ARTICLES

STILL CRYING OUT FOR A "MAJOR OVERHAUL" AFTER ALL THESE YEARS—SALMON AND ANOTHER FAILED BIOLOGICAL OPINION ON COLUMBIA BASIN HYDROELECTRIC OPERATIONS

BY

MICHAEL C. BLUMM,* JULIANE L. FRY** & OLIVIER JAMIN***

For nearly four decades, national policy has been to restore Columbia Basin salmon devastated by the construction and operation of the Federal Columbia River Power System (FCRPS). In the 1980 Northwest Power Act, Congress declared that salmon restoration was a national priority and that it would be funded largely through federal hydropower sales. A basinwide plan approved by the Northwest states began the restoration effort in 1982, but since that plan did not focus on wild salmon restoration, it was soon eclipsed by federal biological opinions (BiOps) after the listing of several salmon species under the Endangered Species Act (ESA) in the early 1990s. There followed a seemingly endless series of court challenges to the adequacy of the BiOps, most of which succeeded.

Although we discuss all of the Columbia Basin ESA salmon court decisions over the last quarter-century, our focus is on the 2016 decision, a remarkable 149-page opinion that is a paragon of close judicial review. United States District Judge Michael H. Simon became the third consecutive federal judge to find the federal BiOp on FCRPS hydroelectric operations wanting, but he did so in much greater detail

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

** Arthur F. Scott Associate Professor of Chemistry and Environmental Studies, Reed College; M.S.L. 2016 Lewis & Clark Law School; Ph.D. 2005 California Institute of Technology; B.S. 2000 University of Rochester.

*** J.D. 2017 Lewis & Clark Law School; B.A. 2013 Gonzaga University.

and scope than did his predecessors. The result was a judicial opinion that could produce substantial changes in the way the federal government approaches ESA compliance of the world's largest integrated hydroelectric system. Some of those changes were evident in an ensuing 2017 decision ordering increased spills of water at mainstem dams to facilitate downstream fish passage.

Like his predecessors, Judge Simon faulted the federal government for failing to ensure that the mitigation measures—which the FCRPS BiOp assumed would produce immediate, significant benefits—were actually "reasonably certain to occur." In addition, among other shortcomings, he determined that the BiOp failed to 1) employ a proper methodology for evaluating species jeopardy in its BiOp; 2) account for the low abundance levels and declining recruits per spawning salmon without an adequate margin of safety; 3) rationally examine recovery of the listed species; 4) consider effects of climate change on the mitigation measures; and 5) prepare a programmatic environmental impact statement (EIS) on the cumulative effects of those measures and reasonable alternatives.

Implementation of Judge Simon's opinion, if carried out faithfully, could substantially improve prospects for the recovery of the thirteen ESA-listed salmon runs. The opinion also may establish important ESA precedent concerning the species jeopardy that BiOps are to avoid, the critical habitat that BiOps are supposed to protect, and the relationship between BiOp implementation and procedures necessary to satisfy the National Environmental Policy Act (NEPA). Concerning the latter, perhaps the most arresting aspect of the Simon opinion was the strong suggestion that the EIS the court ordered should include an evaluation of the alternative of breaching the four federal dams on the lower Snake River. However, perhaps more significant in terms of the forthcoming BiOp, the court was insistent that the burden of uncertainty no longer be shouldered by the listed species. Although a court may encourage the FCRPS agencies to consider dam breaching as a NEPA alternative, neither the agencies nor a court have authority to order dam breaching, a power that lies exclusively with Congress in the case of federal dams.

The 2017 injunction ordering increased spills beginning in 2018 promised the first substantive improvement in fish passage due to changed hydroelectric project operations since United States District Judge James A. Redden ordered spills over a dozen years earlier in 2005. This injunctive relief, which also included promised judicial scrutiny of large-scale expenditures at the lower Snake dams, is interim—pending completion of revised BiOp and the new EIS that Judge Simon ordered. But the injunction may reflect the fact that the longstanding federal effort to direct attention away from dam operations to offsite habitat creation and restoration and hatchery production has not entirely succeeded. If so, that is a good omen for the fate of imperiled Columbia Basin salmon.

"[The 1993 Biological Opinion] is "seriously, 'significantly' flawed because it is too heavily geared toward a status quo that has allowed all forms of river activity to proceed in a deficit situation—that is, relatively small steps, minor improvements and adjustments—when the situation literally cries out for a major overhaul."[1]

I. INTRODUCTION

In 2016, for the sixth time in just over two decades, the National Marine Fisheries Service (NMFS) failed to comply with the Endangered Species Act[2] (ESA) in its biological opinion (BiOp) on Federal Columbia River Power System (FCRPS) operations.[3] Columbia Basin dams are a principal reason for the listing of thirteen salmonid species for ESA protection, and NMFS has been trying to meet the requirements of the ESA for nearly a quarter-century, largely unsuccessfully.[4] Although the ESA experience with Columbia Basin salmon has been mostly futile in terms of restoring the

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

2 Endangered Species Act of 1973, 16 U.S.C. §§ 1531–1544 (2012).

3 Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. 3:01-cv-0640-SI, 2017 WL 1135610, at *3 (D. Or. Mar. 27, 2017). NMFS is also known as National Oceanic and Atmospheric Administration (NOAA) Fisheries. In the interest of clarity, NMFS will be used in this Article.

4 *See generally* John Harrison, *Endangered Species Act and Columbia River Salmon and Steelhead*, NW. POWER & CONSERVATION COUNCIL (May 4, 2016), https://perma.cc/W85C-2FE9 (discussing several attempts by NMFS from 1993 to the present to meet ESA requirements).

listed salmon,[5] the listings have, ironically, materially affected federal implementation of the ESA.[6] There are many such ironies in the Columbia Basin salmon saga.

The repeated failure of federal BiOps to satisfy the ESA has occurred under the watch of three separate federal district court judges: Malcolm F. Marsh, James A. Redden, and now Michael H. Simon,[7] and despite nearly $1 billion in fish habitat restoration funds offered by the region's federal power broker, the Bonneville Power Administration (BPA), to state and tribal governments to drop their legal opposition to the BiOps.[8] This effort succeeded only partially as the State of Washington and several tribes accepted the federal money;[9] but the State of Oregon and the Nez Perce

---

5 In 1996, the National Academy of Sciences reported that Pacific salmon had disappeared from 40% of their historical breeding range in Washington, Idaho, Oregon, and California, and in many cases where populations are now stable, they are composed largely or entirely of hatchery fish. COMM. ON PROT. & MGMT. OF PAC. NW. ANADROMOUS SALMONIDS, NAT'L ACAD. OF SCI., UPSTREAM: SALMON AND SOCIETY IN THE PACIFIC NORTHWEST 2 (1996). Although 2002 and 2003 witnessed record returns of many salmon populations in the Columbia River Basin, NMFS observed that hatchery fish comprised the majority of these returns (e.g., 69% of Snake River spring/summer chinook salmon and up to 90% of upper Columbia River spring chinook). *See* Michael C. Blumm et al., *Practiced at the Art of Deception: The Failure of Columbia Basin Salmon Recovery Under the Endangered Species Act*, 36 ENVTL. L. 709, 719–24 (2006) [hereinafter *Practicing Deception*]. Further, favorable ocean conditions facilitated large salmon returns, while long-term growth remained below replacement rates required for recovery. *Id.* at 724.

6 *See* Michael C. Blumm & Greg D. Corbin, *Salmon and the Endangered Species Act: Lessons from the Columbia River Basin*, 74 WASH. L. REV. 519, 599–601 (1999) (explaining that the salmon listings affected ESA implementation by: 1) causing NMFS to define salmonid species as "evolutionarily significant units" (ESUs); 2) streamlining the biological consultation process through so-called "summary concurrences"; 3) using multi-year BiOps; 4) invoking consultation to implement pre-existing ecosystem management plans; and 5) defining the ESA-required "best available" science to include intergovernmental consultation among other agencies and tribes with scientific expertise).

7 Judge Marsh first found NMFS's 1993 BiOp "seriously flawed." Idaho Dep't of Fish & Game v. Nat'l Marine Fisheries Serv., 850 F. Supp. 886, 900 (D. Or. 1994), *vacated as moot*, 56 F.3d 1071 (9th Cir. 1995). He subsequently upheld the agency's 1995 BiOp, despite serious misgivings about NMFS's risk tolerance in *American Rivers v. National Marine Fisheries Service*, No. Civ. 96-384-MA, 1997 WL 33797790, at *9 (D. Or. Apr. 3, 1997). Judge Redden rejected the 2000 BiOp in *National Wildlife Federation v. National Marine Fisheries Service* (*NMFS I*), 254 F. Supp. 2d 1196 at 1211 (D. Or. 2003), and he rejected the 2004 BiOp in *National Wildlife Federation v. Marine Fisheries Service* (*NMFS II*), No. 3:01-cv-0640-RE, 2005 WL 1278878 at *7 (D. Or. May 26, 2005), *aff'd*, 524 F.3d 917 (9th Cir. 2008). Redden also invalidated the 2008 BiOp, as amended in 2010. Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv. (*NMFS IV*), 839 F. Supp. 2d 1117, 1131 (D. Or. 2011). These decisions—and several related ones—are discussed in Michael C. Blumm & Aurora Paulsen, *The Role of the Judge in ESA Implementation: District Judge James Redden and the Columbia Basin Salmon Saga*, 32 STAN. ENVTL. L.J. 87, 111–29 (2013). Judge Simon's first decision on the FCRPS is the subject of this Article. For a timeline covering these decisions, see Appendix A.

8 2008 Columbia Basin Fish Accords: Memorandum of Agreement Between the Treaty Tribes and FCRPS Action Agencies 1, 10–12, 17, 19 & B-1 (2008) [hereinafter Columbia Basin Fish Accords], https://perma.cc/VY97-637N; William McCall, *BPA, Tribes Reach $900 Million Deal to Help Columbia River Salmon*, SEATTLE TIMES (Apr. 7, 2008), https://perma.cc/HZY4-4Z9L.

9 Columbia Basin Fish Accords, *supra* note 8. Technically, Washington did not sign an accord in which the state promised not to participate in the suit challenging the 2014 BiOp. The

Tribe did not, and they proceeded with the litigation, along with a number of environmental groups.[10]

A hallmark of all recent FCRPS BiOps has been a federal effort to shift attention from the salmon mortalities caused by mainstem dams and their operation (which generate substantial hydropower revenues) to focus on so-called "off-site mitigation measures," mostly habitat restoration and hatchery production.[11] These off-site measures, which the BiOps assumed would produce immediate and considerable survival benefits, have failed to survive judicial review because most have not proved to be "reasonably certain to occur."[12] Judge Simon reiterated Judge Redden's repeated holdings on this issue in his 2016 decision.[13] And he went considerably farther, deciding that NMFS employed an improper jeopardy standard—"trending toward recovery"—that ignored the desperate current situation of Columbia Basin listed salmon.[14]

Judge Simon also determined that the current BiOp failed to rationally evaluate recovery prospects or assess the effects of climate change on the mitigation measures NMFS claimed would avoid jeopardy.[15] Finally, he decided that implementation of these measures required preparation of a programmatic environmental impact statement (EIS), which he strongly

---

state, which supported NMFS concerning both the 2000 and 2008 BiOps (but not the 2004 BiOp)—well before BPA offered habitat funding through the accords—agreed to coordinate habitat restoration in the Columbia River estuary in a 2009 memorandum of agreement, in which Washington agreed that the "FCRPS and Upper Snake BiOps (including hydro operation, configuration, and water management provisions) satisfy ESA requirements during their terms." Memorandum of Agreement on Columbia River Estuary Habitat Actions Between the State of Washington, BPA, the United States Army Corps of Engineers (the Corps), and the Bureau of Reclamation (Sept. 16, 2009), https://perma.cc/2R4C-8764.

10 McCall, *supra* note 8. The Nez Perce Tribe supported the plaintiffs by filing an amicus brief. Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv. (*NMFS V*), 184 F. Supp. 3d 861, 882 (D. Or. 2016); Nez Perce Tribe's Memorandum in Support of Plaintiffs' Motions for Summary Judgment, *NMFS V*, 184 F. Supp. 3d 861 (No. 3:01-cv-0640-SI), ECF No. 1984. The environmental plaintiffs included the National Wildlife Federation, the Idaho Wildlife Federation, the Washington Wildlife Federation, the Sierra Club, the Pacific Coast Federation of Fishermen's Association, the Institute for Fisheries Resources, the Idaho Rivers United, the Northwest Sport Fishing Industry Association, Salmon for All, Columbia Riverkeeper, the NW Energy Coalition, the Federation of Fly Fishers, and American Rivers. *NMFS V*, 184 F. Supp. 3d at 868 n.1.

11 The focus on off-site habitat restoration began with the 2000 BiOp. Blumm & Paulsen, *supra* note 7, at 116.

12 *NMFS I*, 254 F. Supp. 2d 1196, 1215 (D. Or. 2003) (finding that the agency improperly relied on off-site mitigation measures that were not reasonably certain to occur); *NMFS IV*, 839 F. Supp. 2d 1117, 1125–28 (D. Or. 2011) (finding that habitat mitigation was not reasonably certain to occur); *NMFS V*, 184 F. Supp. 3d at 876, 903–04, 906, 949 (finding several mitigation measures were not reasonably likely to occur).

13 *NMFS V*, 184 F. Supp. 3d at 906–09.

14 *Id.* at 892–95. We include listed steelhead trout (*Salmonidae Oncorhynchus mykiss*) with salmon (*Salmonidae Oncorhynchus*), as Indian tribes have always considered steelhead to be salmon and they belong to the same genus. John Harrison, *First-Salmon Ceremony*, NW. POWER & CONSERVATION COUNCIL (Oct. 28, 2008), https://perma.cc/D4A5-PHVT.

15 *NMFS V*, 184 F. Supp. 3d at 917–23.

suggested should include consideration of the alternative of breaching the lower Snake River dams.[16]

The upshot of the 2016 decision was another remand to NMFS to produce a new BiOp that would satisfy the ESA.[17] But like his predecessors, Judge Simon did not enjoin ongoing FCRPS operations, a result that has not encouraged NMFS or the action agencies to comply with the ESA in the past.[18] Although there might not be a good alternative—since enjoining FCRPS operations is unrealistic (as judges have no power over streamflows and lack expertise concerning dam operations)—part of the reason for the repeated federal failure to comply with the ESA may be the lack of enforceable sanctions over an ongoing activity like hydropower operations. Perhaps there is some form of innovative injunctive relief that could require the involved federal agencies to begin to take the judicial opinions more seriously than they have over the last two decades.[19]

Above all, Judge Simon's 2016 decision reflected an exacting approach to reviewing ESA implementation. Given the sorry history of Columbia Basin salmon restoration, this "hard look" review was a welcome development, perhaps attributable to the influence of numerous failures over time.[20] The long history of failure—following repeated, inaccuate government predictions[21]—must have influenced the reviewing judge. When "expert" agencies continuously fail to deliver on their promises over a long period of

---

16 *Id.* at 942–44. On the scientific, economic, and legal grounds for breaching these dams, see generally Michael C. Blumm et al., *Saving Snake River Water and Salmon Simultaneously: The Biological, Economic, and Legal Case for Breaching the Lower Snake River Dams, Lowering John Day Reservoir, and Restoring Natural River Flows*, 28 ENVTL. L. 997 (1998).

17 *NMFS V*, 184 F. Supp. 3d at 949–50.

18 *Id.*; Idaho Dep't of Fish & Game v. Nat'l Marine Fisheries Serv., 850 F. Supp. 886, 901 (D. Or. 1994), *vacated as moot*, 56 F.3d 1071 (9th Cir. 1995); Am. Rivers v. Nat'l Marine Fisheries Serv., No. Civ. 96–384–MA, 1997 WL 33797790, at *14 (D. Or. Apr. 3, 1997); *NMFS I*, 254 F. Supp. 2d 1196, 1215 (D. Or. 2003); *NMFS II*, No. 3:01-cv-0640-RE, 2005 WL 1278878, at *22 (D. Or. May 26, 2005), *aff'd* 524 F.3d 917, 938 (9th Cir. 2008); *NMFS IV*, 839 F. Supp. 2d 1224, 1131 (D. Or. 2011); *see also* Appendix A (charting these decisions along a timeline).

19 The federal role in the operation of the Federal Columbia Basin is complicated. BPA, which sells power from federal dams (and other sources), is the dominant entity. *See generally* BONNEVILLE POWER ADMIN. ET AL., THE COLUMBIA RIVER SYSTEM INSIDE STORY, at 19 (2d ed. 2001) [hereinafter BPA INSIDE STORY], https://perma.cc/UA6Y-TFVE. The Corps and the Bureau of Reclamation operate the federal dams, while the Federal Energy Regulatory Commission (FERC) regulates nonfederal projects, including five large, mainstream dams on the mid-Columbia and Idaho Power's Hells Canyon dams on the Snake. *Id.* at 18–19. For a full list of FERC-licensed dams, see *Complete List of Active Licenses*, FED. ENERGY REG. COMMISSION, https://perma.cc/U3S3-AC6Z (last updated Mar. 8, 2017). NMFS has responsibilities under the Endangered Species Act for salmon, which accounts for NMFS as the lead federal defendant in the long-running litigation over ESA compliance concerning annual hydroelectric operations. BPA INSIDE STORY, *supra*, at 20. Judge Redden imposed numerous study and reporting requirements on federal agencies during earlier remand periods. Blumm & Paulsen, *supra* note 7, at 143–44.

20 *See, e.g.*, J. Tavener Holland, *Regulatory Daubert: A Panacea for the Endangered Species Act's "Best Available Science" Mandate*, 39 MCGEORGE L. REV. 299, 309 (2008) ("[J]udicial review of agency decisions should encompass a searching, 'hard look' review.").

21 *See* discussion *infra* Part III.B.

time, judicial deference to agency expertise should diminish. The Columbia Basin salmon saga may be a prime exhibit for this proposition.

This Article assesses the latest—and perhaps most interesting—decision in the long-running Columbia Basin salmon–hydropower conflict. Part II discusses the relevant background, and there is a good deal of that necessary to understand the context of the 2016 decision and its significance. Part III explores Judge Simon's opinion finding the NMFS BiOp once again to be inadequate, examining his decisions on 1) the proper standard for "jeopardy" under the ESA, 2) the requirement that mitigation measures be specific and enforceable, 3) the need for a thorough analysis of the effect of climate change on those mitigations measures, 4) the effect of FCRPS operations on critical habitat, and 5) the applicability of the National Environmental Policy Act (NEPA) to the implementation of ESA mitigation measures. Part IV explains Judge Simon's 2017 decision requiring increased spills of water at mainstem dam beginning in 2018 to facilitate juvenile fish passage, which will be the most significant FCRPS operational change in over a dozen years. Part V considers the significance of the Simon decision in light of the earlier decisions of Judges Marsh and Redden.

We conclude that Judge Simon's close review of NMFS latest BiOp was warranted in light of the unwillingness of the federal government to take seriously the need to restructure hydroelectric operations. However, prospects for significant improvement in the future are not promising if they must continue to rely on court review. Over the past two decades the courts have repeatedly found fault with federal efforts to restore Columbia Basin salmon, but the courts cannot run the complex FCRPS. Until there is a commitment on the part of those federal agencies controlling the system—particularly BPA, the real "power broker in the region"[22]—to take seriously their obligation to protect the Columbia's salmon runs, significant restoration of the listed salmon is unlikely.

