

PRACTICED AT THE ART OF DECEPTION: THE FAILURE OF
COLUMBIA BASIN SALMON RECOVERY UNDER THE
ENDANGERED SPECIES ACT

BY

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The saga of Columbia Basin salmon recovery is one of the foremost natural resource restoration efforts in the United States over the last quarter-century. Although development of the world's largest integrated hydroelectric system crippled the Columbia's salmon runs, Congress declared in 1980 that salmon and hydropower were to become "co-equals" in the management of Columbia Basin dams. However, that declaration did not prevent the listing of most Columbia Basin salmon runs under the Endangered Species Act (ESA).

Widely perceived as a draconian, economically insensitive statute, the ESA has proved extremely pliable in the case of Columbia Basin salmon. The National Oceanic and Atmospheric Administration (NOAA), the agency charged with implementing the statute in the case of salmon, consistently chose to exercise its discretion largely to preserve status quo hydropower and navigation operations. While this rather remarkable development has apparently escaped the attention of congressional reformers attempting to make the ESA more economically accountable, it has not escaped the attention of many in the Pacific Northwest. As a result, a series of lawsuits over the last decade has challenged NOAA's ESA implementation.

The suits have, for the most part, borne fruit. NOAA's two most recent biological opinions have been struck down, and the federal district court has indicated that without a drastic change in course, salmon recovery is headed for a "train wreck." Thus, the Columbia Basin salmon story appears about to embark on a new era of active judicial oversight. This Article explains how and why this development came to be, and charges that NOAA and the federal agencies operating Columbia Basin dams have engaged in longstanding deceptive practices

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in an attempt to mislead the public and Congress into thinking that meaningful salmon restoration is underway, when in fact it has never been seriously attempted.

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I. INTRODUCTION

For at least a quarter century, national policy has been to restore the Columbia Basin’s salmon runs.¹ Once the world’s largest, the Columbia’s salmon runs were decimated first by over-fishing and later by water project development, which transformed the basin into the largest interconnected hydroelectric system in the world and created a seaport in Idaho, some 465 miles inland.²

After unsuccessfully experimenting with massive reliance on hatcheries to substitute for salmon habitat lost to water project development,³ Congress ordered modifications in the operations of Columbia Basin dams in an innovative 1980 statute, the Northwest Power Act.⁴ Although the drafters of that statute were quite optimistic that those operational changes and other

¹ Unless otherwise indicated, the term “salmon” encompasses both Columbia Basin salmon and steelhead. Salmon and steelhead are not identical species. *All* species of Columbia Basin salmon and steelhead, however, are members of the same genus, *Oncorhynchus*, and are considered salmonids. While steelhead (*O. mykiss*) is actually a trout, scientists include steelhead among the salmonids because it is, like salmon, an anadromous fish (i.e., migrates from the sea to fresh water to spawn). Steelhead, unlike salmon, do not necessarily die after they spawn. Although there are only five species of salmon in the Pacific Northwest according to the traditional Linnean system—pink salmon (*O. gorbuscha*), chum (*O. keta*), sockeye (*O. nerka*), coho (*O. kisutch*), and chinook (*O. tshawytscha*)—there is considerable variability between members of the same species, depending on where and when they spawn and migrate. These differences between members of the same species led to a formal classification of salmonids in the United States that goes beyond the traditional Linnean system to define distinct groups of populations as evolutionary significant units (ESUs). There are between 50 and 55 distinct salmonid ESUs that inhabit the waterways of the American West. Phillip S. Levin & Michael H. Schiewe, *Preserving Salmon Biodiversity*, AMERICAN SCIENTIST ONLINE, May-June 2001, <http://www.americanscientist.org/template/AssetDetail/assetid/14347/page/2#22500> (last visited July 16, 2006).

² See generally MICHAEL C. BLUMM, *SACRIFICING THE SALMON: A LEGAL AND POLICY HISTORY OF THE DECLINE OF COLUMBIA BASIN SALMON* 5–14 (2002) [hereinafter *SACRIFICING THE SALMON*] (tracing the history of the Columbia Basin and the dams).

³ See generally *id.*

⁴ See 16 U.S.C. § 839b (2000) (establishing regional entity for managing the river basin). See generally *SACRIFICING THE SALMON*, *supra* note 2, at 129–60 (discussing the Northwest Power Act).

modifications to the dams would reverse the salmon's decline,⁵ the measures instituted under the 1980 statute were unable to prevent the listing of several salmon species under the Endangered Species Act (ESA) in the early 1990s.⁶

The ESA era ushered in by the listings began with great anxiety among the electricity, navigation, and other river-dependent industries that so-called draconian ESA measures would elevate salmon protection over hydropower generation or barge transport of agricultural goods. But over a dozen years after the initial listings, the issuance of several biological opinions (BiOps)—designed to avoid jeopardy to listed salmon—produced no such reallocation of Columbia Basin hydrosystem priorities.

Actually, a good case can be made that the salmon listings have done much more to demonstrate the economic sensitivity of ESA implementation than to restore salmon spawning in the Columbia Basin.⁷ This surprising result has been reinforced by developments in the twenty-first century. Notably, during the 2001 West Coast electricity crisis, hydrosystem⁸

⁵ The Northwest Power Act promised that fish and wildlife would be treated “on a par” with other uses in the Columbia River, and a “coequal partner” with hydropower. *See* H.R. REP. NO. 96-976, at 49, 56–57 (1980), *reprinted in* 1980 U.S.C.C.A.N. 5989, 6015. The Act sought to produce parity between fish and wildlife restoration and hydropower by altering hydroelectric operations, such as improving flows and installing fish bypass systems at mainstem dams, and calling for the creation of an interstate agency—the Northwest Power Planning Council—to implement a system-wide approach to salmon restoration. *Id.*; Northwest Power Planning Act, 16 U.S.C. § 839b(h)(6)(E)(i)–(ii) (2000). Despite the Act’s ambitious call for “equal footing” between hydropower and fish, *Confederated Tribes & Bands of the Yakima Nation v. Federal Energy Regulatory Commission*, 746 F.2d 466, 473 (9th Cir. 1984), Columbia Basin salmon populations continue to decline. *See* Michael C. Blumm & Andy Simrin, *The Unraveling of the Parity Promise: Hydropower, Salmon and Endangered Species in the Columbia Basin*, 21 ENVTL. L. 657, 661–62 (1991) [hereinafter *Unraveling Parity*] (arguing that the failure of the Northwest Power Act to halt the decline of Columbia Basin salmon was due to the Northwest Power Planning Council’s failure to defer to the biological expertise of the region’s federal and state fishery agencies and Indian tribes on issues of stream flows and spill).

⁶ *See* Endangered and Threatened Species; Endangered Status for Snake River Sockeye Salmon, 56 Fed. Reg. 58,619, 58,623 (Nov. 20, 1991) (codified at 50 C.F.R. § 222 (2005)) (concluding “Snake River sockeye salmon (*Oncorhynchus nerka*) is a ‘species’ under the ESA and should be listed as endangered under the ESA”); Endangered and Threatened Species; Threatened Status for Snake River Spring/Summer Chinook Salmon Threatened Status for Snake River Fall Chinook Salmon, 57 Fed. Reg. 14,653, 14,653–54 (Apr. 22, 1992) (codified at 50 C.F.R. § 227 (2005)) (“Snake River spring/summer chinook salmon (*Oncorhynchus tshawytscha*) and Snake River fall chinook salmon are ‘species’ under the Endangered Species Act of 1973 . . . and should be listed as threatened”); *see also* SACRIFICING THE SALMON, *supra* note 2, at 173–217 (discussing the ESA salmon listings in the Columbia Basin as well as other ESA issues).

⁷ *See* SACRIFICING THE SALMON, *supra* note 2, at 213–17 (describing effect of salmon listing on implementation of the ESA).

⁸ The term “hydrosystem” is synonymous with the Federal Columbia River Power System (FCRPS). Comprised of 14 sets of dams, powerhouses, and associated reservoirs, the FCRPS is operated primarily for flood control, navigation, hydropower generation, and irrigation by the United States Army Corps of Engineers (the Corps), the Bonneville Power Administration (BPA), and the United States Bureau of Reclamation (USBOR). NAT’L MARINE FISHERIES SERV., NW. REGION, BIOLOGICAL OPINION: REINITIATION OF CONSULTATION ON OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM 1-1 to 1-3 (2000) [hereinafter 2000 BiOP]. The facilities that constitute the FCRPS include Dworshak, Lower Granite, Little Goose, Lower Monumental, and Ice Harbor dams, powerplants, and reservoirs in the Lower Snake River Basin; Albeni Falls, Hungry Horse, Libby, Grand Coulee, and Chief Joseph dams, powerplants, and reservoirs in the

operators completely abandoned salmon-protective operations.⁹ In fact, the Bush Administration's entire approach to Columbia Basin salmon has been dominated by deception. For example, when a federal judge rejected a Clinton Administration BiOp on hydrosystem operations in 2003 because its provisions were not "reasonably certain" to be implemented,¹⁰ the Bush Administration seized the opportunity to completely revise the standards BiOps must satisfy under the ESA.¹¹ The result produced a new BiOp in late 2004, in which the Bush Administration attempted to reverse an earlier conclusion that Columbia Basin hydrosystem operations jeopardized listed salmon runs—a brazen attempt to ratify the operational status quo for at least five additional years.¹²

This attempt to repudiate the need for changed dam operations followed on the heels of the hydrosystem operators' efforts to effectively abandon improvements in river migration conditions for salmon during the summer of 2004.¹³ Both of the attempts to eliminate hydrosystem operations benefiting salmon failed to survive judicial scrutiny, however. Consequently, the reviewing court rejected the spill proposal and the 2004 BiOp, and during both the 2005 and 2006 salmon migration seasons ordered spills of water at a number of Columbia Basin dams in order to facilitate salmon passage, spills the dam operators attempted to eliminate.¹⁴ As of this writing, with the district court willing to assume an active role in Columbia Basin operations, with appeals of that court's decisions pending before the Ninth Circuit, and with no reversal of the decline in spawning salmon populations in sight, the situation seems especially precarious. A Ninth Circuit reversal of the district court's decisions, or a change of heart by the district court, could effectively restore the status quo *ante*, which would enable the federal agencies operating and regulating the Columbia Basin hydrosystem to resume their practice of deceiving the public into thinking that they were making a meaningful attempt to restore spawning salmon populations, when in fact they were doing no such thing.

Upper Columbia River Basin; and McNary, John Day, The Dalles, and Bonneville dams, powerplants, and reservoirs in the Lower Columbia River Basin. *Id.* at 1-3. The Corps has responsibility for operation and management of the dams operated primarily for hydroelectric production, flood control, and navigation. *Id.*; see also *infra* notes 397-414 and accompanying text. The USBOR has operational control over projects developed for irrigation. 2000 BiOp, *supra*, at 1-1. The BPA plays a crucial role in the dam operations through its authority to market electricity under the Bonneville Project Act of 1937 and its duty to protect and enhance fish and wildlife in the Columbia Basin under the Northwest Power Act. 16 U.S.C. §§ 832-832I (2000); 16 U.S.C. § 839 (2000).

⁹ See, e.g., Michael C. Blumm & Daniel J. Rohlf, *The BPA Salmon/Power Crisis: A Way Out*, 31 ENVTL. L. REP. 10,726 (2001) [hereinafter *BPA Salmon Crisis*] (discussing the 2001 West Coast electricity crisis and BPA's role in it, including invoking waivers of salmon protections in the 2000 BiOp).

¹⁰ Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv. (*NWF v. NMFS I*), 254 F. Supp. 2d 1196, 1213-14 (D. Or. 2003). The case is discussed *infra* notes 294-313 and accompanying text.

¹¹ See *infra* notes 358-75 and accompanying text.

¹² See *infra* note 343 and accompanying text.

¹³ See *infra* notes 318-30 and accompanying text.

¹⁴ See *infra* notes 479-90 and accompanying text.

This Article examines these and other recent developments in the Columbia Basin salmon saga, focusing on the deceptive proposals by the hydrosystem operators and the National Oceanic and Atmospheric Administration (NOAA),¹⁵ the agency charged with ESA implementation, as well as the recent revival of active and skeptical judicial review. Part II begins by explaining the complex relationship between the Columbia Basin's hydropower and its salmon. Part III compares the BiOps NOAA prepared on Columbia Basin hydrosystem operations through 2000, including the litigation they engendered. Part IV considers the 2004 proposal to terminate salmon spills and the court decision that prevented it. Part V discusses the Bush Administration's 2004 BiOp, which would have redefined the key concept of "jeopardy" in such a way as to eliminate the need to take meaningful remedial action, while Part VI examines its judicial rejection. Part VII explores some of the events since the district court struck down the 2004 BiOp, including the court's injunctions and the attempted dismantling of an agency which reported on the success of the relief the court ordered. The Article concludes that while the ESA has proved to be no more capable of reversing the decline of Columbia Basin salmon than did the Northwest Power Act, the advent of judicial skepticism offers some hope for more than mere paper promises about Columbia Basin salmon restoration in the future.

II. THE RELATIONSHIP BETWEEN HYDROPOWER AND SALMON

Between the 1930s and the 1970s, hydropower development reconstructed the mighty flows of the Columbia River and its principal tributary, the Snake River.¹⁶ By the middle of the 1970s, the completion of the four dams on the Lower Snake River—Ice Harbor, Lower Monumental, Little Goose, and Lower Granite—created a series of deep, slackwater pools that transformed Lewiston, Idaho into a deepwater port.¹⁷

In the rush to develop the Columbia Basin, the federal government did not entirely ignore the plight of salmon, however.¹⁸ In 1945, when Congress

¹⁵ National Marine Fisheries Service (NMFS) is a sub-agency of the National Oceanic and Atmospheric Administration (NOAA). NMFS has now changed its name to NOAA Fisheries. See *NWF v. NMFS I*, 254 F. Supp. 2d at 1199 n.2 (explaining the name change). To avoid confusion, this Article refers to NMFS (NOAA Fisheries) as NOAA throughout.

¹⁶ See *SACRIFICING THE SALMON*, *supra* note 2, at 87 (noting FCRPS projects were authorized for flood control, navigation, and irrigation, in addition to hydropower).

¹⁷ The Corps' early plans for development of the Columbia Basin focused on the Columbia River, but, due to strong lobbying from shipping and agricultural interests, the Corps began to endorse the development of the Lower Snake River. See Michael C. Blumm, *Saving Idaho's Salmon: A History of Failure and a Dubious Future*, 28 *IDAHO L. REV.* 667, 672 (1991-1992) [hereinafter *Saving Idaho's Salmon*] (noting that the Corps recommended Lower Snake River development despite its estimate that operation of the dams would return only 15% of their cost).

¹⁸ In 1937, Congress directed the Commissioner of Fisheries to study the effects of the Bonneville Dam on salmon and to propose measures "to attain the full conservation of [the salmon] and the preservation of the fishing industry." S. DOC. NO. 75-87, at 1 (1st Sess. 1937) (quoting S. Res. 113, 75th Cong. (1937)). The report anticipated many of the problems that continue to plague Columbia Basin salmon, including juvenile bypass, unscreened irrigation pumps, uncertain hatchery technology, and nonselective ocean harvests. See *id.* (containing the

authorized the McNary Dam—in the same statute that sanctioned the Lower Snake Dams—it pledged that “adequate provision shall be made for the protection of anadromous fishes by affording them free access to their natural spawning grounds.”¹⁹ Despite this directive suggesting that salmon conservation was a federal priority, hydropower operations have always remained the dominant use of the rivers in the Columbia Basin,²⁰ even though in 1980 Congress passed the Northwest Power Act (NPA), which called for “parity” between salmon conservation and hydropower production.²¹ A dozen years after enactment of the NPA, the listing of salmon under the ESA eclipsed the NPA as the primary tool for salmon conservation. The ESA did not, however, stem the decline of the Columbia Basin salmon populations—largely because NOAA has continued to preserve the hydropower status quo over the survival and recovery needs of salmon.²² This section examines the relationship between hydropower and salmon in the Columbia Basin, first by tracing the evolution of Columbia Basin salmon law, then by examining the current sorry state of the salmon runs and their perilous migration corridor.

A. The Legal Framework: The Northwest Power Act and the Endangered Species Act

Congress first expressed concern about the potential effects of Columbia River hydropower operations on salmon as long ago as 1937, when it enacted the Bonneville Power Act.²³ But it was not until the passage of the NPA in 1980 that Congress seriously attempted to protect and restore the Columbia Basin’s salmon runs. The NPA directed the Northwest Power Planning Council (Council) to create a program to “protect, mitigate, and enhance” damaged salmon runs “to the extent affected by the development

Commission of Fisheries report).

¹⁹ River and Harbor Act of 1945, ch.19, § 2, 59 Stat. 10, 22 (authorizing the McNary Dam, situated just below the confluence of the Columbia and Snake Rivers). Section 2 of the same statute also authorized the four Lower Snake River dams, albeit vaguely. *Id.* at 21 (calling for “such dams as are necessary” for navigation and irrigation). In the years following this authorization, the Corps revamped its plan for the Columbia Basin, calling for “[c]onservation of salmon . . . to the maximum practical extent.” H.R. DOC. NO. 81-531, at 41–42 (2d Sess. 1950) (also proposing “[m]inimum interference . . . with fish and wildlife habitat”).

²⁰ See generally Michael C. Blumm, *Hydropower v. Salmon: The Struggle of the Pacific Northwest’s Anadromous Fish Resources For a Peaceful Coexistence With the Federal Columbia River Power System*, 11 ENVTL. L. 211 (1981) [hereinafter *Hydropower v. Salmon*] (examining conflict between hydropower and salmon).

²¹ Northwest Power Planning Act, 16 U.S.C. §§ 839–839h (2000). See generally Michael C. Blumm & Brad L. Johnson, *Promising a Process for Parity: The Pacific Northwest Electric Power Planning and Conservation Act and Anadromous Fish Protection*, 11 ENVTL. L. 497 (1981) (discussing the Act in an article published soon after Congress passed the legislation).

²² See generally Michael C. Blumm & Greg D. Corbin, *Salmon and the Endangered Species Act: Lessons from the Columbia Basin*, 74 WASH. L. REV. 519 (1999) [hereinafter *Salmon and the ESA*] (examining ESA salmon listings and their aftermath).

²³ Bonneville Power Act, Pub. L. No. 75-329, 50 Stat. 731 (1937) (codified as amended at 16 U.S.C. §§ 832–832I); see *supra* note 18 (describing the study commissioned to examine the effects of Bonneville Dam on salmon). For a history of the dam-building era, see SACRIFICING THE SALMON, *supra* note 2, at 87–108.

and operation” of the hydropower system.²⁴ The ensuing program—the Columbia Basin Fish and Wildlife Program—was once touted by the Council as “the most ambitious effort in the world to save a biological resource,”²⁵ and aimed to achieve parity between salmon and hydropower.²⁶ Despite years of efforts to fulfill this promise, however, the program failed to restore the Columbia Basin’s decimated salmon runs.²⁷

Although Congress passed the modern ESA in 1973, after hydropower had imperiled the Columbia Basin’s salmon runs for most of the twentieth century, the ESA did not become the central player in salmon legal protection until the 1990s.²⁸ Citizens began the ESA era by invoking the public petitioning process for listings after the NPA failed to achieve its objective of putting salmon on par with hydropower.²⁹ In 1991, NOAA listed

²⁴ 16 U.S.C. § 839b(h)(1)(A), (h)(10)(A) (2000).

²⁵ NW. POWER PLANNING COUNCIL, 1987 COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM 5 (1987). The NPPC promulgated the first Columbia Basin Fish and Wildlife Program in 1982. *See generally* NW. POWER PLANNING COUNCIL, 1982 COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM (1982) (detailing program intended to mitigate the ill effects of Columbia River Basin hydropower dams on fish and wildlife); *See generally* Michael C. Blumm, *Implementing the Parity Promise: An Evaluation of the Columbia Basin Fish and Wildlife Program*, 14 ENVTL. L. 277 (1984) (arguing the program could be substantially improved).

²⁶ *See* H.R. REP. NO. 96-976 pt. 1, at 49, 56–57 (1980), *reprinted in* 1980 U.S.C.C.A.N. 5989, 6015 (envisioning that fish and wildlife would be “coequal partners” with hydropower production in the operation of the dams and “on a par” with other project purposes); *see also* SACRIFICING THE SALMON, *supra* note 2, at 129 (describing the origins of the NPA).

²⁷ *See* SACRIFICING THE SALMON, *supra* note 2, at 129 (“After two decades of implementation, this parity goal remains elusive, as hydroelectric operators continue to resist restructuring system operations.”).

²⁸ NOAA Fisheries and United States Fish and Wildlife Service (FWS) actually had begun a review of whether or not upriver salmon populations warranted listings under the ESA in 1978. *See* Upper Columbia River Basin Populations of Salmon (*Oncorhynchus spp.*) and Steelhead (*Salmo gairdneri*), 43 Fed. Reg. 45,628, 45,628 (Oct. 3, 1978) (stating that the NOAA and FWS were reviewing the status of Columbia River Basin populations of Pacific Salmon). But passage of the Pacific Northwest Electric Power and Conservation Planning Act forestalled any ESA listings. *See supra* notes 24–27 and accompanying text; *Salmon and the ESA*, *supra* note 22, at 526 (stating that NOAA and FWS postponed a comprehensive status review in the wake of the Pacific Northwest Electric Power and Conservation Planning Act).

²⁹ The Shoshone-Bannock Tribe petitioned NOAA Fisheries to list Snake River sockeye in 1990. Listing Endangered and Threatened Species: Petition to List Sockeye Salmon in the Snake River, 55 Fed. Reg. 22,942 (June 5, 1990); *see* SACRIFICING THE SALMON, *supra* note 2, at 175 (discussing the petition filed in November 1991 by the Shoshone-Bannock Tribe, concerning Snake River sockeye). The public petitioning process is an undervalued aspect of ESA implementation. *See Salmon and the ESA*, *supra* note 22, at 586–87 (discussing the importance of citizen petitions); *see also* Holly Doremus, *Adaptive Management, The Endangered Species Act, and the Institutional Challenge of “New Age” Environmental Protection*, 41 WASHBURN L. J. 50, 58 (2001) (arguing that listings of “species lacking charisma or standing in the way of development” are most often initiated by citizen petition).

Following the tribal petition, a coalition of environmental groups petitioned for listings of the Snake River spring, summer, and fall chinook and Lower Columbia River coho. Listing Endangered and Threatened Species: Petitions to List Snake River Spring, Summer, and Fall Chinook Salmon, and Lower Columbia River Coho Salmon, 55 Fed. Reg. 37,342 (Sept. 11, 1990). The petitioners included Oregon Trout, Northwest Environmental Defense Center, the Oregon and Idaho chapters of the American Fisheries Society, American Rivers, and Oregon Natural Resources Council. *See Unraveling Parity*, *supra* note 5, at 714 n.316.

On the failure of the NPA, *see id.* at 713–14 (observing that “[a] decade of attempting to

the Snake River sockeye as endangered, and the next year listed two species of Snake River chinook as threatened.³⁰ By 2005, NOAA had listed thirteen Columbia Basin salmon runs under the ESA.³¹

The ESA protects listed threatened and endangered species,³² defining “species” to include distinct population segments (DPSs).³³ But the statute fails to define DPS, a phrase with no independent scientific meaning. Because salmon populations consist of both natural and hatchery-derived fish, NOAA invented the term “evolutionarily significant unit” (ESU) to define a salmon DPS.³⁴ Hatchery fish may be part of an ESU, but the agency largely excluded hatchery fish from the initial salmon listings.³⁵ A court decision forced NOAA to reconfigure its ESUs to include more hatchery fish, however.³⁶ But, somewhat surprisingly, this has not produced a major

design and implement [the Columbia River Basin Fish and Wildlife Program] has failed to reverse the serious decline of wild stocks throughout the region”). See also SACRIFICING THE SALMON, *supra* note 2, at 173 (noting among the Columbia Basin Fish and Wildlife Plan’s deficiencies “imperfect design, poor enforcement, and lack of authority over harvest management, hatchery operations, and habitat-damaging activities”).

³⁰ NOAA Fisheries listed the Snake River sockeye as endangered in 1991. Endangered Status for Snake River Sockeye Salmon, 56 Fed. Reg. 58,619 (Nov. 20, 1991). NOAA Fisheries grouped the Snake River spring and summer chinook into a single “evolutionarily significant unit” (ESU) and listed it, along with Snake River fall chinook, as threatened in 1992. See Threatened Status for Snake River Spring/Summer Chinook Salmon, Threatened Status for Snake River Fall Chinook Salmon, 57 Fed. Reg. 14,653, 14,654 (Apr. 22, 1992) (codified at 50 C.F.R. § 223.102) (suggesting that genetic and life history similarities warranted listing the spring and summer runs together).

³¹ For a general discussion of the listings of Columbia Basin salmon, see Michael Blumm, *Columbia River Basin*, in 6 WATERS AND WATER RIGHTS 63, 155–60 (Robert E. Beck ed., 2005). See also *infra* notes 36–37 (discussing the controversy over the listing of Oregon coastal coho, which included hatchery fish).

³² Species may be listed as either endangered or threatened. An “endangered” species “is [one] in danger of extinction throughout all or a significant portion of its range.” Endangered Species Act of 1973, 16 U.S.C. § 1532(6) (2000). A “threatened” species is one that is “likely to become . . . endangered.” *Id.* § 1532(20). The decision whether to list a species is based on five factors: 1) habitat loss or modification, 2) overharvesting, 3) disease or predation, 4) inadequate regulatory protection, and 5) other natural or manmade factors. *Id.* § 1533(a).

³³ The ESA defines “species” as “any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.” *Id.* § 1532(16).

³⁴ A salmon population is defined as an “evolutionarily significant unit” (ESU) if it meets two criteria: first, the population must be “substantially reproductively isolated from other nonspecific populations”; second, it must represent an “important component in the evolutionary legacy of the species.” Policy on Applying the Definition of Species Under the Endangered Species Act to Pacific Salmon, 56 Fed. Reg. 58,612, 58,612 (Nov. 20, 1991). See generally Daniel J. Rohlf, *There’s Something Fishy Going on Here: A Critique of the National Marine Fisheries Service’s Definition of Species Under the Endangered Species Act*, 24 ENVTL. L. 617 (1994) (criticizing the ESU policy).

³⁵ Under the longstanding pre-2005 policy, NOAA Fisheries included hatchery fish in a listing only when they were “essential for recovery,” meaning that hatchery fish constituted a “substantial portion of the genetic diversity remaining in the species.” Interim Policy on Artificial Propagation of Pacific Salmon Under the Endangered Species Act, 58 Fed. Reg. 17,573, 17,575 (Apr. 5, 1993).

³⁶ A coalition of agricultural, forestry, and development interests challenged the 1998 listing of the Oregon Coast coho ESU, arguing that because NOAA Fisheries included hatchery coho in the ESU, but not the hatchery fish in the listing, the agency made an impermissible distinction

change in the landscape of the application of the ESA in the Columbia Basin.³⁷

A species's listing implicates the ESA's protections, including bans on sales, imports, exports, and "takes" of endangered species and, in some circumstances, threatened species.³⁸ Section 7 of the ESA also prohibits federal agencies from proceeding with an action that is likely to jeopardize a listed species or adversely modify its critical habitat.³⁹ To decide whether an

under the ESA. *See* *Alsea Valley Alliance v. Evans*, 161 F. Supp. 2d 1154, 1161 (D. Or. 2001) (outlining the plaintiffs' claim that the ESA does not allow listings below the DPS level). Judge Michael Hogan agreed with the plaintiffs. *See id.* at 1162 (determining that NOAA Fisheries made improper distinctions between natural and hatchery fish). NOAA Fisheries therefore promulgated a new policy requiring that if NOAA Fisheries included hatchery fish in an ESU, the agency must also include them in a listing of that ESU. Policy on the Consideration of Hatchery-Origin Fish in Endangered Species Act Listing Determinations, 70 Fed. Reg. 37,204, 37,215 (June 28, 2005).

³⁷ Although inclusion of hatchery fish boosts a population's numbers, under NOAA Fisheries' 2005 policy, when making listing decisions, the agency will consider the effects hatchery fish have on an ESU, and how hatchery fish affect each of four characteristics, including 1) abundance, 2) productivity, 3) genetic diversity, and 4) spatial distribution. *Id.* NOAA's reevaluation of Columbia Basin salmon listings under this new standard has produced only one change to date: Lower Columbia River coho moved from a mere candidate for listing to having endangered status. Final Listing Determinations for 16 Evolutionarily Significant Units of West Coast Salmon, and Final 4(d) Protective Regulations for Threatened Salmon ESUs, 70 Fed. Reg. 37,160, 37,193 (June 28, 2005). NOAA Fisheries did extend the deadline for final listing determinations on the Oregon Coastal coho and Columbia Basin steelhead. *See* 6-month Extension of the Final Listing Determination for Oregon Coast Evolutionarily Significant Unit of Coho Salmon, 70 Fed. Reg. 37,217 (June 28, 2005) (extending deadline to review Oregon's assessment of the coastal coho's viability); 6-month Extension of the Final Listing Determinations for 10 Evolutionarily Significant Units of West Coast *Oncorhynchus mykiss*, 70 Fed. Reg. 37,219 (June 28, 2005) (delaying a decision on a proposal to downlist Upper Columbia River steelhead from endangered to threatened to review new scientific information and resolve a conflict regarding anadromous and resident steelhead populations).

The biggest change occasioned by the court-induced review of listing policy occurred on January 19, 2006, when NOAA Fisheries withdrew its proposed rule to list the Oregon coastal coho as threatened. *See* *Withdrawals of Proposals to List and Designate Critical Habitat for the Oregon Coast Evolutionarily Significant Unit of Coho Salmon*, 71 Fed. Reg. 3033, (Jan. 19, 2006) (reasoning that, despite concerns expressed by its own scientists that ocean conditions could produce a dramatic decline during the next few years, the best available information demonstrated that the coastal coho is not likely to become endangered); *see also* Blumm, *supra* note 31, at 160 (suggesting that development interests desired widespread delistings in NOAA Fisheries 2005 policy, while wild fish proponents objected to the listing of any hatchery fish, and that both were disappointed in the result). There is little doubt that more litigation over NOAA's listing policy will be forthcoming.

³⁸ Endangered Species Act of 1973, 16 U.S.C. § 1538 (a)(1)(A)–(D) (2000). Prohibitions against "taking" threatened species may be proscribed by the so-called 4(d) rules when the listing agency deems the provisions "necessary and advisable." *Id.* § 1533(d). For a description of the 4(d) rules applicable to salmon, *see* Blumm, *supra* note 31, at 167–69. A "take" means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Id.* § 1532(19). The ESA regulations define "harm" to include "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3(c)(3) (2005). In *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687 (1995), the Supreme Court upheld the regulatory definition of "harm."

³⁹ *See* 16 U.S.C. § 1536(a)(2) (2000) (describing "agency action" as "any action authorized, funded, or carried out by . . . [a federal] agency"). The ESA does not define "jeopardy," but the

action is likely to jeopardize a listed species, the federal “action” agency must first determine, once it discovers the presence of a listed species in the area of the proposed action, whether its proposed action might affect the species.⁴⁰ If the action agency determines that there is a possible effect, it must prepare a biological assessment evaluating the proposed action’s likely effects.⁴¹

The action agency must initiate a formal consultation with the appropriate agency to determine whether the proposed action is likely to jeopardize the species or result in adverse critical habitat modification only if the biological assessment indicates that the proposal is likely to affect adversely either the listed species or its critical habitat.⁴² Otherwise, the action may proceed without formal consultation.⁴³ This determination is made public as a biological opinion (BiOp), in which NOAA or the United States Fish and Wildlife Service (FWS) explains the analytical basis of its determination and suggests reasonable and prudent alternatives (RPAs) as mitigation measures if the action would otherwise result in jeopardy or adverse critical habitat modification.⁴⁴

The Columbia Basin hydropower operations have been the subject of numerous BiOps over the last dozen years. After section B of this Part describes the current status of Columbia Basin salmon, and section C highlights the harm the hydropower system causes migrating juvenile salmon and possible mitigation measures for such harm, Part III of the Article examines these BiOps through a historical lens, comparing the essential elements of each to those of prior BiOps.

B. Current Status of the Columbia River Basin’s Listed Salmon Runs

At the time NOAA published its 2004 BiOp, twelve Columbia Basin salmon species were listed under the ESA.⁴⁵ Most of these species were

ESA regulations define “jeopardize” to mean “to engage in an action that reasonably would be expected, directly or indirectly, to 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.” 50 C.F.R. § 402.02 (2005).

⁴⁰ 16 U.S.C. § 1536(c)(1) (2000). This determination must be made on “the best scientific and commercial data available.” *Id.* See generally Holly Doremus, *The Purposes, Effects, and Future of the Endangered Species Act’s Best Available Science Mandate*, 34 ENVTL. L. 397 (2004) (discussing use of commercial and scientific data under the ESA).

⁴¹ See 16 U.S.C. § 1536(c)(1) (2000) (stating that the action agency has 180 days to complete its biological assessment).

⁴² *Id.* § 1536(a); see also 50 C.F.R. § 402.14 (2005) (formal consultation regulations).

⁴³ See 50 C.F.R. § 402.13(a) (2005) (stating that an action may proceed without formal consultation only if it will not have an adverse impact on either species or its critical habitat).

⁴⁴ 16 U.S.C. § 1536(a)(2), (b)(3)(A) (2000); see also 50 C.F.R. § 402.14(g) (2005) (describing consultation agency’s obligations).

⁴⁵ The listed salmon were 1) Snake River spring/summer chinook, 2) Snake River fall chinook, 3) Upper Columbia River spring chinook, 4) Upper Willamette River chinook, 5) Lower Columbia River chinook, 6) Snake River steelhead, 7) Upper Columbia River steelhead, 8) Middle Columbia River steelhead, 9) Upper Willamette River steelhead, 10) Lower Columbia River steelhead, 11) Columbia River chum, and 12) Snake River sockeye. NAT’L OCEAN & ATMOSPHERE ADMIN., DIV. OF FISHERIES, ENDANGERED SPECIES ACT—SECTION 7 CONSULTATION BIOLOGICAL OPINION: CONSULTATION ON REMAND FOR OPERATION OF THE COLUMBIA RIVER POWER

listed as threatened; only two were listed as endangered—the Snake River sockeye and the Upper Columbia River spring chinook.⁴⁶ This section summarizes the status of these salmon runs at the time of the 2004 BiOp.

1. Snake River Runs

Current Snake River salmon runs are a mere shadow of their former abundance and vigor. The Hells Canyon Dam complex, completed in 1967, and the four Lower Snake River dams, the last of which was completed in 1975, have had a devastating impact on Snake River chinook species, effectively eliminating nearly 50% of their historical spawning habitat.⁴⁷ The historic total adult Snake River spring/summer chinook production probably exceeded 1.5 million per year, but the average return between 1997 and 2001 was roughly 3,700, a decline of nearly 98.8%.⁴⁸

The years 2002 and 2003 witnessed record high returns, but hatchery fish comprised 69% of the returns.⁴⁹ Further, NOAA attributed much of the increase to favorable ocean cycles.⁵⁰ Nonetheless, in 2004, a federal Biological Review Team (BRT) concluded that the Snake River spring/summer chinook run was “likely to become endangered in the foreseeable future.”⁵¹

Although no historic estimates of Snake River fall chinook exist, the species’ returns from 1985 to 1993 were precariously low, ranging from 114

SYSTEM AND 19 BUREAU OF RECLAMATION PROJECTS IN THE COLUMBIA BASIN 4-1 to 4-2 (Nov. 30, 2004) [hereinafter 2004 BiOp] (revised and reissued pursuant to court order, Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv., Civ. No. CV 01-640-RE, 2005 WL 3576843 (D. Or. Dec. 29, 2005)). 13 are now listed. See *supra* notes 36–37.

⁴⁶ 2004 BiOp, *supra* note 45, at 4-1 to 4-2.

⁴⁷ See *id.* at 4-3, 4-6 (noting that Snake River spring/summer chinook have been extirpated above the Hells Canyon Dam complex, which eliminated access to 211 miles of historic spawning ground for the Snake River fall chinook). Snake River fall chinook currently have access to only about 22% of historical spawning habitat. *Id.* at 4-6.

⁴⁸ Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv. (*NWF v. NMFS III*), No. CV 01-640-RE, CV 05-23-RE, 2005 WL 1278878, at *23 (D. Or. May 26, 2005).

⁴⁹ *Id.*

⁵⁰ 2004 BiOp, *supra* note 45, at 4-5; see Proposed Listing Determinations for 27 ESUs of West Coast Salmonids, 69 Fed. Reg. 33,102, 33,114 (June 14, 2004) [hereinafter Proposed Listing of 27 ESUs] (stating that salmon population increases are mostly due to favorable ocean conditions). Beginning around 1998, ocean temperatures cooled, and studies show that cooler ocean temperatures correlate with higher salmon abundances. *Id.* The geometric mean for Snake River spring/summer chinook returns for the period 2001 to 2003 represented a 548% increase over the base period of 1996 to 2000. *Id.* As opposed to an arithmetic mean, a geometric mean is an average interpreted according to the product of a series of numbers. Geometric means are useful for describing average growth rates and are also useful when a data set is highly skewed. See Dictionary Laborlaw Talk.com, <http://encyclopedia.laborlawtalk.com/Mean> (last visited July 15, 2006); see also *Geometric Mean*, <http://www.cmh.edu/stats/definitions/geometric.htm> (last visited July 15, 2006).

⁵¹ *NWF v. NMFS III*, 2005 WL 1278878, at *23. The Biological Review Team (BRT) included salmon biologists and other scientists from the NOAA Fisheries, FWS, and the United States Geological Survey. Proposed Listing of 27 ESUs, *supra* note 50, at 33,110. NOAA Fisheries organized the team to comprehensively study and review the viability and extinction risk of each of the 27 proposed listings of salmon ESUs on the West Coast. *Id.* at 33,140.

to 732 fish.⁵² Like Snake River spring/summer chinook, Snake River fall chinook experienced increased return rates during 2002 and 2003, but 64% were hatchery fish.⁵³ Moreover, since NOAA acknowledged that the favorable ocean conditions of 2002–03 would not last, the Snake River fall chinook run had a moderately high risk of becoming endangered.⁵⁴

Snake River sockeye salmon face the most serious threat of extinction of all listed salmon species. Historically, sockeye were abundant throughout the Snake River Basin, spawning in numerous lakes.⁵⁵ But today, Snake River sockeye return only to Redfish Lake, and their numbers are alarmingly low.⁵⁶ Since 1991, when the Snake River sockeye was first listed under the ESA, only sixteen wild fish have returned to spawn in Redfish Lake.⁵⁷ The species is effectively on life support.

Like the Snake River chinook species, Snake River steelhead faced major restrictions on its spawning habitat due to the completion of the Hells Canyon Dam complex in the 1960s.⁵⁸ Historic population data is scarce. Although it is estimated that 40,000 to 60,000 adults may have returned to spawn in the Clearwater River system in the pre-Hells Canyon Dam era, this number may have included up to 86% hatchery fish.⁵⁹ The natural spawner returns for the period of 1996 to 2000 averaged only around 10,000 fish.⁶⁰ The years of 2001 to 2003 saw a return rate increase of 258%, but long-term population growth estimates remained below the rates needed for a ratio of one-to-one replacement, meaning that the population continued to decline.⁶¹

2. Columbia River Runs

Of all the Columbia Basin runs, none have fared worse than those of the Upper Columbia River. The Grand Coulee Dam, completed in 1941, is a major barrier to spawning habitat for salmon, excluding Upper Columbia River runs from nearly fifty percent of their historic spawning grounds.⁶² Both Upper Columbia River spring chinook and steelhead continue to spawn precariously in drainages between Rock Island Dam and Chief Joseph Dam (immediately below Grand Coulee), the limit of upstream passage today.⁶³ In

⁵² *NWF v. NMFS III*, 2005 WL 1278878, at *24.

⁵³ 2004 BiOp, *supra* note 45, at 4-7.

⁵⁴ *See id.* at 4-6 (indicating that despite recent population increases, the ESU was still at risk).

⁵⁵ *Id.* at 4-22. Historic spawning lakes included Alturas, Pettit, Redfish, Stanley, and Yellowbelly in the Sawtooth Valley and Wallowa, Payette, and Warm Lakes. *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.* In 2000, over 250 adults returned, including artificially propagated fish, but the numbers fell again in 2001 and 2002 when only 30 fish returned. *Id.* at 4-22 to 4-23.

⁵⁸ *Id.* at 4-12.

⁵⁹ *NWF v. NMFS III*, No. CV 01-640-RE, CV 05-23-RE, 2005 WL 1278878, at *26 (D. Or. May 26, 2005).

⁶⁰ 2004 BiOp, *supra* note 45, at 4-14.

⁶¹ *Id.* at 4-13, 4-14.

⁶² *Id.* at 4-14.

⁶³ *NWF v. NMFS III*, 2005 WL 1278878, at *26. Current populations of these species continue to spawn in the Wenatchee, Methow, and Entiat Rivers. *Id.* Upper Columbia River steelhead also spawn in the Okanogan River. *Id.*

1998, however, fewer than one-hundred wild Upper Columbia River spring chinook returned.⁶⁴ Despite increasing returns during the period of 2001 to 2003, this species faces a high rate of extinction, primarily because hatchery fish account for approximately seventy to ninety percent of the returns.⁶⁵ The BRT concluded in 2004 that Upper Columbia River steelhead were in danger of extinction because hatchery fish constituted a high percentage of returning fish.⁶⁶

All of the Lower Columbia River listed species—chinook, steelhead, and coho—have sustained losses of thirty-five to forty percent of historic habitat due to impassable dams.⁶⁷ Additionally, hatchery fish comprise most of these salmon populations.⁶⁸ Although experiencing increases in abundance of returning spawners around 2001, Lower Columbia River chinook still face long-term risks due to inadequate replacement rates.⁶⁹ Of the twenty populations where natural production still occurs, only one has an average spawner abundance in excess of one thousand fish.⁷⁰

Lower Columbia River steelhead exhibit particularly small abundance averages; in fact, not a single population demonstrated a recent five-year mean abundance over 750 fish.⁷¹ Although some populations experienced overall abundance increases during 2001, other populations showed declines.⁷² As a result, a majority of the BRT concluded that Lower Columbia River steelhead were at risk of becoming endangered in the foreseeable future.⁷³ Of the twenty-three historic populations of Lower Columbia River coho, only two have any significant remaining natural productivity, and those two show recent five-year mean spawner abundances of fewer than

⁶⁴ *Id.*

⁶⁵ 2004 BiOP, *supra* note 45, at 4-8 (suggesting that neither major habitat restoration efforts nor other protective measures have substantially decreased the likelihood of extinction). Returning spawners, including hatchery and natural-origin fish, increased by approximately 5,000 from the period of 1992 to 1996 to that of 1996 to 2001. *Id.* at 4-15. See also Proposed Listing of 27 ESUs, *supra* note 50, at 33,127 (reporting that “despite strong returns in 2001, both recent five-year and long-term productivity trends remain below replacement”); *id.* at 33,140 (the average proportion of wild spawners declined by 10% during recent years).

⁶⁶ *Id.*

⁶⁷ See 2004 BiOP, *supra* note 45, at 4-10, 4-19, 4-24 (explaining that the Lower Columbia River chinook and steelhead each have lost approximately 35% of historic spawning habitat, while the Lower Columbia coho has lost nearly 40%). Although historic abundance levels of the Lower Columbia River chinook are sparse, cannery records indicate that these runs may have peaked at nearly 4.6 million fish in 1883. *NWF v. NMFS III*, 2005 WL 1278878, at *27.

⁶⁸ See 2004 BiOP, *supra* note 45, at 4-11, 4-19, 4-24 (noting concern among the BRT that disproportionately high numbers of hatchery fish comprise returning spawners).

⁶⁹ See Proposed Listing of 27 ESUs, *supra* note 50, at 33,126 (indicating further that eight to ten historic populations have already faced or are on the brink of extirpation).

⁷⁰ 2004 BiOP, *supra* note 45, at 4-10.

⁷¹ See Proposed Listing of 27 ESUs, *supra* note 50, at 33,138 (suggesting that only half of all historic populations now have any significant natural production).

⁷² See 2004 BiOP, *supra* note 45, at 4-20 (estimating that, in the aggregate, only 4,429 spawners returned during 2001 compared to an average of 6,333 returning spawners between 1996 and 2000).

⁷³ *NWF v. NMFS III*, 2005 WL 1278878, at *28.

1,500 fish.⁷⁴ For this reason, the BRT determined that the species was at risk of extinction.⁷⁵

Two other Columbia River runs—the middle Columbia River steelhead and the Columbia River chum—convey much the same story as the other listed salmon species: where they once were bountiful and inhabited many different rivers and tributaries, they now consist of hatchery-inflated populations with limited spawning habitat.⁷⁶ NOAA estimated that nearly ninety percent of historic Columbia River chum populations have become extinct.⁷⁷ Although Middle Columbia River steelhead returns increased by nearly 10,000 fish between 1996–2000 and 2001–02,⁷⁸ estimated returns of Columbia River chum, even including hatchery chum, showed a sixteen percent decline.⁷⁹

3. Willamette River Runs

The Willamette River runs listed under the ESA consist of the Upper Willamette River chinook and the Upper Willamette River steelhead. Both species have experienced significant loss of spawning grounds due to the thirty-seven dams that occupy their historic habitat.⁸⁰ During the 1920s, adult runs of the Upper Willamette River chinook may have included as many as 275,000 fish; however, recent estimates of twenty populations with spawning production revealed an exceedence of 1,000 fish in only one population.⁸¹ Consequently, the BRT determined that natural populations of Upper Willamette River chinook are “likely to become endangered within the foreseeable future.”⁸²

⁷⁴ See Proposed Listing of 27 ESUs, *supra* note 50, at 33,133 (describing the Sandy and Clackamas River populations).

