

35 F.3d 1371 (1994)

**NORTHWEST RESOURCE INFORMATION CENTER, INC.; Trout Unlimited; Oregon Natural Resources Council, Inc.; Idaho Steelhead and Salmon Unlimited; The Wilderness Society; Petitioners, and**

**Puget Sound Power & Light Company; Northwest Irrigation Utilities, Inc. ("NIU"); Columbia/Snake River Irrigators Association, Inc. ("CSRIA"); Port of Lewiston, Port of Clarkston and Port of Whitman County ("PPA"); United States of America; Pacific Northwest Generating Company ("PNGC"); Pacificorp; Washington Water Power Company ("WWP"); Public Power Council; Public Utility District No. 2 of Grant County; Direct Service Industrial Customers Aluminum Co. of America, Atochem North America, Columbia Falls Aluminum Company, Georgia-Pacific \*1372 Corp., Kaiser Aluminum & Chemical Corp., Intalco Aluminum Corp., et al.; Oregon Trout, Inc.; Public Utility District No. 1 of Douglas County; Public Utility District No. 1 of Chelan County; State of Idaho, Petitioners-Intervenors,**

1372

**v.**

**NORTHWEST POWER PLANNING COUNCIL, Respondent.**

**CONFEDERATED TRIBES & BANDS OF THE YAKIMA INDIAN NATION; Petitioner, and Puget Sound Power & Light Company; Northwest Irrigation Utilities, Inc. ("NIU"); Columbia/Snake River Irrigators Association, Inc. ("CSRIA"); Port of Lewiston, Port of Clarkston and Port of Whitman County ("PPA"); United States of America; Pacific Northwest Generating Company ("PNGC"); Pacificorp; Washington Water Power Company ("WWP"); Public Power Council; Public Utility District No. 2 of Grant County; Direct Service Industrial Customers (Aluminum Co. of America, Atochem North America, Columbia Falls Aluminum Company, Georgia-Pacific Corp., Kaiser Aluminum & Chemical Corp., Intalco Aluminum Corp., et al.); Oregon Trout, Inc.; Public Utility District No. 1 of Douglas County; Public Utility District No. 1 of Chelan County; State of Idaho, Petitioners-Intervenors,**

**v.**

**NORTHWEST POWER PLANNING COUNCIL, Respondent.**

**CONFEDERATED TRIBES & BANDS OF the YAKIMA INDIAN NATION, Petitioner, and United States of America, State of Idaho, Intervenor,**

**v.**

**NORTHWEST POWER PLANNING COUNCIL, Respondent.**

**ALUMINUM COMPANY OF AMERICA; Columbia Aluminum Corporation, et al., Petitioners, and Washington Power Company, Petitioner-Intervenor, State of Idaho, Intervenor,**

**v.**

**NORTHWEST POWER PLANNING COUNCIL, Respondent, Pacificorp, Respondent-Intervenor.**

**NORTHWEST RESOURCE INFORMATION CENTER, INC., et al., Petitioner, and Washington Water Power Company, Petitioner-Intervenor,**

**v.**

**NORTHWEST POWER PLANNING COUNCIL, Respondent, and**

**Public Utility District No. 1 of Chelan County; Public Utility District No. 1 of Douglas County,  
Respondents-Intervenors.**

Nos. 92-70190, 92-70191, 93-70055, 93-70059 and 93-70064.

**United States Court of Appeals, Ninth Circuit.**

Argued and Submitted July 11, 1994.

Decided September 9, 1994.

1378 \*1373 \*1374 \*1375 Adam J. Berger, Seattle, WA, for petitioners, NW RIC.

Tim Weaver, Yakima, WA, for petitioners, Yakima Indian Nation.

Paul M. Murphy, Portland, OR, for petitioner, DSI, et al.

D. Robert Lohn, Portland, OR, for respondents-intervenors.

Before: TANG, and WIGGINS, Circuit Judges, and THELTON E. HENDERSON,<sup>[1]</sup> District Judge.

TANG, Circuit Judge:

Salmon and hydropower are the two great natural resources of the Columbia River Basin. At odds for most of this century, congressional action in 1980 injected a needed resolve into the conflict, inciting a sense of optimism. Since that time, optimism has largely given way to the dynamics of a classic struggle between environmental and energy interests. The climax of this particular struggle may well be our review of the parties' efforts constituting what has been touted as the world's largest program of biological restoration.<sup>[1]</sup>

The Northwest Resources Information Center, Inc., and other environmental interests (collectively "NRIC"), the Confederated Tribes and Bands of the Yakima Indian Nation (the "Yakima Nation"), and the Aluminum Company of America and other companies purchasing power from the Bonneville Power Administration (the "Direct Service Industries" or "DSIs") challenge the Pacific Northwest Electric Power and Conservation Planning Council's final amendments to the Columbia River Basin Fish and Wildlife Program (the "Program" or "Strategy for Salmon"). These cases have been consolidated for decision on the petitions for review.<sup>[2]</sup>

## **BACKGROUND**

The flows of the Columbia River Basin<sup>[3]</sup> are the linchpin of the Pacific Northwest's economy. More than one hundred and fifty dams are integrated to form the world's largest hydropower system, generating over forty percent of the nation's hydropower. The generation of kilowatts, however, is not the only reason for the Basin's importance; the Basin is the habitat for what were once the world's largest salmon runs.<sup>[4]</sup>

Unfortunately, "[l]ike most of the American West, the Columbia River Basin has been developed, not managed as an ecosystem." John M. Volkman & Willis E. McConnaha, *Through a Glass, Darkly: Columbia River Salmon, the Endangered Species Act, and Adaptive Management*, 23 *Envtl.L.* 1249, 1250 (1993) [hereinafter *Through a Glass*]. Adverse impacts have resulted from deforestation, over-fishing, irrigation practices, mining, grazing, urbanization, and  
1376 hydropower operations and development. \*1376 Although precise estimates of the impacts of these activities are currently unknown, it is generally accepted that the Basin's hydropower system is "a major factor in the decline of some salmon and steelhead runs to a point of near extinction." 126 *Cong.Rec.* H10687 (1980) (letter from Comptroller General). The U.S. General Accounting Office ("GAO") described the impact of the hydropower system on anadromous fish<sup>[5]</sup> in its September 4, 1979, report to Representative John D. Dingell, Chairman of the House Subcommittee on Energy and Power, as follows:

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. Others lose the desire to migrate and become permanent residents of the river, further reducing the breeding stock that finally reaches the ocean. It is the cumulative effect of hydro facilities which is so destructive. Each facility poses a separate and sometimes different set of problems for migrating smolts, and each contributes to a cumulative deterioration of the downstream migration. Depending on flows, juvenile losses from all causes average an estimated 15 to 20 percent at each main-stem dam and reservoir complex. Mortalities as high as 30 percent per project have been recorded under particularly adverse conditions.

These problems occur in normal or good water years. In low or below normal water years, the problems are compounded and mortality rates for downstream migrants increase. Juvenile losses increase because of competition for available water supplies.

H.R.Rep. No. 96-976, pt. I, 96th Cong., 2d Sess., at 46, 1980 U.S.Code Cong. & Ad. News at pp. 5989, 6044 (1980); see *Public Util. Dist. 1 of Chelan County, Wash.*, 34 FERC ¶ 63,044 (1986) (finding of eleven percent mortality at one powerhouse); 126 Cong.Rec. H2062 (1980) (Rep. Bonker) ("Each dam on the upper [Columbia R]iver can destroy 10 to 15 percent of the fish that pass over it enroute to the sea.").

As a result of human activities, anadromous fish runs in the Columbia River Basin have dwindled from an estimated ten to sixteen million fish annually, before European settlement in the Northwest, to about two-and-one-half million today. Robert C. Lothrop, *The Misplaced Role of Cost-Benefit Analysis in Columbia Basin Fishery Mitigation*, 16 *Envtl.L.* 517, 522 (1986) [hereinafter *Misplaced Role of Cost-Benefit Analysis*]. Of this annual loss, eighty percent is attributable to hydropower development and operation. *Endangered and Threatened Species; Proposed Endangered Status for Snake River Sockeye Salmon*, 56 *Fed.Reg.* 14,055, 14,058 (1991).

There was early recognition by some that highlight the importance of the Basin's salmon runs. In the 1850's, Northwest tribes ceded to the United States a total of sixty-four million acres of land in exchange for certain rights and for the exclusive use of land reservations. The tribes were careful, however, to reserve the right to continue, as they always had, to take fish at their usual fishing grounds.<sup>[6]</sup> Environmental factors affecting \*1377 run sizes were studied as early as 1875. *Salmon is King*, 16 *Envtl.L.* at 351. And Congress expressed concern about the Basin's salmon runs in 1937 when it passed the Bonneville Project Act.<sup>[7]</sup>

In the wake of devastating losses of salmon and steelhead in the mid-1970s,<sup>[8]</sup> Congress enacted the Fish and Wildlife Coordination Act in 1976. 16 U.S.C. §§ 661-666c. The Coordination Act provided that fish and wildlife have "equal consideration" in the planning and development of hydropower projects.<sup>[9]</sup> In 1978, however, Federal fishery agencies considered invoking the protection of the Endangered Species Act ("ESA"), 16 U.S.C. §§ 1531-44, for Snake River runs. Despite the mandate of the Coordination Act, it was not until the threat of action under the ESA that the depletion of anadromous fish in the Columbia River Basin was considered to be more than merely an issue that would resolve itself over time. Also in 1978, Congress was preparing to revise Northwest electric policies in light of forecasts predicting serious power shortages during critical water years expected in the 1980's. H.R.Rep. No. 96-976, pt. II, 96th Cong., 2d Sess., at 31 (1980); see *Forelaws on Bd. v. Johnson*, 743 F.2d 677, 679 (9th Cir.1984). Recognizing the tremendous, detrimental impact of dams on the fish runs, Congress acknowledged "that no longer [should] fish and wildlife be given a secondary status." 126 Cong.Rec. H10681 (1980) (Rep. Dingell). In 1980, Congress enacted the Northwest Power Act ("NPA" or "Act"). 16 U.S.C. §§ 839-839h.