II. THE 1993–2008 BIOLOGICAL OPINIONS: A HISTORY OF SHIFTING JEOPARDY STANDARDS

The 2014 BiOp failed to pass Judge Simon's review in the latest round of litigation on grounds both similar to earlier decisions by Judge Redden—assuming considerable survival benefits to the listed species due to habitat mitigation actions that were not reasonably certain to occur[23]—as well as new problems, including 1) NMFS's use of an improper jeopardy standard; 2) an inadequate analysis of the effects of climate change; and 3) a failure to prepare an EIS concerning implementation of the BiOp's reasonable and prudent alternatives (RPAs).[24] However, in his discussion of NMFS's analysis of critical habitat, Judge Simon issued a more confusing decision. He ruled

22 *See* Jeffrey P. Foote et al., *The Bonneville Power Administration: The Northwest Power Broker*, 6 ENVTL. L. 831, 831 (1976).

23 *NMFS V*, 184 F. Supp. 3d 861, 870 (D. Or. 2016).

24 *Id.* at 876.

that although the agency's "retaining the current ability to become functional" standard failed to comply with the ESA, NMFS's conclusion that the RPA would not adversely modify the designated critical habitat was not unreasonable.[25] The following sections describe each of these elements of the decision in some detail.

Section 7(a)(2) of the Endangered Species Act requires federal agencies to insure that their discretionary actions will not "jeopardize the continued existence . . . or result in the destruction or adverse modification of habitat" of a listed species.[26] To determine whether an action will jeopardize a listed species, NMFS must, according to its regulations, ascertain whether the action will "reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."[27] Because the agency retains substantial discretion in implementing this regulatory definition, the framework for determining whether proposed hydropower operations would produce jeopardy has evolved over time.

NMFS refined the standard in its 1995 BiOp to require protection of both a listed species' survival and its recovery.[28] Beginning in the 2008 BiOp, NMFS phrased this inquiry as "whether the species can be expected to survive with an adequate potential for recovery—e.g., trending toward recovery."[29] The 2014 BiOp's foremost failure was its reliance on this

---

25 *Id.* at 930–33. Judge Simon upheld NMFS's analysis on this issue because "significant improvements to the mainstem habitat" made NMFS's conclusion "not irrational or in clear error." *Id.* at 933. For a more thorough discussion of this topic, see *infra* Part III.D.

26 ESA, 16 U.S.C. § 1536(a)(2) (2012) ("Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an 'agency action') is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical . . . .").

27 50 C.F.R. §402.02 (2016) (defining jeopardy).

28 *See* NW. REGION, NAT'L MARINE FISHERIES SERV., BIOLOGICAL OPINION: REINITIATION OF CONSULTATION ON 1994–1998 OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM AND JUVENILE TRANSPORTATION PROGRAM IN 1995 AND FUTURE YEARS 10–11 (1995) [hereinafter 1995 BIOP], https://perma.cc/39WZ-YCPA (referring to the consultation regulatory definition of "jeopardize the continued existence of" and the 1994 *Draft Section 7 Endangered Species Consultation Handbook* regulatory definitions of "survival" and "recovery"). NMFS's jeopardy standard interpreted 50 C.F.R. § 402.02, which defines jeopardy to include "both the survival and recovery" as parallel goals, with no distinction in the stringency of assessment required. Judge Simon rejected NMFS's argument that including precise recovery abundance levels would improperly incorporate ESA recovery planning called for by section 4 of the statute into the section 7 consultation process, stating that "[w]ithout tying its recovery metrics to any rough estimated recovery abundance level or time frame, however, NOAA Fisheries cannot rationally conclude that the RPA actions will not appreciably reduce the species' chances of recovery." *NMFS V*, 184 F. Supp. 3d at 894.

29 NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT SECTION 7(A)(2) CONSULTATION BIOLOGICAL OPINION AND MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT CONSULTATION: CONSULTATION ON REMAND FOR OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM 1-10 (2008) [hereinafter 2008 BIOP], https://perma.cc/P643-VQ2H. NMFS interpreted "trending toward recovery" to mean that the

jeopardy standard, which Judge Simon thought was inconsistent with the ESA.[30] Before discussing the reasons that the judge struck down NMFS's trending toward recovery standard in the 2014 BiOp, this Part outlines the history of the moving target of jeopardy established in the hydroelectric BiOps over the past quarter-century.

A. No Jeopardy Biological Opinions

The first BiOp the federal government issued on the operation of federal Columbia Basin dams in 1992 followed the first ESA salmon listing.[31] In both this BiOp and an ensuing 1993 BiOp, NMFS reached "no jeopardy" conclusions. The 1992 BiOp based its no jeopardy determination on an assessment that "reduction in mortality represents progress toward reversing the decline of listed and proposed species," apparently suggesting that any improvement satisfied the statute.[32] The 1993 BiOp assumed that flow augmentation and spill measures adopted by the federal agencies, along with improvements in structures and fish bypass facilities, "have reduced the anticipated mortality . . . adequately for the purposes of the 1993 consultation."[33] Idaho, along with Oregon and the Northwest Resource Information Center as intervenors and several tribes participating as amici,[34] challenged the 1993 BiOp based on NMFS reliance on life-cycle modeling of estimated salmon mortality and a 1986–1990 baseline period—a period of record low salmon runs that led to the species' listing.[35]

Judge Marsh decided that the 1993 BiOp's jeopardy analysis failed to satisfy the ESA because NMFS had arbitrarily omitted consideration of the full range of risk assumptions, instead relying selectively upon "uncertain favorable model results [while rejecting] other equally uncertain model results tending to undermine a no jeopardy conclusion."[36] Also objectionable to the court was the baseline NMFS chose to judge improvements: years of

---

standard was met if one more fish returned than the previous year, even if actual recovery was in the distant future. *Id.* at xxix, 1–12

30 *NMFS V*, 184 F. Supp. 3d at 949.

31 Pac. Nw. Generating Coop. v. Brown, 822 F. Supp. 1479, 1483 (D. Or. 1993), *aff'd*, 38 F.3d 1058 (9th Cir. 1994).

32 NW. REGION, NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT SECTION 7 CONSULTATION/CONFERENCE BIOLOGICAL OPINION 50 (1992).

33 Letter from Nancy Forester, Acting Assistant Adm'r for Fisheries, Nat'l Marine Fisheries Serv., to Randall Hardy, Adm'r, Bonneville Power Admin. (May 26, 1993) (on file with author).

34 The participating tribes were the Confederated Tribes of the Umatilla, Warm Springs, and Yakama reservations, and the Nez Perce Tribe.

35 Idaho Dep't of Fish & Game v. Nat'l Marine Fisheries Serv., 850 F. Supp. 886, 891–93 (D. Or. 1994), *vacated as moot*, 56 F.3d 1071 (9th Cir. 1995). The 1993 BiOp used results from three life-cycle models: 1) BPA's Stochastic Life–Cycle Model; 2) Northwest Power Planning Council's System Planning Model; and 3) State and Tribal Fisheries Agencies' Empirical Life–Cycle Model. *Id.* at 896.

36 *Id.* at 898–99 ("Especially in light of the perilously low numbers of Snake River sockeye and fall chinook expected in 1993. . . , I also find that NMFS should have fully considered the enhanced risks associated with small populations prior to discounting low range assumptions.").

extremely low returns, meaning that it would be easier for the agency to show improvement.[37] Judge Marsh saw through NMFS's manipulations of the baseline period as an effort to maintain hydropower generation instead of attempting to reduce the effect of hydropower on declining salmon runs. He concluded that the BiOp was so committed to maintaining status quo hydroelectric operations that ESA compliance would require "a major overhaul."[38] The judge therefore remanded the BiOp for NMFS to revise.[39]

B. Jeopardy Biological Opinions

The 1995 BiOp was the first to reach a jeopardy finding for the listed species.[40] This BiOp also was the first time NMFS incorporated recovery into its analysis, as the 1992 and 1993 BiOps had focused exclusively on survival.[41] The new recovery standard required the agency to determine "whether the species can be expected to survive with an adequate potential for recovery under the effects of the proposed or continuing action."[42] The 1995 BiOp adopted a dual-probability standard, requiring the proposed actions to demonstrate a "high likelihood" of species survival, but only a "moderate to high likelihood" of recovery.[43] This dual-probability standard was only the first of a series of weakening interpretations of what recovery required. Also beginning in 1995, BiOps began to encompass five-year periods, relieving the operating agencies from annual consultation.[44]

Because of its jeopardy finding, in 1995, for the first time, NMFS had to include RPAs to avoid jeopardy in its BiOp, including flow augmentation, spill, and juvenile fish transportation as "immediate" actions to avoid jeopardy.[45] A group of environmentalists led by American Rivers challenged the BiOp, alleging that it did not adequately explain how its RPAs would avoid jeopardy and claiming that the time period used for the recovery analysis was too long to be protective.[46] But Judge Marsh deferred to the

---

37 *Id.* at 893 ("It is clear that a longer base period which includes years of higher abundance levels would have encompassed higher escapement levels and would have resulted in a higher goal.").

38 *Id.* at 900.

39 *Id.* at 900–01.

40 *See* 1995 BIOP, *supra* note 28, at 83–91.

41 *Id.* at 13; *Practicing Deception*, *supra* note 5, at 738.

42 1995 BIOP, *supra* note 28, at 13.

43 *Id.* at 14; *see also id.* at 78 (defining a "high likelihood" as a 70% probability and a "moderate likelihood" as a 50% of recovery).

44 *See* Blumm & Corbin, *supra* note 6, at 552. The 1995 BiOp applied during 1994–1998. 1995 BIOP, *supra* note 28, at 7.

45 1995 BIOP, *supra* note 28, at 91–139; *see also Practicing Deception*, *supra* note 5, at 743–48 (pointing out that NMFS structured these requirements so that they could be modified or suspended in order to maintain hydropower operations status quo).

46 Am. Rivers v. Nat'l Marine Fisheries Serv., No. Civ. 96–384–MA, 1997 WL 33797790, at *1 (D. Or. Apr. 3, 1997), *aff'd*, 168 F.3d 497 (9th Cir. 1999) (unpublished table decision). Notably, the State of Idaho, which led the challenge to the 1993 BiOp, switched sides and now supported NMFS's 1995 BiOp. *Id.* at *2 The Columbia Basin tribes were also now split, and no longer were all amici on the plaintiffs' side. *See* Blumm & Corbin, *supra* note 6, at 557 (noting that the upper

agency and upheld the 1995 BiOp, although he expressed considerable skepticism about its conclusions.[47] The 1995 BiOp was the only BiOp to survive judicial review in the past quarter-century. The Ninth Circuit upheld Judge Marsh's decision in 1999.[48]

The next BiOp, in 2000, also concluded that dam operations would jeopardize the listed Columbia Basin salmonid species, which then numbered twelve.[49] This jeopardy finding again necessitated RPAs to reduce the harm to the listed species from dam operations. The 2000 RPAs included a number of off-site habitat improvement measures as part of a so-called basinwide recovery strategy, which shifted the focus of restoration efforts toward off-site habitat restoration and away from hydropower operations.[50] This BiOp was challenged by a group of environmentalists, now led by the National Wildlife Federation.[51] Judge Redden—who succeeded Judge Marsh as the presiding judge—struck down the 2000 BiOp because the off-site habitat measures were "not reasonably certain to occur."[52]

In the 2000 BiOp, NMFS interpreted the recovery prong of the jeopardy standard to require both quantitative abundance goals and a time frame for

---

basin Colvillle and Spokane tribes sought to protect reservoir levels in Lake Roosevelt, formed by Grand Coulee Dam, which might be lowered to achieve the river flows advocated by the lower basin tribes).

47 *Am. Rivers*, 1997 WL 33797790, at *10. Judge Marsh wrote that "the ESA says nothing about risk tolerance and the limits of judicial review dictate that I not interfere with a federal agencies' exercise of professional judgment or their reasoned decisions." *Id.* at *10. Judge Marsh decided that NMFS had "provided a reasoned evaluation of all five factors of the jeopardy analysis and [had] adequately explained its limited reliance upon lifecycle model results," and that given existing uncertainties about whether transportation or in-river migration improvements would provide better mitigation, he could not "find that NMFS's failure to select a single strategy to pursue . . . is arbitrary or capricious." *Id.* Judge Simon later was unwilling to impose the risks of these uncertainties on the endangered species. *See NMFS V*, 184 F. Supp. 3d. 861, 895 (D. Or. 2016).

48 Am. Rivers v. Nat'l Marine Fisheries Serv., 168 F.3d 497 (9th Cir. 1999) (unpublished table decision).

49 NW. REGION, NAT'L MARINE FISHERIES SERV., BIOLOGICAL OPINION: REINITIATION OF CONSULTATION ON OPERATIONS OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM, INCLUDING THE JUVENILE FISH TRANSPORTATION PROGRAM AND 19 BUREAU OF RECLAMATION PROJECTS IN THE COLUMBIA BASIN 1-6 to -7 (2000) [hereinafter 2000 BIOP].

50 *Id.* at 9-2.

51 *NMFS I*, 254 F. Supp. 2d 1196, 1199 (D. Or. 2003). In addition to the National Wildlife Federation, the environmental groups challenging the BiOp were the Idaho Wildlife Federation, the Washington Wildlife Federation, the Sierra Club, Trout Unlimited, the Pacific Coast Federation of Fishermen's Associations, the Institute for Fisheries Resources, Idaho Rivers United, Idaho Steelhead and Salmon United, the Northwest Sportfishing Industry Association, Friends of the Earth, Salmon for All, and Columbia Riverkeeper.

52 *Id.* at 1215. Judge Marsh quoted *Center for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002), with approval. *Id.* at 1207 (quoting *Rumsfeld*, 198 F. Supp. 2d at 1152) ("Mitigation measures must be reasonably specific, certain to occur, and capable of implementation; they must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards." (citing Sierra Club v. Marsh, 816 F.2d 1376 (9th Cir. 1987)).

reaching recovery.[53] But in response to Judge Redden's opinion, in the 2004 BiOp, the Bush Administration adopted a radically new jeopardy analysis. The new approach removed the quantitative abundance targets and time frames, and instead proceeded through five narrative steps to analyze proposed actions in a so-called "comparative approach" that evaluated incremental adverse effects of the proposed action against an environmental baseline that included existing dams.[54] Since NMFS now considered the dams to be part of the environmental baseline and their operation was allegedly "nondiscretionary," the 2004 BiOp essentially exempted dam operations from section 7 analysis.[55] Consequently, the BiOp declared that there was no jeopardy to listed species.[56]

The National Wildlife Federation and others challenged the 2004 BiOp, and Judge Redden concluded that the new jeopardy definition unlawfully restricted NMFS's jeopardy analysis to the effects from so-called "discretionary" aspects of the proposed action over which agencies have control.[57] Thus, alleged nondiscretionary actions, like dam operations actions, were now part of the environmental baseline and not subject to ESA consultation.[58] This interpretation, the plaintiffs maintained, allowed the agency to omit consideration of the substantial adverse effects produced by dam operations.[59] Judge Redden agreed and struck down the 2004 BiOp.[60]

---

53 *See* 2000 BIOP, *supra* note 49, at 1-14, 1-15 tbl.1.3-1. *See generally supra* notes 27–29 and accompanying text (discussing the regulatory origin of the "survival" and "recovery" prongs of jeopardy analysis).

54 NW. REGION, NAT'L MARINE FISHERIES SERV., BIOLOGICAL OPINION, CONSULTATION ON REMAND FOR OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM AND 19 BUREAU OF RECLAMATION PROJECTS IN THE COLUMBIA BASIN 1-5 to -6 (2004) [hereinafter 2004 BIOP]; *see also Practicing Deception*, *supra* note 5, at 771 (discussing the comparative approach to jeopardy used by NMFS).

55 *See NMFS II*, No. 3:01-cv-0640-RE, 2005 WL 1278878 at *10–11 (D. Or. May 26, 2005), *aff'd*, 524 F.3d 917, 938 (9th Cir. 2008).

56 2004 BIOP, *supra* note 54, at 8-4 to -38 & tbl.8.1 (repeatedly exempting so-called non-discretionary hydro operations from the jeopardy analysis).

57 *See NMFS II*, 2005 WL 1278878, at *13.

58 *See Practicing Deception*, *supra* note 5, at 772. The 2004 jeopardy analysis focused only on whether a proposed action would diminish the species' likelihood of survival or recovery when compared to the effects of the environmental baseline. *Id.*

59 See *NMFS II*, 2005 WL 1278878, at *8–9.

60 Judge Redden concluded that NMFS's new approach to jeopardy analysis was arbitrary and capricious because:

> What [NMFS] has in effect done in the 2004BiOp is compare the proposed action to the share of the proposed action it chose to re-categorize as part of the environmental baseline, rather than properly evaluating the proposed action in its entirety. . . .
>
> . . . .
>
> [NMFS's] comparative approach improperly circumscribes the effects of the action by basing the jeopardy decision on [NMFS's] estimate of the impacts attributable only to "discretionary" elements of the proposed action. This has the effect of substantially lowering the threshold required for the mitigation elements of the proposed action. The 'net effects' analysis operates only on a portion of impacts properly attributable to the action as a whole, instead of needing to offset impacts attributable to the entirety of the

In 2004, while NMFS was preparing the 2004 BiOp, the United States Army Corps of Engineers (the Corps) issued a "statement of decision" curtailing summer spill at four Columbia Basin dams.[61] The proposal would have eliminated spills at The Dalles and Bonneville Dams for the entire month of August and at the Ice Harbor and John Day Dams during the last week of August, potentially resulting in a loss of up to 377,000 listed juvenile salmon.[62] NMFS surprisingly accepted this proposal in its 2004 BiOp, even though its 2000 BiOp cited the spill program as an important element of successful salmon mitigation.[63] The 2004 BiOp sugested that the spill curtailment would generate an additional $18–28 million in revenue from increased hydropower sales which could support measures to mitigate the adverse effects of curtailing spill.[64]

Environmental groups proceeded to file suit, claiming that NMFS illegally modified the summer spill program established in the 2000 BiOp.[65] Judge Redden rejected curtailing spill because of "fundamental defects" in the agency's reasoning, which was based on "flawed assumptions."[66] Judge Redden noted that projected survival improvements from the release of water from Brownlee Reservoir had not materialized, undermining the agency's reasoning, and he enjoined the Corps from curtailing the summer spill.[67] The court concluded that given the centrality of the spill program to the 2000 BiOp's RPA—and in the absence of any meaningful offset—the proposed spill curtailment would result in FCRPS operations jeopardizing ESA-listed salmon.[68]

---

action-discretionary and nondiscretionary elements alike. Only a comprehensive approach to jeopardy analysis will meet the statutory mandate.

Id. at *13–14 (footnote omitted). Given the practical inability to enjoin streamflows and the infeasibility of completely restricting hydropower operations through judicial decree, Judge Redden's injunction required the parties only to engage in ongoing consultation and discussion (with court-overseen status conferences) to determine which elements of the RPAs would remain in place during a remand. *Id.* at *17. More significant injunctive relief came six weeks later, when in order "to avoid irreparable harm to juvenile fall chinook and other listed species," Judge Redden ordered specified spill at certain dams. Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. 3:01-cv-0640-RE, 2005 WL 1398223, at *5 (D. Or. June 10, 2005), *aff'd in part*, *remanded in part*, 422 F.3d 782 (9th Cir. 2005).