⁷⁵ See *NWF v. NMFS III*, 2005 WL 1278878, at *28 (indicating also that a substantial minority of the BRT thought that the species was likely to become endangered).

⁷⁶ See *id.* at *27 (explaining that Middle Columbia River steelhead once had a historical run size of an estimated 300,000 fish but lost the Upper White Salmon and Upper Deschutes River populations to dam blockages, and that the Columbia River chum were historically reported in nearly every river in the Lower Columbia Basin). There are seven steelhead hatchery programs supporting Middle Columbia River populations and three supporting Columbia River chum populations. See 2004 BiOP, *supra* note 45, at 4-17, 4-21 (noting, however, that the artificial propagation programs did little to substantially reduce extinction risks).

⁷⁷ Proposed Listing of 27 ESUs, *supra* note 50, at 33,134.

⁷⁸ See 2004 BiOP, *supra* note 45, at 4-18 (reporting that the geometric mean between these periods increased 143%, up from 7,228 fish in 1996 to 2000 to 17,553 between 2001 and 2002).

⁷⁹ See *id.* at 4-22 (return fish during the period of 2001 to 2003 averaged about 1,776, while returns between 1996 and 2000 averaged 2,114).

⁸⁰ See Proposed Listing of 27 ESUs, *supra* note 50, at 33,126, 33,138 (citing a loss of spawning ground as significant factors in each of the species' decline). See also *NWF v. NMFS III*, 2005 WL 1278878, at *29 (observing that the multitude of dams in the Willamette River Basin has blocked access to more than 700 kilometers of spawning streams and rivers, which amounts to a 75% reduction in spawning habitat for Upper Willamette River chinook).

⁸¹ See *NWF v. NMFS III*, 2005 WL 1278878, at *29 (noting that hatchery production accounts for approximately 90% of spawners).

⁸² See Proposed Listing of 27 ESUs, *supra* note 50, at 33,126 (stating that the minority opinion was that the species was in danger of extinction).

The BRT reached the same conclusion for Upper Willamette River steelhead.⁸³ The recent five-year mean abundance was low (5,819 adults), long-term trends in abundance are negative for all populations in the ESU, and approximately one-third of the ESU's historical spawning habitat is now blocked.⁸⁴ The BRT was also concerned that the continued release of non-native summer steelhead posed an ESU diversity risk.⁸⁵

4. *The Outlook*

Although ocean conditions during 2000–2003 produced a boon in salmon productivity, as evidenced by increases in returning spawner numbers for almost all populations, all listed salmon runs in the Columbia Basin face the likelihood of endangerment, if not extinction, within the foreseeable future.⁸⁶ Most current ESUs are heavily supported by hatchery fish, and the effects of increased numbers of hatchery fish interspersed with naturally reproducing stocks is unknown.⁸⁷ The high returns reported at the turn of the twenty-first century were the result of favorable ocean conditions, not improvements in hydropower operations.

The following section describes the causes of declining Columbia Basin salmon populations as well as the hydropower operational changes that could mitigate some of the dams' most devastating effects. Part III demonstrates that, despite longstanding calls for improvements in hydropower operations, NOAA has asked hydropower agencies to implement few, if any, meaningful salmon protections. Later Parts illustrate how salmon advocates have been forced to resort to litigation in an attempt to force the agencies to supply the protection that the ESA promises but has yet to deliver.

C. A Lethal River: Juvenile Migration

Long before adoption of the existing legal framework, the Columbia Basin developed a network of hatcheries to bolster the numbers of salmon available for harvesters, beginning in 1877.⁸⁸ Throughout the twentieth

⁸³ See *id.* at 33,138 (basing its determination on conclusions that hatchery fish did not obviate the risks posed to productivity, spatial structure, or diversity).

⁸⁴ See *id.* (concluding that no population had a recent five-year average abundance of more than 750 spawners).

⁸⁵ *Id.*

⁸⁶ Voting tallies from the BRT's assessment of listed salmon stocks in 2004 showed that a majority of the BRT believed extinction was imminent for four of the ESUs, including Upper Columbia River spring chinook, Upper Columbia River steelhead, Lower Columbia River coho, and Snake River sockeye. See *NWF v. NMFS III*, 2005 WL 1278878, at *23 (showing vote distribution). For the remainder of the ESUs, the majority of the BRT determined all were likely to become endangered within the foreseeable future. See *id.* The only ESU on which the vote was nearly split was the Middle Columbia River steelhead, with 71 voting for likely to become endangered, one voter believing that the ESU faced extinction, and 68 indicating they did not think the ESU was likely to become endangered. *Id.*

⁸⁷ See Proposed Listing of 27 ESUs, *supra* note 50, at 33,142 (describing uncertainty concerning long-term impacts of increasing hatchery populations).

⁸⁸ The first hatchery in the Columbia Basin was located on the Clackamas River by

century, hatcheries remained the primary means of supplementing harvests; they eventually became a narcotic by which hydropower could continue its devastating effects on already depleted salmon runs.⁸⁹

The promise of hatcheries proved elusive, primarily because hatchery operators released smolts (juvenile salmon) into a lethal river, one rife with salmon death traps, such as power turbines,⁹⁰ high temperatures,⁹¹ and

Livingston Stone and constructed for Oregon cannery owners. *See* SACRIFICING THE SALMON, *supra* note 2, at 109–11 (detailing the early history of hatcheries).

⁸⁹ *See id.* at 109 (explaining continued reliance on hatcheries as a function of ensuring an adequate harvest for Indian fishers while maintaining non-Indian harvests). Hatcheries have also been designed as “mitigation” for the effects of Columbia Basin dams. *Id.*

⁹⁰ The Northwest Power Planning Council stated the problem succinctly:

[R]esearch has shown that as juvenile salmon and steelhead are drawn through power turbines, they are exposed to conditions which can cause injury and death in a variety of ways. Changes in pressure within each turbine are the primary contributor to juvenile mortality as the fish move from the top of the dam through the turbine intake and out a tunnel at the base of the dam. The impact of the moving turbine blades and the shearing action of water in the turbine can also cause injuries or death. In addition, juvenile salmon and steelhead become stunned and disoriented after passing through the turbines, thus increasing their vulnerability to predators, especially squawfish, which are abundant at the base of each dam.

NW. POWER PLANNING COUNCIL, 1984 COLUMBIA BASIN FISH AND WILDLIFE PROGRAM § 401 (1982). Juvenile salmon suffer mortality rates of 6 to 15% at each dam, resulting from turbine impacts. *See* 2000 BiOp, *supra* note 8, at 6-18.

⁹¹ *See* Craig N. Johnston, *Salmon and Water Temperature: Taking Endangered Species Seriously in Establishing Water Quality Standards*, 33 ENVTL. L. 151, 153–54 (2003) (“High temperatures can lead to a host of ill effects in salmon, including elevated risks of disease, fatality, increased predation, and barriers to migration.”) (citations omitted). High temperatures in the waterways of the Columbia Basin are directly attributable to the dams and reservoirs. As the Environmental Protection Agency wrote in a guidance document related to water temperature in the Pacific Northwest:

Dams and their reservoirs can affect thermal patterns in a number of ways. They can increase maximum temperatures by holding waters in reservoirs to warm, especially in shallow areas near shore. Reservoirs, due to their increased volume of water, are more resistant to temperature change which results in diurnal temperature variation and prolonged periods of warm water. For example, dams can delay the natural cooling that takes place in late summer-early fall thereby harming later summer-fall migration runs. Reservoirs also inundate alluvial river segments, thereby diminishing the groundwater exchange between the river and the riverbed (i.e., hyporheic flow) that cools the river and provides cold water refugia during the summer. Further, dams can significantly reduce the river flow rate, thereby causing juvenile migrants to be exposed to high temperatures for a much longer time than they would under a natural flow regime.

ENVTL. PROT. AGENCY, REGION 10 GUIDANCE FOR PACIFIC NORTHWEST STATE AND TRIBAL TEMPERATURE WATER QUALITY STANDARDS 7 (2003). The EPA guidance document also noted that dams can cause water temperatures to drop significantly, particularly when the bottom, cold layer of water is released from a thermally stratified reservoir behind a dam. *Id.* High water temperatures were factors in listing Lower Columbia River chinook, Snake River spring/summer chinook, and Upper Willamette chinook. *See* Threatened Status for Snake River Fall Chinook Salmon, 57 Fed. Reg. 14,653, 14,655–56 (Apr. 22, 1992) (codified at 50 C.F.R. § 223.102(a)(9) (2000)) (Snake River spring/summer chinook); Threatened Status for Three Chinook Salmon Evolutionarily Significant Units (ESUs) in Washington and Oregon, and Endangered Status for One Chinook Salmon ESU in Washington, 64 Fed. Reg. 14,308, 14,323 (Mar. 24, 1999) (codified at 50 C.F.R. §§ 223.102(a)(5)–(6), 224.101(a) (2005)) (Lower Columbia

massive slack-water pools,⁹² all of which produce high mortality rates.⁹³ Two basic means of reducing juvenile salmon mortalities as they migrate downriver are: 1) removing smolts from the river and either barging or trucking them to the estuary at the mouth of the Columbia River, or 2) improving in-river passage to speed migration and divert juveniles from dangerous dam machinations.⁹⁴

1. Out-of-River Migration: The Juvenile Transport Program

Throughout the course of recent salmon history, beginning as early as 1968, hydropower operators have favored the artificial transportation program as the preferred means of fish passage.⁹⁵ Transportation remains the primary means of fish passage because it minimizes costs to the hydropower system.⁹⁶ The transportation program collects smolts at McNary Dam on the Columbia River and at Lower Granite, Little Goose, and Lower Monumental dams on the Lower Snake River, funnels the fish into either barges or trucks, and transports them downriver below the dams to avoid

River chinook and Upper Willamette chinook).

⁹² The House Commerce Committee included the following in its 1980 report on the Pacific Northwest Electric Power Planning and Conservation Act, P.L. 96-501:

Smolts surviving passage through the turbines of one dam enter the large, slow-moving reservoir of water formed by the next dam. The river no longer has the strong, swift current needed to carry the smolts rapidly downstream and out to sea. It now takes young fish more than twice as long to migrate downstream as it did before the dams were built. The slower the downstream migration, the more smolts are lost to predators.

H.R. REP. NO. 96-976, pt. I, at 46 (1996), *reprinted in* 1980 U.S.C.C.A.N. 5989, 6012. *See also* THE INDEP. SCIENTIFIC GROUP, RETURN TO THE RIVER 235 (2000) [hereinafter RETURN TO THE RIVER 2000] (describing the condition of the Columbia River as lacustrine, meaning more like a lake than a river).

⁹³ *See infra* notes 101-05 and accompanying text. Hatchery fish also compete with naturally spawning fish for food and habitat and cause adverse genetic effects in naturally spawning fish. *See* SACRIFICING THE SALMON, *supra* note 2, at 190 (noting NOAA Fisheries' concern that hatchery operations cause genetic introgression and competition for food and habitat).

⁹⁴ One of the authors of this Article once noted that Columbia Basin salmon restoration "has created the odd situation of sometimes trucking salmon on Interstate 84, the highway paralleling the Columbia, while grain and other agricultural products float in barges on the river." *See* SACRIFICING THE SALMON, *supra* note 2, at 281.

⁹⁵ *See* Am. Rivers v. Nat'l Marine Fisheries Serv., 126 F.3d 1118, 1121 (9th Cir. 1997) (noting that artificial transportation began in 1968 as an experiment at Ice Harbor Dam); *see also* JOSEPH E. TAYLOR III, MAKING SALMON: AN ENVIRONMENTAL HISTORY OF THE NORTHWEST FISHERIES CRISIS 245 (1999) (discussing the nearly four-decade history of artificial transportation).

⁹⁶ *See* 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, 1009 (1998) [hereinafter *The Case for Dam Breaching*] (claiming that the transportation program is more "politically palatable" than other fish passage alternatives, namely spill); *see also* Blumm, *supra* note 31, at 121, 185 (observing that the transportation program does not result in lost hydropower revenue). Spill, on the other hand, produces a direct loss of revenue of hydropower operations because the water that would otherwise flow through turbines and generate power is spilled over the dams. *See infra* notes 490 (describing BPA's own estimation of its lost revenue due to a mandatory spill order in 2005).

the dams' power turbines and the reservoirs' slack water.⁹⁷ Although the transportation program prevents some direct juvenile salmon mortalities, it produces indirect or delayed mortalities. Transportation seems to interfere with homing behavior and causes adverse genetic selectivity.⁹⁸ Moreover, salmon experience stress when they are siphoned from the river, handled, tagged, and stored in an artificial environment, increasing their vulnerability to disease and predation.⁹⁹ The combination of these effects appears to result in so-called "delayed mortality," raising questions about whether the transportation program actually aids salmon recovery—that is, whether transported fish return to their natal spawning grounds in greater numbers than they would without the program.¹⁰⁰

The potential for high rates of delayed mortality to juvenile salmon has led numerous studies to question the biological integrity and efficacy of the transportation program. As early as 1993, the states and tribes advocated reduced reliance on the transportation program because they concluded that the program would never adequately compensate for poor river conditions.¹⁰¹

⁹⁷ See Michael C. Blumm & Melissa Powers, *Avoiding Dam Breaching through Offsite Mitigation: NMFS's 2000 Biological Opinion on Columbia Basin Hydroelectric Operations*, 32 ENVTL. L. 241, 258 (2002) [hereinafter *Avoiding Dam Breaching*] (listing collection dams); see also Blumm, *supra* note 31, at 121 (describing the process of capturing salmon and depositing them in Columbia River estuary). In *American Rivers v. National Marine Fisheries Service*, 126 F.3d 1118, 1121 (9th Cir. 1997), the court explained the transportation process as follows:

[M]echanical bypass systems . . . divert a portion of the juvenile salmon away from the power house turbines and into vertical gatewells. From the gatewells, the salmon pass through small orifices into bypass channels which run the length of the power house. The salmon then enter a primary dewatering facility, and then a high velocity pipe or flume that carries them to the transportation facility where they are separated, sorted, marked, and examined. The salmon then are held in raceways and from these raceways they are loaded into tanker trucks or barges. The transportation barges are specially equipped to circulate river water into the holding tank. It takes approximately forty hours for a barge to travel to the release site below the Bonneville Dam. Once the salmon are released, they continue their migration for another 140 miles to the Pacific Ocean.

⁹⁸ See SACRIFICING THE SALMON, *supra* note 2, at 283–84 (explaining the findings of an independent peer review of the transportation program in 1994); see also *The Case for Dam Breaching*, *supra* note 96, at 1010 (suggesting that improvements in the technology of the transportation process would not overcome the inherent dangers to salmon populations because transportation prevents salmon from "imprinting" the river, which allows them to return to their natal streams to spawn).

⁹⁹ SACRIFICING THE SALMON, *supra* note 2, at 284; see also COLUMBIA RIVER INTER-TRIBAL FISH COMM'N, WY-KAN-USH-MI WA-KISH-WIT, SPIRIT OF THE SALMON: THE COLUMBIA RIVER ANADROMOUS FISH RESTORATION PLAN OF THE NEZ PERCE, UMATILLA, WARM SPRINGS, AND YAKAMA TRIBES 5B-25 to 5B-26 (1995) [hereinafter TRIBAL RESTORATION PLAN] (describing the selective mortality resulting from the transportation process).

¹⁰⁰ See RETURN TO THE RIVER 2000, *supra* note 92, at 293 (noting that questions exist as to the efficacy of transportation as a long-term recovery option). Past survival data showed that of transported fish, less than 0.5% returned to spawn as adults in 1997 and 1998. See *The Case for Dam Breaching*, *supra* note 96, at 1010 (indicating that 2% is often cited as necessary for recovery).

¹⁰¹ See SACRIFICING THE SALMON, *supra* note 2, at 282 (describing the Detailed Fishery Operating Plan of 1993, which was the collaborative work of federal and state fishery agencies, as well as treaty tribes). The states recommended transportation only in unusually low flow conditions, while the tribes advocated total abdication of the program. *Id.* The tribes continued

In 1994, the Independent Peer Review of Transportation, which included NOAA scientists, recognized that the transportation program alone could not eliminate the serious threats facing declining salmon populations.¹⁰² The report concluded that a dearth of scientific data meant that the team could not support the transportation program as a primary, or even supporting means, of salmon recovery.¹⁰³ Subsequent scientific studies have reached similar conclusions,¹⁰⁴ including the Independent Scientific Advisory Board in 2000.¹⁰⁵ But NOAA and Bonneville Power Administration (BPA) continue to rely on transportation as a primary mitigation mechanism because it protects the hydropower operational status quo and avoids power losses.

Since up to ninety-one percent of juveniles may face death as they travel downriver,¹⁰⁶ reducing this mortality rate is central to any serious recovery strategy. Much of the controversy throughout the last fifteen years of ESA implementation has centered on the adequacy of mitigation measures contained in NOAA's BiOps. Dam operators, favoring mitigation that interferes minimally with power production, support barging and trucking salmon and maintain that the efficacy of the transportation program has not yet been undermined by clear scientific proof and continuously declining salmon runs.¹⁰⁷ This successful shifting of the burden of proof to those advocating for salmon—in this case being forced to prove a nearly impossible negative¹⁰⁸—is commonplace in Columbia Basin salmon/hydropower tradeoffs.

to eschew the transportation program, calling for its cessation in its restoration plan in 1995. See TRIBAL RESTORATION PLAN, *supra* note 99, at 5B-29.

¹⁰² See *The Case for Dam Breaching*, *supra* note 96, at 1013–14 (summarizing the Independent Peer Review of Transportation, which included scientists from NOAA Fisheries, FWS, state fisheries agencies, and treaty tribes).

¹⁰³ *Id.* at 1014.

¹⁰⁴ See *id.* at 1015 (discussing the National Research Council report of 1995, which endorsed natural river conditions over transportation program for the long-term); *id.* at 1016 (discussing the 1995 tribal restoration plan's recommendation of an immediate termination of the transportation program); *id.* at 1018 (discussing RETURN TO THE RIVER 1996, which called for restoration of river flows instead of transportation); *id.* at 1019 (discussing the 1998 Idaho Department of Fish and Game report that concluded that continued reliance on transportation would not recover salmon populations).

¹⁰⁵ See RETURN TO THE RIVER 2000, *supra* note 92, at 299 (condemning future reliance on the transport program as a means of achieving salmon recovery).

¹⁰⁶ See *Pac. Nw. Generating Coop. v. Brown*, 822 F. Supp. 1479, 1485 (D. Or. 1993).

¹⁰⁷ See *infra* notes 114–16, 125–28, 188–89 and accompanying text. In the 1995 BiOp—the first BiOp to reach a jeopardy conclusion—the juvenile transportation program played a major role in the RPA, although NOAA Fisheries purportedly adopted a “spread the risk” approach to hydropower mitigation. See *infra* note 205 and accompanying text. For more on the 1995 BiOp's reliance on the transportation program, see *infra* notes 196–98 and accompanying text. The heavy reliance on the transportation program continued in the 2000 BiOp. See *infra* note 272 and accompanying text.

¹⁰⁸ Even though proving a negative is nearly impossible scientifically, post-1995 reputable scientific studies concluded that transportation was ineffective and should be terminated. See RETURN TO THE RIVER 2000, *supra* note 92, at 299 (advocating only restricted reliance on the transportation program); FISH PASSAGE CTR., COMPARATIVE SURVIVAL STUDY OF PIT-TAGGED SPRING/SUMMER CHINOOK AND PIT-TAGGED SUMMER STEELHEAD 52–54 (2005) (concluding that generally the transportation program did not provide expected benefits because delayed mortality rates were higher in transported fish than those that traveled in-river).

Salmon advocates, states, tribes, and many scientists oppose the transportation program, citing statistics indicating that artificial transportation causes juveniles to incur higher mortality rates than would improved in-river migration.¹⁰⁹ Salmon advocates generally favor some combination of flow improvements and spill.¹¹⁰ Many insist that the four Lower Snake dams must be breached to ensure salmon recovery of the Snake River runs.¹¹¹

2. In-River Migration: Of a Faster River, Spills, and Dam Breaching

In-river passage improvement may consist of modifying dam mechanics, increasing river flows, lowering reservoir levels, or allowing more water to pass over or around the dams instead of through them (called “spill”).¹¹² Both the Council and NOAA have consistently recommended improvements in dam mechanics, including installation of various mechanical bypass systems.¹¹³ However, increasing river velocity via flow

¹⁰⁹ See TRIBAL RESTORATION PLAN, *supra* note 99, at 5B-24 to 5B-31 (eschewing artificial transport except in low flow years); INDEPENDENT SCIENTIFIC GROUP, RETURN TO THE RIVER 328 (1996) [hereinafter RETURN TO THE RIVER 1996] (transportation program is sufficient neither to maintain nor to rebuild salmon populations); *The Case for Dam Breaching*, *supra* note 96, at 1019–22 (describing a 1998 Idaho Fish and Game report and an independent scientific report, both concluding that a natural or normative river condition is a better alternative than the transportation program); see also Independent Scientific Group, *Return to the River: An Ecological Vision for the Recovery of the Columbia River Salmon*, 28 ENVTL. L. 503, 504–18 (1998) (reprinting the executive summary of RETURN TO THE RIVER 1996).

¹¹⁰ See, e.g., *The Case for Dam Breaching*, *supra* note 96, at 1003 n.19 (detailing the history of calls for reservoir drawdowns). See generally *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, No. CV 01-640-RE, CV 05-23-RE, 2005 WL 1398223, *1–2 (D. Or. June 10, 2005) [hereinafter *NWF v. NMFS III Injunction Order*] (lawsuit for injunction, demanding spill and increased rate of flow during summer migrations). For more on the spill injunction, see *infra* notes 478–89 and accompanying text.

¹¹¹ See *Avoiding Dam Breaching*, *supra* note 97, at 248 (describing the beginnings of the dam removal movement).

¹¹² See Michael C. Blumm et al., *Beyond the Parity Promise: Struggling to Save Columbia Basin Salmon in the mid 1990s*, 27 ENVTL. L. 21, 30 (1997) [hereinafter *Beyond Parity*] (describing various means of improving in-river migration).

¹¹³ Generally, a mechanical bypass system is “[a] channel or conduit in a dam that provides a route for fish to move through or around the dam without going through the turbine units.” *Glossary of Dam Related Terms*, <http://www.streamnet.org/pub-ed/ff/Glossary/glossarydam.html> (last visited Aug. 9, 2006). Mechanical bypass systems include 1) mechanical screen bypass systems, 2) diel passage, 3) surface bypass and sluiceways, and 4) removable spillway weirs. Mechanical-screen-bypass systems describe submersible fish screens that are placed in turbine intakes and redirect salmon to either a channel that leads to the river or to a holding facility where fish are collected for the transportation program. See Blumm, *supra* note 31, at 150 n.535. Diel passage means that fish are held until power production breaks, and the fish can move more safely through the turbines. *Id.* Surface bypass or sluiceways are modified ice and trash sluiceways that allow salmon to pass through into a plunge pool and then around the dam. *Id.* A removable spillway weir passes fish over a raised spillway crest at the surface of the water, through a channel in the dam, which works like a waterslide. *Id.* The 1982 Columbia Basin Fish and Wildlife Program called for installation of mechanical bypass systems at five mid-Columbia Federal Energy Regulatory Commission (FERC)-licensed dams. See *Unraveling Parity*, *supra* note 5, at 677 (describing the 1982 Columbia Basin Program). The 1984 Amendments to the program expanded reliance on mechanical bypass systems, calling for installation at several other mainstem dams. See *id.* at 680 (noting that the Northwest Power Planning Council

augmentation or reservoir drawdowns, spill, and dam breaching provide the most effective—and most controversial—means of improving in-river juvenile migration. The following section discusses each of these methods, including their merit and NOAA's reluctance to the use of each.

a. A Faster River

Increased river velocity is important because it speeds juvenile salmon passage through reservoirs, and increased river flows correlate to colder water temperatures, which, in turn, translates into higher rates of salmon survival.¹¹⁴ Increasing flow velocity can occur two ways—either through flow augmentation from stored water upriver or via reservoir drawdowns.

expected to achieve 90% juvenile survival rates at each dam with the new bypass mechanisms). Subsequent amendments to the program continued to invoke dam operators to install bypass mechanisms. See *Saving Idaho's Salmon*, *supra* note 17, at 683 (noting that 1987 Amendments to the program called for installation of mechanical bypass systems at mainstem dams lacking such systems); see also NW. POWER PLANNING COUNCIL, 1994 COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM 5.6 (1994) [hereinafter 1994 AMENDMENTS], available at <http://www.nwcouncil.org/library/1994/program.pdf> (canvassing the history of mechanical bypass systems). Despite these numerous requests for mechanical bypass installation, undertaking the projects required adequate funding, and appropriations were often lacking. See *Unraveling Parity*, *supra* note 5, at 695 (noting historical difficulty in obtaining congressional appropriation but describing an \$18.5 million appropriation passed in 1990 for bypass installation at the Corps' dams). Additionally, many of the requests for installation set deadlines for completion of the projects far into the future. See 1994 AMENDMENTS, *supra*, at 5.6A.1 to 5.6A.12 (setting deadlines for installation ranging from 1998 to 2000). Later versions of the program developed fish passage efficiency rates and left the choice of whether to rely on mechanical bypass systems to achieve those rates to individual dam operators. See NW. POWER PLANNING COUNCIL, 20 YEARS OF PROGRESS: HYDROPOWER (Nov. 2003), available at <http://www.nwcouncil.org/library/2003/2003-20/hydro.htm>. NOAA Fisheries has also incorporated mechanical bypass technology in its BiOps. See, e.g., 2000 BiOP, *supra* note 8, at 9-81 to 9-87. For data and analysis on the efficiency of these mechanical bypass methods, see generally JOHN W. FERGUSON ET AL., NOAA TECH. MEMO. NMFS-NWFSC-64, PASSAGE OF ADULT AND JUVENILE SALMONS THROUGH FEDERAL COLUMBIA RIVER POWER SYSTEM DAMS (Mar. 2005).

¹¹⁴ Flow augmentation is significant to migrating smolts because it creates more natural, faster-moving river conditions, hastening their downriver migration. See TRIBAL RESTORATION PLAN, *supra* note 99, at 5B-27 (noting that adequate flows trigger a response in juvenile salmon, inciting the urge to migrate). In addition, increased river flows can minimize predation and reduce the risk of degraded water quality resulting from high temperatures and gas saturation. NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT—SECTION 7 CONSULTATION, 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 38 (1995) [hereinafter 1995 BiOP]. Similarly, reservoir drawdowns increase the velocity through the slack water behind a dam, but they do so without appropriating upriver water. *Beyond Parity*, *supra* note 112, at 31. NOAA described the machinations of a drawdown as follows: "Like running water through a small pipe, decreased cross-sectional area increases the speed at which the same amount of water flows." *Id.* at 31 n.44. Drawdowns are typically prescribed at four different levels—minimum irrigation pool, minimum operating level, spillway-crest level, and natural river level. Minimum irrigation pool describes a situation in which the water level is at the level of the irrigation pumps: the lowest level at which irrigation pipes will continue to function. *Id.* at 112 n.202. Minimum operating pool is the lowest level that allows navigational locks to function; spillway crest level means that the water level of the reservoir is flush with the top of the dam's spillway. *Id.* at 112 nn.202–04.

Although water will still flow through power turbines, flow augmentation generally calls for increased flows during the spring, summer, and early fall, when dam operators favor storing water for winter power production.¹¹⁵ Consequently, dam operators are reticent to adopt flow regimes tied to salmon migration. In fact, the Columbia Basin hydropower BiOps have secured only minimal flow augmentation, often subject to emergency exceptions that can curtail implementation.¹¹⁶

Similarly, reservoir drawdowns have been controversial,¹¹⁷ even though drawdowns could significantly increase river velocity with less water.¹¹⁸ Earlier advocacy focused on implementation of seasonal drawdowns,¹¹⁹ but since the 1996 release of the *Harza Report*, permanent reservoir drawdowns became a more economically viable option, increasing calls for permanent natural river drawdowns.¹²⁰ But reducing the amount of water stored in a reservoir could affect levees, embankments, docks, and irrigation pumps, injuring irrigators, shippers, and others who rely on the lakes the reservoirs create.¹²¹ As a result, significant drawdowns have not figured prominently in NOAA's BiOps.¹²² The region's tribes and many scientists, however, have long endorsed restoration of normative river conditions through permanent

¹¹⁵ The Council defined the conflict in terms of tradeoffs, stating, "[t]he timing of water releases for flow augmentation, unfortunately, does not coincide with peak needs for electricity. This conflict creates a tradeoff between power . . . and fish." *Beyond Parity*, *supra* note 112, at 31 n.43 (quoting Northwest Power Planning Council, Draft Briefing Paper: Detailed Fishery Operating Plan 6 (1994)).

¹¹⁶ See *infra* note 299 and accompanying text.

¹¹⁷ See *Beyond Parity*, *supra* note 112, at 31 nn.45–47 (explaining that some analysts think reservoir drawdowns improves smolt survival, while others cite a lack of scientific proof that drawdowns are effective).

¹¹⁸ For example, the Columbia Basin Fish and Wildlife Authority estimated that 30-foot drawdowns with 85,000 cubic feet per second (cfs) of water in the river would result in the same juvenile travel times as would regular reservoir levels with 140 kcfs of water. See *Saving Idaho's Salmon*, *supra* note 17, at 686 (citing Columbia Basin Fish and Wildlife Authority, *The Biological and Technical Justification for the Flow Proposal of the Columbia Basin Fish and Wildlife Authority* (1991)).

¹¹⁹ In 1991, Idaho Governor Cecil Andrus supported a proposal to draw down the Snake River reservoirs 25 feet or more during the spring migration season. See *Saving Idaho's Salmon*, *supra* note 17, at 688 (describing one of the few influential results of the "Salmon Summit," a meeting held by representatives from Idaho, Oregon, Washington, and Montana, aiming to forestall ESA listings of Columbia Basin salmon).

¹²⁰ The Corps commissioned Harza Northwest to report on the economic feasibility of salmon restoration options. See *The Case for Dam Breaching*, *supra* note 96, at 1024. The report concluded that permanent, natural river drawdowns were ten times less expensive to implement than seasonal drawdowns. *Id.*

¹²¹ See Andrew S. Noonan, *Just Water Over the Dam? A Look at the Endangered Species Act and the Impact of Hydroelectric Facilities on Anadromous Fish Runs of the Northwest*, 28 IDAHO L. REV. 781, 797 (1992) (comparing costs and benefits of reservoir drawdowns).

¹²² In its 1995 BiOp, NOAA Fisheries decided to study the feasibility of reservoir drawdowns, recommending only conditional, minimal drawdowns of the four Lower Snake River reservoirs. The 2000 BiOp retained nearly identical recommendations. See *infra* notes 271–77 and accompanying text.

reservoir drawdowns.¹²³ They view drawdowns as a fair and reasonable tradeoff between restoration of salmon runs and the interests of reservoir users.¹²⁴

b. Spill

Spill is a second means of improving in-river migration for juvenile salmon because it aids juvenile salmon dam passage.¹²⁵ Spill avoids running water through turbines. Instead, dam operators open spillway gates, which release large volumes of water, allowing smolts to pass around the dams virtually unharmed.¹²⁶ Spill provides the safest means of dam passage—at least four times more effective than turbine passage.¹²⁷ Despite the efficacy of spill, dam operators have long resisted calls for spill because it reduces the amount of power the river can generate.¹²⁸

Migrating salmon need spill most during low flow periods, usually in the summer and early fall, when virtually all streamflows pass through power turbines. Unfortunately, that is also when Columbia Basin hydropower sales to users in California and the Southwest are most lucrative.¹²⁹ Rather than

¹²³ See *The Case for Dam Breaching*, *supra* note 96, at 1012–13 (detailing numerous scientific reports calling for reservoir drawdowns); see also *SACRIFICING THE SALMON*, *supra* note 2, at 282 (describing the 1993 Detailed Fishery Operating Plan, published by federal and state fishery agencies and treaty tribes, which called for reservoir drawdowns to restore natural river conditions); see also *RETURN TO THE RIVER 1996*, *supra* note 109, at 510 (calling for normative river conditions); *RETURN TO THE RIVER 2000*, *supra* note 92, at 448 (reiterating need for a more natural river).

¹²⁴ See Blumm, *supra* note 31, at 124–25 (explaining the controversy over drawdowns).

¹²⁵ Hydropower operators can sometimes implement spill in conjunction with flow augmentation and reservoir drawdowns. See *Beyond Parity*, *supra* note 112, at 33. If the drawdown is to natural-river level, spill is impossible. *Id.* Two types of spill can occur: standard spill and surface spill. Standard spill occurs approximately 50 feet below normal operating-pool level, whereas surface spill occurs at the water level. *RETURN TO THE RIVER 1996*, *supra* note 109, at 186–88. Surface spill is viewed as especially effective for dam bypass. *Id.*

¹²⁶ See 2000 BiOp, *supra* note 8, at 3–5. NOAA Fisheries estimates that the mortality rate for spills is between 0% and 2% and suggests that a majority of the mortality is the result of indirect effects, such as predation and gas saturation resulting from turbidity. *Id.* at 6–17.

¹²⁷ *Id.* at 6–16.

¹²⁸ The 1995 and 2000 BiOps resulted in limited spill regimes, but soon after NOAA Fisheries released its 2000 BiOp, BPA declared a power “emergency,” effectively eviscerating any RPA spill requirements. See *BPA Salmon Crisis*, *supra* note 9, at 10,726. Dam operators have since continued in their attempt to evade mandatory spill. For example, in 2004, while the 2000 BiOp was still operational, the Corps and BPA proposed to curtail their summer spill regimes, seeking to end the program earlier than called for in the 2000 RPA. See *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv. (NWF v. NMFS II)*, No. CV 01-6940-RE, 2004 WL 1698050, at *1–2 (D. Or. July 29, 2004) (describing 2004 decision to halt spill at The Dalles and Bonneville dams during the month of August and at Ice Harbor and John Day dams during the last week of August). In 2005, relying on the no-jeopardy determination of the 2004 BiOp, the Corps and BPA failed to schedule any spill at all during the summer migration. See *NWF v. NMFS III Injunction Order*, No. CV 01-640-RE, CV 05-23-RE, 2005 WL 1398223, at *4 (D. Or. June 10, 2005) (order granting preliminary injunction). For more on spill as an RPA, see *infra* notes 195–201, 255 and accompanying text. For analysis of litigation over spill, see *infra* Part IV.

¹²⁹ See *SACRIFICING THE SALMON*, *supra* note 2, at 144 (highlighting the difficulties of securing adequate river flow during summer months).

supplement its power supply with expensive spot market purchases, BPA prefers to curtail spill, thus generating hydropower.¹³⁰

c. Dam Breaching

In the late 1990s, advocates for in-river improvement and restoration of the most imperiled salmon runs began to call for breaching the four Lower Snake River Dams—Lower Granite, Lower Monumental, Little Goose, and Ice Harbor.¹³¹ Before NOAA released its 2000 BiOp, political, economic, and scientific support emerged for dam breaching as the only viable means of restoring Snake River salmon runs.¹³² A group of federal, state, and tribal scientists conducted peer-reviewed studies on salmon restoration measures, known as the Plan for Analyzing and Testing Hypotheses (PATH), concluding that Snake River fall chinook and spring/summer chinook had the greatest chance of recovery—eighty-two percent and one hundred percent, respectively—if the Corps breached the four Lower Snake Dams.¹³³ In an apparent effort to counter these conclusions NOAA convened a group of its own scientists, called the Cumulative Risk Initiative (CRI), which predicted many of the same dire consequences of hydropower development, but did not embrace dam breaching.¹³⁴

¹³⁰ See *BPA Salmon Crisis*, *supra* note 9, at 10,726 (suggesting that BPA curtailed spill for financial reasons).

¹³¹ Breaching a dam entails slowly lowering the reservoir and eventually removing the earthen embankment. The concrete locks and powerhouses are left in place. The entire process could take four to seven years, which includes time for engineering studies. See Bill Loftus, *How to Breach a Dam*, LEWISTON MORNING TRIB., June 7, 1998, at 1D. For a history of the Lower Snake River Dams, see *Saving Idaho's Salmon*, *supra* note 17, at 672–77.

¹³² For a history of the political momentum (which was short-lived), see *Avoiding Dam Breaching*, *supra* note 97, at 250. For the economic reasons to breach the Lower Snake dams, see *The Case for Dam Breaching*, *supra* note 96, at 1023–30.

¹³³ See Blumm, *supra* note 31, at 179–80 (predictions also indicated that dam breaching would benefit sockeye and steelhead, although the scientists did not complete modeling for those species). The Plan for Analyzing and Testing Hypotheses (PATH) was a creation of the 1995 BiOp, in response to the Oregon district court's criticism that earlier BiOps had entirely failed to adequately consider the recommendations of state and tribal scientists. See *Idaho Dep't of Fish & Game v. Nat'l Marine Fisheries Serv.*, 850 F. Supp. 886 (D. Or. 1994), *vacated as moot*, 56 F.3d 1071 (9th Cir. 1995). The scientific group consisted of about 25 federal, state, tribal, and independent scientists. See *SACRIFICING THE SALMON*, *supra* note 2, at 184. The group's efforts centered on developing mortality hypotheses that predicted death rates incurred for each migration alternative. PATH then plugged those estimates into life-cycle models. *Id.* For further description of the models, see *infra* note 186 and accompanying text.

¹³⁴ NOAA Fisheries established the CRI—now called the NOAA Science Center—in 1999. Composed of 25 NOAA Fisheries scientists, the team conducted similar life-cycle analyses as PATH; however, CRI selected much lower delayed mortality rates, which are unexplained mortalities suffered after transport. See *SACRIFICING THE SALMON*, *supra* note 2, at 291; see also *supra* note 103 and accompanying text). CRI emphasized the potential benefits from habitat restoration, harvest limits, and predator control in its modeling, leading to CRI's conclusion that dam breaching was neither necessary nor adequate for salmon recovery. See *SACRIFICING THE SALMON*, *supra* note 2, at 291.

Relying on CRI's recommendations (while discounting PATH's), NOAA's 2000 BiOp postponed dam breaching for future consideration.¹³⁵ Instead, it adopted a complex system of adaptive, ecosystem management in an apparent effort to divert attention from the calls for dam breaching, while deferring to the position of the Corps and BPA that they lacked the authority to breach the dams.¹³⁶ Although NOAA's BiOps turned away from dam breaching, many biologists, economists, and constituents continue to believe that breaching the four Lower Snake River dams is the only effective way to restore the imperiled Snake River salmon runs.¹³⁷ In fact, dam breaching recently gained one notable adherent: in 2005, Don Chapman, a long-time consultant for dam operators and river users, recanted years of defending hydropower status quo by acknowledging that breaching the four dams is imperative.¹³⁸

III. A COMPARATIVE ANALYSIS OF THE HYDROPOWER BIOPS—1992 THROUGH 2000: A HISTORY OF FORM OVER FUNCTION

To understand the National Oceanic and Atmospheric Association's (NOAA) 2004 BiOp and its implications within the context of the future of Columbia Basin salmon, it is important to understand the history of salmon BiOps. The following section describes the four salmon hydropower BiOps that preceded the 2004 BiOp. This survey suggests that, despite many innovations, NOAA has consistently disregarded a precautionary approach to salmon management. This Part also briefly describes the legal challenges to these BiOps. Because the BiOps seemed to call for great change, but produced little or no improvement in the condition of the species, this is basically a history of form over function.

Two of the most important elements of a BiOp are its jeopardy analysis and its proposed reasonable and prudent alternative (RPA). The former consists of both a jeopardy framework—the structure of the jeopardy analysis—and a jeopardy definition, which establishes the requirements necessary for survival and recovery of the listed species. NOAA apparently

¹³⁵ Although NOAA Fisheries concluded that breaching was the most risk-averse mitigation alternative, the 2000 BiOp recommended dam breaching only if, after eight years of implementation, NOAA Fisheries determined that the species remained in jeopardy and gathered new data on delayed mortality showing that, without doubt the transportation program was failing to avoid jeopardy. See *SACRIFICING THE SALMON*, *supra* note 2, at 188–89.

¹³⁶ See *infra* notes 248–93 and accompanying text (describing the 2000 BiOp RPA); see also *SACRIFICING THE SALMON*, *supra* note 2, at 189 (explaining the influence of the action agencies).

¹³⁷ See *Scientists, Others Offer Policy Options for Saving Salmon*, COLUMBIA BASIN FISH & WILDLIFE NEWS BULL., Sept. 16, 2005, available at <http://www.cbbulletin.com/Archive/09162005/default.aspx> (indicating that scientists, policy analysts, and wild salmon advocates have called for dam breaching to restore salmon runs, but noting that was unlikely to happen); *Views on Salmon Recovery, ESA Aired at Clarkston Hearing*, COLUMBIA BASIN FISH & WILDLIFE NEWS BULL., June 10, 2005, available at <http://www.cbbulletin.com/Archive/06102005/default.aspx> (noting constituent support for dam breaching). But see *id.* (describing views of local community members opposed to dam breaching).

¹³⁸ See Rocky Barker, *Expert Changes His Mind: Dams Should Come Down*, IDAHO STATESMAN, Aug. 9, 2005 (discussing Chapman's opinion that warmer river temperatures now make breaching necessary).

believes that either the framework or the definition may change in any given BiOp.¹³⁹ The evolution of the jeopardy framework and the jeopardy definition in the context of Columbia Basin hydropower BiOps has produced no discernable benefits to salmon; in fact, NOAA changed both to make it considerably easier for the agency either to make a no-jeopardy finding or to propose an RPA that essentially achieves a no-jeopardy determination.¹⁴⁰

A. 1992 and 1993 Biological Opinions: Foreshadowing the Future

Once NOAA listed Snake River sockeye and chinook in 1991 and 1992, respectively, any federal actions that might affect these species were subject to the consultation requirements of the ESA, resulting in NOAA's first BiOp on hydropower operations.¹⁴¹ Despite hope that NOAA would undertake its obligations with full regard to biological and ecological realities,¹⁴² the agency issued a no-jeopardy opinion, surprisingly suggesting that the proposed actions would, in fact, contribute to a decrease in salmon

¹³⁹ Although the ESA regulations define "jeopardize," FWS and NOAA Fisheries retain considerable discretion in the implementation of the definition. See Mary Christina Wood, *Protecting the Wildlife Trust: A Reinterpretation of Section 7 of the Endangered Species Act*, 34 ENVTL. L. 605, 617–19 (2004) (discussing the massaging of the jeopardy determination undertaken by FWS and NOAA Fisheries); see also DANIEL J. ROHLF, *THE ENDANGERED SPECIES ACT: A GUIDE TO ITS PROTECTIONS AND IMPLEMENTATION* 149 (1989) (maintaining that federal agencies have "complete discretion" over the interpretation of the term). FWS and NOAA Fisheries have produced an ESA Consultation Handbook that creates a standardized jeopardy framework, suggesting that the framework consists of 1) defining the environmental baseline, 2) evaluating all effects of the proposed action, 3) considering the cumulative effects of other anticipated actions, and 4) calculating the aggregate effects to determine whether a species can be expected to both survive and recover. U.S. FISH & WILDLIFE SERV. & NAT'L MARINE FISHERIES SERV., *ENDANGERED SPECIES CONSULTATION HANDBOOK 4-37* (1998) [hereinafter *CONSULTATION HANDBOOK*], available at <http://www.fws.gov/endangered/consultations/s7hndbk/s7hndbk.htm>. The 1995 and 2000 BiOps followed the handbook. See *infra* notes 161–63 and accompanying text. The 2004 BiOp, however, did not. See *infra* note 471 and accompanying text.

The Consultation Handbook also provides general definitions of survival and recovery, but it does so only qualitatively, affording NOAA Fisheries considerable discretion to translate the definitions into quantitative standards. See *CONSULTATION HANDBOOK*, *supra*, at 4-35. Survival means "the species' persistence, as listed or as a recovery unit, beyond the conditions leading to its endangerment, with sufficient resilience to allow recovery from endangerment." *Id.* Recovery is "improvement in the status of a listed species to the point at which listing is no longer appropriate. . . . Said another way, recovery is the process by which species' ecosystems are restored and threats to the species are removed." *Id.*

¹⁴⁰ Although RPA proposals are not technically binding on action agencies, the Supreme Court has determined that they are virtually binding, imposing "a powerful coercive effect on the action agency." *Bennett v. Spear*, 520 U.S. 154, 169 (1997). See 16 U.S.C. § 1536(b)(3)(A) (2000) (stating that the Secretary "suggests" RPAs). But see *Bennett*, 520 U.S. at 178 (determining that RPAs have "direct and appreciable legal consequences"). Thus, although an action agency need not follow the RPA, not doing so would likely lead a court to conclude that the agency violated its obligation to avoid jeopardy. See *Avoiding Dam Breaching*, *supra* note 97, at 247 (discussing the possible ramifications of not abiding by the consulting agencies' recommendations).

¹⁴¹ See *supra* Part II.A (outlining implementation of the ESA).

¹⁴² See *Saving Idaho's Salmon*, *supra* note 17, at 701 (suggesting that BPA's biological assessment was fundamentally flawed and expressing hope that NOAA Fisheries would act "with greater biological sensitivity").

mortality.¹⁴³ This conclusion was based entirely on qualitative indicators,¹⁴⁴ relying mostly on the 1991 amendments to the Columbia Basin Fish and Wildlife Program under the Northwest Power Act (NPA),¹⁴⁵ which promised to increase salmon survival over previous years' numbers, but made no attempt to restore salmon populations to healthy, viable levels.¹⁴⁶

This initial hydropower BiOp was a harbinger of the future. Over the next decade-and-a-half, NOAA failed to take seriously the ESA's calls for salmon recovery. Instead, the agency pursued only small steps that did not jeopardize the hydropower dominance of the Columbia Basin.¹⁴⁷ Despite incorporating innovations that could have positively affected salmon recovery,¹⁴⁸ since 1992, NOAA has maintained a policy that might be described as "hopefully, the situation will get no worse," producing various manipulations of the ESA's requirements in the process.

