



Anadromous Fish Law Memo



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AN EVALUATION OF THE COLUMBIA BASIN FISH AND WILDLIFE PROGRAM

Over the past 50 years, the anadromous fish runs of the Upper Columbia Basin have taken a severe beating as a result of the development and operation of the Federal Columbia River Power System, an interconnected system of 28 dams that annually produce over 13,000 megawatts of low cost hydropower. These dams, along with other nonfederal dams, have reduced accessible spawning habitat by more than 50%, materially contributing to a two-thirds decline in the Columbia's commercial salmon catch and extinguishing some fish runs altogether.

In passing the Pacific Northwest Electric Power Planning and Conservation Act in 1980, Congress made it clear that these losses were no longer tolerable. The Act created the Pacific

Northwest Electric Power and Conservation Planning Council and directed the Council to develop a systemwide program to preserve and restore the Columbia Basin's fish and wildlife. On November 15, 1982, after a year of consideration, the Council adopted its Columbia Basin Fish and Wildlife Program, containing over 200 substantive measures. This Memo evaluates the Program, assesses its prospects for restoring the once bountiful salmon and steelhead runs of the Upper Columbia Basin, and makes an effort to describe significant implementation activities that have taken place during recent months.

Due to the complex nature of the Program, this Memo is an unusually lengthy one. As a result, no "Fish Law Briefs" are included.

INSIDE: Background, a Brief Summary, and a Detailed Analysis of the 1982 Columbia Basin Fish and Wildlife Program, Comments and criticism of this Memo are welcomed. See page 35.



I. BACKGROUND

A. The Power and Conservation Act and the Parity Promise

The 1980 Pacific Northwest Electric Power Planning and Conservation Act¹ signaled the advent of a new era in efforts to preserve and restore the region's anadromous runs. The Act contains a number of innovative provisions which collectively place it in the vanguard of national wildlife legislation.

Perhaps the most innovative aspect of the Act is its call for a systemwide approach not simply to protect, but also to restore the Columbia Basin's fish and wildlife resources.² And, as has been pointed out before, "[n]othing in the language of the statute suggests that Congress intended anything less than complete compensation for fish and wildlife losses incurred due to hydroelectric project development and operation."³ This remedial, systemwide program stands in sharp contrast to past mitigation efforts at water resource projects, which might be appropriately characterized as "too little and too late."⁴ Moreover, the Act's recognition

1. Pub. L. No. 96-501, 16 U.S.C. §§ 839-839h.

2. The Fish and Wildlife Program authorized by § 4(h) of the Act is limited to the Columbia River and its tributaries by § 4(h)(2). However, fish and wildlife resources outside the Columbia Basin but within the Northwest (e.g., in the Puget Sound area and Oregon coastal streams) were not entirely overlooked by the Act. Section 4(e)(2) requires non-Columbia Basin hydroelectric developments in the Northwest to protect, mitigate, and enhance fish and wildlife resources affected by their development and operation. See notes 230 below and accompanying text.

3. Blum, 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 *Env't. L.* 103, 109 (1982).

4. One commentator summarized the inadequacy of mitigation efforts under the Fish and Wildlife Coordination Act:

But the Coordination Act is not working. Information to identify and defend mitigation measures is not acquired prior to project implementation, much less prior to authorization. Specific mitigation measures are not recommended to construction agencies; or, if recommended, are flatly rejected by construction agencies as unjustifiable. Mitigation methodologies are not uniform--one agency is replacing habitat, another is replacing recreational opportunities. Mitigation plans are not submitted to Congress for funding along with project construction. In euphemistic terms, the fish and wildlife column of the federal water resources (con't.)

that changes in hydroelectric operational practices must be a fundamental element of restoration efforts is also a considerable break from characteristic mitigation efforts which, in the case of anadromous fish, have emphasized funding hatcheries.⁵

But the Act's promise of restoration would have been a hollow one had it not fundamentally altered the concept of mitigation itself. Traditional efforts aimed at supplying "in place, in kind" replacement resources are simply not practicable in the Columbia Basin--where over 1,000 miles of anadromous fish habitat were lost through construction of the Grand Coulee Dam alone. In recognition of the fact that a half-century of dam building has forever altered the Basin's accessible fish and wildlife habitat, the Act authorizes offsite enhancement measures as compensation for irreversible losses,⁶ like the Upper Columbia and Middle Snake reaches of the Basin. Consequently, enhancement efforts can be focused on drainages that possess the greatest rehabilitative prospects, such as in the Yakima Basin and on the Umatilla Indian Reservation.⁷ In this manner, systemwide compensation for past and future losses can be provided to the extent feasible.⁸

In addition to its compensatory goals and its offsite enhancement means, a third innovation of the Power and Conservation Act concerns its directive that the cost of implementing fish and wildlife measures be borne by the region's ratepayers, through increases in the Bonneville Power Administration's wholesale power rates.⁹

development balance sheet--which the Coordination Act was supposed to enhance--shows a minus figure.

Parenteau, Unfulfilled Mitigation Requirements of the Fish and Wildlife Coordination Act, 42 *N. Am. Wildlife Conf. Proceedings* 179 (1977). On the effects of the Coordination Act in the Columbia Basin, see Anadromous Fish Law Memo #6 (March 1980). There is little question that the fish and wildlife provisions of the Power and Conservation Act were designed to overcome the Coordination Act's shortcomings, see Fulfilling Parity, above note 3, at 108-112.

5. Changes in operations are a prerequisite to achieving the congressional directives of (1) providing for "improved survival of [anadromous] fish at hydroelectric facilities...and (2) providing "flows of sufficient quality and quantity to improve production, migration, and survival of such fish as necessary to meet sound biological objectives." Power and Conservation Act § 4(h)(6)(E).

6. Id. §§ 4(h)(5), 4(h)(8)(A).

7. See § III.E below.

8. For an elaboration of the feasibility standard, see notes 52 and 61 and accompanying text below; and Fulfilling Parity, above note 3, at 122-24, 146-52, 157-58.

9. Power and Conservation Act §§ 2(4) (BPA customers and consumers to pay all costs of producing, transmitting, and conserving electric power); 4(h)(8)(B) (such costs include fish and wildlife losses attributable to the development (con't.))

Access to BPA revenues avoids the delays and uncertainties involved in the congressional authorization and appropriation process. Moreover, billing regional ratepayers for fish and wildlife losses attributable to the development and operation of the Basin's hydroelectric dams is a more equitable financing arrangement, since presumably these ratepayers have derived greater benefits from the dams than the national taxpayers.¹⁰

A fourth innovative aspect of the Act concerns the institutional arrangements it establishes to carry out its substantive mandates. Of course, the most notable new institutional entity is the Regional Council, a body composed of two gubernatorial appointees from each of the four Pacific Northwest states. Although created by federal law, the Council is not a federal agency.¹¹ It was, nevertheless, designed by Congress to have a substantial influence over the actions of federal water resource agencies.¹² It was also directed by Congress to initiate an era of widespread public involvement in hydroelectric planning and fish and wildlife measures,¹³ a role it has fulfilled to a surprising extent.¹⁴ Another, perhaps overlooked innovative institutional arrangement is the Act's elevation of the Columbia Basin Indian tribes to a co-equal basis with the region's state fish and wildlife agencies,¹⁵ a status the tribes have long felt was necessary to protect their treaty fishing and hunting rights.¹⁶

and operation of the hydroelectric system); 4(h)(10)(A) (BPA revenues to finance fish and wildlife measures); and 7(a)(2)(B) (BPA rates to reflect total system costs).

10. Ratepayer financing reflects an enterprise theory of liability, see Blumm, *Risk Management and Northwest Electric Power Planning: Some Lessons from the Rearview Mirror*, 13 *Env't. L.* 739, 760 (forthcoming, 1983). However, some fish and wildlife measures will continue to be financed from general taxpayer revenues, see notes 172-77 and accompanying text and § IV, *beTow*.

11. Power and Conservation Act § 4(a)(3).

12. See Fulfilling Parity, above note 3, at 152-56.

13. Power and Conservation Act §§ 2(3) (public participation is one of the six goals of the Act); 4(g)(1) (maintenance of comprehensive public involvement programs); 4(d)(1) (public hearings on Conservation and Electric Power Plan); 4(h)(4) (public involvement in Fish and Wildlife Program).

14. See Northwest Power Planning Council, Columbia River Basin Fish and Wildlife Program (Nov. 1982), § 102, at 1-1 to 1-2; and *id.* Northwest Conservation and Electric Power Plan (April, 1983), App. A § III, at A-5 to A-9 (describing public involvement in the formulation of the Program and the Plan).

15. Power and Conservation Act §§ 4(h)(1)(A), 4(h)(2); 4(h)(3), 4(h)(5), 4(h)(7) (tribal role in developing, reviewing, implementing, and revising the Program).

16. See generally Anadromous Fish Law Memo #21 (March, 1983) and #12 (April 1981). Unfor-(con't.)

A final innovation of note is the Act's shifting of the burden of proof in the design and timing of fish and wildlife measures. One of the chief causes for the failure of earlier mitigation efforts was the success that project operators and regulators had in assigning the burden of documenting the extent of resource losses to fish and wildlife interests before mitigation effort would be undertaken.¹⁷ However, the 1980 Act shifted the burden of proof by authorizing the fish and wildlife agencies and Indian tribes to submit recommendations that formed the basis of the Fish and Wildlife Program.¹⁸ These recommendations could be rejected by the Council (notably, not the water management agencies) only on findings of inconsistency with specific statutory standards.¹⁹ Moreover, the recommendations had to be supported only with "best available scientific knowledge," not absolute certainty, and were authorized to favor biological outcomes over economic ones.²⁰ Thus, while the Act did not give final authority to develop the Program to the fish and wildlife agencies and Indian tribes, the Program approval standards and process it established were clearly aimed at providing these disenfranchised entities with a greater decision-making role and arguably designed to resolve uncertainties in their favor.²¹ To a considerable (although not complete) extent, the Fish and Wildlife Program approved by the Council reflects the innovations of the Act. In many respects, it represents an unprecedented restoration attempt.

Unfortunately, the cooperative spirit that characterized efforts by the region's federal (Marine Fisheries Service and U.S. Fish and Wildlife Service) and state fish and wildlife agencies (Idaho Department of Fish and Game; Montana Department of Fish, Wildlife, and Parks; Oregon Department of Fish and Wildlife; and Washington Departments of Fisheries and Game) and the Columbia Basin Indian tribes (especially the Nez Perce, Umatilla, Warm Springs, and Yakima tribes) has dissipated. For example, the state agencies recently established the Columbia Basin Fish and Wildlife Council as a successor to the Columbia River Fisheries Council. The new Council has no tribal representation because its Chairman decided it should be governed by majority, not unanimous vote (which governed its predecessor). Majority vote would enable the states to override the tribes, in contrast to the co-equal status implicit in the Power and Conservation Act and numerous judicial decisions.

17. See Fulfilling Parity, above note 3, at 110-11.

18. See provisions cited in note 15 above.

19. Power and Conservation Act § 4(h)(7).

20. *Id.* § 4(h)(6)(B) (discussed in Fulfilling Parity, above note 3, at 124-131); 4(h)(6)(C) (discussed in Fulfilling Parity, at 131-39).

21. See Fulfilling Parity, above note 3, at 123-24, 138-39 (burden on power interests), 130-31 (error on side of overprotection), 134-35 (use of predictive judgments).

B. Program Approval Process

The process that produced the Columbia Basin Fish and Wildlife program began in April, 1981, when the Regional Council was established. That June the Council officially requested recommendations for program measures from the region's fisheries and power interests and the public. By November 15, 1981, over 2,200 pages of recommendations, comments, and supporting materials were submitted to the Council.²²

The most extensive set of recommendations were submitted by a coalition of federal and state fishery agencies and Columbia River Indian tribes. This fishery coalition proposed a goal of restoring salmon and steelhead runs to their highest pre-1953 levels before completion of the McNary Dam helped send the Upper Basin runs on a precipitous downward slide.²³ To achieve this goal, the coalition posited six objectives: (1) improving downstream juvenile migrant survival; (2) improving upstream adult migrant survival; (3) improving natural production through better spawning habitat; (4) improving and increasing hatchery production; (5) changing hydropower operations to elevate fishery protection to co-equal status; and (6) formally involving fishery experts in planning and operating the hydroelectric system.²⁴

After receiving the recommendations, the Council publicly distributed them and conducted public hearings throughout the region during March, 1982. Following the close of the public comment period on April 1, 1982, the Council embarked upon a series of frequent consultations with fishery and power interests and others with particular interest and expertise, while formulating a draft Program.

Drafting the Program proved more arduous than the Council anticipated, however. Originally scheduled for public distribution in July, 1982, the Council delayed approval of the draft Program until September 16, in order to allow additional time for consultation with fish and wildlife and power interests. As a result, public release of the draft was delayed two months, until late September. With only about six weeks between distribution of the draft and the November 15 deadline for final Program approval, the Council faced severe time pressures. Although given less than one month to respond to a com-

plex and detailed proposal, public interest in the Program was intense. By the time the public comment period had closed in late October, the Council had received over 1400 pages of public hearing testimony and over 5000 of written comments from more than 600 individuals and entities.²⁵ With less than three weeks to revise the Program, it is perhaps not surprising that the Council had difficulty responding to this welter of public concern.²⁶ A more serious flaw was the Council's inability or unwillingness to explain how its Program satisfied the approval standards specified in the Act.²⁷ Such shortcomings in the existing Program should prompt the public to focus attention on the process for Program amendments specified by the Council.

There is, however, no question that promulgation of the Council's Program represents the most significant step to achieve a balance between fish and wildlife protection and hydro-power generation since development of the power system began over 50 years ago. The Program's most significant provisions include: the creation of a Water Budget designed to provide spring flows necessary to transport juvenile fish to the ocean; detailed schedules for installation of mechanical bypass facilities at a number of mainstem dams; provisions for interim spills of water to facilitate dam passage pending installation of bypass systems; and a systemwide approach to enhancement that emphasizes preservation of wild stocks and restoration of lost or damaged habitat. Other important include provisions aimed at ensuring that federal water managers implement the Program, and a set of conditions to ensure that new hydroelectric developments are compatible with fish and wildlife protection and restoration efforts.

25. For a more detailed overview of the program development process, see Northwest Power Planning Council, Columbia River Basin Fish and Wildlife Program § 102 at 1-1 to 1-2 (Nov. 15, 1982) [hereinafter cited as Fish and Wildlife Program].

26. The Council decided not to extend the November 15 deadline because such an extension could have jeopardized its ability to meet its regional April, 1983 deadline for approval of its Conservation and Electric Power Plan. Also, since the Council's Program includes numerous deadlines for actions on the part of other agencies, the Council apparently felt it important to set a good example. While meeting statutory deadlines is, of course, an important goal for an administrative agency, (cf., the Environmental Protection Agency's inability to meet numerous congressionally and judicially established deadlines under the hazardous waste title of the Resource Conservation and Recovery Act), the primary administrative goal must be to fulfill the statutory standards.

27. This publication identified 10 statutory standards in §§ 4(h)(5) and (6) of the Act; see Anadromous Fish Law Memo #17 (April, 1982) at 6-7; see also Fulfilling Parity, above note 3, at 115-17.

22. Northwest Power Planning Council, Fish and Wildlife Program Recommendations (Dec. 1981), summarized in Anadromous Fish Law Memo #16 (Dec. 1981).

23. See Anadromous Fish Law Memo #16 (Dec. 1981) at 4-5. While the goals for spring, summer and fall chinook, sockeye, and summer steelhead were based on pre-McNary run sizes, the goal for coho was based on 1967 run size, to account for hatchery production. Id. at 5, n.30.

24. See id., at 6-11; see also Northwest Power Planning Council, 1 Northwest Energy News no. 3 (May/June, 1982) at 13-14 (also depicting run size declines).

However, many potentially significant measures were deferred pending the outcome of numerous studies ordered by the Council, notably a study to assist in establishing area-by-area, run-by-run anadromous fish program goals, and a study of means to improve fish flows throughout the Basin through modifying flood control requirements, using uncontracted storage, and developing new storage sites. Other studies that will have an important effect on the integration of fish and wildlife objectives with the hydroelectric system are (1) a site-ranking study designed to identify both sites suitable for hydroelectric development under the Council's "resource options" program and sites which would have adverse fish and wildlife effects; (2) a study aimed at producing a methodology to assess the cumulative impacts of multiple hydroelectric developments in particular drainages; and (3) a study of critical habitat and important stream reaches designed to protect designated areas from future hydroelectric development.

The principal deficiencies in the Program appear to be the amount of water in the Water Budget on the Snake River and a "short haul" transportation program on the mid-Columbia. Both measures were opposed by the fishery agencies and tribes, and in neither case did the Council explain how the measures satisfied the statutorily established Program approval standards. Moreover, it is likely in both cases that the Council misinterpreted the Act's allocation of the burden of proof.²⁸

Despite these infirmities, the Program does more than simply promise future studies of the

28. For example, the Council failed to support its conclusion that it was infeasible to meet the recommended flows on the Snake (notes 82-84 and accompanying text below). Nor did it explain how the "short haul" transportation study was based on "best available scientific knowledge" and would be "equally effective" as a mechanical bypass system (note 103 and accompanying text below). On the other hand, the Council was perhaps more justified in not adopting the Water Budget suggested by the Columbia River Inter-Tribal Fish Commission (notes 86-87 and accompanying text below), given the fact that this proposal was submitted long after the deadline for Program recommendations, and thus did not warrant the deference due such recommendations (see Promising Parity, note 3 above, at 114-15). Similarly, the Council's divergence from the hatchery-oriented approach to propagation efforts espoused by the fishery agencies (notes 137-40 and accompanying text below) may be justified, since the Council relied on the wild stock preference espoused by the Columbia Basin Indian tribes. With a disagreement among these expert entities, the Council was free to resolve the issue in favor of the tribes without violating the Act's spirit of deference to the agencies and tribes and the admonition in the Act's legislative history that the Council should not establish itself as a "super" fish and wildlife agency (see Promising Parity, note 3 above, at 126-31).

fishery problem: it includes important affirmative measures that will lead to changes in hydroelectric operations in both the short and long-term.²⁹ For this reason, implementation of the Columbia Basin Fish and Wildlife Program will be welcomed by all fisheries advocates.