61 U.S. ARMY CORPS OF ENG'RS, STATEMENT OF DECISION: MODIFICATION TO SUMMER SPILL OPERATIONS FOR FISH PASSAGE IN 2004 12–13 (2004), https://perma.cc/DND7-A7PQ.

62 *Id.* at 3, 5.

63 *See Practicing Deception*, *supra* note 5, at 763–64 (detailing the circumstances surrounding the NMFS's surprise acceptance of the proposal).

64 *Id.*

65 Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. 3:01-cv-0640-RE, 2004 WL 1698050, at *1 (D. Or. July 29, 2004).

66 *Id.* at *4–5. NMFS argued that the release of water from the Brownlee Reservoir to increase river flows would help juvenile salmon migrate and would mitigate the lack of spill. *Id.* at *4. Judge Redden referred to NMFS's assumption that the water would be released at a consistent rate over twenty-one days as "unsupportable." *Id.*

67 *Id.* at *4–5.

68 *Id.*; *see also Practicing Deception*, *supra* note 5, at 766–67 (discussing the court's conclusions).

The government appealed Judge Redden's decision on the 2004 BiOp, but the Ninth Circuit affirmed, determining that the FCRPS action agencies have "considerable discretion" over dam operations, and that therefore the BiOp's failure to consider the effects of those operations on the listed salmon's chances of recovery violated the ESA.[69] The appeals court also confirmed that the jeopardy regulation requires analysis of both survival and recovery, including consideration of the recovery goal as part of the inquiry into adverse modification of critical habitat.[70] Concluding that NMFS "offered no rational explanation for its decision to omit recovery standards from the 2004 BiOp's analysis"—after the agency had included recovery as part of its jeopardy analysis in both its 1995 and 2000 BiOps—the Ninth Circuit decided that "[t]he only reasonable interpretation of the jeopardy regulation requires NMFS to consider recovery impacts as well as survival."[71] The trending toward recovery standard that NMFS developed in the 2008 BiOp was a response to this instruction.[72]

The failure of its appeal sent NMFS back to the jeopardy-analysis drawing board, pursuant to Judge Redden's order instructing the agency to "[c]orrect its failure to consider the effects of the proposed action on both recovery and survival of the listed species," not solely on survival.[73] This reconsideration of jeopardy led NMFS to develop a new metric—the trending toward recovery standard—discussed below, which the agency began to apply to its BiOps beginning in 2008.[74] Although the new standard acknowledged that recovery was indeed part of the jeopardy determination, it would not survive Judge Simon's scrutiny.

The new interpretation of jeopardy simply asked whether "[t]he populations within a species are expected to be on a trend towards recovery."[75] According to NMFS, "[a]n adequate potential for recovery [meant] the listed species is on a trend toward *eventual* recovery"—meaning

---

69 *NMFS III*, 524 F.3d 917, 929 (9th Cir. 2008).

70 *Id.* at 934 (citing Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv., 378 F.3d 1059, 1069 (9th Cir. 2004)). In *Gifford Pinchot*, the Ninth Circuit noted:

> [T]he regulatory definition reads the 'recovery' goal out of the adverse modification inquiry. . . . The [agency] could authorize the complete elimination of critical habitat necessary only for recovery, and so long as the smaller amount of critical habitat necessary for survival is not appreciably diminished, then no 'destruction or adverse modification,' as defined by the regulation, has taken place. This cannot be right. If the [agency] follows its own regulation, then it is obligated to be indifferent to, if not to ignore, the recovery goal of critical habitat.

378 F.3d at 1069–70.

71 *NMFS III*, 524 F.3d at 932–33. (citing Immigration & Naturalization Serv. v. Cardoza–Fonseca, 480 U.S. 421, 446 n.30 (1987)) (noting that when an agency pursues a dramatically changed administrative approach less judicial deference is warranted); *see also supra* notes 53–57 and accompanying text (discussing the drastic change in the approached adopted by the Bush Administration in 2004).

72 2008 BIOP, *supra* note 29, at 1-10.

73 Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. 3:01-cv-0640-RE, 2005 WL 2488447, at *5 (D. Or. Oct. 7, 2005), *aff'd*, 524 F.3d 917 (9th Cir. 2008).

74 2008 BIOP, *supra* note 29, at 1-10.

75 *Id.* at 7-5.

that any increment in listed salmon returns beyond the previous year's returns would satisfy the recovery standard, regardless of the size of the runs.[76]

Employing a combination of quantitative and qualitative measures to assess the listed species' recovery trend prospects, the 2008 BiOp considered average returns-per-spawner (R/S),[77] mean population growth rate (lambda),[78] and abundance trend,[79] among other factors.[80] In order to achieve what the court called the "significant survival improvements necessary to avoid jeopardy," the agency identified specific mitigation projects from 2008–2013 as well as "broad, unidentified categories of projects" from 2013–2018 to conclude that FCRPS operations would likely produce no jeopardy to the listed species through 2018.[81]

After the inauguration of President Obama, NMFS reconsidered and produced a 2010 supplemental BiOp that integrated an adaptive management implementation plan into the 2008 BiOp, including updated population metrics indicating a decrease in salmon productivity.[82] Because of a too-vague discussion of RPA mitigation measures, Judge Redden invalidated the 2008/2010 BiOp without enjoining hydropower operations,[83] except for a

---

76 *Id.* at 1-12 (emphasis added).

77 2008 BIOP, *supra* note 29, at 7-4 to -5, 7-21 fig.7.1-4. Average R/S was the geometric mean of brood year returns during 1979–2003. *Id.* at 7-21 to -22 & fig.7.1-4. Individual brood-year returns value was the annual abundance of natural spawners, using an age-structure estimate. *Id.* at 7-23.

78 *Id.* at 7-21 fig.7.1-4 (estimating mean population-growth rate by converting the 1979–2003 abundance of natural spawners into a 4-year running sum, then fitting an exponential curve, the slope of which is lambda).

79 *Id.* (calculating the basinwide abundance trend as the slope of the linear regression of log-transformed time series of abundance of natural spawners during 1979–2003).

80 *Id.* at 7-32 to -37 (discussing qualitative factors affecting jeopardy, such as climate change, monitoring, and adaptive management).

81 *NMFS IV*, 839 F. Supp. 2d 1117, 1126 (D. Or. 2011).

82 NW. REGION, NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT SECTION 7(A)(2) CONSULTATION SUPPLEMENTAL BIOLOGICAL OPINION: SUPPLEMENTAL CONSULTATION ON REMAND FOR OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM, 11 BUREAU OF RECLAMATION PROJECTS IN THE COLUMBIA BASIN AND ESA SECTION 10(A)(I)(A) PERMIT FOR JUVENILE FISH TRANSPORTATION PROGRAM §§ 1.2, 2.1.1 (2010) (describing integration of an adaptive management implementation plan). "For most populations, the . . . mean R/S estimates decreased in comparison with the 2008 BiOp base period when an additional two to five years of data were added." *Id.* § 2.1.1.2.3 (citation omitted); see also *Id.* § 2.1.1.2.3 tbl.5 (showing updated R/S statistics). This decline in listed salmon productivity is possible despite overall increasing fish numbers because intense hatchery fish production adds to the overall size salmon runs. *Id.* § 2.1.1.2.4. But as NMFS noted, hatchery fish are almost completely unsuccessful at returning to their spawning stream, so the elevation of aggregate numbers does not translate to higher R/S. *Id.* (citing 2008 BIOP, *supra* note 29, at 7-24). Unfortunately, the distinction between hatchery and spawning salmon can lead to confusion and contradictions between public perception and scientific reality. *See* Associated Press, *Fall Chinook Returns to Hanford Reach of Columbia River Breaks Record*, OREGONIAN (Nov. 12, 2015), https://perma.cc/LYY7-7C8W (mentioning in a caveat buried at the end of the newspaper article that "the numbers failed to distinguish between wild salmon and hatchery-raised salmon . . . [and the] endangered fish are wild fish").

83 *NMFS IV*, 839 F. Supp. 2d at 1128, 1131. Instead, Judge Redden remanded the BiOp without vacatur, allowing it to stay in effect through 2013. *Id.* at 1129.

continuation of the spills that he ordered in 2005.[84] Judge Redden instructed NMFS to ensure that its mitigation measures were "reasonably specific, certain to occur, and capable of implementation"; they had to be "subject to deadlines or otherwise-enforceable obligations."[85]

The judge did not address NMFS's contested trending toward recovery jeopardy standard. Instead, he struck down the BiOp primarily because of its vagueness and the unenforceable nature of its off-site mitigation restoration plans, which lacked the requisite specificity beyond 2013.[86] The court ordered a new BiOp that would 1) "reevaluate[] the efficacy of the RPAs in avoiding jeopardy," 2) "identif[y] reasonably specific mitigation plans for the life of the biological opinion," and 3) "consider[] whether more aggressive action, such as dam removal and/or additional flow augmentation and reservoir modifications are necessary to avoid jeopardy."[87] Because of the court's focus on the vagueness of its RPAs, NMFS largely retained the 2008/2010 BiOp's jeopardy standard in its 2014 BiOp, when its trending toward recovery standard would no longer escape judicial scrutiny.

III. THE 2014 BIOLOGICAL OPINION

A coalition of environmental groups, again led by the National Wildlife Federation, joined by the State of Oregon and the Nez Perce Tribe, challenged the 2014 BiOp.[88] The remaining Columbia Basin states and tribes—who had objected to the earlier BiOps—decided not to participate in this round of litigation. Many of these entities chose to sign the so-called Columbia Basin Fish Accords in May 2008, in which they agreed not to sue and instead support the federal defendants in the suit.[89] In return, they obtained $100 million per year over ten years in federally funded projects to aid in salmon recovery.[90] Some critics thought that the funds amounted to a quid pro quo for agreeing to not sue on the 2014 BiOp.[91]

Since the 2014 BiOp was a response to Judge Redden's 2011 opinion, ruling that the 2008/2010 BiOp failed because its mitigation was not reasonably certain to occur,[92] NMFS aimed to show that its RPAs would

---

84 *Id.* at 1123, 1131.

85 *Id.* at 1125 (quoting Ctr. for Biological Diversity v Rumsfeld, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002)).

86 *Id.*

87 *Id.* at 1130.

88 *NMFS V*, 184 F. Supp. 3d 861, 868 n.1 (D. Or. 2016). The plaintiffs in this latest round included those from previous litigation, and included Idaho Steelhead and Salmon United. *Id.*; *supra* note 10. The State of Oregon joined as an intervenor-plaintiff and the Nez Perce Tribe filed an amicus curiae brief in support of the plaintiffs. *NMFS V*, 184 F. Supp. 3d at 868 n.1.

89 2008 Columbia Basin Fish Accords, *supra* note 8, at 1, 19. The parties realigned in the litigation beginning in 2010 in the challenge to the 2008 BiOp.

90 See supra notes 8–9 and accompanying text.

91 *See, e.g.*, Ben Goldfarb, *The Great Salmon Compromise*, HIGH COUNTRY NEWS (Paonia, Colo.) (Dec. 8, 2014), https://perma.cc/4JBC-SEMY.

92 *NMFS IV*, 839 F. Supp. 2d at 1128.

occur with reasonable certainty.[93] Unfortunately for the federal government, Judge Redden's successor, Judge Simon, took up a number of issues that his predecessor had deferred, and most of these issues went badly for the government, especially its interpretation of how it would factor in recovery into its RPAs. The government also fared poorly concerning its claim of the efficacy of habitat improvements to offset the damage from hydroelectric operations, its failure to analyze the effects of climate change on its RPAs, and the lack of a comprehensive EIS on the cumulative effects of the RPA's mitigation measures on listed salmon. This Part takes up these issues.

A. The Flawed Jeopardy Standard

The 2014 BiOp continued the 2008/2010 BiOp's trending toward recovery standard for the recovery prong of the jeopardy analysis, under which NMFS assessed recovery prospects quantitatively for each listed species. If the three population-growth metrics mentioned above were all greater than 1.0—meaning that anything above a replacement rate constituted recovery, regardless of how small or gradual the growth rate—the agency considered the recovery standard satisfied.[94]

But the "trending" standard failed to account for the actual abundance of individual listed populations, despite a recommendation of NMFS's own scientific review team to do so.[95] The Interior Columbia Technical Review Team (ICTRT), created by NMFS and comprised of scientific experts from multiple disciplines, established minimum viable abundance numbers for nearly all listed populations, but the BiOp's jeopardy analysis incorporated none of those numerical benchmarks.[96] Because the agency failed to link recovery analysis to any abundance levels or time frames, its analysis did not, in Judge Simon's view, satisfy the Ninth Circuit's prescribed "full analysis of [recovery] risks and their impacts on the listed species' continued

---

93 NW. REGION, NAT'L MARINE FISHERIES SERV., NWR-2013-9562, ENDANGERED SPECIES ACT SECTION 7(A)(2) SUPPLEMENTAL BIOLOGICAL OPINION: CONSULTATION ON REMAND FOR OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM 459–60 (2014) [hereinafter 2014 BIOP], https://perma.cc/6TR5-E892.

94 *See supra note*s 77–79 (explaining the three population indicators used to assess the recovery prong of the jeopardy standard) A fourth metric evaluated the survival prong through a 24-year extinction risk. 2014 BIOP, *supra* note 93, at 47.

95 *NMFS V*, 184 F. Supp. 3d 861, 891–92 (D. Or. 2016).

96 *Id.* at 872 & n.24. This omission occurred despite guidance in NMFS's Consultation Handbook which recognized that population size matters: "[T]he longer a species remains at low population levels, the greater the probability of extinction from chance events, inbreeding depression, or additional environmental disturbance." U.S. FISH & WILDLIFE SERV. & NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES CONSULTATION HANDBOOK: PROCEDURES FOR CONDUCTING CONSULTATION AND CONFERENCE ACTIVITIES UNDER SECTION 7 OF THE ENDANGERED SPECIES ACT 4-21 (1998) [hereinafter ESA CONSULTATION HANDBOOK]; *accord NMFS V*, 184 F. Supp. 3d at 891.

existence."[97] NMFS therefore could not "logically conclude that the RPA actions will not appreciably reduce the likelihood [of recovery]."[98]

Compared to the earlier litigation over hydropower BiOps, Judge Simon's opinion reflected considerably more detailed and exacting judicial review. Unsatisfied with NMFS's ignoring the ICTRT's abundance goals, and in response to the agency's claim that the plaintiffs had misrepresented the trending toward recovery standard,[99] Judge Simon emphasized that the plaintiffs were in fact correct, and that for some fish populations, an increase of just one fish per year could satisfy all three productivity metrics, and therefore meet NMFS's interpretation of the recovery standard.[100] But he noted that the 2014 BiOp also indicated that 93.5% of the populations in the listed evolutionary significant units (ESUs) remained in the highest two risk categories for extinction.[101] Given this evidence of the "highly precarious status" of listed salmon,[102] NMFS's approach of requiring only incremental improvement without accounting for populations at dangerously low abundance levels could not, in Judge Simon's view, rationally ensure a likelihood of recovery.[103]

Relying heavily on the Ninth Circuit's emphasis that the "highly precarious status" of the listed species made the recovery analysis particularly critical, the court ruled that the ESA prohibits agency action that would allow a "slow slide into oblivion" or a tipping "from a state of precarious survival into a state of likely extinction."[104] These possibilities increase with the length of time a species remains at low population levels.[105] The Ninth Circuit's prescription—calling for "a full analysis of [recovery]

---

97 *NMFS V*, 184 F. Supp. 3d at 888 (alteration in original) (quoting *NMFS III*, 524 F.3d 917, 933 (9th Cir. 2008)).

98 *Id.* at 894.

99 *Id.* at 889 ("Defendants respond that the phrase 'one more fish per year' is a 'simplistic soundbite' and will not suffice to increase the recovery metrics, which involve averages over many years, above 1.0.").

100 *Id.* at 890.

101 *Id.* (citing 2014 BIOP, *supra* note 93, at 70–71 & tbl. 2.1-1). The data "shows that 65 percent of the populations in the listed ESUs are at 'high risk' of extinction and 28.5 percent are at a 'maintained' risk of extinction (the second-highest risk category), while only 4 percent are considered 'viable' and 2.5 percent are considered 'highly viable.'" *Id.*

102 *Id.* (quoting from *NMFS III*, 524 F.3d at 933).

103 *Id.* at 891–92.

104 *Id.* at 890 (quoting *NMFS III*, 524 F.3d at 930, 933).

105 ESA CONSULTATION HANDBOOK, *supra* note 96, at 4-21. Judge Simon explained that the trending toward recovery standard failed to consider the concerns expressed by courts and NMFS about the dangers of sustained low abundance levels. *NMFS V*, 184 F. Supp. 3d at 891–92. The trending toward recovery standard omitted any consideration of the actual abundance numbers of the fish, instead asking whether the population is growing at any detectable rate. *Id.* at 892. ("The problem with the 'trending toward recovery' standard is not that it fails to ensure that the chances of recovery are increased, but that it does not include any metric or goal that considers whether the incremental improvements to the currently low abundance levels are sufficient to avoid creating a 'new risk of harm' by decreasing the chances of recovery of the listed species.").

risks and their impacts on the listed species' continued existence"[106]—required NMFS to examine whether hydropower operations would appreciably diminish the species' chance of recovery, including whether the species was "cling[ing] to survival even when recovery is far out of reach."[107] Failure to meet this recovery standard proved fatal to the 2014 BiOp.

Judge Simon was quite critical of the metrics and data used (or not used) in NMFS's recovery analysis, particularly the omission of any temporal recovery end-point in the 2008 and 2014 BiOps—in contrast to the earlier 1995 and 2000 BiOps, which had assessed the probabilities of reaching interim recovery abundance levels within forty-eight and one hundred years.[108] Although the survival prong of the new jeopardy analysis evaluated the risk of extinction in twenty-four years, the recovery prong included no similar time frame. The ESA regulations draw no such distinction,[109] and NMFS failed to explain the analytical change in its jeopardy standard from previous BiOps.[110] The government instead argued that including abundance goals and timelines would improperly incorporate recovery plan analysis required under section 4 of the ESA into the statute's federal section 7 consultation analysis, but Judge Simon pointed out that the Ninth Circuit had already rejected this argument.[111] Judge Simon required at least a roughly identified recovery endpoint to justify NMFS's conclusion that RPA actions will not appreciably diminish the likelihood of reaching the recovery goal.[112]

The ESA expressly requires agency decisions to be made based on the "best scientific . . . data available."[113] More than his predecessors, Judge Simon immersed himself in the details of the scientific quantitative analysis, finding unacceptable unexplained omissions or divergences from the recommendations of scientific experts. For example, NMFS had the ICTRT's minimum viable abundance numbers available since 2008, even listing them in tables in both the 2008 and 2014 BiOps.[114] But the agency failed to use

106 *NMFS V*, 184 F. Supp. 3d at 888 (alteration in original) (quoting *NMFS III*, 524 F.3d at 933).

107 *Id.* at 892 (quoting *NMFS III*, 524 F.3d at 931).

108 *Id.* at 892.

109 *See* 50 C.F.R. § 402.02 (2016) (definition of jeopardy, which includes "both the survival and recovery" as parallel goals, with no distinction in the stringency of assessment required).

110 *NMFS V*, 184 F. Supp. 3d at 894–95.