In its next BiOp, issued in 1993, NOAA finessed its jeopardy analysis, blinding itself from scientific reality and causing the agency to again reach a no-jeopardy conclusion. The agency's new jeopardy analysis consisted of two criteria, asking whether the actions would 1) improve survival, as measured against the operations from a baseline period of 1986–1990, and 2) be reasonably likely to reduce mortalities, when considered in combination with all other human effects, so that salmon populations would stabilize within four salmon life cycles.¹⁴⁹ NOAA determined that the proposed hydropower operations for 1993 met both criteria, predicting that the operations would result in a three to eleven percent reduction in overall salmon mortality, and opining that stabilizing salmon populations to 1990 levels was possible with a confidence range of sixty to seventy percent.¹⁵⁰

NOAA's conclusions in its 1993 BiOp marked the beginning of an era of litigation over the application of the ESA to listed salmon runs.¹⁵¹ In *Idaho Department of Fish and Wildlife v. National Marine Fisheries Service*, Idaho, Oregon, and several tribes and environmental groups challenged NOAA's choice of its baseline period and the life-cycle modeling used to hypothesize

¹⁴³ See Mark A. Eames, *The Endangered Species Act, the Federal Columbia River Power System, and the National Marine Fisheries Service*, 25 ENVTL. L. 389, 395 (1995) (describing NOAA Fisheries' decision making regarding the 1993 BiOp).

¹⁴⁴ *Id.* Appended to the 1992 BiOp was a report detailing a mathematical model that would simulate conditions at various salmon life cycles, but NMFS declined to use the model, citing a lack of scientific data. *Id.* at 394.

¹⁴⁵ See generally NW. POWER PLANNING COUNCIL, AMENDMENTS TO THE COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM (1991) (amending the program to be a comprehensive salmon plan).

¹⁴⁶ See *Salmon and the ESA*, *supra* note 22, at 550 (discussing the lack of efforts to counteract the decline of the listing species).

¹⁴⁷ See *supra* notes 88–111 and accompanying text (analyzing the mortality rate of juveniles).

¹⁴⁸ See *infra* notes 172–76 and accompanying text (discussing the jeopardy analysis).

¹⁴⁹ U.S. DEP'T OF COMMERCE, BIOLOGICAL OPINION ON 1993 OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM 10–11, 15 (1993); see also Eames, *supra* note 143, at 395–96 (discussing the goals and quantitative approach taken prior to the 1993 BiOp).

¹⁵⁰ *Idaho Dep't of Fish & Game v. Nat'l Marine Fisheries Serv. (IDFG v. NMFS)*, 850 F. Supp. 886, 891 (D. Or. 1994), *vacated as moot*, 56 F.3d 1071 (9th Cir. 1995).

¹⁵¹ *Id.* at 888–91 (recounting the many disputes over salmon brought in Oregon and Washington's federal district courts).

probable salmon mortalities.¹⁵² Judge Malcolm Marsh agreed that the agency's jeopardy analysis was arbitrary and capricious.¹⁵³

First, the 1986–1990 baseline period represented a significant change from the 1992 BiOp¹⁵⁴ and seemed to be an attempt to maintain hydropower generation, instead of an attempt to reduce the effect of hydropower on declining salmon populations.¹⁵⁵ Judge Marsh saw through NOAA's manipulations, pointing out that the base period of 1986 to 1990 was a term of record low salmon counts—record lows that, in fact, induced NOAA to list the Snake River sockeye and chinook. Using this period for comparison virtually ensured that NOAA was able to find improvements in survival. Second, NOAA relied on overly optimistic data in arriving at its estimates of mortality reduction because it systematically disregarded life-cycle modeling that predicted lower survival rates.¹⁵⁶ With the agency employing only the high end of the survival assumptions in its confidence analysis, it ended up with an arbitrarily inflated success rate, allowing it to conclude that hydropower operations met the second criterion, which called for a reduction in mortality.¹⁵⁷

Judge Marsh observed that although NOAA may have tried to create a framework for measuring the effects of hydropower operations on salmon, “the process is seriously, ‘significantly,’ flawed because it is too heavily

¹⁵² *Id.* at 891. Notably, the intervening industries (Pacific Northwest Generating Co-op, Direct Services Industries, and the Public Power Council) argued that NOAA Fisheries' comparative baseline choice was flawed because it did not distinguish between mortality caused by the proposed hydropower operations and that resulting from the existence of the dams. *Id.* at 893–94. Instead, the industries insisted that the baseline should include all mortalities caused by the dams' existence. *Id.* at 894. In effect, that would mean that any additional mortalities caused by the proposed action would have relatively little further effect on salmon survival. Judge Marsh responded that:

There is no dispute that dam existence is properly part of the “environmental baseline” as defined by 50 C.F.R. 402.02. The idea that the dams are immutable and uncontrollable like the weather ignores decades of fish protection improvements (such as bypass facilities and ladders) and other structural and operational enhancements.

Id. The argument that the hydropower dams are an immutable part of the salmon's ecosystem underlies much of NOAA Fisheries' 2004 BiOp. See *infra* Part V.B.

¹⁵³ *IDFG v. NMFIS*, 850 F. Supp. at 898.

¹⁵⁴ In the 1992 BiOp, NOAA Fisheries employed a baseline of 1984–1990 for juvenile mortality comparisons and a 1975–1990 baseline for measuring changes in adult mortality. *Id.* at 893.

¹⁵⁵ *Id.* at 893.

¹⁵⁶ *Id.* at 897.

¹⁵⁷ *Id.* at 898–99. Because NOAA Fisheries cited a lack of scientific certainty in survival rates for different methods of river passage, such as spills, Judge Marsh ordered the agency to initiate a collaborative scientific endeavor, incorporating the analyses of “well-qualified scientists such as the fisheries biologists from the states and tribes.” *Id.* at 900. Thus were born the scientific efforts of Path for Analyzing and Testing Hypothesis (PATH) and Cumulative Risk Initiative (CRI). See SACRIFICING THE SALMON, *supra* note 2, at 184–86 (describing the birth of PATH and the later nativity of NOAA Fisheries' own CRI, which was an apparent effort by NOAA Fisheries' Snake River scientists to debunk interagency PATH conclusions that the four Lower Snake dams needed to be breached if salmon were to have any reasonable chance at survival and recovery). See also Eames *supra* note 143, at 395 (describing NOAA Fisheries' decision-making regarding the 1993 BiOp).

geared towards 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.”¹⁵⁸ Although NOAA substantially overhauled its analyses in subsequent BiOps, hydropower operators and navigators maintained largely status quo operations, while salmon populations continued to decline. The overhaul Judge Marsh called for never occurred because NOAA persisted in its disregard of precautionary salmon management in favor of traditional hydrosystem operations.

B. The 1995 BiOp: Elaborate Maintenance of the In-River Status Quo

NOAA’s next hydropower BiOp governed river operations from 1995–1999 (the 1995 BiOp).¹⁵⁹ Unlike earlier BiOps, the 1995 BiOp declared that hydropower operations would indeed jeopardize listed salmon populations.¹⁶⁰ Thus, Columbia Basin salmon restoration entered a new era of legal legerdemain; this time NOAA’s efforts focused on issuing an RPA to avoid jeopardy, in addition to its continued efforts to finesse the jeopardy analysis.

The jeopardy analysis and the RPA are two of the most meaningful parts of a BiOp. Beginning with the 1995 BiOp, these elements became much more structured and more thoroughly analyzed. In large part, this phenomenon may be attributed to the 1995 release of a draft of the Fish and Wildlife Service’s (FWS) and NOAA’s *Consultation Handbook*.¹⁶¹ As described in the handbook, the jeopardy analysis consists of two steps. First, NOAA must decide on a jeopardy framework, which sets the stage for measuring whether the proposed action jeopardizes a listed species. In other words, the framework provides the elements NOAA must analyze to determine whether jeopardy will occur.¹⁶² The framework gives the jeopardy analysis structure. According to the handbook, the framework establishes a kind of balance sheet where “the action is viewed against the aggregate effects of everything that has led to the species’ current status . . . [and] given the aggregate effects, [determines whether] the species can be expected to both survive and recover.”¹⁶³

Second, NOAA must decide how it will measure survival and recovery or, in other words, define “jeopardy.” The ESA regulations stipulate only that

¹⁵⁸ *IDFG v. NMFS*, 850 F. Supp. at 900.

¹⁵⁹ *Am. Rivers, Inc. v. Nat’l Marine Fisheries Serv.*, No. 96-384-MA, 1997 WL 33797790, at *1 (D. Or. April 3, 1997). Just prior to Judge Marsh’s order in *IDFG v. NMFS*, NOAA Fisheries finished a BiOp spanning hydropower operations from 1994–1998. However, in order to comply with Judge Marsh’s decision on the 1993 BiOp, the agency reinitiated the consultation leading to that BiOp. *Id.*; see also *infra* notes 220–27, and accompanying text.

¹⁶⁰ See *supra* notes 142–46 and accompanying text.

¹⁶¹ Although not completed until 1998, FWS and NOAA Fisheries released a draft version in 1995. See 1995 BiOp, *supra* note 114, at 10 (discussing release of draft CONSULTATION HANDBOOK).

¹⁶² See *supra* notes 139–40 and accompanying text (describing the jeopardy framework presented in FWS and NOAA Fisheries’ CONSULTATION HANDBOOK).

¹⁶³ CONSULTATION HANDBOOK, *supra* note 139, at 4-35.

“jeopardize” means “to reduce [directly or indirectly] appreciably the likelihood of both survival and recovery.”¹⁶⁴ When FWS and NOAA revised the ESA consultation regulations in 1986, it was not clear whether the ESA required the consulting agencies to issue a jeopardy opinion if only injury to recovery were likely.¹⁶⁵ In the preamble to final rule, FWS and NOAA stated that “except in exceptional circumstances, injury to recovery alone would not warrant the issuance of a ‘jeopardy’ biological opinion.”¹⁶⁶ Despite the language of the regulatory preamble, the *Consultation Handbook* suggested that the consultation agencies must measure jeopardy in terms of *both* survival and recovery.¹⁶⁷ However, the handbook provided no formula for defining survival or recovery, even though the final stage of the jeopardy framework—determining whether the aggregate effects and the effects of the proposed action will jeopardize survival and recovery—depends on knowing what recovery requires.¹⁶⁸

Beginning in 1995, with its decision to incorporate recovery into the jeopardy analysis,¹⁶⁹ NOAA could no longer contend that hydropower operations would not jeopardize salmon, but the agency did begin to inflate the potential likelihood of success from its RPA. Although both the 1995 BiOp and 2000 BiOp concluded that hydropower operations would cause jeopardy, the jeopardy definition offered enough flexibility to allow hydropower operations to continue with only the minor adjustments called for in the RPAs. In fact, the hydropower system ran nearly unfettered until 2005, when federal district Judge James Redden’s fears that the Columbia Basin was headed for an impending “train wreck”¹⁷⁰ led him to strike down NOAA’s 2004 BiOp.¹⁷¹ In order to more clearly understand the evolution of the hydropower BiOps and the relationship between the jeopardy analysis

¹⁶⁴ 50 C.F.R. § 402.02 (2005).

¹⁶⁵ See Interagency Cooperation—Endangered Species Act of 1973, as Amended; Final Rule, 51 Fed. Reg. 19,926, 19,934 (June 3, 1986) (discussing commentary suggesting that “injury to the recovery of an already depleted species would require the issuance of a jeopardy opinion”).

¹⁶⁶ See *id.* (describing the addition of the word “both” to the definition of “jeopardize”). This reasoning seems to make recovery functionally irrelevant. See ROHLF, *supra* note 139, at 149 (highlighting the irrelevancy of recovery to the jeopardy analysis). However, the 1995 and 2000 hydropower BiOps considered each survival and recovery as independent analyses. 1995 BiOp, *supra* note 114, at 13; 2000 BiOp, *supra* note 8, at 1-12.

¹⁶⁷ See CONSULTATION HANDBOOK, *supra* note 139, at 4-37 (“The final analysis then looks at whether, given the aggregate effects, the species can be expected to both survive and recover . . .”).

¹⁶⁸ The CONSULTATION HANDBOOK does, however, qualitatively define survival and recovery. See *supra* note 139 and accompanying text.

¹⁶⁹ See 1995 BiOp, *supra* note 114, at 13-14 (indicating that NOAA Fisheries would consider recovery in its jeopardy analysis).

¹⁷⁰ Barry Espenson, *Judge Concerned about BiOp Rewrite Getting off Track*, COLUMBIA BASIN BULL. (June 4, 2004); Ley Garnett, *Judge: Salmon Plan a ‘Train Wreck’*, OREGON PUBLIC BROADCASTING (Sept. 28, 2005), available at http://www.publicbroadcasting.net/opb/news.newsmain?action=article&ARTICLE_ID=689891; Bill Rudolph, *BiOp Judge Worries about Approaching ‘Train Wreck’*, NW. FISHLETTER (June 22, 2004), available at <http://www.bluefish.org/biopjudg.htm>. For a detailed analysis of the 2004 BiOp and Judge Redden’s opinions overturning the BiOp and ordering spill, see *infra* Parts V-VI.

¹⁷¹ *NWF v. NMFS III*, No. CV 01-640-RE, CV05-23-RE, 2005 WL 1278878, at *22 (D. Or. May 26, 2005); see also *infra* Part V.

and the RPA, as well as the influence of the *Consultation Handbook* and the basis of Judge Redden's fears, the following section explains the jeopardy analyses and the RPAs of the 1995 and 2000 BiOps.

1. *The Jeopardy Analysis*

The 1995 BiOp was innovative in many ways. First, the 1995 BiOp was the first to govern hydropower operations for five years, a change from annual consultations. The expanded time frame allowed NOAA to undertake long-term planning and goal setting. This innovation influenced BiOps nationwide; five-year BiOps are now the norm in many ESA contexts. Second, the 1995 BiOp was the first hydropower BiOp that NOAA publicly circulated pre-publication, allowing hydropower agencies and other interested parties, including irrigators, recreationists, and landowners, to influence NOAA's conclusions.

Finally, and perhaps most significantly, in 1995, NOAA began to incorporate salmon recovery into the hydropower BiOps. The agency accomplished this feat in two ways. First, NOAA measured jeopardy in terms of both survival *and* recovery.¹⁷² At least in theory, this innovation aimed to ensure that in addition to not worsening the situation for salmon, hydropower operations would actually improve the status quo. Second, NOAA incorporated recovery planning into the BiOp. The ESA only conditionally requires recovery plans¹⁷³ and fails to make them legally enforceable.¹⁷⁴ But in the 1995 BiOp, NOAA employed the draft salmon recovery plan, also released in 1995,¹⁷⁵ to both ascertain the status of the salmon runs and the biological requirements necessary for salmon recovery, and also to set operational benchmarks against which NOAA could compare the proposed action to make its jeopardy determination.¹⁷⁶ Although in the long-run the importance of these innovations was potentially path-breaking, they did little for salmon in the short-run.

NOAA determined whether the proposed 1995–1999 hydropower operations met the biological needs of salmon using a jeopardy framework aimed at ascertaining “whether the species can be expected to survive with

¹⁷² 1995 BiOp, *supra* note 114, at 13 (proposing that NOAA would “[d]etermine whether the species can be expected to survive with an adequate potential for recovery under the effects of the proposed or continuing action”). The 1992 and 1993 BiOps measured only survival. *See supra* notes 141–50 and accompanying text.

¹⁷³ *See* Endangered Species Act of 1973, 16 U.S.C. § 1533(f)(1) (2000) (“The Secretary shall develop and implement [recovery] plans . . . for the conservation and survival of endangered species and threatened species . . . [unless] such a plan will not promote the conservation of the species.”).

¹⁷⁴ *See* *Fund for Animals, Inc. v. Rice*, 85 F.3d 535, 547 (11th Cir. 1996) (determining that recovery plans do not have the “force of law”).

¹⁷⁵ NAT'L MARINE FISHERIES SERV., PROPOSED RECOVERY PLAN FOR SNAKE RIVER SALMON (March 1995).

¹⁷⁶ *See* 1995 BiOp, *supra* note 114, at 1 (describing incorporation of proposed recovery plan); *id.* at 14 (“NMFS will therefore first consider whether the proposed action is consistent with the Recovery Plan. If not, NMFS will consider whether the proposed action reduces the risks to the listed species as much or more than the Recovery Plan.”). Although the proposed recovery plan played an integral role in the 1995 BiOp, it never went final. 2000 BiOp, *supra* note 8, at 1-11.

an adequate potential for recovery under the effects of the proposed or continuing action, the environmental baseline and any cumulative effects, and considering measures for survival and recovery specific to other life stages.”¹⁷⁷ To implement this framework, the agency 1) defined the biological status and needs of the listed salmon populations, 2) weighed the effect of the conditions generated by the environmental baseline on the current status of listed salmon, 3) calculated the effects of the proposed action, and 4) added the impact of the “environmental baseline,”¹⁷⁸ the effects of the proposed action, along with any “cumulative effects”¹⁷⁹ from non-federal activities. Finally, the agency decided whether the salmon populations might survive and possibly recover.¹⁸⁰

This approach to jeopardy is an “aggregate” approach to jeopardy. In effect, NOAA created a balance sheet: on one side, the agency put the biological needs necessary for survival and for an “adequate potential for recovery” of listed salmon; on the other side, the agency listed the aggregate effect of 1) the effects incurred as a result of the environmental baseline, 2) any cumulative effects, and 3) the effects of the proposed action. If the sides balanced—if the aggregate effects did not exceed the biological needs of listed salmon, defined on the basis of the definitions of survival and recovery—NOAA would reach a no-jeopardy conclusion. If they did not, the proposed action would jeopardize listed salmon. In the 1995 BiOp, NOAA reached its jeopardy conclusion based on discrepancies between the proposed hydropower actions and the draft recovery plan, released just prior to the 1995 BiOp,¹⁸¹ which NOAA employed to define the biological needs of the listed salmon.¹⁸²

The 1995 BiOp employed a potentially revolutionary jeopardy definition: it considered not merely the stabilization of salmon populations—meaning survival—but also recovery—meaning population growth. In a draft of the 1995 BiOp, NOAA distinguished between survival and recovery, defining jeopardy as requiring a “high probability” of survival and a

¹⁷⁷ 1995 BiOp, *supra* note 114, at 13.

¹⁷⁸ The environmental baseline is defined to include:

the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process.

50 C.F.R. § 402.02 (2005).

¹⁷⁹ “Cumulative effects’ are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” *Id.*

¹⁸⁰ 1995 BiOp, *supra* note 114, at 13–14.

¹⁸¹ *See id.* at 91 (“NMFS concludes that the operation of [the hydropower system] is likely to jeopardize the continued existence of listed . . . salmon . . . because of . . . the fact that the proposed action differs in significant respects from the Recovery Plan . . .”).

¹⁸² *See id.* at 83 (noting that in the decision-making process, consistency with the recovery plan was influential in determining whether the proposed actions would achieve survival and recovery goals).

“moderate to high” likelihood of recovery.¹⁸³ In the final BiOp, NOAA watered down its approach, stating that the biological needs of salmon would be met if 1) the proposed actions led to a “high likelihood” of species survival, meaning that, relative to historic likelihood, a *majority* of populations will exist above threshold levels for twenty-four year and one-hundred year periods,¹⁸⁴ and 2) the proposed action demonstrated a “moderate likelihood” that a *majority* of the salmon populations will achieve recovery-based escapement thresholds within forty-eight years.¹⁸⁵ This analysis demanded neither survival nor recovery of all salmon populations, since both may be satisfied even if certain populations remain precipitously low or fail to survive at all.

By incorporating at least some recovery requirements, however, NOAA substantially improved its jeopardy definition. Yet its application of that definition continued to reflect the agency’s hesitation to require immediate action. For example, the temporal periods framing the jeopardy standard were quite long—achievement of above-threshold populations over twenty-four and one-hundred year periods, and recovery within forty-eight years—particularly in light of the rapid decline of salmon populations during the years prior to the 1995 BiOp. Further, the jeopardy standard did not require unqualified survival and recovery: merely a high likelihood for survival and a moderate likelihood of recovery for a majority, not all, salmon populations. Finally, NOAA continued to rely on BPA’s life-cycle modeling, which was based on lower risk assumptions and predictions of lower mortality rates for transported fish than state and tribal models.¹⁸⁶ The upshot was that in the

¹⁸³ See *Salmon and the ESA*, *supra* note 22, at 554 (quoting NAT’L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT—SECTION 7 CONSULTATIONS—REINITIATION OF CONSULTATION ON 1994–1998 OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM AND JUVENILE TRANSPORTATION PROGRAM IN 1995 AND FUTURE YEARS 16, app. 1 (pre-decisional document, Jan. 25, 1995)) (describing the 1995 draft BiOp).

¹⁸⁴ 1995 BiOp, *supra* note 114, at 83. The BiOp fixed escapement thresholds at either 150 or 300 spawners, depending on subpopulation size for Snake River spring/summer chinook; 300 adult spawners for Snake River fall chinook; and 150 or 300 for Snake River sockeye, also depending on subpopulation counts. *Id.* at 24–27. None of the salmon subpopulations met these thresholds regularly at the time the agency issued the 1995 BiOp; in fact, the situation was so dire that NOAA Fisheries predicted that only two adult Snake River sockeye would return to spawn in Redfish Lake in 1995. See *id.* at 27–31 (analyzing salmon population status under the environmental baseline).

¹⁸⁵ *Id.* at 32. For recovery, the BiOp set thresholds at the salmon levels proposed in the draft recovery plan, which was set to be released for public comment the same month as the BiOp. *Id.* at 1. These thresholds described eight-year geometric means, meaning that for sockeye at least 1000 naturally-produced fish would return to one lake, and 500 would return to each of its other spawning lakes in the Stanley Basin; for fall chinook at least 2,500 would spawn; for spring/summer chinook, the escapement threshold was 31,440 at Lower Granite Dam. *Id.* at 32.

¹⁸⁶ *Id.* at 84–85 (concluding that BPA’s “model assumptions are more consistent [than the state and tribal model] with available data on passage survival and therefore the results of life cycle modeling that use [BPA’s] results . . . are due more weight”). To predict juvenile migration mortality, BPA scientists developed a model called the Columbia River Fish Passage Model (CRISP). See Rollie Wilson, *Removing Dam Development to Recover Columbia Basin Treaty Protected Salmon Economies*, 24 AM. INDIAN L. REV. 357, 415 (2000) (explaining that BPA created CRISP in collaboration with University of Washington scientists). The CRISP model assumed much lower mortality rates, ultimately not factoring in delayed, post-transportation mortalities, producing results that favored the transportation program. *Id.* A competing state

1995 BiOp NOAA was able to preserve the hydropower status quo, reflected in the RPA's continued heavy reliance on the juvenile transportation program.¹⁸⁷

2. *The Reasonable and Prudent Alternative*

Because the proposed action would produce jeopardy, NOAA developed an RPA to allow the hydropower system to continue operations while avoiding jeopardy. The RPA adopted an "adaptive" management scheme under which the action agencies were to take specified immediate measures and do a considerable amount of planning and evaluation.¹⁸⁸ The goal of this adaptive management scheme was to combine "immediate actions to improve mainstem survival while reducing the uncertainty about the likely benefits of, need for and feasibility of major system structural modifications."¹⁸⁹ In reality, the scheme amounted to another NOAA attempt to maintain the status quo of hydropower operations.

The 1995 BiOp's immediate measures consisted of flow augmentation, spills, and continuation of the transportation program. Although billed as "immediate" actions, flow augmentation and increased spills were hardly immediate because factors unrelated to the salmon's biological requirements could forestall action. Even though NOAA touted the flow measures as a means to increase "the priority for the use of reservoirs for fish flow augmentation relative to power production," the agency structured the flows so as to not interfere with optimum hydropower operations.¹⁹⁰ This paramount concern for maintaining hydropower status quo became clear when viewed through the lens of the draft BiOp.¹⁹¹ The draft BiOp included biweekly benchmarks for flow averages in the Columbia and Snake Rivers.¹⁹²

and tribal model, Fish Leaving Under Several Hypotheses (FLUSH), in contrast, presumed that transported fish suffer a level of delayed mortality, and thus concluded that improved in-river migration was the most favorable option for juvenile salmon. *Id.*

¹⁸⁷ See *infra* notes 202–12 and accompanying text.

¹⁸⁸ 1995 BiOp, *supra* note 114, at 91. NOAA maintained that the RPA "employs an adaptive approach to increasing survival and the probability of recovery of listed salmon, by taking immediate actions to improve mainstem survival while reducing the uncertainty about the likely benefits of, need for and feasibility of major system structural modifications." *Id.* NOAA's increasing reliance on RPAs calling for planning, phased evaluations, and delayed implementation was once termed "studying the salmon to death." Neil Hamilton, *Feature: New Hope for Salmon in Northwest*, THE PLANET NEWSL., Dec.–Jan. 1995 (quoting Jim Baker, Sierra Club Wild Salmon Campaign Director), available at <http://www.sierraclub.org/planet/199412/ft-salmon.asp>; see *Beyond Parity*, *supra* note 112, at 68 n.299 (describing the collective voices advocating for NOAA Fisheries to not use science, or a lack of it, as a delay mechanism, including an editorial by a former Northwest Power Planning Council Chairman Ted Hallack, urging that science no longer be used as a delay mechanism).

¹⁸⁹ 1995 BiOp, *supra* note 114, at 91.

¹⁹⁰ *Id.* at 96.

¹⁹¹ The final BiOp's provisions were less protective than earlier drafts, which seemed to consider the biological needs of salmon more seriously. See *Salmon and the ESA*, *supra* note 22, at 552–54 (highlighting the chronology of several drafts and noting that the final version contained only "vague exhortations" and caveats like "economic mitigation").

¹⁹² For example, the draft BiOp called for Snake River biweekly flow averages of 85,000 to 100,000 cubic feet per second (cfs) and Columbia River biweekly flow averages of 220,000 to

The final BiOp included the same flow averages but, instead of biweekly requirements, called only for “recommended” seasonal averages—a significant change.¹⁹³ Moreover, the final BiOp indicated that flow targets could vary depending on optimum hydropower operations, suggesting that releases in specified reservoirs should be considered “interim” only because low runoff years would increase hydropower demand for stored water and, in such years, the flow targets for salmon would be impossible to meet.¹⁹⁴ Mandatory biweekly averages would have provided relatively steady and reliable flows for salmon, but NOAA set generous targets that could accommodate the demands of power generation, essentially allowing the hydropower agencies to conduct business as usual.

Although the BiOp’s RPA declared that the action agencies “shall spill at the Snake and Columbia River projects in order to increase fish passage efficiency and survivals at the dams,” it clarified that this apparent directive was actually merely an advisory guideline.¹⁹⁵ First, during the juvenile spring/summer chinook migration, low flow “triggers” would stop spill from occurring, allowing hydropower operators to pass all the water in the river through power generating turbines, although NOAA offered no biological justification for stopping spill.¹⁹⁶ Instead, increased transportation at juvenile collection sites would attempt to compensate for decreased spill.¹⁹⁷ During fall chinook migration, spill would occur only at those sites where juveniles were not collected for transportation, reflecting NOAA’s wholesale commitment to the transportation program.¹⁹⁸

260,000 cfs. See *Salmon and the ESA*, *supra* note 22, at 553–54 (offering a critique of the 1995 BiOp based on stronger salmon conservation terms in the drafts) (citing *Nat’l Marine Fisheries Serv., Pre-decisional ESA Document 10,957*, 10,960–61 (released to operating agencies Dec. 30, 1994)).

¹⁹³ The final BiOp called for Snake River spring flow averages of 85,000 to 100,000 cfs and Columbia River spring flow averages of 220,000 to 260,000 cfs. It also called for summer averages of 50,000 to 55,000 cfs in the Snake River and 200,000 cfs in the Columbia. See 1995 BiOp, *supra* note 114, at 103 (noting that “recommendations shall take into account the goal of meeting a seasonal average flow objective”). The draft BiOp, on the other hand, set biweekly targets, rather than seasonal—“spring” or “summer”—average targets, which would have made water levels much more reliable for salmon. See *Salmon and the ESA*, *supra* note 22, at 553–54.

¹⁹⁴ See 1995 BiOp, *supra* note 114, at 95 (noting that summer migration flows would suffer in low water years).

¹⁹⁵ *Id.* at 104.

¹⁹⁶ See *id.* at 105. At Lower Granite Dam, unregulated weekly average flows of less than 100,000 cfs would halt spill. *Id.* When unregulated weekly average flows fell below 85,000 cfs, no spill would occur at Lower Granite, Little Goose, or Lower Monumental Dam. *Id.*

¹⁹⁷ See *id.* at 105 (explaining the relationship between the spill triggers and the collection program, and suggesting that action agencies aimed to achieve a fish passage rate of 80% at non-collector projects). In fact, the BiOp set 80% fish passage efficiency standards for all of the dams. *Id.* This standard actually represented a low passage rate for the hydropower system. For example, if 100 Upper Snake River salmon migrate downstream, with an expected 80% passage rate at each dam, 80 fish would survive the first dam, 64 salmon would make it through the second dam, and so forth. Since some Snake River salmon must pass eight dams during their migration, only approximately 13 salmon would actually complete the migration. Upper Columbia River runs pass through nine dams, so below Bonneville Dam about 11 salmon would survive. See Blumm, *supra* note 31, at 118, for a similar description of mortalities produced by a 90% passage rate.

¹⁹⁸ 1995 BiOp, *supra* note 114, at 105.

Second, the 1995 BiOp conditioned spill on the levels of total dissolved gases measured below the dams, reducing or eliminating spills when gas levels exceeded 115% saturation over a twelve hour average.¹⁹⁹ The BiOp set these spill caps despite evidence from the states and tribes that showed gas levels as high as 120% would not increase the probability of mortality or susceptibility to disease and predation.²⁰⁰ Yet NOAA concluded, “the impairments to migrating fish as a result of the sublethal effects of dissolved gas may be sufficiently grave to warrant caution,” thereby maintaining the spill cap and continuing to ensure that all doubts were resolved in favor of the hydropower status quo.²⁰¹

The transportation program, widely criticized as ineffectual and with virtually no evidence of success,²⁰² was also conditional: Under the 1995 BiOp, it would continue to operate only until “credible” scientific data proved it ineffective.²⁰³ Maintaining the transportation program represented the core of NOAA’s vision of adaptive management: continued barging and trucking, more studies, and adaptation of the transportation program if, at a later date, the studies showed in-river migration to be more beneficial to salmon, creating a comparative test.²⁰⁴ NOAA termed this policy “spreading the risk.”²⁰⁵

¹⁹⁹ *Id.* at 108. Favoring spill reduction, NOAA Fisheries chose 12 hour averages over 24 hour averages and calculated the averages using the highest twelve hourly measurements. *Id.* NOAA Fisheries cited a desire to be “conservative” as its reason for these choices. *Id.*

²⁰⁰ *See id.* at 109 (summarizing the reasons NOAA rejected 120% as the maximum saturation level, which the states and tribes had recommended). The state agency and tribal evidence relied largely on studies conducted by NOAA, one of which indicated that prolonged exposure to 120% dissolved gas concentrations would not cause significant increases in mortality unless the fish remained in that water for over 40 days. *Id.* A second study demonstrated that exposure to gas saturation levels of 120% did not increase vulnerability to squawfish predation. *Id.* For the tribes’ plan for spill implementation, see TRIBAL RESTORATION PLAN, *supra* note 99, at 5B-24 to 5B-31.

²⁰¹ 1995 BiOp, *supra* note 114, at 108.

²⁰² *See id.* at 111 (acknowledging that most state and tribal commentators favor decreased reliance on transportation); TRIBAL RESTORATION PLAN, *supra* note 99, at 5B-25 to 5B-26 (discussing the failure of transportation to improve salmon runs and suggesting that transportation may, in fact, harm salmon); *see also The Case for Dam Breaching*, *supra* note 96, at 1009–10 (noting that two decades of barging and trucking have failed the salmon).

²⁰³ *See* 1995 BiOp, *supra* note 114, at 110 (indicating that transportation may be discontinued if “credible evidence is presented that in-river migration will be beneficial”). For a discussion of the ineffective nature of transportation, see *supra* note 108 and accompanying text.

²⁰⁴ *See* 1995 BiOp, *supra* note 114, at 81 (suggesting that continued reliance on transporting juveniles and limited implementation of a spill regime would allow for evaluation of the relative merits of in-river versus out-of-river passage methods). NOAA claimed its goal was to create a dynamic and interconnected spill and transportation program in which the relative significance of each passage method depended on flow conditions, in-river survivals, and the rate of delayed mortality from transport. *See id.* at 112 (promising that NOAA would establish a working group to review data and recommend a relationship between spill and transport in the future). NOAA’s plan relied on transportation unless river levels were high enough so that spilling would not have an overly detrimental effect on hydropower generation. In contrast, the tribal plan called for the immediate halt of the entire transportation program. *See* TRIBAL RESTORATION PLAN, *supra* note 99, at 5B-27, 5B-29 (explaining that closure of the program would allow thorough study of alternative passage methods).

²⁰⁵ *See* *Am. Rivers v. Nat’l Marine Fisheries Serv.*, No. Civ. 96-384-MA, 1997 WL 33797790, at *5 n.6 (D. Or. Apr. 3, 1997) (discussing the basis behind the “spread the risk” policy). “Spread

The spill and transportation program portions of the RPA exemplified NOAA's approach to scientific uncertainty. The RPA made clear that uncertainty warranted caution only in those circumstances that interfered with hydropower operations.²⁰⁶ In other circumstances, uncertainty meant simply that questionable actions could continue until scientific evidence proved otherwise.²⁰⁷ This is a reckless, not a precautionary approach, resolving all doubts in favor of the status quo. For example, NOAA's decision not to commit to an unconditional spill program rested on its judgment that studies showing high gas levels were not likely to endanger salmon were inconclusive, so it maintained spills caps.²⁰⁸ And the agency retained the transportation program, claiming that data submitted by the states and tribes concerning that program's delayed mortality needed further assessment before it was reliable enough to call into question the merits of barging juvenile salmon, even though two decades of the transportation program had yielded no evidence of improved salmon runs.²⁰⁹

Had NOAA followed the same approach it took regarding spill implementation in its decision making concerning the transportation program, the agency would have concluded that precaution warranted a suspension of barging and trucking.²¹⁰ In short, one might have expected that the agency charged with protecting listed salmon would resolve at least

the risk" was actually a policy initiated by the Northwest Power Planning Council. *See* 1994 AMENDMENTS, *supra* note 113, at 2-3 (describing a "system" approach for assessing conflicts and trade-offs). However, the Council's "spread the risk" policy favored reductions in the transportation program. *See Beyond Parity*, *supra* note 112, at 73 (comparing "spread the risk" policy of the 1994 Amendments to the that of the 1995 BiOp). The 1994 Amendments to the Columbia Basin Fish and Wildlife Program advocated employment of both in-river and out-of-river approaches to juvenile migration, with equal numbers of fish migrating in-river as those transported, which required a reduction in the number of transported fish. 1994 AMENDMENTS, *supra* note 113, at 5-6 to 5-7.

²⁰⁶ *See infra* notes 210-12 and accompanying text.

²⁰⁷ *See supra* note 203 and accompanying text.

²⁰⁸ *See* 1995 BiOp, *supra* note 114, at 109-10 (explaining that the spill requirements were experimental because of uncertainties about the benefits and the need to collect more information on total dissolved gas levels).

²⁰⁹ *See* RETURN TO THE RIVER 2000, *supra* note 92, at 293. The efficacy of the transportation program remains unknown:

Available evidence is not sufficient to identify transportation as either a primary or supporting method of choice for salmon recovery in the Snake River Basin. . . . Even if all juvenile salmon could be collected for transportation, there is not enough evidence from previous research to suggest that even the minimum survival rates necessary for maintenance of population levels could be achieved, let alone those survival rates necessary for rebuilding of salmon populations.

Id. at 299.

²¹⁰ Unlike the 1995 BiOp, the 1994 Amendments to the Columbia River Basin Fish and Wildlife Program recognized the need for precaution regarding the transportation program. 1994 AMENDMENTS, *supra* note 113, at 5-46; *see also Beyond Parity*, *supra* note 112, at 58 (suggesting that the 1994 Amendments restricted the transportation program). The Amendments also adopted an adaptive management plan, but, unlike NOAA, the Northwest Power Planning Council understood that transportation had yet to produce any evidence of salmon recovery. The Council consequently recommended that the transportation program operate only in "extremely adverse" river conditions. 1994 AMENDMENTS, *supra* note 113, at 5-46.

some uncertainties in favor of the salmon. But the 1995 BiOp clearly put the burden of proof on salmon, a far cry from the first draft of the 1995 BiOp, where NOAA expressly stated that “the ESA does not require that the burden of proof be put on the listed species.”²¹¹ Thus, despite Judge Marsh’s calls for precautionary salmon management,²¹² scientific uncertainty continued to benefit the maintenance of the hydropower status quo.

In addition to studying the relative merits of spill and transport, the “planning and evaluation” provisions in the 1995 BiOp called for extensive studying of the feasibility of reservoir drawdowns.²¹³ The lack of immediate attention to significant reservoir drawdowns distinguished the BiOp from other prominent salmon restoration plans at the time,²¹⁴ which called for reservoir drawdowns to hasten juvenile salmon migration and reduce the threats that juveniles face in the dangerous slackwater of reservoirs.²¹⁵ In the first draft of the 1995 BiOp, NOAA endorsed reservoir drawdowns as a primary means of reducing harm to salmon, but the final version offered only a watered-down directive, calling for operation of the Lower Snake River reservoirs within a foot of minimum operating pool and operation of the John Day Reservoir within one-and-a-half feet of minimum irrigation pool.²¹⁶ Ignoring the advice of the states and tribes, NOAA delayed further action at John Day until it studied the feasibility of extending irrigation

²¹¹ *Salmon and the ESA*, *supra* note 22, at 553 (quoting *Nat’l Marine Fisheries Serv., Predecisional ESA Document* 10,945 (released to operating agencies Dec. 30, 1994)).

²¹² See *supra* note 159 and accompanying text.

²¹³ See 1995 BiOp, *supra* note 114, at 91 (outlining the stages of implementation, planning, and evaluation).

²¹⁴ For example, the 1994 Amendments to the Columbia River Basin Fish and Wildlife Program called for a phased approach to drawdowns, immediately drawing down Lower Granite Dam to near minimum operating pool for the juvenile migration period and the John Day Reservoir to minimum irrigation pool during the summer months. 1994 AMENDMENTS, *supra* note 113, at 5-25. John Day Reservoir would subsequently remain at minimum operating pool year-round, and Lower Granite Dam, as well as Little Goose Dam, would eventually be drawn down to near spill level during the migration period. *Id.* at 5-26 to 5-27. See *Beyond Parity*, *supra* note 112, at 54–57 (describing the drawdown provisions of the 1994 Amendments). Central to the 1994 Amendments was an understanding that the effects of drawdowns could not be understood until they were implemented. *Id.* at 56.

The tribes’ plan also called for immediate drawdowns, echoing the 1994 Amendments concerning the immediate drawdown of Lower Granite Dam and the immediate drawdown to minimum operating pool of the John Day Reservoir, and also calling for seasonal drawdowns to minimum operating pool at the other Lower Snake River dams (Little Goose, Lower Monumental, and Ice Harbor dams). TRIBAL RESTORATION PLAN, *supra* note 99, at 5B-29 to 5B-31; see also Melissa Powers, *The Spirit of the Salmon: How the Tribal Restoration Plan Could Restore Columbia Basin Salmon*, 30 ENVTL. L. 867, 898–99 (2000) (detailing the potential effects on salmon of the tribal plan’s calls for permanent drawdowns).

²¹⁵ See Noonan, *supra* note 121, at 796–98 (describing the predicted benefits on juvenile salmon migration of reservoir drawdowns). But see *id.* at 798–99 (highlighting the threats drawdowns could pose to other salmon runs, including prevention of proper operation of adult fish ladders).

²¹⁶ 1995 BiOp, *supra* note 114, at 113. The immediate calls for drawdowns on the Lower Snake were conditional: the reservoirs could operate at higher levels to conduct approved research. *Id.* The first draft of the BiOp called for immediate drawdown of the Lower Snake River reservoirs to near minimum operating pool and directed that planning should begin immediately for operation of those reservoirs at natural river levels. See *Salmon and the ESA*, *supra* note 22, at 553–55 (describing the changes in the series of drafts of the 1995 BiOp).

pumps and reconstructing boat ramps, as well as the impacts drawdowns would have on other wildlife.²¹⁷ The 1995 BiOp deferred final action on reservoir drawdowns until 2000.²¹⁸ Pre-decisional release of draft versions of the 1995 BiOp clearly influenced the final version, as in virtually every provision NOAA (whose representatives were able to comment on the draft BiOps) accommodated economic concerns, diffusing its directives in order to protect status quo hydropower operations.²¹⁹

3. 1995 BiOp Litigation

Although the 1995 BiOp found jeopardy and consequently created an RPA to avoid the jeopardizing effects of the proposed action, environmental groups nonetheless challenged NOAA's decision.²²⁰ In *American Rivers, Inc. v. National Marine Fisheries Service*, environmentalists claimed that the 1995 BiOp failed to adequately explain how the RPA would avoid jeopardy, and why it dropped a twenty-four year period from the recovery analysis.²²¹ The environmentalists also maintained that NOAA unjustifiably diminished the significance of state and tribal life-cycle modeling results, relying instead on the overly optimistic modeling of BPA to conclude that the RPA would avoid jeopardy.²²² They also argued that the reason for excising the twenty-four year period from the recovery analysis was to produce more optimistic results.²²³

Despite considerable skepticism of NOAA's approach to salmon recovery by the reviewing court, Judge Marsh upheld the 1995 BiOp just three years after he had called for a "major overhaul" of hydropower operations²²⁴—though not without noting that he remained quite skeptical. Unlike the 1993 BiOp, NOAA discounted each life-cycle model based on its relative flaws and underestimations, and explained that it relied on each model proportionately in its decision making.²²⁵ Further, Judge Marsh

²¹⁷ 1995 BiOp, *supra* note 114, at 113. The states and tribes recommended immediate drawdown of John Day to minimum operating pool, largely because that reservoir has one of the highest smolt predation rates. *Id.* The "economic mitigation" at John Day Reservoir had an extensive history. See *Beyond Parity*, *supra* note 112, at 66 n.291 (explaining the context for NOAA's decision-making regarding drawdowns at John Day Reservoir).

²¹⁸ See 1995 BiOp, *supra* note 114, at 75 (describing NOAA's decision-making). NOAA stated that, if drawdowns became the preferred alternative, implementation could not begin until 2000. *Id.*

²¹⁹ See *Salmon and the ESA*, *supra* note 22, at 553–55 (noting changes from draft 1995 BiOps to the final version and indicating that NOAA described the changes as reasonable economic considerations).

²²⁰ See generally *Am. Rivers, Inc. v. Nat'l Marine Fisheries Serv.*, No. CV 96-384-MA, 1997 WL 33797790 (D. Or. Apr. 3, 1997). Although Oregon and Idaho had both been plaintiffs in *IDFG v. NMFS*, in *American Rivers*, three years later, reflecting a change from a Democratic to a Republican governor, Idaho filed an amicus brief in support of NOAA. *Id.* at *6.

²²¹ See *id.* at *4–5, *9.

²²² See *id.* at *8.

²²³ See *id.* at *9. In the final BiOp, NOAA Fisheries' definition of recovery included an analysis considering recovery only over a 48 year period, but in an earlier draft NOAA included a 24 as well as a 48 year period. *Id.*

²²⁴ See *IDFG v. NMFS*, 850 F. Supp. 886, 900 (D. Or. 1994).

²²⁵ See *American Rivers*, 1997 WL 33797790, at *8. For example, NOAA discounted the state

determined that NOAA had adequately explained its recovery definition, although observing that the environmentalists' "criticism of the merits of . . . [NOAA's] ultimate selection of a 48 year recovery period may be well-founded since it appears to have produced the most optimistic results."²²⁶

This sort of judicial unease characterized Judge Marsh's opinion, and he expressly noted: "Given the dwindling numbers, time is clearly running out [for the salmon]. As a long-time observer and examiner of this process, I cannot help but question the soundness of the selected level of risk acceptance."²²⁷ However, judicial restraint and deference to agency decisionmaking led him to uphold the 1995 BiOp, the only one of the Columbia Basin hydropower BiOps to survive judicial scrutiny.

C. The 2000 BiOp: More Status Quo (with Offsite Mitigation Promises)

By the time NOAA released its 2000 BiOp, governing hydropower and irrigation operations from 2001 to 2005,²²⁸ several additional salmon evolutionary significant units (ESUs) had been listed under the ESA.²²⁹ Despite the additional listings, the 2000 BiOp retained many features of the 1995 BiOp. Both BiOps employed the same basic jeopardy framework, although the 2000 BiOp added an additional step, as discussed below. Both incorporated adaptive management into the RPAs.

and tribal models because they failed to consider predator removal programs and dismissed BPA's model for its failure to consider likely departures from assumed recruit-to-spawner ratios. *Id.* Further, NOAA did not outright reject any of the models. *Id.*

²²⁶ *Id.* at *9.

²²⁷ *Id.* at *10.