The following section contains a brief summary of the Program. Readers interested in more detail and in recent implementation developments will find them in section III.

II. PROGRAM SUMMARY

The Council's Program did not adopt the fishery coalition's pre-McNary goal. Instead, the Program establishes a process for establishing area-by-area, stock-by-stock goals some time in 1984.³⁰ However, the Program does include provisions that address nearly all of the objectives recommended by the fishery coalition.

Improved downstream juvenile migration is the aim of the Council's innovative Water Budget, designed to supply increased spring (but not summer or fall) fish flows.³¹ In addition, better downstream migrant passage around dams is promised by provisions calling for interim spills and installation of bypass systems.³² The Program also initiates a series of studies aimed at assisting upstream adult migrants, including establishing flow and spill criteria and fish ladder operation and maintenance guidelines.³³

To begin restoration of the upriver stocks, the Program includes detailed measures for wild, natural, and hatchery propagation, establishing as a primary objective the restoration of viable wild upriver stocks and maintenance of genetic diversity of stocks.³⁴ Guidelines for improved

29. Since the Program was not challenged in the Ninth Circuit Court of Appeals within 60 days of its promulgation, its initial implementation was not delayed by dilatory litigation. See 16 U.S.C. § 839f(e)(5). Reportedly, Chelan County PUD seriously considered filing suit, presumably over the interim spill provisions (see § III.C, below), but decided not to do so. See 2 Northwest Conservation Act Report no. 3 (Feb. 4, 1983) at 4. One reason for the absence of suits may have to do with the fact that virtually every party interested in the Fish and Wildlife Program was also an interested party in the Council's Conservation and Electric Power Plan, scheduled for approval 6 months later. These parties may have feared that a suit on the Fish and Wildlife Program would affect the Council's reaction to positions they advocated in the power plan.

30. Fish and Wildlife Program § 200.

31. Id. § 300.

32. Id. § 400. Bypass facilities aim to keep juveniles from passing through the dams' power turbines; spills of water are an interim measure to pass migrants around dams until bypass systems are installed.

33. Id. §§ 600, 1304(d).

34. Id. § 700.

hatchery propagation are established, designed to integrate hatchery and natural production efforts. To help ensure that the fruits of these investments produce increased upriver fish runs, the Program places the Council in a consultation and coordination role with agencies responsible for regulating ocean and river harvests. The Council also promises to withhold funding for two new fish propagation facilities until it satisfies itself that "adequate" harvest management controls are instituted.³⁵ One of these facilities is a hatchery in the Yakima River Basin, an area singled out for special enhancement efforts because of its potential for supporting increased anadromous fish runs.³⁶

The Council's Program is not limited to anadromous fish measures, however. It also establishes resident fish and wildlife measures. Included among the resident fish measures are minimum flow studies below a number of dams and a 5-year program to revise operating procedures at the Hungry Horse and Libby Dams in Montana.³⁷ Wildlife initiatives include (1) establishment of a wildlife management coordinator; (2) development of a wildlife mitigation status report; (3) negotiation of memoranda of agreement between BPA and each of the four Northwest states regarding transmission line corridor mitigation; and (4) development of criteria for acquisition of wildlife habitat.³⁸

To implement its Program, the Council established a Fish and Wildlife Committee, comprised of four Council members, to develop research objectives, monitor the progress of the Program, and encourage coordinated implementation among fish and wildlife and power interests.³⁹ In order to ensure that it produces changes in hydroelectric system operations, the Program includes a number of important measures designed to change decisionmaking by federal water managers.⁴⁰ Moreover, to prevent future hydroelectric development from further damaging fish and wildlife habitat, the Program sets a number of conditions for new project development and calls for studies aimed at producing criteria for assessing cumulative impacts of developments and for designating particular streams and wildlife habitat for protection from future projects.⁴¹

Finally, the Program establishes a process for considering amendments to it.⁴² Given the number of actions which are dependent upon results of studies called for by the Program and

the number of issues which the Program's measures leave unresolved, the amendment process will play an important role in the months and years ahead.

III. DETAILED ANALYSIS OF PROGRAM MEASURES

To properly evaluate the Fish and Wildlife Program, it is necessary to understand the role assigned to the Council by Congress. Unlike the approval of the Council's Conservation and Electric Power Plan, Congress supplied a number of specific directives designed to govern the Council's discretion in designing the Fish and Wildlife Program.⁴³ When administrators are given such detailed directives, the only way the public can be assured that their actions in fact satisfy the statutory directives is if the administrators explain in writing how and why they have fulfilled the statute's mandates. Some administrators resist this chore, considering it to be unnecessary red tape. However, such explanations are fundamental to reasoned decisionmaking. Without written rationales, those outside the administrative decisionmaking arena--including the public, other agencies, and the courts--must guess as to how and why the administrator's decision complies with the legislature's directives. Moreover, the exercise of reconciling administrative decisionmaking with statutory mandates serves very real substantive purposes, since careful consideration of the statute often forecloses certain administrative options and encourages others.

There is no question that the Fish and Wildlife Program "has no precedent in the nation or in the region" and the "Council's intentions... go beyond the status quo towards equity and change the way decisions have been made in the past..."⁴⁴ Nevertheless, the Program frequently fails to explain how its measures fulfill the statutory standards.⁴⁵ Given the time pressures

43. Compare standards cited in note 27 above with § 4(e) (establishing "priorities," "considerations," "elements" for the Conservation and Electric Power Plan, but no standards that the Plan must meet). While certainly the Council did not have unbounded discretion in the development of the Power Plan, the greater specificity of congressional directives concerning the Fish and Wildlife Program indicates a narrower range of Council discretion.

44. Comments on the Draft Fish and Wildlife Program by the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, the Washington Departments of Fisheries and Game, the Oregon Department of Fish and Wildlife, and the Idaho Department of Fish and Game at 1 (Oct. 1982) [hereinafter cited as Fishery Agency comments].

45. See, e.g., Comments on the Draft Fish and Wildlife Program by the National Wildlife Federation, the Idaho Wildlife Federation, and Oregon Wildlife Federation at 7 (Oct. 22, 1982) [hereinafter cited as Wildlife Federation comments].

35. Id. § 500.

36. Id. § 900.

37. Id. § 800.

38. Id. § 1000.

39. Id. § 1100.

40. Id. § 1300.

41. Id. § 1200. In addition, the Council's recently approved Conservation and Electric Power Plan authorizes a region-wide "site ranking" study that will classify potential hydroelectric sites as acceptable, potentially acceptable, or unacceptable in terms of fish and wildlife and other considerations. See § III.J, below.

42. Id. § 1400.

placed on the Council by the statutory deadlines, and with limited staff, it is perhaps not surprising that the Council was unable to sufficiently explain itself. However, these pressures will not be as evident when the Council considers amendments to the Program in the fall of 1983. Since statutory standards remain in effect, the public, the courts, and the Congress should insist that the Council explain itself in sufficient detail to demonstrate that the statutory directives have been satisfied.

A. The Program Goals

The fishery coalition's recommendations included run size goals for six major stocks of Columbia Basin anadromous fish. These goals were generally based on the highest run sizes which could have been maintained prior to construction of the McNary Dam in 1953.⁴⁶ The Pacific Northwest Utilities Conference Committee (PNUCC) objected to these goals, and suggested an alternative based on average run sizes during the pre-McNary era.⁴⁷ The Council rejected both suggestions because it determined that neither satisfied the statutory directives of being (1) based on best available scientific knowledge and (2) limited to compensation for losses due to the development and operation of the hydroelectric system.⁴⁸

The Council criticized the fishery coalition's pre-McNary Dam goal because

...the Columbia is not a pre-McNary River, and the Act did not authorize or direct the Council to return the River to its previous condition. Nor did the Act direct the Council to restrict its efforts to hydroelectric impacts since

The Council cannot merely announce a recommendation's inconsistency with the statute or baldly declare an alternative to be more effective. It must explain the basis--founded, if appropriate on best available scientific knowledge, for its decision.

46. The recommended run size goals compared to current 5-year average runs (in parenthesis) were: 300,000 spring chinook (101,000); 200,000 summer chinook (41,000); 400,000 fall chinook (294,000); 200,000 sockeye (55,000); 164,000 coho (45,600); 400 summer steelhead (124,000). The coho goal was based on 1967 runs to account for hatchery production. See Anadromous Fish Law Memo #16 (Dec. 1981) at 4-5.

47. See Fish and Wildlife Program § 201 at 2-2. However, BPA believed that the fishery coalition's recommended goal was "reasonable and generally supportable." BPA Comments on the Recommendations for the Fish and Wildlife Program (April 1, 1982) at 6.

48. Power and Conservation Act §§ 4(h)(6)(B) (best available scientific knowledge); 4(h)(2)(A), 4(h)(8)(A), § 4(h)(8)(B), 4(h)(10)(A) (restore fish and wildlife to the extent affected by the development and operation of the hydroelectric system).

McNary Dam. The law directs the Council to address losses caused 'by the development and operation of any hydroelectric project on the Columbia River and its tributaries.'⁴⁹

From these truisms the Council proceeded to reject the pre-McNary goal because it would assign the hydroelectric system full responsibility for losses since 1953 and none for pre-1953 losses. The Council concluded there was no scientific evidence to support such an allocation of responsibility.⁵⁰

The Council apparently felt that the pre-McNary goal ignored the realities of restoring the fish runs under the conditions of the 1980s, noting that restoration efforts would necessarily be limited by the production potential of the Columbia River and its tributaries.⁵¹ However, the pre-McNary goal did not seek a return to the pre-dam era: it was simply an estimate of the fish losses attributable to the hydroelectric system. As this publication has pointed out more than once, the Power and Conservation Act requires the Council to do only what is economically and technically feasible to restore the fish runs.⁵² Coupled with the Act's directives regarding a system-wide approach and least-cost approaches to sound biological objectives, and its recognition of the necessity of offsite mitigation measures,⁵³ adopting the pre-McNary goal would not have foreclosed concentrating on restoration measures where production potential was greatest.⁵⁴

To replace the rejected goal, the Council directed BPA to fund a fishery agency and tribal study designed to provide data necessary to establish area-by-area and stock-by-stock goals.⁵⁵ Following submission of this study in

49. Fish and Wildlife Program § 201 at 2-2; and App. 1-15.

50. Id. Among other factors listed by the Council as contributing to the decline of the fish runs were irrigation, forestry, overfishing, and cycles of nature.

51. The Council stated that it was critical to distinguish losses (i.e., what the Basin was capable of producing before hydroelectric development) from goals (i.e., mitigation necessary to compensate for losses, within the constraints imposed by the existing system).

52. See Anadromous Fish Law Memo #17 (April 1982) at 1-3, 11, 18, 20-21; #19 (Sept. 1982), at 7. See generally Fulfilling Parity, above note 3.

53. §§ 4(h)(1)(A) (system-wide approach); § 4(h)(6)(C) (least-cost approaches to sound biological objectives); 4(h)(5), 4(h)(8)(A) (offsite measures).

54. However, restoration measures probably could not disproportionately favor the non-Indian fishery and be consistent with the Act's preservation of fishing treaty rights (§§ 4(h)(D), 10(c)). See generally Anadromous Fish Law Memo #12 (April, 1981); #21 (March, 1983).

55. Fish and Wildlife Program, §§ 200(1)-(3), at 2-3.

April, 1984, the Council promises "appropriate action to establish goals for the program."⁵⁶ Until then, the Council promises to "take special care not to endorse any projects that would overcompensate for fish and wildlife losses caused by the Columbia River hydroelectric system,"⁵⁷ an occurrence, it goes without saying, that would be both physically and fiscally impossible in that short period of time.

The public should take an active interest in the setting of these goals, for they represent the larger end which the more specific Program measures are designed to accomplish. Unfortunately, although the fishery agencies and tribes are directed to consult with federal water managers, utilities, and the Salmon and Steelhead Advisory Commission⁵⁸ in designing and conducting the study, there are no provisions for public review and comment.⁵⁹ At the very least, the public will want to carefully scrutinize proposed Program amendments emanating from such studies.⁶⁰ While the goals for particular stocks and particular areas are bounded by the feasibility standard,⁶¹ it is important to recognize that the program as a whole must compensate for the losses sustained by the fishery as a result of the development and operation of the hydroelectric system, at least to the extent it is feasible to do so.

B. The Water Budget

The most controversial aspect of the Fish and Wildlife Program was the Water Budget, essentially a block of water to be used to assist juvenile salmonids on their downstream migration to the ocean in the spring.⁶² The loss of the spring freshet is one of the enduring legacies of the mature Columbia Basin hydroelectric system,⁶³ and one of the chief recommendations of the fishery coalition was restoration of a portion of the lost flows.⁶⁴ Because

increased fish flows reduce the capability of the power system to assuredly produce hydropower under low flow conditions, power interests like BPA tried to convince the Council to adopt flows less than those recommended by the fishery agencies and to seek alternatives to fish flows.⁶⁵

The Council determined that increased spring flows were necessary to improve downstream migration, but it did not approve either the agencies' "sliding scale" flows or the tribes' optimum flows. Instead, it used the agencies' "sliding scale" flows as a basis for the amount of water available in its Water Budget.⁶⁶ However, because the Council determined that there would not be enough water available on the Snake to meet the recommended flows and supply sufficient assurance of refill, it reduced the Snake budget from 27.6 thousand cubic feet per second-months (Kcfs-months) to 20 Kcfs months. To provide some opportunity to meet the tribes' recommended optimum flows some of the time on the mainstem Columbia, the Council raised the Columbia budget from 40.2 Kcfs-months to 58 Kcfs-months, as measured at Priest Rapids Dam. Thus, the total Water Budget is 78 Kcfs-months, or a total volume of 4.64 million acre-feet of water.⁶⁷

Since these Water Budget flows are not sound biologically by themselves but are increments built upon existing power flows,⁶⁸ the Council also established a fixed schedule of "firm power flows" to ensure that changed power flows could not frustrate its budget concept.⁶⁹ Firm power

1981) at 6-7. The fishery agencies recommended a series of "sliding scale" flows tied to anticipated runoff. The Columbia Basin Indian tribes, however, claimed their treaty rights entitled them to biologically optimum flows. See also Fish and Wildlife Program § 302, at 3-2 to 3-3.

65. See, e.g., Comments to the Fish and Wildlife Program Recommendations, at 9-13 (April, 1982), summarized in Anadromous Fish Law Memo #16 (Dec. 1981) at 13.

66. The Council deducted from the flow levels requested by the agencies the average monthly power flows during the worst 42-1/2-month drought on record (i.e., critical period) and arrived at the following flows: 40.2 Kcfs-months (a Kcfs-month equals a flow of a 1000 cubic feet per second for a month, or .0595 million acre-feet (MAF)) at Priest Rapids Dam on the Columbia (or 2.39 MAF) and 27.6 Kcfs-months at Lower Granite Dam on the Snake (or 1.64 MAF). Fish and Wildlife Program § 303, at 3-3. Basically, the effect of the Budget is to reduce the amount of water available at the discretion of power managers and, subject to vested water rights and flood control requirements, dedicate this water to supply spring fish flows.

67. Id. § 304(a)(1), at 3-4.

68. See Anadromous Fish Law Memo #19 (Sept. 1981) at 8.

69. Fish and Wildlife Program § 304(a)(2), at 3-5. Fixed power flows at Priest Rapids are 76 Kcfs-months, while flows at Lower Granite vary from 50 to 65 Kcfs-months.

56. Id. §§ 200(5)-(6), at 2-3.

57. Id. § 200(7), at 2-4.

58. Created by the Salmon and Steelhead Enhancement Act of 1980. See Anadromous Fish Law Memo #15 (Aug. 1981).

59. See Fish and Wildlife Program, § 200(2), at 2-3.

60. The difficulty of delaying public involvement until the Program amendment stage is that, at that time, it will be too late to influence the content of the underlying studies. Moreover, the public may be able to contribute useful information regarding production potential in particular drainages. However, it should be noted that the meetings of the Council's Fish and Wildlife Committee (notes 208-211 and accompanying text below) are open to the public.

61. See note 52 and accompanying text, above.

62. See Anadromous Fish Law Memo #19 (Sept. 1982) at 8-9 (also questioning some underlying premises of the Water Budget).