111 *Id.* at 893 ("Requiring some attention to recovery issues does not improperly import ESA's separate recovery planning provisions into the section 7 consultation process. Rather, it simply provides some reasonable assurance that the agency action in question will not appreciably reduce the odds of success for future recovery planning, by tipping a listed species too far into danger." (quoting *NMFS III*, 524 F.3d at 936)); *see also* Alaska v. Lubchenco, 723 F.3d 1043, 1054 (9th Cir. 2013) (emphasizing that the ultimate recovery goal must be delisting: "the goal of the ESA is not just to ensure survival, but to ensure that the species recovers to the point that it can be delisted," so NMFS "therefore had to consider whether the proposed action, continued fishing, could prevent the species from achieving the [recovery] goals for delisting").

112 *NMFS V*, 184 F. Supp. 3d at 894.

113 ESA, 16 U.S.C. § 1536(a)(2) (2012).

114 2014 BIOP, *supra* note 93, at 210–11 tbls.2.2-3, 2.2-4 & 2.2-5; 2008 BIOP, *supra* note 29, at 7-7, 8.10-14 tbl.8.10.2.1-4.

them in setting recovery goals.[115] NMFS also ignored the advice of its own biologists about what was the best available science to inform the recovery analysis.[116] Finally, the agency failed to explain the dramatic change in the recovery prong of the jeopardy standard from the 1995 and 2000 BiOps—which Judge Redden and Ninth Circuit had cited with approval[117]—to the 2008 and 2014 BiOps.[118]

Judge Simon noted the agency's failure to explain this abrupt shift[119] and, in the absence of an explanation, refused to defer to the agency's new interpretation of the jeopardy standard.[120] Because the agency ignored its scientific advisors without explanation and failed to link recovery metrics to abundance levels or time frames, it could not rationally conclude that the RPAs would avoid appreciably reducing listed species' chance of recovery. Its use of the trending toward recovery standard therefore violated the ESA.[121]

B. Using Habitat Mitigation to Offset Hydropower Losses

In remanding the 2008/2010 BiOp because of a lack of enforceability of its RPAs, Judge Redden did not rule on the jeopardy standard and its underlying scientific methodology. Instead, he focused on the capability of the BiOp's mitigation measures to offset the adverse effects of federal

---

115 *NMFS V*, 184 F. Supp. 3d at 872 ("[T]he methodology [NMFS] employs essentially ignores [the ICTRT's] findings without explanation.").

116 *Id.* at 894 (citing an email from Chris Toole, the ESA section 7 coordinator in the NMFS Northwest Regional Office, which noted that "to assess a 'trend towards recovery,' with meaningful metrics, one must have some idea of what constitutes recovery. The tables assume that [ICTRT's] recommendations represent the best available scientific information relative to the ESUs most affected in the remand.").

117 *Id.* at 895 (citing *NMFS III*, 524 F.3d 917, 932–33 (9th Cir. 2008), and *NMFS II*, No. 3:01-cv-0640-RE, 2005 WL 1278878, at *17 (D. Or. May 26, 2005), *aff'd*, 524 F.3d 917, 938 (9th Cir. 2008)).

118 *Id.* at 894 ("[I]n the 2008 and 2014 BiOps, [NMFS] did not follow its standards set forth in the 1995 and 2000 BiOps because [NMFS] dropped consideration of whether the agency action will appreciably reduce the likelihood of recovery by assessing the actions' impact on the probabilities of reaching interim recovery abundance levels in 48 and 100 years.").

119 *Id.* (citing Pac. Coast Fed'n of Fishermen's Ass'n v. U.S. Bureau of Reclamation, 426 F.3d 1082, 1091 (9th Cir. 2005)).

120 *Id.* at 894–95 (citing Christopher v. SmithKline Beecham Corp., 132 S. Ct. 2156, 2166 (2012) and *NMFS III*, 524 F.3d at 933) ("Because the agency again has dramatically changed its approach, its latest interpretation of the jeopardy standard is entitled to less deference than a court normally gives."). The government argued unsuccessfully for deference to its scientific expertise, citing *Northwest Ecosystem Alliance v. United States Fish and Wildlife Service*, 475 F.3d 1136 (9th Cir. 2007) for the proposition that "interpretation of complex genetic data falls within the domain of the Service's scientific discretion, to which we must defer so long as the Service has articulated a rational basis for its conclusion." Federal Defendant's Cross-Motion for Summary Judgment, and Memorandum in Support of Cross-Motion and Opposition to Plaintiff's Motions for Summary Judgment at 19, *NMFS V*, 184 F. Supp. 3d 861 (No. 3:01-cv-0640-SI), ECF No. 2001 (quoting *Nw. Ecosystem All.*, 475 F.3d at 1150). But Judge Simon decided deference would not have saved NMFS's interpretation. *NMFS V*, 184 F. Supp. 3d at 895 ("Even applying deference, however, for the reasons discussed above, the Court finds NOAA Fisheries' 'trending toward recovery' standard to be arbitrary and capricious.").

121 *NMFS V*, 184 F. Supp. 3d at 895.

hydropower operations.[122] He decided that NMFS's reliance on habitat mitigation measures that were not specific or certain to occur made its no jeopardy decision arbitrary and capricious, calling it "simply [a] promise to figure it all out in the future."[123]

To comply with the court's 2011 remand order,[124] NMFS aimed to produce a 2014 BiOp with "more specific identification of habitat mitigation projects for the 2014 through 2018 period."[125] Consequently, the agency revised its jeopardy analysis, buttressing it with specific habitat mitigation projects it identified for implementation during 2014 through 2018.[126] But Judge Simon decided that the benefits of these habitat mitigation projects continued to be too uncertain to satisfy the ESA requirement of giving the "benefit of the doubt" to the endangered species.[127] Citing previous case law on FCRPS BiOps, Judge Simon concluded that NMFS failed again to ensure that its mitigation measures were "reasonably specific, certain to occur, and capable of implementation" and "subject to deadlines or otherwise-enforceable obligations" in order to justify the no jeopardy conclusion of the BiOp.[128] He emphasized both NMFS's use of faulty survival metrics and the agency's overestimates of the benefits of estuarine and tributary habitat improvements.

1. Survival Metrics

Judge Simon was heavily influenced by NMFS's poor track record demonstrating the jeopardy-avoiding benefits of existing habitat programs. The agency had not, since the 2008 BiOp, revised its no jeopardy finding or reconsidered the efficacy of the off-site habitat RPAs, alleging that productivity in recent years was "within the expectations of the 2008 BiOp."[129] Judge Simon, however, noted that a key survival and recovery metric in the 2014 BiOp—R/S[130]—already was showing a decline.[131] NMFS

122 *NMFS IV*, 839 F. Supp. 2d. 1117, 1127 (D. Or. 2011).

123 *Id.* at 1128.

124 *Id.* at 1128–29 ("For the reasons above, I find that the no jeopardy decision for the *entire* ten-year term of the BiOp is arbitrary and capricious because NOAA Fisheries has failed to identify specific mitigation plans beyond 2013, that are reasonably certain to occur. Because the 2008/2010 BiOp provides some protection for listed species through 2013, however, I order NOAA Fisheries to fund and implement the BiOp until then.").

125 2014 BIOP, *supra* note 93, at 33.

126 *Id.*

127 *NMFS V*, 184 F. Supp. 3d 861, 900 (D. Or. 2016) (citing Sierra Club v. Marsh, 816 F.2d 1376, 1386 (9th Cir. 1987), *abrogation on other grounds recognized by* Cottonwood Envtl. Law Ctr. v. U.S. Forest Serv., 789 F.3d 1075, 1088 (9th Cir. 2015)); *see also id.* at 903 (quoting Nat'l Oceanic & Atmospheric Admin. Fisheries, Responses to Comments from the Sovereign Review of the 2013 Draft Supplemental Biological Opinion 33 (Jan. 17, 2014), https://perma.cc/2YGA-3HEL); *id.* at 906 (citing *NMFS IV*, 839 F. Supp. 2d at 1128) (criticizing NMFS's decision to count all habitat mitigation benefits as accrued immediately upon project completion, when in reality those benefits could take years to materialize).

128 *Id.* at 873 (citing *NMFS III*, 524 F.3d 917, 935–36 (9th Cir. 2007), and *NMFS IV*, 839 F. Supp. 2d at 1125).

129 2014 BIOP, *supra* note 93, at 113–19.

130 *See supra* note 77 (discussing this metric).

attempted to explain this downturn as falling within the 95% confidence intervals established by the 2008 BiOp—intervals that Judge Simon decided were "so broad, that falling within them is essentially meaningless."[132] Although the judge acknowledged that such wide confidence intervals may be unavoidable, he ruled that they could not "be used as a shield in the 2014 BiOp against the need for further analysis and possible changes in the RPA actions when the underlying assumptions on which the 2008 BiOp's no jeopardy conclusion was based are not coming to fruition."[133]

NMFS claimed that observations of high spawner abundance, coupled with low productivity (low R/S), were consistent with interference of competition for resources that occurs at high population abundance in a small area ("density-dependent mortality"), a well-established phenomenon in Pacific salmonids.[134] Density-dependent mortality is one explanation for the RPA not realizing its expected productivity returns because, according to NMFS, the time constraints of the 2010 remand did not allow for analyzing these factors in detail.[135] This explanation failed to convince Judge Simon, who considered the agency's selective invocation of density dependence as a transparent attempt to "have it both ways"; that is, not considering the detrimental effects of density dependence on survival benefits and productivity increases but instead using it to excuse a decreasing R/S trend.[136] Judge Simon concluded that the agency failed to provide a rational explanation for its disregard of the decline in R/S, a metric it had described

---

131 *NMFS V*, 184 F. Supp. 3d at 886–87.

132 *Id.* at 873, 899 (noting that, for example, the Yankee Fork population "could, in one generation, *be declining by nearly three-fourths or increasing by nearly one-third*, and both would fall within the 2008 BiOp's wide confidence intervals").

133 *Id.* at 899.

134 *NMFS V*, 184 F. Supp. 3d at 922–923 (citing RICH ZABEL ET AL., LIFE-CYCLE MODELS OF SALMONID POPULATIONS IN THE INTERIOR COLUMBIA RIVER BASIN 35 (2013)); 2014 BIOP, *supra* note 93, at 67. Density-dependence refers to the inverse relationship between population density and population growth rate that can develop when a habitat's carrying capacity is exceeded and competition for scarce food and space takes over. INDEP. SCI. ADVISORY BD. FOR THE NW. POWER & CONSERVATION COUNCIL ET AL., ISAB 2015-1, DENSITY DEPENDENCE AND ITS IMPLICATIONS FOR FISH MANAGEMENT AND RESTORATION PROGRAMS IN THE COLUMBIA RIVER BASIN 25 (2015) [hereinafter ISAB REPORT 2015-1], https://perma.cc/JW6Z-TFFD ("Evidence of strong density dependence at abundances lower than historical levels suggests that carrying capacity has been reduced. Density dependence . . . is also critical for enhancing the stability of natural populations.").

135 2014 BIOP, *supra* note 93, at 67. For further NMFS analysis of density-dependent mortality, see *id.* app D.

136 *NMFS V*, 184 F. Supp. 3d at 901 ("NOAA Fisheries thus relies on the fact that density dependence is occurring during the time period of the BiOp to disregard the decline in R/S, while at the same time refusing to consider the negative effects of density dependence when calculating the survival estimates and prospective productivity increases relied on as accruing within the time frame of the BiOp. These positions are inconsistent— if the best available science shows that density dependence is occurring within the 10-year time frame of the BiOp, then density dependence should be considered in analyzing the estimated survival improvements and prospective productivity increases, but if the best available science shows that density dependence is not occurring during the BiOp time frame, then it cannot be relied on to explain the decrease in R/S. NOAA Fisheries cannot have it both ways.")

in the 2008 BiOp as the "most realistic" assessment of the likelihood of recovery.[137]

2. Estuary and Tributary Habitat Improvements

To provide a quantitative assessment of survival benefits habitat actions in the estuary, the Expert Regional Technical Group (ERTG)—comprised of regional scientists with relevant estuarine ecology and fisheries biology expertise—scored each RPA project using the so-called "survival benefit units" (SBUs) method, which the agency updated in the 2014 BiOp.[138] ERTG's scoring in the 2008 and 2014 BiOps indicated that the increase in survival benefit necessary to avoid jeopardy was thirty SBUs for stream-type fish and forty-five SBUs for ocean-type fish, requiring improvements of about 6% and 9%, respectively.[139]

Judge Simon thought that the agency's effort to provide specific, numerical survival benefits of habitat actions "does not allay the concern expressed by Judge Redden" about the uncertainty of survival benefits, because NMFS's own scientists, as they had in the 2008 BiOp, expressed skepticism about the uncertainties in the scoring.[140] In light of the litany of suggestions made by the Independent Scientific Advisory Board (ISAB) to improve the scientific soundness of the ERTG scoring process, Judge Simon was not satisfied by NMFS's "conclusory statement" that the ERTG applied the best available science.[141] Without a reasonable explanation of the

---

137 *Id.* at 887 ("NOAA Fisheries has described average R/S as 'the most realistic assessment of the likelihood that a population will trend toward recovery in the absence of continued hatchery programs . . . because th[is] metric considers only the survival of natural-origin fish.'" (alterations in original) (citation omitted)). According to Judge Simon, NMFS was not entitled to judicial deference because NMFS, at a minimum,

> should have should have explained why these positions are not inconsistent or, if they are inconsistent, why it is not arbitrary and capricious to treat density dependence differently in the context where it would have negative effects than in the context where it is relied on to explain-away the fact that improvements relied-upon in the no jeopardy conclusion are not being realized.

Id. at 901.

138 *Id.* at 902; 2014 BIOP, *supra* note 93, at 326.

139 *NMFS V*, 184 F. Supp. 3d at 902; BIOP, *supra* note 93, at 326.

140 *Id.* at 903–04 (emphasizing that the Independent Scientific Advisory Board (ISAB) considered ERTG's new scoring process to be "partially based on sound science" with low statistical accuracy and precision, reducing it to an "informed hypotheses," rather than a rigorous assessment). ISAB also made numerous suggestions as to how the ERTG scoring process could be improved, which ERTG ignored and NMFS did not explain. *Id.*

141 *Id.* at 904. ISAB's members are appointed by a majority vote of the chair of the Northwest Power Planning Council, the Regional Administrator of NMFS, and a senior tribal representative. Indep. Sci. Advisory Bd., Terms of Reference 3–4 (July 15, 2004), https://perma.cc/FN9K-UGA9. Candidates must meet strict criteria and may not be salaried employees of the Council, the tribes, NMFS, or be a member of the Selection Panel. *Id.* at 5. By contrast, ERTG is comprised of five scientists associated with NMFS, the Oregon Department of Fish and Wildlife, the Washington Department of Fish and Wildlife, the Skagit River System Cooperative, and the Pacific Northwest National Laboratory. BONNEVILLE POWER ADMIN. & U.S. ARMY CORPS OF ENG'RS, SCIENCE AND THE EVALUATION OF HABITAT RESTORATION PROJECTS IN THE

discrepancies between the ERTG scoring and the ISAB's recommendations, Judge Simon rejected the government's argument that the court should defer to the expert judgment of the ERTG.[142]

NMFS also maintained that survival improvements could not be proven with absolute certainty.[143] Judge Simon discussed this aspect of uncertainty in substantial detail, troubled by a lack of any "cushion"—or margin of safety—to account for project failures, which could improperly impose risk on the listed species.[144] Because NMFS, ERTG, and other scientists agreed that the survival benefit estimation is "rife with uncertainty," and since NMFS acknowledged that benefits assumed to be instantaneous in the SBU calculation may in fact take years to achieve, the judge thought that omitting any margin for error in the number of required SBUs was "neither cautious nor rational."[145] Judge Simon cited the Supreme Court's 1978 recognition of Congress' decision to give endangered species national priority, which characterized the ESA's as a "policy of institutionalized caution,"[146] in reaching his conclusion that NMFS must include a margin for error in its RPA mitigation measures in order to give the benefit of the doubt to the listed species.[147]

In addition to the uncertainty over alleged survival benefits of the off-site habitat measures, NMFS's track record inspired no judicial confidence that the RPAs were reasonably certain to occur. According to Judge Simon, "[t]he estuary program has not only failed to catch up in the four years since the 2010 Supplemental BiOp, but has fallen further behind."[148] Six years into the ten-year 2008 BiOp's time frame, he cited considerable evidence that the estuary-habitat mitigation actions were not on track for completion by 2018.[149]

COLUMBIA RIVER ESTUARY: THE EXPERT REGIONAL TECHNICAL GROUP PROCESS 5 (2013), https://perma.cc/D7C6-NWRS.

142 *NMFS V*, 184 F. Supp. 3d at 904. ("[NMFS] may not, however, make general assertions that it applied the 'best available science' and deserves deference without providing a reasonable explanation and addressing the fact that independent scientists have repeatedly expressed skepticism regarding the specific, numeric survival benefits assigned to habitat mitigation.").

143 *Id.*

144 *Id.* at 905 n.71.

145 *Id.* at 905–06 (quoting in the second quotation *NMFS IV*, 839 F. Supp. 2d 1117, 1128 (D. Or. 2011)).

146 *Id.* at 906 (citing Tenn. Valley Auth. v. Hill, 437 U.S. 153, 194 (1978) ("Congress has spoken in the plainest of words, making it abundantly clear that the balance has been struck in favor of affording endangered species the highest of priorities, thereby adopting a policy which it described as 'institutionalized caution.'")).

147 *NMFS V*, 184 F. Supp. 3d at 906.

148 *Id.*

149 *Id.* at 906–07 (noting that thirty-eight of forty-three estuary projects had not been scored by the ERTG, and only two were in the final planning phase). With only 18% and 11% of the ocean- and stream-type fish-survival improvements implemented more than halfway through the BiOp period, Judge Simon thought it was not rational to conclude that action agencies were on track to meet the BiOp's goals. *Id.* at 906. Judge Simon described in detail the breakdown of negotiations on one project that represented more than 41% of the stream-type survival benefits, and the lack of any replacement project to make up for this loss. *Id.* at 907 n.72. Such failures

Tributary-habitat actions also contributed survival benefits on which NMFS relied for its no jeopardy conclusion.[150] As with the estuary-habitat actions, Judge Simon decided that the BiOp's reliance on numeric survival benefits of tributary projects was, given the scientific uncertainty, inconsistent with the ESA's requirement that the "risk . . . should not fall on the listed species."[151] Given this uncertainty, the agency inappropriately omitted any "cushion" of excess RPA actions that would provide a margin for error in these expected survival benefits.[152] As of 2011 (four years into the ten-year BiOp time frame), tributary projects appeared on track for only forty-eight of the affected fifty-six populations,[153] which the plaintiffs claimed showed that government was behind schedule, but which NMFS addressed in the 2014 BiOp by enumerating additional supplemental tributary habitat actions.[154]

Despite these worries, Judge Simon did defer to NMFS concerning tributary mitigation. He did so based on the action agencies' "extensive track record of success" and the fact that, as compared to estuary-habitat projects, most tributary projects were farther along in development, with a larger fraction approved through expert review.[155] For example, the Nez Perce Tribe raised concerns about the timing of needed supplemental tributary habitat actions in light of the required of panel evaluation and availability of funding, but Judge Simon decided that NMFS addressed these concerns with a rational explanation of why the supplemental tributary projects remained reasonably certain to occur.[156]

The court's evaluation of tributary-habitat measures to avoid jeopardy of the Catherine Creek and Yankee Fork salmon populations were two exceptions to the court's deference. In the former, NMFS stated that action agencies would resolve an 8% shortfall in habitat improvement by "identify[ing] additional actions based on" assessment tools "in

undermined NMFS's claim that its mitigation measures were "reasonably certain to occur." *Id.* at 908 (quoting *NMFS III*, 524 F.3d 917, 935–36 (9th Cir. 2007)).