²²⁸ The 2000 BiOp examined the effects of the continued operation of 19 individual Bureau of Reclamation projects on listed Columbia Basin salmon, as well as the juvenile salmon transportation program. 2000 BiOp, *supra* note 8, at 1-1, 1-3; see *Avoiding Dam Breaching, supra* note 97, at 250–51 (discussing the 2000 BiOp).

²²⁹ In addition to considering Snake River fall and spring/summer chinook and Snake River sockeye, the 2000 BiOp assessed the status of Upper Columbia River spring chinook, Upper Willamette River chinook, Lower Columbia River chinook, Snake River steelhead, Upper Columbia River steelhead, Middle Columbia River steelhead, Upper Willamette River steelhead, Lower Columbia River steelhead, and Columbia River chum. See 2000 BiOp, *supra* note 8, at 1-7 to 1-8 (listing salmon considered during consultation); see also *Endangered and Threatened Species: Threatened Status for Three Chinook Salmon Evolutionarily Significant Units (ESUs) in Washington and Oregon*, and *Endangered Status for One Chinook Salmon ESU in Washington*, 64 Fed. Reg. 14,308 (Mar. 24, 1999) (listing Upper Columbia River spring chinook as endangered, Upper Willamette River chinook as threatened, and Lower Columbia River chinook as threatened); *Endangered and Threatened Species: Listing of Several Evolutionarily Significant Units (ESUs) of West Coast Steelhead*, 62 Fed. Reg. 43,937 (Aug. 18, 1997) (listing Snake River steelhead as threatened and Upper Columbia River steelhead as endangered); *Endangered and Threatened Species: Threatened Status for Two Steelhead ESUs in Washington and Oregon*, 64 Fed. Reg. 14,517 (Mar. 25, 1999) (listing Middle Columbia River steelhead as threatened and Upper Willamette River steelhead as threatened); *Endangered and Threatened Species: Threatened Status for Two ESUs of Steelhead in Washington, Oregon, and California*, 63 Fed. Reg. 13,347 (Mar. 19, 1998) (listing Lower Columbia River steelhead as threatened); *Endangered and Threatened Species: Threatened Status for Two ESUs of Chum Salmon in Washington and Oregon*, 64 Fed. Reg. 14,508 (Mar. 25, 1999) (listing Columbia River chum as threatened).

In other significant ways, the BiOps were quite different. The 2000 BiOp's jeopardy definition was less favorable to salmon than was the 1995 BiOp's definition. Further, the additional step in the jeopardy analysis—which measured both survival and recovery in the context of an entire salmon life-cycle—induced NOAA to incorporate non-hydropower agency actions from the Basinwide Recovery Strategy (BRS), NOAA's new salmon recovery plan,²³⁰ as “offsite mitigation.” This reliance would ultimately cause the 2000 BiOp to fail to survive judicial scrutiny.²³¹

1. *The Jeopardy Analysis*

In the 2000 BiOp, NOAA employed the same four step jeopardy framework analysis it used in the 1995 BiOp, but added an additional step.²³² As in 1995, the agency added the effects of the proposed action in the action area to the environmental baseline and the cumulative effects, then determined whether those aggregate effects met the biological requirements of the listed salmon.²³³ Unlike the 1995 BiOp, however, NOAA undertook a further “comprehensive analysis,” considering the proposed actions in light of a salmon life-cycle, involving a much larger area than the action area.²³⁴ This extra analysis was central to the agency's concept of “ecosystem management” in the 2000 BiOp.²³⁵ But instead of creating sound ecosystem management for hydropower operations, the analysis placed the burden of both salmon survival and recovery beyond the boundary of the action area—that is, beyond the operation of the dams, where most human-caused salmon mortalities occur.²³⁶

This expansive view of salmon survival and recovery shifted the focus of attention beyond hydrosystem operations. Thus, the 2000 BiOp evaluated the proposed dam operations in the context of the BRS's life-cycle approach, which examined the biological needs of salmon at each life-stage in order to recover healthy populations, including parts of the life-cycle unaffected by

²³⁰ See 2000 BiOp, *supra* note 8, at 1-11 (noting that the BRS replaced the 1995 draft salmon recovery plan). See generally Federal Caucus, Conservation of Columbia Basin Fish: Final Basinwide Salmon Recovery Strategy Volume 1 (Dec. 21, 2000), available at http://www.salmonrecovery.gov/reports_and_papers/all_h_strategy/docs/2000_Final_Strategy_Vol_1.pdf.

²³¹ See *infra* notes 294–313 and accompanying text.

²³² See *supra* notes 177–80 and accompanying text (describing the four step jeopardy framework).

²³³ The “action area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” 50 C.F.R. § 402.02 (2005).

²³⁴ See 2000 BiOp, *supra* note 8, at 1-9 (citing the 1995 BiOp). The goal of this comprehensive analysis was an examination of “measures likely to be necessary in all life stages that, in combination, would insure that the biological requirements of the listed species will be met and thereby insure its continued existence.” *Id.*

²³⁵ For more on the relationship between ecosystem management and salmon restoration, see SACRIFICING THE SALMON, *supra* note 2, at 309–22.

²³⁶ As one of the authors of this Article put it: “In the case of Columbia Basin salmon, ecosystem management plans can also make it appear that serious salmon restoration strategies are being pursued when in fact the existing activities that produce the lion's share of salmon mortalities are allowed to continue.” *Id.* at 309.

hydropower operations.²³⁷ The result was that the 2000 BiOp included an RPA in which “offsite mitigation” was the preeminent feature.

The definitions of survival and recovery—the jeopardy definition—morphed in the 2000 BiOp as well. In effect, they became even more favorable to hydropower status quo. NOAA equated survival with avoiding absolute extinction over the next 100 years, with absolute extinction defined as just one returning fish over the course of a salmon generation.²³⁸ This definition assumed that survival is commensurate with merely not being extinct, a considerable dilution from the 1995 definition of survival.²³⁹ Further, NOAA incorporated into the definition a five percent chance that natural phenomena other than the proposed actions would cause extinction.²⁴⁰ Finally, the agency continued to gauge survival against a “high likelihood” standard, meaning that any given population still had some chance of extinction, beyond the five percent factored in to account for the possibility of “natural” extinction.²⁴¹ This definition of survival—with its long-range time spans, the criterion of only one returning spawner, the presumption of natural extinction, and the need to demonstrate only a “high likelihood” of survival—was undeniably favorable to the hydropower status quo.

NOAA described recovery as the likelihood that natural spawners would achieve average returns, over an eight year period, comparable to the recovery levels specified by the BRS.²⁴² However, since the agency had recovery abundance-level estimates for only a limited number of the listed populations,²⁴³ the BiOp also relied on a second indicator of recovery, the

²³⁷ See 2000 BiOp, *supra* note 8, at 1-10 to 1-11 (directing that recovery planning provides the best barometer of whether the proposed actions satisfy species-level biological requirements).

²³⁸ *Id.* at 1-13. Although NOAA chose 100 years as the main time frame for measuring survival, the agency acknowledged that hypothesizing population dynamics over a 100 year period was fraught with uncertainty. *Id.* For this reason, NOAA Fisheries also conducted a 24 year analysis, suggesting that if predictions at the 24 year stage were dire, the adaptive management process would allow the action agencies to modify their operations. *Id.* The agency explained that it chose absolute extinction instead of “quasi-extinction level because of the unambiguous interpretation of this criterion, whereas quasi-extinction levels such as 20, 50, or 100 fish have different meanings for populations of different sizes and capacities in different river systems.” *Id.*

²³⁹ The 1995 BiOp judged survival as at least 350 returning spawners for most salmon populations. See *supra* notes 184–85 and accompanying text (describing the 1995 jeopardy standard for survival).

²⁴⁰ See 2000 BiOp, *supra* note 8, at 1-13 (explaining that NOAA determined that 5% was adequately conservative relative to other estimations employing 10% probability factors).

²⁴¹ See *id.* Had NOAA Fisheries wanted to ensure that a population met the survival standard, it would have chosen a gauge of absolute survival—in other words, a 100% chance of meeting the survival standard.

²⁴² See *id.* at 1-14 (stating that the recovery standard in the 1995 BiOp is still relevant). For a description of the 1995 BiOp’s recovery standard, see *supra* notes 183–87 and accompanying text. As in the 1995 BiOp, the standard was phrased as simply a likelihood of achievement. *Id.* In quantifiable terms, this meant that recovery would be achieved if the probability was greater than or equal to 50%. See *id.* at 6-79 (describing a risk level of greater than, or equal to, 50% for recovery); see also SACRIFICING THE SALMON, *supra* note 2, at 182 (estimating quantifications of NOAA’s qualitative assessment criteria in the 1995 BiOp).

²⁴³ See 2000 BiOp, *supra* note 8, at 1-14 (indicating that NOAA had no complete estimates for any of the ESUs but identified recovery abundance levels for five ESUs based on the best

same as that found in the 1995 BiOp: “the level of improvement needed in the productivity of the population to result in a median annual population growth rate . . . greater than 1.0 over 48 years.”²⁴⁴ A rate of 1.0 indicates that the population is at least replacing itself; any rate higher than 1.0 means that the population is growing.²⁴⁵ Thus, any growth in wild populations of listed salmon, however slight, over a span of forty-eight years would satisfy the recovery definition.²⁴⁶ This standard did not require populations to grow yearly: any growth over the forty-eight-year period was sufficient.²⁴⁷

2. *The Reasonable and Prudent Alternative*

Despite these generous definitions of survival and recovery, the proposed hydropower operations could not convince NOAA to issue a no-jeopardy determination for each of the listed salmon.²⁴⁸ To satisfy the biological requirements of an entire salmon life-cycle, and therefore avoid jeopardy, the 2000 BiOp incorporated the BRS into the RPA as non-hydropower “offsite” mitigation, thus further implementing “ecosystem management.”²⁴⁹ In so doing, NOAA employed a multi-tiered approach.

First, the agency created a system of performance standards, which it used to measure the progressive success of staged RPA actions during periodic reviews.²⁵⁰ The BiOp employed this system to implement adaptive management, under which NOAA and the action agencies would redirect efforts based on periodic review and evaluation. Second, the BiOp directed the action agencies to implement a series of ongoing hydropower-related measures.²⁵¹ Third, it incorporated “offsite mitigation,” which included numerous promised actions related to salmon harvest, habitat, and hatcheries, mostly by agencies other than the hydropower agencies.²⁵²

available science).

²⁴⁴ *See id.* (concluding this standard provides a goal that is at least higher than current abundance levels).

²⁴⁵ *Id.*

²⁴⁶ *See id.* (noting that a population must be growing at least slightly to recover).

²⁴⁷ Action agencies therefore would not have to adjust their activities in response to annual population declines.

²⁴⁸ The 2000 BiOp concluded that FCRPS operations would jeopardize the continued existence of eight salmon species: 1) Snake River spring/summer chinook salmon, 2) Snake River fall chinook salmon, 3) Upper Columbia River spring Chinook salmon, 4) Snake River steelhead, 5) Upper Columbia River steelhead, 6) Middle Columbia River steelhead, 7) Columbia River chum salmon, and 8) Snake River sockeye salmon. *Id.* at 8-3, 8-5, 8-7, 8-13, 8-23, 8-25. The BiOp also determined that FCRPS operations did not jeopardize four species. *See id.* at 8-3, 8-5, 8-7, 8-9, 8-11, 8-13, 8-15, 8-17, 8-19, 8-21, 8-23, 8-25 (Upper Willamette River chinook, Lower Columbia River chinook, Upper Willamette River steelhead, and Lower Columbia River steelhead).

²⁴⁹ *See id.* at 9-1 (determining that the measures provided for in the BRS would avoid jeopardy for all listed salmon species). *See generally Avoiding Dam Breaching, supra* note 97 (describing both the 2000 BiOp’s RPA and the BRS).

²⁵⁰ *See* 2000 BiOp, *supra* note 8, at 9-1, 9-3 to 9-5 (providing for performance standards, staged planning, periodic assessments, and monitoring and evaluation reporting).

²⁵¹ *See infra* notes 269–82 and accompanying text.

²⁵² *See* 2000 BiOp, *supra* note 8, at 9-1 to 9-2 (calling for ongoing measures, as well as offsite mitigation actions).

Included in the RPA were 199 measures designed to offset the effects of FCRPS operations on Columbia Basin salmon.²⁵³ Although RPAs generally attempt to mitigate the adverse effects an agency's action may have on listed species by altering the proposed action itself,²⁵⁴ remarkably, the 2000 BiOp called for very few FCRPS operational changes, and instead made only minor technical changes.²⁵⁵ The 2000 BiOp did, however, assign the spill program as its "highest priority" for improving the survival rate of juvenile salmon in the Columbia Basin.²⁵⁶

²⁵³ For example, the 2000 BiOp established flow objectives for the Lower Snake River at Lower Granite Dam that ranged from 85,000 to 100,000 cfs in the spring, and 50,000 to 55,000 cfs in the summer. *Id.* at 9-56 tbl.9.6-1. Flow objectives for the Lower Columbia River were 220,000 to 260,000 cfs in the spring, 200,000 cfs in the summer, and 125,000 to 160,000 cfs in the winter. *Id.* The 2000 BiOp required the Bureau of Reclamation to work to reduce streamflow depletions in water supply contracts, acquire water through purchases, pursue water conservation measures, and develop plans to reduce illegal water use. *Id.* at 9-68 to 9-71. The RPA also established water quality measures like installing spill deflectors to reduce levels of dissolved gases, which can cause gas bubble trauma in juvenile salmon. *Id.* at 9-121 to 9-125. The RPA called for the maximizing juvenile transportation as well as providing annual spill on all mainstem dams. *Id.* at 9-76, 9-88. And the RPA set minimum reservoir levels. *Id.* at 9-65. *See also* *Avoiding Dam Breaching*, *supra* note 97, at 250-67 (providing a detailed summary of the 2000 BiOp and its RPA).

²⁵⁴ *Avoiding Dam Breaching*, *supra* note 97, at 253.

²⁵⁵ For example, the RPA included a plan to operate the FCRPS dams and reservoirs with the intent of meeting certain flow objectives (e.g., at Lower Granite Dam, 85,000-100,000 cfs during spring and 50,000-55,000 cfs during summer). 2000 BiOp, *supra* note 8, at 9-55. The RPA contained a directive to the action agencies to coordinate with the state, tribes, NMFS, and USFWS in planning for spill and flow objectives. *Id.* at 9-60. The RPA also directed the Corps and BPA to continue to negotiate with British Columbia Hydro for annual releases from storage projects in excess of that called for by the Columbia River Treaty. *Id.* at 9-67. And the RPA called for enhanced spill and spillway improvements, improved flow management, physical improvements to juvenile and adult passage facilities, and increased use of barges rather than trucks for transporting juvenile salmon around Columbia Basin dams. *Id.* at 9-2.

²⁵⁶ *Id.* at 9-82. The 2000 BiOp also relied heavily on the development of removable spillway weirs (RSWs), which may provide an alternative route of dam passage for juvenile salmon that is as safe as traditional spill. *See id.* at 9-54, 9-85 to 9-86 (calling for further evaluation of removable spillway weirs). RSWs, a relatively new dam passage technology, are massive structures—approximately 105 feet tall, 70 feet wide, and 1.7 million pounds—installed on the surface of the reservoir at the dams, which allow juvenile salmon to pass through the dams near the water's surface over a raised spillway crest—similar to a waterslide—and through the dam to avoid turbine passage without the use of traditional spill or artificial transportation. Initial studies show that juvenile fish pass over the weir as safely as conventional spill but without the loss of large quantities of water. The Corps claims that the use of RSWs can actually improve salmon survival compared to traditional spill because traditional spill normally involves opening "spill gates" that are 50 to 60 feet below the surface of the water, which can expose juvenile salmon to trauma from high pressure and high velocity passage. Also, because the weir allows juvenile salmon to pass through the dam continually, there is no migration delay at the dams' reservoirs, where juvenile salmon are often the target of predatory birds and marine species. RSWs are designed to be removed by controlled submersion, allowing dam operators to return the spillway flow to full capacity during major flood events. A prototype RSW was installed at Lower Granite Dam in 2001, a second RSW was installed at Ice Harbor Dam in 2005, and a third RSW is scheduled to be installed at Lower Monumental Dam in 2007. U.S. ARMY CORPS OF ENGRS, WALLA WALLA DIST., SPILLWAY WEIR FACT SHEET, http://www.nww.usace.army.mil/spillway_weir/SW_FactSheet.pdf (last visited Jul. 15, 2006) [hereinafter SPILLWAY WEIR FACT SHEET].

Although initial studies of salmon survival through RSW show that salmon passage

“Offsite mitigation” measures, addressing factors unrelated to actual dam operations, such as habitat protection, hatchery operations, predator control, as well as harvest control measures,²⁵⁷ dominated the RPA.²⁵⁸ Claiming that “hydro actions alone” could not avoid a finding of jeopardy to listed species, NOAA concluded that such “offsite mitigation” measures were necessary to avoid jeopardy under the ESA.²⁵⁹ Thus, most of the 199 mitigation measures in the RPA were offsite, away from the hydrosystem, and many involved studies, evaluations, reports, and requests for funding, rather than concrete remedial action.²⁶⁰ In addition, many of these measures directed nonfederal agencies, such as states, tribes, and local agencies—over which NOAA had no authority—to take specific actions designed to improve juvenile salmon survival.²⁶¹

a. Performance Standards, Planning, and Review

NOAA’s method of planning, review, evaluation, and adaptation in the 2000 BiOp was extraordinarily complex, relying on analyses of tiered standards and progressive implementation. As with the final 1995 BiOp, the final 2000 BiOp represented weakened directives relative to earlier drafts. For example, a draft of the 2000 BiOp would have imposed concrete biological performance standards, which, if not met, would trigger a failure report and produce changes in hydropower operations.²⁶² The final 2000

through an RSW is as safe as through a traditional spill (Lower Granite tests showed 98% survival), conservationists have expressed doubts as to whether the RSWs can improve juvenile salmon migration over conventional spill, calling for more studies of survival rates through the RSW. *Id.*; Joe Rojas-Burke, *Spillway Device May Offer Safer Spillway for Migrating Salmon*, THE OREGONIAN, Nov. 26, 2004, at D01, available at <http://www.fwee.org/news/getStory?story=1320>. Moreover, RSWs are quite expensive: each RSW costs approximately \$13 million to build and install, with another \$5–8 million required for testing over several years. SPILLWAY WEIR FACT SHEET, *supra*, see Bill Rudolph, *Removable Spillway Weir at Ice Harbor a Top Priority for 2004*, NW. FISHLETTER, Feb. 6, 2004, <http://www.bluefish.org/weiratom.htm> (last visited Apr. 4, 2006). Funding for such measures depends on congressional appropriations, over which neither NOAA nor the action agencies have any control.

²⁵⁷ See *Avoiding Dam Breaching*, *supra* note 97, at 253, 260.

²⁵⁸ *Id.* at 284.

²⁵⁹ 2000 BiOp, *supra* note 8, at 9-2.

²⁶⁰ *Avoiding Dam Breaching*, *supra* note 97, at 253–54.

²⁶¹ *Id.* For example, one provision called for the action agencies, states, and tribes to “coordinate” management of flow and spill operations. 2000 BiOp, *supra* note 8, at 9-60. Another measure directed BPA and the Corps to request, and negotiate with B.C. Hydro, a Canadian entity, for storage water for flow enhancement within the Columbia Basin. *Id.* at 9-67. Several actions asked for peer-review panels and third party independent groups to conduct various studies. See, e.g., *id.* at 9-72 (calling for a peer-review panel with at least three independent reviewers with expertise in water management, flood control, or anadromous salmonids and the involvement of state, tribal, and Canadian agencies to provide a feasibility analysis of modifying flood control operations); see also *Avoiding Dam Breaching*, *supra* note 97, at 283–88 (examining the legality of the 2000 BiOp and its accompanying RPA).

²⁶² See NAT’L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT—SECTION 7 CONSULTATION: DRAFT BIOLOGICAL OPINION: OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM INCLUDING THE JUVENILE FISH TRANSPORTATION PROGRAM AND THE BUREAU OF RECLAMATION’S 31 PROJECTS, INCLUDING THE ENTIRE COLUMBIA BASIN PROJECT 9-22 (July 27, 2000) [hereinafter

BiOp did include a series of general categories of biological performance standards, measured at different stages of a salmon's life-cycle for both hydropower and offsite actions, but the performance standards were much less concrete than in the draft.²⁶³

The BiOp also included physical performance standards.²⁶⁴ Evaluations of these standards were to occur at three, five, and eight year periods.²⁶⁵ The five-year plan set long-term goals for operation of the hydropower system and funding and evaluation objectives for the coordination of offsite mitigation efforts.²⁶⁶ The first yearly plan would specify project-specific and technical measures needed to implement the initial year of the five-year plan.²⁶⁷ This phased and tiered structure for implementing the RPA encouraged adaptive management, but it also fostered considerable possibility of inaction (and perhaps aimed to dissuade active judicial

DRAFT BiOp]. The draft BiOp measured population productivity using *lambda*, defined as annual population growth or decline, measured by observed population abundance, reflecting a population's productivity. *Id.* at 9-8. NOAA used *lambda* to indicate whether the hydropower and other RPA actions were successful. *Id.* at 9-22. For example, at the eight-year review, if NOAA calculated *lambda* as greater than 1.1 (meaning that the population was more than replacing itself), actions could continue without reinitiation of consultation. *Id.* If *lambda* was between .95 and 1.1, NOAA would continue to recommend implementation but reinitiate consultation to reassess the jeopardy conclusion. *Id.* If *lambda* was less than .95 (meaning declining population numbers), however, "[NOAA] shall notify the Action Agencies in writing that the RPA is failing to avoid jeopardy . . . [and NOAA] shall propose a specific plan for changes to avoid jeopardy, including breaching one or more dams as appropriate." *Id.*

²⁶³ The performance standards consisted of three tiers. First, population-based standards indicated an adequate likelihood of survival and recovery for each listed population. *Id.* at 9-7. Second, a life-stage standard distributed performance expectations between habitat, harvest, hatcheries, and hydropower. *Id.* The final tier aimed to ensure that biological requirements were satisfied at each stage of a salmon's life-cycle. *Id.* Whether these standards were met depended on achieving a positive *lambda*. Finally, NOAA delineated various standards, either quantitative or qualitative, for each of the four types of actions—hydro, habitat, harvest, and hatchery. *See id.* at 9-11 to 9-17 (establishing the various standards); *see also Avoiding Dam Breaching, supra* note 97, at 255 (noting that "in response to comments on the draft BiOp . . . [NOAA] diluted the significance of *lambda*").

²⁶⁴ The physical standards estimated changes in ecosystem characteristics necessary to support the biological requirements of each listed salmon population at each life-stage. *See id.* at 9-17 (suggesting that these standards may be used in lieu of biological standards when biological standards are hard to quantify). Physical standards applied to actions such as water quality improvements, habitat access, and in-stream flow levels. *See Avoiding Dam Breaching, supra* note 97, at 254 (observing that although the BiOp outlined the standards, it established no specific targets and established no concrete parameters).

²⁶⁵ *See* 2000 BiOp, *supra* note 8, at 9-7 (defining the performance standards as the scheduled actions at each review period). Further, NOAA established a framework for creating "rolling" one and five year plans, with involvement from regional tribes and state fish and wildlife managers, when possible. *See id.* at 9-3 (indicating that "[a]n annual, multiyear planning process to refine, implement, evaluate, and adjust ongoing efforts is critical to achieving the . . . hydro and offsite performance standards within the time frame covered by this biological opinion"). The BiOp suggested that regional consensus was desirable, but a lack of it did not equate to a failure to implement the RPA. *See id.* at 9-24.

²⁶⁶ *See id.* (noting that long-term projections will indicate the actions needed to be taken to meet performance standards).

²⁶⁷ *See id.* (planning for action agencies to include detailed implementation directives in annual plan).

review).²⁶⁸ The BiOp gave hydropower operators nearly a decade to show any overall improvement in salmon productivity, and whether any of the offsite mitigation measures would actually occur was entirely speculative. Although the listed salmon populations' continued decline suggested the need for immediate and concrete action, the 2000 BiOp demanded action only at some uncertain future date, effectively choosing maintenance of the hydropower status quo over the needs of salmon.

b. Hydropower Operation Mitigation

The 2000 BiOp's hydropower mitigation measures reflected NOAA's determination that the proposed action, as modified by the RPA, would produce an "acceptably low risk of extinction."²⁶⁹ This conclusion effectively allowed hydropower agencies at least a decade to phase in adjustments providing for promised long-term productivity improvements. Many of the RPA's hydropower prescriptions merely repeated the federal hydropower agencies' proposals and included many of the same operating parameters as in the 1995 BiOp's RPA, including flow objectives, transportation reliance, a limited spill regime, and setting reservoir levels.²⁷⁰

The flow objectives in the 2000 BiOp's RPA were not mandatory: instead, the action agencies had to operate dams and reservoirs only with the mere "intent" to attain goals on seasonal and weekly averaged bases, mirroring the language in the 1995 RPA.²⁷¹ Despite the 1995 BiOp's goal of reworking the juvenile fish passage strategy based on studies of the record of river migration methods, the 2000 BiOp simply maintained the same transportation program approved in the 1995 BiOp.²⁷² Thus, the 2000 RPA

²⁶⁸ See Powers, *supra* note 214, at 893 (suggesting that adaptive management can be "a smokescreen for agency recalcitrance or irresponsibility" and "another term for compromise and inaction").

²⁶⁹ See 2000 BiOp, *supra* note 8, at 9-1 ("Based on the best available scientific information, the following fundamental components of the RPA would allow the FCRPS to avoid jeopardizing the continued existence of the listed species or adversely modifying their critical habitat."); see also *NWF v. NMFS I*, 254 F. Supp. 2d 1196, 1201 (D. Or. 2003) (describing briefly the components of the RPA and its effects on eight of the listed salmon ESUs).

²⁷⁰ See 2000 BiOp, *supra* note 8, at 3-1. The action agencies' proposed action largely continued implementation of the 1995 RPA. *Id.*; see *Avoiding Dam Breaching*, *supra* note 97, at 253 (questioning the efficacy salmon protection from the RPA because few operational changes were to occur). Many of the changes were merely technical, including proposals to study in-river fish passage versus the juvenile transportation program. *Id.*

²⁷¹ See 2000 BiOp, *supra* note 8, at 9-55 (suggesting that flow objectives will benefit migrating juvenile salmon). Snake River flow targets at Lower Granite Dam remained the same as those called for in the 1995 BiOp: spring flows ranging from 85,000 to 100,000 cfs, and 50,000 to 55,000 cfs for summer flows. *Id.* at 9-56, tbl.9.6-1. Columbia River flows at McNary Dam were 220,000 to 260,000 cfs during the spring, 200,000 cfs for summer, and 125,000 to 160,000 cfs for winter at Bonneville Dam, depending on water volume forecasts. *Id.* At Priest Rapids Dam, spring flows had a target of 135,000 cfs. *Id.* For a description of the 1995 BiOp's flow schedule, see *supra* note 193 and accompanying text.

²⁷² See 2000 BiOp, *supra* note 8, at 3-6 (proposing to continue barging efforts approved in the 1995 BiOp with the same "spread the risk" approach); see also *Avoiding Dam Breaching*, *supra* note 97, at 258 (noting that the only change was a minor adjustment, which emphasized barging over trucking). The Corps collected juvenile migrants at many of the Lower Snake and

adopted an identical “spread the risk” approach as the 1995 RPA but provided an even more limited spill schedule, allegedly because gas limits were regularly exceeded under the 1995 regime.²⁷³ NOAA imposed these limits on spill, despite the fact it recognized that “the body of research evidence indicates that juvenile survival is generally highest through this passage route.”²⁷⁴ Unfortunately, for juvenile salmon survival, this approach meant less effective action and more ineffective studying.²⁷⁵

As with most other hydropower actions, the specified reservoir levels were nearly exactly the same as those in the 1995 BiOp. In fact, the only reservoir-level change was a ten day extension of operating the John Day Reservoir within a foot-and-a-half of minimum irrigation pool, moving the start date from April twentieth to April tenth.²⁷⁶ Despite the many promises of operational changes resulting from the studies conducted under the 1995 RPA, the 2000 BiOp merely called for additional studies,²⁷⁷ apparently content to continue the hydropower status quo. The commitment to the status quo was even more obvious in the BiOp’s treatment of dam breaching.²⁷⁸ In a draft of the 2000 BiOp, NOAA insisted that the Army Corps of Engineers, operator of the Lower Snake River dams, request congressional authorization for dam breaching in 2006.²⁷⁹ Even in the final BiOp, NOAA acknowledged that “breaching the four Lower Snake River

Columbia River dams and transported them downriver for release below Bonneville Dam. 2000 BiOp, *supra* note 8, at 3-6. Spill, which interferes with collection of juvenile fish for transport, was curtailed during summer months in order to coordinate with a comprehensive trucking regime, which would collect juveniles from all four transport facilities. *See id.* (indicating that reduced spill would allow more juveniles to be diverted into collection facilities).

²⁷³ 2000 BiOp, *supra* note 8, at 9-82 (describing assumption that increased spill would occur only if “implemented in a biologically safe manner to maintain appropriate water quality”). For example, because NOAA set so-called “conservative” gas level limits in 1995, the spill goal of 80% at Lower Granite Dam caused gas limits to be regularly exceeded. *See Avoiding Dam Breaching, supra* note 97, at 259 (highlighting changes in spill regime between the 1995 and 2000 BiOps); *see also supra* notes 190-95 and accompanying text (detailing the 1995 BiOp’s flow schedule and gas limits). Consequently, NOAA set the spill goal at Lower Granite Dam at 60,000 cfs, a reduction of approximately 20% from earlier spill goals, in the 2000 BiOp. *See* 2000 BiOp, *supra* note 8, at 9-88 to 9-89 (indicating project-by-project spill requirements).

²⁷⁴ *See* 2000 BiOp, *supra* note 8, at 9-88 to 9-89 (noting that studies would continue and that spill would be the baseline for measuring the relative successes of the various passage methods).

²⁷⁵ *See id.* at 9-101 to 9-102 (directing action agencies to continue studies of spill efficacy).

²⁷⁶ *See id.* at 9-65. The Snake River reservoirs were to operate within one foot of minimum operating pool, from April third until the time small numbers of juveniles were present, at which point collection for transport would begin. *Id.*

²⁷⁷ *See Avoiding Dam Breaching, supra* note 97, at 295 (concluding that the 2000 BiOp eschewed immediate action in favor of planning and evaluation).

²⁷⁸ Prior to the release of the 2000 BiOp, numerous salmon advocates and environmental groups urged NOAA to seriously consider the possibility of breaching the four Lower Snake River Dams. *See id.* at 248-50; Dan Hansen, *Breaching Hearings Draw 9,000: Nearly 30,000 Submit Opinions on What Should Happen to Snake River Dams*, SPOKESMAN REV., Mar. 17, 2000, at B1. The Lower Snake River Dams consist of the Lower Granite, Little Goose, Lower Monumental, and Ice Harbor dams. For an examination of the biological, economic, and legal arguments for breaching the Lower Snake River Dams, *see The Case For Dam Breaching, supra* note 96, at 1005-06.

²⁷⁹ *See* Jonathon Brinckman, *Unreleased Federal Plan calls for Dam Breaching*, THE OREGONIAN, Nov. 18, 2000, at A1 (describing the draft BiOp released to federal agencies).

dams would provide more certainty of long-term survival and recovery than would other measures.²⁸⁰ But the BiOp stated only that the action agencies should consider the need to breach the Lower Snake River dams if NOAA issued a failure report at the five or eight year reviews.²⁸¹ As a result of NOAA's lip service to the possibility of dam breaching, environmentalists and salmon advocates scrutinized the 2000 BiOp closely.²⁸²

c. Offsite Mitigation

Because status quo operations of the hydropower system would not alone achieve a no-jeopardy determination, NOAA incorporated numerous offsite mitigation actions to improve the productivity of salmon populations in order to avoid jeopardy through promises to achieve appropriate levels of survival and recovery.²⁸³ This offsite mitigation was mostly directed at agencies other than the action (federal hydropower) agencies, since the BiOp aimed to address the phases of the salmon lifecycle not directly affected by hydropower operations, including harvests, habitat, and hatcheries.²⁸⁴ The BRS supplied the offsite mitigation outline, since its plan incorporated recovery at all salmon life-stages, thus directing actions at other federal agencies, as well as state, tribal, local, and private entities.²⁸⁵ Reliance on a recovery plan like the BRS was not an innovation of the 2000 BiOp. But unlike the 1995 BiOp—which used the 1995 draft recovery plan directives as a baseline for proposing improved hydropower operations, like spills, drawdowns, and so forth—the 2000 BiOp's RPA incorporated actions directed at entities unrelated to the federal hydropower system, and these actions were crucial to the RPA's jeopardy analysis.²⁸⁶

Because NOAA has authority to affect only the operational choices of the federal hydropower agencies as action agencies,²⁸⁷ it called for those

²⁸⁰ 2000 BiOp, *supra* note 8, at 9-5.

²⁸¹ *Id.* at 9-130 (indicating that only reevaluation, not action, would occur if NOAA Fisheries issued a failure report).

²⁸² See *Avoiding Dam Breaching*, *supra* note 97, at 276.

²⁸³ See 2000 BiOp, *supra* note 8, at 9-2.

²⁸⁴ See *id.* at 9-15 (explaining that the goal of offsite mitigation is to improve the likelihood that all of the species' biological requirements will be met).

²⁸⁵ See *Avoiding Dam Breaching*, *supra* note 97, at 260–61 (explaining that authority to implement many of the offsite mitigation measures rests with agencies other than those operating the dams); see also *NWF v. NMFS I*, 254 F. Supp. 2d 1196, 1201 (D. Or. June 29, 2001) (quoting Def.'s Summ. J. Mem. 6) (indicating that the 1995 BiOp included "actions to be taken by federal, state and private entities across all phases of the salmon life-cycle (the four 'Hs' of Habitat, Hatcheries, Harvest, and Hydropower) to restore the runs"). But see 2000 BiOp, *supra* note 8, at 9-21 ("Offsite enhancement includes only measures that are within the current authorities of the Action Agencies.").

²⁸⁶ "In combination with efforts to reduce hydro-mortality, improvements expected from other ongoing Federal actions, and the cumulative effects of state or private activities . . . should be sufficient to allow . . . [dam] operations to meet the jeopardy standard." 2000 BiOp, *supra* note 8, at 9-21 (describing significance of offsite mitigation). For details on the 1995 BiOp's RPA, see *supra* notes 188–219 and accompanying text.

²⁸⁷ See 16 U.S.C. § 1536(b)(4)(C)(iv) (2000) (delineating the authority of consulting agencies to establish "terms and conditions . . . that must be complied with by the Federal agency or

agencies to fund, study, and coordinate the offsite actions in order to link the actions in the BRS with the RPA.²⁸⁸ For example, NOAA directed BPA to fund habitat programs related to both tributaries and the Columbia River estuary and to coordinate efforts with the Northwest Power Planning Council to develop subbasin habitat assessments.²⁸⁹ Although BPA has virtually no authority to affect salmon harvest, the RPA called for the power agency to “work with” other federal agencies, states, and tribes to study and initiate use of selective fishing gear (which could minimize incidental takes of listed salmon) and to develop better stock assessments for use in the creation of harvest management plans.²⁹⁰

The RPA also indicated that BPA should become a benefactor of the hatchery program, funding hatchery and genetic management plans, a hatchery fish identification program, and an “artificial propagation safety net program.”²⁹¹ Thus, the 2000 BiOp created a new BPA funding role concerning

applicant . . . to implement the measures specified [as a reasonable and prudent alternative to avoid species jeopardy]”); *see also* 2000 BiOp, *supra* note 8, at 9-30 to 9-31 (describing responsibility of action agencies to plan, research, monitor, and evaluate habitat, hatchery, and harvest actions).

²⁸⁸ *See Avoiding Dam Breaching, supra* note 97, at 260–67 (describing funding, studying, and coordination obligations and the need to link the RPA to the BRS).

²⁸⁹ 2000 BiOp, *supra* note 8, at 9-134. The RPA directed BPA to fund protection of productive non-federal habitat through conservation easements, acquisitions, or coordination with conservation organizations. *Id.* It also called for the agency to research methods of increasing tributary flow, such as establishing a water brokerage. *Id.* Further, NOAA suggested a variety of ways BPA could support offsite habitat enhancement, including participating in tribal, state, and regional restoration efforts. *Id.* at 9-135. Additionally, the RPA required BPA to fund an estuary restoration program and develop an estuary habitat plan. *Id.* at 9-139; *see also Avoiding Dam Breaching, supra* note 97, at 261–62 (describing RPA’s habitat provisions).

²⁹⁰ 2000 BiOp, *supra* note 8, at 9-146 to 9-148. NOAA enlisted BPA to help create a multi-year development program for devising, testing, and implementing selective fishing gear in coordination with NOAA, FWS, and tribal and state fishery management agencies. *Id.* at 9-146. The BiOp also called for BPA to work with the same agencies and with the Pacific Salmon Commission (which administers the Pacific Salmon Treaty between the United States and Canada) as well as the Pacific Fishery Management Council (which establishes harvest rates for ocean fishers), to improve and revise stock assessment models. *Id.* at 9-147. The extent to which BPA can participate in the efforts of these fishery agencies is questionable; certainly BPA does not have authority to require any of these agencies to use data or other information from any studies it might conduct or fund. *See Avoiding Dam Breaching, supra* note 97, at 263 (questioning whether BPA’s assigned role in harvest management is sufficient to avoid jeopardy).

²⁹¹ These hatchery provisions seemed a closer fit in terms of BPA’s involvement in offsite mitigation activities because federal hydropower agencies have relied on hatchery production for years to insulate the hydroelectric system from criticism over declining salmon runs. *See Avoiding Dam Breaching, supra* note 97, at 263–64 (noting that hydroelectric operators have long pointed to hatchery fish to claim that the Columbia Basin could reap the awards of both cheap electricity and abundant salmon runs). The hatchery and genetic management plan is a comprehensive monitoring and evaluation plan, studying the impacts of hatchery fish and wild fish and setting forth facility and operational details for the hatchery program. 2000 BiOp, *supra* note 8, at 9-155. In terms of the marking program, BPA was merely to fund the undertaking, enabling regional, state, tribal, and federal fish managers to mark the adipose fin of all hatchery-origin salmon. *Id.* at 9-157 to 9-158. The “artificial propagation safety-net program” created a four-step process for artificial production supplementation and intervention when a particular depressed salmon population faces a high risk of extinction. *Id.* at 9-158. NOAA instructed BPA to fund this program and, when appropriate, to implement necessary measures. *Id.* at 9-159.

habitat, harvest, and hatchery measures. Actually implementing most of the actions with any direct benefits to salmon was well beyond the scope of BPA's authority.²⁹² And whether NOAA could legally rely on speculative implementation of these actions to support its no-jeopardy determination was highly questionable. In fact, Judge Redden, the reviewing district court judge, struck down the 2000 BiOp because he concluded that the habitat, harvest, and hatchery directives aimed at non-action agencies were not "reasonably certain to occur," as required by ESA regulations.²⁹³

3. *Judicial Rejection of the 2000 Biological Opinion*

In May 2001, a coalition of salmon advocates²⁹⁴ sued NOAA, challenging its reliance in the 2000 BiOp on uncertain future federal, state, and private mitigation actions that had not undergone consultation.²⁹⁵ Among other things, the salmon advocates argued that NOAA had no authority to direct nonfederal entities to take any particular action in the Columbia River Basin.²⁹⁶ Thus, the mitigation measures that the 2000 BiOp called for the states and private parties to implement—including habitat protection, hatchery improvements, and harvest controls²⁹⁷—were not "reasonably certain" to occur, as required by the ESA.²⁹⁸ Therefore, NOAA could not rely

²⁹² The 2000 BiOp described the extent of BPA's authority to implement these actions. *See id.* at 9-21. Under the Northwest Power Act, BPA has authority to "protect, mitigate, and enhance" the fish and wildlife compromised by construction and operation of the hydropower system through participation in the Council's fish and wildlife program, but this authority extends only to some of the 2000 BiOp's offsite programs. *Id.*; *see also supra* note 5, *infra* notes 406-08, 411 and accompanying text (describing Northwest Power Act).

²⁹³ *See infra* notes 308-11 and accompanying text.

²⁹⁴ The State of Oregon, the Nez Perce Tribe, the Confederated Tribes and Bands of the Yakima Indian Nation, the Confederated Tribes of the Umatilla Indian Reservation, and the Confederated Tribes of the Warm Springs Reservation of Oregon all filed amicus curiae briefs on behalf of the plaintiffs, which were comprised of 13 non-profit environmental and salmon conservation organizations: the National Wildlife Federation, the Idaho Wildlife Federation, 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. *NWF v. NMFS I*, 254 F. Supp. 2d 1196, 1200 (D. Or. 2003).

²⁹⁵ *Id.* at 1203.

²⁹⁶ *Id.*

²⁹⁷ For example, the RPA called for the development of an estuary restoration program to protect and restore 10,000 acres of tidal wetlands and other key habitat areas over 10 years, through the acquisition of lands, breaching levees, creation of wetlands, and other habitat measures. 2000 BiOp, *supra* note 8, at 9-139 to 9-140. It was not clear, however, who would implement habitat measures on non-federal lands. *See Avoiding Dam Breaching, supra* note 97, at 262. Moreover, hydropower managers have virtually no authority over harvest management. *See id.* at 163.

²⁹⁸ *NWF v. NMFS I*, 254 F. Supp. 2d at 1213-14; *see also* *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002) (citing *Sierra Club v. Marsh*, 816 F.2d 1376, 1389 (9th Cir. 1987)) ("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.").

upon them to reach a no jeopardy conclusion.²⁹⁹ In *National Wildlife Federation v. National Marine Fisheries Service (NWF v. NMFS I)*,³⁰⁰ Oregon District Court Judge James Redden agreed with the environmentalists and struck down the 2000 BiOp.³⁰¹

Judge Redden first concluded that NOAA's definition of the "action area" subject to section 7 consultation was unreasonably narrow.³⁰² Although the ESA regulations required NOAA to assess the biological impact of Federal Columbia River Power System (FCRPS) operations on "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action,"³⁰³ the agency claimed that only the mitigation measures within the immediate action area—the mainstem

²⁹⁹ *NWF v. NMFS I*, 254 F. Supp. 2d at 1213–14. The salmon advocates also argued that NOAA's no-jeopardy conclusion relied on implementation of future federal conservation plans that required, but had yet to undergo ESA consultation, and thus might never be implemented. *Id.* at 1207–08. In addition, they challenged an emergency exemption in the 2000 BiOp, authorizing the action agencies to ignore the BiOp's measures for indefinite periods of time in the event of power system, flood control, or other emergencies. Plaintiff's Complaint for Declaratory and Injunctive Relief, at 35, Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. CV 01-00640-KI (D. Or. June 29, 2001) [hereinafter *NWF Complaint*]; see *Avoiding Dam Breaching*, *supra* note 97, at 276–77; 2000 BiOp, *supra* note 8, at 9-62, 9-88. Because NOAA had never assessed the effects of the emergency exemption, the plaintiffs argued that such a broad exemption was contrary to the ESA. *NWF Complaint*, *supra*, at 35; see *Avoiding Dam Breaching*, *supra* note 97, at 260, 279. Importantly, the BiOp did not define what constituted an emergency. 2000 BiOp, *supra* note 8, at 9-62. Further, the BiOp did not require the action agencies to consult with NOAA prior to invoking the exemption. *Id.* For an examination of the legality of the 2000 BiOp's emergency exemption, see *Avoiding Dam Breaching*, *supra* note 97, at 288–92 (arguing that there was no authority in the ESA authorizing an agency to unilaterally exempt itself from the ESA's requirements). Nowhere in the 2000 BiOp was there an explanation of how the exemption fit into NOAA's no jeopardy conclusion.

The salmon advocates also maintained that NOAA's issuance of an incidental take permit was unlawful, alleging that NOAA's failure to track or even evaluate the amount of the incidental take violated the ESA. *Id.* at 293. Finally, the plaintiffs argued that NOAA failed to use the best available science in assessing the status of the species. *Id.* at 277. Judge Redden declined to address most of these arguments, limiting the scope of his ruling to NOAA's noncompliance with the ESA and its regulations. In so doing, he avoided the most difficult issues raised by the plaintiffs: whether NOAA employed the best available science, whether the emergency exception was contrary to the ESA, and whether the ESA required NOAA to track and evaluate the amount of incidental take authorized by the BiOp.

³⁰⁰ 254 F. Supp. 2d 1196 (D. Or. 2003).

³⁰¹ *Id.* at 1211–13.

³⁰² *Id.* at 1212. Under the ESA regulations, NOAA must consider the "effects of the action" and the "cumulative effects" of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." 50 C.F.R. § 402.02 (2005) (defining cumulative effects); see 50 C.F.R. § 402.14(g)(3) (2005) (defining NOAA's responsibilities during formal consultation). The regulations define "action area" to include "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." *Id.* § 402.02. In its 2000 BiOp, NOAA considered the action area as "the farthest upstream point at which smolts enter . . . the Snake and Upper Columbia Rivers to the farthest downstream point at which they exit . . . the migration corridor. In the Snake River, that area translates to immediately below Hells Canyon Dam . . . to the confluence of the Snake and Columbia Rivers. In the Columbia River, the action area begins immediately below Chief Joseph Dam . . ." 2000 BiOp, *supra* note 8, at 5-1.

³⁰³ See 50 C.F.R. § 402.02 (2005) (defining action area).