63. See Fish and Wildlife Program, § 300, Figure 3 (graphic depiction of natural versus regulated flows).

64. See Anadromous Fish Law Memo #16 (Dec. (con't.))

flows thus provide assured "minimum" spring flows; the Water Budget may be "spent" to increase flows to facilitate migration between April 15 to June 15 each year. How the Budget is spent is left largely to the discretion of two Water Budget managers, subject to some qualifications, including approval by the Council.⁷⁰ However, the Budget may not exceed recommended optimum flows (140 Kcfs-months).⁷¹ The basic premise of the Budget is that the managers will coordinate flows when the fish are actually present, thus increasing the efficacy of the flows.⁷²

If implemented as provided in the Program,⁷³ the Water Budget will constitute the biggest change in system operations since the signing of the Pacific Northwest Coordination Agreement nearly 20 years ago,⁷⁴ and the Council is to be commended for adopting it. However, there remain a number of significant unanswered questions about the duties it places on federal water managers and the effect of the priorities it attempts to establish. For example, the Corps of Engineers has taken the position that it would not implement the Water Budget until completing environmental assessments on the effects of the Budget at its Libby and Dworshak storage reservoirs.⁷⁵ Since these documents

will not be completed until July of 1983, technically the Corps did not implement the Budget during the 1983 spring downstream migration season. However, due to an extremely good water year and "voluntary" efforts by the Corps, the Water Budget managers received the flows they requested. Because of high levels of runoff in 1983, no water had to be released from storage to supply these flows.⁷⁶

Another area of uncertainty concerns the Council's directive to the Corps to reexamine its flood control rule curves to ensure a proper balance between flood control requirements and the Water Budget.⁷⁷ The Corps has responded by indicating it will take "several years" to fully evaluate its flood control rule curves, and until then, it could not commit itself to any flood control changes.⁷⁸ These unanswered questions make it particularly important for the public to monitor implementation of the Water Budget since average or below average water years may jeopardize the Budget.⁷⁹

The adequacy of the Water Budget is most questionable on the Snake, where there is much less storage to supply flows in low water years than on the Columbia. To meet the 20 Kcfs-months called for at Lower Granite Dam, the

70. "The Water Budget may be used by fish and wildlife agencies to implement any flow schedule which provides maximum juvenile salmon survival, within the limits of firm non-power requirements, physical conditions, and flows required for firm loads." Id. § 304(a)(1), at 3-4. One Water Budget manager is selected by a majority of the state and federal fishery agencies; the other by a majority of Columbia Basin Indian tribes. Id. § 304(b), at 3-6. A detailed procedure for fixing a schedule of Water Budget flows is established by § 304(c) of the Program (at 3-6 to 3-7). Changes to this schedule can be made on 3 days notice to the Corps. Id. § 304(a)(3), at 3-5. The Council also "recommended" that the Water Budget receive priority over reservoir refill for power purposes. Id. § 304(a)(8), at 3-6.

71. Id. § 304(a)(2), at 3-5.

72. Id. § 303, at 3-3 to 3-4.

73. Section 4(h)(11)(A)(ii) of the Power and Conservation Act requires federal water managers to take into account the Fish and Wildlife Program at each relevant stage of their decision-making processes "to the fullest extent practicable." See Fish and Wildlife Program § 104, at 1-3 to 1-4. The Council has interpreted this requirement to mean that federal water managers must either implement the measures in its program or provide written explanation "why it will not be physically, legally, or otherwise practicable to implement the program measures, including a description of all possible allowances available to permit program implementation." Id. § 1304(a)(5), at 13-2.

74. See Anadromous Fish Law Memo #10 (Oct. 1980) at 2.

75. U.S. Army Corps of Engineers, Summary of Fish and Wildlife Measures Involving the Corps of Engineers (submitted to Northwest Power (con't.))

Council, May 10, 1983) at 1. BPA has also drafted an environmental assessment concerning the power system changes required to implement the Water Budget. Bonneville Power Administration, Environmental Assessment on Proposed Power System Changes to Implement the Water Budget (May 1983). However, since BPA is required by § 4(h)(10)(A) of the Act to employ its fiscal and legal authorities "in a manner consistent" with the Fish and Wildlife Program, it is clear that BPA lacks the discretion to choose not to implement the Water Budget.

76. Memorandum from Pam Stromberg, Pacific Northwest Utilities Conference Committee to Council's Fish and Wildlife Committee (June 6, 1983) (summarizing the Water Budget managers' meeting of May 9, 1983, and noting that the Budget was exhausted on May 18, 1983).

77. Fish and Wildlife Program § 304(a)(6), at 3-3.

78. Corps' Summary, note 75 above, at 2. Preliminary Corps studies indicate that flood control requirements will conflict with Water Budget storage in 40% of the recorded water years. However, the Corps believes that in most of these years Water Budget flows could be satisfied by natural runoff. Id. General van Loben Sels, the Corps' North Pacific Division Engineer, indicated to the Council's Fish and Wildlife Committee meeting on June 15, 1983 that diminished flood control capabilities might require congressional project reauthorization. He declined to speculate, however, just when he would determine that reauthorization was required.

79. Water Budget flows are to be provided in below average water years. In fact, the Program states that the Budget will be met in any year with flows at least as great as the worst water year on record. See Fish and Wildlife Program § 304(a)(6), at 3-5.

Council seems to assume that the flows must come from storage at Dworshak Dam (a Corps dam on the Clearwater) or from Brownlee Dam (one of three Idaho Power Company dams on the middle Snake), or both.⁸⁰ However, Idaho Power claims that, under a 1979 Settlement Agreement agreed to by state and federal fishery agencies (but not the tribes or the Council), it has fully mitigated all losses attributable to the development and operation of its projects. Thus, according to the utility, it must be compensated for any additional flows not called for by the 1979 Agreement.⁸¹

However, water may not necessarily be in as short supply in the Snake drainage as the Council appears to assume. For example, there are four Bureau of Reclamation dams and one Corps dam in Idaho with a total of nearly 700,000 million acre-feet of uncontracted storage space.⁸² Some of this storage might be used to relieve the burdens on Dworshak and Brownlee.

Further, if this storage is in fact available, it calls into question the Council's con-

80. See *id.* § 304(a)(5), at 3-5.

81. *Id.* For a brief overview of the 1979 agreement, see Blumm, *Hydropower vs. Salmon: The Struggle of the Pacific Northwest's Anadromous Fish for a Peaceful Coexistence With the Federal Columbia River Power System*, 11 *Env'tl. L.* 211, 273 n.330, 278-79 nn.357, 359. The 1979 Agreement expressly limits only the fishery agencies (not, e.g., the Council or the tribes) from petitioning FERC for additional compensation if there are no "substantial changes in condition." The National Wildlife Federation considers the passage of the 1980 Power and Conservation Act to be a "substantial change in condition." See Wildlife Federation comments, above note 45, at 25-26. The Council declined to express an opinion as to whether Idaho Power is correct in its interpretation, but it did state that if BPA determines (under procedures to be developed pursuant to § 4(h)(11)(A)(ii) of the Act) that the company is being required to release water to prevent or compensate for fish losses not attributable to the development and operation of its dams, BPA will reimburse Idaho Power. See *Fish and Wildlife Program*, §§ 304(a)(5), at 3-5; 1305(e)(1), at 13-3; at App. II-9; and 48 *Fed. Reg.* 20,117 (May 4, 1983) (BPA notice of intent to develop policies and procedures for compensating costs and power losses at non-federal electric power projects). See also note 221 below. According to the Corps, the major unknown factor in the implementation of the Water Budget is the flow contribution from Brownlee, Corps comments, note 75 above, at 1.

82. I.e., Palisades on the Snake (Bureau) with 19,000 MAF; Ririe (Bureau) on Willow Creek with 80,500 MAF; Lucky Peak (Corps) on the Boise River with 116,000 MAF; Cascade (Bureau) on the North Fork of the Payette with 378,000 MAF; and the Deadwood (Bureau) on the Deadwood River with 105,000 MAF. However, the Council does appear willing to investigate the use and potential availability of this water. See note 146 and accompanying text below.

clusion that the fishery agencies recommended 27.6 Kcfs-months of flows could not be accommodated. In contrast to its rationale for rejecting the fishery coalition's recommended Anadromous Fishery Goal,⁸³ the Council provided only a cursory explanation of its "modification" of the recommended Snake flows.⁸⁴ The practical effect of this modification is to increase smolt travel time through the Snake system from 30 days, which the fishery agencies consider essential, to 31 days.⁸⁵ The Columbia River Inter-Tribal Fish Commission submitted an eleventh-hour proposal that would reduce travel time to 28 days [with a consequent loss of 760 megawatts (mw) of firm energy load carrying capability (FELCC)--as compared to the approved Budget, which the Council originally estimated to cost 550 mw of FELCC]. This too was rejected, although the Council promised to study the matter.⁸⁶ Now

83. See notes 49-51 and accompanying text, above.

84. See *Fish and Wildlife Program* § 303, at 3-3 ("Computer simulations by the Instream Flow Work Group indicate that there is not enough water in the Snake River Basin during the critical period both to meet the recommended flows and to ensure that the system's reservoirs refill frequently enough to be of use for future power and fish flow purposes"); at App. II-4 (same). Notably, the fishery agencies alleged that the reason for the physical limitations on the Snake was "a qualitative judgment by power interests that the system should strive to meet an arbitrary figure like 95% confidence of refill." The fishery agencies' recommended budget on the Snake would, they claimed, reduce this confidence to 75%, which they concluded was an acceptable level. Fishery Agency comments, above note 44, at 40.

85. See Fishery Agency comments, above note 44, at 46. The agencies, admitting that perhaps the argument for 30 days versus 31 days was not a compelling one, argued that, given the paucity of data, it would be "prudent to err on the side of fish." *Id.* The Columbia River Indian tribes alleged that a 30-day travel time is likely to be adequate in wet years, but in dry years higher water temperatures cause physiological deterioration, inhibiting the ability of the migrants to adjust to salt water by the time the 30 days have elapsed. See 1 *Northwest Conservation Act Report* no. 23 (Nov. 26, 1983) (also containing an overview of the Fish and Wildlife Program).

The Colville tribe argued that the present power surplus meant that the region could afford flows which the Columbia River Inter-Tribal Fish Commission sought, alleging that the additional power losses would be "marginal" and the long-term fishery benefits would be substantial. See *Comments on the Draft Fish and Wildlife Program* by the Colville Confederated Tribes (Oct. 22, 1982) at 15, 19.

86. Technically, this tribal proposal, submitted on September 30, 1982, was rejected for lack of sufficient supporting information. *Fish and Wildlife Program*, § 303 at 3-4 at App. II-4 ("less certainty" of refill for both power and fish). See also Letter of Council Chairman Dan Evans to Timothy Wapato (Jan. 25, 1983) (denying (con't.))

that the Council has reduced its estimate of the power cost of the program from 550 mw to 450 mw,⁸⁷ it appears much more feasible to implement the tribal proposal.

The Council was admittedly faced with a formidable task in devising its Water Budget: to devise a workable scheme to elevate fisheries to a co-equal status with hydropower is not a simple matter under intense time pressures, with power interests reluctant to relinquish operational authority.⁸⁸ Nevertheless, neither the time pressures under which the Council labored, nor its intention to monitor and oversee the Program's implementation seem to be satisfactory justifications for failing to correlate its Water Budget to the statutory standards set by Congress.⁸⁹ During the amendment process, when the time pressures have diminished somewhat, fisheries advocates should urge the Council to explain its actions in light of the congressional commands.⁹⁰

a motion for reconsideration of the Water Budget by the Columbia River Inter-Tribal Fish Commission, largely on the grounds of the uncertainty such a reconsideration would create for system planners and its interference with the Council's schedule for completing its Power Plan). The Council also rejected an eleventh-hour suggestion by the Inter-Company Pool that would have established a smaller Water Budget than that which the Council approved, largely because of a lack of hydroregulation studies on the proposal. Id. at App. II-4.

87. Compare id. § 304(a)(4) (550 mw loss) with Northwest Conservation and Power Plan (April 27, 1983) at 6-3 (450 mw loss). Earlier, the "sliding scale" flows sought by the fishery agencies were estimated to cause a 780 mw loss. See Fulfilling Parity, above note 3, at 150 n.204.

88. For a sampling of power interest recalcitrance, see the objections raised (1) concerning the Council's authority to direct federal agencies to implement the Program, (2) BPA's authority to fund Program measures, and (3) the Council's authority to direct implementation of measures "upon approval" (i.e., outside the program amendment process). Fish and Wildlife Program, at App. II-1 to II-3.

89. See id. at App. II-3 (also justifying its failure to explain why the Program met the statutory directives on the ground that the Program approval process was not an adjudication for which formal findings were necessary). Noting that the Northwest Conservation Act Coalition's model electric power plan assumed a 900 mw loss for fish flows, the National Wildlife Federation unsuccessfully urged the Council to fully discuss its Water Budget as compared to the fishery agency and tribal recommendations and to justify (under § 4(h)(7) of the Act) any modifications or rejections of these recommendations. The Federation also was unsuccessful in seeking to have the Council state whether (and why) flows causing a greater-than-550 mw loss of power violated § 4(h)(5) (calling for protecting fish while assuring reliable power) of the Act. Wildlife Federation comments, above note 45, at 11-12.

(con't.)

The continuing oversight role the Council has established for itself is most welcome. However, in addition to studying the efficacy of the Water Budget,⁹¹ the Council should focus its attention on the effective operation of the entire system. A study that publicly describes and evaluates alternative operating arrangements under a variety of water years, that discloses the breadth of administrative discretion in system operations, and that considers and responds to public comments is still badly needed. Until such an evaluation is conducted, the public, the Council, and the Congress will be left to guess whether the existing hydroelectric system, even with the innovative Water Budget, is being operated optimally.⁹² Unless we are sure that we have an optimum use system, the next low water year is likely to result in a crisis.

C. Juvenile Dam Bypass

Nearly as controversial as the Water Budget were the provisions of the Program calling for improved bypass facilities at dams to facilitate downstream migration. Whereas the Water Budget is designed to decrease downstream migration time to the ocean, bypass measures are aimed at reducing mortalities caused by the dams' power turbines.⁹³ While the principal problems with

90. See Anadromous Fish Law Memo #17 at 6-7 (April 1982).

91. Fish and Wildlife Program, § 304(d), at 3-7 (study of relationships among flows, spills, travel time, and smolt survival). This study is also to focus on the relationship between flows and survival rates for summer chinook migrants, a stock that will not benefit from use of the Water Budget, since it must be spent by June 15. The Corps issued a \$277,000 contract to the National Marine Fisheries Service to carry out this study in 1983. Corps comments, note 75, at 3.

92. This type of analysis has been suggested here before. See Anadromous Fish Law Memo #19 (Sept. 1982) at 12; #10 (Oct. 1980) at 7-9; see also Fish and Wildlife Program § 105, at 1-4 to 1-5 (Council's promise to consult with federal water managers concerning the relationship between fish flows and (1) conservation, (2) power exchange agreements with California, (3) changes in thermal plant maintenance schedules, (4) use of Canadian storage, (5) changes in flood control operations, and (6) use or development of additional water storage). Such an analysis, if it involved all federal water managers, could obviate the need for the individual environmental reviews now taking place concerning the implementation of the Water Budget. See Anadromous Fish Law Memo #21 (March 1981) at 12, n.3. And it might even lead BPA to reconsider its conclusion that it is not bound by the Council's program. Id.

93. The Council succinctly explains the bypass problem:

When the hydroelectric dams were originally constructed in the Northwest, it was believed that providing adequate upstream passage over the dam was sufficient to sustain salmon and

(con't.)

the formulation and development of the Budget are on the Snake, the most controversial bypass provisions concern the mid-Columbia reach, where five Washington Public Utility District dams are located.⁹⁴

The fishery coalition recommended that the mid-Columbia PUDs be directed to study prototype mechanical bypass systems and install systems using the best available technology (e.g., submersible traveling screens, ice sluice skimmers, etc.). In the interim, the coalition recommended "sufficient spill ... to minimize juvenile salmon losses."⁹⁵ Later, in ongoing FERC proceedings, the coalition defined "sufficient" spill to be up to 40% of the flow.⁹⁶ The PUDs, through PNUCC, denied that there was any evidence indicating a relationship between spills and smolt survival rates (an estimated 17-25% of downstream migrants perish at each dam), and requested "sliding scale" spills that would reduce spill levels in low water years.⁹⁷

The Council agreed with the fishery coalition concerning mechanical bypass, ordering that prototype test studies be undertaken and completed by July, 1985, followed by installation by March, 1987 "or such later date as the Council

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

Fish and Wildlife Program § 401, at 4-1.

94. I.e., Wells Dam (Douglas County PUD), Rocky Reach and Rock Island Dams (Chelan County PUD), and Wapanum and Priest Rapids Dams (Grant County PUD). Unlike federal dams operated by the Corps or the Bureau of Reclamation, each of these dams is licensed by the Federal Energy Regulatory Commission (FERC) under the terms of the Federal Power Act. See generally Anadromous Fish Law Memo #3 (Nov. 1979).

95. See Fish and Wildlife Program § 402, at 4-1.

96. See Anadromous Fish Law Memo #19 (Sept. 1982) at 9, 14. The agencies explained to the Council that they sought up to 40% spill (during the peak of the migration), but not less than 20%. Fishery Agency Comments, note 44 above, at 11.