150 *Id.* at 911, 949.

151 *Id.* at 910 (citing Tenn. Valley Auth. v. Hill, 437 U.S. 153, 194 (1978)).

152 *Id.* at 909–10 (observing that for estuary-habitat actions, by contrast, NMFS enumerated specific SBUs required to avoid jeopardy and identified the SBUs that it expected the RPAs to achieve, with the latter exceeding the former, providing a cushion of excess survival benefits).

153 *Id.* at 910 (noting that projects had achieved more than 33% of required habitat quality improvements by 2011 meet performance standards); 2014 BiOp, *supra* note 93, at 269–70.

154 Appendix B of the Implementation Plan listed specific, quantitative supplemental habitat quality improvement measures such as the Umatilla Tribes' improving flow in the upper Grande Ronde River by 14 cubic feet per second, to address the seven populations referenced in the 2014 BiOp as "not projected to meet their HQI performance standard without an increase in the pace and/or focus of action implementation." NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT FEDERAL COLUMBIA RIVER POWER SYSTEM: 2014–2018 IMPLEMENTATION PLAN app. B at 279–83, https://perma.cc/CSE2-BMRM; 2014 BIOP, *supra* note 93, at 282.

155 *NMFS V*, 184 F. Supp. 3d at 911 & n.73.

156 *Id.* at 911–12. ("NOAA Fisheries did consider the Nez Perce Tribe's timing and funding concerns and offered a reasonable explanation for its conclusion that those issues will not prevent the supplemental tributary projects from being reasonably certain to occur.").

development."[157] Judge Simon rejected this claim as "little more than the 'sincere general commitment' of the Action Agencies," a position which the Ninth Circuit earlier stated was insufficient.[158] With respect to the Yankee Fork population, Judge Simon expressed concern with NMFS's "pattern of discounting pessimistic information" from expert panels, citing selective use of data in reaching conclusions about the population by NMFS in its 2008 and 2014 BiOps.[159]

Despite these worries, Judge Simon decided that NMFS adequately explained the 2014 BiOp's conclusion that the necessary habitat improvements would be achieved before 2018 "under the deferential standard of a Section 7 consultation review."[160] He concluded that the flaw in the 2014 BiOp was not its reliance on off-site habitat mitigation projects per se but instead the fact that some RPA projects or their survival benefits were insufficiently certain to occur to avoid jeopardy, making NMFS's reliance on those survival benefits arbitrary.[161] Judge Simon reiterated that the ESA requires the risk of failure of mitigation to not fall on the species, and that habitat improvement projects must achieve "some amount of survival benefit beyond the minimum survival benefit."[162] In short, the listed salmon should not shoulder the burden of uncertainty.

C. Effects of Climate Change on Mitigation Measures

Because the best available science indicated that climate change would have a detrimental future effect on listed populations, NMFS had to adequately assess the adverse effects of climate change in its BiOp.[163] Judge Simon concluded that NMFS had failed to do so, since the BiOp lacked any assessment of how climate change might diminish or eliminate the effectiveness of its habitat-mitigation RPAs and ignored the expert assessment of ISAB concerning future ocean temperature scenarios.[164]

---

157 *See* 2014 BIOP, *supra* note 93, at 289.

158 *NMFS V*, 184 F. Supp. 3d at 913 (quoting *NMFS III*, 524 F.3d 917, 935–36 (9th Cir. 2007)).

159 *Id.*

160 *Id.*

161 *Id.* at 914.

162 *Id.*

163 *Id.* ("Climate change effects that have harmful impacts to certain of the listed species include: warmer stream temperatures; warmer ocean temperatures; contracting ocean habitat; contracting inland habitat; degradation of estuary habitat; reduced spring and summer stream flows with increased peak river flows; large-scale ecological changes, such as increasing insect infestations and fires affecting forested lands; increased rain with decreased snow; diminishing snow-packs; increased flood flows; and increased susceptibility to fish pathogens and parasites, organisms that are generally not injurious to their host until the fish becomes thermally stressed.").

164 *Id.* at 917 ("NOAA Fisheries' analysis does not apply the best available science, overlooks important aspects of the problem, and fails properly to analyze the effects of climate change, including its additive harm, how it may reduce the effectiveness of the RPA actions, particularly habitat actions that are not expected to achieve full benefits for 'decades,' and how it increases the chances of a catastrophic event.").

The 2014 BiOp considered quantitative effects of climate change on ocean conditions, using scenarios modeled for the 2008 BiOp, but it relied only on qualitative assessments for freshwater climate change effects.[165] In considering "a reasonable range of future ocean survivals" to assess the effects of climate change on Columbia Basin salmon extinction risk and productivity, the 2008 BiOp evaluated three future climate scenarios.[166] The 2014 BiOp included updated climate data, including decreased streamflows and increased in average tributary and mainstem temperatures, which augured worsening effects on salmon.[167]

In the 2014 BiOp, NMFS announced that "while additional details regarding observed and forecasted effects of climate change on Pacific Northwest salmonids have become available in recent years, the effects remain consistent with those described in the 2008 BiOp."[168] This statement, and a later comment that "new projections of the effects of ocean warming on salmon marine distributions are an example of an effect generally considered in the 2008 BiOp, but which new information indicates may be greater than previously anticipated,"[169] called into question whether NMFS had adequately addressed the possible effects of climate change. The plaintiffs characterized NMFS's approach to climate change analysis as "irrational exuberance,"[170] not the "institutionalized caution" required by the ESA.[171]

Judge Simon found troubling NMFS's emphasis on claims that the new climate information presented "continue[d] to be within the range of assumptions considered in the 2008 BiOp and 2010 Supplemental BiOp" because this reliance implied that consistency with prior expectations obviated the need for deeper inquiry.[172] Consequently, Judge Simon decided that NMFS's cursory analysis of the effects of climate change in the 2014 BiOp was not "complete, reasoned, [or] adequately explained" and failed to apply the best available science by fully analyzing the additive harm of climate change.[173]

---

165 *Id.* at 915.

166 *See* 2014 BIOP, *supra* note 93, at 152.

167 *Id.* at 160–62 & figs. 2.1-37 to -38 (decreased streamflows); *id.* at 163–67 & figs.2.1-39 to -41 (increased temperatures).

168 *Id.* at 168.

169 *Id.* at 178.

170 Plaintiffs' Summary Judgment Motion and Memorandum, *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, No. 3:01-cv-0640-SI (9th Cir. Dec. 16, 2014) at 1, 33 [hereinafter Plaintiffs' Brief].

171 Plaintiffs' Brief, *supra* note 170, at 17 (citing Sierra Club v. Marsh, 816 F.2d 1376, 1383 (9th Cir. 1987)).

172 *NMFS V*, 184 F. Supp. 3d 861, 916 & n.77 (D. Or. 2016) (quoting 2014 BIOP, *supra* note 93, at 179).

173 *Id.* at 874 (citing Nw. Coal. for Alts. to Pesticides v. U.S. Envtl. Prot. Agency, 544 F.3d 1043, 1052 n.7) (9th Cir. 2008) ("NOAA Fisheries' analysis does not apply the best available science, overlooks important aspects of the problem, and fails properly to analyze the effects of climate change, including its additive harm, how it may reduce the effectiveness of the RPA actions, particularly habitat actions that are not expected to achieve full benefits for 'decades,' and how it increases the chances of a catastrophic event.").

A prominent example of the agency's failure to analyze additive harm was its omission to consider whether the effectiveness of the RPA actions could be reduced by climate change. Because RPA habitat restoration measures aimed to improve the same freshwater streamflow and temperature variables that climate change will adversely affect, climate change could diminish or even overtake these promised habitat restoration benefits. Despite the prospect that climate change may negate the effectiveness of some habitat mitigation efforts, NMFS failed to assess this possibility and instead assumed that climate conditions would remain the same for the purposes of the jeopardy analysis.[174]

Judge Simon faulted this premise of no change in the climate as short-sighted. He pointed out that the survival prong of the jeopardy analysis estimated a twenty-four-year extinction risk, requiring a longer time-horizon than the ten-year time frame of the BiOps.[175] Expanding this time horizon would surely result in an analytic period encompassing worsening ocean conditions, rather than the "recent" ocean conditions base period on which NMFS based its no jeopardy conclusion.[176] The agency failed to explain its omission of the "warm" ocean scenario, likely to be more representative of future climate conditions.[177] Moreover, the 2014 BiOp's assertion that worsening ocean conditions was "unlikely to apply to the period of the Prospective Actions" contradicted the agency's evaluation of the potential failure of recovery under the warm ocean scenario in its 2008 BiOp.[178] This inconsistency, along with an insufficient explanation of why NMFS ignored ISAB's expert advice, was the quintessence of arbitrary decision making, according to Judge Simon.[179]

Claiming that climate change would not diminish the effectiveness of the RPAs, NMFS also maintained that the RPAs were consistent with ISAB-recommended actions to mitigate climate change, effectively double-counting some existing RPA actions to both mitigate any negative effects of climate change and offset adverse habitat modifications due to hydropower operations.[180] Judge Simon found the agency's treatment of climate change

---

174 *NMFS V*, 184 F. Supp. 3d at 917–18.

175 *Id.* at 918.

176 *Id.* at 918–19.

177 *Id.* at 919 (the ISAB commented that even this warm scenario "may not be pessimistic enough").

178 *Id.* at 919 (quoting 2008 BIOP, *supra* note 29, at 7-13).

179 *Id.* at 921–22 ("NOAA Fisheries listed significant additional quantitative and qualitative information and then summarily concluded that all of the new information was included in the 2008 BiOp's assumptions and expectations. . . . Scientifically-sound consideration of climate impacts requires more than that.").

180 *Id.* at 916–17. Judge Simon's discussion of individual examples of the effects of climate change on RPA effectiveness exemplified his close judicial review. For example, he noted that to offset the adverse effects of dam operations, the action agencies have used cold water releases from Dworshak Dam to augment mainstem flows during juvenile migration seasons. *Id.* at 920. However, the 2014 BiOp employed similar releases to reduce mortality from high water temperatures, an effect of climate change. NMFS did not analyze whether Dworshak has the capacity for a sufficient number and magnitude of releases necessary to address both types of harms. *Id.*

effects unconvincing to the point of disingenuity, noting that confining its analysis to the BiOp time frame (on the ground that there was too much uncertainty after 2018) was inconsistent with the fact that a meaningful recovery analysis required consideration of climate effects well beyond the BiOp period.[181] NMFS's selective invocation of uncertainty to justify not applying new scientific results on the climate change effects of recovery prospects violated the ESA's requirement of using the best scientific data available.[182]

Judge Simon illustrated his concern about NMFS's "inconsistent treatment of scientific uncertainty" with several examples, chief among them the failure to conduct any quantitative analysis of climate effects on freshwater life stages of salmonids, despite a burgeoning scientific literature.[183] Given the specter of a "catastrophic event that can quickly imperil" listed species, Judge Simon did not consider NMFS's broad and general analysis to be "complete, reasoned, and adequately explained."[184] After a close review of the new scientific information that NMFS "merely recited,"[185] Simon decided that the BiOp's climate change analysis was "insufficient, not based on the best available science, and inconsistent with how [NMFS] analyzed climate change" in the another similar BiOp.[186] In short, the agency failed to properly evaluate the degree to which climate change could reduce the effectiveness of the RPAs and thus affect the jeopardy analysis.

---

181 *See id.* at 920–21 (noting that the 1995 and 2000 BiOps' recovery analysis evaluated effects twenty years beyond the BiOp period).

182 *See id.* at 921 (observing that in the 2014 BiOp, NMFS relied on "numerous analytical tools and methodologies that are not scientifically certain, some of which have much less scientific data available than does climate change"); ESA, 16 U.S.C. § 1533(b)(1)(A) (2012) (requiring that endangerment determinations be made on the basis of "the best scientific and commercial data *available*" (emphasis added)).

183 *Id.* at 920–21. & n.81. The plaintiffs pointed out NMFS's strategy to insulate itself from analyzing or acting on new evidence by declaring it to be "detail"; they cited examples where these "new details" actually represented abrupt changes from previous understanding, such as contractions of the ocean range for all species of salmon by 2080. Plaintiffs' Brief, *supra* note 170, at 35–36. Judge Simon concluded that "scientifically-sound consideration of climate impacts required more than" 1) general statements of possible effects of climate, 2) quantitative analysis that assumed base-period climate rather than any warming, and 3) qualitative analysis that merely assessed whether RPA actions were "consistent with" the ISAB's recommendations for the types of actions that might ameliorate climate change. *NMFS V*, 184 F. Supp. 3d at 921–23.

184 *Id.* at 922–23.

185 *Id.* at 920.

186 *Id.* at 923. Judge Simon also mentioned the Central Valley Project (CVP) BiOp. *Id.* In 2009, NMFS developed procedures and an operational plan for CVP for eight dams, pumping stations, and hatcheries that explicitly included climate change as part of the future baseline. SW. REGION, NAT'L MARINE FISHERIES SERV., BIOLOGICAL OPINION AND CONFERENCE OPINION ON THE LONG-TERM OPERATIONS OF THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT 43, 172 (2009). Five region-specific future climate scenarios demonstrated the sensitivity of future operations to potential climate and sea level conditions through 2030. *Id.* at 172. NMFS saw this as the best way to fulfill its court-directed responsibility to "consider the effects of climate change on the species and critical habitat and our prediction of the future impacts of a proposed action." *Id.* at 43.

D. Effects on Designated Critical Habitat

The ESA forbids any federal action likely to result in "destruction or adverse modification of habitat of [listed] species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical."[187] The statute defines "critical habitat" as areas with physical or biological features that are "essential to the conservation" of listed species.[188] NMFS designated critical habitat for twelve of the thirteen listed species affected by Columbia Basin dam operations.[189] Judge Simon interpreted the agency's regulatory definition of the statutory language forbidding the destruction or adverse modification of critical habitat to require "improvement to the point of delisting," referring to a Ninth Circuit decision that adverse modification includes any adverse effects on recovery due to alterations of critical habitat.[190]

The regulatory requirement that NMFS must analyze effects on both survival and recovery of adverse modification of salmon migration corridors was a major controversy in the case. The agency evaluated critical habitat to determine whether the habitat "is likely to . . . retain the ability to become functional."[191] In a confusing portion of his ruling, Judge Simon decided that although this standard failed to comply with the ESA, he nevertheless ruled the BiOp's critical habitat analysis was "not irrational" or in clear error because of "significant improvements" in mainstem habitat.[192]

In contrast to his careful analysis of the jeopardy standard, Judge Simon's discussion of critical habitat was quite cursory. The judge declared NMFS's standard of "retain[ing] the current ability to become functional" to be inconsistent with the ESA.[193] He pointed out that the mainstem migration corridors were degraded, dysfunctional, and failing to fulfill their conservation role—as acknowledged by NMFS[194]—and explained that asking

---

187 ESA, 16 U.S.C. § 1536(a)(2) (2012).

188 *Id.* § 1532(5)(A).

189 *NMFS V*, 184 F. Supp. 3d at 929 n.89. The designated critical habitat for listed Columbia Basin salmon includes the juvenile and adult migration corridors of the Snake and Columbia Rivers. *Id.* at 929; Endangered and Threatened Species; Designation of Critical Habitat for Lower Columbia River Coho Salmon and Puget Sound Steelhead, 78 Fed. Reg. 2,726, 2,732 (Jan. 14, 2013). NMFS concluded that "safe passage" through this migratory corridor was among the primary constituent elements of this critical habitat. *NMFS V*, 184 F. Supp. 3d at 929 (quoting the 2008 BIOP, *supra* note 29, at 3-5 to -6 & tbl.3.2-1).

190 *NMFS V*, 184 F. Supp. 3d at 929 (construing 50 C.F.R. § 402.02) (citing Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv., 378 F.3d 1059, 1069 (9th Cir. 2004)). Destruction or adverse modification is defined as "a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species." 50 C.F.R. § 402.02 (2016).

191 *NMFS V*, 184 F. Supp. 3d at 930 (quoting 2008 BIOP, *supra* note 29, at 1-10).

192 *Id.* at 930, 933.

193 *Id.* at 930 (citing Nez Perce Tribe v. Nat'l Oceanic & Atmospheric Admin. Fisheries, No. CV–07–247–N–BLW, 2008 WL 938430, at *8 (D. Idaho Apr. 7, 2008)) ("Maintaining the status quo when there is severely degraded habitat that does not serve its conservation role and will be adversely modified unless changes are made to FCRPS operations does not suffice.").

194 *Id.* (citing 2008 BIOP, *supra* note 29, at 3-7).

"whether the RPA allows this degraded habitat to retain its current ability to someday become functional" failed to comply with the ESA's directive.[195] Judge Simon decided that the standard failed to comply with the ESA because it would not suffice in a situation like the mainsteam Columbia and Snake Rivers, where the degraded habitat was not serving its conservation role.[196]

Despite the agency's reliance on this flawed standard, Judge Simon concluded that NMFS's analysis of adverse modification of critical habitat did "more than just permit the status quo,"[197] and thus was "not irrational or in clear error."[198] Simon's reasoning—that a simple trajectory of improvement sufficed—appeared to be inconsistent with his earlier conclusion that the trending toward recovery jeopardy standard was inconsistent with the statute.[199] In both cases, NMFS argued that any change in the right direction complied with the ESA. Curiously, the agency succeeded with this argument in the critical habitat context where it had failed in the jeopardy context.

Judge Simon upheld NMFS's critical habitat analysis because the BiOp included measures beyond those the standard required, "includ[ing] significant improvements."[200] NMFS listed mainstem improvements in the 2008 BiOp,[201] and the 2014 BiOp maintained that the RPA actions would "substantially improv[e] the functioning of many" primary constituent elements of the critical habitat.[202] Although Judge Simon was "concerned" about the failure of NMFS to establish a quantitative recovery level, he cited modeling that predicted "quantifiable improvements" to juvenile salmon passage in upholding NMFS's conclusion that the BiOp would not adversely modify designated critical habitat.[203] This result seems inconsistent with the Ninth Circuit's admonition that critical habitat designations must include

195 *Id.*

196 *Id.* (noting that the cases defendants cite in support of this standard are situations where current habitat is functional).

197 *See id.* at 930–31 ("The RPA need not restore habitat to a fully functioning level, but it must at least include improvements sufficient to avoid the adverse modification of the FCRPS.").

198 *Id.* at 933.

199 *See supra* notes 108–121 and accompanying text.

200 *NMFS V*, 184 F. Supp. 3d at 931.

201 *Id.* at 932–33 (citing 2008 BIOP, *supra* note 29, at 8.2-31, 8.3-46, 8.4-23, 8.5-49, 8.6-33, 8.7-43, 8.8-46, 8.10-52, 8.12-33).

202 *Id.* (citing 2014 BIOP, *supra* note 25, at 477).