Columbia and Snake Rivers—were subject to the ESA’s consultation requirements.³⁰⁴ The court rejected NOAA’s argument that the RPA’s “range-wide” mitigation measures³⁰⁵ were outside the scope of section 7 consultation, and consequently did not need to be “reasonably certain” to occur.³⁰⁶ Judge Redden observed that the agency’s no-jeopardy conclusion depended on the same “range-wide” habitat, harvest, and hatchery mitigation measures that it now claimed were outside the action area, which suggested that the “range-wide” area was indirectly affected by FCRPS operations, and thus subject to the requirements of section 7.³⁰⁷

The court also rejected NOAA’s argument that its proposed offsite mitigation measures did not have to be “reasonably certain” to occur, holding that the ESA regulations expressly required such certainty.³⁰⁸ Since there was no evidence indicating that any of the states, tribes, or private parties named in the RPA had committed to implementing any of the measures that the RPA assigned to them, Judge Redden concluded that those measures were not “reasonably certain” to occur.³⁰⁹ In addition, the RPA included a number of federal actions that required, but had not undergone, ESA consultation.³¹⁰ Because NOAA placed such a heavy reliance

³⁰⁴ *NWF v. NMFS I*, 254 F. Supp. 2d at 1210; see 2000 BiOp, *supra* note 8, at 5-1.

³⁰⁵ The range-wide mitigation measures included in the 2000 RPA consisted of both federal and non-federal offsite habitat, harvest, and hatchery proposals listed in the Basinwide Recovery Strategy. The Basinwide Recovery Strategy included, among other things, a variety of short- and long-term federal, state, regional, tribal, and private off-site mitigation actions, primarily related to habitat, harvest, and hatchery programs designed to “provide survival improvements needed to avoid jeopardy.” 2000 BiOp, *supra* note 8, at 9-282; see *id.* at 9-133 to 9-141 (calling for habitat improvements, such as creating an agricultural incentive program, developing improvement plans, establishing riparian buffers, restoring and protecting 10,000 acres of tidal wetlands, and conducting habitat improvement feasibility studies); *id.* at 9-143 to 9-149 (calling for harvest improvements such as developing selective fishing methods and equipment, tribal and state fishery management and stock assessment models, improved methods of estimating mortalities in fisheries, and credit systems for harvest reforms); *id.* at 9-151 to 9-160 (calling for hatchery improvements such as developing hatchery and genetic management plans, hatchery maintenance plans, a safety-net program, and implementing hatchery reforms).

³⁰⁶ *NWF v. NMFS I*, 254 F. Supp. 2d at 1209–10. Under the ESA, “[m]itigation 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.” *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002) (citing *Sierra Club v. Marsh*, 816 F.2d 1376, 1389 (9th Cir. 1987)). In *NWF v. NMFS I*, NOAA argued that “range-wide” offsite mitigation measures were adequate if there monitoring and evaluation standards were in place, so that it was reasonable to expect that the measures were likely to occur. *NWF v. NMFS I*, 254 F. Supp. 2d at 1210.

³⁰⁷ *NWF v. NMFS I*, 254 F. Supp. 2d at 1212.

³⁰⁸ See *id.* at 1210 (rejecting NOAA’s claim that the mitigation measures had to be merely “reasonably likely” to occur); see also 50 C.F.R. § 402.02 (2005) (requiring a consulting agency to assess the “effects . . . that are reasonably certain to occur within the action area”).

³⁰⁹ *NWF v. NMFS I*, 254 F. Supp. 2d at 1213; cf. *Or. Natural Res. Council v. Daley*, 16 F. Supp. 2d 1256, 1259 (D. Or. 1998) (warning that NOAA “may not make [an] ESA listing decision based upon the hope that Oregon implements adequate enforceable measures and the hope that those measures will be taken in time to save the Oregon Coast ESU”).

³¹⁰ *NWF v. NMFS I*, 254 F. Supp. 2d at 1214. For example, The RPA called for the development of the Interior Columbia Basin Ecosystem Management Plan, a joint Forest

on offsite federal actions that had not undergone section 7 consultation, as well as non-federal mitigation actions that were not reasonably certain to occur, Judge Redden ruled that the 2000 BiOp's no-jeopardy conclusion was arbitrary and capricious.³¹¹

Despite the 2000 BiOp's substantial legal flaws, Judge Redden denied the salmon advocates' motion to vacate the 2000 BiOp; instead, he instructed NOAA to cure the deficiencies in the 2000 BiOp within one year.³¹² The potentially disruptive effect that an injunction vacating the 2000 BiOp could have had on federal power operations, as well as NOAA's potential exposure to takings liability under the ESA for FCRPS operations during the remand period, led Judge Redden to conclude that the balance of equities favored allowing the 2000 BiOp to remain in place during the remand period.³¹³

IV. THE BRIEF RISE AND FALL OF THE BPA/CORPS PROPOSAL TO CURTAIL SUMMER SPILL

During the summer of 2004—just a year after Judge Redden struck down the 2000 BiOp—BPA and the Corps issued proposals to curtail the summer spill at four Columbia Basin dams in an effort to generate hydroelectric revenue.³¹⁴ Although the 2000 BiOp cited the spill program as a core element of successful salmon mitigation through the Federal Columbia River Power System (FCRPS),³¹⁵ The National Oceanic and Atmospheric

Service and Bureau of Land Management Plan designed to provide long-term guidance for managing habitat east of the Cascades, and the Mid-Columbia Habitat Conservation Plan, aimed at improving juvenile and adult salmon survival. *Id.* at 1207–08; 2000 BiOp *supra* note 8, at 9-30 to 9-31.

³¹¹ *NWF v. NMFS I*, 254 F. Supp.2d at 1214–15.

³¹² *Id.* at 1215. Judge Redden ordered NOAA to insure that only those federal mitigation actions which had undergone section 7 consultation, and those non-federal actions that were reasonably certain to occur, were considered in NOAA's determination of whether any listed Columbia Basin salmon would be jeopardized by continued FCRPS operations. *Id.*; Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., Minute Order, Civ. No. 01-00640-KI (D. Or. June 25, 2003). The one-year time frame was later extended to 18 months. *NWF v. NMFS III*, No. CV 01-640-RE, CV 05-23-RE, 2005 WL 1278878, at *2 (D. Or. May 26, 2005). According to Judge Redden, the environmentalists failed to offer a convincing argument that an injunction vacating the 2000 BiOp, standing alone, would enhance the survivability or recovery of listed Columbia Basin salmon. Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. CV-01-640-RE, at *3 (D. Or. July 1, 2003) (order denying plaintiffs' motion to vacate the 2000 BiOp).

³¹³ Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., No. CV-01-640-RE, at *3 (D. Or. July 1, 2003).

³¹⁴ U.S. ARMY CORPS OF ENG'RS & BONNEVILLE POWER ADMIN., FINAL PROPOSAL FOR FEDERAL COLUMBIA RIVER POWER SYSTEM (FCRPS) SUMMER JUVENILE BYPASS OPERATIONS 1 (June 22, 2004), available at http://www.salmonrecovery.gov/Implementation/final_summerspill_proposal_6_22.pdf [hereinafter 2004 FINAL PROPOSAL]; U.S. ARMY CORPS OF ENG'RS, STATEMENT OF DECISION, MODIFICATION TO SUMMER SPILL OPERATIONS FOR FISH PASSAGE IN 2004 12–14 (July 6, 2004) [hereinafter CORPS STATEMENT OF DECISION], available at http://www.salmonrecovery.gov/docs/summer_spill/statement_of_decision/corps_Statement_of_Decision.pdf; BONNEVILLE POWER ADMIN., 2004 FEDERAL COLUMBIA RIVER POWER SYSTEM JUVENILE BYPASS OPERATIONS STATEMENT OF DECISION 1–2 (July 6, 2004), available at http://www.salmonrecovery.gov/docs/summer_spill/statement_of_decision/BPA_Statement%20of%20Decision.pdf [hereinafter BPA STATEMENT OF DECISION].

³¹⁵ See *supra* note 256 and accompanying text.

Administration (NOAA) surprisingly concluded that the proposed reduction in spill was consistent with the 2000 BiOp, and thus would not produce jeopardy for any listed Columbia Basin salmon.³¹⁶ A number of environmental groups, led by the National Wildlife Federation, immediately filed suit, claiming that the agency had illegally modified the summer spill program established in the 2000 BiOp.³¹⁷ This Part describes the BPA/Corps proposal to curtail spill during summer 2004, outlines the arguments of those who opposed that proposal, and explains the significance of Judge Redden's decision to enjoin the proposal. The court's spill decision clearly reflected Judge Redden's growing impatience with attempts by federal hydrosystem operators to evade the ESA's requirements.

A. The 2004 Proposal to Curtail Summer Spill

The BPA/Corps 2004 proposal to curtail spill called for eliminating spill at The Dalles and Bonneville dams for the entire month of August, as well as eliminating spill at the Ice Harbor and John Day dams during the last week of August.³¹⁸ BPA and the Corps maintained that the majority of juvenile salmon would have passed The Dalles, Bonneville, Ice Harbor, and John Day dams by the end of July, so the reduction of spill in August would have little effect on the majority of migrating fish.³¹⁹ Although the two dam operating agencies acknowledged that the spill proposal might result in a loss of up to 376,000 listed juvenile salmon,³²⁰ they claimed that in the context of an estimated total run of 50 million juvenile salmon, the effect would be minimal, and that any adverse effects to listed salmon could be mitigated.³²¹ The agencies claimed their proposal would save the region's ratepayers \$18-28 million,³²² while ensuring salmon survival equivalent to, if not better than,

³¹⁶ NOAA, FINDINGS REGARDING ADEQUACY OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM ACTION AGENCIES 2004 ANNUAL IMPLEMENTATION PLAN 9 (July 1, 2004), available at <http://www.eswt.com/704/spill04findings.pdf>.

³¹⁷ *NWF v. NMFS II*, No. CV 01-6940-RE, 2004 WL 1698050, at *2 (D. Or. July 29, 2004). As in *NWF v. NMFS I*, 254 F. Supp. 2d 1196 (D. Or. 2003), the plaintiffs were 13 environmental and salmon advocacy groups: National Wildlife Federation, Idaho Wildlife Federation, Washington Wildlife Federation, Sierra Club, Trout Unlimited, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, Idaho Rivers United, Idaho Steelhead and Salmon United, Northwest Sportfishing Industry Association, Friends of the Earth, Salmon for All, Columbia Riverkeeper. *NWF v. NMFS II*, 2004 WL 1698050, at *1. The State of Oregon and several treaty tribes filed *amicus curiae* briefs on behalf of the plaintiffs as well. *Id.*

³¹⁸ *NWF v. NMFS II*, 2004 WL 1698050 at *3-4.

³¹⁹ *Id.*

³²⁰ BPA STATEMENT OF DECISION, *supra* note 314, at 4.

³²¹ *Id.*

³²² Press Release, U.S. Army Corps of Eng'rs, Summer Spill Program Expected to Reduce Costs, Protect Fish (July 6, 2004), available at <http://www.bpa.gov/corporate/BPAnews/2004/NewsRelease.cfm?ReleaseNo=504>. Salmon advocates claimed that the primary beneficiaries of the savings that BPA and the Corps claimed would result from the reduction in spill were industrial power users, and that the average residential ratepayer would save only seven to ten cents per month. Press Release, Pat Ford & Rob Masonis, Save Our Wild Salmon & American Rivers et al., Court Orders Federal Agencies to Keep Spilling for Salmon (July 28, 2004) (on file with author).

the estimated juvenile salmon survival rates in the 2000 BiOp.³²³ The latter contention rested on a series of proposed “offsets” that would allegedly mitigate any adverse effects to protected fish.³²⁴

Among the proposed “offsets” was continuation of an aggressive transportation program, predator control, new fish passage technologies, harvest controls, and water flow management.³²⁵ But, each of these measures was included in the 2000 BiOp’s RPA, which was still in effect.³²⁶ One “offset” not required by the 2000 BiOp was the release of an additional 100,000 acre-feet of water from Idaho Power Company’s Brownlee Reservoir in July 2004, the product of a one-year agreement between BPA and Idaho Power.³²⁷ If timed properly, increased river flows could improve juvenile salmon survival, increasing the speed at which salmon are able to migrate through reservoirs to the ocean, thus minimizing both the threat of predation and potentially lethal water temperatures during the summer.³²⁸ BPA and the Corps claimed that the Brownlee storage release would benefit migrating juvenile salmon and offset the adverse effects that spill reduction would have on migrating salmon, even though the proposal called for the release of water in July, a month before the agencies planned to reduce spill in August.³²⁹ Although BPA and the Corps claimed that the proposal was

³²³ 2004 FINAL PROPOSAL, *supra* note 314, at 15. While BPA and the Corps acknowledged that the spill proposal could result in the loss of an estimated 81,000 to 376,000 juvenile salmon, the agencies claimed that the proposed predator control measures and the release of 100,000 acre-feet of water at Brownlee Reservoir could benefit approximately 1.1 million to 1.3 million juvenile salmon. BPA STATEMENT OF DECISION, *supra* note 314, at 4.

³²⁴ BPA STATEMENT OF DECISION, *supra* note 314, at 4; CORPS STATEMENT OF DECISION, *supra* note 314, at 6.

³²⁵ CORPS STATEMENT OF DECISION, *supra* note 314, at 6.

³²⁶ *NWF v. NMFS I*, 254 F. Supp. 2d 1196, 1215 (D. Or. 2003); *see also* 2000 BiOp, *supra* note 8, at 9-75 to 9-80 (calling for transportation at all Snake River collector projects, maximizing transportation during summer migration, extending barge transportation and reducing reliance on trucking, developing transportation evaluation programs with federal, state, and tribal salmon managers, studying delayed mortality of transported salmon versus in-river mortality, and evaluating the effects of transportation on salmon homing ability); *id.* at 9-54 (promising to develop measures to control predation); *id.* at 9-74, 9-81 to 9-87 (calling for new and improved fish passage technologies); *id.* at 9-143 to 9-150 (discussing harvest mitigation measures); *id.* at 9-55 (setting forth flow management objectives).

³²⁷ 2004 FINAL PROPOSAL, *supra* note 314, at 6.

³²⁸ RETURN TO THE RIVER 2000, *supra* note 92, at 238–40. *But see* Powers, *supra* note 214, at 880–81 (questioning the efficacy of increased fish flows because the idea of flushing fish out to sea ignores the natural migration patterns of juvenile fish). Migration involves more than just moving downstream as quickly as possible; it is likely that juvenile fish typically alternate between migrating, resting, and feeding as they migrate downstream. RETURN TO THE RIVER 2000, *supra* note 92, at 238–41. The Independent Scientific Group suggested that increased water flow could adversely affect the natural migration cycle of young salmon. *Id.* at 231–32. It is possible that faster flows may just end up pushing fish into the next dam more quickly than they would have otherwise traveled. *See* Powers, *supra* note 214, at 880 (discussing problems with flow augmentation).

³²⁹ *See* BPA STATEMENT OF DECISION, *supra* note 314, at 4 (claiming salmon that are affected by the reduction in spill “will benefit from the additional July discharge from Brownlee as that water flows through the lower river”); CORPS STATEMENT OF DECISION, *supra* note 314, at 3 (“The modification also includes actions to offset potential adverse impacts to listed and non-listed salmonids in order to achieve similar or better biological benefits than those anticipated in the NOAA Fisheries 2000 BiOp.”). Notably, the agreement between BPA and Idaho Power contained

consistent with both the ESA and the Northwest Power Act, their focus on the economic benefits of reducing spill to the detriment of listed juvenile salmon seemed at odds with the ESA, the Northwest Power Act, and the case law interpreting those statutes.³³⁰

B. The District Court's Spill Decision

Environmentalists quickly challenged the spill proposal, arguing that it was inconsistent with the 2000 BiOp because spill was a core element of the 2000 BiOp's reasonable and prudent alternative (RPA), and the 2000 BiOp concluded that the continued operation of the FCRPS would jeopardize the continued existence of listed salmon unless the action agencies implemented the measures contained in the RPA.³³¹ But NOAA, the Corps, and BPA maintained that the offsets—especially the release of 100,000 acre feet of water from Brownlee Reservoir in July—would mitigate any adverse effects that the spill proposal might have on listed salmon.³³²

In July 2004, in *National Wildlife Federation v. National Marine Fisheries Service (NWF v. NMFS II)*,³³³ Judge Redden agreed with the environmentalists and enjoined the BPA/Corps 2004 spill proposal.³³⁴ The court observed that the offsets consisted only of the release of water from Brownlee Reservoir, since the other promises simply reiterated mitigation measures to which NOAA already committed in the 2000 BiOp.³³⁵ Judge Redden also found fundamental defects in the BPA/Corps conclusion that the Brownlee release would adequately remedy the increased salmon mortalities the agencies acknowledged could occur due to terminating the spill program.³³⁶ Absent any meaningful offset, and given the centrality of the

no assurances that the water would be released at a uniform rate. Without such assurances, there was no guarantee that a large release of water early in July would have any beneficial effect on juvenile salmon migrating downstream in August.

³³⁰ See *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 184–85 (1978) (citing 16 U.S.C. §§ 1531(c), 1532(2) (1976 ed.)) (discussing Congressional intent in the ESA). The court stated:

“The plain intent of Congress in enacting [the ESA] was to halt and reverse the trend toward species extinction, whatever the cost. . . . Agencies in particular are directed by §§ 2(c) and 3(2) of the Act to ‘use . . . all methods and procedures which are necessary’ to preserve endangered species. . . . In addition, the legislative history undergirding § 7 reveals an explicit congressional decision to require agencies to afford first priority to the declared national policy of saving endangered species.”

Id.; see also *Confederated Tribes & Bands of the Yakima Indian Nation v. Fed. Energy Regulatory Comm'n*, 746 F.2d 466, 473 (9th Cir. 1984) (recognizing that the Northwest Power Act placed “fish and wildlife on an equal footing with power production”).

³³¹ *NWF v. NMFS II*, No. CV 01-6940-RE, 2004 WL 1698050, at *4 (D. Or. July 29, 2004); see *supra* note 256 and accompanying text (core element).

³³² *NWF v. NMFS II*, 2004 WL 1698050, at *4.

³³³ *Id.*

³³⁴ *Id.* at *6.

³³⁵ *Id.* at *4.

³³⁶ *Id.* First, Judge Redden noted that the 2000 BiOp had already directed BPA and the Corps to negotiate with Idaho Power for additional water. *Id.*; see 2000 BiOp, *supra* note 8, at 9-70. Thus, NOAA erroneously assumed that the Brownlee release in summer 2004 would provide a greater amount of “new” water to the Columbia and Snake Rivers than NOAA had already

spill program to the 2000 BiOp's RPA, the court concluded that the proposed curtailment of spill would result in FCRPS operations that jeopardized ESA-listed salmon.³³⁷

The *NWF v. NMFS II* decision was remarkable because it effectively constrained dam operations over the objections of dam operators—an unusual result.³³⁸ The result suggested that consulting agency action that is inconsistent with its own BiOp is subject to exacting judicial scrutiny. The decision also revealed Judge Redden's growing impatience with attempts by federal hydrosystem managers to obfuscate the effects of FCRPS operations on listed salmon species. The judge's observation that ESA implementation required more than a simple "numbers game"³³⁹ reflected his increasing skepticism of the claims of federal dam operators and NOAA, who were willing to risk large numbers of listed salmon, while professing to fulfill their ESA duty to avoid jeopardy through other actions that allegedly compensated for the increased risk.

V. THE 2004 BIOP—NOAA'S NEW ANALYTICAL FRAMEWORK: A NOVEL WAY OF MAINTAINING THE STATUS QUO

In November 2004, nearly eighteen months after Judge Redden issued his order remanding the 2000 BiOp to the National Oceanic and Atmospheric Administration (NOAA) and instructing the agency to cure the deficiencies

contemplated would be available in the 2000 BiOp. *NWF v. NMFS II*, 2004 WL 1698050, at *4. Second, NOAA's conclusion that the Brownlee Reservoir release would produce the same or better juvenile fish survival was based on the assumption that the water would be released at a uniform rate throughout the month of July, but BPA's agreement with Idaho Power did not require the utility to release the water at a uniform rate. *Id.* at *4-5. In fact, the record showed that during the first two weeks in July there were large fluctuations in flow, and that the utility released water at a faster rate than NOAA assumed it would. *Id.* Thus, the July releases of storage water from Brownlee Reservoir might provide little, if any, benefit to listed salmon migrating in the latter part of August. *Id.* at *5 n.3.

³³⁷ *Id.* at *5; 2000 BiOp, *supra* note 8, at 9-82.

³³⁸ For example, in *In re Operation of Missouri River System Litigation*, 421 F.3d 618, 627-28 (8th Cir. 2005), the States of Missouri and Nebraska and the Nebraska Public Power District argued that the Corps Master Navigation Manual violated the Corps' non-discretionary duty under the Flood Control Act of 1994 to maintain river flow sufficient to support downstream navigation because, under certain drought conditions, it called for canceling the navigation season in order to hold water in the reservoirs for the benefit of recreation. The Eighth Circuit concluded that the Flood Control Act imposed no duty to maintain a minimum level of downstream navigation independent of consideration of other interests. Although the court acknowledged that "[t]he dominant functions of the Flood Control Act were to avoid flooding and to maintain downstream navigation, . . . the Act recognizes secondary uses of the River including irrigation, recreation, fish, and wildlife." *Id.* at 629 (citing *South Dakota v. Ubbelohde*, 330 F.3d 1014, 1019-20 (8th Cir. 2003)). Thus, the court concluded that the statute "clearly gives a good deal of discretion to the Corps in the management of the River." *Id.* at 633 (citing *Ubbelohde*, 330 F.3d at 1027). See generally *Nat'l Wildlife Fed'n v. U.S. Army Corps of Eng'rs*, 384 F.3d 1163, 1167 (9th Cir. 2004) (exempting federal dams from Clean Water Act water quality standards); *Nat'l Wildlife Fed'n v. Gorsuch*, 693 F.2d 156, 165 (D.C. Cir. 1982) (discussed in Michael C. Blumm & William Warnock, *Roads Not Taken: EPA vs. Clean Water*, 33 ENVTL. L. 79, 83-91 (2003)) (evaluating the *Gorsuch* decision).

³³⁹ *NWF v. NMFS II*, 2004 WL 1698050, at *5.

in the 2000 BiOp by developing measures that met the regulatory standard of being “reasonably certain” to occur,³⁴⁰ NOAA issued a revised BiOp for Columbia Basin operations from 2004 to 2014,³⁴¹ designed to formally replace the 2000 BiOp.³⁴² For the first time since 1994, the agency concluded that the continued operation of the Federal Columbia River Power System (FCRPS) would not jeopardize the continued existence of any of the listed Columbia Basin salmon.³⁴³ Thus, the 2004 BiOp contained no reasonable and prudent alternative (RPA),³⁴⁴ eliminating the need for mitigation measures required by the ESA regulations to be “reasonably certain” to occur.³⁴⁵

This Part describes the NOAA’s attempt to cure the deficiencies in the 2000 BiOp, and the agency’s deviation from the terms of Judge Redden’s remand order. It then examines the 2004 BiOp’s new analytical framework for determining jeopardy and the resulting “no-jeopardy” conclusion. We suggest that NOAA’s new jeopardy definition was simply an attempt to justify FCRPS status quo operations.

³⁴⁰ See *supra* notes 308–11 and accompanying text. Although Judge Redden concluded that the 2000 BiOp was inconsistent with both the ESA and its regulations because NOAA improperly relied on mitigation measures that were not “reasonably certain” to occur, he did not enjoin its implementation. *NWF v. NMFS I*, 254 F. Supp. 2d 1196, 1211–12 (D. Or. 2003). Instead, he remanded the 2000 BiOp to NOAA, instructing the agency to revise the BiOp and cure its deficiencies within one year. *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, Minute Order, Civ. No. 01-00640-KI (June 25, 2003). Judge Redden later extended that deadline, giving NOAA 18 months to revise the BiOp. *NWF v. NMFS III*, No. CV 01-640-RE, CV 05-23-RE, 2005 WL 1278878, at *2 (D. Or. May 26, 2005).

³⁴¹ U.S. ARMY CORPS OF ENG’RS, RECORD OF CONSULTATION AND STATEMENT OF DECISION CONCERNING THE FINAL UPDATED PROPOSED ACTION FOR THE FCRPS BIOLOGICAL OPINION ON REMAND 6 (Jan. 2005). *NWF v. NMFS III*, 2005 WL 1278878, at *3. The 2004 biological opinion included consultation on 12 listed salmon species as well as the Lower Columbia River coho salmon, proposed for listing on June 14, 2004. *NWF v. NMFS III*, 2005 WL 1278878, at *3 (consultation on 1) Snake River spring chinook salmon, 2) Snake River fall chinook salmon, 3) Upper Columbia River spring chinook salmon, 4) Snake River steelhead, 5) Upper Columbia River steelhead, 6) Middle Columbia River steelhead, 7) Columbia River chum salmon, 8) Snake River sockeye salmon, 9) Lower Columbia River chinook, 10) Upper Willamette River chinook, 11) Lower Columbia River steelhead, and 12) Upper Willamette River steelhead).

³⁴² 2004 BiOp, *supra* note 45, at 2-3.

³⁴³ Letter from Dr. Robert Lohn, Reg’l Adm’r, NOAA Fisheries Serv., to Stephen J. Wright, Adm’r, Bonneville Power Admin., Brig. Gen. William T. Grisoli, Commander & Div. Eng’r, U.S. Army Corps of Eng’rs, & William McDonald, Reg’l Dir., U.S. Bureau of Reclamation 1–2 (Nov. 30, 2004), available at http://seahorse.nmfs.noaa.gov/pls/pcts-pub/sxn7.pcts_upload.download?p_file=F10237/200400727_coverletter_section01-04_11-30-2004.pdf. See also Blumm, *supra* note 31, at 103–05, 107–09, 113–16 (comparing and contrasting the 1995, 2000, and 2004 BiOps). Compare 2004 BiOp, *supra* note 45, at 8-1 to 8-38 (concluding the proposed operations of the FCRPS will not jeopardize any of the twelve listed Columbia Basin salmon), with 2000 BiOp, *supra* note 8, at 8-1 to 8-26 (concluding the proposed operation of the FCRPS would jeopardize eight of the 12 listed Columbia Basin salmon), and 1995 BiOp, *supra* note 114, at 83–91 (concluding the proposed operation of the FCRPS would jeopardize the continued existence of three listed Columbia Basin salmon and adversely modify their critical habitat).

³⁴⁴ 2004 BiOp, *supra* note 45, at 8-1 to 8-38.

³⁴⁵ See *supra* notes 308–11 and accompanying text.

A. *The 2000 BiOp on Remand: Making It ESA Compliant?*

Judge Redden was intimately involved in the process of revising the 2000 BiOp to comply with the ESA, requiring NOAA to file quarterly reports on the agency's progress and attending steering committee meetings with the parties, the action agencies, and members of the public.³⁴⁶ In January 2004, when NOAA's 2003 progress report required by the 2000 BiOp claimed the agency "was making substantial progress toward completing the objectives of the remand,"³⁴⁷ the court expressed misgivings, noting that NOAA had failed to collaborate with government agencies, the states, or the tribes, as the court had ordered, and warning that "time was running out."³⁴⁸ The 2003 progress report also revealed that NOAA had yet to implement the monitoring programs required by the 2000 BiOp³⁴⁹ and failed to develop performance standards necessary to implement the RPA.³⁵⁰ Even though the action agencies' uncertain ability to implement off-site mitigation measures was the basis of Judge Redden's 2003 decision invalidating the 2000 BiOp,³⁵¹ those agencies had yet to develop off-site mitigation plans three years after the 2000 BiOp promised them.³⁵²

Later in 2004, citing "evidence of strong salmon returns in recent years,"³⁵³ NOAA signaled it was revisiting its jeopardy analysis.³⁵⁴ But Judge Redden responded by noting that NOAA had failed to report data on 2001 salmon returns, and he wondered if there was any real support for NOAA's assertion that salmon returns had actually improved.³⁵⁵ In September 2004, NOAA released a draft BiOp, which Judge Redden observed "differs markedly from the 2000 BiOp in both its analytical approach and its conclusions."³⁵⁶ Expressing "concerns regarding whether the remand process has diverged significantly from the intent and terms of the court's orders," he predicted that the process was headed for a "train wreck," declaring that a revised BiOp would be vacated if it was legally infirm.³⁵⁷

³⁴⁶ *NWF v. NMFS III*, 2005 WL 1278878, at *2.

³⁴⁷ *Id.*

³⁴⁸ *Id.*

³⁴⁹ *Id.*; NOAA FISHERIES, 2003 IMPLEMENTATION PROGRESS EVALUATION REPORT 6 (Dec. 19, 2003).

³⁵⁰ NOAA FISHERIES, 2003 IMPLEMENTATION PROGRESS EVALUATION REPORT at 5, 10; *see also NWF v. NMFS III*, 2005 WL 1278878, at *2 (citing NOAA's failure to develop habitat and hatchery performance standards, as required by the 2000 BiOp).

³⁵¹ *NWF v. NMFS III*, 2005 WL 1278878, at *2; *see supra* note 310 and accompanying text.

³⁵² *NWF v. NMFS III*, 2005 WL 1278878, at *2; 2003 IMPLEMENTATION PROGRESS EVALUATION REPORT, *supra* note 349, at 11. The progress report indicated that the reason the action agencies had not implemented most of the key actions under the 2000 BiOp was their inability to obtain funding from Congress. *Id.* at 4.

³⁵³ *NWF v. NMFS III*, 2005 WL 1278878, at *2.

³⁵⁴ *Id.* NOAA indicated that it planned to apply the "reasonably certain to occur standard" to future harmful activities, as well as future mitigation activities. *Id.*

³⁵⁵ *Id.*

³⁵⁶ Barry Espenson, *Judge Redden Expresses Concern About BiOp Remand Process*, COLUMBIA BASIN BULL., Oct. 1, 2004, available at <http://www.bluefish.org/judgecon.htm>.

³⁵⁷ *Id.*

B. NOAA's New Analytical Framework Designed to Avoid Jeopardy

Instead of attempting to ensure that the RPA measures in the 2000 BiOp were both “reasonably certain” to occur and consistent with the requirements of section 7 of the ESA, NOAA abandoned the analytical approach it used in the 2000 BiOp (and in the 1995 BiOp), replacing it with an analytical framework the agency had never before used. Despite NOAA’s own findings over the previous decade that FCRPS operations jeopardized listed salmon and overwhelming scientific evidence suggested that Columbia Basin salmon populations were in serious peril,³⁵⁸ NOAA’s 2004 BiOp abruptly concluded that the continued operation of the FCRPS would not jeopardize any listed Columbia Basin salmon.³⁵⁹ This remarkable new conclusion stemmed not from a major revision in the proposed FCRPS operations or new scientific information, but from a new legal interpretation concerning which federal agency actions were subject to ESA review.

Before 2004, NOAA’s jeopardy inquiry evaluated the “environmental baseline,”³⁶⁰ together with the effects of proposed FCRPS operations, to determine whether the continued operation of the FCRPS would “jeopardize the continued existence”³⁶¹ of listed Columbia Basin salmon.³⁶² This

³⁵⁸ See *NWF v. NMFS III*, 2005 WL 1278878, at *4 (“It is apparent that the listed species are in serious decline and not evidencing signs of recovery.”); *id.* at *23–30 (recounting the Biological Review Team’s conclusions for each of the listed salmon species in the Columbia River Basin).

³⁵⁹ 2004 BiOp, *supra* note 45, at 8-1 to 8-38.

³⁶⁰ The ESA regulations define the “environmental baseline” to

include the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process.

50 C.F.R. § 402.02 (2005). The ESA regulations define the “effects of the action” as “the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline.” *Id.*

³⁶¹ 50 C.F.R. § 402.02 (2005) states “*Jeopardize the continued existence of* means to engage in an action that reasonably would be expected, directly or indirectly, to 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.”

³⁶² See, e.g., 1995 BiOp, *supra* note 114, at 13 (focusing on “whether the species [could] be expected to survive with an adequate potential for recovery under the effects of the proposed or continuing action, the environmental baseline and any cumulative effects, and considering measures for survival and recovery specific to other life stages”); 2000 BiOp, *supra* note 8, at 1-9 (stating, “[t]he effects of the action, the effects of the environmental baseline, and the cumulative effects in the action area are considered together relative to the action area biological requirements of the various listed species.”); see also *NWF v. NMFS III*, 2005 WL 1278878, at *6–7 (discussing the previous standard); Blumm, *supra* note 31, at 113–16 (discussing the effects of the Northwest Power Act on Columbia River Basin fish and wildlife programs). The *Endangered Species Consultation Handbook*—the guidance document jointly published by NOAA and the United States Fish and Wildlife Service—required NOAA to analyze the “aggregate” effects of the proposed action, the environmental baseline, and any cumulative effects. See *supra* notes 161–63 and accompanying text;

“aggregate approach” focused on whether the cumulative adverse impacts from both the environmental baseline and the proposed action were consistent with the biological requirements of the listed species.³⁶³ In contrast, the 2004 BiOp adopted a “comparative approach” to jeopardy, in which NOAA simply compared the incremental additional adverse effects of the proposed action against an expanded definition of the environmental baseline to determine whether the proposed action would reduce appreciably the likelihood of both survival and recovery of the listed species.³⁶⁴ Under this new framework, even if NOAA concluded that the species was likely to become extinct due to the environmental baseline conditions, so long as the proposed action did not appreciably “reduce the abundance, productivity, or distribution of [the listed species] compared to the environmental baseline,” the agency could conclude that the proposed action would not jeopardize the continued existence of the species.³⁶⁵

In determining whether an action is likely to jeopardize the continued existence of a species, the action is viewed against the aggregate effects of everything that has led to the species' current status and, for non-Federal activities, those things likely to affect the species in the future. . . . The final analysis then looks at whether, given the aggregate effects, the species can be expected to both survive and recover, as those terms are defined above.

CONSULTATION HANDBOOK, *supra* note 139, at 4-35; *see also supra* note 179 (definition of “cumulative effects”).

³⁶³ 2000 BiOp, *supra* note 8, at 1-9.

³⁶⁴ 2004 BiOp, *supra* note 45, at 5-6, 5-7; *see* Blumm, *supra* note 31, at 116-17. The result of the BiOp's comparative approach produced an almost singular focus on the effects of proposed discretionary federal actions, which were essentially identical to the mitigation actions enumerated in the 2000 BiOp's RPA. *See, e.g.,* 2004 BiOp, *supra* note 45, at 3-1 (stating, “[t]o a large extent, the [updated proposed action] continues the implementation of many of the actions contained in the 2000 Biological Opinion”).

³⁶⁵ 2004 BiOp, *supra* note 45, at 1-12. According to NOAA, a proposed action could not jeopardize the continued existence of the listed species if it did not appreciably diminish the likelihood of both survival *and* recovery of the listed species. Thus, if NOAA found that the proposed FCRPS operations did not appreciably reduce current salmon reproduction, abundance, or distribution of listed salmon (i.e., the likelihood of survival), the proposed action could not, by definition, “jeopardize the continued existence of” listed salmon because it did not appreciably reduce the likelihood of both survival *and* recovery. Thus, when NOAA determined that the action would not appreciably reduce the likelihood of listed salmon survival, the jeopardy inquiry came to an end, and there was no reason to consider whether the proposed action appreciably reduced the likelihood of species' recovery. *Id.* at 8-1, 1-12.

The 2004 BiOp's approach to the jeopardy analysis was remarkably similar to the framework used in the 1993 BiOp, *see supra* notes 141-50 and accompanying text, which Judge Marsh struck down in the 1994 case *Idaho Department of Fish & Game v. National Marine Fisheries Service*, 850 F. Supp. 886, 899 (D. Or. 1994), rejecting NOAA's claim that any agency proposal that resulted in improved survival, as a matter of law, could not be said to have “reduced both the likelihood of survival and recovery” so as to result in jeopardy. Judge Marsh noted that such an interpretation could lead to a bizarre result in which the agency may find an improved survival rate—mandating a no-jeopardy conclusion—even though the survival rate might still be so low that as to constitute a threat to the species' existence. *Id.* Three years later, while upholding the 1995 BiOp in *American Rivers*, *see supra* notes 220-27 and accompanying text, Judge Marsh rejected the same argument, then raised by Columbia Basin industries, that “any improved survival rates necessarily satisfied the ESA.” *Am. Rivers v. Nat'l Marine Fisheries Serv.*, No. Civ. 96-384-MA, 1997 WL 33797790, at *4 n.4 (D. Or. Apr. 3, 1997).

The most startling change in the 2004 BiOp was NOAA's assertion that it was required to assess only those federal actions over which federal agencies have discretionary control.³⁶⁶ According to this new jeopardy framework, any nondiscretionary actions became part of the environmental baseline and not subject to ESA consultation, since, as noted above, the jeopardy analysis focused only on whether the proposed action would appreciably diminish the species likelihood of survival and recovery when compared to the impacts of the environmental baseline on the listed species.³⁶⁷ Although acknowledging that the ESA required the agency to distinguish the effects of nondiscretionary operations from the effects of proposed discretionary operations, NOAA claimed it was "analytically impossible" to do so.³⁶⁸ Instead, the agency simply assumed any FCRPS operations necessary to achieve congressionally authorized purposes—such as navigation, flood control, irrigation, and power generation—were nondiscretionary,³⁶⁹ and therefore part of the environmental baseline and outside the scope of ESA consultation.³⁷⁰

The 2004 BiOp also considered whether the proposed action would destroy or adversely modify the designated critical habitat³⁷¹ of three of the listed salmon species—Snake River spring/summer chinook, fall chinook, and sockeye.³⁷² Although NOAA acknowledged that the condition of

³⁶⁶ 2004 BiOp, *supra* note 45, at 5-1 (stating, "[50 C.F.R. § 402.03 (2005)] provides: 'Section 7 and the requirements of this part apply to all actions in which there is discretionary Federal involvement or control'").

³⁶⁷ 2004 BiOp, *supra* note 45, at 5-1.

³⁶⁸ *Id.* at 5-5, 5-8.

³⁶⁹ *Id.* at 5-1, 5-6; *NWF v. NMFS III*, No. CV 01-640-RE, CV 05-23-RE, 2005 W.L. 1278878, at *7 (D. Or. May 26, 2005); Blumm, *supra* note 31, at 115.

³⁷⁰ 2004 BiOp, *supra* note 45, at 5-6. Notably, NOAA also assumed that BPA and the Corps would implement a variety of fish survival enhancing measures, and included those actions in the baseline. *Id.*

³⁷¹ "Each federal agency shall . . . insure that any action authorized, funded, or carried out by such agency . . . is not likely to . . . result in the destruction or adverse modification of habitat of such species which is determined by the Secretary . . . to be critical . . ." Endangered Species Act of 1973, 16 U.S.C. § 1536(a)(2) (2000). A biological opinion must state "whether or not the Federal action is likely to . . . result in the destruction or adverse modification of critical habitat." 50 C.F.R. § 402.02 (2005).

³⁷² *NWF v. NMFS III*, 2005 WL 1278878, at *14. NOAA designated critical habitat for all listed Columbia Basin salmon in 2000, but voluntarily withdrew the critical habitat designations for nine Columbia Basin salmon species in 2002 following a legal challenge to those designations brought by the National Association of Homebuilders and a subsequent settlement decree. *See Nat'l Ass'n of Home Builders v. Evans*, No. 00-CV-2799, 2002 WL 1205743 (D.D.C. Apr. 30, 2002). In *Home Builders*, pointing to an e-mail written by then acting NOAA Northwest regional administrator Donna Darm that stated, "[w]hen we make critical habitat designations . . . we just designate everything as critical," the plaintiffs alleged that NOAA failed to properly analyze the economic effects of its critical habitat designations for nineteen listed salmon populations, as required by the ESA. Bill Rudolph, *NMFS Caves on Critical Habitat*, NW. FISHLETTER, Mar. 15, 2002, available at <http://www.newsdata.com/enetnet/fishletter/fishltr139.html>; see also 16 U.S.C. § 1533(b)(2) (2000) (NOAA and the FWS must make critical habitat designations "on the basis of the best scientific data available . . . after taking into consideration the economic impact . . . and any other relevant impact, of specifying any particular area as critical habitat").

The plaintiffs also relied on *New Mexico Cattle Grower's Association v. United States Fish & Wildlife Service*, 248 F.3d 1277 (10th Cir. 2001), in which the Tenth Circuit rejected FWS's conclusion that the designation of critical habitat for the southwest willow flycatcher

designated critical habitat for each of the three species was poor, and that the proposed action was likely to degrade the habitat further,³⁷³ the 2004 BiOp concluded the proposed action was not likely to modify adversely or

(*Empidonax trallis extimus*) would have no economic effects beyond those already been caused by the initial decision to list the species under the ESA. *Id.* at 1285–86. The Tenth Circuit concluded that FWS was required to consider *all* of the economic effects of critical habitat designations, regardless of whether those effects were attributable to the listing decision itself, the critical habitat designation, or a combination of co-extensive causes. *Id.* at 1284–85. Despite a distinct factual record in *Home Builders*, NOAA entered into a settlement agreement with the National Association of Home Builders, and voluntarily withdrew its critical habitat designations for 19 listed salmon species. Environmentalists decried the settlement agreement as an attempt to “short-circuit” the formal rulemaking process—including public participation and opportunity to comment—for critical habitat designations. Rudolph, *NMFS Caves on Critical Habitat*, NW. FISHLETTER, Mar. 15, 2002, available at <http://www.newsdata.com/enernet/fishletter/fishltr139.html> (quoting Earthjustice attorney Todd True).

The settlement agreement reached in *Home Builders* appeared to be another example of what one of us has called the “Bush Administration’s Sweetheart Settlement Policy.” Michael C. Blumm, *The Bush Administration’s Sweetheart Settlement Policy: A Trojan Horse Strategy for Advancing Commodity Production on Public Lands*, 34 ENVTL. L. REP. 10,397, 10,397 (2004). The Bush Administration has successfully reversed a series of Clinton-era environmental regulations without initiating time-consuming public participation, administrative rulemaking, or judicial processes by simply settling (or failing to litigate) the lawsuits brought by industry interest groups challenging the Clinton Administration’s environmental policies. *Id.* at 10,397. Rather than defend the Clinton Administration’s environmental policy initiatives, such as the “roadless rule,” wilderness study area protections, Northwest Forest Plan protections, and snowmobile restrictions in Yellowstone National Park—policies that the current administration opposes—the Bush Administration has often settled such lawsuits, agreeing to rescind the challenged administrative rules and promising to adopt the changes advocated by industry. *Id.* at 10,397. These “sweetheart settlements” invariably take place behind closed doors without public participation, administrative rulemaking, or adjudication; thus advancing industry interests while bypassing administrative procedures and undermining environmental controls. *Id.* at 10,397–98. On September 2, 2005, NOAA issued revised critical habitat designations for the nine species of Columbia Basin whose critical habitat designations had been withdrawn in 2002. 70 Fed. Reg. 52,630, 52,630–31 (Sept. 2, 2005) (to be codified at 50 C.F.R. pt. 226). The 2005 critical habitat determinations represented only about one-fifth of the critical habitat designated in 2000. See Bill Crampton & Barry Espenson, *NOAA Releases Final Salmon Critical Habitat Designations*, THE COLUMBIA BASIN BULL., Aug. 12, 2005 (on file with author). Whereas the 2000 critical habitat determination assessed all potentially accessible river reaches within 150 sub-basins in the Northwest, the 2005 designation identified habitat more narrowly, listing only reaches where salmon and steelhead have actually been observed, or where biologists with expertise presumed the fish existed. NOAA regional chief Bob Lohn explained, “[t]he 2000 designations were over-inclusive We have focused very specifically on those areas that are most important to recovery of salmon and steelhead, allowing us to most efficiently use our resources to protect fish.” *Id.*

³⁷³ See 2004 BIOP, *supra* note 45, at 6-76 (“The net effect of the proposed action is to negatively impact an essential feature of designated critical habitat from 2004 through 2009.”). For Snake River spring/summer chinook salmon, the “essential features of critical habitat under the environmental baseline are poor.” *Id.* at 8-8. “The proposed action negatively impacts the essential habitat feature of safe passage in the juvenile migration corridor” for Snake River spring/summer chinook salmon. *Id.* at 8-7. For Snake River fall chinook salmon “essential features of critical habitat . . . are poor under the environmental baseline The effect of the proposed action . . . is a further degradation of the “safe passage” characteristic of the habitat in the 2005-2009 period.” *Id.* at 8-13. “[T]he proposed action would [also] negatively impact the essential feature of safe passage in critical habitat [for Snake River sockeye salmon] Safe passage and other essential features of critical habitat in the juvenile migration corridor under the environmental baseline are poor.” *Id.* at 8-35 to 8-36.

destroy the critical habitat for any of the listed species.³⁷⁴ These conclusions rested on the action agencies' implementation of measures designed to improve juvenile migration, such as aggressive hatchery, habitat restoration, and predator-control programs, as well as removable spillway weirs.³⁷⁵

By assuming that the existence and operation of the FCRPS were immutable facts, not attributable to the actions of federal agencies in its 2004 BiOp, NOAA sought to create the impression that federal agencies were not responsible for most of the harm that continuing FCRPS operations inflict upon listed salmon. Under the 2004 BiOp's comparative approach and its revolutionary definition of the environmental baseline, the action agencies could effectively ignore whether the listed species would become extinct. Indeed, as a result of its new interpretation of the ESA regulations, NOAA was able to maintain the status quo for FCRPS operations, concluding not only that the proposed federal actions would not jeopardize the continued existence of listed Columbia Basin salmon, but that the proposed FCRPS operations would actually benefit the listed species.³⁷⁶ That implausible contention was promptly challenged in federal court.