97. See Fish and Wildlife Program, at App. II-6.

may specify."⁹⁸ The Council did not, however, order the 40% spill that the fishery agencies requested. Instead, it directed FERC to require the PUDs to provide spills achieving survival rates comparable to the best available collection and bypass systems, with minimum spill levels of at least 20% of the average daily flow for any 30 of the 60-day downstream migrant season.⁹⁹ This spill, designed to achieve a 90% survival rate at each dam, would produce a system survival rate of only around 30%.¹⁰⁰

The Council incurred the criticism of the numerous fish and wildlife interests by carving a potential exception from this program of study and bypass installation for Grant County PUD concerning its Priest Rapids Dam. The PUD suggested that a "short haul" transportation system around Priest Rapids might be at least as effective and cost substantially less than bypass installation.¹⁰¹ Despite the fact that "short haul" transportation is effectively nothing more than an undocumented theory,¹⁰² and despite the existence of statutory standards calling for program measures to be biologically sound and based on "best available scientific knowledge,"¹⁰³ the Council sanctioned a short haul

98. Id. §§ 404(a)(1)-(3), at 4-3 to 4-4.

99. Id. § 404(a)(10), at 4-4 to 4-5. Less than 20% spill will be permitted if the PUDs can demonstrate to the Council that reduced spills are achieving a 90% survival rate. Id. The Council specifically rejected requests by the tribes for a 95% survival rate, determining that such a rate would result in spills so large as to violate § 4(h)(5) of the Act (program to restore fish runs while assuring a reliable power supply). Id. at App. II-6. The Council declined to explain the basis for this conclusion. Requiring 20% for 30 days represented a significant dilution of the Draft Fish and Wildlife Program's provision calling for 20% spill for the entire 60-day period. See Draft Fish and Wildlife Program § 304(c)(14) (Sept. 16, 1982).

100. Wildlife Federation comments, above note 45, at 14-15. The Council made no effort to explain how such a system's survival rate was biologically sound, nor why higher spill levels would be infeasible (cf. note 99, above).

101. Fish and Wildlife Program § 403, at 4-2.

102. See Fishery Agency comments, above note 44, at 7 ("neither have the agencies been aware of specific information supporting 'short haul transportation' as a viable means of improving downstream survival").

103. See Power and Conservation Act, §§ 4(h)(6)(B) and (C). The latter provision authorizes cheaper cost alternatives only where they would "achieve the same sound biological objective." However, the Council seemed to rewrite the statutory standard in authorizing the short haul study, authorizing the second phase of the study if the data from the first phase indicated that "short haul transportation is likely to be as effective as a collection and bypass system." Fish and Wildlife Program § 404(a)(5), at 4-4. The Council attempted to justify this standard by stating it reflects "a (con't.)

transportation study which could obviate the need for Grant County to install a mechanical bypass system at Priest Rapids.¹⁰⁴ The first phase of this study would collect smolt survival data until December, 1985. At that time, the Council could authorize a second phase of the project if it determines that short haul transportation is "likely to be as effective as a collection and bypass system."¹⁰⁵ This second phase could continue through 1988 and would defer construction of a mechanical bypass system.¹⁰⁶

There are a number of reasons for the fishery agency and tribal opposition to the short haul transportation project. First, ongoing transportation programs by the Corps on the Snake River have been notably unsuccessful for spring chinook. Instead of sanctioning a new transportation program, the agencies and tribes urged the Council to have Grant County participate in the Corps' program.¹⁰⁷ Second, the fish needed to support such studies are in short supply due in large measure to the adverse effects of dams such as Priest Rapids.¹⁰⁸ Third, while the transportation program on the Snake has been successful in increasing smolt survival rates, adult salmon returns have dropped consistently despite enhanced smolt survival rates.¹⁰⁹ Yet the Council's Grant

practical recognition that results of tests... can do no more than predict what long-term results are 'likely' to be. Results of tests do not, of course, absolutely guarantee the long-term results of the measure tested." *Id.* at App. II-6. This explanation misconstrues the burden of proof placed upon those who would suggest "minimum cost measures," particularly where such measures do not have the support of the expert fish and wildlife agencies and Indian tribes. If proponents of such measures cannot produce documentation of how their proposals would be "equally effective," doubts should be resolved against their proposals.

104. Fish and Wildlife Program §§ 404(a)(4)-(9). Three months before approval of the Council's program, a FERC judge specifically ruled against Grant County PUD's short haul transportation proposal. See note 111 below.

105. *Id.* § 404(a)(5). See note 103 above.

106. If, however, the Council determined that short haul transportation would not be as effective as a bypass system, the Council would direct FERC to order the PUD to install such a system within two years. *Id.* § 404(a)(6), at 4-4.

107. See, e.g., Colville tribe comments, above note 85, at 17.

108. *Id.* See also Fishery Agency comments, above note 44, at 7.

109. See Wildlife Federation comments, above note 45, at 17. The stumbling block in artificial transportation of juvenile fish around dams (by barge and truck) appears to be stress induced by collection and loading. This stress, which manifests itself in poor adult returns, is not likely to be reduced by the length of the haul, which is the basic premise of the Grant County proposal. As the fishery agencies have (con't.)

County study focuses on smolt survival, not adult returns.¹¹⁰

The Council's mid-Columbia passage provisions are affected by the Power and Conservation Act's complicated institutional arrangements. Measures like the interim spills and the bypass and short haul studies must be approved by the Federal Energy Regulatory Commission (FERC), which licenses nonfederal dams producing electric power. Under § 4(h)(11)(A)(ii) of the Power and Conservation Act, FERC must take the Council's Program into account "to the maximum extent practicable."¹¹¹ In ongoing FERC proceedings implementing two 1980 Settlement Agreements between the fishery agencies and the mid-Columbia PUDs,¹¹² FERC has agreed with fishery agencies that only minimal numbers of fish can

stated:

The fishery agencies cannot dispute the idealized concept of transportation reflected in the PUD proposal and the Council measure. At the same time, the agencies cannot disregard the disappointing results obtained for spring and summer chinook when the theory of transportation has been tested on the Snake and mainstem Columbia Rivers. Although there is no doubt that smolt survival can be improved by transportation, the actual smolt-to-smolt survival of transported fish cannot be reconciled with the anticipated benefits.

The fishery agencies have not refused to discuss transportation with the PUDs. However, the agencies cannot agree to studies that do not meaningfully address the real problems which have been experienced under other transportation programs, e.g., stress during collection and loading. The PUD proposal and Council measure duplicate studies performed to date. Studies which require actual movement of fish cannot be justified until stress in collection and loading can be substantially lowered.

Fishery Agency comments, above note 44, at 23.

110. Fish and Wildlife Program § 404(a)(5), at 4-4. Data on adult returns, of course, could not be gathered for an additional 3-5 years, which could serve to defer bypass installation indefinitely. This time lag, necessary to test what is essentially an unproven theory, reinforces the conclusion that the Council has misconstrued the burden of proof the Act requires such proposals to satisfy. See note 103, above. Nowhere in the Program does the Council explain how the "short haul" transportation program is based on the statutory standards in §§ 4(h)(5) and (6) of the Act, including reflecting "best available scientific knowledge."

111. See note 73, above; and Fulfilling Parity, above note 3, at 153 n.222.

112. See Hydropower vs. Salmon, above note 81, at 278, n.357, for a brief overview of these Settlement Agreements.

be used for short haul studies,¹¹³ and has approved spill rates for 1983 that are similar to those called for by the Council's Program.¹¹⁴ The Council has intervened in the settlement proceedings in an attempt to ensure that FERC effectuates its Program.¹¹⁵ However, its

113. See 2 Northwest Conservation Act Report no. 3 (Feb. 4, 1983) at 4.

114. In February, 1983, Judge Grossman, the FERC Administrative Law Judge assigned to the mid-Columbia proceeding, approved spills based on 20% of the average daily flow for 30 days, or until 80% of the migrants pass. He also sanctioned studies of higher and lower percentages of spill. The 1983 spill percentages are about double those of last year. Earlier, in August of 1982, Judge Gressman specifically ruled out short haul transportation as a viable substitute for installation of bypass facilities. See Anadromous Fish Law Memo #19 (Sept. 1982) at 14.

The fishery agencies sought 40% spill, which would increase smolt cumulative survival rates to 39%; a 20% spill rate yields an estimated 31% cumulative survival rate; while the 10% spill (the spill rate called for in the Settlement Agreement) produced a 27% cumulative survival rate. See FERC Docket No. E-9569, Position on Spill in the Mid-Columbia of the National Marine Fisheries Service, the Washington Departments of Fisheries and Game, the Oregon Department of Fish and Wildlife, and the Yakima and Umatilla tribes (Dec. 16, 1982) at 8-10.

115. FERC has demonstrated what can only be described as an inconsistent concern regarding the fish and wildlife effects of the operation of the mid-Columbia projects. Although Judge Grossman's February decision doubled spill rates for 1983 (note 114 above), in June of 1982 FERC awarded a new 40-year license to Chelan County PUD for the Rock Island Dam without any specific fish and wildlife provisions, prompting suits by the National Wildlife Federation, the Yakima tribe, the Washington Departments of Fisheries and Game, and the National Marine Fisheries Service. These suits are now pending before the Ninth Circuit Court of Appeals. See 2 Northwest Conservation Act Report no. 3 (Feb. 4, 1983) at 4.

On September 23, 1982, one week after the Council published its draft Fish and Wildlife Program, FERC issued a license amendment to Douglas County PUD for its Wells Dam which failed to take into account the recommendations of the fish and wildlife agencies or the imminence of the Council's Program. The decision has been appealed by the National Wildlife Federation, the National Marine Fisheries Service, and the Colville tribe. Still pending before FERC is Grant County PUD's proposal that would permit powerhouse expansion at Priest Rapids and Wapanum Dams for peak power purposes, a proposal that the fishery agencies and tribes oppose until studies establish the proper flow regimes for the Hanford Reach below Priest Rapids. Although § 404(b) of the Council's Draft Program would have prohibited expansion prior to the completion of these studies, this provision was deleted from the final Program without explanation. Wildlife Federation Comments, above note 45, at 24; cf. Fish and Wildlife Program (con't.)

failure to supply reasons why Program measures, such as its spill provisions and the short haul transportation study, are consistent with Power and Conservation Act's directives will make it difficult to insist that FERC should order such measures to be implemented, particularly in view of the fact that under the Federal Power Act, FERC orders must be supported by "substantial evidence."¹¹⁶

On the Snake, the bypass measures prompted somewhat less controversy but no less concern. Unlike on the mid-Columbia, the Council established no minimum spill rates. No explanation was given for treating these Corps dams differently from the PUD dams.¹¹⁷ According to the Program, interim spill plans at Lower Monumental and Ice Harbor (dams without effective bypass systems) must be implemented "which will achieve a level of smolt survival at least comparable to that achieved by the best available collective and bypass system."¹¹⁸ However, the Program also authorizes the Corps to continue its transportation program at Lower Granite and Little Goose Dams, a result the National Wildlife Federation charged was inconsistent with other measures calling for installation of mechanical bypass systems.¹¹⁹

§ 704(b)(4), at 7-6. However, any such powerhouse expansion will presumably be affected by the conditions for new hydroelectric developments, established in § 1204 of the Program (at 12-2 to 12-3). See also notes 226-27 below.

Most recently, in response to FERC's failure to recognize pertinent Program provisions in licensing the Enloe Dam (note 232 below), the Council wrote the FERC Chairman specifically requesting that all FERC licenses and orders include explanations of how each Program measure will be implemented or why it would be impracticable to do so. The Council also requested that FERC provide the Council and other interested parties an opportunity to review and comment on all draft licenses and orders. Letter of Council Chairman Dan Evans to FERC Chairman Charles Butler (June 28, 1983).

116. 16 U.S.C. § 8251(b). See Letter of Lawrence P. Anderson, Director FERC Office of Electric Power Regulation to Pacific Northwest Electric Power Planning Council (n.d.) (noting that the "substantial evidence" requirement may cause delay in implementation of a number of Program measures and reminding the Council that on August 13, 1982, Judge Grossman ruled against Grant County's short-haul transportation study).

117. The fishery agencies requested the Council to provide the same interim spill levels at Corps dams as at PUD dams. Fishery Agency comments, above note 44, at 27.

118. Fish and Wildlife Program §§ 404(b)(9) and (11), at 4-7 to 4-8. The Ice Harbor measure specifically states "comparable to or better than" the best available bypass. The Corps objected to these provisions, complaining that they would require "spilling the entire river." Id. at App. II-6.

119. Wildlife Federation comments, above note 45, at 19 (alleging that the Council did not adequately explain its decision to deviate (con't.)

Numerous Corps' studies are called for by the Program, generally calling for that agency to study the efficacy of what it is already doing at various projects. Most of these studies are due to be submitted to the Council in November, 1983--which now appears will measure success under unusually high flow conditions. Moreover, the Program simply calls for the Corps to make additional proposals for action at that time--no further direction from the Council is supplied as to what action might be necessary.¹²⁰ Finally, the Council sanctioned additional transportation studies during 1983, calling for further action in light of these studies. Apparently, however, one option that will not be considered is terminating the transportation program, since the Council also authorized a study of the homing behavior of transported fish which will not be completed until November, 1987.¹²¹

from the fishery coalition recommendations, which limited the transportation program as an interim or emergency measure during low water years). § 404(b)(8) of the Program (at 4-7) requires a study to be submitted of its Snake River transportation program by November 15, 1983, and promises to direct the Corps to study alternative screening and bypass systems at Lower Monumental and Ice Harbor Dams if the Council determines that the current transportation program "would not be as effective as the best available screening and bypass systems." However, the Corps has recently indicated that its transportation studies will continue "through 1985 at least," and reiterated its belief that any deemphasis on transportation "will make it more difficult to achieve satisfactory levels of juvenile survival." Corps comments, note 75, at 7, 8.

120. E.g., §§ 404(b)(1) (McNary), (4) (The Dalles), (6) (Lower Granite), (7) (Little Goose), (10) (Ice Harbor), at 4-5 to 4-8. Although the Program anticipates installation of a bypass system at John Day Dam by March, 1986 (§ 404(b)(2)), this deadline has been jeopardized by the Reagan Administration's recently proposed 1984 budget, which anticipates a 3-year slippage in the installation of John Day bypass facilities--to 1989. Corps comments, above note 75, at 5. Persons concerned about this slippage might write Senator Mark Hatfield, U.S. Senate, Washington, D.C. 20510.

121. Id. §§ 404(b)(19) and (20), at 4-10. Studies analyzing the use of Squoxin to control predation of anadromous fish by squawfish (due November, 1983) and the causes of juvenile mortality in mainstem reservoirs (due November, 1987) are also authorized. Id. §§ 404(e)(1) and (2), at 4-10. In addition to the provisions pertaining to the mainstem mid-Columbia and Snake, the Program includes a number of provisions designed to study the efficacy of existing bypass systems at tributary dams. Studies (most of which are due to be completed by November, 1983) are called for on the Marmot Dam (Sandy River), the Sullivan Plant (Willamette Falls), Foster Dam (South Santiam River), Lebanon Dam (South Fork of the Santiam), and the Walterville Canal (McKenzie River). In addition, the Program calls upon FERC to require the Eugene Water (con't.)

D. Upstream Passage

In contrast to its downstream bypass measures, the Program's upstream passage provisions were relatively uncontroversial, undoubtedly because they emphasize studies.¹²² The fishery coalition's recommendations asked for the establishment of spill and flow criteria at each mainstem and tributary dam to attract adult fish to fish ladders, as well as improved operation and maintenance of the ladders themselves.¹²³ The Council adopted most of these recommendations and, in addition, added a study to assess the disease problems associated with adult passage facilities.¹²⁴

The Program calls for studies by the Corps and the mid-Columbia PUDs to determine optimum flows and spill configuration for improving adult migrant passage at their dams.¹²⁵ The Corps is specifically directed to implement existing fishway operating criteria, to resolve the problem of unreliable pump gearboxes inhibiting auxiliary fishway flows, and to install a new fish counting facility at The Dalles Dam.¹²⁶

and Electric Board to install "best available bypass" at its Leaburg Canal on the McKenzie River. Id. §§ 404(b)(12)-(17), at 4-8 to 4-9.

122. Although studies with relatively short deadlines, see notes 125-28 below.

123. Fish and Wildlife Program § 602, at 6-1. Unlike the flows and spills for juvenile migrants, which are provided in the spring (April 15-June 15), adult spills and flows are most important during the summer and fall upstream salmon migrant season (June to November, with peak returns July to September). However, steelhead migrate upstream from November 15 to April 15, with peak returns in January. See Id. Figure 8, at 6-1. Moreover, it is the quality, not the quantity of flow and spill that is the key to providing optimum design attraction flow at ladder entrances. For example, Dale Evans of the National Marine Fisheries Service reports that excellent adult passage occurred during the drought year of 1977.

124. Id. § 603, at 6-1 to 6-2.

125. Id. §§ 604(a)(1) (flow studies to assess impacts resulting from peak power operations); 604(a)(2) (spill configuration studies); 604(a)(3) (studies of entrance flows at new fishways of dams with expanded powerhouses), at 6-2. The spill configuration studies are due in November, 1983; the others in November, 1984. The suggestions of both the fishery agencies and PNUCC that the Council specify with greater particularity the purposes, goals, and details of these studies were rejected by the Council because "it is the Council's intention to have all parties cooperate and consult on the types of studies which will be necessary..." Id. at App. II-7. While certainly no one would quarrel with this ideal, it must be pointed out that vehement disagreements over the purposes, goals, and details of studies have characterized fishery agency and utility confrontations in the past. See, e.g., Anadromous Fish Law Memos #13 (May 1981) at 7; #19 (Sept. 1982) at 14-15.