203 *Id.* at 932–33. The discussion that satisfied Judge Simon included mentions of prospective RPA actions to improve surface passage at mainstem dams and adjusting spill to avoid avian predators, such as cormorants. *Id.* at 932. Judge Simon recently ruled that although the Corps violated NEPA by failing to consider alternatives before deciding to kill the birds, the killing could continue because it helps threatened and endangered fish, adopting the reasoning that the endangered species gets the "benefit of the doubt." Audubon Soc'y of Portland v. U.S. Army Corps of Eng'rs, No. 3:15-cv-665-SI, 2016 WL 4577009, at *13, *16 (D. Or. Aug. 31, 2016); *see also* Cassandra Profita, *Court Rules Corps Can Continue Killing Cormorants*, EARTHFIX (Sept. 1, 2016), https://perma.cc/B2JB-ZTZF.

sufficient habitat to promote species recovery.[204] In fact, the appeals court has made it quite clear that the critical habitat standard requires more protection for recovery than for avoiding jeopardy,[205] but Judge Simon seemed to adopt a more lenient approach[206]

E. Requiring an Environmental Impact Statement on Endangered Species Act Implementation

A novel element in the 2014 BiOp litigation was the claim that the action agencies, especially the Corps, BPA, and the Bureau of Reclamation, failed to comply with NEPA.[207] Although implementation of the BiOp required the action agencies to undertake NEPA procedures concerning their implementation of RPA measures,[208] the agencies undertook no program-wide NEPA analysis on the 2014 BiOp's implementation.[209] Instead, the action agencies claimed to have complied with NEPA through pre-existing EISs—some dating back to 1992, some involving more recent individual project EISs.[210]

---

204 Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv., 378 F.3d 1059, 1070 (9th Cir. 2004).

205 *Id.* at 1069 ("[I]t is logical and inevitable that a species requires more critical habitat for recovery than is necessary for the species survival.").

206 *NMFS V*, 184 F. Supp. 3d at 931. Although NMFS failed to clearly analyze the impact of its measures on recovery, Judge Simon seemed willing to imply that the expected habitat improvements would benefit juvenile salmon enough to allow some degree of recovery. *Id.* at 931–33.

207 *Id.* at 933–34.

208 42 U.S.C. § 4332(C) (2012) (requiring all federal agencies to "include in every recommendation or report on proposals for . . . major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—(i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action. . . ."). Note that the obligation to comply with NEPA rests with the action agencies, not NMFS. *See* San Luis & Delta-Mendota Water Auth. v. Jewell, 747 F.3d 581, 641–42 (9th Cir. 2014).

209 *See NMFS V*, 184 F. Supp. 3d at 936. In November 1995, the action agencies prepared a programmatic EIS on Columbia Basin hydroelectric operations that was incorporated into the 1995 BiOp. BONNEVILLE POWER ADMIN. ET AL., COLUMBIA RIVER SYSTEM OPERATION REVIEW: FINAL ENVIRONMENTAL IMPACT STATEMENT 5 (1995), https://perma.cc/K85Z-9ECF.

210 *See NMFS V*, 184 F. Supp. 3d at 935–36. Judge Simon observed that action agencies' determination of the scope of an EIS (e.g., the decision not to produce a single, programmatic EIS) typically obtains judicial deference. *Id.* at 935. However, he decided the decision not to produce a comprehensive EIS for the 2014 BiOp RPA was unreasonable because the older NEPA documents were outdated and thus too stale for use to justify the 2014 BiOp, especially given several new species listings, additional designated critical habitat, and significant new scientific information relating to climate change effects. *Id.* at 937. The government's claims that these documents sufficed for NEPA purposes on the ground that there were no significant changes to the proposed action since the 1990s fared poorly because in the course of its jeopardy analysis, the government also argued that it made numerous and significant positive changes to habitat, predation control, and project operations in order to avoid jeopardy and adverse modification of habitat. *Id.* at 936–37.

The NEPA violation was premised on a recent Ninth Circuit decision holding that a BiOp on the effect of the operation of water projects in the Sacramento–San Joaquin Delta on the threatened delta smelt required an EIS.[211] Judge Simon rejected the government's contention that a decision not to prepare either an EIS or an environmental assessment was entitled to deference, pointing out that the NEPA documents on which the government relied were stale, unrelated, or irrelevant.[212] He determined that the seventy-three mitigation measures, "designed to work synergistically," were "connected actions" justifying a single, comprehensive EIS.[213] The programmatic EIS on the 2014 BiOp's mitigation measures thatJudge Simon ordered is to cure stale information contained in existing project-based NEPA documents, reflect new scientific information, account for new species listings, and consider cumulative effects.[214]

Judge Simon suggested that the NEPA process could serve as a vehicle to induce the parties to think things through in a comprehensive manner,[215] a sentiment similar to that voiced by Judge Redden when he encouraged the parties to engage in discussions to reach a consensus regarding summer spills.[216] The alternatives analysis required by NEPA would likely be more broad-ranging than the analysis under the ESA, since it could include actions that "may not be funded and are outside the jurisdiction of the lead agency."[217] According to Judge Simon, the ESA alternatives analysis is

---

211 Id. at 935 ("[A]ction agencies adopting an ROD implementing a biological opinion generally *must* prepare an EIS." (citing *Jewell*, 747 F.3d at 640–42)).

212 *Id.* at 934–38.

213 *Id.* at 939 (citing 40 C.F.R. § 1508.25(a)). The court also concluded that the BiOp's mitigation measures were "cumulative actions" requiring a single EIS and dismissed the government's argument that such an EIS was infeasible or impractical. *Id.* at 944-47 (citing 40 C.F.R. § 1508.25(a)(2)).

214 *Id.* at 936–37 (citing N. Plains Res. Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1086 (9th Cir. 2011); Lands Council v. Powell, 395 F.3d 1019, 1031 (9th Cir. 2005)) ("It strains credulity to assert that information regarding habitat and fish population remains the same in 2014 as it did in the 1990s.").

215 *Id.* at 876–77 ("One of the benefits of a comprehensive environmental impact statement, which requires that all reasonable alternatives be analyzed and evaluated, is that it may be able to break through any logjam that simply maintains the precarious status quo. A comprehensive environmental impact statement may allow, even encourage, new and innovative solutions to be developed, discussed, and considered. The federal agencies, the public, and our public officials then will be in a better position to evaluate the costs and benefits of various alternatives and to make important decisions."). NEPA further requires agencies to give all reasonable alternatives a "hard look" and to force consideration environmental considerations into agency decision-making processes. *Id.* at 875. Judge Simon gave this example: "[T]he option of breaching, bypassing, or even removing a dam may be considered more financially prudent and environmentally effective than spending hundreds of millions of dollars more on uncertain habitat restoration and other alternative actions." *Id.* at 875–76.

216 Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. 3:01-cv-0640-RE, 2005 WL 1398223, at *5 (D. Or. June 10, 2005), *aff'd in part*, *remanded in part*, 422 F.3d 782 (9th Cir. 2005) ("I encourage the parties to engage in discussions to reach a consensus on issues of spill, and to advise me if one is reached during the period covered by my 2005 summer spill order. Otherwise, the spill shall proceed in accordance with this order.").

217 *NMFS V*, 184 F. Supp. 3d at 934; *see also* 40 C.F.R § 1502.14 (2016) (describing the alternatives analysis as "the heart of environmental impact assessment").

narrower in that it only requires consideration of RPAs that are "reasonably certain to occur, with specific and binding plans and committed resources."[218] These requirements could rule out consideration of dam breaching in a BiOp, but it may merit consideration in an EIS. In fact, one reasonable NEPA alternative apparently endorsed by the court was breaching the four lower Snake River dams.[219]

Judge Simon relied on several decisions for the proposition that the collective effect of NMFS's suite of seventy-three RPA actions was precisely the "type[] of agency plans or programs [that] require a single EIS."[220] The purpose of requiring a single programmatic EIS on the 2014 BiOp was "so that the Action Agencies, the public, and public officials can take a hard look at the programmatic plan to offset the adverse effects of the FCRPS and consider the reasonable alternatives."[221] According to Simon, only a programmatic EIS would allow the public to meaningfully compare alternatives.[222] The fact that NEPA compliance may be "time consuming or costly" did not excuse the agency from complying with NEPA.[223]

An example of the interplay between the mitigation called for by the 2014 BiOp and NEPA procedures is RPA 46, promising a management plan to reduce predation of juvenile salmon by double-crested cormorants in the Columbia River estuary by killing the seabirds.[224] Cormorants—aquatic birds whose diet includes juvenile salmonids—significantly increased in and around the estuary in recent years, as much of their habitat declined

---

218 *NMFS V*, 184 F. Supp. 3d at 934.

219 *Id.* at 942 ("Although the Court is not predetermining any specific aspect of what a compliant NEPA analysis would look like in this case, it may well require consideration of the reasonable alternative of breaching, bypassing, or removing one or more of the Snake River Dams.").

220 *Id.* at 938–39 (citing Kleppe v. Sierra Club, 427 U.S. 390, 400–01, 409, 415 (1976); Pac. Coast Fed'n. of Fishermen's Ass'ns v. U.S. Bureau of Reclamation, 693 F.3d 1082, 1098 n.12 (9th Cir. 2005); Earth Island Ins. v. U.S. Forest Serv., 351 F.3d 1291, 1304–05 (9th Cir. 2003); Native Ecosystems Council v. Dombeck, 304 F.3d 886, 893–94 (9th Cir. 2002); City of Tenakee Springs v. Clough, 915 F.2d 1308, 1312 (9th Cir. 1990)).

221 *Id.* at 940 (citing 40 C.F.R. § 1500.1(b)).

222 *Id.* ("Without a single or programmatic EIS, no other site-specific EIS provides the opportunity to meaningfully consider programmatic alternatives, such as comparing the cost and effects of dam bypass with the cost and effects of habitat mitigation, or determining if some other alternative provides enough survival benefit to replace killing the [double-crested cormorant]."). Judge Simon also noted that the flexibility of NEPA regulations to "tier" an EIS is an answer to the government's argument that forcing the agency to aggregate diverse actions risks paralysis of agency decision making. *Id.* at 944–45 (citing 'Ilio'ulaokalani v. Rumsfeld, 464 F.3d 1083, 1094 (9th Cir. 2006)).

223 *Id.* at 947 (citing San Luis & Delta-Mendota Water Auth. v. Jewell, 747 F.3d 581, 644 (9th Cir. 2014)). On July 6 2016, Judge Simon ordered the federal government to complete NEPA scoping by September 30, 2017, and he scheduled status conference for November 30, 2017. *See* Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No., 3:01-cv-0640-SI, at 4 (D. Or. July 6, 2016), ECF No. 2089 (order remanding 2014 BiOp). The deficiencies in ESA section 7 consultation must be completed by December 31, 2018. *Id.* at 5.

224 2014 BIOP, *supra* note 93, at 409–11.

elsewhere along the West Coast.[225] In its 2008 BiOp, NMFS first called for a cormorant management program, but it did not authorize the killing any cormorants or attempt to estimate the benefits that culling the bird population would have on increased survival of listed salmonids.[226]

In their challenge to the 2008 BiOp, the plaintiffs observed that NMFS's estimates of salmonid productivity did not account for the increase in the cormorant population.[227] Recognizing its oversight, NMFS later calculated that its 2008 BiOp had overestimated productivity of salmon and steelhead, resulting in a so-called "survival gap" of 3.6% for steelhead and 1.1% for upriver chinook salmon.[228] NMFS therefore revised RPA 46 in its 2014 BiOp to call for reducing the cormorant population nesting on East Sand Island in the Columbia River estuary to below six thousand nesting pairs, almost a three-fold decline, in order to reduce bird consumption of juvenile salmon to the level that the 2008 BiOp erroneously assumed.[229] In his decision remanding the 2014 BiOp, Judge Simon deferred to NMFS's RPA on the cormorant program.[230]

The 2014 BiOp tasked the Corps with implementing RPA 46's cormorant-killing program.[231] The Corps proceeded to prepare an EIS on the program that considered four alternatives that focused exclusively on killing

---

225 *See* Cassandra Profita, *Corps Plans to Kill Nearly 16,000 Cormorants Nesting in Columbia River*, OR. PUB. BROADCASTING (June 12, 2014, rev. Feb. 18, 2015), https://perma.cc/KC4K-4A6F (reporting that scientists estimate cormorants regularly consume 10%–15% of the juvenile salmon passing through the estuary).

226 2008 BIOP, *supra* note 29, at 8-15 (stating that benefits for the migrating salmons are not quantifiable due to absence of plan to control double-crested cormorants); *id.* at 8-3 to -26 (calling for development of a plan including research and "actions, if warranted, in the estuary"); *id.* app. at 65, 92 (containing RPAs that research and manage cormorants). Double-crested cormorants are seabirds whose diet is largely fish. Columbia Basin Bulletin, *For Second Year, Corps Issued Permit to Cull Cormorants in Lower Columbia; Allows killing 3,216 birds*, CHINOOK OBSERVER (Apr. 1, 2016), https://perma.cc/WUG3-PR7H. They are native to the Columbia Basin; their largest colony is now on East Sand Island in the Columbia estuary—an island created by the Corps' navigation maintenance dredging—where their population grew from 100 breeding pairs on 1989 to more than 15,000 in 2013. *Id.*

227 Plaintiffs Summary Judgment Motion and Memorandum at 38–42, *NMFS V*, 184 F. Supp. 3d 861 (No. 3:01-cv-0640-SI), ECF No. 1976.

228 Audubon Soc'y of Portland v. U.S. Army Corps of Eng'rs, No. 3:15-cv-655-SI, 2016 WL 4577009, at *2 (D. Or. Aug. 31, 2016). The plaintiffs challenged these "survival gap" figures, claiming that the government's assumption of zero "compensatory mortality" associated with the cormorant program (i.e., that all juvenile salmon escaping cormorant predation would survive all other sources of mortality on their long journey and return as adults to spawn in the rivers) was fanciful. *Id.* at *10. Judge Simon did not accept the agency's claims of zero compensatory mortality, but he did defer to the agency on what he thought was considerable scientific uncertainty over compensatory mortality. *Id.* at *13 ("[A]lthough the survival gap . . . is not likely as high as [estimated], it is not zero. This means that at least some of the many millions of juvenile salmonids eaten each year by [cormorants] would return to spawn if the [cormorant] population were reduced.").

229 *See id.* at *2 (discussing a reduction of double-crested cormorant populations to their "'Base Period' levels of no more than 5,380–5,939 nesting pairs").

230 *NMFS V*, 184 F. Supp. 3d at 949.

231 2014 BIOP, supra note 93, at 410.

or dispersing cormorants, plus the required "no action" alternative.[232] In 2015, the Corps adopted a plan to kill some 10,912 double-crested cormorants and destroy 26,096 nests over four years.[233] None of the alternatives considered making up the salmon "survival gap" by altering hydropower operations or taking other operational measures to increase salmon productivity.[234]

The Corps then applied to the United States Fish and Wildlife Service, a cooperating agency on the Corps' EIS, for a depredation permit under the Migratory Bird Treaty Act[235] (MBTA) to kill the cormorants, which the Service granted in 2015 and 2016—and would have to grant in future years under the program.[236] Several wildlife groups led by the Audubon Society of Portland filed suit, challenging the adequacy of the Corps' EIS and the legality of the depredation permits.[237] The heart of their challenge was an allegation that the Corps violated NEPA by failing to consider a reasonable range of alternatives to the proposed program.[238]

Judge Simon agreed with the plaintiffs that the Corps failed to evaluate a sufficient range of alternative measures and dismissed the federal argument that his earlier order of a comprehensive EIS on the implementation of all RPA measures mooted the case.[239] He also faulted the government's assumption that RPA 46 reduced the range of reasonable alternatives that NEPA required the Corps to consider, rejecting the allegation that the RPA imposed a nondiscretionary duty on the Corps to

---

232 PORTLAND DIST., U.S. ARMY CORPS OF ENG'RS, DOUBLE-CRESTED CORMORANT MANAGEMENT PLAN TO REDUCE PREDATION OF JUVENILE SALMONIDS IN THE COLUMBIA RIVER ESTUARY: FINAL ENVIRONMENTAL IMPACT STATEMENT, at ES-13 to -16 & tbl.ES-2 (2015), https://perma.cc/V34Q-YYQ5.

233 NW. DIV., U.S. ARMY CORPS OF ENG'RS, RECORD OF DECISION: DOUBLE-CRESTED CORMORANT MANAGEMENT PLAN TO REDUCE PREDATION OF JUVENILE SALMONIDS IN THE COLUMBIA RIVER ESTUARY ENVIRONMENTAL IMPACT STATEMENT 1, 4 (2015), https://perma.cc/6JAH-7GSL.

234 *Audubon Soc'y of Portland*, 2016 WL 4577009, at *5.

235 16 U.S.C. §§ 703–711 (2012).

236 MIGRATORY BIRD & HABITAT PROGRAM, U.S. FISH & WILDLIFE SERV., DEPREDATION PERMIT ASSOCIATED WITH DOUBLE-CRESTED CORMORANT MANAGEMENT PLAN TO REDUCE PREDATION OF JUVENILE SALMONIDS IN THE COLUMBIA RIVER ESTUARY 2 (2015), https://perma.cc/85MF-4N3C; *see also Audubon Soc'y of Portland*, 2016 WL 4577009, at *3. The United States Department of Agriculture's Wildlife Service, which was also a cooperating agency on the Corps' EIS, assists the Corps in carrying out the cormorant program. *Audubon Soc'y of Portland*, 2016 WL 4577009, at *3.

237 In addition to Portland Audubon, the groups included the Wildlife Center of the North Coast, the Animal Legal Defense Fund, the Center for Biological Diversity, and Friends of Animals. *Audubon Soc'y of Portland*, 2016 WL 4577009, at *1.

238 *Id.* at *4. The plaintiffs also claimed that the Corps crafted an unreasonably narrow "purpose and need" statement for the program by focusing only on juvenile salmon survival and failed to take a hard look at the alleged benefits that the program would have in terms of increasing adult returns of the listed salmon. *Id.* They further alleged an MBTA violation, claiming that the depredation permits would reduce the cormorant population to an unsustainable level, threatening the population's existence. *Id.* Judge Simon rejected these claims, deferring to the expertise of the agency in the face of scientific uncertainty about the benefits of the program. *Id.* at *14–16.

239 *Id.* at *7–8.

implement the cormorant program.[240] Despite these rulings, Judge Simon refused to enjoin the cormorant killing, largely on the same ground as his ruling in the BiOp decision: giving the benefit of the doubt to the listed salmon species.[241]

The cormorant decision illustrates the weakness underlying Judge Simon's faith in the NEPA process to reveal tradeoffs among RPAs and force federal managers to consider a broader range of alternatives than under the ESA. NEPA authorizes agencies to protect the environment, but it does not require environmental protection.[242] The NEPA process does provide the public and other agencies an opportunity to communicate their preferred outcomes with administrative decision makers, but NEPA requires only that decision makers listen, not that they accommodate public or other agency concerns. Moreover, judges have no obligation to enjoin even actions that clearly violate NEPA.[243] The statute is therefore hardly a panacea for Columbia River salmon restoration—even if, as Judge Simon suggested, it could require consideration of changed dam operations or removal of the lower Snake River dams.[244] Although the Corps violated NEPA in approving the cormorant-killing program, that violation did not halt the program, one that ironically reduces predation primarily on hatchery fish, which are not generally protected by the ESA.[245] Similarly, the hope that NEPA procedures will promote resolution of decades-old problems that the operation of Columbia Basin dams cause for listed salmon seems quixotic.

---

240 *See id.* at *10–11 (quoting Res. Ltd., Inc. v. Robertson, 35 F.3d 1300, 1304 (9th Cir. 1993)) ("An agency cannot abrogate its responsibility to ensure that its actions will not jeopardize listed species; its decision to rely on a [BiOp] must not have been arbitrary or capricious.").

241 *Id.* at *12–13 (noting that vacatur is not required where vacating an illegal agency decision would produce inequitable results).