The NPA marked an important shift in federal policy. Continually declining fish runs had revealed the failures of previous legislative efforts requiring that "equal consideration" be given to fish and wildlife affected by resource exploitation. The NPA ensured the "equitable treatment" of fish and wildlife; it marked the shift of the burden of uncertainty — of proving specific harm to salmon from particular activities — from the salmon to the hydropower

system, or so was its intent.<sup>[10]</sup> In doing so, it created a new obligation on the region and various Federal agencies to protect, mitigate, and enhance fish and wildlife. See 126 Cong.Rec. 10682 (Rep. Dingell).

The Act created a "pluralistic intergovernmental and public review process." Michael C. Blumm, *Fulfilling the Parity Promise: A Perspective on Scientific Proof, Economic Cost, and Indian Treaty Rights in the Approval of the Columbia Basin Fish and Wildlife Program*, 13 *Envtl.L.* 103, 112 (1982) [hereinafter *Parity II*]. At the hub of this process, Congress established the Pacific Northwest Electric Power and Conservation Planning Council ("Council"), directing it to create "a program to protect, mitigate, and enhance" the Columbia River Basin's fish and wildlife "to the extent affected by the development and operation" of the Basin's hydropower system.<sup>[11]</sup> 16 U.S.C. § 839b(h)(1)(A), (h)(10)(A). In making fish and wildlife a "co-equal partner" with the hydropower industry, the NPA adopted several innovations, marking the Act for its legislative craftsmanship. See 126 Cong.Rec. H9852 (Rep. Swift) ("[The Act] represent[s] legislative craftsmanship at its very best"); see also Michael C. Blumm and Andy Simrin, *The Unraveling of the Parity Promise: Hydropower, Salmon, and Endangered Species in the Columbia Basin*, 21 *Envtl.L.* 657, 667 (1991) [hereinafter *Parity V*].

First, the Act expressly required "textual consistency"; that is, that its provisions, together with other applicable laws, specifically including environmental laws, be construed in a consistent manner. 16 U.S.C. § 839; see *Parity II*, 13 *Envtl.L.* at 118-21. Second, the Act called for a systemwide remedial program to cover the entire Basin, rather than the more traditional approach of focusing on individual projects. H.R.Rep. No. 96-976, pt. II, 96th Cong., 2d Sess., at 38 ("The goal of the program is not to increase the obligations of water project owners and operators, but rather to go beyond a project-by-project approach on a river system whose multiplicity of projects and interdependent biological species makes [sic] a project-by-project approach unsatisfactory for all involved parties."); see *Parity V*, 21 *Envtl.L.* at 667. Third, the Act shifted focus in wildlife mitigation from merely creating substitute resources, such as salmon hatcheries, to emphasizing changes in hydro project operations. Fourth, "Congress lowered the burden of proof for undertaking action by requiring that the remedial program (1) be based only on 'best available scientific knowledge,' not scientific certainty; (2) favor biological outcomes over economic ones, and (3) defer to the recommendations of agencies and Indian tribes with fish and wildlife expertise." *Id.* at 667-68 (footnotes omitted).<sup>[12]</sup> Fifth, the Act tapped revenues of the Basin's hydropower system as a source for financing the biological restoration. 16 U.S.C. § 839b(h)(10); 126 Cong.Rec. H9845 (Rep. Lujan) ("[The NPA] provides for the rebuilding of the salmon and steelhead runs that have been damaged by hydro development on the Columbia River, with the cost to be paid by the rate-payers in the Northwest, not by U.S. taxpayers."). Finally, the NPA called for energy conservation to be developed as a resource ahead of traditional resources. 16 U.S.C. § 839; 126 Cong.Rec. H9848 (Rep. Pritchard) ("[The Act] treats energy conservation as a resource, making it the top priority in meeting the region's energy needs. I know of no other legislation which carries such a strong mandate for implementing conservation.").

Attempting to balance environmental and energy considerations, the Act states that fish and wildlife protection measures cannot jeopardize "an adequate, efficient, economical, and reliable power supply." 16 U.S.C. § 839b(h)(5).<sup>[13]</sup> Also, the Council's authority with respect to fish and wildlife measures is constrained; the Council "can guide, but not command, federal river management." *Through a Glass*, 23 *Envtl.L.* at 1253; see 16 U.S.C. §§ 839b(h)(10), 839b(i), 839b(j); *Northwest Resource Info. Ctr. v. National Marine Fisheries Serv.*, 25 F.3d 872, 874 (9th Cir.1994) ("The Bonneville Power Administration [BPA] must act consistently with the Council's program but in the end has final authority to determine its own decisions."); *Public Utility Dist. 1 v. BPA*, 947 F.2d 386, 392 (9th Cir.1991) (Section 839b(h)(11)(A)(ii) "does not mean the Administrator and other agencies are limited to the program in exercising their responsibilities under the Act.") (emphasis added), *cert. denied*, \_\_\_ U.S. \_\_\_, 112 S.Ct. 1759, 118 L.Ed.2d 422 (1992).<sup>[14]</sup> On the other hand, the Act requires federal water managers to act in a manner consistent with the Council's fish and wildlife program.<sup>[15]</sup>

Congressional mandate that the Council, once appointed and functioning, begin immediately to adopt a fish and wildlife program, reflected Congress's sense of urgency in the NPA; indeed, "the emphasis of the entire structure of the legislation is on prompt action." *Northwest Resource Info. Ctr. v. NMFS*, 818 F.Supp. 1399, 1401 (W.D.Wash. 1993), *aff'd*, 25 F.3d 872 (9th Cir.1994); see 126 Cong.Rec. 10683 (Rep. Dingell) ("Adoption of the [fish and wildlife]

program should not be delayed pending adoption of the plan. The program is to be adopted and implemented whether or not the plan is adopted. It exists independent of the plan and a part of it as well"); H.R.Rep. No. 96-976, pt. I, 96th Cong., 2d Sess., at 56 ("The Committee wants to stress that adoption of [fish and wildlife] recommendation[ ] is not intended to be delayed pending adoption of any plan or revision...."). Seven months after the Act was signed into law, the Council's prompt action yielded an extensive set of recommendations from a coalition of federal and state fish and wildlife agencies and Indian tribes. See *Parity V*, 21 Env'tl.L. at 670-74 (discussion of the recommendations). The coalition recommended a goal of restoring the Basin's anadromous fish runs to their levels predating construction of the McNary Dam in 1953. *Id.* at 672. The key recommendation of the coalition concerned mainstem streamflows needed to help transport migrating juvenile anadromous fish downstream to the ocean during spring.<sup>[16]</sup> The coalition 1380 asserted that \*1380 optimum fish survival required average weekly spring flows of 300-350 thousand cubic feet per second (kcfs) at the Dalles Dam on the lower Columbia River. *Id.* at 671. In order to reduce the impact on hydropower generation, however, the fish and wildlife agencies recommended minimum flows of 220 kcfs, subject to cutbacks of twenty-five percent during dry water years and increases in better-than-average water years, and warned that new biological information might necessitate higher flows.<sup>[17]</sup> The Indian tribes, on the other hand, refused to endorse the concession to hydropower interests, maintaining that Indian treaties entitled the tribes to optimum flows.

The Council promulgated the Columbia Basin Fish and Wildlife Program in November 1982.<sup>[18]</sup> The Council rejected the recommended goal of run sizes equal to those predating 1953. Rather, the program directed BPA to study fish losses from hydropower development and operations, as well as current and potential carrying capacity. To judge the efficacy of the program, the Council directed the development of area-by-area and stock-by-stock goals by 1984. By mid-1986 these goals remained undefined.<sup>[19]</sup>

The centerpiece of the 1982 program, however, was the Council's response to recommended mainstem flows. Rather than adopt a "sliding scale" of flows, "the Council avoided fixed flow levels and proposed a volumetric approach":

The Council computed the volume of flows required by the fishery coalition's recommendations for what the Council thought was the peak of the spring downstream migration season (April 15 through June 15), then deducted the amount of water normally flowing during that period to serve power and other purposes. The difference, over 4.6 million acre feet (maf), would be made available to representatives of the fishery coalition to shape and time water flows to benefit juvenile fish migration.

*Parity V*, 21 Env'tl.L. at 675 (footnotes omitted). The Council characterized this approach as the "Water Budget." The Water Budget had the advantages over fixed flows of costing less in foregone hydropower revenues and involving fishery managers in day-to-day system operations, but it was limited to the period between April 15 and June 15. *Id.* Fishery managers claimed then, as is claimed in the present petitions, that a significant proportion of the spring, summer, and fall chinook runs extend past June 15.

In 1984, the Council approved a set of comprehensive amendments. The amendments included a five-year "Action Plan" setting priorities for program measures and implementation deadlines. They also established three interim goals: (1) the increase of quality and quantity of anadromous fish produced in the Basin (by improving mainstem passage, providing Water Budget flows, protecting against adverse effects of new hydropower development, and increasing systemwide production capability); (2) the protection of ratepayer investment in the program (by improving harvest 1381 controls and monitoring the effectiveness of program measures); \*1381 and (3) the progress of wildlife and resident fish measures where they did not conflict with anadromous fish measures. See Michael C. Blumm, *Reexamining the Parity Promise: More Challenges Than Successes to the Implementation of the Columbia Basin Fish and Wildlife Program*, 16 Env'tl.L. 461, 475 (1986) [hereinafter *Parity IV*].

The Council adopted further amendments in 1985 and 1986, but amendments in 1987 established a new framework for implementing the program. The new framework sought greater accounting for the destructive effects of hydropower on anadromous fish at each stage of their life cycle. The new system focused on integrating into the system-wide program subbasin planning efforts designed to identify objectives and constraints on local fish production. The principal interim goal of the new system was to double the existing fish runs from approximately two-and-one-half

million to five million annually.<sup>[20]</sup> The Council set no time-frame, however, for attaining this goal. Nevertheless, to facilitate implementation of the new system and achieve the double population goal, the Council gave priority to areas above the Bonneville Dam on the Columbia River, emphasizing improved mainstem passage.<sup>[21]</sup>

Despite the Council's progress in ensuring the installation of bypass systems and sufficient spills, salmon and steelhead populations generally declined through 1987. This trend continued the next three years. As a consequence, the National Marine Fisheries Service ("NMFS") was petitioned in 1990 by special interests to list three Snake River stocks and one Columbia River stock under the ESA. Over the next two years, NMFS listed the three Snake River stocks and determined that the Columbia River stock was extinct.<sup>[22]</sup>

The ESA proceedings spurred the region's political leaders to convene a "Salmon Summit" in 1990 of various agencies and interested groups to develop a regional plan to end the salmon decline. While the Summit produced several interim measures, the participants returned to the Council for direction.