126. Fish and Wildlife Program §§ 604(b)(1)-(3), at 6-3. The studies (con't.)

Corps' studies aimed at resolving passage problems at its Green Peter and Foster Dam complex on the Santiam and at its John Day project, on the mainstem Columbia are also called for.¹²⁷

Finally, the Program prescribes a new adult trapping facility at Portland General Electric's Willamette Falls project and a series of studies aimed at determining (1) the cause of passage problems at PGE's Clackamas River dams, (2) the best available adult passage facilities at the Tumwater and Dryden Dams on the Wenatchee River, (3) the extent of interdam losses, especially between the mid-Columbia PUD dams, and (4) the relationship between adult passage problems and disease susceptibility.¹²⁸

due in November, 1983. The fishery agencies alleged that, although fishway operating guidelines had been developed for all Corps projects, the Corps has failed to implement these guidelines at some projects. *Id.* at App. II-8.

127. *Id.* §§ 604(a)(4)-(5), at 6-2 to 6-3 (due in November, 1983). Winter steelhead returns have diminished alarmingly on the Middle Santiam, and there continues to be significant undocumented interdam losses between John Day and The Dalles Dams on the mainstem Columbia. While some continue to believe that the latter problem is due to illegal tribal fishing, the real cause is more probably due to poor fish passage performance and tributary straying (especially to the colder Deschutes River). See Anadromous Fish Law Memo #21 (March 1983) at 14. A recent NMFS study concludes that tribal poaching allegations cannot explain the extent of interdam losses. See, e.g., The Oregonian, April 22, 1983 (citing study team leader Ken Liscom).

128. Fish and Wildlife Program §§ 604(c)-(d), at 6-4. FERC was to determine by June 15, 1983 whether PGE is responsible for funding the Clackamas River studies; the Council determined that the utility would have to pay 16% of the Willamette Falls trapping facility. *Id.* at App. II-8. The disease study is to be completed by November, 1983; the Tumwater and Dryden Dam studies by June, 1984; and the mid-Columbia interdam loss study by November, 1984.

The fish passage facilities at Chelan County PUD's Tumwater and Dryden projects have been the subject of litigation. In 1979, the Washington State Supreme Court ruled that although a Washington statute requires owners of "dams and other obstructions" to "provide and maintain" fishways at their own expense (R.C.W. § 75.02.060), this duty did not extend to the reconstructing of existing fishways no longer supplying efficient passage. State Dept. of Fisheries v. Chelan County PUD, 588 P.2d 1146, 91 Wash. 2d 378 (1979). This decision, however, does not directly speak to obstructions which never possessed fishways, nor perhaps to situations where fishways were originally provided but clearly not maintained, as in the case of Pacific Power and Light's Condit Dam on the White Salmon River (note 149 below). This state statutory duty may reduce regional obligations to compensate nonfederal project operators under procedures BPA is developing (note 221 below).

E. Propagation

Because of the depressed state of many of the Columbia Basin's fish stocks, reducing downstream transportation time (through the Water Budget) and providing for safer dam passage (through bypass systems, interim spills, and better adult passage) would not by themselves restore the fishery. Substantial habitat rehabilitation, as well as natural and artificial propagation efforts, are necessary. As a result, the Power and Conservation Act authorized enhancement measures throughout the Basin on a systemwide basis.¹²⁹ The genius of the Act may be the systemwide approach, in which irreversible habitat damages to particular areas of the Basin (such as the mainstem and upper Columbia River and the middle Snake) can be compensated for by offsite enhancement in locations of good or potentially good habitat (e.g., the Yakima Basin, the Hanford Reach, the Umatilla Reservation, and a number of tributaries with blocked passage but prime habitat conditions).

In its recommendations to the Council, the fishery coalition emphasized habitat improvements (including minimum flows and rehabilitation of blocked passage) for better natural propagation and improvements in hatchery technology and facilities.¹³⁰ The Council incorporated the thrust of these recommendations into its Program¹³¹ but added an important primary goal:

129. Power and Conservation Act §§ 4(h)(1)(A) (systemwide basis); 4(h)(8)(A) (offsite enhancement measures to compensate for system losses).

130. Fish and Wildlife Program § 702, at 7-1 to 7-2.

131. *Id.* § 701, at 7-1:

Hydroelectric development has eliminated much of the natural spawning and rearing habitat in the Columbia River system. Reservoirs created by dams have inundated nearly all of the mainstem Columbia spawning habitat. Although the Hanford area of the Columbia River and the Hells Canyon area of the Snake remain freeflowing, water level fluctuations caused by power peaking operations adversely attest the uses of those areas for spawning. Fortunately, the Columbia River has a number of tributary streams with good spawning and rearing habitat. Many of these streams can be brought to their full propagation potential through habitat improvement. Other streams offer good habitat but currently are underused by fish mostly because of passage problems.

Hatchery propagation of anadromous fish has proven successful as a means of supplementing the dwindling runs of naturally spawning fish in the Columbia River system. Although hatcheries produce large numbers of fish, important questions remain concerning

(con't.)

the restoration of wild and natural stocks to preserve the genetic diversity of the Columbia Basin's fish runs.¹³² To coordinate wild, natural and artificial propagation efforts¹³³ in a systemwide program emphasizing wild stocks (and also promote new low capital propagation efforts and improved hatchery operations),¹³⁴ the Council established a "Fish Propagation Panel."¹³⁵ The Panel is to (1) develop an

selection of stock, disease, quality of smolt, genetics, integration of hatchery propagation with natural propagation, and most important, where and when smolt should be released...In fact, releasing large numbers of fish can actually be harmful because hatchery fish compete with natural fish for a limited food supply and habitat.

102. Id.:

Maintenance of genetic diversity of stocks is essential to the vigor and survival of a species. A primary goal of the Council's program is to restore wild and natural propagation of salmon and steelhead in the Columbia River system. Fish that spawn naturally are subjected to constant selective pressures, resulting in an evolution toward strong, resilient, and diverse stocks. Since each stream or drainage offers a different environment which influences the natural selection process, the fish stocks originating there will be genetically unique to that drainage.

133. "Wild stocks" are genetically unique populations that have successfully maintained production without supplementation from hatcheries; "natural stocks" are propagated in rivers and streams but which originated from, or have been supplemented by, hatcheries. Id. § 1600, at 16-3, 16-4.

134. Id. § 703, at 7-3 to 7-4.

135. Id. § 704(a), at 7-4 to 7-5. The Council appointed 7 members to this Panel, all of whom are knowledgeable and experienced in hatchery and natural production. They are: Richard Whitney (Chairman, University of Washington), Wallace Hublou (Oregon Dept. of Fish and Wildlife), Douglas Dompier (Columbia River Inter-Tribal Fish Commission), Conrad Mahnken (National Marine Fisheries Service), James Johnson (Nez Pierce tribe), Ernest Salo (University of Washington), and Roy Hamilton (Pacific Power and Light). See Northwest Power Planning Council, 2 Northwest Energy News no. 1 (March/April, 1983) at 8. The Council's Draft Program included two propagation teams: a natural team and an artificial team. However, in response to several comments, the Council consolidated both sets of functions into one panel to ensure better coordination. See Fish and Wildlife Program, at App. II-9. This consolidation may also ensure that the Council's emphasis on wild and natural stocks over hatchery stocks is (con't.)

inventory of Columbia River tributaries, evaluate their potential for supporting increased wild and natural propagation (through improved flows and habitat and passage restoration) and set priorities; (2) develop measures to improve wild and natural propagation in the Yakima Basin; (3) develop detailed hatchery propagation objectives and criteria that are consistent with natural and wild propagation objectives; (4) develop a priority listing of potential hatchery sites; and (5) coordinate all natural and hatchery measures with efforts taken under the directives of the Salmon and Steelhead Enhancement Act.¹³⁶

The Council's clear preference for wild and natural stock propagation over additional hatcheries represents a significant shift from the recommendations of the fish and wildlife agencies, which considered artificial production to be "the most critical element for assuring prompt recovery of spawning populations, and the restoration of productive fisheries..."¹³⁷ The agencies disputed the Council's assertion that hatchery smolts compete with natural smolts¹³⁸ and argued that dependence on natural production to the exclusion of new large-scale hatcheries would not provide harvestable fish runs.¹³⁹

reflected in measures implementing the Program.

136. Fish and Wildlife Program § 704(a)(2), at 7-5. See also id. § 703, at 7-4 (listing the standards established by § 120(d) of the Salmon and Steelhead Enhancement Act); and Anadromous Fish Law Memo #15 (Aug. 1981) at 8 (same).

137. Fishery Agency comments, above note 44, at 61. The agencies did, however, support the Council's emphasis on natural production, although they stated that hatchery production "carefully selected to be compatible with existing natural production and stocks, must play a major role in th[e] enhancement process." The agencies suggested that hatchery production should be designed to improve natural production and recommended that hatchery production proceed for all upriver species (except for fall and summer chinook) irrespective of further controls on the ocean harvest. Id. at 50.

138. Compare above note 131, with Fishery Agency comments, above note 44, at 63 ("There is no evidence that hatchery fish released as migratory smolts compete with naturally produced fish").

139. Id. at 63:

In streams located above seven or eight mainstem dams, current projections of best possible survival rates through reservoirs and dams with bypass systems and enhanced flows, indicate that such runs might reproduce themselves, but could not support a significant harvest unless the runs are supplemented with hatchery smolts or natural survival is artificially increased...Data on present technology indicates that average loss per dam may be reduced at best to 15 percent. Dependence on natural production alone at that loss rate would not provide harvestable surpluses of anadromous (con't.)

Noting the long lead time necessary to site, construct, and bring on line new hatcheries, the agencies unsuccessfully sought to alter the Council's presumption against major capital investments in new hatcheries.¹⁴⁰ They were particularly critical of the Council's implication that the problems inherent in managing a mixed stock fishery (i.e., composed of both hatchery and naturally spawned fish) and the lack of harvest management controls were as responsible for the decline of the upriver runs as dam-caused habitat damage and peaking power operations.¹⁴¹ Despite these concerns, the

fish.

140. Id. at 66:

...only through a vigorous hatchery program can the traditional fisheries dependent on upriver runs, and impacted by the development of the hydro-power system, be restored. Since a delay of 5 to 10 years is common, under the best of circumstances for hatcheries to be sited, designed, and begin production, it is imperative that the siting and design stages be implemented immediately.

But compare the Council's response:

The Council rejected the proposed language as it would call for hatchery construction as a priority item equal to other program measures on hatchery propagation. The Council has adopted the policy of emphasizing natural propagation and habitat and passage improvement measures as well as improved hatchery operation at existing facilities, before endorsing the large capital expenditure associated with new hatchery construction.

Fish and Wildlife Program, at App. II-9. In effect, the agencies were arguing for an approach to hatchery siting similar to the Council's "resource options" approach to siting new power facilities (especially new hydropower facilities). See Anadromous Fish Law Memo #21 (March 1983) at 12, n.8. Although they did not succeed in having this principle included in the Council's Program, it is possible that the new Fish Propagation Panel (note 135 above) will endorse such an approach in its priority list of potential hatchery sites (text accompanying note 136).

141. Fishery Agency comments, above note 44, at 62:

Mixed stock fisheries successfully operated for many years on upriver stocks without causing depletion, prior to full hydroelectric development on the mainstem Columbia and Snake Rivers. Increasing dam mortalities forced reduction and finally closure of all river fisheries on upriver stocks of spring and summer chinook (con't.)

Council proceeded to include in the Program measures aimed at ensuring the "adequacy" of harvest management controls before funding a hatchery in the Yakima Basin and an acclimation pond at John Day Dam.¹⁴²

Specific Program measures include studies aimed at establishing spawning flows for the critical mainstem areas of the Hanford Reach on the mid-Columbia and the Snake below Hells Canyon Dam.¹⁴³ Although a number of studies of

and sockeye. Since these species have not been taken in the ocean in conjunction with large fisheries on fall chinook and coho, recent depletion is due to the dams and not the fisheries. Fisheries on naturally produced stocks of upriver fall chinook has become a problem in recent years, but even here, most of the hatchery production was in place before extensive construction of dams. The natural production of fall chinook in the Hanford Reach readily handled the impact of mixed-stock fisheries in the ocean and the river until the completion of the John Day Dam in 1968, and the expanded powerhouse at The Dalles in the earlier 1970's...

142. See § III.G below. The agencies objected to the Council's preoccupation with harvest management controls, stating:

Further restraints on historic tribal, sport and commercial fisheries as the major means of maintaining upriver naturally produced runs is not an equitable means of resolving this problem. Rather, techniques for supplementing natural production with carefully selected, compatible artificially produced stocks need to be developed to maintain adequate spawning escapement while supplying a harvest in mixed-stock fisheries. The availability of select stock fishing is limited. Therefore mixed-stock fisheries will occur and must be planned for.

Fishery Agency comments, above note 44, at 61-62. See also notes 137 and 141 above. The Council, however, emphasized its desire to "move in the direction of a known stock harvest, as compared to mixed stock harvests." Fish and Wildlife Program, at App. II-8.

143. In effect, the Council deferred to the studies taking place under an FERC's Mid-Columbia Settlement Agreement regarding Hanford Reach flows. See Fish and Wildlife Program §§ 704(b)(1)-(4), at 7-5 to 7-6. The fish and wildlife agencies maintain that between 20%-40% of the quantified spawning habitat along 4 miles of the Hanford Reach below Priest Rapids Dam lies in areas inundated only when flows exceed the 36,000 cfs. flow level required in Grant County PUD's FERC license. Fishery Agency Comments, above note 44, at 71. The National (con't.)

tributary flow regimes are authorized, the Program calls for no immediate operational changes,¹⁴⁴ except it does direct the Bureau of Reclamation to use 6000 acre-feet of uncontracted storage in its McKay Reservoir to enhance Umatilla River flows.¹⁴⁵ Among the most important of all the studies authorized by the Program is an evaluation of the feasibility of improving fish flows throughout the Basin by modifying flood control requirements, developing new storage dams, and/or using uncontracted water in existing storage dams.¹⁴⁶ The public

Wildlife Federation complained that the Council omitted without explanation a fishery coalition recommendation that would have limited proposed expansion of the Priest Rapids and Wapanum Dams until adequate flow regime were established. Wildlife Federation comments, note 44 above, at 24. See note 115 above.

The Hells Canyon study, to be funded by BPA and completed by November 1983, aims to improve fall chinook and steelhead spawning by establishing minimum flows and limits on river level fluctuations. Fish and Wildlife Program § 704(b)(5), at 7-6. On the contention of Idaho Power Company that any additional flows from its Hells Canyon complex will require compensation, see note 81 above and accompanying text.

^{144.} Despite the fact that the fishery agencies stated that further studies of flow guidelines for the Willamette Basin were unnecessary, and that what was needed was for the Corps to implement the flows recommended by previous studies (Fishery Agency comments, above note 45, at 73), the Council refused to direct the Corps to do so, apparently sanctioning a 5-year Corps study of the issue. Fish and Wildlife Program § 704(b)(6), at 7-6. The Council gave no reason why the recommended flows should not be implemented, simply stating that the Corps study (including annual reports) "does not constitute an unnecessary delay and will provide a firm and clear set of guidelines for the establishment of Willamette Basin flows." *Id.* at App. II-10.

An ongoing FERC-ordered study to establish flows on the North Fork of the Lewis River below the Merwin Dam and existing FERC-imposed flows from the Pelton, Round Butte, and Powerdale Dams are also sanctioned. In addition, the Council endorsed including the flows contained in a 1977 FERC Settlement Agreement concerning the Mayfield Dam. Finally, the Council directed FERC to have the Eugene Water and Electric Board begin studying flows from its Leaburg and Walterville projects on the McKenzie River, the largest producer of spring chinook in the Willamette Basin. *Id.* §§ 704(b)(9)-(13), at 7-7.

^{145.} Fish and Wildlife Program § 704(b)(15), at 7-8.

^{146.} *Id.* § 704(b)(14), at 7-7 to 7-8. No date is provided for the completion of this study. Nor is it entirely clear who will be responsible for conducting it, although presumably, the study will be conducted in consultation with the fishery agencies and tribes (see *id.* § 1304(c), at 13-3). However, there is no specific provision for public review and comment. Further, the Council's comment accompanying the Program measure seems to indicate that (con't.)

should monitor the progress of this study with great care.

Other enhancement measures concern temperature control studies at Detroit Dam on the North Fork of the Santiam and the Dworshak Dam on the Clearwater and the installation of temperature control devices on the Cougar and Blue River Dams in the upper McKenzie Basin.¹⁴⁷ Lists of habitat improvement and passage restoration projects are included in the Program, although the Council left to its Fish Propagation Panel the task of prioritizing these projects and devising schedules and project details.¹⁴⁸ One exception is the directive to FERC to order Pacific Power and Light to immediately design upstream and downstream passage facilities at Condit Dam on the White Salmon River.¹⁴⁹

Artificial propagation measures include an evaluation of the effectiveness of existing

the study's emphasis will be on the feasibility of new storage projects (e.g., in the Yakima Basin and the Weiser River project in the Snake Basin), not on employing existing facilities for optimum use. The Corps will complete a feasibility study of the Galloway site on the Weiser River in 1984, with a final report due in 1985. Corps comments, above note 75, at 15.

^{147.} *Id.* at 704(c), at 7-8. In response to a comment from Dr. Jack Stafford of the University of Montana, who contended that the Draft Program's temperature control measures were too brief and vague, since a stream's thermal regime is its most important attribute, the Council noted that no specific measures regarding temperature controls were recommended. *Id.* at App. II-10. Perhaps such measures should be the subject of Program amendments. The Corps has recently stated that installation of temperature control devices at Detroit Dam must be preceded by NEPA actions "because of the expected impacts on reservoir recreation and other possible non-fishery impacts downstream (such as municipal supply systems)." The Corps also stated that the earliest temperature control devices could be installed at Cougar and Blue Dams would be 1988, 3 years later than called for in the Program. Corps comments, above note 75, at 15-16.