242 Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1988) ("NEPA itself does not mandate particular results, but simply prescribes the necessary process.").

243 Cal. Cmtys. Against Toxics v. U.S. Envtl. Prot. Agency., 688 F.3d 989, 992 (9th Cir. 2012).

244 *NMFS V*, 184 F. Supp. 3d 861, 944 (D. Or. 2016).

245 NMFS's hatchery policy allows the agency to include hatchery salmon and steelhead within a "distinct population segment"—termed an ESU in the case of Pacific salmonids—when determining whether to list the ESU as endangered or threatened under the ESA. Policy on the Consideration of Hatchery-Origin Fish in Endangered Species Act Listing Determinations for Pacific Salmon and Steelhead, 70 Fed. Reg. 37,204, 37,215 (June 28, 2005); ESA, 16 U.S.C. § 1532(16) (2012) (defining species to include "any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature"). Despite concluding that court decisions precluded the agency's early efforts to exclude hatchery fish when it delineated an ESU, NMFS stressed that "the intent of the ESA is to conserve natural self-sustaining populations and functioning ecosystems." 70 Fed. Reg. at 37,205, 37,207–08. (citing Alsea Valley All. v. Evans, 161 F. Supp. 2d 1154 (D. Or. 2001)). Therefore, the hatchery policy calls for NMFS to make decisions as to whether to list a given ESU as threatened or endangered in part by assessing whether the presence of hatchery fish provides conservation benefits for the entire ESU, or whether hatchery fish instead pose genetic and ecological risks to the ESU's naturally-spawning component. *See id.* at 37,215. The policy was upheld in Trout Unlimited v. Lohn, 559 F.3d 946, 957–959 (9th Cir. 2009).

IV. THE 2017 SPILL DECISION

Judge Simon's 2016 decision concluding that continued operation of FCRPS dams under the 2014 BiOp would violate both the ESA and NEPA included no interim injunctive relief pending procedural compliance with those statutes. However, the federal government acknowledged that the plaintiffs could move for injunctive relief later, and the court retained continuing jurisdiction to ensure the implementation of revised mitigation measures, a new BiOp, and a new EIS complying with federal law.[246] After the parties agreed to a five-year schedule for the comprehensive EIS that Judge Simon ordered, the plaintiffs asked for interim injunctive relief that would 1) increase spills at mainstem dams to facilitate juvenile fish passage, 2) begin earlier monitoring of smolt migration each year, and 3) stop large capital expenditures at the four lower Snake Dams pending preparation of the forthcoming EIS, so as to not prejudice the alternative of recommending removal of those dams.[247]

In March 2017,[248] roughly eleven months after striking down the 2014 BiOp, Judge Simon granted injunctive relief on the first two issues beginning in 2018 and indicated that large capital expenditures could "create a significant risk of bias in the NEPA process," although he declined to stop two projects at Ice Harbor dam aimed at improving fish passage.[249] This "spill injunction" built on Judge Redden's 2005 injunction, but will require larger spills,[250] which Judge Simon justified on the grounds that the listed salmonids are "highly vulnerable for many reasons, including because they have precariously remained at low abundance for some time, are susceptible to devastating effects from climatic events, such as occurred in 2015, and are without any survival 'cushion' in the 2014 BiOp and its RPAs."[251] He therefore

---

246 Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. 3:01-cv-0640-SI, 2017 WL 1829588, at *3–4 (D. Or. Apr. 3, 2017).

247 *Id.* at *1, *3.

248 Judge Simon initially issued an opinion and order on March 27, 2017; that order was superseded by an amended opinion and order issued on April 3, 2017. *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, No. 3:01-cv-0640-SI, 2017 WL 1135610 (D. Or. Mar. 27, 2017), *opinion amended and superseded*, No. 3:01-cv-0640-SI, 2017 WL 1829588 (D. Or. Apr. 3, 2017). No substantive changes were made in the amended opinion and order. *Nat'l Wildlife Fed'n*, 2017 WL 1829588, at *1 n.1.

249 *Nat'l Wildlife Fed'n*, 2017 WL 1829588, at *9–11, *14–16. Interim injunctive relief was appropriate, in Judge Simon's view, because the ongoing dam operations presented "imminent harm" to the listed species. *Id.* at *6 (citing a number of Ninth Circuit and district court cases).

250 *Id.* at *9. Plaintiffs' proposed spills of 115% of total dissolved gas in the dams' forebays and 120% in the tailraces, arguing that the government had tested higher levels of dissolved gas—125% in both the forebays and tailraces—with little evidence of gas bubble disease, which is often fatal to juvenile fish. *Id.* at *7.The Plaintiffs sought spill on a 24-hour basis from April 10 through June 15 at Bonneville, The Dalles, John Day, and McNary Dams and at Ice Harbor, Lower Monumental, Little Goose, and Lower Granite Dams from April 3 through June 20. *Id.* at *1. These spills could be changed by the Corps under certain spill conditions or to address specific biological concerns. *Id.*

251 *Id.* at *6. Increased spill was supported by NMFS's ISAB as well as a number of other scientific studies. *See id.* at *7. The federal government suggested that it might consider increased spill in the next BiOp, but Judge Simon thought that the listed species were "in need

reaffirmed Judge Redden's 2005 decision to order spill over the "vigorous objections" of the federal government, intervenors, and *amici* because it could "offer immediate survival benefits," a finding of Judge Redden that, as Judge Simon observed, "has proven accurate, as all parties now agree."[252] But the government did convince Simon of the need to "calculate[] appropriate spill patterns" at each dam rather than impose a blanket spill increase, and he therefore allowed a year for testing and developing optimum spill levels, delaying the imposition of his injunction until spring 2018.[253]

As for the plaintiffs' request that the judge enjoin large capital expenditures at the lower Snake River, Simon agreed that financial commitments could bias the NEPA process through the so-called "bureaucratic steamroller" effect—in which expenditures and agency momentum can prejudice the selection of alternatives.[254] As a result, he concluded that "spending hundreds, tens, or even millions of dollars on the four lower Snake River dams during the NEPA remand period is likely to cause irreparable harm by creating a significant risk of bias in the NEPA process."[255] However, the court indicated that any injunction concerning dam expenditures did not apply to safety measures, rejected a "blanket injunction" for all expenditures over $1 million, and proceeded to approve two projects at Ice Harbor Dam because they promised "substantial immediate survival improvement" of juvenile salmon.[256]

The new spill injunction, once implemented, will be the most significant substantive improvement in salmon migration since Judge Redden's

---

of additional survival protections now" and rejected "[k]icking the can down the road." *Id.* *8. Judge Simon cited an expert from the State of Washington who suggested that additional spill was "credible, and deserving of further scientific investigation," with a focus on the optimum spill at each individual dam, sentiments that the judge found were widely shared, at least among the defendants and their allies. *Id.* at *8 (quoting Declaration of Bill Tweit Submitted in Support of Washington's Response to Plaintiff's Motions for Injunctive Relief at 10, *Nat'l Wildlife Fed'n*, 2017 WL 1829588 (No. 3:01-cv-0640-SI), ECF No. 2137).

252 *Id.* at *8, *16.

253 *Id.* at *9–10. Judge Simon also delayed the imposition of early monitoring of smolt migration (through so-called PIT tags) until March 1, 2018. *Id.* at *11. Judge Simon rejected the plaintiffs' request to limit spill adjustments for biological reasons only if no member of the Fish Passage Advisory Committee (which includes fishery agency and tribal members) objected. *Id.* at *1, *10. Judge Simon found "no evidence that the current system is not sufficiently working to be able to implement additional spill," or that "minority voices" needed an opportunity to be heard because "current decisionmakers are more policy-focused than science-driven." *Id.* at *10. Consequently, he decided not to implement a system "requiring unanimity" of committee members "at this time." *Id.* But he left the door open to such claims in the future if backed by evidence, stating that "[i]f, after additional spill begins, the Spill Plaintiffs or any other party has evidence that the current system is not working, that party may then file a motion with the Court." *Id.*

254 *Id.* at *12–14 (adopting the "bureaucratic steamroller or momentum theory" recognized in *Sierra Club v. Marsh*, 872 F.2d 497, 500 (1st Cir. 1989)).

255 *Id.* at *14.

256 *Id.* at *14–15. The court noted that if the plaintiffs believed that a project was not a safety measure and "substantially may bias the NEPA process," they could file a motion to that effect with the court. *Id.* at *15.

injunction in 2005.[257] Although it was only interim injunctive relief, pending compliance with the ESA and NEPA, it represented a clear counterweight to two decades of federal efforts that, in Judge Simon's words, "kick[ed] the can down the road" in favor of maintaining, as much as possible, status quo hydroelectric operations.[258] Judge Simon has now joined Judge Redden in resisting this longstanding federal effort to delay changing dam operations to benefit listed salmon.

V. THE SIGNIFICANCE OF THE SIMON DECISION

The Simon decision was only the latest in a long series of decisions reflecting considerable judicial skepticism of federal efforts to comply with the ESA in the case of Columbia Basin salmon.[259] But it was the most far-reaching.

Judges Marsh and Redden both expressed deep reservations about what the government was proposing,[260] but neither was willing to seriously interfere with status quo operations of the federal dam system.[261] Except for spills at specific dams ordered by Judge Redden beginning in 2005, and increased by Judge Simon in 2018,[262] the status quo has largely prevailed, at least in terms of project operations. The explanation must lie in the nonjudicial persuasiveness of BPA and its deep pockets.[263] One of the Columbia Basin salmon saga's ironies is that BPA's coordination of the FCRPS—dominant since 1964, if not before[264]—made the agency the region's

---

257 *See generally* Blumm & Paulsen, *supra* note 7, at 133–35 (discussing the 2005 spill decision).

258 *Nat'l Wildlife Fed'n*, 2017 WL 1829588, at *8.

259 *E.g.*, Idaho Dep't of Fish & Game v. Nat'l Marine Fisheries Serv., 850 F. Supp. 886, 900 (D. Or. 1994) (Marsh, J.), *vacated as moot*, 56 F.3d 1071 (9th Cir. 1995) (describing the process behind the 1993 BiOp as "seriously, 'significantly,' flawed"); s*ee also* Blumm & Corbin, *supra* note 6, at 551 (discussing Judge Marsh's decision).

260 *E.g.*, Am. Rivers v. Nat'l Marine Fisheries Serv., No. Civ. 96–384–MA, 1997 WL 33797790, at *10 (D. Or. Apr. 3, 1997) (Marsh, J.) (questioning the soundness of the selected level of risk acceptance in the BiOp); *NMFS I*, 254 F. Supp. 2d 1196, 1215 (D. Or. 2003) (Redden, J.) (finding the government's actions to be arbitrary and capricious); Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. CV 01–6940–RE, 2004 WL 1698050, at *5–6 (D. Or. July 29, 2004) (Redden, J.) (same).

261 *See Practicing Deception*, *supra* note 5, at 809 (explaining that forces supporting the status quo were relying on the limits of judicial review to avoid making substantial changes); *supra* Part II.B (discussing the decisions issued by Judges Marsh and Redden).

262 *See supra* Part IV.

263 *See BPA's Annual Costs for Basin Fish and Wildlife Mitigation Expected to Nudge Above $500 Million*, COLUMBIA BASIN FISH & WILDLIFE NEWS BULL. (July 11, 2014), https://perma.cc/S8H4-P2WE (explaining that BPA funds have produced a substantial amount of habitat restoration); Harrison, *supra* note 4 (explaining that off-site mitigation has been insufficient to make progress recovering listed salmon). Whether it will do so in the future is the fundamental question at the root of the last two decades of BiOp litigation.

264 Michael C. Blumm, *The Northwest's Hydroelectric Heritage: Prologue to the Northwest Power Planning and Conservation Act*, 58 WASH. L. REV. 175, 217–19 (1983) (discussing various coordination agreements and California power marketing in the wake of the signing of the 1961 Columbia River Treaty with Canada that contributed to the rise of BPA as the central power

chief electric power entity also made BPA most responsible for the salmon's decline in the Columbia Basin. Yet, BPA has also now become the government's principal agency funding salmon recovery, giving the agency significant control over the type and timining of salmon recovery measures.[265] The power of BPA's funding was evident in its ability to persuade a majority of Columbia Basin tribes to switch sides in the litigation in exchange for substantial funding of habitat restoration.[266]

A related irony is that NMFS, the agency charged by Congress with protecting endangered species, would become the leading federal apologist for maintaining status quo hydroelectric operations damaging salmon. In the era before it acquired decision-making authority through the Columbia Basin salmon ESA listings, NMFS was a member of a coalition of federal and state agencies and Indian tribes that advocated for changing FCRPS operations.[267] Once vested with decision-making authority, however, NMFS became a voice against increased water flows beneficial to salmon and for more artificial transport of juvenile by truck and barge around FCRPS projects.[268]

The 2014 BiOp that Judge Simon found wanting reflected a fracturing of the agency and tribal coalition that once argued for changed hydropower operations.[269] Not only did the federal fishery agencies drop out of the coalition, among the states only Oregon continued to challenge the BiOp.[270]

---

planning agency of the Columbia Basin). The Treaty, signed in 1961, entered into force in 1964. Columbia River Basin Treaty: Cooperative Development of Water Resources, Can.-U.S., Jan. 17, 1961, 15 U.S.T. 1555.

265 *See BPA's Annual Costs for Basin Fish and Wildlife Mitigation Expected to Nudge Above $500 Million*, THE COLUMBIA BASIN FISH & WILDLIFE NEWS BULL. (July 11, 2014), https://perma.cc/6Z9S-DW4U (explaining that BPA's annual costs on recovery efforts are over $500 million per year).

266 *See supra* notes 8–10 and accompanying text.

267 *See* Michael C. Blumm & F. Lorraine Bodi, *Northwest Power Act: "Fish Coequal with Hydropower"*, *in* THE NORTHWEST SALMON CRISIS: A DOCUMENTARY HISTORY 262–64 (Joseph Cone & Sandy Ridlington eds., 1996) (discussing the recommendations of a coalition of federal, state, and tribal agencies, including NMFS, to the Northwest Power Planning Council to formulate a Columbia Basin Fish and Wildlife Program in 1981).

268 *See* Blumm & Corbin, *supra* note 6, at 591–92 (discussing the evolution of NMFS's position as it obtained decision-making authority).

269 In addition to NMFS, the "fishery coalition" of the 1980s included the United States Fish and Wildlife Service; state fish and wildlife agencies from Idaho, Oregon, and Washington; and numerous Columbia Basin tribes. These entities cooperated on the submission of program recommendations to the Northwest Power Planning Council in 1981. Michael C. Blumm, *Implementing the Parity Promise: An Evaluation of the Columbia Basin Fish and Wildlife Program*, 14 ENVTL. L. 277, 284–86 (1984) [hereinafter Blumm, *Implementing Parity*] (discussing the goals of the fishery coalition).

270 Michael C. Blumm, Opinion, *Salmon Are Flourishing Because of Judge's Orders*, OREGONIAN (Nov. 8, 2014), https://perma.cc/K2T9-JDZ6. Idaho signed the Columbia Basin Fish Accords and received funding, but Washington did not actually sign a BiOp-related Accord since it had decided to support the 2008 BiOp (and ensuing ones), and received federal funding. *See supra* note 9. During the many years of litigation over whether the federal government complied with the ESA concerning its FCRPS operations, the Northwest Power and Conservation Council, an interstate compact agency directed by Congress to produce a program for the Columbia Basin to protect, mitigate and enhance fish and wildlife, has been largely silent and passive. *Mission and Strategy*, NW. POWER & CONSERVATION COUNCIL, https://perma.cc/W73B-

Among the tribes, only the Nez Perce—the most geographically disadvantaged Stevens Treaty tribe—remained in the litigation.[271] The institutional forces of the 21st century were apparently scattering ones.

Although both his predecessors thought NMFS BiOps failed to satisfy the ESA, Judge Simon's 149-page opinion represented a higher level of judicial scrutiny of ESA implementation. Judge Simon's decision was in fact a paradigmatic example of hard look review. This level of judicial scrutiny is justified by decades of obfuscation and deception by the involved federal agencies whose chief goal has been to shield FCRPS operations from salmon-induced changes. To a remarkable extent, the agencies have, over the years, largely succeeded.[272] It is possible that Judge Simon's sense of this sorry history influenced his review.

Judge Simon's searching review focused on the recommendations of a number of scientific advisory committees, emphasizing instances where the 2014 BiOp diverged from those recommendations.[273] These inconsistencies undermined NMFS's claims for judicial deference to its administrative judgment. So did repeated, longstanding overstatements about the effectiveness of planned mitigation.[274] Given the number of BiOps that failed review previously, there were plenty of inconsistencies that weakened NMFS claims to deferential judicial review.[275]

Another irony of the Simon decision was that time—long apparently on the side of BPA and NMFS, as courts refused to enjoin, with one notable exception concerning spills,[276] status quo FCRPS operations—worked against the federal defendants in this case. Now, the long history of failure seemed to outweigh claims of administrative expertise. Judge Simon's hard look review was probably the result of both the federal failure to follow scientific advice and the repeated inability to deliver on asserted benefits of mitigation.

Judge Simon not only reiterated Judge Redden's rulings that mitigation measures had to be reasonably certain to occur,[277] he rejected NMFS's

---

SRRF (last visited Apr. 15, 2017). For example, when BPA attempted to defund the Fish Passage Center, established by the Council's program to provide information on the effects of program measures on fish survival, the Council largely failed to defend the Center, intervening in the litigation which successfully challenged BPA's defunding efforts only to mention to the court that the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act), 16 U.S.C. §§ 839–839h (2012), required BPA to act "consistent" with its program. Brief of Intervenor Nw. Power & Conservation Council, Nw. Envtl. Def. Ctr. v. Bonneville Power Admin, 477 F.3d 668 (9th Cir. 2007) (Nos. 06-70430, 06-71182), 2006 WL 2986799.

271 *See supra* notes 8–10 and accompanying discussion.

272 *See generally Practicing Deception*, *supra* note 5, at 713.

273 *See supra* Part III.A–B.

274 *See supra* notes 148–149 and accompanying text.

275 *See supra* Part II.

276 Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. 3:01-cv-0640-RE, 2005 WL 1398223, at *5 (D. Or. June 10, 2005) (Redden, J.) (order granting in part an injunction requiring water to be spilled over the lower Snake River dams); *supra* Part IV (discussing Judge Simon's decision to increase spills).