In 1991, the Council adopted a four-phase decision-making process to amend the fish and wildlife program. The first three phases of this process culminated in the Council's adoption of the Strategy for Salmon in December 1992. See 56 Fed.Reg. 56935 (1992).

The Council received numerous proposals to its request for amendments to the fish and wildlife program. Fish and wildlife agencies and Indian tribes (collectively "agencies and tribes" or "fishery managers") emphasized two points: (1) that substantial increases in Columbia River and Snake River spring and summer flows were necessary,<sup>[23]</sup> and (2) biological \*1382 objectives, such as water particle travel time,<sup>[24]</sup> were necessary to measure the efficacy of restoration efforts. These two ideas formed the basis of a comprehensive regimen intended to replace the Water Budget.

While fishery managers recommended significant changes — substantial increases in mainstem flows and the adoption of specific biological objectives—power interests and DSIs defended the status quo — conservative steps calculated to produce positive, albeit minor, improvements. In particular, these latter interests vigorously challenged the biological benefits of flows above 85 kcfs in the lower Snake River and 200 kcfs in the lower Columbia River.

During the second phase of the process, which focused on salmon survival and harvest, the Council rejected the consensus of agencies and tribes that flows should be significantly increased, and adopted flows very close to those recommended by power interests and DSIs. As for biological objectives, the Council deferred consideration until the third phase, which would deal with salmon habitat and production.

Ultimately, the Council's Strategy for Salmon called for both immediate and intermediate-term actions to enhance salmon survival in the rivers: increased river velocities, dam screens, water spills, reduced predation, and downstream barge transportation of juveniles. With respect to increased flows, the Council adopted the following:

*Immediate Actions*

1. We call for increased flows in the Snake River during the spring migration aimed at providing a flow equivalent of at least 85,000 cubic-feet per second by lowering Snake River reservoirs to near minimum operating levels and providing additional water from Dworshak Dam and the Upper Snake River.
2. Brownlee Reservoir on the Snake River would be operated in a manner that assists spring-migrating salmon down-stream. In addition, Idaho Power, which owns and operates Brownlee, will make water available to ensure that fall chinook redds (nests of eggs) downstream remain wet.
3. Flows in the Columbia would be aimed at providing at least 200,000 cubic-feet per second in the lowest water years. This will mean increased water storage in years when low runoff is forecast. John Day Reservoir on the Columbia would be operated at minimum irrigation pool during critical migration periods. The reservoir would be lowered to minimum operating pool as soon as irrigation systems are modified or relocated so they can operate at this lower level.

*Intermediate-term Actions*

1. Because the immediate measures in this strategy do not appear to be enough, in themselves, to rebuild salmon runs, we call for deeper Snake River drawdowns to begin in April 1995, unless drawdowns are shown to be economically or structurally infeasible, biologically imprudent or inconsistent with the Northwest Power Act.
- 1383 2. Water efficiency improvements, water leases, additional storage, use of uncontracted storage space and other measures \*1383 would be utilized to provide additional water from the upper Snake River Basin.
3. Various alternatives would be evaluated for providing additional water in the Columbia to aid summer-migrating salmon.
4. The Bonneville Power Administration should begin to secure options on power-generating resources that could reduce the load on hydroelectric dams, thereby ensuring greater flows for fish.
5. Other water-saving measures should be studied as means to make more water available for fish, such as seasonal power exchanges, accelerated acquisition of energy conservation measures that could help ease the demand for electricity in the winter, and additional water from Brownlee.
6. The Fish Operations Executive Committee, created by the Council during phase two, will coordinate these river flow and temperature measures and reconcile them with other salmon recovery measures. The Fish Operations Executive Committee includes policy-level representatives of the affected state and federal agencies and Indian tribes.
7. We also call for expeditious research on the relationship between increased flows, increased water velocity and salmon survival, and will conduct a further amendment proceeding on this issue in 1993.

No obvious biological objectives were included in the Program.

Since 1980, at the latest, the debate concerning the decline of anadromous fish runs in the Columbia River Basin has revolved around the issue of river flows. Not surprisingly, how the Council's Program addresses this primary issue is the basis for the instant petitions for review. NRIC, the Yakima Nation, and the DSIs each argue for restriking the balance between salmon and energy. Nevertheless, Petitioners find common ground in arguing that the Council failed to explain the basis for its flow decisions and failed to adopt and apply proper standards and objectives.

## ***Standards of Review***

In construing a statute, we look first to the statute's language. *California ex. rel. State Water Resources Bd. v. FERC*, 877 F.2d 743, 746 (9th Cir.1989), *aff'd*, 495 U.S. 490, 110 S.Ct. 2024, 109 L.Ed.2d 474 (1990); *Pacificorp v. Bonneville Power Admin.*, 856 F.2d 94, 96 (9th Cir.1988). "Absent a clearly expressed legislative intention to the contrary, that language must ordinarily be regarded as conclusive." *Consumer Prod. Safety Comm'n v. GTE Sylvania, Inc.*, 447 U.S. 102, 108, 100 S.Ct. 2051, 2056, 64 L.Ed.2d 766 (1980).

Congress directed that the Administrative Procedure Act ("APA"), 5 U.S.C. §§ 701-06, govern our review of Council actions. Adoption of the Program is a final action subject to judicial review for the purposes of the APA. 16 U.S.C. § 839f(e)(1)(A); *see* 5 U.S.C. § 553.

We have previously considered the Council's decisions under the APA. *Seattle Master Builders Ass'n v. Pacific Northwest Elec. Power and Conservation Planning Council*, 786 F.2d 1359 (9th Cir.1986), *cert. denied*, 479 U.S. 1059, 107 S.Ct. 939, 93 L.Ed.2d 989 (1987). We ruled that:

While Congress intended that this court's scope of review of Council actions be consistent with 5 U.S.C. § 706, the Act specifically declines to require that the Council follow the hearing provisions of 5 U.S.C. §§ 554, 556, and 557, which govern formal rulemakings. § 839f(e)(2). Consequently, this court will use neither the substantial evidence standard, 5 U.S.C. § 706(2)(E), nor the de novo standard, 5 U.S.C. § 706(2)(F). The remaining subsection of 5 U.S.C. § 706 provides that an agency's factual findings may be set aside if arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law. 5 U.S.C. § 706(2)(A). We adopt this standard of review.

*Id.* at 1366. Review under this standard is to be "searching and careful," but remains "narrow," and a court is not to substitute its judgment for that of the agency. Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 378, 109 S.Ct. 1851, 1861, 104 L.Ed.2d 377 (1989). This is especially appropriate where, as here, the challenged decision implicates substantial agency expertise. See United States v. Alpine Land and Reservoir Co., 887 F.2d 207, 213 (9th Cir.1989) ("Deference to an agency's technical expertise and experience is particularly warranted with respect \*1384 to questions involving ... scientific matters."), *cert. denied*, 498 U.S. 817, 111 S.Ct. 60, 112 L.Ed.2d 35 (1990).

## **DISCUSSION**

Petitioners agree in arguing that the Council failed to explain a "rational connection between the facts found and the choice[s] made" in the Strategy for Salmon. See Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Automobile Ins. Co., 463 U.S. 29, 43, 103 S.Ct. 2856, 2866, 77 L.Ed.2d 443 (1983); National Wildlife Fed'n v. FERC, 801 F.2d 1505, 1515 (9th Cir.1986). More specifically, NRIC and the Yakima Nation mount a procedural challenge to the Program under § 839b(h)(7), alleging that the Council failed to explain, in the Program, a statutory basis for its rejection of river flow recommendations of fishery managers.<sup>[25]</sup> NRIC and the Yakima Nation also contend that the Council failed to properly consider the criteria in § 839b(h)(6) for adopting program measures. Underlying each of these claims is an assertion that the Council failed to give due deference to fishery managers.

The DSIs join NRIC and the Yakima Nation in arguing that the Council failed to explain its rationale for adopting the program measures of the Strategy for Salmon. The DSIs assert their challenge from a different perspective, however, arguing that the Council improperly tilted the balance between salmon and energy in favor of the salmon by failing to engage in a critical cost-benefit analysis of each program measure.

Responding to these challenges, the Council contends that the NPA and the record support each of the Strategy for Salmon's measures.

### **I. NRIC's and the Yakima Nation's Petitions**

NRIC and the Yakima Nation first charge that the Council's Program failed to explain a statutory basis for its rejection of the recommendations of fishery managers as required under § 839b(h)(7).

Section 839b(h)(7) states:

The Council shall determine whether each recommendation received is consistent with the purposes of this chapter. In the event such recommendations are inconsistent with each other, the Council, in consultation with appropriate entities, shall resolve such inconsistency in the program giving due weight to the recommendations, expertise, and legal rights and responsibilities of the Federal and the region's State fish and wildlife agencies and appropriate Indian tribes. If the Council does not adopt any recommendation of the fish and wildlife agencies and Indian tribes as part of the program or any other recommendation, it shall explain in writing, as part of the program, the basis for its finding that the adoption of such recommendation would be —

(A) inconsistent with paragraph (5) of this subsection;



(B) inconsistent with paragraph (6) of this subsection; or

(C) less effective than the adopted recommendations for the protection, mitigation, and enhancement of fish and wildlife.

This section mandates that the Council "shall explain in writing, as part of the program," a statutory basis for rejecting the recommendations of fishery managers. NRIC and the Yakima Nation emphasize that the Council's Program failed to explain *any* basis for its decisions rejecting the agencies' and tribes' recommendations. However, NRIC and the Yakima Nation argue that, to the extent the Council may have "explained in writing, as part of the program," grounds  
 1385 for its rejection of recommendations of fishery managers, the Council failed to explain and rely \*1385 upon at least one of the three permissible statutory bases in § 839b(h)(7) allowing such action. The Council responds with numerous citations to the administrative record, claiming that such references fulfill the written statutory explanation requirement of § 839b(h)(7). We find the Council's position to be inconsistent with the clear and unambiguous language of the Act; it states that the Council "shall explain in writing, *as part of the program*," a statutory basis<sup>[26]</sup> for rejecting recommendations.<sup>[27]</sup> (Emphasis added). This mandate is particularly forceful with respect to the recommendations of those to whom the statute gives deference — fish and wildlife agencies and Indian tribes.