^{148.} Fish and Wildlife Program §§ 704(d) and (e), at 7-9 to 7-12 and Tables 2 (John Day Basin), 3 (Salmon and Clearwater Basins), 4 (Deschutes, Clackamas, Hood, Grand Ronde, and Entiat Rivers), and 5 (passage restoration projects). The Council expressed support for the Bureau of Reclamation's feasibility studies of additional dams in the upper John Day and Umatilla Basins. *Id.* § 704(d)(2), at 7-10.

^{149.} *Id.* § 704(e)(2), at 7-11. The Portland Anglers Club and the Clark and Skamania County Flyfishers suggested that flows be established for the Clackamas and Mollala drainages, and that the Council address the problem of spring chinook passage at Mill River Dam. The Council declined to do so because such measures were not submitted as Program recommendations; however, it suggested the possibility of Program amendments concerning these measures. *Id.* at App. II-12.

hatcheries as well as a survey of potential hatchery sites.¹⁵⁰ In addition, the Council called for a basinwide study of upriver sites suitable for releasing lower river hatchery fish; based on that study, the Council promises a comprehensive reprogramming plan by April of 1984.¹⁵¹ Improving the effectiveness of existing hatcheries is given priority over new hatcheries,¹⁵² and the Council authorized a number of studies designed to assess or improve hatchery effectiveness.¹⁵³ Only three major hatchery facilities are included in the Program: juvenile release and adult collection and holding facilities on the Umatilla Indian Reservation, an acclimation pond above the John Day Dam, and a hatchery on the Yakima Indian Reservation.¹⁵⁴ Further, the latter two projects are specifically conditioned on the Council's finding that harvest management controls are "adequate."¹⁵⁵ In contrast, the Council seeks to encourage construction of low capital propagation facilities, particularly on the Nez Perce Reservation where there are more than 300 miles of suitable fish habitat.¹⁵⁶ The Program also sanctions studies

to help develop programs for planting hatchery-reared chinook stocks to supplement naturally-produced stocks on the upper mainstem Columbia and Snake drainages and along the Willamette.¹⁵⁷ Finally, a study of the potential use of some hatchery fish to develop a "known stock" fishery is authorized.¹⁵⁸

F. Yakima Basin Enhancement

Singled out for special attention is the Yakima Basin, largely because of a lack of water to satisfy both fishery and irrigation needs, as well as for its considerable potential for off-site enhancement.¹⁵⁹ In their recommendations to the Council, the fishery coalition recommended construction of the proposed Bumping Lake Enlargement Project to help overcome some of the Yakima's water supply limitations.¹⁶⁰ However, the Council decided not to endorse any specific project pending completion of ongoing studies of (1) alternative storage sites (being conducted by the Bureau of Reclamation and the Washington Department of Ecology) and (2) the flow requirements for anadromous fish (being conducted by the U.S. Fish and Wildlife Service).¹⁶¹ The Program endorses "additional storage incorporating appropriate cost-sharing arrangements,"¹⁶²

150. Id. § 704(f), at 7-13 (due June 1, 1984). See also § 704(h)(2), at 7-13 (study of hatchery rearing facilities due November 15, 1984).

151. Id. § 704(g), at 7-13. On May 27, 1983, the Columbia River Inter-Tribal Fish Commission and the Warm Springs and Yakima Indian tribes submitted a Freedom of Information Act request to the National Marine Fisheries Service, seeking all records relating to the selection of 33 existing and 14 proposed hatcheries funded under the Mitchell Act. The tribes seek this data to gain a better understanding of how the Mitchell Act (which since 1949 has supplied federal funds for fishery mitigation efforts related to Columbia River dam construction) has been interpreted and implemented to assist them in making recommendations to the Council concerning this reprogramming plan.

152. Id. § 704(h)(1), at 7-13.

153. Id. §§ 704(h)(3) (assessment of Columbia Basin stocks to ensure maintenance of genetic integrity in Columbia River hatcheries), 704(h)(4) (study on diagnosis and control of diseases in hatcheries); 704(h)(5) (study to develop a smolt survival index), at 7-13 to 7-14.

154. Id. §§ 704(i)(1)-(3), at 7-14 to 7-15.

155. Id. §§ 504(b)(2)-(4), at 5-4. In addition, the John Day acclimation pond is conditioned on a commitment to reprogram lower river hatcheries. See note 151 and accompanying text above, and notes 184-90 and accompanying text, below.

156. Id. § 704(j), at 7-15 (authorizing BPA funds to develop and test low cost, small-scale propagation facilities and citing the major advantages of these facilities as (1) smaller water supply requirements and (2) ready adaptability to individual drainages, fostering conservation of gene pools). The fishery agencies noted to the Council that low cost, small-scale facilities have yet to be evaluated, while large-scale hatcheries have proved to be cost effective. They further argued that small-scale facilities should be compared to large facilities (con't.)

ties in terms of cost effectiveness, and in the interim, large hatcheries should be constructed "where water supplies allow, because they have proven value." Fishery Agency comments, above note 44, at 63.

157. Fish and Wildlife Program §§ 704(k)(1)-(2), at 7-15.

158. Id. § 704(k)(3), at 7-16 (due November 15, 1984).

159. Id. § 901, at 9-1.

160. Id. § 902, at 9-1. However, it is clear that additional storage is not the only way to combat water supply problems in the Yakima. As the Council notes, "change[s] in existing storage operations or water management functions" could help alleviate tensions between fisheries needs and consumptive uses. Id. Such changes may come as a result of the Council's consultation efforts (see text accompanying note 163, below), or perhaps has a result of the adoption by Washington courts of the "public trust" reasoning employed in the California Supreme Court's Mono Lake decision. See Anadromous Fish Law Memo #21 (March 1983) at 15.

161. Fish and Wildlife Program § 903, at 9-1 to 9-2. The Council stated that any new storage should be used "primarily to protect, mitigate, and enhance anadromous and resident fish in the basin," drawing criticism from the Washington Farm Bureau, the Bureau of Reclamation and the Washington Department of Ecology. See id. App. II-14. The Council also promised to evaluate reregulating dams "to provide maximum flexibility in managing the additional stored water." The fishery agencies opposed reregulating dams in the Yakima Basin, because such dams are employed to minimize the impacts of power operations on fisheries--and power operations are not the primary problem in the Yakima Basin. Fishery Agency comments, above note 44, at 96.

162. Fish and Wildlife Program § 904(a)(2) (con't.)

and the Council promises to consult with water users for the purpose of developing more efficient water use practices.¹⁶³

Specific measures include a directive to FERC to order Pacific Power and Light to install best available fish screens at its Wapatox Dam by February of 1984; the promise of minimum flows (based on the Fish and Wildlife Service flow study) at Wapatox and the Bureau of Reclamation's Prosser and Roza Dams; and structural modifications at both Roza and Prosser.¹⁶⁴ A list of passage problems at irrigation facilities along with needed corrections is specified, with priority given to facilities in the lower river.¹⁶⁵ Finally, the Program calls for an evaluation of the feasibility of reintroducing anadromous fish runs above the Cle Elum Dam and promises support for a hatchery on the Yakima Reservation when the Council determines the adequacy of harvest management efforts.¹⁶⁶

at 9-4. Note that this measure addresses cost-sharing for additional storage only; it does not require cost-sharing for passage and habitat restoration measures. But see *id.* § 1304(e), at 13-3 to 13-4, discussed at notes 167-177 and accompanying text below.

163. *Id.* § 904(a)(3), at 9-4. Although it has no authority over irrigation practices (see Power and Conservation Act, § 10(h)), the Council noted it would monitor implementation of § 210 of the Reclamation Reform Act of 1982 requiring (1) the Secretary of the Interior to encourage full consideration and incorporation of prudent and responsible water conservation measures by non-federal irrigators where shown to be economically feasible; (2) the development of water conservation plans by irrigation districts with repayment or water service contracts; and (3) the Secretary of the Interior to enter into memoranda of agreement with relevant federal agencies to help assist in implementing water conservation measures. Fish and Wildlife Program at § 904(a)(4), at 9-4.

164. Fish and Wildlife Program §§ 904(b), (c)(1), (d)(1) and (2) at 9-4 to 9-5. Pending completion of the Fish and Wildlife Service's flow study, the Council stipulated it would support interim flows if more detailed data and information were provided by the fishery agencies and tribes. *Id.* § 904(c)(2), at 9-4 to 9-5.

165. *Id.* §§ 904(d)(2)-(4) and Table 6, at 9-5 to 9-6. In addition, a study to evaluate relocation of juvenile fish screens at the Ellensburg Town Diversion Dam is called for. *Id.* § 904(d)(5), at 9-5. A most welcome development involving one of the projects listed in Table 6 concerns the Naches Cowiche Dam on the Naches River. The City of Yakima recently proposed to the Council that the installation of fishery facilities at the project be accelerated to proceed simultaneously with the City's planned rehabilitation work on the Dam, saving the region an estimated \$218 million. See Letter of Dennis Covell, City of Yakima Director of Engineering and Utilities to Keith Colbo, Chairman of the Council's Fish and Wildlife Committee (June 7, 1983).
(con't.)

Implementing the Yakima Basin measures has run into difficulty because of uncertainties as to apportionment of enhancement costs. Although the Power and Conservation Act authorizes off-site enhancement measures (e.g., at non-power dams, irrigation canals, etc.), as compensation for systemwide losses, it forbids charging rate-payers with costs in excess of those attributable to the development and operation of the power system.¹⁶⁷ In other words, enhancement measures at non-power projects may be funded by the Program so long as they are compensation for power system-caused losses, taken as a whole.¹⁶⁸ One problem is that the Council was unable to determine the extent of fish and wildlife losses attributable to power system development and operations by the deadline for Program approval,¹⁶⁹ although it designed Program measures in light of the Act's intention to limit the rate-payers liability¹⁷⁰ and commissioned a study to enable it to make such a determination.¹⁷¹ A related problem is that the Act anticipates some non-ratepayer funding of measures at federal dams; such costs to be allocated under existing accounting procedures by BPA in consultation with the Corps of Engineers and the Bureau of Reclamation.¹⁷² As a result of these provisions relating to the funding of enhancement measures, quick implementation of the Program's Yakima Basin measures has been jeopardized.

After the Council's staff developed cost estimates and time schedules to implement Yakima Basin fish screening and passage measures, BPA proposed funding somewhat less than half the cost of implementing these measures, assuming that the remaining costs would be provided by the Bureau of Reclamation and non-federal sources.¹⁷³ While BPA is willing to help fund

166. Fish and Wildlife Program §§ 904(d)(6) and (e), at 9-5 to 9-6.

167. Power and Conservation Act §§ 4(h)(5), 4(h)(8)(A) (enhancement measures); §§ 4(h)(8)(B) (electric consumers' liability limited to power system impacts).

168. *Id.* § 4(h)(10)(A) (BPA's fish and wildlife expenditures limited to effects of development and operation of the hydroelectric system). Any enhancement measures that are not in compensation for hydroelectric system losses are to be coordinated with power-related enhancement measures through interagency agreements. *Id.* § 4(h)(8)(C).

169. Fish and Wildlife Program § 201, at 2-1 to 2-3.

170. *Id.* §§ 101, 108, 200, at 1-1, 1-7, 2-1.

171. This study, being conducted by the fishery agencies and tribes, is due in April, 1984. *Id.* §§ 201(3)-(5) at 2-3. See also *id.*, at App. II-15 (PNUCC suggestion that non-power entities contribute to enhancement costs, and that ratepayers be given appropriate credit for offsite enhancement measures in the Yakima against their responsibilities elsewhere).

172. Power and Conservation Act § 4(h)(10)(C); see also Fish and Wildlife Program § 1304(e)(2), at 13-4 (BPA to initiate discussions with federal project operators to determine "most expeditious means" of funding Program measures).

(con't.)

installation of fishery facilities, the agency does not wish to be responsible for operation and maintenance activities or costs, claiming it possesses neither the requisite expertise nor the staff. Therefore, BPA has proposed transferring funds to the Bureau to help operate and maintain fish facilities at Bureau projects. However, the Bureau claims it lacks authority to construct, operate, or maintain fish and wildlife facilities at most of its Yakima Basin projects, and that accepting BPA funds might amount to an impermissible "augmentation of appropriations" without congressional approval.¹⁷⁴ Therefore, BPA and the Bureau have suggested that federal legislation is necessary to authorize the Bureau to accept BPA funds for fish and wildlife purposes and to construct and operate fish facilities. As this issue goes to press, efforts were underway to reach agreement among various regional interests on proposed legislation that would accomplish these purposes and might also authorize the East Selah Regulating Dam.¹⁷⁵

This alleged need for more legislation is an indication of the complex institutional arrangements necessary to effectuate the restoration efforts called for by the Program. However, it is not entirely clear that additional congressional action must precede implementation of Yakima Basin measures;¹⁷⁶ such a position

173. Of the estimated cost of \$23 million, BPA proposed contributing about \$10 million, the Bureau would contribute approximately \$11-1/2 million; and around \$1-1/2 would be contributed by non-federal entities, including the State of Washington.

174. An exception, according to the Bureau, is its Kennewick Division which was authorized to allocate costs to the "conservation and propagation of fish and wildlife" by the Act of June 12, 1948 (62 Stat. 382).

175. In 1979, the Bureau of Reclamation was authorized to study the feasibility of this project by Public Law 96-162. However, the State of Washington is so eager to pursue the project (one that has not been endorsed by all fishery agencies, see note 161 above), that its Senators recently introduced legislation that would credit the State for funds expended if it begins construction of the project before the Bureau completes its feasibility studies and the project is subsequently authorized by Congress. See S. 1027, 98th Cong., 1st Sess., 129 Cong. Rec. S. 4418 (April 12, 1983).

176. For example, the Economy Act of 1982 (31 U.S.C. § 1531) appears to authorize the Bureau to accept BPA funds for fish and wildlife purposes. And BPA seems to have sufficient authority to transfer funds by virtue of § 8(b) of the Power and Conservation Act (giving BPA express authority to make expenditures to carry out the purposes and provisions of the Power and Conservation Act). However, BPA has alleged in its 1983 rate case that "there exists no mechanism...for Bonneville to circumvent [the Corps'--presumably, the same reasoning would apply to the Bureau's] authorization and appropriation process and transfer funds to them..." BPA 1983 Rate Case, Transcript at 1253 (con't.)

reflects a narrow reading of the spirit, if not the provisions, of the Power and Conservation Act.¹⁷⁷ If the process of securing this legislation delays implementation efforts, the intent of both Congress and the Council will be contravened.

G. Ocean Survival

The fishery coalition made no recommendations regarding restrictions on ocean harvest, believing this issue to be outside of the Council's scope of authority.¹⁷⁸ However, since one measure of the success of its program will be the number of adult fish returning to spawn, the Council included Program provisions aimed at ensuring adequate escapement levels from the ocean fisheries, while recognizing that it lacks authority to impose harvest management controls.¹⁷⁹

Ocean survival is directly related to the "mixed stock" character of the ocean fisheries--that is, natural and wild stocks mixed with hatchery stocks. Since hatchery stocks can be harvested much more heavily than natural and wild stocks and still reproduce themselves, harvest managers are faced with a recurring dilemma: either regulate to optimize hatchery harvests while overharvesting wild stocks or regulate to protect wild stock escapement while underharvesting hatchery stocks.¹⁸⁰ Despite painful cutbacks in the ocean fisheries in

(testimony of John Palensky). BPA has also stated that it will not be responsible for operation and maintenance costs. *Id.* at 1249 (testimony of Janet McLennan).

177. The Act essentially reauthorized the dams in the Federal Columbia River Power System to be operated for fish and wildlife purposes (§ 2(6)). It also authorized enhancement measures at non-power projects (notes 6-8 and 167-68 and accompanying text above) and envisioned intergovernmental agreements as a means of coordinating power-related enhancement measures with non-power-related enhancement measures (note 168 above). But, although it also commanded the Bureau to exercise its responsibilities "consistent with the purposes of this and other applicable laws" to adequately protect and restore fish and wildlife in a manner that provides "equitable treatment" to fish and wildlife (§ 4(h)(11)(A)(i)), this provision technically applies only to hydroelectric facilities. However, in light of the Act's purposes, offsite enhancement provisions, and its overriding concern with expeditious implementation, this limitation was likely just a drafting oversight.

178. E.g., Fishery Agency comments, above note 44, at 50.

179. Fish and Wildlife Program, § 501 at 5-1. Authority to set harvest management controls, of course, rests with the states (in-river and within three miles of their coasts), with the Pacific and Northwest Pacific Fishery Management Councils (beyond three miles in U.S. waters), and with the Canadian government (British Columbia). *Id.* § 501(b) at 5-1.

180. See *id.* § 703, at 7-3.

recent years,¹⁸¹ the proclivity of ocean harvest managers has been to emphasize the former course of action--to the detriment of the Columbia Basin's wild stocks. However, it must be emphasized that the hydroelectric system has played a central role in the trend toward a mixed stock fishery: for years hydroelectric projects were sanctioned on the assumption that fish ladders and hatcheries (usually cited in the lower tributaries) could compensate for any dam-caused losses.¹⁸² The existence of 70 salmon and steelhead hatcheries in the Columbia Basin¹⁸³ is in large measure a consequence of this assumption.