277 *NMFS V*, 184 F. Supp. 3d at 870–71 (citing *NMFS I*, 254 F. Supp. 2d 1196, 1211–12 (D. Or. 2003) and *NMFS II*, 839 F. Supp. 2d 1117, 1130–31 (D. Or. 2011).

proffered interpretation of avoiding jeopardy to the listed salmon as merely putting the species on a track of trending toward recovery.[278] He criticized the government's standard because the government could satisfy the "trending" interpretation without any real improvement in run sizes, no matter how desperate the existing condition of the listed species.[279]

A troubling aspect of the Simon decision was its interpretation of whether the proposed operations would adversely modify designated critical habitat. Judge Simon ruled that the standard NMFS used to evaluate effects on critical habitat—"retaining the current ability to become functional"—was inconsistent with the ESA.[280] But he then proceeded to sustain NMFS's claim that the agency satisfied the statute with its mitigation measures concerning critical habitat protection, using an analysis that seemed inconsistent with his reasoning on the jeopardy standard.[281]

In addition to rejecting NMFS's interpretation of recovery, the Simon decision made at least two important interpretations of the ESA that may prove influential. First, the decision repeatedly construed the statute to require that NMFS give the "benefit of the doubt" to the listed salmon, making clear that the burden of uncertainty—long referenced by those seeking to block significant changes in FCRPS operations[282]—would no longer be acceptable as a justification for refusing to undertake meaningful and verifiable action to protect and restore listed species.[283] Second, remedial actions in a BiOp require a margin of safety, a "cushion," to guard against overoptimistic predictions.[284] These requirements are in addition to Judge Simon's reaffirmation that the ESA requires BiOp measures to be reasonably certain to occur and could be persuasive in the future. The 2017 spill injunction gave the benefit of the doubt to listed species and ordered increased interim spills, constituting a significant refocusing of attention on the operation of the dams that are the primary cause for the imperiled status of the salmon.[285]

A pioneering aspect of the Simon decision was its call for a comprehensive EIS that would consider a broader range of alternatives than NMFS has considered in its BiOps, including the costs and benefits of breaching the dams on the lower Snake River.[286] Employing NEPA to

278 *NMFS V*, 184 F. Supp. 3d at 891–95; *see also supra* Part III.A.

279 *NMFS V*, 184 F. Supp. 3d at 890; *see also* text accompanying *supra* note 100.

280 *NMFS V*, 184 F. Supp. 3d at 930.

281 *NMFS V*, 184 F. Supp. 3d at 930–31. For a more in-depth discussion of this issue, see *supra* notes 193–206 and accompanying text.

282 *Id.* at 873; *see also* Nw. Res. Info. Ctr. v. Nw. Power Planning Council, 35 F.3d 1371, 1377 (9th Cir. 1994) (holding that the Northwest Power Act "marked a shift of the burden of uncertainty . . . from the salmon to the hydropower system").

283 *NMFS V*, 184 F. Supp. 3d at 873.

284 *Id.* at 909.

285 The benefit of the doubt to the listed species worked also to sustain the cormorant-kill program. *See supra* note 241 and accompanying text.

286 *NMFS V*, 184 F. Supp. 3d at 944. ("For example, the option of breaching, bypassing, or even removing a dam may be considered more financially prudent and environmentally effective than spending hundreds of millions of dollars more on uncertain habitat restoration and other alternative actions.").

evaluate BiOp measures is a relatively recent judicial development, ushered in by the Ninth Circuit's decision in *San Luis & Delta-Mendota Water Authority v. Jewell*.[287] There is some irony in this judicial reliance on a statute—often criticized for its nonsubstantive, procedural basis[288]—to redirect the federal government's focus beyond its off-site mitigation efforts to reducing the adverse effects of FCRPS operations.[289] Judge Simon clearly thought that a comprehensive EIS would prompt serious consideration of larger tradeoffs on which the BiOps had not focused. However, long-term observers of the Columbia Basin salmon saga may be skeptical about how the FCRPS agencies will employ their discretion—which NEPA hardly restricts—to materially change the focus of Columbia Basin salmon restoration through a programmatic EIS.[290]

Ultimately, the Simon decision challenged the federal government to justify—with much greater particularity than in the past—the efficacy of its mitigation plans. Judges Marsh and Redden had repeatedly called for greater certainty that planned mitigation measure would take place, but Judge Simon searched for evidence that the mitigation was actually producing the benefits NMFS claimed would take place.[291] That kind of inquiry could, if sustained over time, undermine the BiOps' heavy reliance on hatchery production.[292] Moreover, the whole idea of emphasizing off-site habitat restoration to the near exclusion of changes in project operations needs public reconsideration. That approach seems clearly inconsistent with the federal interpretation of mitigation, which favors operational changes over

---

287 747 F.3d 581, 642 (9th Cir. 2014).

288 *E.g.*, Bradley C. Karkkainen, *Toward a Smarter NEPA: Monitoring and Managing Government's Environmental Performance*, 102 COLUM. L. REV. 903, 905 (2002) ("From the critics' vantage point, NEPA appears to demand burdensome procedural formalities while accomplishing little or nothing of substance.").

289 The above interpretation is consistent with the federal definition of mitigation. *See* 40 C.F.R. 1508.20 (2016).

290 Judge Marsh observed in his 1994 decision that a major problem with NMFS's BiOp was that it failed to reflect the views of other agencies. Idaho Dep't of Fish & Game v. Nat'l Marine Fisheries Serv., 850 F. Supp. 886, 899–90 (D. Or. 1994), *vacated as moot*, 56 F.3d 1071 (9th Cir. 1995). Judge Redden also called for all parties to cooperate on measures to conserve the listed salmon. Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. 3:01-cv-0640-RE, 2005 WL 2488447, at *3 (D. Or. Oct. 7, 2005) ("There must be cooperation between the parties and all of three branches of government."), *aff'd*, 524 F.3d 917 (9th Cir. 2008). Neither judicial suggestion produced much success. Whether NEPA procedures aimed at, among other things, increasing interagency cooperation can produce material change may well be doubted. And the cost of a comprehensive EIS will be considerable in terms of time and money.

291 *Compare Idaho Dep't of Fish & Game*, 850 F. Supp. at 899–90 (Marsh, J.), *and NMFS IV*, 839 F. Supp. 2d 1117, 1125–26 (D. Or. 2011) (Redden, J.), *with NMFS V*, 184 F. Supp. 3d 861, 902–14 (Simon, J.).

292 *See* PATRICK MCCULLY, SILENCED RIVERS: THE ECOLOGY AND POLITICS OF LARGE DAMS 51 (1996) (arguing that despite hatcheries aimed at mitigating the effects of the Columbia Basin dams, "not only has the number of adult salmon plummeted, but hatchery fish are degrading the genetic diversity of the remaining wild salmon and helping push them toward extinction").

creating substitute resources.[293] The federal definition of mitigation has apparently been inoperative in the Columbia Basin, and perhaps Judge Simon's call to bring dam breaching back on the table portends a shift towards a greater focus on operational changes to the dams themselves.

VI. CONCLUSION

Judge Simon's decision signaled a new era on the long-running Columbia Basin salmon saga. Dating back to roughly 1980, when Congress called for a basinwide restoration program for the fish and wildlife adversely affected by the construction and operation of the FCRPS dams,[294] and continuing during the ESA-era beginning in the 1990s, some $14 billion has been spent on Columbia Basin salmon recovery efforts during the last forty years, mostly by the federal government.[295] In terms of the condition of the listed salmon, these vast expenditures clearly have not produced satisfactory results.

In many respects, the money has not been spent wisely, supporting a veritable army of biologists, lawyers, and bureaucrats committed to hatchery operations and habitat restoration with uncertain benefits in terms of listed salmon.[296] The amount of mitigation expenditures is fairly astonishing, including enough money to encourage several tribes to drop out of the litigation.[297] There may be legitimate scientific debate around the merits of off-site mitigation versus operational changes or dam removal. But after a quarter-century of failure of off-site mitigation to make discernable progress recovering the listed salmon, the government's position looks increasingly arbitrary. Time, a former ally of the government, now has become an opponent.

---

293 *See* 33 C.F.R. § 332.3(e)(1) (2016) ("In general, in-kind mitigation is preferable to out-of-kind mitigation because it is most likely to compensate for the functions and services lost at the impact site.").

294 Pacific Northwest Electric Power Planning and Conservation Act, Pub. L. No. 96-501, § 4(h)(1)(A), 94 Stat. 2697, 2708 (codified at 16 U.S.C. § 839b(h)(1) (2012)) ("The Council shall promptly develop and adopt, pursuant to this subsection, a program to protect, mitigate, and enhance fish and wildlife, including related spawning grounds and habitat, on the Columbia River and its tributaries."). *See generally* Blumm, *Implementing Parity*, *supra* note 269, at 284–86.

295 *See* NW. POWER & CONSERVATION COUNCIL, 2014 COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM COSTS REPORT: 14TH ANNUAL REPORT TO THE NORTHWEST GOVERNORS 28 n.iii (2014), http://perma.cc/4TTD-3M6S (reporting a "grand total of all fish and wildlife costs incurred by Bonneville from 1978 when the costs began, through 2014, [of] $14.53 billion"); Press Release, Idaho Rivers United, Conservation Groups Highlight Salmon Plan's Shortcomings in Federal Court (July 1, 2015), https://perma.cc/UN7S-DBV9 (describing the amount as "more than $13 billion").

296 In the late 1990s, FCRPS agencies developed a salmon restoration strategy of "4 Hs," that would account for hydropower, hatcheries, harvest, and habitat. *See* Cat Lazaroff, *Four H's of Salmon Recovery: Habitat, Harvest, Hatcheries & Hydropower*, ENVTL. NEWS SERV., (Nov. 18, 1999), https://perma.cc/9E7J-A32Y. In many respects the recent BiOps are the result of the four H approach, since they reduce the amount of mitigation necessary at the dams producing hydropower because of substantial efforts at habitat restoration.

297 *See supra* note 9 and accompanying text.

When viewed in light of the long arc of the salmon–hydropower struggle in the Columbia Basin, Judge Simon's opinion suggests a new way forward. In order to survive the close judicial review likely ahead, the path now almost assuredly will require government BiOps to reinterpret the ESA's jeopardy standard to include a margin of error that will ensure listed salmon receive the "benefit of the doubt."[298] This new era could also prompt reconsideration of the merits of changing FCRPS operations, perhaps reopening serious evaluation of breaching the lower Snake River dams. The hope would be that the next twenty-five years will not prove to be as fruitless as the last twenty-five.

VII. POSTSCRIPT

While this article was in press, in a sign that the optimism reflected in the concluding paragraph above may be misplaced, four members of the Northwest's congressional delegation penned a letter to the BPA Administrator, alleging that Judge Simon's spill decision will produce "unintended consequences" that will allegedly hurt salmon recovery and "greatly increase[] power costs."[299] The letter claimed 2008 BiOp was "biologically and legally sound," wholly ignoring Judge Simon's decision and posing a series of questions about the cost of the injunction that the BPA Administrator was to answer.[300] The letter also asked BPA to inform the signatories of any status conferences or protocols concerning appropriate revised spills at mainstem dams. One need not be too cynical about the long history of the hydropower versus salmon conflict in the Columbia Basin to suggest that the letter was drafted by BPA in an effort to resist increased spills in 2018, and that it may be an omen of an appropriations rider overriding the court's spill decision.

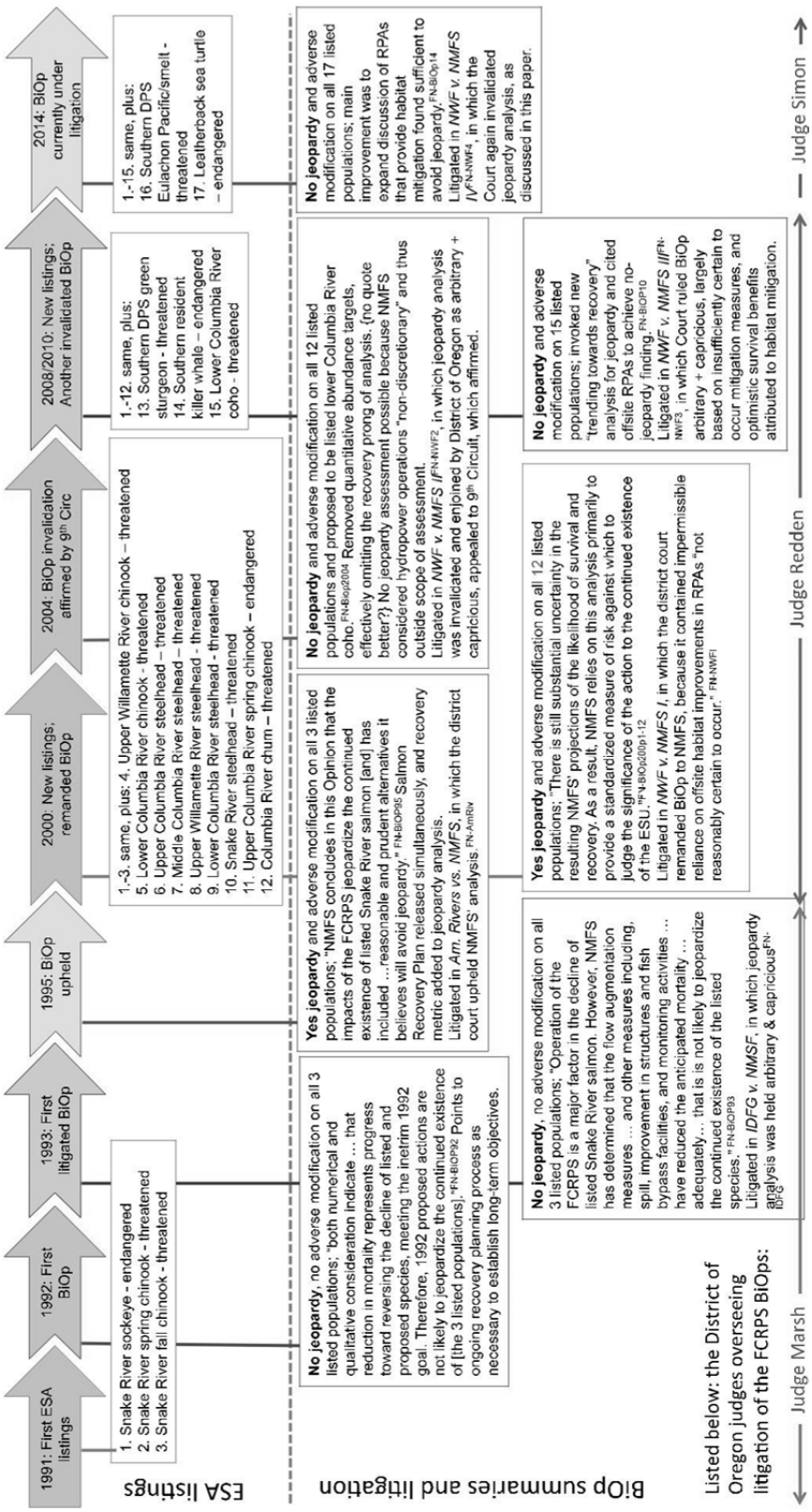
---

298 *NMFS V*, 184 F. Supp. 3d 861, 873–906 (D. Or. 2016) (repeatedly referring to the requirement that the salmon receive the "benefit of the doubt").

299 Letter from Rep. Cathy McMorris Rodgers (R-Wash.), Rep. Peter DeFazio (D-Or.), Rep. Dan Newhouse (R-Wash.), and Rep. Kurt Schrader (D-Or.), to Elliot Mainzer, Adm'r, Bonneville Power Admin. (May 2, 2017) (on file with authors). For a discussion of the spill decision, see *supra* Part IV.

300 Letter from Rep. Cathy McMorris Rodgers, Rep. Peter DeFazio, Rep. Dan Newhouse, and Rep. Kurt Schrader to Elliot Mainzer, *supra* note 299 (asking, *inter alia*, about BPA's annual spending on fish and wildlife, the resulting effect on a ratepayer's monthly bill, salmon losses due to predation from sea lions and birds, adverse consequences of increased spill, and the costs of the actions required to implement the court's order).

APPENDIX


1991: First ESA listings
1992: First BiOp
1993: First litigated BiOp
1995: BiOp upheld
2000: New listings; remanded BiOp
2004: BiOp invalidation affirmed by 9th Circ
2008/2010: New listings; Another invalidated BiOp
2014: BiOp currently under litigation
ESA listings
BiOp summaries and litigation
1. Snake River sockeye - endangered
2. Snake River spring chinook - threatened
3. Snake River fall chinook - threatened
No jeopardy, no adverse modification on all 3 listed populations; "both numerical and qualitative consideration indicate ... that reduction in mortality represents progress toward reversing the decline of listed and proposed species, meeting the inetrim 1992 goal. Therefore, 1992 proposed actions are not likely to jeopardize the continued existence of [the 3 listed populations]."FN-BiOP92 Points to ongoing recovery planning process as necessary to establish long-term objectives.
No jeopardy, no adverse modification on all 3 listed populations; "Operation of the FCRPS is a major factor in the decline of listed Snake River salmon. However, NMFS has determined that the flow augmentation measures ... and other measures including, spill, improvement in structures and fish bypass facilities, and monitoring activities ... have reduced the anticipated mortality ... adequately... that is is not likely to jeopardize the continued existence of the listed species."FN-BiOP93
Litigated in IDFG v. NMSF, in which jeopardy analysis was held arbitrary & capricious.FN-IDFG
1.-3. same, plus; 4. Upper Willamette River chinook – threatened
5. Lower Columbia River chinook - threatened
6. Upper Columbia River steelhead – threatened
7. Middle Columbia River steelhead – threatened
8. Upper Willamette River steelhead - threatened
9. Lower Columbia River steelhead - threatened
10. Snake River steelhead – threatened
11. Upper Columbia River spring chinook – endangered
12. Columbia River chum – threatened
Yes jeopardy and adverse modification on all 3 listed populations; "NMFS concludes in this Opinion that the impacts of the FCRPS jeopardize the continued existence of listed Snake River salmon [and] has included ...reasonable and prudent alternatives it believes will avoid jeopardy." FN-BiOP95 Salmon Recovery Plan released simultaneously, and recovery metric added to jeopardy analysis.
Litigated in Am. Rivers vs. NMFS, in which the district court upheld NMFS' analysis.FN-AmRiv
Yes jeopardy and adverse modification on all 12 listed populations; "There is still substantial uncertainty in the resulting NMFS' projections of the likelihood of survival and recovery. As a result, NMFS relies on this analysis primarily to provide a standardized measure of risk against which to judge the significance of the action to the continued existence of the ESU."FN-BiOp2008p1-12
Litigated in NWF v. NMFS I, in which the district court remanded BiOp to NMFS, because it contained impermissible reliance on offsite habitat improvements in RPAs "not reasonably certain to occur." FN-NWFI
1.-12. same, plus:
13. Southern DPS green sturgeon - threatened
14. Southern resident killer whale – endangered
15. Lower Columbia River coho - threatened
No jeopardy and adverse modification on all 12 listed populations and proposed to be listed lower Columbia River coho.FN-Biop2004 Removed quantitative abundance targets, effectively omitting the recovery prong of analysis. ('no quote better?) No jeopardy assessment possible because NMFS considered hydropower operations "non-discretionary" and thus outside scope of assessment.
Litigated in NWF v. NMFS IIFN-NWF2, in which jeopardy analysis was invalidated and enjoined by District of Oregon as arbitrary + capricious, appealed to 9th Circuit, which affirmed.
No jeopardy and adverse modification on 15 listed populations; invoked new "trending towards recovery" analysis for jeopardy and cited offsite RPAs to achieve no-jeopardy finding.FN-BiOP10
Litigated in NWF v. NMFS IIIFN-NWF3, in which Court ruled BiOp arbitrary + capricious, largely based on insufficiently certain to occur mitigation measures, and optimistic survival benefits attributed to habitat mitigation.
1.-15. same, plus:
16. Southern DPS Eulachon Pacific/smelt - threatened
17. Leatherback sea turtle – endangered
No jeopardy and adverse modifcation on all 17 listed populations; main improvement was to expand discussion of RPAs that provide habitat mitigation found sufficient to avoid jeopardy.FN-BiOp14
Litigated in NWF v. NMFS IVFN-NWF4, in which the Court again invalidated jeopardy analysis, as discussed in this paper.
Listed below: the District of Oregon judges overseeing litigation of the FCRPS BiOps:
Judge Marsh
Judge Redden
Judge Simon