Furthermore, for a court to fulfill its function under the appropriate standard of review, it:

[M]ust be able to ascertain the reasons for an agency's decision. [It] cannot determine whether an agency has acted correctly unless [it is] told what factors are important and why they are relevant. Therefore, an agency must provide a reasoned explanation for its actions and articulate with some clarity the standards that governed its decision.

*Moon v. U.S. Dept. of Labor*, 727 F.2d 1315, 1318 (D.C.Cir.1984).

Study of the Strategy for Salmon evokes an undeniable sense of the tremendous effort and commitment invested to create such a program. The Council has the unenviable task of sorting through the multitude of diverse recommendations and compiling measures that form the framework of an aggressive, effective, and balanced fish and wildlife program. To ensure a balance of interests in the program, the Act specifically requires the Council to explain, in the program, its reasons for rejecting recommendations. This requirement is critical to our review of Council decisions, but, more importantly, it forces the Council to hold out its *final* decisions and their rationale for public consideration and scrutiny. The Council neglected this mandate of the Act.

The Strategy for Salmon fails to explain the reasons for the Council's decisions rejecting recommendations of the agencies and tribes.<sup>[28]</sup> The Council, however, directs our attention to *other* documents in the administrative record to convince us of its compliance with § 839b(h)(7). Most notable are documents related to amendments created during the first and second phases of the Council's decision-making process.

The Council completed Phase Two amendments on December 11, 1991. 57 Fed.Reg. 56935, 56936 (1992). It noticed the completion of Phase Three and the adoption of the Strategy for Salmon on December 1, 1992, a year later. *Id.* During the interim, the Council "reopened for additional comment" its consideration of measures adopted in the first two phases. *Id.* Fishery managers renewed their positions during this period. The Council concluded the third phase by announcing that it "consider[ed] its September, 1992 decision [adopting the Program] to be a final decision with respect to all three phases of the salmon and steelhead amendments process, and the phase three rule *supercedes* the phase one and two amendments *in their entirety*." *Id.* (emphasis added).

This sequence of events establishes the Council's intent that the Strategy for Salmon supercede all earlier amendments to the Program. If the Council intended otherwise, it should have specifically incorporated desired materials into the Program. The Council's reliance here on documents expressly superceded by its final decision is  
 1386 somewhat analogous to a court's reliance on a judicial decision \*1386 it previously vacated; reliance on such documents (or a vacated judicial decision), if allowed, would undermine the validity and authoritativeness of final

decisions. We refuse, therefore, the Council's invitation to consider these documents in our determination of whether the Council complied with the written statutory explanation requirement of § 839b(h)(7).<sup>[29]</sup>

The Council emphasizes one document in particular, however, which was created during Phase Three, to demonstrate its compliance with § 839b(h)(7): the Response to Comments for Phase Three ("P3 Response"). This document is separate from the Strategy for Salmon, but it does explain some of the Council's rationale for certain decisions. Nevertheless, underscoring the fact that the Program itself fails to explain any basis, much less a statutory basis, for the Council's decisions rejecting recommendations of fishery managers, we find that the P3 Response fails, as well, to explain a *statutory* basis justifying such decisions.

In sum, § 839b(h)(7) requires the Council to explain, in the Program, a statutory basis for its rejection of recommendations. The Council failed to do so here with respect to the recommendations of agencies and tribes and was, therefore, not in accordance with the NPA. See 5 U.S.C. §§ 706(2)(A), (2)(D).<sup>[30]</sup> As a consequence, we remand this matter to the Council with instructions that it comply with the written statutory explanation requirement of § 839b(h)(7).

We note that the Council's failure to comply with § 839b(h)(7)'s mandate limits our ability to review the Council's actions in these appeals. It has also hampered Petitioners efforts to scrutinize and challenge the Council's decisions. Nevertheless, most of the parties' remaining contentions relate more to statutory interpretation of the fish and wildlife provisions of the Act, rather than the Council's substantive decisions. We recognize that many of these statutory construction issues have plagued efforts to finalize the Strategy for Salmon. Therefore, we carefully consider the statutory interpretation issues with the expectation that our effort will aid the parties' efforts on remand.

NRIC and the Yakima Nation contend that the Council failed to comply with the criteria set out in § 839b(h)(6) for adopting specific program measures. To decide this issue, we must determine the meaning of § 839b(h)(7)'s mandate that the Council give "due weight" to the recommendations and expertise of fishery managers when resolving inconsistencies in recommendations of program measures, and the nature of the criteria in § 839b(h)(6).

NRIC and the Yakima Nation claim that the fish and wildlife provisions of the Act and their legislative history reveal a congressional intent that the Council give a high degree of deference to fishery managers. The Council, on the other hand, argues that fishery managers are entitled to merely a nominal degree of deference, and urges that the discretion granted to it in the fish and wildlife provisions strictly limits judicial review of its decisions.

There is no question that § 839b(h)(7) requires that deference be given to the recommendations and expertise of agencies and tribes — the question is how much deference is due.

In *Seattle Master Builders*, 786 F.2d at 1367, we stated:

The preparation and consideration of the plan is a matter within Council authority over which the Act accords the Council considerable flexibility. For the same reasons that we defer to BPA expertise in construing other sections of the Act, therefore, we will defer to the Council's interpretations of § 839b *if reasonable*.

(Emphasis added). *Seattle Master Builders* involved model conservation standards the Council adopted in its conservation and electricity usage plan for the region. Accordingly, <sup>1387</sup> we considered the power planning provisions of § 839b only — we did not consider the fish and wildlife provisions, nor did we even refer to § 839b(h). *Id.* at 1366 ("In this action petitioners challenge only that portion of the 1983 plan which establishes model energy conservation standards for new residential construction. Consequently, we so limit the following discussion.").

The power plan provisions of the Act are cast in broad terms. For instance, section 839b(e)(2) provides that the "plan shall set forth a general scheme for implementing conservation measures and developing resources. ..." In establishing this general scheme, the Council is to consider several enumerated factors and "other criteria that may be set forth in the plan" by the Council. 16 U.S.C. § 839b(e)(2)(A)-(C). Furthermore, the NPA provides that the plan shall

include seven elements that should be described "in such detail as the Council deems appropriate." 16 U.S.C. § 839b (e)(3). Finally, the Council is to adopt "model conservation standards" in the plan that "reflect geographic and climatic differences within the region and other appropriate considerations. ..." 16 U.S.C. § 839b(f)(1). Relevant to this provision, we noted in Seattle Master Builders, 786 F.2d at 1368, that "[t]he Act does not require the Council to follow any particular method or timetable for forecasting the amount of energy demand."

These provisions grant the Council considerable flexibility in preparing a power plan; indeed, the Council's function under these provisions is essentially legislative.

In stark contrast are the fish and wildlife provisions of § 839b(h). To initiate the development of a fish and wildlife program, Congress required the Council to solicit recommendations from the region's fishery managers. The Act requires the Council to give notice of all the recommendations and supporting materials to, among others, the Administrator, federal and state fish and wildlife agencies, Indian tribes, federal agencies that manage, operate, or regulate the hydrosystem. 16 U.S.C. § 839b(h)(4)(A). The Council is then required to provide for public participation and comment on the recommendations. 16 U.S.C. § 839b(h)(4)(B). From this process, "[t]he Council shall develop a program on the basis of such recommendations, supporting documents, and views and information obtained through public comment and participation, and consultation with the agencies, tribes, and customers referred to in subparagraph (A) of paragraph (4)." 16 U.S.C. § 839b(h)(5). In short, the NPA requires the Council to develop the program from sources outside the Council. In doing so, the Council must adopt program measures that are consistent with the purposes of the Act — the protection, mitigation, and enhancement of fish and wildlife, "while assuring the region an adequate, efficient, economical, and reliable power supply." 16 U.S.C. § 839b(h)(5); *see also* 16 U.S.C. § 839b(h)(7). If reconciliation of recommendations is required, the Council must give "due weight" to fishery managers' recommendations, and may disregard such recommendations only after explaining in the program a statutory basis for its decision. *Id.*

The difference between the power plan and the fish and wildlife provisions of § 839b, then, is a contrast of generous discretion and bound discretion; the difference highlights the limited discretion of the Council under 839b(h)(7).

Although an agency's interpretation of the statute under which it operates is entitled to some deference, "this deference is constrained by our obligation to honor the clear meaning of a statute, as revealed by its language, purpose, and history." International Broth. of Teamsters, Chauffeurs, Warehousemen and Helpers of America v. Daniel, 439 U.S. 551, 566 n. 20, 99 S.Ct. 790, 800 n. 20, 58 L.Ed.2d 808 (1979). In other words, "[i]n assessing action by an administrative agency, the court must temper its standard of review according to the degree of discretion Congress has given to the agency concerned." Farley v. Sullivan, 983 F.2d 405, 407 (2d Cir.1993). "[T]he degree of respect to be accorded to an agency's statutory interpretation of the limit of its authority varies, depending upon such factors as the interpretation's inherent reasonableness, its consistency with prior precedent, its basis in statutory text and legislative history, and whether it is based on experience or expertise peculiarly within the agency's ken." Office of Consumers' Counsel v. FERC, 655 F.2d 1132, 1141 (D.C.Cir.1980).

We conclude that § 839b(h) binds, more than unleashes, the Council's discretion with respect to fish and wildlife issues. Indeed, we are convinced that the fish and wildlife provisions of the NPA and their legislative history require that a high degree of deference be given to fishery managers' interpretations of such provisions and their recommendations for program measures.

Section 839b(h)(2) of the Act *requires* that the Council solicit recommendations from agencies and tribes for:

- A. measures which can be expected to be implemented by the Administrator, using authorities under this chapter and other laws, and other Federal agencies to protect, mitigate, and enhance fish and wildlife, including related spawning grounds and habitat, affected by the development and operation of any hydroelectric project on the Columbia River and its tributaries;
- B. establishing objectives for the development and operation of such projects on the Columbia River and its tributaries in a manner designed to protect, mitigate, and enhance fish and wildlife; and

C. fish and wildlife management coordination and research and development (including funding) which, among other things, will assist protection, mitigation, and enhancement of anadromous fish at, and between, the region's hydroelectric dams.