VI. JUDICIAL REJECTION OF THE 2004 BIOP

Perhaps not surprisingly, environmentalists immediately challenged the legality of the 2004 BiOp, claiming that the National Oceanic and Atmospheric Administration (NOAA) improperly included the existence of the Federal Columbia River Power System (FCRPS) and allegedly nondiscretionary dam operations in its definition of the "environmental baseline," and challenging the agency's comparative approach to jeopardy.³⁷⁷ They also maintained that NOAA's critical habitat determinations were flawed, and that the agency failed to consider measures necessary for species recovery.³⁷⁸ This Part first explains the standard of review the district court employed in *National Wildlife Federation v. National Marine Fisheries*

³⁷⁴ *Id.* at 8-8, 8-12, 8-36.

³⁷⁵ *Id.* at 8-7 to 8-8, 8-12 to 8-13, 8-35 to 8-36; *see supra* note 256 (explaining removable spillway weirs).

³⁷⁶ *See id.* at 8-7 (stating "beneficial actions would reduce the effect to 'no change' and perhaps to a net improvement by 2010" for Snake River spring/summer chinook salmon); *id.* at 8-11 (stating "by 2010, various hydro improvements and non-hydro offsets would be expected to result in improved hydro survival" for Snake River fall chinook salmon); *id.* at 8-16 (stating "beneficial actions would reduce the effect to 'no change' and perhaps to a net improvement by 2010" for Upper Columbia River spring chinook salmon); *id.* at 8-25 (stating "beneficial actions would reduce the effect to 'no change' and perhaps to a net improvement by 2010" for Upper Columbia River steelhead).

³⁷⁷ *NWF v. NMFS III*, 2005 WL 1278878, at *7. The plaintiffs were 15 environmental organizations, joined by the intervening state of Oregon. The environmental groups included the National Wildlife Federation, the Idaho Wildlife Federation, the Washington Wildlife Federation, the Sierra Club, Trout Unlimited, Pacific Coast Federation of Fishermen's Associations, the Institute for Fisheries Resources, Idaho Rivers United, Idaho Steelhead and Salmon United, Northwest Sportfishing Industry Association, Salmon for All, Columbia Riverkeeper, American Rivers, Inc., the Federation of Fly Fishers, and the Northwest Energy Coalition. *Id.* at *1.

³⁷⁸ *Id.* at *7. The environmentalists also claimed that NOAA relied on faulty and unproven scientific and commercial data, and that the agency improperly issued an incidental take statement. *Id.*

Service (NWF v. NMFS III).³⁷⁹ It then examines four legal flaws in the 2004 BiOp that prompted Judge Redden to invalidate it.

A. Requiring a “Reasonable Rationale” for Agency Departures from Past Practices

In *NWF v. NMFS III*, Judge Redden declined to defer to NOAA’s new interpretations of jeopardy and the environmental baseline. While acknowledging that “[d]eference to an agency’s technical expertise and experience is particularly warranted with respect to questions involving . . . scientific matters,”³⁸⁰ the court noted that judicial deference to agency expertise is not unlimited. As Judge Redden explained, “[w]hen an agency’s interpretation of a regulation conflicts with its earlier interpretation, the new [interpretation] is ‘entitled to considerably less deference’ than a consistently-held agency view.”³⁸¹ Under these circumstances, “[t]he agency will be required to show not only that the new policy is reasonable, but also to provide a reasonable rationale supporting its departure from prior practice.”³⁸² Since NOAA’s new approach was clearly inconsistent with its earlier BiOps, the agency needed to offer a convincing rationale for its reinterpretation of the ESA regulations and its conclusion that the ESA did not require consultation on any elements of a pre-existing project that are beyond the agency’s current discretion or control.³⁸³ Like other judicial decisions striking down abrupt administrative changes in regulatory enforcement,³⁸⁴ Judge Redden found NOAA’s position untenable and declined to defer to the agency.

³⁷⁹ *Id.*

³⁸⁰ *Id.* at *4 (quoting *United States v. Alpine Land & Reservoir Co.*, 887 F.2d 207, 213 (9th Cir. 1989)).

³⁸¹ *NWF v. NMFS III*, 2005 WL 1278878, at *5 (quoting *Immigration & Naturalization Serv. v. Cardoza-Fonseca*, 480 U.S. 421, 446 n.30 (1987)).

³⁸² *NWF v. NMFS III*, 2005 WL 1278878, at *5 (quoting *Seldovia Native Ass’n, Inc. v. Lujan*, 904 F.2d 1335, 1345 (9th Cir. 1990)).

³⁸³ 2004 BiOp, *supra* note 45, at 5-1 (citing 50 C.F.R. § 402.03 (2003)). Section 402.03 provides: “Section 7 and the requirements of this part apply to all actions in which there is discretionary involvement or control.” 50 C.F.R. § 402.03 (2005). Neither the ESA nor its implementing regulations define the term “discretionary.”

³⁸⁴ *See Motor Vehicles Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 56 (1983) (“While [an] agency is entitled to change its view . . . it is obligated to explain its reasons for doing so.”); *Immigration & Naturalization Serv. v. Cardoza-Fonseca*, 480 U.S. 421, 446 n.30 (1987) (citing *Watt v. Alaska*, 451 U.S. 259, 273 (1981)) (holding that when an agency’s interpretation of a regulation conflicts with an earlier interpretation, the new interpretation is “entitled to considerably less deference” than a consistently-held agency view); *Seldovia Native Ass’n, Inc. v. Lujan*, 904 F.2d 1335, 1346 (9th Cir. 1990) (quoting *Mobil Oil Co. v. Env’tl. Prot. Agency*, 871 F.2d 149, 152 (D.C. Cir. 1989) (stating that an agency’s interpretation is entitled to deference “so long as the agency acknowledges and explains the departure from its prior views”); *Nw. Ecosystem Alliance v. Rey*, 380 F. Supp. 2d 1175, 1192-93 (W.D. Wash. 2005) (holding the Forest Service had an obligation to disclose and explain the basis for its decision to eliminate Survey and Manage standards from the Northwest Forest Plan, when the agency had previously determined that the standards were necessary to protect rare and sensitive species on National Forest land); *Moden v. U. S. Fish & Wildlife Serv.*, 281 F. Supp. 2d 1193, 1203 (D. Or. 2003) (rejecting an FWS decision to delist a sucker fish because the agency failed to adequately explain its conclusion).

The court relied heavily on NOAA's own section 7 consultation handbook. Indeed, the court even referred to the "requirements" contained in the handbook.³⁸⁵ Although not legally binding,³⁸⁶ Judge Redden considered the handbook to be persuasive evidence of the agency's previous and consistently held agency interpretation of the ESA regulations.³⁸⁷ Because NOAA's new interpretation of the ESA's jeopardy regulations was inconsistent with the agency's previous regulatory interpretations and lacked a "thorough consideration" or explanation of the reasons for the change, the court gave the new interpretation "considerably less deference" than its prior consistently held view.³⁸⁸

B. The Four Fatal Flaws in the 2004 BiOp

In *NWF v. NMFS III*, Judge Redden agreed with four of the environmentalists' challenges to the 2004 BiOp. The court concluded that the

³⁸⁵ See *NWF v. NMFS III*, 2005 WL 1278878, at *17 ("Both regulation § 402.02 and NOAA's own Consultation Handbook *require* that listed species be protected from any appreciable reduction in their likelihood of recovery") (emphasis added). As noted *supra* notes 161–63 and accompanying text, *The Endangered Species Consultation Handbook*, jointly published by NOAA and the United States Fish and Wildlife Service in 1998, aimed to promote efficient and consistent implementation of consultation procedures under the ESA. CONSULTATION HANDBOOK, *supra* note 139, at xx–xxi.

³⁸⁶ See *Christensen v. Harris County*, 529 U.S. 576, 587 (2000).

Interpretations such as those in opinion letters—like interpretations contained in policy statements, agency manuals, and enforcement guidelines, all of which lack the force of law—do not warrant *Chevron*-style deference. . . . Instead, interpretations contained in formats such as opinion letters are 'entitled to respect,' . . . but only to the extent that those interpretations have the 'power to persuade.'

Id.

³⁸⁷ *NWF v. NMFS III*, 2005 WL 1278878, at *5–7. Other courts have looked to agency guidance documents in overruling agency decisions inconsistent with previous regulatory interpretations. See, e.g., *Moden v. U.S. Fish & Wildlife Serv.*, 281 F. Supp. 2d 1193, 1204 (D. Or. 2003) (overruling FWS's denial of a petition to delist the sucker fish under the ESA, and noting that FWS's "Petition Management Guidance" manual directed the agency to determine whether a reasonable person would view the scientific information in the petition as indicating that the species may have achieved the recovery objectives for reclassification or delisting); *Am. Rivers v. U.S. Army Corps of Eng'rs*, 271 F. Supp. 2d 230, 251–52 (D.D.C. 2003) (noting that the Corps' master manual on navigation allowed the Corps to consider a variety of factors, thus "afford[ing] the Corps discretion in management of the Missouri River," contrary to the agency's claim that it lacked discretion to comply with the ESA).

³⁸⁸ *NWF v. NMFS III*, 2005 WL 1278878, at *11. Although not explicitly mentioned in the court's opinion, the Supreme Court's rationale in both *Christensen v. Harris County*, 529 U.S. 576 (2000), and *Skidmore v. Swift*, 323 U.S. 134 (1944), supports Judge Redden's decision, suggesting that the consultation handbook should be "entitled to respect," depending upon the "thoroughness evident in its consideration, the validity of its reasoning, its consistency with earlier and later pronouncements, and all those factors which give it power to persuade, if lacking power to control." *Skidmore*, 323 U.S. at 140; *Christensen*, 529 U.S. at 587. Thus, when NOAA failed to provide a reasonable explanation in its 2004 BiOp for its departure from its previous practices, it was no surprise that Judge Redden could look to the consultation handbook for guidance, since the handbook thoroughly and comprehensively described the requirements of a jeopardy analysis, requirements which NOAA itself had followed in its previous BiOps.

BiOp: 1) improperly segregated the elements of the proposed action NOAA deemed to be discretionary, 2) compared, rather than aggregated, the effects of the proposed action with the environmental baseline, 3) contained flawed critical habitat determinations, and 4) failed to consider recovery in its jeopardy determination.³⁸⁹ This Part examines the reasons the court struck down the 2004 BiOp.

1. Segregating “Non-Discretionary” Operations from the Proposed Action

One of the most significant and contentious aspects of the 2004 BiOp’s analytical framework was NOAA’s attempt to insulate adverse impacts that FCRPS operations have on listed salmon from the scope of the jeopardy analysis by characterizing certain congressionally-authorized FCRPS operations as part of the environmental baseline.³⁹⁰ Despite the long history of federal hydrosystem managers jealously guarding agency discretion in

³⁸⁹ *NWF v. NMFS III*, 2005 WL 1278878, at *7. Stating that each of those issues was “independently dispositive,” the court declined to address the environmentalists’ claim that the 2004 BiOp’s incidental take statement was invalid and their challenge to scientific and commercial data relied on by NOAA. *Id.* The court’s decision not to address the science and commercial data used by NOAA was not surprising, given the difficult nature and contentious history of the issue. As previously noted, “given the vast uncertainty and potential economic consequences of various salmon recovery options, virtually anything anyone says about salmon has at least some kernel of truth to it.” SACRIFICING THE SALMON, *supra* note 2, at ii. In 1994, Judge Marsh observed:

Within this conflict are the sharply divided scientific disputes over transportation benefits, flow-survival relationships and mortality allocation figures used by NMFS for comparative purposes. Scientific advocates on all sides accuse each other of a lack of sufficient scientific backing, and to this I quote the following: “[O]pportunities to save fisheries have been squandered because of concerns for adequate data. This lesson was clearly noted for another Pacific fishery. The California sardine fishery is a monument to the failure to act in time, and to the insistence of having conclusive scientific evidence before acting.”

Idaho Dep’t of Fish & Game v. Nat’l Marine Fisheries Serv., 850 F. Supp. 886, 892 n.18 (D. Or. 1994) (quoting Nehlsen, Williams, & Lichatowich, *Pacific Salmon at the Crossroads: Stocks at Risk from California, Oregon, Idaho, and Washington*, 16 FISHERIES NO. 2, at 16 (Mar.–Apr. 1991)). In 2000, the Independent Scientific Group, formed by the Northwest Power and Conservation Council described the problem as:

a relative lack of evaluation of the results of biological monitoring. A significant reason has been the lack of identified forums responsible for making evaluations and acting on the results. Among existing groups, there has been confusion generally about the proper roles and responsibilities of technical groups (evaluation) and policy groups (deliberation and decision). Evaluation by technical specialists has often been derided as improper excursions into policy formulation. Consequently, critical technical evaluations have not been done or have not been fully incorporated into management decisions. A clearer role is needed for technical/scientific evaluation in the pathway to management and policy decisions.

RETURN TO THE RIVER 2000, *supra* note 92, at 416.

³⁹⁰ 2004 BiOp, *supra* note 45, at 5-5. One of the odd implications of NOAA’s re-interpretation of the environmental baseline is that by arguing that that the action agencies lacked discretion in the operation of the FCRPS, NOAA and the action agencies were essentially limiting their own authority.

dam operations,³⁹¹ NOAA now claimed that a significant portion of FCRPS operations—for flood control, navigation, irrigation, and power generation operations—was beyond the discretionary authority of the action agencies, and therefore outside the scope of ESA consultation.³⁹² NOAA argued that its new interpretation of the environmental baseline followed from what it called a “fundamental principle” of the section 7 consultation regulations: “[s]ection 7 and [its regulations] apply to all actions in which there is discretionary Federal involvement or control.”³⁹³ Judge Redden was not persuaded, however, noting that the regulatory history of the regulations suggested that NOAA and the FWS intended for section 7 to apply “when some meaningful discretionary control or involvement [was] retained by an action agency.”³⁹⁴ The fact that NOAA and FWS added the term

³⁹¹ Indeed, the Corps’ Statement of Decision for the 2004 BiOp asserted that “[t]raditionally, the Corps has been granted broad discretion by Congress in planning, constructing, and operating federal water resource projects.” U.S. ARMY CORPS OF ENG’RS, RECORD OF CONSULTATION AND STATEMENT OF DECISION 2 (2004), available at http://www.salmonrecovery.gov/Implementation/Army_Corps_UPA_Rod.pdf.

³⁹² *NWF v. NMFS III*, 2005 WL 1278878, at *7; 2004 BiOp, *supra* note 45, at 5-5 to 5-6; see also 2004 BiOp, *supra* note 45, at 3-1 (“[T]his Opinion covers all of the Action Agencies’ proposed *discretionary* operations of the FCRPS, associated projects, and coincident mitigation actions through 2014.”) (emphasis added). NOAA’s attempt to segregate discretionary from non-discretionary actions was widely criticized. For example, observing that the revised 2004 BiOp “differ[ed] markedly from the 2000 BiOp in both its analytical approach and its conclusions,” Judge Redden expressed concern that the remand process aimed at revising the 2000 BiOp was headed for a “train wreck.” See Barry Espenson, *Judge Redden Expresses Concern About BiOp Remand Process*, COLUMBIA BASIN BULL., Oct. 1, 2004 (on file with author). Environmentalists claimed that the 2004 BiOp’s reinterpretation of the environmental baseline was “driven by a fundamental misunderstanding of the nature of the agency action that should be the subject” of consultation under the ESA. Plaintiffs’ Second Supplemental Complaint for Declaratory and Injunctive Relief at 38, *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, No. CV 01-00640-RE (D. Or. Dec. 30, 2004). The State of Oregon asserted that NOAA’s definition of the environmental baseline failed “to provide a legal or rational basis for partitioning the existence and non-discretionary operations of the federal action from the so-called non-discretionary operations.” *Oregon Warns it May Want to Intervene in BiOp Challenge*, COLUMBIA BASIN BULL., Jan. 21, 2005 (quoting Oregon’s Notice of Intent to Sue) (on file with author). A spokesperson for tribes and conservation groups decried the 2004 BiOp as the “abandonment of recovery as a goal, and a declaration of the hydropower system as an unchangeable part of the Columbia Basin’s natural landscape.” *BiOp Reaction: Some Applaud, Others Say It’s Not Enough*, COLUMBIA BASIN BULL., Dec. 3, 2004.

There were some, however, who disputed environmentalists’ assessment of the 2004 BiOp’s focus on discretionary operations. For example, the intervening BPA Customers Group countered, “The bottom line is that the Plaintiffs are mischaracterizing what the biological opinion does and does not do.” *BPA Customers File Motion to Intervene in BiOp Case*, COLUMBIA BASIN BULL., Jan. 20, 2005 (quoting Ken Canon, executive director of the Industrial Customers of Northwest Utilities). And NOAA claimed that “where there is no agency discretion to act, the ESA does not apply.” Fed. Defendant’s Memo. in Support of Motion for Summary Judgment and in Opposition to NWF’s and Oregon’s Cross-Motions for Summary Judgment at 30, *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, No. 01-00640-RE, 2005 WL 1182723 (D. Or. Mar. 11, 2005) [hereinafter Def. Summ. J. Mem.] (quoting *Natural Res. Def. Council v. Houston*, 146 F.3d 1118, 1125–26 (9th Cir. 1998)).

³⁹³ 2004 BiOp, *supra* note 45, at 5-1; 50 C.F.R. § 402.03 (2005).

³⁹⁴ *NWF v. NMFS III*, 2005 W.L. 1278878, at *8 n.6. In August 2005, three months after *NWF v. NMFS III*, the Ninth Circuit reached a similar conclusion in *Defenders of Wildlife v. U.S. EPA*, 420 F.3d 946 (9th Cir. 2005) (applying the ESA to an Environmental Protection Agency decision

“discretionary” to the final regulation in 1986 without any explanation suggested to the court that the agencies’ silent addition of a single word was not intended to exclude numerous congressionally authorized actions from ESA consultation.³⁹⁵

More importantly, the court thought that the statutes authorizing FCRPS operations did not support NOAA’s new theory that the ESA regulations insulated the action agencies from accountability because of their alleged nondiscretionary nature.³⁹⁶ Even a cursory examination of the statutes that govern the operation of the FCRPS reveals that, contrary to NOAA’ assertions, Congress gave the Corps, BPA, and the Bureau of Reclamation enormous discretion in managing the hydrosystem, authorizing the agencies to operate the FCRPS to meet a wide variety of different purposes under varying conditions.³⁹⁷ Indeed, the congressionally authorized

to delegate water pollution discharge permit authority to the state of Arizona). The *Defenders* court noted that “an agency cannot escape its obligation to comply with the [ESA] merely because it is bound to comply with another statute that has consistent, complementary objectives.” *Id.* at 967 (quoting *Wash. Toxics Coal. v. EPA*, 413 F.3d 1024, 1032 (9th Cir. 2005)). The court reasoned that the only possible source for the ESA regulation’s “discretionary . . . involvement” qualification of all actions was the ESA’s statutory reference to actions “authorized, funded, or carried out’ by the agency”, and accordingly the “discretionary . . . involvement” regulation must be interpreted congruently with that statutory provision. *Defenders*, 420 F.3d at 968. Thus, section 7(a)(2) applies where the agency in question has continuing decision-making authority over the challenged action. *Id.*

³⁹⁵ *NWF v. NMFS III*, 2005 WL 1278878, at *8 n.6.

³⁹⁶ *Id.* at *11.

³⁹⁷ *Id.* at *9–10. In the Rivers and Harbors Act of 1925, Congress jointly authorized the Corps and the Federal Power Commission to prepare feasibility studies and estimate costs for developing navigable the streams and tributaries of the Columbia River for the purposes of navigation, irrigation, flood control, and water power. Rivers and Harbors Act of 1925, ch. 467, § 3, 43 Stat. 1186, 1190 (1925). The Bonneville Project Act authorized the construction, operation, and maintenance of the Bonneville Dam for the purpose of improving navigation and power generation. Bonneville Project Act, ch. 720, 50 Stat. 731 (1937) (codified at 16 U.S.C. § 832 (2000)). The Grand Coulee Dam was authorized for flood control, navigation, downstream flow regulation, reclamation, “other beneficial uses,” and power generation as a means of generating revenue to carry out the primary purposes. River and Harbor Act of 1935, ch. 831, § 2, 49 Stat. 1028, 1039–40. In 1944, Congress authorized the construction of the Hungry Horse Dam in Montana for the purposes of irrigation, flood control, downstream flow regulation, hydroelectric generation, and “other beneficial uses primarily in the State of Montana but also in downstream areas.” Act of June 5, 1944, ch. 234, § 1, 58 Stat. 270 (codified at 43 U.S.C. § 593a (2000)). The Flood Control Act of 1944 gave the Corps to prescribe flood control and navigation regulations at all dams constructed with federal funds. Flood Control Act of 1944, ch. 655, § 10, 58 Stat. 890, 891–92. In 1945, Congress authorized the four Lower Snake River dams—Ice Harbor, Little Goose, Lower Granite, and Lower Monumental—for the purposes of navigation and irrigation. River and Harbor Act of 1945, ch. 19, § 2, 59 Stat. 10, 21. Although power production was not among the express purposes of the Lower Snake River dams, the Act directed the Secretary of Interior to market any “surplus electrical energy” generated at the dams. *Id.* § 2, 59 Stat. at 22. The River and Harbor Act of 1945 also authorized the construction of the McNary Dam for navigation, power development and irrigation. *Id.* The Act expressly required the McNary Dam to be operated to protect anadromous fish: “In the design, construction, and operation of the [McNary Dam] adequate provision shall be made for the protection of anadromous fishes.” *Id.* The 1945 Act also directed the FWS to conduct “studies and surveys necessary for fish protection.” *Id.* In 1946, Congress authorized the construction of the Chief Joseph Dam for purposes of navigation, irrigation, and power production. River and Harbor Act of 1946, ch. 595, § 1, 60 Stat. 634, 637. The Flood Control Act of 1950 authorized the

operating purposes of all fourteen FCRPS dams and water projects include “incidental” hydroelectric power production,³⁹⁸ fish and wildlife protection,³⁹⁹ and recreation.⁴⁰⁰

construction of the Albeni Falls, Libby, Dalles, and John Day dams “for the benefit of navigation and the control of destructive floodwaters and other purposes.” Flood Control Act of 1950, ch. 188, § 204, 64 Stat. 163, 170–79. The Flood Control Act of 1950 was included as Title II of the River and Harbor Act of 1950. *Id.* § 219, 64 Stat. 184. The Dworshak Dam on Idaho’s Clearwater River was authorized “for control of destructive [sic] floodwaters and other purposes.” Flood Control Act of 1962, Pub. L. 87-874, § 203, 76 Stat. 1180, 1193.

³⁹⁸ The Bonneville Project Act of 1937 authorized the Corps to “construct, operate, maintain, and improve at [the] Bonneville [Dam] such machinery, equipment, and facilities for the generation of electric energy . . . and BPA to market “surplus” electricity.” 16 U.S.C. § 832 (2000). The Act made it clear, however, that power production is “an incident” to the dam’s primary purpose of improving navigation. *Id.* § 832f; see *Hydropower v. Salmon*, *supra* note 20, at 226–27 n.68. Bonneville Dam was also a public works project, designed primarily to create jobs during the depression. *Id.* at 226. Power production was merely a secondary consideration to the project’s primary purpose of promoting economic growth by improving navigation. *Id.*; see also E. KIMBARK MACCOLL, *THE GROWTH OF A CITY: POWER AND POLITICS IN PORTLAND, OREGON, 1915 TO 1950*, at 436–52 (1979) (describing the negotiations which led to Bonneville Dam’s construction as a public works project and the public reaction to the project). The Grand Coulee Dam was also a public works project, see River and Harbor Act of 1935, 1946, ch. 595, § 1, 49 Stat. at 1039–40 (authorizing the construction of Grand Coulee Dam for purposes of flood control, improving navigation, storage, reclamation, and “other beneficial uses, and for the generation of electric energy as a means of financially aiding and assisting such undertakings”); see *Hydropower vs. Salmon*, *supra* note 20, at 227. In addition, from 1945 to 1946, Congress authorized the development of the Ice Harbor, Little Goose, Lower Granite, Lower Monumental, and Chief Joseph dams as a means of stabilizing the postwar economy and employing returning soldiers when World War II ended. River and Harbor Act of 1945, ch. 19, § 2, 59 Stat. at 22; River and Harbor Act of 1946, ch. 585, § 1, 60 Stat. at 637; see *Hydropower vs. Salmon*, *supra* note 20, at 233–34; see also S. REP. NO. 79-22, at 3, as reprinted in 1945 U.S.C.C.A.N. 666, 666 (announcing that “the bill is a post-war planning measure”).

³⁹⁹ For statutes authorizing FCRPS managers to provide for fish and wildlife protection, see Pacific Northwest Electric Power Planning and Conservation Act, 16 U.S.C. § 839 (2000) (outlining that “the purposes of this Act . . . are: . . . to assure the Pacific Northwest of an adequate, efficient, economical, and reliable power supply; . . . to protect, mitigate and enhance the fish and wildlife, including related spawning grounds and habitat, of the Columbia River and its tributaries, particularly anadromous fish”); and Fish and Wildlife Coordination Act, 16 U.S.C. § 661 (2000), noting:

For the purpose of recognizing the vital contribution of our wildlife resources to the Nation, the increasing public interest and significance thereof due to expansion of our national economy and other factors, and to provide that wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs through the effectual and harmonious planning, development, maintenance, and coordination of wildlife conservation and rehabilitation

Id.

⁴⁰⁰ *NWF v. NMFS III*, 2005 WL 1278878, at *10. For statutes authorizing FCRPS operators to provide for recreation, see Federal Water Project Recreation Act, 16 U.S.C. §§ 4601–12 (2000), which declares:

It is the policy of the Congress and the intent of this Act that (a) in investigating and planning any Federal navigation, flood control, reclamation, hydroelectric, or multiple-purpose water resource project, full consideration shall be given to the opportunities, if any, which the project affords for outdoor recreation and for fish and wildlife enhancement and that, wherever any such project can reasonably serve either or both of these purposes consistently with the provisions of this part, it shall be constructed,

The statutes authorizing the construction of the FCRPS dams and reservoirs directed the Corps to operate ten of the projects for navigation purposes,⁴⁰¹ six for irrigation,⁴⁰² seven for flood control,⁴⁰³ and two for water quality purposes.⁴⁰⁴ In none of these statutes did Congress supply any specific operating directions. Moreover, the Fish and Wildlife Coordination Act⁴⁰⁵ stipulated that “wildlife conservation shall receive equal consideration” in the operation of the FCRPS for water-resource development,⁴⁰⁶ and the Northwest Power Act of 1980⁴⁰⁷ placed fish and wildlife on an “equal footing” with power production.⁴⁰⁸

operated, and maintained accordingly

Id. The Flood Control Act of 1944 also provides for recreation, stating:

In connection with the exercise of jurisdiction over the rivers of the Nation through the construction of works of improvement, for navigation or flood control, as herein authorized, it is hereby declared to be the policy of the Congress to recognize the interests and rights of the States in determining the development of the watersheds within their borders and likewise their interests and rights in water utilization and control, as herein authorized to preserve and protect to the fullest possible extent established and potential uses, for all purposes, of the waters of the Nation’s rivers

Flood Control Act of 1944, Pub. L. No. 78-534, 58 Stat. 887, 887–88.

⁴⁰¹ See, e.g., Bonneville Project Act of 1937, 16 U.S.C. § 832 (authorizing the completion, maintenance, and operation of the Bonneville Dam, locks, power plant, and appurtenant works for the purpose of improving navigation); River and Harbor Act of 1945, ch. 19, § 2, 59 Stat. 10, 21–22 (authorizing the McNary, Lower Granite, Little Goose, Lower Monumental, and Ice Harbor dams for navigation); River and Harbor Act of 1946, ch. 595, § 1, 60 Stat. 634, 637 (authorizing Chief Joseph Dam for navigation purposes); Flood Control Act of 1950, ch. 188, § 204, 64 Stat. 163, 170–79 (authorizing Libby, The Dalles, John Day, and Albeni Falls dams for navigation purposes).

⁴⁰² *NWF v. NMFS III*, 2005 WL 1278878, at *10; see also Act of June 5, 1944, ch. 234, § 1, 58 Stat. 270 (codified at 43 U.S.C. § 593a (2000)) (authorizing the Hungry Horse Dam for irrigation); River and Harbor Act of 1945, ch. 19, § 2, 59 Stat. 10, 21–22 (authorizing the McNary, Lower Granite, Little Goose, Lower Monumental, and Ice Harbor dams for irrigation).

⁴⁰³ See River and Harbor Act of 1935, ch. 831, § 2, 49 Stat. 1028, 1039–40 (authorizing Grand Coulee Dam for flood control purposes); Act of June 5, 1944, ch. 234, § 1, 58 Stat. 270 (codified at 43 U.S.C. § 593a (2000)) (authorizing Hungry Horse Dam for flood control); Flood Control Act of 1950, ch. 188, § 204, 64 Stat. 163, 170–79 (authorizing Libby, The Dalles, John Day, and Albeni Falls dams for flood control purposes); Flood Control Act of 1962, Pub. L. 87-874, § 203, 76 Stat. 1180, 1193 (authorizing Dworshak Dam for flood control).

⁴⁰⁴ *NWF v. NMFS III*, 2005 WL 1278878, at *10.

⁴⁰⁵ Fish and Wildlife Coordination Act, 16 U.S.C. §§ 661–666c (2000).

⁴⁰⁶ *Id.* § 661.

⁴⁰⁷ Pacific Northwest Electric Power Planning and Conservation Act of 1980, 16 U.S.C. §§ 839–839h (2000).

⁴⁰⁸ See *Confederated Tribes & Bands of the Yakima Indian Nation v. Fed. Energy Regulatory Comm’n*, 746 F.2d 466, 473 (9th Cir. 1984) (citing H.R. REP. NO. 96-976, at 57 (1980), *reprinted in* 1980 U.S.C.C.A.N. 5989) (construing the statute to place “fish and wildlife concerns on an equal footing with power production”). The Northwest Power Act directs the federal agencies responsible for managing and operating the FCRPS to:

[E]xercise such responsibilities consistent with the purposes of this Act and other applicable laws, to adequately protect, mitigate, and enhance fish and wildlife, including related spawning grounds and habitat, affected by such projects or facilities in a manner that provides equitable treatment for fish and wildlife with the other purposes for which the system and facilities are managed and operated

In no statute did Congress ever tell dam operators how to operate the FCRPS. Indeed, it would be difficult for Congress to do so, since it is institutionally incapable of operating a dam. Although there may be conflicts among the authorized purposes of the FCRPS, nothing suggests Congress intended to limit agency discretion in balancing these conflicts.⁴⁰⁹ On the contrary, each of the projects' authorizing legislation included open-ended directives to operate the dams for "other purposes" or "other beneficial uses," suggesting that hydrosystem operators have considerable discretion to operate the FCRPS for the benefit of listed fish.⁴¹⁰ Further, McNary Dam's authorizing legislation, which expressly calls for the protection of anadromous fish⁴¹¹—along with considerable other legislative history⁴¹²—evinces congressional solicitude for operating the FCRPS dams to avoid the negative effects of the FCRPS on salmon. The multiple, and sometimes conflicting, purposes for which Congress authorized the dams led Judge Redden to conclude that the FCRPS operating agencies "have considerable discretion in their administration of the systems, allowing them to meet their

Northwest Power Act, 16 U.S.C. § 839b(h)(11)(A)(i) (2000). For a discussion of the litigation over the meaning of the obligation to give fish and wildlife "equitable treatment," see Blumm, *supra* note 31, at 136–41.

⁴⁰⁹ See *Hydropower v. Salmon*, *supra* note 20, at 248.

⁴¹⁰ *Id.*

⁴¹¹ See Rivers and Harbors Act of 1945, ch. 19, § 2, 59 Stat. 10, 22 (requiring that "[i]n the design, construction, and operation of the [McNary Dam, originally known as the Umatilla Dam] adequate provision shall be made for the protection of anadromous fishes [sic] by affording free access to their natural spawning grounds or by other appropriate means"). The Rivers and Harbors Act of 1945 might have been interpreted to establish a federal policy of requiring dam operations to provide maximum fish passage and favoring improvements in natural spawning habitat rather than hatchery production, but federal dam operators never construed the statute in that way. See SACRIFICING THE SALMON, *supra* note 2, at 97.

⁴¹² See H.R. DOC. NO. 87-403, at 313 (2d Sess. 1962) (indicating that some of the storage water at Dworshak Dam was to be released to improve downstream flow conditions for fish migration in order to mitigate the loss of spawning grounds inundated by the reservoir); S. REP. NO. 78-862, at 1–4 (2d Sess. 1944), *as reprinted in* 1944 U.S.C.C.A.N. 1133, 1133–35 (contemplating the use of Hungry Horse Dam for multiple purposes); H.R. DOC. NO. 81-531, app. P, at 2901 (2d Sess. 1950) (requiring that "[m]inimum flows for fish life should be provided at all times in the river below the [Hungry Horse] dam, and all diversions should be screened."); S. RES. 75-113 (1st Sess. 1937) (directing the Commissioner of Fisheries to assess the effect of the Bonneville Dam on the propagation of the Columbia's salmon fishery and to recommend measures "to attain the full conservation of such fish and the preservation of the fishing industry on" the Columbia River); S. REP. NO. 85-1981, at 5 (1958), *as reprinted in* 1958 U.S.C.C.A.N. 3446, 3450 (noting that equal consideration provision of the Fish and Wildlife Coordination Act "would have the effects of putting fish and wildlife on the basis of equality with flood control, irrigation, navigation, and hydroelectric power in our water resource program . . ."); see also *Hydropower v. Salmon*, *supra* note 20, at 248. On several occasions, Congress has expressed concern about the status of anadromous fish in the Columbia Basin. See, e.g., Act of June 30, 1978, Pub. L. No. 95-308, § 8(a)(2), 92 Stat. 358, 359 (declaring that "[t]he vitality of the Columbia River estuary and marine environment is crucial to the maintenance and enhancement of major fishery resources for the enjoyment and livelihood of present and future generations"); Pacific Northwest Electric Power Planning and Conservation Act, 16 U.S.C. § 839b(h)(10)(A) (2000) (directing the Administrator of the Bonneville Power Administration to use BPA to "protect, mitigate, and enhance fish and wildlife to the extent affected by the development and operation of any hydroelectric project of the Columbia River and its tributaries in a manner consistent with the plan" developed by the Pacific Northwest Electric Power and Conservation Planning Council).

mandates and yet adjust operations to fulfill multiple purposes.”⁴¹³ Accommodating the divergent interests and balancing the multiple purposes of the FCRPS projects clearly involves making difficult choices and exercising considerable administrative discretion.⁴¹⁴

Judge Redden also concluded that ESA case law lent no support to NOAA’s attempt to segregate congressionally authorized operations from its jeopardy analysis.⁴¹⁵ For example, in *American Rivers v. Corps of Engineers*,⁴¹⁶ the District Court for the District of Columbia addressed an almost identical issue and rejected an argument that the Flood Control Act deprived the Corps of its discretion in its management of the Missouri River Basin.⁴¹⁷ That court held that “if an agency has any statutory discretion over the action in question, that agency has the authority, and thus the responsibility, to comply with the ESA.”⁴¹⁸ In a related case, the District Court of Minnesota ruled that while Congress authorized the Corps to manage the Missouri River for multiple purposes—including flood control, irrigation, power, navigation, wildlife, and recreation—the Corps’ prioritization of those interests was discretionary, and therefore the Corps was not exempt from the ESA.⁴¹⁹

NOAA’s attempt to segregate the alleged nondiscretionary effects of the existence of the FCRPS from the discretionary effects of the proposed action appeared to be an attempt to take advantage of the Ninth Circuit’s 2004 decision in *National Wildlife Federation v. United States Army Corps of Engineers (NWF v. USACE)*,⁴²⁰ a case in which environmentalists unsuccessfully claimed that the Corps’ operation of four Lower Snake River dams violated the Clean Water Act (CWA)⁴²¹ by causing excessive water temperatures.⁴²² Although the Corps acknowledged that the construction and existence of the dams contributed to a shift in the temperature regime of the Snake River, the agency maintained that it had already implemented several

⁴¹³ *NWF v. NMFS III*, No. CV 01-640-RE, CV 05-23-RE, 2005 W.L. 1278878, at *10 (D. Or. May 26, 2005).

⁴¹⁴ *Id.*

⁴¹⁵ *Id.* Although not specifically mentioned by the court, NOAA’s new regulatory interpretation conflicted with the Oregon District Court’s rejection of NOAA’s existence versus operations argument in *IDFG v. NMFS*, 850 F. Supp. 886, 894 (D. Or. 1994), where Judge Marsh noted “[t]he idea that the dams are immutable and uncontrollable like the weather ignores decades of fish protection improvements (such as bypass facilities and ladders) and other structural and operational enhancements.”

⁴¹⁶ 271 F. Supp. 2d 230 (D.D.C. 2003).

⁴¹⁷ *Id.* at 251.

⁴¹⁸ *Id.* The *American Rivers* court also noted that the Corps’ master manual on navigation allowed the Corps to consider a variety of factors in the management of the river, and thus afforded the Corps wide discretion. *Id.* at 251–52. Similarly, Judge Redden turned to NOAA’s consultation handbook to support his conclusion that the action agencies have considerable latitude in their management of the FCRPS. *See supra* notes 385–88, and accompanying text.

⁴¹⁹ *In re Operation of the Mo. River Sys. Litig.*, No. 03-MD-1555(PAM), 2004 WL 1402563, at *3–4 (D. Minn., June 21, 2004).

⁴²⁰ 384 F.3d 1163 (9th Cir. 2004).

⁴²¹ Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1387 (2000).

⁴²² *NWF v. USACE*, 384 F.3d 1163, 1168 (9th Cir. 2004). The Corps operates four dams on the Lower Snake River: Ice Harbor, Lower Monumental, Little Goose, and Lower Granite. *Id.* at 1166.

actions to help alleviate adverse water temperatures and claimed that there were no operational changes—short of removing the dams, which would require congressional approval—that the agency could implement to significantly reduce water temperatures.⁴²³ The court concluded that the Corps had reasonably determined that the existence of the dams, rather than any discretionary dam operations, caused the excessive water temperatures in the Snake River. Since there were no additional feasible steps the Corps could take to decrease water temperatures short of removing the dams, the court refused to hold the agency in violation of the CWA for its failure to meet state water quality standards.⁴²⁴ The court opined that dam removal was inconsistent with the congressional mandate to build and operate the dams, and thus beyond the Corps' authority.⁴²⁵

NOAA used the *NWF v. USACE* court's "existence versus operations" distinction to argue that the Ninth Circuit's ruling supported its decision to "limit [its ESA] consultation to the discretionary actions in the operations of the dams and consider[] the non-discretionary aspects of those operations [as part of] the Environmental Baseline."⁴²⁶ Judge Redden rejected that argument, distinguishing *NWF v. USACE* on its facts,⁴²⁷ concluding that the decision did not relieve NOAA of its duty to consult on the entirety of its proposed action under the ESA.⁴²⁸

⁴²³ *Id.* at 1169.

⁴²⁴ *Id.* at 1178–79.

⁴²⁵ *Id.* at 1180. According to the Ninth Circuit, the CWA and the 1945 Rivers and Harbors Act, which authorized the construction and operation of the Lower Snake River dams, had to be read consistently with each other. *Id.* at 1178. The net effect of the decision was to provide what appeared to be an implicit judicial exemption from the CWA, despite the fact that the statute contains an express presidential exemption for water projects, 33 U.S.C. § 1323(a) (2000), which might have been interpreted to be the exclusive means of relief.

⁴²⁶ Def. Summ. J. Mem., *supra* note 392, at 33.

⁴²⁷ *NWF v. NMFS III*, No. CV 01-640-RE, CV 05-23-RE, 2005 W.L. 1278878, at *11. Judge Redden noted that, unlike the Corps in *NWF v. USACE*, NOAA never asserted that "the sole cause" of salmon and steelhead decline in the Columbia Basin was "the existence of the dams and not any discretionary method of operating" the dams. *Id.* In addition, NOAA did not claim that there were "no operational changes" that could be taken to protect endangered salmon. *Id.* (citing *NWF v. USACE*, 384 F.3d at 1169). Moreover, *NWF v. USACE* involved compliance with state water quality standards required by the CWA, whereas *NWF v. NMFS III* turned on NOAA's contention that certain congressionally authorized federal actions were exempt from ESA requirements. *NWF v. NMFS III*, 2005 W.L. 1278878, at *11.

Note that NOAA did not claim that *all* congressionally authorized FCRPS operations, including those designed to protect fish and wildlife, water quality, and provide for recreation, were ESA exempt, but that only *some* congressionally authorized operations, namely hydroelectric power, navigation, flood control, and irrigation, were more "non-discretionary" than other congressionally mandated purposes of the FCRPS, and thus exempt from consultation. At the same time, NOAA was forced to admit that it was unable to define the limits of the action agencies' discretionary operational authority, "given all of the various possible permutations of the FCRPS." 2004 BiOp, *supra* note 45, at 5-5, 5-8. Indeed, NOAA's decision to characterize some congressionally authorized operations of the FCRPS as mandatory, and thus non-discretionary, while categorizing others as discretionary, suggested that the action agencies have considerable discretion in how they interpret the statutory authorities governing the FCRPS.

⁴²⁸ *NWF v. NMFS III*, 2005 W.L. 1278878, at *11.

Judge Redden recognized that the effect of NOAA's new interpretation of agency actions subject to consultation was to create an administrative exemption from section 7 consultation far broader than the only statutory exemption expressly created by Congress in the ESA.⁴²⁹ According to the court, this administrative exemption was sweeping, potentially insulating federal proposals from the ESA's consultation requirements simply by characterizing certain activities, however lethal, as "non-discretionary."⁴³⁰ The judge observed that if Congress had intended to provide such a far-reaching exemption, it would have done so expressly, so he ruled that such an administrative exemption conflicted with the structure, purpose, and policy of the ESA.⁴³¹

⁴²⁹ *Id.* Under the ESA, where the agency cannot insure that an action is not likely to jeopardize the continued existence of an endangered or threatened species or results in the destruction or adverse modification of habitat, the agency may apply to the Endangered Species Committee for an exemption from the requirements of the ESA. Endangered Species Act of 1973, 16 U.S.C. § 1536(e)(2) (2000). Also known as the "God Squad," the Endangered Species Committee is composed of at least seven members: The Secretary of Agriculture, the Secretary of the Army, the Chairman of the Council of Economic Advisors, the Administrator of the Environmental Protection Agency, the Administrator of the National Oceanic and Atmospheric Administration, and one individual, appointed by the President, from each state affected by the proposed exemption. 16 U.S.C. § 1536(e)(3)(A)–(G). The Endangered Species Committee is known as the God Squad because it is the "ultimate arbiter of the fate of an endangered species." *Portland Audubon Soc'y v. Endangered Species Comm.*, 984 F.2d 1534, 1537, *as amended*, 988 F.2d 121 (9th Cir. 1993). To create an exemption, the Endangered Species Committee must conclude that 1) there are no reasonable and prudent alternatives to the proposed action; 2) the action is of regional or national significance; 3) the benefits of alternative courses of action consistent with conserving the species are clearly outweighed by the benefits of the action; and 4) the agency has not made any irretrievable or irreversible commitments of resources with respect to the agency action. 16 U.S.C. § 1536(h)(1)(A)(i)–(iv). In granting an exemption, the committee can also require the agency to implement "reasonable mitigation and enhancement measures." *Id.* § 1536(h)(1)(B).

⁴³⁰ *NWF v. NMFS III*, 2005 WL 1278878, at *11. In addition, the court noted that NOAA's interpretation would result in a jeopardy analysis that "ignore[d] the reality of past, present, and future effects of federal actions" and would almost always limit the consultation to only a part of the proposed action. *Id.*

⁴³¹ *Id.* *NWF v. NMFS III* never addressed the short-term "emergency" exemption tucked into the action agencies' proposed action, authorizing FCRPS operators to deviate from the proposed action and the 2004 BiOp's prescriptions. U.S. ARMY CORPS OF ENG'RS, BUREAU OF RECLAMATION, & BONNEVILLE POWER ADMIN., FINAL UPDATED PROPOSED ACTION FOR THE FCRPS BIOLOGICAL OPINION REMAND 19 (Nov. 24, 2004) [hereinafter FINAL UPDATED PROPOSED ACTION]. The broad exemption stated:

[a]s anticipated in the 2000 BiOp, operators may have to interrupt or adjust water management actions in response to unforeseeable power system, flood control, or other emergencies. . . . During winter power emergencies, . . . hydrosystem operators may draft water from reservoirs that they otherwise would hold for spring and summer flow augmentation. . . . Similarly, during summer emergencies, the federal hydrosystem operators may draft storage reservoirs below biological opinion draft limits, or reduce bypass spill for fish.

Id. Like the 2000 BiOp's emergency exemption, the 2004 emergency exemption made no attempt to define what might constitute an emergency. 2000 BiOp, *supra* note 8, at 9-62 (describing the emergency exemption); FINAL UPDATED PROPOSED ACTION, *supra*, at 19; *see Avoiding Dam Breaching*, *supra* note 97, at 260, 279, 288–92 (arguing that the emergency exemption in the 2000 BiOp violated the ESA. Nor does the exemption require the action agencies to consult with

The court also ruled that NOAA's reinterpretation of the environmental baseline conflicted with longstanding practices in previous BiOps over ten years.⁴³² In the absence of a reasonable rationale for this departure from its previous analytical approach, NOAA's new interpretation was "entitled to considerably less deference than its consistently-held agency view."⁴³³ Thus, in order to comply with the ESA, NOAA had to consult on all actions in which the action agencies possessed "meaningful discretion" in FCRPS operations.⁴³⁴

2. *The Comparative vs. Aggregative Approaches to Jeopardy*

The error in NOAA's improper segregation of allegedly nondiscretionary FCRPS operations from its jeopardy analysis was compounded, according to Judge Redden, by the agency's comparative approach to jeopardy.⁴³⁵ Instead of examining the effects of the proposed action in conjunction with the environmental baseline, as it had in previous BiOps, the 2004 BiOp merely compared the proposed action, which now

NOAA prior to declaring an emergency. *Id.*

Remarkably, the 2004 BiOp failed to mention the emergency exemption included in the proposed action. Even had NOAA analyzed the effects of emergency exemption, Judge Redden's treatment of NOAA's *de facto* ESA exemption for so-called nondiscretionary operations from the jeopardy analysis suggested that the emergency exemption also violated the ESA, since the emergency exemption gives the action agencies a license to unilaterally avoid the 2004 BiOp's spill and flow prescriptions. *Avoiding Dam Breaching*, *supra* note 97, at 292.