The necessity of coordinating harvest management controls¹⁸⁴ with upriver enhancement efforts in order to ensure meaningful restoration of upriver stocks justifies the Council's concern over the adequacy of harvest management controls and its determination to consult on a regular basis with harvest regulators.¹⁸⁵ Nevertheless, questions remain about the wisdom

181. E.g., the Council notes that Alaska, British Columbia, and Washington have instituted programs to reduce ocean vessel licenses, while Oregon and California have imposed moratoria on new licenses. *Id.* at § 501(c), at 5-1 to 5-2.

182. See note 141 above. For a highly readable account of this tragic scenario in western Washington streams, see B. Brown, *Mountain in the Clouds: A Search for the Wild Salmon*, 62-108 (Simon & Schuster, 1982). The fishery agencies point out that the dams have exacerbated the harvest management problems of the mixed stock fishery:

The construction and operation of Columbia River and tributary hydroelectric dams has led to reduced habitat and poor migration conditions. The resultant reduced survival of juvenile salmon reaching the ocean has seriously compounded ocean fishery management. Many upriver stocks formerly supported healthy in-river and ocean fisheries. Much of this harvestable surplus which formerly existed with these stocks is now "harvested" annually by dam mortality. This "harvest" in addition to the mixed stock harvest in the traditional fisheries has lead [sic] to the difficulty in adequate harvest rate control.

Fishery Agency comments, above note 44, at 49.

183. Fishery Agency comments, above note 44, at 82.

184. In response to numerous comments (see, e.g., *id.* at 50) pointing out that sockeye and steelhead are not harvested in the ocean (and spring chinook only minimally), the Council expanded its focus of concern to include both ocean and in-river harvests.

185. *Fish and Wildlife Program* § 504(a) (consultation with fishery management councils, states, tribes, and State Department with objective of ensuring consistency of ocean fishery management plans and enhancement plans under the Salmon and Steelhead Enhancement Act of 1980).

of Council's decision to withhold funding of capital facilities at John Day Dam and on the Yakima Reservation until it determines "the adequacy" of harvest controls.¹⁸⁶ In addition to having neither the legal authority nor the staff to evaluate harvest management controls, the Council set forth no criteria by which to make such determinations, although it stated that it will establish production goals which in the future "may provide a basis for determining the adequacy of controls..."¹⁸⁷ Until such goals are formulated, these promised enhancement facilities will apparently not be funded,¹⁸⁸ a situation which the Colville Tribe labeled a "Catch 22."¹⁸⁹

Despite these questions regarding the Council's approach to harvest management, ocean survival is, of course, a prerequisite to enhanced upriver runs. There is little question that the ocean harvest has been excessive in the past, and perhaps the Council can help to influence reductions in the ocean harvest until rehabilitation efforts begin to take effect. However, there are encouraging signs that such reductions are coming, irrespective of the Council's efforts.¹⁹⁰ Moreover, it is important to bear in mind that ocean fishers are among the intended beneficiaries of the Council's program and that increased fishing seasons, so long as

186. See note 155 above and accompanying text.

187. *Fish and Wildlife Program*, at App. II-7. Presumably, these production goals will emanate from the stock-by-stock, area-by-area goals promised sometime in 1984 or later. See notes 55-60 and accompanying text above.

188. See notes 55 and 56 above and accompanying text. *Fish and Wildlife Program* § 504(b)(2) at 5-4. The John Day acclimation pond is also conditioned upon a commitment to reprogram fish from lower river hatcheries (note 155 above). Umatilla Reservation acclimation ponds were removed from this "hostage list" in response to comments indicating that funds for these facilities were already appropriated. *Id.* at App. II-7.

189. Therefore, while the Council is entirely correct that it is necessary to coordinate the Council's Program with the management entities regulating the ocean fishery, withholding of funding necessary for enhancement of Columbia River stocks will be counterproductive and will only delay realization of the statutory goal established by Congress of enhancing those stocks.

Colville Tribe comments, above note 85, at 22.

190. For example, U.S. and Canadian negotiators recently agreed upon a draft Treaty that would reduce interception of Columbia Basin-origin stocks off the coasts of Canada and Alaska. See *Anadromous Fish Law Memo* #21 (March 1981) at 13. And this year, for the first time, the Pacific Fishery Management Council imposed a ceiling on the ocean harvest of upriver chinook stocks. See *2 Northwest Energy News No. 2* (May/June 1983) at 7.

they do not adversely affect the revitalization of upriver stocks, will be one measure of the success of the Council's program.

H. Resident Fish and Wildlife

The development and operation of the hydroelectric system has adversely affected resident fish and wildlife as well as anadromous fish. The Council received especially detailed recommendations concerning resident fish measures from the State of Montana, where anadromous fish runs have been extinguished.¹⁹¹ These recommendations generally sought to revise operating procedures at certain reservoirs to provide improved habitat both in reservoirs and in downstream areas and to undertake specific restoration studies and projects. Species of particular interest include the white sturgeon, kokanee, Dolly Varden (bull trout), and westslope cutthroat trout.¹⁹²

The majority of the measures adopted by the Council concern western Montana streams¹⁹³ and many involve research.¹⁹⁴ However, the Council

191. Fish and Wildlife Program § 802, at 8-1.

192. Id. § 801, at 8-1. Although biologically the white sturgeon is an anadromous fish, the fishery coalition recommendations treated the species as a resident fish, because in the Columbia Basin it no longer is able to migrate from fresh water to the ocean and back (although it does migrate between dams). Id. at App. II-12.

193. The Colville Tribe alleged that the program unfairly ignored it in emphasizing western Montana, since the anadromous fish runs upon which the tribe historically depended were extinguished by the Grand Coulee and Chief Joseph Dams, just as the Montana runs were. Therefore, the tribe asked for the development of a resident fish program on its reservation. The tribe also requested that the Okanagon River System be included in the program of anadromous fish habitat improvements (particularly regarding the laddering or removal of Enloe Dam) and that the Council found a hatchery immediately below Chief Joseph Dam. Colville Tribe comments, above note 85, at 23-26. Although the Enloe Dam is included among the passage restoration projects under consideration by its Fish Propagation Panel (see Fish and Wildlife Program § 704(e), Table 5, at 7-12), the Council responded to the other requests by indicating that such measures were not included among the original recommendations, and that the Program amendment process was the appropriate means for their inclusion. Id. at App. II-12. A similar response was given to suggestions (by Professor Stober at the University of Washington) for resident fish enhancement projects in Lake Roosevelt and (by the Forest Service) for measures on the North Fork Payette and Cascade Rivers. Id., at App. II-12, II-14. For a discussion of the recent controversy surrounding the Enloe Dam, see note 232 below.

194. Among the many studies are: a study of kokanee reproduction in Flathead Lake, due by (con't.)

did direct the Bureau of Reclamation and the Corps to revise operating procedures at their Hungry Horse and Libby projects, including limitations on drawdowns for power purposes.¹⁹⁵ Further, specific flow levels on the Flathead River below Hungry Horse are called for to protect kokanee spawning.¹⁹⁶ Minimum flows below Libby to protect resident fish in the Kootenai River and in Lake Kookanusa are established, effective in 1987.¹⁹⁷ The Program also directs the Corps to remove accumulated material in Kootenai River tributary deltas¹⁹⁸ and authorizes the purchase of water from the Painted Rocks Reservoir to maintain summer and fall flows for the benefit of Bitterroot River resident fish.¹⁹⁹ Other projects include Corps construction and maintenance of a spawning channel along the Flathead River, development of Bureau of Reclamation operating procedures, and

November, 1985 (§ 804(a)(2), at 8-2); a study of the effects of Kerr Dam on game fish in the lower Flathead and its tributaries due by November, 1988 (§ 804(a)(3), at 8-2); studies of various flow regimes below the Big Fork Dam, due by November, 1985 (§ 804(a)(4)-(5), at 8-2 to 8-3); flow studies on tributaries of the Kootenai River and Lake Kookanusa to improve spawning and rearing of rainbow and cutthroat trout (§ 404(a)(9), at 8-3); studies of the effects of the drawdown limits at Hungry Horse and Libby on fisheries enhancement, power production, and the implementation of the Water Budget, due by November, 1986 (§ 804(b)(3), at 8-4); studies of the effect on kokanee reproduction in Flathead Lake of the operations of Hungry Horse and Kerr Dams, due by November, 1983 (§ 804(b)(5)-(6), at 8-4 to 8-5); a study of the resident fish effects of releases of suspended solids, heavy metals and organic pollutants from the proposed Milltown Dam (§ 804(b)(8), at 8-5); a study of the potential of artificial propagation of white sturgeon (§ 804(e)(8), at 8-6); and a number of enhancement studies on the Bitterroot River, the Kootenai River and Lake Pend Oreille (aimed at construction of a hatchery), and the Lower Clark Fork River (§ 804(e)(2)-(5), (11), at 8-6 to 8-7).

195. Id. § 804(b)(1)-(2), at 8-3 to 8-4. The Corps opposed these drawdown limits, apparently on flood control grounds. Id. at App. II-13. The Corps recently alleged drawdown limits "will require additional biological justification based on and supported by best available scientific knowledge," apparently challenging the Council's rationale. The Corps also stated that such limits might make project reauthorization "necessary or desirable." Corps comments, above note 75, at 18.

196. Id. § 804(a)(1), at 8-2. BPA opposed such flows pending further studies. Id. at App. II-12.

197. Id. § 804(a)(7), at 8-3. In addition, a process to resolve conflicts between minimum flows and drawdown constraints is provided. Id. § 804(a)(8), at 8-3.

198. Id. § 804(d)(1), at 8-5. The Corps has recently alleged it lacks authority to carry out this measure. Corps comments, above note 75, at 20.

199. Id. § 804(e)(1), at 8-5 to 8-6.

installation of a barrier net system at Banks Lake to improve kokanee production, and placement of spawning gravel downstream from the Big Fork Dam.²⁰⁰

Recommendations concerning the adverse effects of the hydroelectric system on wildlife²⁰¹ centered around (1) establishing a Wildlife Coordinator to help ensure formal wildlife representation in power system planning and management, (2) compiling wildlife inventories at all hydroelectric projects, and (3) altering project operations and acquiring habitat to compensate for past and ongoing wildlife losses.²⁰² The Council responded by approving funding for a Wildlife Coordinator, ensuring that wildlife considerations are taken into account in all future hydroelectric system activities, and initiating research designed to provide a basis for future wildlife mitigation and enhancement projects.²⁰³ In addition, the Council directed BPA to enter into memoranda of agreement with the region's states regarding transmission corridor mitigation and promised to develop criteria to guide land acquisitions designed to provide offsite habitat.²⁰⁴

200. Id. §§ 804(b)(4), (10), (a)(6), at 8-3 to 8-5.

201. The hydroelectric system's legacy to wildlife has been both adverse and beneficial. Adverse effects include habitat inundation due to reservoir construction and habitat damage due to reservoir operations (especially water level fluctuations). In addition, land and stream alterations with adverse wildlife effects include road building, wetland destruction, stream channelization, and transmission corridor construction and maintenance. On the other hand, some wildlife species (e.g., wintering game birds) have benefited from the habitat supplied by reservoirs. The Council stated that its Program will be based on the net wildlife effects of hydroelectric development and operation. Id. § 1001, at 10-1.

202. Id. § 1002, at 10-1 to 10-2.

203. Id. § 1004(a) and (b), at 10-2 to 10-3. The Wildlife Coordinator will be a member of the Council's staff. Id. at App. II-16. Wildlife considerations will be factored into consultation and coordination arrangements established under § 1304(c) of the program (see note 219 below). Mitigation research includes a study of the status of all past, present, and proposed mitigation (due November 1983) and a study measuring the wildlife and habitat losses at various hydroelectric projects listed in Table 7 of the Program (at 10-4 to 10-5). Based on the site specific project studies (due between 1984 and 1987, depending on the project), a mitigation and enhancement plan for each facility will be developed.

204. Id. § 1004(c) and (d). The Council did not accept BPA's request to limit transmission corridor mitigation under the program to facilities "appurtenant to" hydroelectric facilities. Id. at App. II-17. A list of suitable offsite habitat acquisitions was supplied in Table 8 of the Program (at 10-5).

I. Research and Management Coordination

Two recurring problems that have hampered efforts to fully enfranchise fish and wildlife with hydroelectric planning and operations concern the need (1) to involve fish and wildlife considerations in power planning and operations,²⁰⁵ and (2) to ensure that research efforts are directed to produce information useful in resolving conflicts between power operations and fish and wildlife protection.²⁰⁶ The Program includes provisions aimed at both of these difficulties.

To establish research objectives and oversee Program implementation,²⁰⁷ the Council established a Fish and Wildlife Committee, composed of 4 Council members (one from each state).²⁰⁸

205. See, e.g., Anadromous Fish Law Memos #10 (Oct. 1980), #18 (May 1982).

206. The Council summarized this problem as follows:

A major concern of the Council is whether the federal project operators and regulators, or the fish and wildlife agencies and tribes can be fully effective in establishing priorities and designing research projects that can and will resolve conflicting objectives between fish and wildlife management and hydroelectric system operation. In fact, inherent within the existing funding mechanism is the potential for establishing research objectives which underemphasize or overemphasize fish and wildlife objectives.

The Council is also concerned that research on the existing fish and wildlife resources of the Columbia River Basin has not provided needed data in some areas, whereas in other areas of study there are substantial overlaps among the research programs. The fish and wildlife agencies and tribes have expended substantial efforts on many important fish and wildlife research projects. However, these projects have not been subject to critical evaluation, nor have they been sufficiently coordinated and integrated to achieve maximum benefits for fish and wildlife. Proper coordination and integration of research could improve the knowledge of fish and wildlife resources of the basin and result in a better understanding of measures necessary to protect, mitigate, and enhance those resources.

Fish and Wildlife Program § 1100, at 11-1.

207. Id. § 1104(c), at 11-2. Among the specific duties of the Committee are to assess past and present research projects, report on data needs, and prepare a 5-year research plan.

208. Id. § 1104(a), at 11-2. The Committee advises the full Council; all final decisions of (con't.)

It also called for the development of an Intergovernmental Agreement with BPA to facilitate funding of Program measures.²⁰⁹ This memorandum was signed on February 9, 1983.²¹⁰ The Fish and Wildlife Committee has met regularly since its establishment last November; its meetings are open to the public.²¹¹

Enfranchising fish and wildlife in power management decision-making is the goal of the Program's provisions calling for "coordination of river operations,"²¹² which are among the

the Committee must be approved by the full Council. The Committee members are: Keith Colbo (MT) (Chairman), Dan Evans (WA), Al Hampson (OR), and Larry Mills (ID).

209. Id. § 1104(b)(2), at 11-2.

210. Agreement Between U.S. Dept. of Energy (acting by and through the Bonneville Power Administration) and the Pacific Northwest Electric Power and Conservation Planning Council Regarding Funding of Fish and Wildlife Program Measures (Feb. 9, 1983). Although § 1104(h)(1) requires BPA to fund Program measures approved by the Council under the Agreement, proposal evaluation and contract negotiations are the responsibility of BPA, with Council comments being given "due weight" by BPA and Council staff represented on the evaluation and negotiation teams. This Agreement was prompted by Council concerns over BPA's issuance of a "notice of program interest" (NOPI) soliciting proposals to help implement the Council's (then draft) Program on September 17, 1982. The Council was concerned that BPA could, via the NOPI process, fund projects that the Council believed were not worth funding. And, in fact, there were at least 17 such projects, along with 12 other projects the Council wanted funded but BPA did not. However, as a result of negotiations under the Intergovernmental Agreement, BPA will fund all projects the Council wanted funded, although it will also fund 12 others the Council did not support. See Letter of John Palensky, Director of BPA's Fish and Wildlife Division to Keith Colbo, Chairman of the Council's Fish and Wildlife Committee (March 11, 1983); 2 Northwest Conservation Act Report no. 12 (June 10, 1983) at 5-6.

211. 2 Northwest Energy News no. 2 (May/June 1983) at 7. The Program requires the Committee to consult with the following entities: state and federal fish and wildlife agencies, Columbia Basin Indian tribes, the Salmon and Steelhead Advisory Commission, federal project operators and regulators (including BPA, the Corps of Engineers, the Bureau of Reclamation, and the Federal Energy Regulatory Commission), BPA customers, state water management agencies, irrigation districts, federal land management agencies, fish and wildlife experts in academia, and citizen groups. Fish and Wildlife Program § 1104(d), at 11-3.

212. Fish and Wildlife Program §§ 1300-04. These provisions are based on §§ 4(h)(10) and (11) of the Act which require BPA to use its funding and legal authorities consistent with the program and all federal water managers (including BPA) to (1) take the program into account to the fullest extent practicable; (con't.)

most important in the entire Program, for without them the Program might be viewed by federal project operators and regulators as merely guidance or aspirational in nature.²¹³ These measures require federal water managers to treat the Program as a "hard constraint" on power system planning and operational decision-making under the Pacific Northwest Coordination Agreement and to incorporate program measures such as the Water Budget, flow requirements, and drawdown restraints into power system rule curves.²¹⁴ BPA is directed to use its financial and legal authorities in a manner consistent with the Program concerning a number of specified activities,²¹⁵ and the Federal Energy Regulatory Commission (FERC) is directed to initiate pertinent actions, including supplementation of license conditions, necessary to implement the Program.²¹⁶

Because federal water managers are required by the Act to take the Program measure into account "to the fullest extent practicable," the Council defined the meaning of this directive in § 1304(a)(5) of the Program. That section requires federal agencies to provide in writing (1) plans indicating the measures will be implemented, or (2) explanations (with supporting information) as to why implementation is physically, legally, or otherwise impractical, including all possible allowances available to permit implementation. These measures indicate that Council takes seriously its obligation to ensure that its Program is implemented, not merely considered and ignored by recalcitrant water managers.²¹⁷

(2) provide "equitable treatment" to fish and wildlife with other project purposes in order to protect and restore fish and wildlife; and (3) to consult and coordinate with federal and state fish and wildlife agencies, Indian tribes, and project operators to the greatest extent practicable. See note 73 above; and Fulfilling Parity, above note 3, at 152-56.