The Council "shall [then] determine whether each recommendation received is consistent with the purposes of this chapter." 16 U.S.C. § 839b(h)(7). One of the primary purposes of the chapter is that "[t]he Council shall include in the [fish and wildlife] program measures which it determines" will meet the criteria set forth in § 839b(h)(6). 16 U.S.C. § 839b(h)(6). Inconsistencies between recommendations shall be resolved by the Council, "giving *due weight* to the recommendations, expertise, and legal rights and responsibilities" of agencies and tribes. 16 U.S.C. § 839b(h)(7) (emphasis added).

Congress's intent is manifest in the NPA's legislative history. Representative Dingell, one of the NPA's principal sponsors, emphasized, "[c]learly, the [C]ouncil should rely heavily on the fish and wildlife agencies of the State and Federal Governments and not try to become a superfish and wildlife entity." 126 Cong.Rec. E10683 (1980). The House Committee on Interstate and Foreign Commerce stated:

It has been suggested that the terms "protect, mitigate, and enhance" should be defined. The Committee did not choose to do so *in recognition of the fact that these terms are not new to those concerned with this resource*, and because such a definition might later prove more limiting than anticipated.

H.R.Rep. No. 96-976, pt. I, 96th Cong., 2d Sess., at 57 (emphasis added).

Hence, Congress realized that furtherance of the purpose of the Act, that fish and wildlife be on a par with energy, required that the Council defer to the recommendations of agencies and tribes. Of course, the reason for this deference to fishery managers is their unique experience and expertise in fish and wildlife. Congress intended that the Council not simply tap this resource of information and advice, but that it "heavily rely" upon it.

In promulgating § 839b, Congress anticipated the onus fish and wildlife issues would place on the Council in creating a hydropower plan that balanced fish and wildlife with energy. Congress recognized, in particular, that fish and wildlife issues were, and should be, outside the expertise of the Council and the hydropower regulating agencies. Nonetheless, the need for experience and expertise with respect to fish and wildlife was plain. Looking to those having responsibility for managing such resources, Congress found the experience and expertise on which the Council should rely to frame a fish and wildlife program. Accordingly, Congress required in § 839b that fishery managers be given a high degree of deference in the development of a fish and wildlife program for the Basin.

In light of the NPA's legislative history and text, it follows that fishery managers, as well as the Council, be given deference in interpreting the fish and wildlife provisions of the Act. This conclusion is consistent with our holding in 1389 Public Util. Dist. 1, 947 F.2d at 390, that the BPA is due deference in <sup>\*1389</sup> interpreting the power plan provisions of the NPA because it was involved in the drafting of the Act. The role that fishery managers had in the promulgation of the NPA's fish and wildlife provisions demands no less of us here. Furthermore, the unique experience and expertise of fishery managers makes their interpretations of § 839b, especially § 839b(h)(6), particularly helpful. We find it inherently reasonable to give agencies and tribes, those charged with the responsibility for managing our fish and wildlife, a high degree of deference in the creation of a program and the interpretation of the Act's fish and wildlife provisions.

The Council's contention that § 839b grants *it* virtually unfettered discretion in creating a fish and wildlife program is unfounded; the Act's fish and wildlife provisions significantly temper the Council's discretion. At any rate, we do not decide here whether the Council abused its discretion in giving or failing to give proper deference to fishery managers because the record as it stands precludes such an inquiry. We note again that the Council failed to explain, in the Program, its reasons for rejecting the recommendations of fishery managers. This failure of the Council is disturbing given that it adopted, for the most part, the flows and measures recommended by power interests and DSIs, despite

the overwhelming consensus among agencies and tribes in favor of significantly higher flows and more scientifically-based biological objectives.

We next turn to the nature of the § 839b(h)(6) criteria. The Council claims that the criterion in § 39b(h)(6) merely "set the agenda but do not dictate the substance of measures." As a result, the Council urges, its "determinations necessarily involve a great deal of judgment, not well suited for judicial review." The Council misconstrues § 839b(h)(6).

The criteria in § 839b(h)(6) are mandatory. The provision states that the Council *shall* include program measures that adhere to each of the criterion. As recognized above, the fish and wildlife provisions of the Act significantly circumscribe the Council's discretion with respect to fish and wildlife. Construing the criteria in § 839b(h)(6) as *substantive* criteria is consistent with that construction.

The legislative history is also helpful in characterizing the nature of the criteria in § 839b(h)(6). In discussing § 839b(h), the House Interior and Insular Committee stated that "[t]he section sets out specific criteria such recommendations must meet in order to be included in the program." H.R.Rep. No. 96-976, pt. II, 96th Cong., 2d Sess., at 37, 1980 U.S.Code Cong. & Ad.News at pp. 5989, 6035. The Committee stated further, with respect to § 839b(h)(6), that it:

[S]ets *substantive criteria* for measures included in the program. The criteria include: (1) complementary with other related efforts; (2) scientific support; (3) minimization of costs, not absolutely but for any given biological objective; (4) consistency with the legal rights of Indian tribes; and, in the case of anadromous fish, (5) provision for flows between such facilities to improve production, migration and survival of such fish as necessary to meet sound biological objectives.

H.R.No.Rep. 96-976, pt. II, 96th Cong., 2d Sess., at 44 (emphasis added). The House Committee on Interstate and Foreign Commerce added that "[a]ny determination [under § 839b(h)] must set forth the reasoning in support of that determination and will be subject to judicial review." H.R.Rep. No. 96-976, pt. I, 96th Cong., 2d Sess., at 57.

Finally, we previously decided that other provisions of § 839b(h) impose substantive requirements. In *Confederated Tribes and Bands of the Yakima Indian Nation v. FERC*, 746 F.2d 466, 473 (9th Cir.1984), we held that the FERC failed to meet its obligation to give fish "equitable treatment" under § 839b(h)(11)(A)(i) of the NPA. We construed this requirement as a "substantive" obligation. *Id.*; see also *National Wildlife Fed'n*, 801 F.2d at 1514-15. The criteria in § 839b(h)(6) are no less substantive, and measures adopted thereunder no less reviewable by this Court.<sup>31</sup>

Section 839b(h)(6) provides:

- 1390           \*1390 The Council shall include in the program measures which it determines, on the basis set forth in paragraph (5), will —
- (A) complement the existing and future activities of the Federal and the region's State fish and wildlife agencies and appropriate Indian tribes;
  - (B) be based on, and supported by, the best available scientific knowledge;
  - (C) utilize, where equally effective alternative means of achieving the same sound biological objective exist, the alternative with the minimum economic cost;
  - (D) be consistent with the legal rights of appropriate Indian tribes in the region; and
  - (E) in the case of anadromous fish —
    - (i) provide for improved survival of such fish at hydroelectric facilities located on the Columbia River system; and

(ii) provide flows of sufficient quality and quantity between such facilities to improve production, migration, and survival of such fish as necessary to meet sound biological objectives.

We now focus on each of the criterion in this provision.

The first criterion requires that measures "complement the existing and future activities of the Federal and the region's State fish and wildlife agencies and appropriate Indian tribes." 16 U.S.C. § 839b(h)(6)(A). Since adoption of the Program, there have been various proceedings under the ESA concerning listed anadromous fish in the Basin. Several ESA actions have been filed, the lead case by the State of Idaho against NMFS and other agencies in 1992. *Idaho Dept. of Fish and Wildlife v. NMFS*, 850 F.Supp. 886 (D.Or.1994). That case challenges government actions in operating the Federal Columbia River Power System ("FCRPS") in 1993. More specifically, the Idaho Department of Fish and Game claims that NMFS and other Federal agencies have violated the ESA by "(1) failing to insure that FCRPS operations are not likely to jeopardize listed species; (2) omitting consideration of all relevant scientific factors; (3) failing to include all reasonable and prudent mitigation measures to reduce incidental take of listed species; (4) limiting consideration of short and long term impacts and measures to the immediate nine-month operational period under consideration; and (5) operating the FCRPS between April 15 and May 26, 1993[,] prior to completion of the biological opinion." *Id.* at 887.

A major contention in the case concerns the adequacy of NMFS's 1993 Biological Opinion. The district court, experienced in these particular matters, granted Idaho's summary judgment, finding that the Biological Opinion was "arbitrary and capricious and otherwise not in accordance with the meaning and underlying purposes of the Endangered Species Act, § 7(a)(2), with respect to the chosen jeopardy standard and their consideration of reasonable and prudent alternatives to avoid jeopardy." *Id.* at 900. The court commented:

1391 In this instance, I think the choice is clear and that I have a rare opportunity to tell all of these players (save a few government agencies) that, at least with respect to broad points of agreement regarding the standard by which NMFS measures success, they are all absolutely right. \*1391 NMFS has clearly made an effort to create a rational, reasoned process for determining how the action agencies are doing in their efforts to save the listed salmon species. But the process is seriously, "significantly," flawed because it is too heavily 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. Instead of looking for what can be done to protect the species from jeopardy, NMFS and the action agencies have narrowly focused their attention on what the establishment is capable of handling with minimal disruption.

I fully recognize that stability and recovery are two distinct legal concepts under the ESA. However, in examining the circumstances that confront listed Snake River salmon — the myriad of both human-induced and natural contributions to mortality, their unique life-cycle and geographic range — the two concepts are in many instances virtually indistinguishable. Where stability ends and recovery begins is a crucial question which must be fully explored by the federal defendants in examining what changes can be made to river operations to avoid what many commentators believe will be the inevitable extinction of these species.

*Id.*

*Idaho Dept. of Fish and Game* is relevant to the instant case not just because it involves, ultimately, the same issue — what to do about preserving and restoring the salmon — but because it urges policy and operations in a direction away from the status quo towards affirmative action. NRIC and the Yakima Nation press for the same direction from the Council, the instant case being their vehicle for doing so. While we do not now decide whether the Council's measures complement existing and future activities of fish and wildlife agencies and Indian tribes in the ESA actions, the Council's rejection of the agencies' and tribes' consensus as to increased flows and biological objectives does not appear to square well with these efforts.

The second criterion requires that measures be based on and supported by the "best available scientific knowledge." 16 U.S.C. § 839b(h)(6)(B). That the standard requires only the best *available* scientific knowledge ensures action in the promulgation and implementation of a fish and wildlife program. Textual consistency with § 839b(h)(7) requires that the Council defer to the agencies' and tribes' recommendations as to what is the best available scientific knowledge. Moreover, the standard requires only the best available scientific *knowledge*, not *data*. Section 839b(h)(6)(B) suggests, therefore, that reasonable inferences and predictions may be drawn from the best available scientific knowledge. In this case, determining whether the program measures are based on and supported by the best available scientific evidence is prevented by the Council's failure to comply with § 839b(h)(7)'s written statutory explanation requirement.