⁴³² *NWF v. NMFS III*, 2005 WL 1278878, at *11.

⁴³³ *Id.* (citing *Immigration & Naturalization Serv. v. Cardoza-Fonseca*, 480 U.S. 421, 446 n.30 (1987)).

⁴³⁴ *Id.* at *9 ("I hold that NOAA must consult on the entire proposed action if the action agencies have meaningful discretion to operate the dams in a manner that complies with the ESA."). As noted above, see *supra* note 425, the Ninth Circuit's recent decision in *Defenders of Wildlife v. U.S. Environmental Protection Agency*, 420 F.3d 946, 968–69 (9th Cir. 2005), holding that section 7 applies where the agency in question has continuing decision-making authority over the challenged action, suggests that the Ninth Circuit should affirm Judge Redden's interpretation of the ESA regulations to require federal dam operators to comply with the section 7 consultation procedures for all FCRPS operations where the action agencies have "meaningful discretion." See *supra* note 394 and accompanying text.

Similarly, the Ninth Circuit's decision in *Washington Toxics Coalition v. Environmental Protection Agency (Washington Toxics)*, 413 F.3d 1024 (9th Cir. 2005), also indicates that Judge Redden's decision should be affirmed. In *Washington Toxics*, environmentalists challenged an EPA decision to register several pesticide ingredients under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) without undergoing section 7 consultations. *Id.* at 1028. Although NOAA had determined that pesticides may kill or injure listed salmonids, EPA argued that only FIFRA—not the ESA—governed the registration of pesticides, and that the agency was bound to follow only the limited provisions dealing with endangered species in FIFRA. *Id.* at 1031. The Ninth Circuit rejected EPA's argument, holding that "an agency cannot escape its obligation to comply with the ESA merely because it is bound to comply with another statute that has consistent, complementary objectives." *Id.* at 1032. Although the court acknowledged that FIFRA's goal of ensuring that pesticides present no unreasonable risk to people or the environment, and the ESA's goal of protecting listed species were distinct, it observed that the two statutes served complimentary purposes. *Id.* Because EPA has a continuing discretionary authority to register, alter, and cancel pesticide registrations, the court concluded that the agency also had a continuing obligation to follow the requirements of the ESA. *Id.* at 1033.

⁴³⁵ *NWF v. NMFS III*, 2005 WL 1278878, at *13–14.

consisted primarily of fish passage improvements, to other federal actions it chose to characterize as part of the environmental baseline.⁴³⁶ According to the court, this comparative approach to the jeopardy analysis evaluated only “a portion of the impacts properly attributable to” the operation of the FCRPS—the discretionary effects of the proposed action—and effectively ignored all the adverse effects occurring under the agency’s expansive definition of the environmental baseline.⁴³⁷ Not only did the 2004 BiOp’s new comparative approach to jeopardy depart significantly from earlier BiOps, it conflicted with the language of the ESA consultation regulations⁴³⁸ as well as the agency’s own consultation handbook,⁴³⁹ both of which contemplated an aggregation approach to the jeopardy analysis.⁴⁴⁰

⁴³⁶ *Id.* at *13.

⁴³⁷ *Id.* at *14.

⁴³⁸ *Id.* at *12. During section 7 consultation, the consulting agency must “[e]valuate the effects of the action and cumulative effects on the listed species or critical habitat” and determine “whether the action taken together with cumulative effects, is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.” 50 C.F.R. § 402.14(g)(3)–(4) (2002). The “effects of the action” include the “direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline.” *Id.* § 402.02.

⁴³⁹ *NWF v. NMFS III*, 2005 WL 1278878, at *12; see CONSULTATION HANDBOOK, *supra* note 139, at 4-35. “In determining whether an action is likely to jeopardize the continued existence of a species, the action is viewed against the aggregate effects of everything that has led to the species’ current status and, for non-Federal activities, those things likely to affect the species in the future.” *Id.* at 4-36.

In the majority of cases, a *jeopardy* opinion is rendered when the total of the species’ status, environmental baseline, effects of the proposed action, and cumulative effects lead to the conclusion that the proposed action is likely to jeopardize the continued existence of the *entire* species, subspecies, or vertebrate population as listed.

Id. See also *id.* at 4-31 stating:

The conclusion section presents the Services’ opinion regarding whether the aggregate effects of the factors analyzed under ‘environmental baseline,’ ‘effects of the action,’ and ‘cumulative effects’ in the action area—when viewed against the status of the species or critical habitat as listed or designated—are *likely to jeopardize the continued existence of the species or result in destruction or adverse modification of critical habitat.*

Id.

⁴⁴⁰ NOAA argued that to interpret the consultation regulations to require it to aggregate the impacts of the action with the adverse effects of the environmental baseline could lead to an “absurd result”—a situation where an impaired environmental baseline would result in a jeopardy finding even if the proposed action had beneficial effects, but where the benefits might be insufficient to overcome the impaired baseline. *NWF v. NMFS III*, 2005 WL 1278878, at *12. Judge Redden found that argument unpersuasive, noting that such a “hypothetical situation” was not before the court, and that there was no real dispute that ongoing FCRPS operations were killing listed salmon. *Id.* In any event, the ESA regulations provide federal agencies with an exception from the requirements of formal consultation if during the course of a biological assessment or informal consultation the “[f]ederal agency determines, with the written concurrence [of the relevant consultation agency (NOAA or the Fish and Wildlife Service)] that the proposed action is not likely to adversely affect any listed species or critical habitat.” 50 C.F.R. § 402.14(b)(1) (2004). In other words, if NOAA believes that an action will be beneficial to a listed species and determines that it is “not likely to adversely affect” the species or its habitat, the consultation process comes to an end. *Id.* §§ 402.13(a), 402.14(b)(1). The

Noting that other courts have rejected NOAA's comparative approach,⁴⁴¹ Judge Redden concluded that it was "insufficiently comprehensive" to satisfy the statutory directive to "insure" that any action carried out by a federal agency is "not likely to jeopardize the continued existence" of a listed species.⁴⁴² When combined with NOAA's attempt to segregate nondiscretionary actions from the scope of the jeopardy analysis, the 2004 BiOp's new comparative approach to jeopardy allowed the agency to conclude that the proposed operations would not jeopardize the continued existence of listed salmon, even if the species were likely to become extinct due to the agency's new, expansive definition of environmental baseline actions that are exempt from consultation. Since the 2004 BiOp's comparative approach represented a significant departure from NOAA's previous interpretations of the ESA consultation regulations—as reflected in previous BiOps and in NOAA's consultation handbook—the court was unwilling to give great deference to NOAA's novel interpretation of the regulations.⁴⁴³

regulations also allow the agency to avoid formal consultation "if a preliminary biological opinion, issued after early consultation under § 402.11, is confirmed as the final biological opinion." *Id.* § 402.14(b)(2).

⁴⁴¹ For example, in *Kandra v. United States*, 145 F. Supp. 2d 1192, 1198 (D. Or. 2001), Klamath Basin irrigators challenged a decision by the United States Bureau of Reclamation to halt irrigation water deliveries to protect listed coho salmon in accordance with a biological opinion for the Klamath Reclamation Project, arguing that the ESA required FWS and NOAA to compare only the proposed action to the environmental baseline to determine the actual effects of the project, but the court rejected that argument, holding that:

all human activities that impact the listed species must be considered in the environmental baseline. . . . The effects of the proposed action are then addressed 'in conjunction with the impacts that constitute the baseline.' *The environmental baseline is part of the entire 'effects of the action'* on the listed species or habitat that must be considered, rather than some concrete standard or condition to which other standards or conditions are compared.

Id. at 1208 (emphasis added) (quoting *Defenders of Wildlife v. Babbitt*, 130 F. Supp. 2d 121, 127-28 (D.D.C. 2001)). The *Defenders* court held that a BiOp "must also include an analysis of the effects of the action on the species when added to the environmental baseline—in other words, an analysis of the *total* impact on the species." *Defenders of Wildlife v. Babbitt*, 130 F. Supp. 2d 121, 128 (D.D.C. 2001). Although the issue in *Defenders* was the federal government's treatment of cumulative impacts, and the court in *Kandra* was not squarely presented with the issue of whether an agency must aggregate rather than compare the effects of an action with the environmental baseline, both decisions interpreted the same ESA regulation to require federal agencies to address the effects of the action in conjunction with the impacts of the environmental baseline in a BiOp. *Id.* at 127-28.

⁴⁴² *NWF v. NMFS III*, 2005 WL 1278878, at *14 (citing 16 U.S.C. § 1536(a)(2) (2000)).

⁴⁴³ *Id.* (quoting *Immigration & Naturalization Serv. v. Cardoza-Fonseca*, 480 U.S. 421, 446 n.30 (1987)). In 2005, NOAA and the U.S. Bureau of Reclamation (BOR) issued a biological opinion addressing the effects of BOR's operation of twelve water projects above the Hells Canyon Complex dams on the Upper Snake River on ESA-listed salmon that occupy habitat in the Lower Snake and Columbia Rivers. *See Am. Rivers, Inc. v. NOAA Fisheries*, No. 04-00061, 2006 WL 1455629, at *1 (D. Or. May 23, 2006). Although BOR's Upper Snake projects are operated primarily for irrigation purposes, the projects serve multiple purposes, including flood control, limited hydroelectric power generation, recreation, and fish and wildlife conservation. *Id.* at *2. BOR's Upper Snake projects deplete annual flows below the Hells Canyon dams by approximately 2 million acre-feet, contributing to juvenile salmon mortality in the Lower Snake

3. Flawed Critical Habitat Determinations

The court also concluded that the 2004 BiOp's analysis failed to adequately analyze whether the proposed action would destroy or adversely modify critical habitat necessary for both salmon survival and recovery.⁴⁴⁴ In

and Columbia Rivers by increasing water temperatures, decreasing water quality, and potentially disrupting the migration cycle of some species of juvenile salmon. *Id.* Despite the biological relationship between water use in the Upper Snake River and water quality and quantity in the Lower Snake and Columbia Rivers, NOAA decided to segment BOR's Upper Snake River operations from the downstream FCRPS operations for ESA consultation purposes and prepared two separate biological opinions—both of which concluded the actions would not jeopardize listed species. *Id.* at *2–3.

In *Am. Rivers, Inc. v. NOAA Fisheries*, environmentalists and salmon fishermen challenged that conclusion, arguing that—like the earlier 2004 FCRPS BiOp—the 2005 Upper Snake River BiOp arbitrarily separated non-discretionary federal actions from discretionary actions, focusing only on whether BOR's discretionary operations in the Upper Snake River would jeopardize ESA listed salmon when compared to the environmental baseline, which included effects of the FCRPS. *Id.* at *5–6. In addition, the environmentalists argued that NOAA and BOR abused their discretion by segmenting BOR's operations in the Upper Snake River from the downstream FCRPS operations. *Id.* at *3. In May 2006, Judge Redden struck down the Upper Snake River BiOp, concluding that NOAA's jeopardy analysis violated the ESA because it was based on the same flawed comparative analysis that NOAA used in the 2004 FCRPS BiOp. *Id.* at *5–6. NOAA's decision to segment BOR's Upper Snake River operations from the downstream FCRPS operations

crystalize[d] the need for a comprehensive approach to the jeopardy analysis. If NOAA segments the Columbia and Snake River Basin into two separate actions . . . and uses a comparative analysis, the agencies effectively preclude any jeopardy conclusion, as each agency will be able to conclude that its action is not jeopardizing listed species when compared to the environmental baseline, which of course includes the operations of the other agency and vice versa. In essence, each agency ends up pointing their finger at the other, while ignoring the needs of listed Columbia and Snake River salmon and steelhead.

Id. at *5.

Although the court invalidated the Upper Snake River BiOp because it improperly compared the effects of BOR's proposed action to the environmental baseline rather than aggregating those effects, Judge Redden concluded that neither the ESA nor its regulations required NOAA to prepare a single biological opinion encompassing both BOR's Upper Snake River operations and the FCRPS operations, *id.* at *11, since BOR's Upper Snake River operations and the FCRPS dams were not a single agency action. *Id.* at *7–8. In addition, the federal actions were not "interrelated or interdependent" within the meaning of ESA regulations or the Ninth Circuit case law interpreting those regulations. *Id.* at *8–9. The court noted that although a single comprehensive biological opinion would be "more likely to achieve the comprehensive analysis required by the ESA," the court could not conclude that NOAA's decision to conduct two biological opinions was an abuse of discretion, so long as the separate biological opinions considered the effects of the respective federal actions and the environmental baseline in the aggregate, the agencies could produce the kind of comprehensive analysis required by the ESA. *Id.* at *10. To help ensure such a result, Judge Redden combined FCRPS and Upper Snake River BiOp remands. *Id.* at *11.

⁴⁴⁴ *NWF v. NMFS III*, 2005 WL 1278878, at *15. Under the ESA, federal agencies must ensure that any actions authorized, funded, or carried out by the agency are not likely to result in the "destruction or adverse modification" of a listed species' critical habitat. 16 U.S.C. § 1536(a)(2) (2000). The statute defines "critical habitat" to include "the specific areas within the geographical area occupied by the species, at the time it is listed . . . on which are found those physical or biological features . . . essential to the conservation of the species." *Id.* § 1532(5)(A)(i).

the 2004 BiOp, NOAA simply evaluated the effects of the proposed FCRPS operations on critical habitat necessary for survival.⁴⁴⁵ According to Judge Redden, this interpretation was inconsistent with the Ninth Circuit's 2004 decision in *Gifford Pinchot Task Force v. United States Fish & Wildlife Service*,⁴⁴⁶ requiring federal agencies to consider the effect of the proposed actions on critical habitat necessary for salmon recovery as well as survival.⁴⁴⁷ Although Judge Redden could have interpreted the *Gifford Pinchot* decision narrowly—that is, as limited to the regulatory definition of “destruction or adverse modification of critical habitat”⁴⁴⁸—he concluded that *Gifford Pinchot* required recovery consideration in all section 7 consultations.⁴⁴⁹

NOAA also failed to provide a reasonable rationale for concluding that the proposed action would not “appreciably reduce” the value of the listed species’ already degraded critical habitat.⁴⁵⁰ Despite evidence of the desperate current condition of the species and its critical habitat,⁴⁵¹ NOAA

⁴⁴⁵ See 2004 BiOp, *supra* note 45, at 1-12 (“If . . . NOAA Fisheries determines that the proposed action would either not affect or would result in a net improvement in survival or [critical] habitat condition for a given ESU, NOAA Fisheries would then conclude that the action is not likely to jeopardize that ESU or adversely modify critical habitat.”).

⁴⁴⁶ 378 F.3d 1059 (9th Cir. 2004).

⁴⁴⁷ *NWF v. NMFS III*, 2005 WL 1278878, at *15. In *Gifford Pinchot*, the court struck down the Fish and Wildlife’s regulatory definition of “destruction or adverse modification” because it effectively read the ESA’s recovery goal out of the “adverse modification” inquiry. *Gifford Pinchot*, 378 F.3d at 1069–70. The Ninth Circuit observed that under the agency’s interpretation of the regulation,

FWS 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 FWS follows its own regulation, then it is obligated to be indifferent to, if not to ignore, the recovery goal of critical habitat.

Id. at 1069–70. Judge Redden noted that *Gifford Pinchot* “requires NOAA to determine separately whether the proposed action would destroy or adversely modify critical habitat necessary for the recovery, as well as the survival, of the listed species.” *NWF v. NMFS III*, 2005 WL 1278878, at *15.

⁴⁴⁸ The ESA regulations define “destruction or adverse modification” of critical habitat 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 (2005).

⁴⁴⁹ *NWF v. NMFS III*, 2005 WL 1278878, at *15.

⁴⁵⁰ The 2004 BiOp stated that “[s]afe passage and other essential features of critical habitat in the juvenile migration corridor under the environmental baseline are poor” for all three listed salmon species with designated critical habitat. 2004 BiOp, *supra* note 45, at 8-8 (Snake River spring/summer chinook); *id.* at 8-13 (Snake River fall chinook); *id.* at 8-36 (Snake River sockeye).

⁴⁵¹ In 2003, NOAA’s Biological Review Team (BRT) concluded that Snake River sockeye are in danger of extinction and that the fall and spring/summer chinook are likely to become endangered. See W. COAST BIOLOGICAL REV. TEAM, UPDATED STATUS OF FEDERALLY LISTED ESUS OF WEST COAST SALMON AND STEELHEAD 5 (July 2003), available at <http://santacruz.nmfs.noaa.gov/files/pubs/oo748.pdf> [hereinafter BIOLOGICAL REVIEW TEAM] (“The BRT was unanimous in their assessment of [the Snake River sockeye]: 100% of the likelihood votes were in the ‘danger of extinction’ category.”); *id.* at 143 (“About two-thirds (68%) of the BRT votes for [the Snake River spring/summer chinook] fell in the ‘likely to become endangered’ category.”); *id.* (“A majority (60%) of the BRT votes for [the Snake River

asserted that the proposed FCRPS operations would not adversely modify or destroy any designated critical habitat.⁴⁵² Although the agency acknowledged that the proposed operations would produce a “significant” reduction in safe passage—an “essential feature” of critical habitat⁴⁵³—the 2004 BiOp maintained that proposed fish passage improvements, such as the installation of removable spillway weirs,⁴⁵⁴ predatory control measures, and improved estuarine shelter and hatchery operations, would eventually result in net improvements to the listed species’ critical habitat by 2014.⁴⁵⁵

NOAA’s outlook was unrealistically optimistic. The agency failed to analyze the significant degradation of the listed species’ already poor habitat in the context of the life cycles and migration patterns of the three species with designated critical habitat.⁴⁵⁶ Judge Redden concluded that this failure was inconsistent with the Ninth Circuit’s decision in *Pacific Coast Federation of Fishermen’s Associations v. National Marine Fisheries Service (PCFFA)*,⁴⁵⁷ which struck down a NMFS BiOp that assumed the adverse effects of a proposed logging operation on critical habitat would be inconsequential unless those impacts persisted for more than a decade because the agency failed to consider the likelihood of species survival and recovery during the short-term.⁴⁵⁸ In *NWF v. NMFS III*, Judge Redden confirmed that agencies cannot simply ignore a proposed action’s short-term adverse effects while awaiting uncertain and speculative long-term improvements to critical habitat.⁴⁵⁹

fall chinook] fell in the ‘likely to become endangered’ category.”).

⁴⁵² See 2004 BiOp, *supra* note 45, at 8-8 (Snake River spring/summer chinook); *id.* at 8-14 (Snake River fall chinook); *id.* at 8-36 (Snake River sockeye).

⁴⁵³ *Id.* at 6-76, 8-12, 8-35. NOAA concluded that “[t]he magnitude of the reduction in safe passage [for Snake River spring/summer chinook] (relative to the reference operation) during the first five years is significant.” *Id.* at 8-7; see also *id.* at 8-12 (“[T]he ‘safe passage’ essential feature in the [Snake River fall chinook] juvenile migration corridor . . . would be negatively altered, compared to the reference operation . . .”); *id.* at 8-35 (“[T]he proposed action would negatively impact the essential feature of safe passage in critical habitat [for Snake River sockeye] . . . between 2005 and 2009 . . .”). Remarkably, although NOAA acknowledged that safe juvenile salmon passage at the dams was an “essential feature” of critical habitat, and that spill provides a “safer route of passage than other routes,” spill rates in the proposed action were lower than those in the reference operation. *Id.* at 6-61, 6-76; see *NWF v. NMFS III*, 2005 WL 1278878, at *15.

⁴⁵⁴ *NWF v. NMFS III*, 2005 WL 1278878, at *15; 2004 BiOp, *supra* note 45, at 5-11, 6-16, 6-59, 6-60 to 6-62. For a discussion of removable spillway weirs, see *supra* note 256.

⁴⁵⁵ *NWF v. NMFS III*, 2005 WL 1278878, at *16; see also 2004 BiOp, *supra* note 45, at 6-62 to 6-76, 6-84 to 6-88, 6-134 to 6-136 (calling for predator control measures, improvements in access to rearing habitat, installation of removable spillway weirs, purchasing and leasing in-stream flows, and hatchery improvements for Snake River spring/summer chinook, Snake River fall chinook, and Snake River sockeye critical habitat).

⁴⁵⁶ *NWF v. NMFS III*, 2005 WL 1278878, at *16.

⁴⁵⁷ 265 F.3d 1028 (9th Cir. 2001).

⁴⁵⁸ *Id.* at 1037–38.

⁴⁵⁹ *NWF v. NMFS III*, 2005 WL 1278878, at *16. Echoing his 2003 opinion invalidating the 2000 BiOp because it improperly relied on uncertain future actions, see *supra* note 339 and accompanying text, Judge Redden observed that NOAA improperly relied on uncertain long-term improvements to critical habitat to offset the short-term degradation that NOAA acknowledged would occur as a result of the proposed action. The action agencies had made no commitments to installing expensive removable spillway weirs, and NOAA was, at best,

4. NOAA's Omission of Recovery from the Jeopardy Analysis

Like the 2004 BiOp's critical habitat determinations, NOAA's jeopardy analysis was inconsistent with the Ninth Circuit's reasoning in *Gifford Pinchot Task Force v. United States Fish and Wildlife Service*⁴⁶⁰ because it failed to address the prospects for recovery of the listed species.⁴⁶¹ As previously noted,⁴⁶² in *Gifford Pinchot*, the court struck down the regulatory definition of "destruction or adverse modification"⁴⁶³ of critical habitat because that definition would allow FWS to completely eliminate critical habitat necessary for recovery, so long as the amount of critical habitat necessary for survival was not appreciably diminished.⁴⁶⁴ Similarly, the 2004 BiOp's revised interpretation of the jeopardy regulations⁴⁶⁵ impermissibly permitted NOAA to ignore the ESA's goal of recovery, on the ground that the proposed action was not reasonably expected to appreciably reduce the reproduction, number, or distribution of listed salmon.⁴⁶⁶

The *Gifford Pinchot* court observed that "[b]ecause it is logical and inevitable that a species requires more critical habitat for recovery than is necessary for the species survival, the [FWS] regulation's singular focus becomes 'survival.'"⁴⁶⁷ The same was true of NOAA's interpretation of the jeopardy regulation. A species requires more productivity, greater abundance, and a wider distribution for recovery than for survival. Thus, NOAA's narrow focus on whether the proposed operations would result in a net loss of productivity, numbers, or distribution ignored the more relevant question: whether the proposed action reduced the likelihood of salmon recovery in the Columbia Basin. Consistent with the *Gifford Pinchot* court's observation that Congress intended for survival and conservation to be two distinct, yet complementary, goals of the ESA,⁴⁶⁸ Judge Redden ruled that

uncertain as to whether the long-term habitat improvements it proposed would in fact mitigate the short-term adverse effects on critical habitat. *Id.* Judge Redden also concluded that NOAA's assertion that the species' critical habitat was sufficient to support recovery was inadequate, since the agency conceded that it did not have sufficient information to make that determination. *Id.* at *15.

⁴⁶⁰ 378 F.3d 1059, 1069–77 (9th Cir. 2004).

⁴⁶¹ *NWF v. NMFS III*, 2005 WL 1278878, at *17; see also *supra* notes 446–49, and accompanying text.

⁴⁶² See *supra* note 447 and accompanying text.

⁴⁶³ The ESA regulations defined "destruction or adverse modification" 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 (2003).

⁴⁶⁴ *Gifford Pinchot*, 378 F.3d at 1069–70.

⁴⁶⁵ The ESA regulations define the statutory term "jeopardize the continued existence of" to include "engage[ing] in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species." 50 C.F.R. § 402.02 (2005).

⁴⁶⁶ The 2004 BiOp essentially concluded that a proposed federal action could not, by definition, produce jeopardy unless there was a net reduction in survival. See, e.g., 2004 BiOp, *supra* note 45, at 1–12 ("Because there would be no net reduction in the productivity, abundance or distribution of the ESU, there could not be an appreciable reduction in the likelihood of both survival and recovery . . .").

⁴⁶⁷ *Gifford Pinchot*, 378 F.3d at 1069.

⁴⁶⁸ See *id.* at 1070.

NOAA must consider recovery and survival separately in its jeopardy analysis because the likelihood that both recovery and survival will occur is reduced when the likelihood of either is reduced.⁴⁶⁹

The court observed that the ESA regulations defining jeopardy implicitly required NOAA to analyze whether an action would “appreciably [reduce] the species’ prospects of recovery as well as survival.”⁴⁷⁰ Moreover, NOAA’s new interpretation of jeopardy conflicted with its ESA consultation handbook,⁴⁷¹ as well as the jeopardy analyses in both the 1995 and 2000 BiOps.⁴⁷² Yet the agency offered no real rationale for the departure from its prior approach. Thus, NOAA’s new interpretation lacked persuasiveness, and thus was entitled to “considerably less deference” than the agency’s earlier, consistently-held view, which included separate analyses of recovery and survival.⁴⁷³ By refusing to defer to NOAA’s interpretation of the ESA

⁴⁶⁹ *NWF v. NMFS III*, No. CV 01-640-RE, CV 05-23-RE, 2005 W.L. 1278878, at *17 (D. Or. May 26, 2005).

⁴⁷⁰ *Id.* at *17; see *supra* note 465 and accompanying text.

⁴⁷¹ The consultation handbook, designed to “ensure consistent implementation of [the ESA’s] consultation procedures,” made it clear that the jeopardy analysis “looks at whether . . . the species can be expected to both survive *and* recover.” CONSULTATION HANDBOOK, *supra* note 139, at xx, 4-35 (emphasis added). The handbook further defined survival to include the goal of “retaining the potential for recovery.” *Id.* Although the consultation handbook is not a regulation, and therefore not legally binding, Judge Redden seemed to treat it as the functional equivalent of a regulation, noting that “[b]oth regulation § 402.02 and NOAA’s own Consultation Handbook *require* that species be protected from any appreciable reduction in their likelihood of recovery.” *NWF v. NMFS III*, 2005 WL 1278878, at *17 (emphasis added). Judge Redden’s reliance on the handbook seems entirely consistent with recent Supreme Court decisions. See *supra* note 388; see also *supra* notes 387, 418, *infra* note 473 (reliance on handbook consistent with other lower court decisions).

⁴⁷² *NWF v. NMFS III*, 2005 WL 1278878, at *17. NOAA interpreted the jeopardy regulation to require separate consideration of survival and recovery in both the 1995 and 2000 BiOps. 1995 BiOp, *supra* note 114, at 13 (noting that the jeopardy process involves a determination of “whether the species can be expected to survive with an adequate potential for recovery”); 2000 BiOp, *supra* note 8, at 1-8.

⁴⁷³ *NWF v. NMFS III*, 2005 WL 1278878, at *17 (citing *Immigration & Naturalization Serv. v. Cadoza-Fonseca*, 480 U.S. 421, 446 n.30 (1987)). When an agency’s interpretation of a regulation conflicts with its earlier interpretation, “[t]he agency will be required to show not only that its new policy is reasonable, but also to provide a reasonable rationale supporting its departure from previous practice.” *Seldovia Native Ass’n v. Lujan*, 904 F.2d 1335, 1345 (9th Cir. 1990). This standard suggests that an agency’s abrupt departure from a previous and consistently-held view should be entitled to deference only to the extent that the agency’s new interpretation has the “power to persuade.” *Skidmore v. Swift*, 323 U.S. 134, 140 (1944); *cf.* *Motor Vehicles Mfrs. Ass’n v. State Farm Mutual Auto Ins. Co.*, 463 U.S. 29, 56 (1983) (“While an agency is entitled to change its view . . . it is obligated to explain its reasons for doing so.”).

While environmentalists sought to invalidate the 2004 BiOp because it did too little to protect listed Columbia Basin salmon, a group of Columbia River irrigators—the Columbia Snake River Irrigators Association and the Eastern Irrigators Association—sought to invalidate the 2004 BiOp because it did too much. For example, when the “minimum irrigation pool” on the Columbia River is reduced in accordance with the 2004 BiOp for the benefit of salmon, irrigators are unable to draw water from the river. See *NWF v. NMFS III*, 2005 WL 1278878, at *18. The irrigators argued that the 2004 BiOp improperly 1) excluded tribal in-river fishing rights from its jeopardy analysis, 2) included the effects of state-managed harvests as cumulative effects in the jeopardy analysis, and 3) included recovery planning in the 2004 BiOp. *Id.* Judge Redden rejected each of the irrigators’ claims in turn. First, because NOAA had already engaged in section 7 consultation for tribal harvests, he concluded that NOAA properly included the

regulations, Judge Redden effectively reestablished recovery as a core element of the jeopardy analysis.

VI. THE AFTERMATH OF *NWF v. NMFS III*: JUDGE REDDEN “RUNS THE RIVER”?

Within days of Judge Redden’s May 2005 decision concluding that the 2004 BiOp was arbitrary and capricious, environmentalists urged the court to issue an injunction requiring the National Oceanic and Atmospheric Administration (NOAA) to withdraw the 2004 BiOp and ordering federal dam operators to increase river flows and spill levels in the Federal Columbia River Power System (FCRPS) to protect listed juvenile salmon migrating through the Columbia Basin during summer 2005.⁴⁷⁴ In June 2005, Judge Redden granted the environmentalists’ spill request, but he refused to vacate the 2004 BiOp or order increased river flows through the FCRPS.⁴⁷⁵ In September 2005, a Northwest Power Act-created agency, the Fish Passage Center,⁴⁷⁶ released a preliminary study assessing the effects of the court-ordered spill on juvenile salmon survival in the Columbia Basin and concluding that the court-ordered spill resulted in the highest levels of salmon survival recorded in recent years.⁴⁷⁷ Despite this positive salmon

effects of future tribal harvests in the environmental baseline. *Id.* at *19. Second, since the effects of future state-managed harvests were reasonably certain to occur and undoubtedly affected the status of the listed species, the court concluded that NOAA appropriately considered those effects in its cumulative effects analysis, at least until NOAA completed the section 10 permit process required by the ESA. *Id.* at *20. Third, since Judge Redden found that “NOAA did not adequately address the likelihood of species recovery in the 2004 BiOp,” he concluded that the agency clearly “did not engage in the far more detailed process of recovery planning in the 2004 BiOp, as charged by the Irrigators.” *Id.* at *22.

⁴⁷⁴ Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv. (*NWF v. NMFS III Injunction Order*), No. CV 01-640-RE, CV 05-23-RE, 2005 WL 1398223, at *1–2 (D. Or. June 10, 2005).

⁴⁷⁵ *Id.* at *5.

⁴⁷⁶ The Fish Passage Center (FPC) was established by the Northwest Power and Conservation Planning Council in 1984 to monitor salmon migration through the FCRPS, oversee dissolved gas programs, and report on comparative fish survival. The FPC reported its findings to the council and the public. The agency also provided data and analysis to federal hydrosystem operators, state agencies, and tribes, and assists in formulating flow and spill recommendations. Bill Crampton & Barry Espenon, *Senate Panel Orders BPA to Cease Fish Passage Center Funding*, COLUMBIA BASIN BULL., June 24, 2005; Blaine Harden, *Zeroing out the Messenger*, WASH. POST, Nov. 30, 2005, at A21, available at <http://www.washingtonpost.com/wp-dyn/content/article/2005/11/29/AR2005112901288.html>; see also NW. POWER & CONSERVATION COUNCIL, DOC. NO. 94-55, 1994 COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM 5–18 (1994), available at <http://www.nwcouncil.org/library/1994/sec5.pdf> (calling for the funding and establishment of a fish passage center to: 1) plan and implement the annual smolt monitoring program, 2) develop and implement flow and spill requests, and 3) monitor and analyze research results to assist in implementing the water budget and spill planning). For more information on the Fish Passage Center, see http://www.fpc.org/fpc_homepage.html (last visited July 15, 2006); see also William McCall, *Witnesses Stand Up for Fish Count*, THE REGISTER-GUARD, Dec. 8, 2005, available at http://www.registerguard.com/news/2005/12/08/c2.or.fishcenter.1208.p1.php?section=nation_world (describing the history of the Fish Passage Center and Sen. Craig’s (R-Idaho) proposal to cut funding for the program).

⁴⁷⁷ Bill Crampton & Barry Espensen, *Fish Passage Center Offers Preliminary Analysis on Spill*, COLUMBIA BASIN BULL., Sept. 16, 2005 (on file with author). The study was conducted at the request of the Fish Passage Center Oversight Board, which the Northwest Power and

survival data—actually, because of it—in November 2005, Sen. Larry Craig (R-Idaho) inserted language into a Senate committee report accompanying an energy appropriations bill that aimed to eliminate funding for the Fish Passage Center.⁴⁷⁸

This Part examines Judge Redden’s 2005 injunction order, the summer 2005 Fish Passage Center studies assessing the effect of Judge Redden’s spill order, and Sen. Craig’s subsequent efforts to dismantle the Fish Passage Center. This Part then describes Judge Redden’s October 2005 remand order and suggests that his decision to assume limited control over FCRPS operations and his inclusion of recovery in the ESA’s jeopardy inquiry may be one of the most important legacies of the FCRPS BiOp litigation.

A. Injunctive Relief: “Splitting the Baby”

Shortly after Judge Redden declared the 2004 BiOp illegal, environmentalists asked the court to order NOAA and the action agencies to 1) withdraw the 2004 BiOp and comply with and implement all of the mitigation actions described in the 2000 BiOp, 2) increase river flows to decrease water particle travel time in the Snake and Columbia Rivers by at least ten percent through a combination of reservoir drawdown, flow augmentation, and other measures, and 3) provide twenty-four-hour spill at five Columbia Basin dams—McNary Dam on the Columbia River, and Lower Granite, Little Goose, Lower Monumental, and Ice Harbor dams on the Lower Snake River—to assist juvenile salmon migrating downstream during the summer of 2005.⁴⁷⁹ In June 2005, Judge Redden rejected NOAA’s assertions of agency expertise in the operation of the FCRPS⁴⁸⁰ and required federal dam operators to spill water over five Columbia Basin dams in order to avoid irreparable harm to juvenile fall chinook and other listed species.⁴⁸¹

Conservation Council established as part of its 2000 Columbia River Basin Fish and Wildlife Program to oversee the operations of the Fish Passage Center. *Id.*; see also Northwest Power and Conservation Council, <http://www.nwcouncil.org/fw/fpcob/Default.htm> (last visited July 16, 2006).

⁴⁷⁸ See Harden, *supra* note 476, at A21.

⁴⁷⁹ *NWF v. NMFS III Injunction Order*, 2005 WL 1398223, at *1–2. The 2004 BiOp made no allowance for voluntary spill at the Lower Snake River or McNary dams during the summer transport period. *Id.* at *4.

⁴⁸⁰ Generally, “[d]eference to an agency’s technical expertise and experience is particularly warranted with respect to questions involving . . . scientific matters.” *United States v. Alpine Land & Reservoir Co.*, 887 F.2d 207, 213 (9th Cir. 1989). However, “[t]he presumption of agency expertise may be rebutted if its decisions, even though based on agency expertise, are not reasoned.” *Greenpeace v. Nat’l Marine Fisheries Serv.*, 80 F. Supp. 2d 1137, 1147 (W.D. Wash. 2000).

⁴⁸¹ *NWF v. NMFS III Injunction Order*, 2005 WL 1398223, at *5. Environmentalists also argued that decreasing water particle travel time would provide the most favorable migration conditions for listed salmon and avoid irreparable harm to juvenile fall chinook migrating through the FCRPS that summer. *Id.* at *1–2, *5. Judge Redden was not convinced, however, and denied the environmentalists’ request. *Id.* at *5. While there was ample evidence in the record that suggested spill provided effective and safe dam passage for juvenile salmon, decreasing water particle travel time was not supported by such convincing evidence. *Id.* Thus, the court ordered the parties to engage in further study collaboration concerning whether flow augmentation effectively promoted salmon survival. *Id.* Those conversations would

Evincing a reluctance to “run the river,” however, the court stopped short of granting the full injunctive relief that environmentalists had requested, declining to order NOAA to withdraw the 2004 BiOp and increase river flows to decrease the water particle travel time in both the Columbia and Snake rivers.⁴⁸²

Judge Redden concluded that unless the action agencies modified FCRPS operations, the federal dam operators could not ensure that their operation of the FCRPS would satisfy their ESA requirement of not jeopardizing listed Columbia Basin salmon.⁴⁸³ Indeed, there was “ample evidence” that FCRPS operations adversely affected salmon mortality and were contributing to the endangerment of the listed species.⁴⁸⁴ Clearly constrained in fashioning injunctive relief concerning ongoing federal actions, Judge Redden admitted “in a sense I guess I’m cutting the baby in half,”⁴⁸⁵ which seemed to acknowledge both his reluctance to dictate federal dam operations and the overwhelming evidence in the record supporting the need for spill to protect juvenile salmon.⁴⁸⁶ Even NOAA admitted that spill was generally safer than other routes of juvenile salmon passage.⁴⁸⁷ Echoing Judge Marsh’s sentiments of nearly a decade before,⁴⁸⁸ Judge Redden urged

undoubtedly founder on the definition of what was “effective.”

⁴⁸² *Id.* at *1–2, *5.

⁴⁸³ *Id.* at *4 (citing *Thomas v. Peterson*, 753 F.2d 754, 764 (9th Cir. 1985)).

⁴⁸⁴ *Id.* In its 2004 BiOp, NOAA conceded that “the existence and operations of the dams and reservoirs . . . account for most of the mortality of juvenile [salmon] migrating through the FCRPS.” 2004 BiOp, *supra* note 45, at 5-29.

⁴⁸⁵ Natalie M. Henry, *Judge Orders Feds to Spill More Water Over Lower Snake Dams*, E&E NEWS PM, June 10, 2005 (quoting Judge James Redden), available at <http://www.eenews.net/eenewspm/print/2005/06/10/1>.

⁴⁸⁶ In October 2005, the environmentalists returned to the Oregon District Court, asking Judge Redden to increase flows and spill for FCRPS operations during spring and summer 2006 while NOAA revised the 2004 BiOp. *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, No. CV 01-640-RE, 2005 WL 3576843 (D. Or. Dec. 29, 2005). Although NOAA had concluded that flow augmentation measures were “feasible and implementable” as a reasonable and prudent alternative measure to avoid jeopardy” in its 2000 BiOp, Judge Redden denied the environmentalists’ requests for flow augmentation during spring and summer 2006, citing uncertainty regarding the efficacy of flow augmentation on salmon survival through the FCRPS, and the court’s inability to dictate treaty obligations between the United States and Canada (with which the action agencies would be required to negotiate in order to secure water releases). *Id.* at *6–7. The court did, however, grant the environmentalists’ requests for increased spill during the late spring and summer months of 2006. *Id.* at *3, *5. The court noted that the Corps’ 2006 FCRPS proposal consisted of eliminating spill and relying exclusively on juvenile salmon transportation at the Lower Snake River dams in late spring. *Id.* at *3. According to Judge Redden, this amounted to a “radical departure” from the agency’s longstanding “spread-the-risk philosophy,” and he therefore refused to defer to the Corps’ 2006 operating proposal. *Id.* at *2–4. Similarly, Judge Redden rebuffed the Corps’ proposal to cease spill in favor of full transportation on August 15, 2006, and he ordered the Corps to continue spill until August 31, 2006. *Id.* at *5.

⁴⁸⁷ 2004 BiOp, *supra* note 45, at 6-16, 6-61. In the 2000 BiOp, NOAA acknowledged that spill was the preferred method of passage for juvenile salmon, and that “[t]he body of research evidence indicates that juvenile survival is generally highest through [spill].” 2000 BiOp, *supra* note 8, at 9-82.

⁴⁸⁸ In the 1994 case striking down the 1993 BiOp, Judge Marsh wrote:

As is true in so many of these cases, the merits of the dispute are only a portion of the

the parties to “take advantage of this moment to get together and start talking” about the operation of the FCRPS,⁴⁸⁹ exhorting them to try to “reach a consensus” on the spill issue; otherwise, spill would proceed in accordance with his order.⁴⁹⁰

problem. What compels a party to file an action against the federal government in an environmental case generally is the sense that having been called upon to contribute resources to aid the federal agencies in problem solving and having expended time, energy and money coming up with analyses and recommended solutions it should not be ignored or, as in this case, ultimately have its views discredited. Thus, the underlying root of the litigation problem is the feeling of these parties that the federal government is simply not listening to them. . . . “[E]verybody has got a plan to save the salmon,” but many of these recommendations have fallen on deaf ears.

Idaho Dep’t of Fish & Game v. Nat’l Marine Fisheries Serv., 850 F. Supp. 886, 899–900 (D. Or. 1994) (quoting IDFG Director Steven Huffaker). While NOAA was “under no legal obligation to listen and respond to salmon plans from every corner of the Northwest,” Judge Marsh observed that “the ESA does impose substantive obligations with respect to an agency’s consideration of significant information and data from well-qualified scientists such as the fisheries biologists from the states and tribes.” *Id.* at 900. See Endangered Species Act, 16 U.S.C. § 1536(a)(2) (2000) (each agency “shall use the best scientific and commercial data available”); 50 C.F.R. § 402.14(d) (2005) (agencies requesting consultation must submit best scientific and commercial data available). Three years later, while upholding the 1995 BiOp in *American Rivers*, Judge Marsh again “encourage[d] the [parties] to continue in their settlement efforts and efforts towards process improvements” and implored the parties to engage in “settlement discussions” to help resolve conflicts in defining best science. *Am. Rivers, Inc. v. Nat’l Marine Fisheries Serv.*, No. CV 96-384-MA, 1997 WL 33797790, at *13 (D. Or. Apr. 3, 1997).

⁴⁸⁹ Paul Vandevelder, *Salmon Find Judge Who Listens*, TIDEPOOL NEWS FOR SALMON, June 28, 2005, http://www.tidepool.org/original_content.cfm?articleid=164862 (last visited July 16, 2006).

⁴⁹⁰ *NWF v. NMFS III Injunction Order*, No. CV 01-640-RE, CV 05-23-RE, 2005 WL 1398223, at *5 (D. Or. June 10, 2005). The federal government immediately appealed Judge Redden’s order to the Ninth Circuit, claiming it was an “abuse of discretion” and that maintaining the injunction was not in the public interest because it would cost the Northwest approximately \$67 million—about a million dollars a day—in lost hydropower revenue. *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv. (NWF v. NMFS, 9th Circuit)*, 422 F.3d 782, 793 (9th Cir. 2005), remanded to No. CV 01-640-RE, CV 05-23-RE, 2005 WL 2488447 (D. Or. Oct. 7, 2005); Press Release, Statement of Federal Executives, Federal Agencies Disappointed with Judge’s Ruling (June 10, 2005), available at <http://www.bpa.gov/corporate/BPAnews/2005/NewsRelease.cfm?ReleaseNo=646>. NOAA also argued that the district court’s injunction should be vacated because it was too broad and required the parties to consult and try to build a consensus regarding spill. *NWF v. NMFS, 9th Circuit*, 422 F.3d at 799.

While declining to reach the merits of the district court’s decision, the Ninth Circuit affirmed Judge Redden’s injunction order in part and remanded it in part, concluding that the district court’s order was not an abuse of discretion, and that the traditional preliminary injunction analysis does not apply to injunctions issued pursuant to the ESA. *Id.* at 793–94 (citing *Nat’l Wildlife Fed’n v. Burlington N. R.R.*, 23 F.3d 1508, 1510 (9th Cir. 1994)). In *Tennessee Valley Authority v. Hill*, 437 U.S. 153 (1978), the Supreme Court found that “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.” *Id.* at 194. Accordingly, the Ninth Circuit concluded that courts “may not use equity’s scales to strike a different balance,” and courts need not consider the economic harm to the public when fashioning injunctive relief. *NWF v. NMFS, 9th Circuit*, 422 F.3d at 793–94 (quoting *Sierra Club v. Marsh*, 816 F. 2d 1376, 1383 (9th Cir. 1987)). Although the Ninth Circuit concluded that the district court did not abuse its discretion in granting the preliminary injunction, it remanded the order to the district court to determine whether recent developments in the parties’ attempts to reach a consensus on the issue of spill required the court to modify the order. *NWF v. NMFS, 9th Circuit*, 422 F.3d at 800.

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B. Shooting the Messenger: The Dismantling of the Fish Passage Center

Angered by Judge Redden's order requiring federal hydrosystem operators to spill water over the Lower Snake River and McNary dams, and apparently angrier still at a Fish Passage Center (FPC) study concluding that the court-ordered summer 2005 spill was effective in reducing salmon mortalities,⁴⁹¹ Senator Larry E. Craig (R-Idaho)—the National Hydropower Association's 2002 legislator of the year⁴⁹² and a member of the Senate Appropriations Committee—inserted language into a House of Representatives Conference Report accompanying the 2006 Senate Energy and Water Appropriations bill directing the BPA to eliminate funding for the FPC.⁴⁹³ Although BPA has maintained that the language in the House conference report requires the agency to cease funding the FPC,⁴⁹⁴ a group of environmentalists and sport-fishery advocates, led by the Northwest Environmental Defense Center, successfully challenged that assumption, arguing that the conference report, as mere legislative history, did not carry the force of law.⁴⁹⁵ The environmentalists claimed that BPA's unilateral

BPA, implementation of the spill order increased an average consumer's monthly bill about 1.2%, or approximately 87 cents per month. Blaine Harden, *Future of Salmon Leads to Dispute Over Federal Dams*, WASH. POST, July 2, 2005, at A03 (citing Ed Sheets, a private consultant with expertise in the Northwest hydro system), available at <http://www.washingtonpost.com/wp-dyn/content/article/2005/07/01/AR2005070101808.html>.