The third criterion requires that alternative measures be evaluated for effectiveness in achieving sound biological objectives. 16 U.S.C. § 839b(h)(6)(C). Sound biological objectives relate the biological needs of fish and wildlife to the operations of the hydropower system. If two measures are equally effective in achieving the same biological objectives, the Council must adopt the one with less economic cost. *Id.*

NRIC and the Yakima Nation claim that the Council failed to adopt sound biological objectives.<sup>[32]</sup> They claim that the Council's failure to adopt a particle travel time objective resulted in the adoption of flow measures in the absence of a meaningful evaluation of their effectiveness. The Council relies on the Program's doubling goal, rebuilding targets, and performance measures to demonstrate that it did, in fact, adopt sound biological objectives.

NRIC's and the Yakima Nation's instant claim was markedly described earlier by the Fish and Wildlife Service ("FWS") when it commented on the final amendments to the Program:

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\*1392 In establishing its rebuilding targets and rebuilding schedules, the Council projected run sizes for spring and summer chinook from several different management options which incorporated different rebuilding activities. The projections or rebuilding targets rely on arbitrary estimates of benefits of different actions such as improved dam passage survival, transportation, predator removal, and habitat improvements which are difficult or impossible to measure. This approach ignores the underlying production potential of the stocks which should be the basis for your rebuilding objectives.

Instead of basing your objectives on arbitrary estimates of the cumulative benefits of different, rebuilding activities, we recommend that the Council establish measurable or directly estimable biological objectives such as recruits per spawner, smolt-to-adult return to individual subbasins and to the Columbia River mouth, adult passage conversation rates, and water particle travel times. This approach would provide a strong biological foundation for the Council's objectives and provide a more direct means to measure progress. The Council should rely heavily on the chinook analytical framework being developed by the states and tribes to accomplish this task.

(July 1992 letter from the Regional Director of FWS to Ted Hallock, Chairman of the Council). We are persuaded that the Program fails to incorporate the sound biological objectives contemplated in the Act. For instance, the goal of doubling population is a policy statement; to that end, it is an untelling policy statement because it sets no firm deadline for attaining the goal. The policy's statement of direction and philosophy is a far cry from the specificity of a discrete biological objective. This is also true with respect to the rebuilding targets and performance standards in the Program. Moreover, none of these framework elements appear to have guided the Council in evaluating alternative recommendations and measures; rather, the Council utilized these elements to convey and estimate the effectiveness of measures *already* adopted. Indeed, the record evidences the Council's intent ultimately to refrain from specifically adopting biological objectives. The Council's post hoc adoption of the doubling goal, rebuilding targets, and performance standards as sound biological objectives, despite the recommendations of agencies and tribes, ignores the purposes and requirements of § 839b(h)(6)(C). On remand, the Council should consider measures in light of specific biological objectives, giving the recommendations of agencies and tribes "due weight" in its determination of which biological objectives should be utilized.

The fourth criterion requires that measures "be consistent with the legal rights of appropriate Indian tribes in the region." 16 U.S.C. § 839b(h)(6)(D). Congress recognized the preexisting rights that tribes reserved for themselves, in contrast to rights granted to them by the Government. In this light, it is reasonable to conclude that measures that would allow the extinction of Snake River fall chinook, for instance, upon which the Yakima people largely depend for their livelihood, may very well be inconsistent with the Yakima Nation's treaty reserved fishing rights. See *Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. at 674-82, 99 S.Ct. at 3068-72. We note this possibility only to sensitize the parties to this Court's duty to honor the purposes of the Act while, at the same time, strictly construing its language.

The last criterion addresses the particular needs of anadromous fish. It requires that measures provide "improved survival of such fish" at hydropower facilities, 16 U.S.C. § 839b(h)(6)(E)(i), and "flows of sufficient quality and quantity between such facilities to improve production, migration, and survival of such fish as necessary to meet sound biological objectives," 16 U.S.C. § 839b(h)(6)(E)(ii). This criterion accents the importance of the Council strictly complying with the Act's mandates with respect fish and wildlife, especially that requiring that a high degree of deference be given to fishery managers. The Council's failure to comply with § 839b(h)(7) prevents us from addressing the issue of whether the Council complied with this criterion in adopting the Strategy for Salmon's measures. The record evokes in us, however, a strong sense of skepticism; without explanation, the Council rejected the consensus of most fishery managers \*1393 on the issues of flows and biological objectives in favor of the recommendations of power interests and DSIs.

In justifying its decisions with respect to flows, the Council relies heavily on the NMFS's 1992 Biological Opinion to argue that the Program's flows are of sufficient quality and quantity to comport with the NPA. The opinion, however, is not nearly so reassuring. The NMFS considered the Council's overall plan for 1992 operations only. The opinion states:

[W]e conclude that the proposed operations are not likely to jeopardize the continued existence of listed or proposed salmon species. Nonetheless, we are concerned that if operation of FCRPS continued as is proposed for 1992, it would not be sufficient to reverse the decline over one life cycle of the salmon; therefore, additional steps will likely be needed in 1993 and future years. We should begin discussions on 1993 operations immediately.

The NMFS found that *1992 operations* under the plan's Strategy for Salmon were not likely to retard survival further or to preclude any progress "toward reversing the decline of listed and proposed species." The NMFS recognized two things, however: (1) that the plan, as it related to endangered fish, did little more than maintain the status quo and (2) that the status quo was insufficient to maintain listed runs in future years. We do not take this opinion as either dispositive authority of the Council's Program, or even as NMFS's stamp of approval.<sup>[33]</sup>

Significantly, the Council staff's analysis in November 1991 concluded that stocks with low productivity would "probably decline to extinction" with the Program's measures. The staff further concluded that with the Program's measures, "medium productivity stocks appear to stabilize but not rebuild. Rebuilding is seen only for those stocks in the best habitat that are presently limited only by passage survival rate."

Both the NMFS's 1992 Biological Opinion and the Council staff's analysis undermine, rather than bolster, the Council's assertion that the Program is unquestionably consistent with the purposes of the fish and wildlife provisions of the Act.

We recognize the standards in § 839b(h)(6) as substantive criteria that each program measure must meet. Unfortunately, we are precluded, for the most part, from determining whether the Council applied these standards correctly. We conclude with confidence, however, that the Council failed to utilize sound biological objectives in evaluating program measures. We are also concerned that the Council may not have given the required degree of deference to the recommendations of fishery managers. The Council should address these points on remand.

Finally, NRIC complains that the Council may not be "committed" to implementing the Program's intermediate-term actions. The Council admits in the Strategy for Salmon that immediate measures with respect to river flows "do not



appear to be enough, in themselves, to rebuild salmon runs." Such disclaimers have been a common element of the Program since the Council first adopted a general plan in 1982.<sup>[34]</sup> The success of the Strategy for Salmon is, therefore, dependent on the Council committing itself to aggressive action to save and rebuild the Basin's anadromous fish runs. We construe the Program as the Council's binding commitment to the timely implementation of all measures if they satisfy the substantive criteria of the NPA.

## II. The DSIs' Petition

1394 The DSIs complain that the Council violated the NPA by failing to conduct a critical \*1394 cost-benefit analysis of each measure in the Program. They also claim that the Program's economic impact and drawdown measures violate the Act.

The NPA requires, in part, that the overall Program assure the region "an adequate, efficient, economical, and reliable power supply." 16 U.S.C. § 839b(h)(5). It also requires, under § 839b(h)(6)(C), that the Council "utilize, where effective alternative means of achieving the same sound biological objective exist, the alternative with the minimum cost."

The DSIs argue that these two provisions combine to require the Council to engage in a critical cost-benefit analysis of each of the Program's measures; that is, an evaluation of whether each of the Program's measures imposes costs on the hydropower system that exceed the fish mitigation benefits each measure should achieve. The Council counters that it must only evaluate the costs of the fish and wildlife Program to ensure that the Program does not undermine the region's power supply.

Program costs, generally, were addressed by Congress prior to enacting the NPA. The House Committee on Interstate and Foreign Commerce stated:

Some power losses, with resultant loss in revenues, may be inevitable at times if these fish and wildlife objectives are to be achieved. Such losses, however, should not be a burden on the consumers of the region. The objective, however, should be to avoid, or at least minimize, losses, *while meeting fish and wildlife needs....*

At the same time, the Committee does not intend that [the terms `protect, mitigate, and enhance' fish and wildlife] be construed in broad terms that biological and economic considerations will be totally ignored. They must be considered. *However, cost should not be a deterrent if a fish and wildlife need might be sacrificed to save dollars.*

H.R.No.Rep. 96-976, pt. I, 96th Cong., 2d Sess., at 57 (emphasis added). The Committee further noted that:

The third purpose [of the Act's fish and wildlife provisions] is that the BPA customers and the consumers of those customers will continue to pay all of the costs necessary to produce, transmit, and conserve resources to meet the region's electric power requirements. *These costs include those related to fish and wildlife.*

*Id.* at 49 (emphasis added).

We conclude from our study of § 839b(h)(5) and the legislative history that: (1) Congress did not say the Council should perform a critical cost-benefit analysis of each measure;<sup>[35]</sup> (2) a fish and wildlife measure cannot be rejected solely because it will result in power losses and economic costs; and (3) the Council must assess overall power and economic impacts so that the Program does not cause an inadequate, inefficient, uneconomic, and unreliable power supply. These conclusions are underscored by the substantive criterion in § 839b(h)(6)(C).

Section 839b(h)(6)(C) requires individual program measures to be based on sound biological objectives. In those instances where two proposed measures equally achieve the biological objectives, the provision imposes a "cost-effectiveness" standard to determine which has the least economic cost. See 16 U.S.C. § 839a(4). In this regard, §

839b(h)(6)(C) emphasizes the achievement of predetermined biological objectives in a least-cost manner. See *Misplaced Role of Cost-Benefit Analysis*, 16 *Env'tl. L.* at 549-51. Unlike cost-benefit analysis, which "seeks to reduce and compare all values by a common denomination — the dollar," see *id.* at 534 n. 60, cost-effectiveness, in this context, prevents cost considerations from precluding the biologically sound restoration of anadromous fish in the Columbia River Basin to the extent affected by hydropower development and operations so long as an adequate, efficient, economical, and reliable power supply is assured.

1395 Finally, engaging in a critical cost-benefit analysis of each program measure intended to protect, mitigate, and enhance fish and \*1395 wildlife would work against such efforts. Cost-benefit analysis "measures only the magnitude of costs and benefits; it does not assess the distribution, or equity, of the resulting gains and losses." *Id.* at 535. In other words, non-economic values the Program seeks to further, such as equity, ecology, conservation, and culture, would be ignored. In addition, the application of cost-benefit analysis to the NPA's fish and wildlife provisions would eviscerate another design of the Act: to allow knowledge that is less than scientific uncertainty be a basis for sound decision-making, thereby shifting the burden of proof to those challenging fishery managers' recommendations. We reject the DSIs' contention that a critical cost-benefit analysis of each program measure is required.

The DSIs also complain that the Strategy for Salmon's economic impact imposes unreasonable burdens on the hydropower system, violating the NPA. To the extent the DSIs challenge specific measures under the criterion in § 839b(h)(6)(C), the record is insufficient for us to make a determination. It is worth noting, however, that the DSIs fail to demonstrate that any two proposed measures equally achieved the same biological objectives, requiring an analysis of the measures' cost-effectiveness. Similarly, to the extent the DSIs challenge the Program under § 839b(h)(5), because of its overall economic impact, they fail to demonstrate that the Council's actions were "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(A). The DSIs complain of increased costs and lost profits, but provide no specific evidence that the overall economic impact of the Program on the hydropower system is unreasonable; Congress expected increased costs and lost profits to the hydropower system to the extent the system was responsible for damaging fish and wildlife in the region.

The DSIs' last contention is that the Program's reservoir drawdown measures are contrary to the Act. Specifically, they challenge the Council's expressed intent to implement the drawdown strategy unless it was shown to be "structurally or economically infeasible, biologically imprudent." The DSIs believe the Act imposes a stricter standard for adopting program measures than simply determining whether they are "infeasible" or "imprudent." The DSIs ignore, however, the language of the drawdown measure that reservoir drawdowns will be rejected if they are "inconsistent with Sections 4(b)(5)(7) of the Northwest Power Act." This contention lacks merit.

## **CONCLUSION**

The NPA adopted fish and wildlife restoration as a primary goal, leaving to the Council and interested parties the onerous burden of deciding how to restore such resources. In doing so, the Act placed a premium on prompt action, allowing decisions to be made on the best available scientific knowledge. It also limited the role of economic considerations in decision-making. Most importantly, however, the Act acknowledged fish and wildlife as an irreplaceable finite resource.

Unfortunately, the record reveals few profound successes resulting from these innovations in thinking. The Council's approach seems largely to have been from the premise that only small steps are possible, in light of entrenched river user claims of economic hardship. Rather than asserting its role as a regional leader, the Council has assumed the role of a consensus builder, sometimes sacrificing the Act's fish and wildlife goals for what is, in essence, the lowest common denominator acceptable to power interests and DSIs. The Council has failed at least two requirements of the NPA in its process, as well as § 706 of the APA: it has failed to explain a statutory basis for its rejection of recommendations of fishery managers and it has failed to evaluate proposed program measures against sound biological objectives. There is also concern that the Council may have failed to give proper deference to fishery

managers and to fully comply with other substantive criteria for program measures. We, therefore, remand these matters to the Council for reconsideration consistent with this opinion.

[1] Honorable Thelton E. Henderson, Chief, United States District Judge, for the Northern District of California, sitting by designation.

[1] See Kai N. Lee & Jody Lawrence, *Adaptive Management: Learning From the Columbia River Basin Fish and Wildlife Program*, 16 *Envtl.L.* 431, 441 (1986) [hereinafter *Adaptive Management*].

[2] Two intervenors have filed briefs: the United States Government and the State of Idaho. The United States intervened to clarify the potential impact these actions have on various Government agencies and other proceedings under the Endangered Species Act. The State of Idaho intervened to protect its interest in Snake River salmon and steelhead runs in Idaho, most of which are in serious decline.

[3] The Columbia River Basin is comprised largely of the Columbia River and its largest tributary, the Snake River. Geographically, management of the Basin most directly affects Idaho, Montana, Oregon, Washington, and our northern neighbor, Canada.

[4] The Columbia River Basin produces steelhead trout and four principal species of salmon: chinook, sockeye, coho, and chum. When discussing salmon species, biologists distinguish them by "seasonal races" or "runs" and "tributary stocks" and river "substocks." Thus, the Snake River fall chinook is a fall race and a Snake River stock.

[5] Collectively, the steelhead and salmon are "anadromous" fish; that is, "any fish which spawns or is artificially produced in freshwater, reaches mature size while rearing in saltwater and returns to freshwater to reproduce." *United States v. Washington*, 384 *F.Supp.* 312, 405 (W.D.Wash.1974). Young salmon will not start the smoltification process (swimming downstream and adapting from freshwater to saltwater) until they achieve certain physical and physiological characteristics. John V. Byrne, *Salmon is King — or is it?*, 16 *Envtl.L.* 343, 352-53 (1986) [hereinafter *Salmon is King*].

[6] In *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 667 n. 11, 99 S.Ct. 3055, 3071 n. 11, 61 L.Ed.2d 823 (1979), the Supreme Court told the tribes: "The paper [the treaty] secures your fish." The Court also noted that the treaty guarantee of "the right of taking fish" was meaningful only if fish were available for the taking. *Id.* at 678, 99 S.Ct. at 3071.

[7] Pub.L. No. 75-329, 50 Stat. 731 (1937) (codified as amended at 16 U.S.C. §§ 832-8321). The Senate passed a resolution directing the Commissioner of Fisheries to assess the effect of the Bonneville Dam on the Columbia fish runs and to recommend steps "to attain the full conservation of such fish...." See S.Doc. No. 87, 75th Cong., 1st Sess. (1937).

[8] Between 1973 and 1977, low flow years for the upper Columbia River Basin, virtually the entire flow was put through the turbines of the main-stem dams. This resulted in estimated losses of ninety-five percent of the salmon and steelhead in 1973 alone. H.R.Rep. No. 96-976, pt. I, 96th Cong., 2d Sess., at 47.

[9] The Coordination Act continued the emphasis, from the late 1930s, on hatcheries as a means to compensate for fish and wildlife losses. As a consequence, the focus was on procurement of substitute resources rather than minimizing adverse impacts on the environment.

[10] See, e.g., 126 Cong.Rec. E5105 (Rep. Dingell) ("[I]n developing the program, the Council and BPA should not slight wildlife needs. The fishery needs are important. Much emphasis in consideration of this legislation was on the anadromous and other fishery resources. However, from the beginning of our consideration of the bill in the House, we have stressed the need to protect, mitigate the adverse effects on, and enhance both fish and wildlife."); 126 Cong.Rec. H10680 (Rep. Dingell) ("The conservation and enhancement of the great migratory fish and wildlife populations of the Pacific Northwest, something of great concern to the sportsmen and conservationists of this Nation, are, for the first time, a matter of urgent priority under this legislation. They are placed [sic] on a par with other purposes for Federal facilities in this area. If the fish populations of the Pacific Northwest are to be restored to the sportsmen, the Indians and the commercial fishermen, this is the mechanism which will do it."); 126 Cong.Rec. H2062 (Rep. Bonker) ("Federal management of the Columbia River should be conducted so as to optimize production of salmon and steelhead as well as hydroelectricity."); 126 Cong.Rec. H9846 (Rep. Lujan) ("The concept that protection, mitigation and enhancement of fish and wildlife while assuring an adequate, efficient, economical and reliable power supply is the most basic principle in developing the program. It is particularly important that this concept be recognized whenever a program is developed that is likely to be implemented before a plan is developed or amended."); 126 Cong.Rec. H9848 (Rep. Dingell) ("The bill contains provisions relative to fish and wildlife on the Columbia River and its tributaries. These provisions will assure that the power-planning decisions [sic] fish and wildlife concerns are adequately met. Fish and wildlife, for the first time in this region, will be treated on a par with power and other purposes.").

[11] The Act allows the States of Idaho, Montana, Oregon, and Washington to each appoint two persons to serve on the Council. 16 U.S.C. § 839b(a)(2).

[12] Specific measures were to satisfy, in addition to other criterion, river flows of sufficient quality and quantity to improve production, migration, and survival of anadromous fish. 16 U.S.C. § 839b(h)(6)(E).

[13] It is worth noting the statute assures a "power supply" not a "hydropower supply." This highlights, again, conservation and the development of other resources as purposes of the NPA.

[14] The four federal water managers who affect Columbia River flows are BPA (as marketer of federal hydropower), the U.S. Army Corps of Engineers (as operator of most of the mainstem federal dams), the Bureau of Reclamation (as operator of several large storage dams, including the Grand Coulee Dam), and the Federal Energy Regulatory Commission ("FERC").

[15] See 16 U.S.C. § 839b(h)(10)(A); see *National Wildlife Fed'n v. FERC*, 801 F.2d 1505, 1514-15 (9th Cir.1986). Moreover, it requires all four federal water management agencies to give "equitable treatment" to fish and wildlife. 16 U.S.C. § 839b(h)(11)(A)(i). It also directs the federal agencies to take the program "into account ... to the fullest extent practicable" at each relevant stage of their decision making. 16 U.S.C. § 839b(h)(1)(A)(ii); see 126 Cong.Rec. 10683 (Rep. Dingell) ("Again it is important to stress that the fish and wildlife program, as well as the recommendations, may well proceed [sic] the plan. If so, the BPA and others should not delay implementation pending adoption of the plan which will incorporate this program.... [S]ubsection (h) also provides a directive to BPA and other Federal agencies responsible for the management and operation or regulation of hydro facilities on the Columbia or its tributaries to adequately protect, mitigate, and enhance for fish and wildlife affected by such facilities in a manner that insures equitable treatment for fish and wildlife with other purposes for which system and facilities are managed and operated or regulated. They must achieve the directive consistent with the purposes of this act and other applicable laws."); 126 Cong.Rec. H9845 (Rep. Lujan) ("While creating a mechanism for the acquisition and allocation of power by [BPA] within the region, the bill carefully limits the authority of the BPA administrator. It does not create anything resembling an `energy czar.'"); H.R.Rep. No. 96-976, pt. I, 96th Cong., 2d Sess., at 50 ("Lastly, these purposes provide that BPA, the Council, and other Federal agencies must carry out their duties and responsibilities and exercise their authorities to protect, mitigate, and enhance fish and wildlife...."); H.R.Rep. No. 96-976, pt. II, 96th Cong., 2d Sess., at 45, 1980 U.S.Code Cong. & Ad.News at pp. 5989, 6043 ("BPA shall act consistently with the regional plan, the [fish and wildlife] program ..., the purposes of this Act and other provisions of law.").