⁴⁹¹ See *infra* note 505 and accompanying text.

⁴⁹² Press Release, National Hydropower Association, Craig Receives Legislator of the Year Award (Apr. 23, 2002). See Harden, *supra* note 476. The National Hydropower Association is a non-profit organization dedicated to advancing the interests of the U.S. hydropower industry. For more information, see the National Hydropower Association website, <http://www.hydro.org> (last visited July 15, 2006).

⁴⁹³ See H.R. REP. NO. 109-275, at 174 (2005), reprinted in 2005 U.S.C.C.A.N. 1065, 1125 ("The Bonneville Power Administration may make no new obligations in support of the Fish Passage Center.").

⁴⁹⁴ See Bonneville Power Administration, Integrated Fish and Wildlife Program, http://www.efw.bpa.gov/Integrated_Fish_and_Wildlife_Program/programsolicitation.aspx (last visited July 16, 2006) ("Congress passed legislation (House Report 109-275), which forbids BPA from making additional obligations in support of the Fish Passage Center."); Peter Sleeth, *Groups Seek Aid for Fish Center*, THE OREGONIAN, Jan. 24, 2006, at B05 (quoting BPA spokesperson Mike Hansen as saying, "[w]e have basically been instructed by Congress to stop funding the Fish Passage Center.").

⁴⁹⁵ Petition for Review, Northwest Env'tl. Def. Ctr. v. Bonneville Power Admin. (*NEDC v. BPA Petition*), No. 06-70430 (9th Cir. Jan. 21, 2006), available at http://www.peaclaw.org/objects/BPA_final_petition.pdf. NEDC was joined by co-petitioner groups Public Employees for Environmental Responsibility and Northwest Sportfishing Industry Association. *Id.* While Congress could certainly mandate the elimination of FPC by direct legislation, Northwest Environmental Defense Center (NEDC) maintains that the Energy and Water Development Appropriations Act for 2006, which BPA interpreted to require the elimination of the FPC, does not order BPA to alter funding to the FPC. Indeed, the Act itself does not mention the Fish Passage Center. The only reference to BPA in the Act states: "[e]xpeditures from the Bonneville Power Administration Fund, established pursuant to Public Law 93-454, are approved for official reception and representation expenses in an amount not to exceed \$1,500. During fiscal year 2006, no new direct loan obligations may be made." Energy and Water Development Appropriations Act, 2006, Pub. L. No. 109-103, 119 Stat. 2245, 2276 (2005).

The language on which BPA has relied in eliminating funding for FPC is found, not in the legislation passed by Congress, but in the House Conference Report accompanying the Act. See

decision to cut funding to the FPC was inconsistent with the current Columbia River Basin Fish and Wildlife Program, which expressly calls for the continued operation of the FPC.⁴⁹⁶ Because BPA is required under the Northwest Power Act to use its funding to protect, mitigate and enhance fish and wildlife “in a manner consistent with . . . the [Fish and Wildlife] program,”⁴⁹⁷ the environmentalists maintained that BPA’s withdrawal of funding for the FPC also violated the Northwest Power Act.⁴⁹⁸ According to the petition, BPA may not dissolve the FPC until the Northwest Power and Conservation Planning Council amends the Columbia River Basin Fish and Wildlife Program—a process that requires public notice and comment.⁴⁹⁹ The Ninth Circuit granted the environmentalists temporary injunctive relief in March 2006.⁵⁰⁰

H.R. REP. NO. 109-275 (2005), *reprinted in* 2005 U.S.C.C.A.N. 1065, 1125 (“The Bonneville Power Administration may make no new obligations in support of the Fish Passage Center.”). NEDC and the relevant case law suggest that a House conference report is merely legislative history—not binding law. Indeed, while the Supreme Court has stated that “the legislative history of a statute is a useful guide to the intent of Congress,” the Court has held that its use becomes improper when the line is crossed from using legislative history to resolve things that are not clear in the statutory language to using it to rewrite the statute. *See also* Ratzlaf v. United States, 510 U.S. 135, 147–48 (1994) (declining to “resort to legislative history to cloud a statutory text that is clear”). *Compare* County of Wash. v. Gunther, 452 U.S. 161, 182 (1981) (Rehnquist, J., dissenting) (quoted above), *with* Shannon v. United States, 512 U.S. 573, 583 (1994) (declining to give effect to “a single passage of legislative history that is in no way anchored in the text of the statute”). In the 1975 decision *In re LTV Aerospace Corp.*, the Comptroller General had this to say: “[A]s a general proposition, there is a distinction to be made between utilizing legislative history for the purpose of illuminating the intent underlying language used in a statute and resorting to that history for the purpose of writing into the law that which is not there.” 55 Comp. Gen. 307, 325 (1975).

⁴⁹⁶ The 2003 Mainstem Amendments to the Fish and Wildlife Program—currently in force—expressly call for “the continued operation of the Fish Passage Center,” and specify that “the Center shall” conduct smolt monitoring as well as gather and analyze research data related to fish passage. *See* NW. POWER & CONSERVATION COUNCIL, MAINSTEM AMENDMENTS TO THE COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM, Doc. No. 2003-11, at 27–28 (2003), *available at* <http://www.nwcouncil.org/library/2003/2003-11.pdf>.

⁴⁹⁷ 16 U.S.C. § 839b(h)(10)(A) (2000).

⁴⁹⁸ *NEDC v. BPA Petition*, No. 06-70430, at *7. Under the Northwest Power Act, the Northwest Electric Power Planning and Conservation Council (the Council) is required to adopt a program to protect, mitigate, and enhance fish and wildlife (the Fish and Wildlife Program). 16 U.S.C. § 839b(h)(1)(A) (2000). BPA is required under the Act to use its funding to protect, mitigate and enhance fish and wildlife “in a manner consistent with . . . the program adopted by the Council.” *Id.* § 839b(h)(10)(A).

⁴⁹⁹ Petition for Review, *Nw. Env'tl. Def. Ctr. v. Bonneville Power Admin.*, No. 06-70430, at *6 (9th Cir. Jan. 23, 2006); *see* 16 U.S.C. § 839b(h)(4)(A)–(B) (2000) (requiring public notice and comment). Despite serious questions as to the legality of BPA’s decision to eliminate the FPC, in late January 2006, the agency announced that it had selected two entities—the Pacific States Marine Fisheries Commission and the Battelle Pacific Northwest Laboratory—to replace the FPC. Press Release, Bonneville Power Admin., BPA Selects Successors to Fish Passage Center (Jan. 26, 2006), <http://www.bpa.gov/corporate/BPAnews/2005/NewsRelease.cfm?ReleaseNo=695> (last visited July 16, 2006). *See infra* note 515 and accompanying text. Under agreement with the Bonneville Power Administration, the Fish Passage Center was scheduled to close in March, 2006. Bill Crampton & Barry Espensen, *Parties Petition Appeals Court on Fish Passage Center*, COLUMBIA BASIN BULL., Jan. 27, 2006, *available at* <http://www.cbulletin.com/Free/130110.aspx>.

⁵⁰⁰ The Ninth Circuit granted the environmentalists’ motion for an emergency stay of BPA’s decision to eliminate the FPC on March 17, 2006. Order (preventing the closure of the FPC at

Although Sen. Craig (R-Idaho) introduced the conference report language with the ostensible purpose of protecting the Pacific Northwest's economy,⁵⁰¹ that justification hardly seems persuasive, considering that FPC had only twelve employees and an annual budget of \$1.3 million, less than one percent of BPA's annual budget for all fish and wildlife mitigation programs.⁵⁰² While it is important for the public to know how much it costs to save salmon,⁵⁰³ the reason behind the proposed cut appears to be dissatisfaction with the data collected by FPC and what it suggested, not a genuine concern for saving money. According to the FPC, the collected data suggested that "the federal hydro system kills fish"—a lot of them⁵⁰⁴—and that spill is an effective method of improving salmon survival through the FCRPS.⁵⁰⁵ Indeed, in September 2005, an FPC preliminary analysis concluded that during summer 2005, with the aid of the court-ordered spill, survival levels of juvenile salmon migrating "in-river" through the Lower Snake River were "the highest recorded in recent years."⁵⁰⁶

Despite these results suggesting that Judge Redden's order materially improved juvenile salmon survival in the Columbia Basin during summer 2005, the FPC's conclusions were quickly downplayed by federal dam operators,⁵⁰⁷ and critics claimed that the study was an example of FPC

the end of March), *Northwest Env'tl. Def. Ctr. v. Bonneville Power Admin.*, Civ. No. 06-70430 (9th Cir. Mar. 17, 2006). The Ninth Circuit ordered BPA to continue its existing contractual arrangement to fund and support the FPC under the existing terms and conditions of the contract. *Id.* The injunction effectively stayed BPA's decision to replace the FPC until the Ninth Circuit hears the merits of NEDC's claim in September 2006. Bill Rudolph, *Fish Passage Center Gets Contract Extension Through November*, NW. FISHLETTER No. 213, Apr. 18, 2006, available at <http://www.newsdata.com/fishletter/213/7story.html>. In April 2006, BPA announced that it was extending its existing funding agreement for the FPC until November 2006. Press Release, Bonneville Power Administration, *Fish Passage Center Contract Extended* (July 15, 2006), available at [http://efw.bpa.gov/FPCExtensionPressRelease\(2\)\(2\)\(2\).doc](http://efw.bpa.gov/FPCExtensionPressRelease(2)(2)(2).doc).

⁵⁰¹ See Blaine Harden, *Senator Aims to Kill Agency That Tracks Salmon*, WASH. POST, June 23, 2005, at A11, available at <http://www.washingtonpost.com/wp-dyn/content/article/2005/06/23/AR2005062301915.html> (quoting Sid Smith, a spokesperson for Sen. Larry Craig (R-Idaho); "[p]ower rates are going up [and] we think ratepayers ought to have some answers for how their money is being spent.").

⁵⁰² "BPA spends about \$139 million a year to fund more than 300 fish and wildlife mitigation projects. The [Fish Passage Center's] budget for FY 2005 was \$1.3 million . . ." Crampton & Espenson, *supra* note 477. A number of regional experts on salmon recovery have argued that "[e]liminating or reducing funding for the Fish Passage Center will actually increase salmon recovery costs, as the states and tribes will need additional staff to replace the lost function." Harden, *supra* note 476, at A21 (quoting Jeffrey P. Koenings, Director of the Washington Fish and Wildlife Department).

⁵⁰³ *BiOp Judge Gives Feds One Year to Produce New Hydro BiOp*, NW. FISHLETTER No. 203, Oct. 3, 2005 (quoting Judge Redden on the public's right to know the cost of saving salmon), available at <http://www.newsdata.com/fishletter/203/1story.html>.

⁵⁰⁴ Harden, *supra* note 501 (quoting Michele DeHart, the Manager of the Fish Passage Center).

⁵⁰⁵ Harden, *supra* note 476, at A21.

⁵⁰⁶ Crampton & Espenson, *supra* note 477.

⁵⁰⁷ Bob Lohn, NOAA Fisheries' Northwest regional administrator, stated:

Although I'm happy to hear about better in-river survival numbers through the first four dams than we might of expected, nothing I've heard in this [FPC] report causes me to change our original outlook. Unless the in-river survival exceeds the survival of

resources “being used to advocate for specific positions.”⁵⁰⁸ For several years, hydropower interests have accused the FPC of releasing distorted and inaccurate information.⁵⁰⁹ In fact, quoting from an independent scientific advisory board that reviewed the FPC’s work in 2003, Sen. Craig (R-Idaho) justified the elimination of the FPC by arguing on the Senate floor that “many questions have arisen regarding the reliability of the technical data” the agency publishes.⁵¹⁰ The senator neglected to mention, however, that the scientific report he cited concluded that the agency’s work was of “high technical quality,” and that the questions regarding the technical reliability of agency’s work were unfounded.⁵¹¹ Sen. Craig’s (R-Idaho) selective quotation of the advisory board’s report exemplifies attempts by critics of the FPC to create the misleading impression that the agency was a biased advocate for salmon and to deflect attention from data demonstrating that spill improves juvenile salmon survival through the FCRPS.

Some entity clearly needs to collect salmon survival data through the FCRPS.⁵¹² Sen. Craig (R-Idaho) has claimed that “other institutions” in the Northwest are capable of doing most of the work that FPC does now, maintaining that dismantling the agency would reduce duplicative work and increase efficiency.⁵¹³ But in 2000, the Independent Scientific Review Panel for the Northwest Power and Conservation Planning Council concluded that there was little duplication between the FPC and other organizations.⁵¹⁴

transported fish, then the whole exercise was an interesting and expensive experiment that did not increase the number of returning adult fish.

Crampton & Espenson, *supra* note 477. Others noted that the results were incomplete. In particular, the report only focused on the Snake River, ignoring the Columbia River. The report also only examined the first four weeks of summer spill, leaving out the last 10 weeks, and it did not compare in-river migration survival rates to transported survival rates. *Id.*

In January 2006, an independent scientific panel—funded by the Northwest Power and Conservation Council—concluded that, while the results were encouraging, the Fish Passage Center’s preliminary conclusions had “limited utility for direct estimation of spill effects, given major variations in the river hydrosystem’s spill operations among years and considerable interannual variation in migration timing and passage behavior” of juvenile salmon. *ISAB Evaluates Research, Results Related to 2005 Summer Spill*, COLUMBIA BASIN BULL., Jan. 20, 2006. The independent scientific review panel suggested that it would take several years—until the juvenile salmon migrating in summer 2005 returned as adults—to determine whether the court’s 2005 spill order succeeded in improving salmon survival through the FCRPS. *Id.* The complete report of the independent scientific panel can be found at <http://www.nwcouncil.org/library/isab/isab2006-1.htm> (last visited July 16, 2006).

⁵⁰⁸ Crampton & Espenson, *supra* note 477 (quoting Shauna McReynolds, a spokesperson for the Coalition for Smart Salmon Recovery, a partnership of agricultural employers, utility customers, and businesses).

⁵⁰⁹ *Id.*

⁵¹⁰ Harden, *supra* note 476.

⁵¹¹ *Id.* Ironically, Sen. Craig (R-Idaho) admonished the FPC on the Senate floor for manipulating salmon science, claiming “[d]ata cloaked in advocacy create confusion . . . False science leads people to false choices.” *Id.* (quoting Sen. Craig (R-Idaho)).

⁵¹² Defending the FPC, Judge Redden has said that its data and analysis has been vital, noting that “we all need it” in order to make reasoned decisions regarding FCRPS operations. Bill Crampton & Barry Espenson, *Redden Says Will Order Remand While 2004 BiOp Stays in Place*, COLUMBIA BASIN BULL., Sept. 30, 2005.

⁵¹³ *Id.*

⁵¹⁴ *Id.*; see also Independent Scientific Review Panel for the Nw. Power Planning Council,

Nevertheless, in January 2006, amid questions as to the legality of BPA's decision to eliminate the FPC, BPA announced that it had selected two entities—the Pacific States Marine Fisheries Commission and the Battelle Pacific Northwest Laboratory—to replace FPC,⁵¹⁵ a decision the Ninth Circuit enjoined, at least temporarily.⁵¹⁶

Regardless of which entity is counting salmon, the fish counts demonstrate that FCRPS operations are taking a significant toll on listed salmon.⁵¹⁷ Rather than addressing the deleterious effects that FCRPS operations have on salmon, or taking on the difficult policy issues that federal dam operators must address in order to save Columbia Basin salmon, Sen. Craig (R-Idaho) apparently decided that “when you don't like the message, you kill the messenger”⁵¹⁸—a blatant example of politics trumping science.

C. Judge Redden's Remand: Must the Court Run the River?

Characterizing the 2004 BiOp as a “shameless assault on the Endangered Species Act,”⁵¹⁹ and an exercise “more in cynicism than sincerity,”⁵²⁰ in October 2005, Judge Redden remanded the 2004 BiOp to

Review of Databases Funded through the Columbia River Basin Fish and Wildlife Program, Doc. No. 2000-3, at 5 (2003), available at <http://www.nwcouncil.org/library/isrp/isrp2000-3.pdf> (noting the potential for duplication but stating that “multiple data centers do not necessarily represent either duplication or inefficiency”).

⁵¹⁵ Press Release, Bonneville Power Admin., BPA Selects Successors to Fish Passage Center (Jan. 26, 2006), <http://www.bpa.gov/corporate/BPAnews/2005/NewsRelease.cfm?ReleaseNo=695> (last visited July 16, 2006). Under BPA's plan, the Pacific States Marine Fisheries Commission would manage the smolt monitoring program, perform functions associated with related data collection and management, and conduct routine analysis and reporting of that data, while Battelle Pacific Northwest Laboratory would oversee, coordinate, and facilitate broader, non-routine scientific analysis of that data, including independent peer review. *Id.*

⁵¹⁶ See *supra* note 500.

⁵¹⁷ For example, data collected by a University of Washington research program, which Sen. Craig (R-Idaho) cited as a possible successor to FPC, showed that as of mid-November 2005, approximately 43,271 chinook salmon had passed Lower Granite Dam, the uppermost dam on the Snake River. By comparison, data collected by the same research program showed that approximately 194,541 chinook salmon had passed Lower Granite Dam by mid-November 2001, meaning that the 2005 numbers were about 22% of the 2001 numbers. Editorial, *Our View: Debate Over Who Counts Salmon is Only a Distraction*, IDAHO STATESMAN, Nov. 16, 2005, available at <http://www.idahostatesman.com/apps/pbcs.dll/article?AID=/20051116/NEWS0501/511160317/1052/NEWS05>.

⁵¹⁸ Harden, *supra* note 501 (quoting Michele DeHart). Ironically, in early September 2005, the Fish Passage Center released a preliminary analysis concluding that the survival rate of juvenile salmon migrating in-river through the Lower Snake River in summer 2005 was “the highest recorded in recent years,” suggesting that the court-ordered spill at the Snake River dams greatly improved the survival of migrating salmon. Crampton & Espenon, *supra* note 477; Joe Rojas-Burke, *Salmon Advocates Say Spills Succeeded*, THE OREGONIAN, Sept. 13, 2005, available at <http://www.oregonlive.com/news/oregonian/index.ssf?base/news/112660920057800.xml&coll=7>.

⁵¹⁹ Vandevelder, *supra* note 489.

⁵²⁰ See Blaine Harden, *Future of Salmon Leads to Dispute Over Federal Dams*, WASH. POST, July 2, 2005, at A03, available at <http://www.washingtonpost.com/wp-dyn/content/article/2005/07/01/AR2005070101808.html>.

NOAA, admonishing the action agencies, Congress, and the Bush Administration for their collective failure to develop and implement an ESA-compliant plan for operating the FCRPS.⁵²¹ Directing NOAA to collaborate with nonfederal sovereigns—including the states of Idaho, Montana, Oregon, and Washington, as well as various tribes⁵²² (who were parties or amici in the case)—the judge mapped out a detailed strategy for preparing a new BiOp.⁵²³ He ordered NOAA to correct 1) the 2004 BiOp’s improper segmentation of the elements of the proposed action, which the agency deemed nondiscretionary, 2) its improper comparison, rather than aggregation, of the effects of the proposed action, 3) its flawed critical habitat determinations, 4) the 2004 BiOp’s failure to consider the effects of the proposed action on both survival and recovery, and 5) NOAA’s past reliance on mitigation measures that were not reasonably certain to occur, or which have not undergone section 7 consultation.⁵²⁴ The judge also ordered NOAA to prepare detailed quarterly status reports for the court and the parties concerning the progress of the revised BiOp.⁵²⁵

NOAA had one year—half the time it requested—to comply with the terms of Judge Redden’s order and develop an ESA-compliant BiOp.⁵²⁶ Although the 2004 BiOp will remain in place during the remand, Judge Redden warned that if NOAA failed to follow the terms of his order, he would vacate the BiOp, step in, and “run the river” from the bench.⁵²⁷ If

⁵²¹ Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv. (*NWF v. NMFS Remand Order*), No. CV 01-640-RE, CV 05-23-RE, 2005 WL 2488447, at *1 (D. Or. Oct. 7, 2005); Michael Milstein, *Judge Demands Agencies Help Salmon at Dams*, THE OREGONIAN, Oct. 8, 2005, at A01, available at 2005 WLNR 23953911; Redden: *Make BiOp Compliant or Courts Will “Run the River,”* COLUMBIA BASIN BULL., Oct. 7, 2005.

⁵²² The involved tribes are the Nez Perce, Umatilla, Yakama, Warm Springs, and Kootenai Tribes. *NWF v. NMFS Remand Order*, 2005 WL 2488447, at *5.

⁵²³ *Id.* at *5–6. Judge Redden ordered NOAA and the action agencies to collaborate with nonfederal sovereigns concerning the elements the agency should include in the proposed action, as well as policy, scientific, and technical issues. *Id.*

⁵²⁴ *Id.* at *5.

⁵²⁵ *Id.* The first report had to include: 1) preliminary information concerning the legal framework NOAA intends to use in its jeopardy analysis, 2) information concerning the nature and the scope of the proposed action, and 3) NOAA’s plan for collaboration with the sovereign entities. *Id.* at *6. Any party or amici had five days to comment on the status reports, and the court promised to hold status conferences approximately every 90 days to monitor the progress of the remand. *Id.* at *5. On January 3, 2006, NOAA submitted its first quarterly status report required by Judge Redden’s remand order. The agency indicated that it intended to adopt a jeopardy framework that was similar to the one used for recovery planning, using an approach to the jeopardy analysis that determines whether the action “when aggregated with the effects of the actions and activities in the environmental baseline” will appreciably reduce the likelihood of survival and recovery of each listed species. NOAA FISHERIES, 2006 FCRPS BIOP: CONCEPTUAL FRAMEWORK FOR THE REMAND PROCESS INCLUDING THE JEOPARDY ANALYSIS 6–7 (Dec. 22, 2005), available at http://www.salmonrecovery.gov/reports_and_papers/biop_remand_2004/Docs/2006/010306/Hydro_Ex_3_Conceptual_Framework.pdf.

⁵²⁶ *NWF v. NMFS Remand Order*, 2005 WL 2488447, at *1; Milstein, *supra* note 521. On April 21, 2006, Judge Redden granted NOAA an extension, giving the agency until February 1, 2007 to issue a revised biological opinion. Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv., Minute Order, Civ. No. 01-00640-RE (Apr. 21, 2004).

⁵²⁷ *NWF v. NMFS Remand Order*, 2005 WL 2488447, at *3.

forced to step in, the agencies would be exposed to “takings” liability under section 9 of the ESA.⁵²⁸

NOAA objected to Judge Redden’s step-by-step remand instructions, claiming that the court’s detailed reporting plan amounted to judicial overreaching.⁵²⁹ The judge acknowledged that, “in the absence of ‘substantial justification,’ a court should not dictate to an administrative agency ‘the methods, procedures, and time dimension’ of [a] remand.”⁵³⁰ But he maintained that, given the loss of valuable time due to NOAA’s flawed revision of the 2000 BiOp and the agency’s history of failures to comply with ESA, a detailed and judicially monitored remand process was “substantially justified.”⁵³¹ Judge Redden decried NOAA’s pattern of failing to comply with the ESA, noting that those failures

have taught us that the preparation or revision of NOAA’s biological opinion on remand must not be a secret process with a disastrous surprise ending . . . [w]ithout real action . . . the result will be the loss of the wild salmon. Based on prior history and the experience of the last remand, it is clear that progress can only be made if the agencies understand exactly what is required of them.⁵³²

The court’s decision was remarkable not just because it reflected Judge Redden’s frustration with NOAA’s regulatory interpretations and the agency’s failure to follow the court’s 2000 remand order, but because it suggested that the court was unwilling to allow the government to delay meaningful restoration efforts while jeopardizing the continued existence of listed salmon.

The remand order also directed NOAA to consider seriously the possibility of breaching the four dams on the Lower Snake River if Congress and the president failed to grant the money required to avoid jeopardizing listed salmon.⁵³³ In an apparent reference to President Bush’s 2003 speech at Ice Harbor Dam pledging not to breach the dams,⁵³⁴ Judge Redden wrote that “[s]peeching’ on the dams will not avoid breaching the dams . . .

⁵²⁸ *Id.*

⁵²⁹ *Redden: Make BiOp Compliant or Courts Will “Run the River,” supra* note 521 (citing a Justice Department statement). NOAA argued that it would be inappropriate for the court to “inject [itself] into the deliberative process of the administrative agencies” by issuing an order that identified steps the agency must take on remand. *NWF v. NMFS Remand Order*, 2005 WL 2488447, at *3. Although the agency objected to the court’s strict quarterly briefing schedule, NOAA has stated that it “‘fully intended’ to collaborate with the sovereign states and tribes, but objected to the court’s order making it mandatory.” *Redden: Make BiOp Compliant or Courts Will “Run the River,” supra* note 521. NOAA had 60 days to appeal Redden’s order and the agency considered that option. In the meantime, a spokesperson for NOAA has said, “we’ll roll up our sleeves and do our very best” to comply with Judge Redden’s order. Milstein, *supra* note 521.

⁵³⁰ *NWF v. NMFS Remand Order*, 2005 WL 2488447, at *4 (quoting Fed. Power Comm’n v. Transcontinental Gas Pipe Line Corp., 423 U.S. 326, 333 (1976)).

⁵³¹ *Id.* at *4.

⁵³² *Id.* at *3.

⁵³³ *Id.*

⁵³⁴ Robert McClure & Lisa Stiffler, *Bush Touts Salmon Plan*, SEATTLE POST-INTELLIGENCER, Aug. 23, 2003, available at http://seattlepi.nwsourc.com/local/136401_bush23.html.

[c]ooperation and assistance may.”⁵³⁵ The order also made clear that leaders at all levels of government have an obligation to comply with the ESA and do what is necessary to ensure that listed species survive and recover.⁵³⁶ The judge noted that the specter of dam-breaching should be incentive to all those who oppose such measures to make sure the remand succeeds.⁵³⁷

While the renewed prospect of breaching the four Lower Snake River dams might be a legacy of Judge Redden’s remand order, the judge’s unprecedented assumption of a role in running the river is also remarkable because it reflects a judicial reticence to defer to changes in NOAA’s ESA interpretations which seemed driven by policy concerns rather than scientific data. The court’s interpretation of the ESA jeopardy regulations to require federal agencies to consider both survival and recovery is also potentially quite significant.⁵³⁸

Despite the significance of the remand order, the outcome of the *NWF v. NMFS* litigation is far from certain. Judge Redden’s injunctions have sparked a political firestorm, as both hydropower interests and the Bush Administration responded to the court’s decisions by targeting the agency responsible for collecting salmon survival data in the FCRPS,⁵³⁹ threatening to invoke the “God Squad” exemption for FCRPS operations,⁵⁴⁰ and attempting to amend the ESA to eliminate critical habitat designations and several of the ESA’s recovery provisions.⁵⁴¹ In addition, in late December

⁵³⁵ *NWF v. NMFS Remand Order*, 2005 WL 2488447, at *3; Milstein, *supra* note 521.

⁵³⁶ Milstein, *supra* note 521.

⁵³⁷ *NWF v. NMFS Remand Order*, 2005 WL 2488447, at *3.

⁵³⁸ See *supra* note 472 and accompanying text.

⁵³⁹ See *supra* note 494 and accompanying text.

⁵⁴⁰ See Harden, *supra* note 520 (quoting Fred Disheroon, special litigation council for the Justice Department, who noted, “it may not be possible to come up with a way to avoid jeopardy for these fish,” and if that happens the government may petition the Endangered Species Committee for an exemption for FCRPS operations).

⁵⁴¹ Indeed, the most serious threat to salmon recovery in the Columbia River Basin could come, not from seemingly retributive proposals to slash funding, but from a congressional bill introduced by Rep. Richard Pombo (R-Cal.) in September 2005 that would dramatically weaken the ESA’s protections for endangered and threatened species. Deceptively entitled “The Threatened and Endangered Species Recovery Act,” Pombo’s amendments would eliminate the ESA’s critical habitat provisions along with many of the ESA’s enforceable recovery planning provisions. H.R. 3824, 109th Cong. § 5 (1st Sess. 2005). For example, the Pombo amendment would authorize the Secretary to forego recovery planning for threatened and endangered species if the Secretary finds that a recovery plan will not promote conservation and survival of the species. *Id.* § 9(a). In addition, the ESA’s recovery plans would not be required to be based on the best available scientific data. *Id.* § 9(b)(3)(E). The bill would also require the Secretary of the Interior to consider the impact of listing decisions on the economy as well as national security. *Id.* § 4(d)(4)(A)(i)–(ii). The proposed amendments would significantly alter section 7 consultation by requiring federal agencies to “consider only the effects of any agency action that are distinct from a baseline of all effects upon the relevant species that have occurred or are occurring prior to the action.” *Id.* § 11(a)(4).

In other words, the Pombo amendments would effectively overrule Judge Redden’s interpretation of the ESA regulations, requiring federal agencies to segregate the effects of an action from the environmental baseline, and focus their jeopardy analysis on the effects of the action. Pombo’s amendments would also repeal pesticide restrictions, and they contain broad new protections and compensation provisions for property owners seeking to develop private lands on which threatened or endangered species may be found. *Id.* §§ 14, 16, 20.

2005, NOAA filed notice of its intent to appeal Judge Redden's October 2005 remand order, as well as his May 2005 summary judgment opinion, to the Ninth Circuit.⁵⁴² Any of these measures, if successful, could effectively override all or part of Judge Redden's decision.

VIII. CONCLUSION

The saga of Columbia Basin salmon restoration is unfortunately long and complex, with very few success stories, despite considerable public expenditures.⁵⁴³ The complexity has inhibited effective public involvement. And the expenditures are quite misleading, since so much money has been spent on ineffective hatchery and artificial transportation programs that both mask the hydropower system's operational insensitivity to salmon migration and deceive the public into believing that there exists a functional plan to protect, let alone restore, the salmon runs.⁵⁴⁴ It is hardly surprising that the Federal Columbia River Power System (FCRPS) operators would engage in this deception, given their long history of strenuous opposition to any changes in the hydrosystem status quo that would threaten the dominance of hydropower generation and navigation.⁵⁴⁵ What is more

On September 29, 2005, the House of Representatives approved Rep. Pombo's (R-Cal.) amendments by a 229-193 vote. Thomas, Library of Congress website, <http://clerk.house.gov/evs/2005/roll506.xml> (last visited July 15, 2006). As of July 2006, the Senate had not yet addressed the proposed ESA Amendments.

⁵⁴² Federal Defendant's Notice of Appeal from Grant of Summary Judgment and Order of Remand, *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, No. 01-640-RE (D. Or. Dec. 21, 2005), available at http://www.salmonrecovery.gov/reports_and_papers/biop_remand_2004/Docs/Notice_of_Appeal_122105.pdf. While asserting that it remains "committed to developing a long-term program for strengthening endangered . . . salmon," NOAA has indicated that, on appeal to the Ninth Circuit, it intends to contest each of the four flaws identified by Judge Redden in his May 26, 2005 summary judgment opinion, including his conclusion that "[r]ecovery must be considered separately" in the ESA consultation process. *Federal Agencies to Appeal Redden's BiOp Remand Order*, COLUMBIA BASIN BULL. (Dec. 30, 2005) (on file with author).

The Ninth Circuit Court of Appeals heard oral argument on June 1, 2006. Press Release, Save Our Wild Salmon, Salmon Advocates Urge Federal Appeals Court to Safeguard Columbia Basin Salmon Recovery Plan (June 2, 2006), available at <http://www.wildslamon.org/pressroom/press-detail.cfm?docid=480>. As of July 2006, the Ninth Circuit had not yet issued an opinion.

⁵⁴³ Between 1982 and 2003 BPA claims to have invested approximately \$6.42 billion in fish and wildlife conservation measures in the Columbia Basin, including direct funding for the Fish and Wildlife Program, federal hatcheries, as well as power purchases and foregone revenue due to operational changes designed to benefit salmon. Nw. Power & Conservation Council, *Columbia River Basin Fish and Wildlife Program, Twenty Years of Progress* 3 (2003), available at <http://www.nwcouncil.org/library/2003/2003-20/report.pdf>. That figure does not include the costs of installing fish passage improvement facilities, such as removable spillway weirs, see *supra* note 256, at mainstem dams. *Id.* According to BPA—always willing to inflate salmon protection costs—that agency invested over \$501 million in fish and wildlife protection and conservation through investments in the Council's Fish and Wildlife Program, lost opportunity costs, and power purchases in 2004 alone. Bonneville Power Admin., BPA Fast Facts, available at http://www.bpa.gov/corporate/about_BPA/Facts/FactDocs/BPA_Facts_2004.pdf.

⁵⁴⁴ See *supra* notes 88–92 (ineffective hatcheries), 95–111 (ineffective transportation program) and accompanying text.

⁵⁴⁵ See *supra* notes 147, 187, 269–82, 397–407 and accompanying text (opposition to changes

surprising is that the agency entrusted with Endangered Species Act (ESA) compliance, National Oceanic and Atmospheric Administration (NOAA), should evolve into such a willing co-conspirator in the deception.

In the 1980s, NOAA (then called the National Marine Fisheries Service) was an active participant in a coalition of federal and state fishery agencies that advocated higher river flows and spills at FCRPS dams to improve conditions for salmon.⁵⁴⁶ But in the 1990s, after the agency obtained decision-making authority under the ESA, it proceeded to approve BiOps that countenanced status quo operations,⁵⁴⁷ ignoring a judicial call for a “major overhaul” of system operations.⁵⁴⁸ Unwillingness to undertake such an overhaul led to the 2000 BiOp, characterized by reliance on offsite measures over which NOAA had little or no control,⁵⁴⁹ which led to the BiOp’s failure to survive judicial scrutiny.⁵⁵⁰

In the twenty-first century, NOAA morphed into an agency that resembled an appendage of the most prominent federal power system operator, Bonneville Power Administration (BPA). During the 2001 West Coast electricity crisis, NOAA allowed BPA to invoke an emergency exemption it had approved in the 2000 BiOp to terminate salmon flows and spills,⁵⁵¹ thereby confirming hydropower dominance in the Columbia Basin, contrary to congressional intent.⁵⁵² Then, in 2004—with no electricity

in the status quo). See generally SACRIFICING THE SALMON, *supra* note 2, at 129–60 (discussing resistance to the 1980 Northwest Power Act’s co-equal partnership between restoration and hydropower generation).

⁵⁴⁶ NOAA first considered listing salmon under the ESA in 1978. See F. Lorraine Bodi, *Protecting Columbia River Salmon Under the Endangered Species Act*, 10 ENVTL. L. 349, 349 (1980). It then was an important part of the “fishery coalition,” comprised of federal and state agencies and Indian tribes, which in the early 1980s put together a massive set of recommended mitigation measures from which the Northwest Power Planning Council formulated the Northwest Power Act’s Columbia Basin Fish and Wildlife Program. See Michael C. Blumm, *Implementing the Parity Promise: An Evaluation of the Columbia Basin Fish and Wildlife Program*, 14 ENVTL. L. 277, 286–87 (1984). Subsequently, NOAA helped negotiate a settlement agreement with mid-Columbia public utility districts, which has produced river conditions that now support the basin’s only self-sustaining salmon populations. See F. Lorraine Bodi, *FERC’s Mid-Columbia Proceeding: Ten Years and Still Counting*, 16 ENVTL. L. 555, 564, 572 (1986).

⁵⁴⁷ See *supra* notes 147–48, 158, 188, 238–41, 375 and accompanying text (describing each of the FCRPS BiOps and their commitment to the status quo).

⁵⁴⁸ *IDFG v. NMFS*, 850 F. Supp. 886, 900 (D. Or. 1994), discussed *supra* notes 152–58 and accompanying text.

⁵⁴⁹ See *supra* notes 283–93 and accompanying text.

⁵⁵⁰ *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 254 F. Supp. 2d 1196, 1213–16 (D. Or. 2003) (discussed *supra* notes 294–313 and accompanying text).

⁵⁵¹ See *BPA Salmon Crisis*, *supra* note 9, at 10,726 (describing BPA’s decision).

⁵⁵² See *supra* notes 396–412 and accompanying text. Congress intended that FCRPS operators treat hydropower and salmon as “coequals” under the Northwest Power Act. See *Confederated Tribes & Bands of the Yakima Indian Nation v. Fed. Energy Regulatory Comm’n*, 746 F.2d 466, 473 (9th Cir. 1984) (requiring FERC to give fish “equal consideration”). Despite the Northwest Power Act’s promise of parity, BPA has never embraced that balance, and the agency has consistently sacrificed salmon protections to subsidize hydropower generation. See *BPA Salmon Crisis*, *supra* note 9, at 10,729. During the electricity crisis of 2001, for example, BPA declared a series of power “emergencies,” which allowed the agency to increase hydropower production at Columbia and Snake river dams by routing all spring river flows through the dams’ power turbines—significantly increasing the mortality of juvenile salmon—rather than allowing some of the water to pass through spillways. These power “emergencies”

crisis⁵⁵³—BPA, along with the U.S. Army Corps of Engineers (the Corps), proposed to eliminate the spill program in order to generate more electricity.⁵⁵⁴ Shockingly, NOAA approved the proposal as consistent with its BiOp—even though the BiOp had described the spill program as central to avoiding jeopardy to listed salmon.⁵⁵⁵ This abrupt about-face was not convincing to the reviewing court, and consequently Judge Redden rejected the attempt to terminate spills.⁵⁵⁶

Undaunted, NOAA used the opportunity to revise the failed 2000 BiOp to substantially dilute salmon protections in its 2004 BiOp. It did so not on the basis of any new information suggesting that listed salmon no longer needed remedial hydrosystem operations; instead, NOAA acted on the basis of new legal interpretations of which actions must undergo federal consultation under the ESA. Through a completely revised jeopardy framework and an unprecedented definition of the “environmental baseline,” NOAA employed legal legerdemain in an effort to dismantle FCRPS

were the result of increased power prices on the wholesale market during spring and summer 2001 and poor agency management decisions. Because BPA was unwilling to purchase power on wholesale markets at soaring prices in order to meet its obligations, the agency chose to increase hydropower generation and increase salmon mortalities, despite the Northwest Power Act’s directive that BPA set its power rates to recover all the agency’s costs, including salmon restoration costs. 16 U.S.C. §§ 839b(h)(8)–(10), 839e(a)(1) (2000); *BPA Salmon Crisis*, *supra* note 9, at 10,726.

BPA’s reaction to the electricity crisis of 2001 was not surprising given its history of “trad[ing] economics for fish.” *Id.* at 10,728 (quoting Idaho Fish and Game Manager Steve Pettit). For example, in the 1970s, the agency claimed it lacked authority to alter FCRPS operations to protect fish, but found “implied” authority to implement a seven billion dollar nuclear power plant program. *Id.* That program ultimately failed, leaving behind defunct power plants, for which ratepayers continue to pay. *Id.* In the 1980s, BPA tried to undermine the process of developing a salmon restoration program by claiming that the plan was inconsistent with sound business practices. *Id.* And in the 1990s, the agency’s inflated estimates of fish and wildlife costs led the agency to implement a “cost cap” that limited its obligations to fund fish and wildlife restoration. *Id.* More recently, the agency has repeatedly attempted to curtail fish flow and spill measures, claiming that they were too expensive. *Id.*

BPA has consistently sacrificed the needs of Columbia Basin salmon in favor of the financial stability of its customers—primarily industrial power users. Indeed, during the early part of the decade, large industrial power users (primarily aluminum plants) reaped enormous economic benefits from BPA’s cheap power. The agency not only provided these users with below-market power, during the 2001 electricity crisis industrial customers took advantage of a provision in BPA’s power sales contracts allowing them to sell the low-cost BPA power on the open market. *Id.* In 2001, for example, the Kaiser Aluminum smelter near Spokane sold power it purchased from BPA for \$22.50 per megawatt hour for up to \$555 per megawatt hour—a 2400% markup. *Id.* BPA industrial customers made a total of \$1.2 billion from reselling cheap BPA power in just over four months between October 2000 and February 2001. *Id.*

BPA’s contracting blunders thus allowed its industrial power customers to become power brokers at the same time the agency teetered on the brink of insolvency during the 2001 California energy fiasco. *Id.* Columbia Basin salmon suffered as a result, as BPA tried to rectify its poor financial planning by declaring a series of power “emergencies” during 2001, increasing power production with water that should have been managed to benefit fish. *Id.* at 10,726.

⁵⁵³ *Cf. supra* note 322.

⁵⁵⁴ *See supra* notes 318–30 and accompanying text.

⁵⁵⁵ *See supra* note 316 and accompanying text.

⁵⁵⁶ *NWF v. NMFS II*, No. CV 01-6940-RE, 2004 WL 1698050, at *6 (D. Or. July 29, 2004), discussed *supra* notes 332–38 and accompanying text.

operations aimed at benefiting salmon.⁵⁵⁷ Judge Redden was unpersuaded by the deception, however, and he rejected the 2004 BiOp.⁵⁵⁸

Thus, the Endangered Species Act era of Columbia Basin salmon restoration efforts has been no more successful, although quite a bit more duplicitous, than the preceding Northwest Power Act era.⁵⁵⁹ One significant difference between the eras, however, is the recent advent of active and skeptical judicial review.

Judicial review played an important and lasting role in the reallocation of salmon harvests in the 1970s and 1980s, as Judge Belloni and Judge Boldt upheld the claims of Indian tribes concerning their rights to a harvest share under their treaties.⁵⁶⁰ In 1994, the Ninth Circuit issued what seemed to be a path-breaking opinion concluding that the Northwest Power Act demanded deference to the views of fishery agencies and Indian tribes in salmon restoration efforts.⁵⁶¹ That decision proved to be an isolated one, however, and the ESA listings soon dominated salmon restoration efforts.⁵⁶² The same year as the Ninth Circuit's decision, Judge Marsh announced that the Columbia Basin hydrosystem needed a complete overhaul.⁵⁶³ But he later was unwilling to press forward in the face of FCRPS agency intransigence, upholding the 1995 BiOp⁵⁶⁴ before retiring from the Columbia Basin salmon battles. Whether his successor, Judge Redden, possesses the fortitude to oversee agency implementation of the ESA in the face of massive agency resistance to changes in the hydrosystem status quo remains to be seen. Surely the forces supporting the status quo are counting on the limits of judicial review to allow them to make as few changes as possible.⁵⁶⁵

Over a quarter-century ago, Congress made it national policy to put salmon restoration on an equal footing with hydropower generation. The operators of the FCRPS—especially BPA and the Corps—managed to defeat congressional intent mostly by ignoring it. That brought on the ESA listings a decade later. Defending the hydrosystem status quo against the ESA required transforming NOAA from a salmon advocate to

⁵⁵⁷ See *supra* notes 358–62 and accompanying text.

⁵⁵⁸ *NWF v. NMFS III*, No. CV 01-640-RE, CV 05-23-RE, 2005 WL 1278878 (D. Or. May 26, 2005), discussed *supra* notes 377–474 and accompanying text.

⁵⁵⁹ See *Beyond Parity*, *supra* note 112, at 80–83 (explaining the restoration programs under the two statutes).

⁵⁶⁰ See SACRIFICING THE SALMON, *supra* note 2, at 78–86 (discussing the “Belloni” and “Boldt” decisions and their aftermath).

⁵⁶¹ *Nw. Res. Info. Ctr. v. Nw. Power Planning Council*, 35 F.3d 1371, 1389 (9th Cir. 1994), discussed in *Beyond Parity*, *supra* note 112, at 44–49.

⁵⁶² See *Salmon and the ESA*, *supra* note 22, at 525–48 (providing an overview of the salmon listings).

⁵⁶³ *IDFG v. NMFS*, 850 F. Supp. 886, 900 (D. Or. 1994), discussed in *Beyond Parity*, *supra* note 112, at 42–44.

⁵⁶⁴ See *Salmon and the ESA*, *supra* note 22, at 556–57 (discussing *Am. Rivers v. Nat'l Marine Fisheries Serv.*, No. 96-00384-MA, 1997 WL 33797790 (D. Or. Apr. 3, 1997)).

⁵⁶⁵ For example, the Bush Administration's appeal of Judge Redden's decisions argues that the district court overstepped the limits of judicial review, and that his ordering of spills at FCRPS dams impermissibly interjected himself in the day-to-day operations of the system. See *supra* note 529 and accompanying text.

a part of the hydrosystem status quo, a task accomplished with surprising ease. Anyone in Congress who thinks the ESA is a draconian measure favoring listed species over competing economic concerns has not studied the lessons of the ESA and Columbia Basin salmon, where NOAA has discovered enormous ESA flexibility to accommodate economic concerns.⁵⁶⁶ This history reveals that the status quo is a much more powerful influence than whatever pressure the ESA can bring to bear on a species restoration problem.⁵⁶⁷ Columbia Basin salmon are demonstrably the worse for this reality.

⁵⁶⁶ See *Salmon and the ESA*, *supra* note 22, at 598–99 (describing the ESA’s economic insensitivity as a “myth”).

⁵⁶⁷ The Columbia Basin saga thus resembles the situation of western water generally, where the status quo prevails over all other considerations. See, e.g., Reed D. Benson, *Maintaining the Status Quo: Protecting Established Water Uses in the Pacific Northwest, Despite the Rules of Prior Appropriation*, 28 ENVTL. L. 881, 888 (1998) (discussing how western states maintain status quo policies for water rights); Denise Lach, Helen Ingram & Steve Rayner, *Maintaining the Status Quo: How Institutional Norms and Practices Create Conservative Water Organizations*, 83 TEX. L. REV. 2027 (2005) (discussing agency responses to water problems).