[16] Other important recommendations included installation of juvenile bypass systems in each dam; interim spills at mainstem dams (until by-pass systems were installed); research on the causes and solutions to predation and residualism; improved upstream adult passage; and increased effectiveness of both natural and hatchery production.

Spills are the most biologically benign way of safely passing fish at dams, but the water cannot then be utilized to generate power because it is not passed through the dams' turbines. Spills, therefore, have generally been considered an interim measure. Bypass systems, on the other hand, provide a long-term solution because they provide relatively effective safe fish passage without significantly reducing power generation.

Another notable aspect of the recommendation was the coalition's rejection of transportation by truck or barge of juvenile fish around dams as an alternative to enhanced streamflows.

[17] The coalition estimated mortalities of more than ninety percent if the flows fell below 220 kcfs.

[18] Because of the lack of scientific certainty upon which to base decisions and the Act's bias toward action, the Council adopted "adaptive management" as a conceptual approach and strategy for implementation:

As a conceptual approach, it sets a scientifically sound course that does *not* make action dependent on extensive studies. As a strategy of implementation, adaptive management provides a framework within which measures can be evaluated systematically as they are carried out.

*Adaptive Management* at 442 (emphasis added). "The central point [of this approach] is learning." Kai N. Lee, *Rebuilding Confidence: Salmon, Science, and Law in the Columbia Basin*, 21 *Envtl.L.* 745, 781 (1991) [hereinafter *Rebuilding Confidence*].

[19] See Michael C. Blumm, *Implementing the Parity Promise: An Evaluation of the Columbia Basin Fish and Wildlife Program*, 14 *Envtl.L.* 277, 291-92 n. 58 (1984) [hereinafter *Parity III*] (BPA's allegation that funding the goals study proposed by the fishery agencies and tribes was "unacceptable to BPA management" and "not consistent with ratepayer interests" because it would amount to "funding advocacy" and be inconsistent with "sound business principles").

[20] This goal was based on the Council's 1986 losses study, which estimated that the hydropower system was responsible for five to ten million fish lost each year. Although the Council fixed such losses at eight million fish annually, it adopted the lesser goal of five million on the grounds that socioeconomic and biological conditions reduced the possibility of restoring runs to greater levels.

[21] The Council recognized the importance of preserving the genetic diversity of individual fish runs. For a discussion of the importance of genetic diversity in the Basin's salmon and steelhead, see Michael L. Goodman, Comment, *Preserving the Genetic Diversity of Salmonid Stocks: A Call for Federal Regulation of Hatchery Programs*, 20 *Envtl.L.* 111 (1990).

[22] For the ESA decisions by NMFS, see 56 Fed. Reg. 58619 (1991) (Endangered Status for Snake River Sockeye); 57 Fed.Reg. 14653 (1992) (Threatened Status for Snake River Spring/Summer and Fall Chinook); 56 Fed.Reg. 29553 (1991) (lower Columbia River Coho).

[23] The Columbia Basin Fish and Wildlife Authority ("CBFWA"), a fisheries coalition, proposed the "optimal" flows first recommended in 1981 by agencies and tribes (140 kcfs in the Lower Snake River and 300 kcfs in the Lower Columbia River), the major difference being the "sliding scale" proposed in 1981 versus the fixed flows proposed in 1991. See CBFWA, the Biological and Technical Justification for the Flow Proposal of the Columbia Basin Fish and Wildlife Authority (Feb. 1991). [Petitioners' Joint ER at 140-203.] The Council and others took the position that such flows were virtually impossible because of the lack of water in the Water Budget to perform the augmentation. In response, the State of Idaho and other entities developed a strategy called mainstem reservoir drawdown as a means to meet the CBFWA optimal flows, often referred to as the "Idaho Drawdown Plan."

Drawdowns are releases of water that reduce the cross-section of rivers by lowering water levels in mainstem reservoirs. The result is increased velocity of the streamflow with less water than flow augmentation would require. Most salmon advocates supported the combination of the CBFWA flows and the Idaho drawdown plan, even though the resulting flows still fell short of those with which the salmon evolved. Though some advocates supported the "minimum" flows and sliding scale recommended in 1981 (220 kcfs in the lower Columbia River), nearly all agreed that substantially greater flows than 85 kcfs in the lower Snake River and 200 kcfs in the lower Columbia River were needed.

[24] Particle travel time was recommended as a method to measure smolt travel time and survival because it lends itself well to models and monitoring. This method, however, is based upon a causal relationship between smolt travel time and survival, which is a hotly contested issue in this case; the Council and DSIs rely on studies significantly downplaying the importance of flows, finding faster flows as merely an unremarkable factor in travel time compared to fish size, the level of smolt development, food availability, competition, and predation pressure. Interestingly, the Council has strongly resisted calling for significantly higher flows for a designated period to study their effects. At any rate, the point of particle travel time is to measure the *velocity* of the river, as opposed to the *volume* of water. Velocity can be achieved either by increasing flow rates (augmentation), or reducing the cross-section of rivers by lowering water levels in mainstem reservoirs (mainstem reservoir drawdown). It is also worth pointing out that Idaho (Idaho Code § 42-1501), Oregon (Or.Rev. Stat. §§ 537.332, 537.336), and Washington (Wash.Rev.Code Ann. § 90.03.247) recognize a relationship between smolt travel time and survival in state statutes protecting minimum instream flows.

[25] NRIC and the Yakima Nation support the CBFWA optimal flows in conjunction with the Idaho Drawdown Plan. The Yakima Nation stresses that the Council failed to provide adequate flows to protect Snake River *fall* chinook, as compared to *spring* and *summer* runs; in other words, the Program overemphasizes flows on the lower Snake River from April 16 through June 15.

NRIC and the Yakima Nation also unite in asserting that the flow measure period must not end until much later in the summer if it is to effectively protect spring, summer, and fall runs. The timing of the measures is a critical issue because high power needs in the winter pressure the hydropower system to store water in its reservoirs during spring and summer. Thus, the greatest need for flows by salmon and energy occur at virtually the same time each year.

[26] As § 839b(h)(7) provides, the Council may reject a recommendation only if it is (1) inconsistent with the purposes of the Act, (2) inconsistent with standards established for the Program, or (3) less effective than an adopted recommendation in achieving protection, mitigation, and enhancement. 16 U.S.C. § 839b(h)(7); H.R.Rep. No. 96-976, pt. II, 96th Cong., 2d Sess., at 44. "The quantity or quality of the data should not serve as a basis for turning down any recommendation." H.R.Rep. No. 96-976, pt. I, 96th Cong., 2d Sess., at 56.

[27] That Congress meant precisely what it stated in § 839(b)(h)(7) is highlighted by the statements of Representative Al Swift: "the simplest point to make for the record is that where the bill uses the word 'shall' it means 'shall', not 'may'". 126 Cong.Rec. E5091-92 (1980).

[28] The parties focus on Volume II of the Strategy for Salmon, which contains the Program's measures. Volume I is an overview of the Program. Volume II discusses in greater detail the conclusions and recommendations of Volume I.

[29] We note that none of the documents referred to by the Council explain a *statutory* basis for the Council's rejection of recommendations of fishery managers.

[30] The Yakima Nation and Council engage in a protracted argument over whether § 706(2)(A) or (2)(D) of the APA applies here as the standard of review. We need not address their argument, however, because the Council's failure to explain the basis for its decision, as required by § 839b(h)(7), was not in accordance with the law under either standard.

[31] In support of its contention that the criteria are not substantive, the Council cites a remark by Representative Dingell:

These criteria are intended to provide guidance to the [C]ouncil and are not intended to provide a legal basis for challenging the program of the [C]ouncil. For example, it is clear that the criterion that the measures be based on, and supported by, the best available scientific knowledge requires a certain amount of judgment by the [C]ouncil with the help of the fish and wildlife agencies in determining whether or not the measures meet this kind of test.

126 Cong.Rec. H10683 (1980). Representative Dingell's remark that the Council has "a certain amount of judgment" in making determinations under § 839b(h)(6) does not detract from the high degree of reliance required on the fishery managers' recommendations, nor from authority construing these criteria as substantive. The Council's construction of § 839b(h)(6) would instill tremendous discretion in the Council, effectively circumventing congressional intent that fish and wildlife be assured balanced consideration with other interests, and that the Council not become a "superfish" entity.

Moreover, with respect to Representative Dingell's suggestion that determinations under § 839b(h)(6) were not intended to provide a legal basis for a challenge, the Act specifically provides otherwise. Section 839f(e)(1)(A) states in pertinent part:

For purposes of sections 701 and 706 of Title 5, the following actions shall be final actions *subject to judicial review* —

(A) adoption of the plan or amendments thereto by the Council under section 839b of this title, adoption of the program by the Council, *and any determination by the Council under section 839b(h) of this title.*

(Emphasis added).

[32] That the Council must adopt sound biological objectives is certainly implied if not expressly required in § 839b(h)(6)(C).

[33] Particularly noteworthy is a report to NMFS by Hydrosphere Resource Consultants in which there is support for the fishery managers' contention that the CBFWA flows in combination with the Idaho Drawdown Plan are attainable without material harm to the hydropower system. Hydrosphere Resource Consultants, *Water Supplies to Promote Juvenile Anadromous Fish Migration in the Snake River*, January 1991 (NMFS Contract No. 50ABNF900105).

[34] For example, the Water Budget has often gone unimplemented because of the priority power managers have given power sales and the Council's reticence to assert itself. See *Parity V*, 21 Env'tl.L. at 688-90; *Parity IV*, 16 Env'tl.L. at 494-501. Also, the record indicates that several deadlines since late 1992 have passed with little or no action.

[35] See *American Textile Mfrs. Inst. v. Donovan*, 452 U.S. 490, 508-12, 101 S.Ct. 2478, 2490-92, 69 L.Ed.2d 185 (1980) (a cost-benefit analysis requirement will not be read into a statute; Congress makes specific language when it wants an agency to engage in cost-benefit decision-making).

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