213. On the limits of aspirational commands to achieve meaningful institutional change, see Henderson and Pearson, Implementing Federal Environmental Policies: The Limits of Aspirational Commands, 78 Col. L. Rev. 1429 (1978).

214. Fish and Wildlife Program § 1304(a)(1) and (2), at 13-2. The statutory requirements concerning BPA consistency, the "fullest extent practicable" requirement, and the "equitable treatment" standard (see note 212 above) are reiterated in § 1304(a)(1). "Rule curves" are graphic guides to the use of storage water defining operating rights, entitlements, obligations, and limitations for each reservoir. Id. § 1600, at 16-3.

215. Id. § 1304(a)(3), at 13-2. I.e., "decisions on contracts, billing credits, resource acquisitions, environmental cost/benefit analysis, power supply forecasting, rates, power scheduling, intertie arrangements, use of advance energy withdrawals, and other pertinent planning and operations." Id.

216. Id. § 1304(a)(4), at 13-2 (Initiation of proceedings to begin by January 15, 1983). (con't.)

Other measures require consideration of the use of water stored in Canadian reservoirs for fish and power flows,²¹⁸ development of consultation and coordination processes by November, 1983;²¹⁹ and formulation of repair and maintenance plans for dams affecting fish passage by the same date.²²⁰ The Program also directs BPA to promptly initiate proceedings to ensure that nonfederal project operators do not bear costs not attributable to the development and operation of their projects.²²¹ With respect to federal projects, the Program directs BPA to consult with federal project operators "to determine the most expeditious means of funding each program measure."²²² Notably, this provision does not anticipate delaying implementation of measures until non-ratepayer sources of funding are secured (e.g., by congressional authorization and appropriation), which seems to be BPA and the Bureau of Reclamation's assumption concerning certain Yakima Basin measures.²²³ On the contrary, its clear intent is to use non-ratepayer money only where it is expeditious to do so--to delay implementation of measures by the process of securing non-ratepayer money would violate the intent of the Power and Conservation Act.²²⁴

217. See, e.g., Anadromous Fish Law Memo #17 (April 1982) at 3, 22-23.

218. Fish and Wildlife Program § 1304(b)(1), at 13-2 to 13-3 (also requiring the State Department, BPA, and the Corps to use their best efforts to bring about an exchange of notes with Canada under the terms of the Columbia River Treaty, if necessary). The State Department recently stated that the Treaty did not bar use of Canadian storage to augment fish flows. See Anadromous Fish Law Memo #19 (Sept. 1982) at 13-14.

219. Fish and Wildlife Program § 1304(c), at 13-3. Prior to that date, the program requires federal water managers to use their best efforts to coordinate and consult with fish and wildlife entities to the fullest extent possible, especially regarding research plans (in order to reach agreement concerning the design, scope, and measurement of results).

220. Id. § 1304(d) at 13-3. If such plans are not forthcoming, the Council plans to invite each respective entity to explain why it failed to prepare a plan.

221. Id. § 1304(e)(1) at 13-3. See 48 Fed. Reg. 20,117 (May 4, 1983) (BPA notice of intent to develop nonfederal project compensation policies and procedures). Interestingly, BPA finds authority to compensate nonfederal project operators under both § 4(h)(11)(A)(ii) (see note 81 above) and § 4(h)(10)(A) of the Act. The latter provision does not require nonfederal project costs or power losses to result from measures imposed by other federal agencies, thus providing BPA with considerable discretion. However, BPA should be chary of providing compensation to nonfederal project operators for measures required by state law (see note 128 above).

222. Fish and Wildlife Program § 1304(e)(2), at 13-3 (emphasis added).

223. See notes 174-75 above and accompanying text.

(con't.)

There are, moreover, suitable mechanisms to compensate ratepayers for any overcharges.²²⁵

J. Future Hydroelectric Development

A pathbreaking aspect of the Program is the section on new hydroelectric development. Recognizing that a remedial program committing substantial ratepayer dollars to compensate for past fish and wildlife losses could be undercut by new project development, the fishery coalition called for substantive standards and procedures that would ensure that no hydroelectric developments proceeded without provision for full mitigation of adverse effects and consideration of the cumulative effects of multiple developments. The coalition also recommended that the Council designate certain unaltered streams and priority habitat to be protected from future hydroelectric development as compensation for past losses.²²⁶

224. The fish and wildlife provisions of the Act were passed in response to a sense of crisis. Endangered Species Act status for certain upriver runs was under consideration, and the General Accounting Office informed Congress that for remedial action to be effective "time was a critical factor." See Fulfilling Parity, above note 3, at 108-12, 125. The use of ratepayer money was the principal means to overcome the uncertainties and delays inherent in federal water managers' appropriations.

225. For example, BPA might grant an overcharge credit against fish and wildlife costs in future rate cases; subsequent non-ratepayer appropriations could be employed to reduce the ratepayer obligation; or BPA might receive a credit against its federal repayment requirements. In fact, since BPA envisions repaying to federal project operators the costs of fish facilities that are attributable to power, compliance with the Council's directive of pursuing "the most expeditious means" of funding Program measures (note 172 above) would seem to argue for inclusion of all Program costs (except those already appropriated) in the BPA rate base, then crediting the ratepayers with amounts equivalent to subsequent appropriations. Such an arrangement would ensure that funds to implement Program measures will be available when needed, overcoming the delays which characterize the appropriations process, while also ensuring that ultimately costs will be fairly allocated between power and nonpower uses.

226. Fish and Wildlife Program § 1202, at 12-1. The effects of new developments are of considerable concern because interest in small-scale Northwest hydropower is booming, due in large measure to escalating costs of alternative electric power sources and the existence of federal and state subsidy programs. See, e.g., Anadromous Fish Law Memo #19 (Sept. 1982) at 16. The Council notes that there are at least 400 pending FERC applications in the Northwest and approximately 400 additional sites for which FERC preliminary permits (authorizing feasibility studies) have been issued. Twenty to 50 of these projects are proposed for tributaries

(con't.)

The Council adopted the majority of these recommendations. Of most immediate impact, the Program establishes a number of conditions for new Columbia Basin hydroelectric developments.²²⁷ Fishery conditions include consultation requirements, specific flow and facility plans prior to construction, installation of best available bypass, full compensation for unavoidable fish or habitat losses, a nondegradation standard concerning treaty fishing rights and habitat, and assurance that all fish protection measures will be operational prior to project operation.²²⁸ Wildlife conditions include consultation, a number of restrictions on construction activities designed to minimize effects on habitat and species, avoidance of critical riparian habitat as defined by the wildlife agencies and tribes, regulation of water levels to reduce adverse effects, improved wildlife carrying capacity of undisturbed areas or acquisition of replacement habitat as compensation for any unavoidable losses, and funding operation and maintenance costs of any acquired land for the life of the hydroelectric project.²²⁹ Although these conditions are limited to Columbia Basin projects, the Council included similar conditions as a prerequisite to BPA actions outside the confines of the Basin in its Conservation and Electric Power Plan.²³⁰

The Program includes specific provisions aimed at ensuring a meaningful role for the

containing important anadromous fish habitat. Fish and Wildlife Program § 1201, at 12-1.

227. Actually, the Program requires FERC, the Corps, the Bureau of Reclamation, and BPA to explain how developments under their jurisdiction satisfy the conditions or why the conditions cannot be incorporated into the project (id. § 1204(a)(3), at 12-3), language that the National Wildlife Federation complained would create a loophole enabling these development-oriented agencies to ignore the Council's conditions. The Federation suggested that a more appropriate approach in light of § 4(h)(1)(A)(ii) of the Act (requiring these agencies to take the Council's program into account "to the fullest extent practicable") would be to require compliance with the conditions unless demonstrated that there were to be "no feasible alternatives in which the conditions could be satisfied and no feasible alternative energy sources to the project." Wildlife Federation comments, above note 24, at 30-31. However, the Council apparently ignored these suggestions (cf. Fish and Wildlife Program, App. II-19 to II-20).

228. Id. § 1204(a)(1), at 12-2.

229. Id. § 1204(a)(2), at 12-2 to 12-3.

230. See Northwest Power Planning Council, Northwest Conservation and Electric Power Plan, vol. I, App. E (1983). Such conditions, authorized by § 4(e)(2)(C) of the Act, were urged in Anadromous Fish Law Memo #20 (Jan. 1983). See also Thatcher, *The Pacific Northwest Electric Power Planning and Conservation Act: Fish and Wildlife Protection Outside the Columbia River Basin*, 13 *Envtl. L.* 517 (1983). However, these non-Columbia Basin conditions apply only to BPA actions, not to the other federal water managers.

Council in FERC proceedings and in any Corps of Engineers or Bureau of Reclamation studies or proposals for Columbia Basin developments.²³¹ The Council has recently demonstrated that it takes these Program measures seriously, appealing an FERC license for the Enloe Dam which ignored the requirement of showing how the project accounts for the Council's program "to the fullest extent practicable."²³²

Although it had proposed an interim moratorium of hydroelectric developments on 17 stream segments in its draft Program, the Council backed off from establishing such a moratorium or from designating any particular stream for priority consideration for inclusion in a system of critical habitat streams.²³³ Instead, the Council deferred the issue of which streams should be protected from future hydroelectric development pending an 18-month study of alternative means of classifying and designating such streams.²³⁴ At the conclusion of this study,

231. Fish and Wildlife Program § 1204(d), at 12-4. FERC is to require all license applicants (including license renewals, amendments, and exemptions) to demonstrate how the proposed project would take the proposal into account to the maximum extent practicable (as required by § 4(h)(1)(A)(ii) of the Act, see note 73 above) and to enable the Council an opportunity to comment on the consistency of such projects with the Program. The Council also requests fish and wildlife agencies to incorporate Fish and Wildlife Program requirements into the terms and conditions they attach to FERC exemptions, and federal land management agencies are similarly requested to attach the Program's conditions to their permit procedures regulating hydroelectric developments on federal lands. Id.

232. A license was issued for Enloe Dam on the Similkameen River to Okanagon County PUD on March 3, 1983, without sufficient recognition of pertinent Fish and Wildlife Program provisions, particularly § 704(e)(1) and Table 5 (including the Enloe Dam among the passage development and restoration projects to be considered by the Council's Fish Propagation Panel and noting that removal or laddering of the dam could restore approximately 100 miles of anadromous fish spawning and rearing habitat). On April 12, 1983, the Council filed a motion to intervene in an appeal of the March 3 order, joining with the National Marine Fisheries Service, the National Wildlife Federation, the Washington Departments of Fisheries and Game, and the Yakima and Colville Indian tribes. See Northwest Power Planning Council, Motion to Intervene or to File an Amicus Curiae Brief Appealing New License, FERC Project No. 2062 (Apr. 12, 1983).

233. Draft Fish and Wildlife Program § 904(c)(2), at 105 (listing streams).

234. Fish and Wildlife Program § 1204(c)(1), at 12-4. The Council determined that many of the stream segments designated for priority consideration and interim protection in its draft Program were arbitrarily chosen, and that any such designations should await development of a standard, systemwide method of classification. Id. at App. II-20. No deadline is established for conclusion of this study, however.

which is to evaluate both fish and wildlife value and hydroelectric potential, the Council will establish a system of critical habitat streams.²³⁵ In the interim, the Council promises to keep federal and state regulatory agencies informed of those streams proposed for inclusion in the system,²³⁶ presumably for the purpose of influencing their actions.

Also of considerable significance are the program provisions pertaining to cumulative effects. They direct federal project operators and regulators to consolidate and review simultaneously all development applications and proposals in a single river drainage for the purpose of evaluating the cumulative effects of existing and proposed projects on fish and wildlife.²³⁷ To better assess cumulative effects, the Council directed BPA to fund a study aimed at developing criteria and methods to assess the cumulative effects of hydroelectric development on fish and wildlife and the means by which cumulative impact assessments can be factored into federal hydroelectric review and authorization processes.²³⁸ The results of this study

235. Id. § 1204(c)(2), at 12-4. The Council rejected suggestions by PNUCC and other developers that it should not develop such a system because it would duplicate FERC procedures, state laws, and the protection provided by the National Wild and Scenic Rivers program. The Council reasoned that this system would not duplicate other processes, since it would not supplant FERC's authority, but be incorporated into FERC regulation; it would have a narrower focus than the National Wild and Scenic Rivers program (which also is encumbered by time-consuming procedures and generally requires congressional designation); and would be able to provide interstate basin wide protection, which no state program can do. Id. at App. II-19.

236. Id. § 1204(c)(2), at 12-4.

237. Id. § 1204(b)(1), at 12-3 to 12-4. The Corps recently complained that implementation of this measure "appears impractical," since "it seems infeasible to hold up all [development proposals] while waiting for a basinwide review." Corps comments, above note 75, at 22.

238. Id. § 1204(b)(2), at 12-4. Cumulative impacts are a particular concern in the Salmon River drainage, where there are some 30 proposed projects. See Anadromous Fish Law Memo #19 (Sept. 1982) at 15. The FERC staff recently developed proposed "study guidelines" to develop an "appropriate informational base" to assist in completing a comprehensive study of hydropower development in the Salmon River Basin. "Salmon River Guidelines," FERC No. P-5965-999 (May 27, 1983). The Idaho and National Wildlife Federations, while welcoming these guidelines, cautioned that if they only produce uniform data collection techniques on individual sites, they will not be a substitute for a comprehensive basinwide plan and cumulative impact assessment. Comments of the National and Idaho Wildlife Federations on Salmon River Study Guidelines (June 10, 1983). However, small hydroelectric developers have recently assailed these proposed guidelines as unwarranted, dilatory, and speculative. See 2 Northwest Conservation Act Report (con't.)

could eventually have influence beyond the confines of the Columbia Basin. Finally, another study of critical importance is an identification and ranking of potential hydropower sites throughout the region. This site-ranking study, authorized by the Council's Conservation and Electric Power Plan, will identify sites and stream reaches and classify them into three categories: (1) sites or reaches where development would have insignificant adverse effects on fish and wildlife; (2) sites where fish and wildlife effects could be reduced to insignificant levels through proven mitigation techniques; and (3) sites where adverse effects would be significant.²³⁹

K. Program Amendments

Due to the complex technical, legal, economic, and political issues involved in the implementation of the Fish and Wildlife Program, and the fact that many activities are contingent upon the results of ongoing research, amendments to the Program are a virtual certainty. The Program specifically encourages its critics to consult with the Council and employ the amendment process as an alternative to litigation.²⁴⁰ The amendment process established by the Council invites recommended amendments by November 15, 1983.²⁴¹ Recommendations are to demonstrate consistency with the statutory standards and are to be made in accordance with application forms that the Council will develop.²⁴² Prior to a

no. 13 (June 24, 1983) at 3-5.

239. Conservation and Power Plan, above note 230, Two-Year Action Plan § 14.2, at 10-19 to 10-20. Sites in the insignificant effects categories will be considered for testing the Council's "options" concept (under which BPA would subsidize the siting, licensing, and design of a generating resource and would "bank" the site for construction when the power was needed); see id., chap. 3, at 3-1 to 3-5. During the next two years, the plan calls for BPA to acquire options on six different categories of hydropower sites. Id. Two Year Action Plan, § 14.1, at 10-19.

240. Fish and Wildlife Program § 1402, at 14-1.

241. Id. § 1404(b)(1), at 14-2. This provision envisioned amendments in 1983 and every two years thereafter. However, the Council's Conservation and Electric Power Plan changed the dates for receipt of proposed amendments to November 15, 1983; December 15, 1984; and every two years thereafter. Except for the 1983 revisions, the amendment process will be coordinated with the amendment of the power plan and will take a year to complete. Draft revisions will be publicly distributed. Conservation and Power Plan, above note 230, at II-2. However, the Council reserves the right to consider a Program amendment on its own motion at any time but, if it does so, it will provide for public comment and consultation. Fish and Wildlife Program § 1404(a)(1), at 14-1.

242. Fish and Wildlife Program § 1404(b)(2), at 14-2. Applications by a state, state subdivision or a tribe under § 4(g)(3) of the Act (con't.)

Council decision on whether to adopt, modify, or reject an amendment, the proposals will be screened by the Council's Fish and Wildlife Committee and opened to public comment and consultation with pertinent fish and wildlife and power agencies.²⁴³ With the number and variety of research tasks ordered by the Council²⁴⁴ and the number of suggested measures the Council has stated it would consider as amendments,²⁴⁵ the amendment process is one in which the public should involve itself and monitor with care.

IV. PAYING FOR THE PROGRAM

Implementing the Fish and Wildlife Program will not come cheaply. The Council estimated the cost of the Program over the next 20 years to be between \$650 million and \$740 million (1982 dollars), about the equivalent of 1/20th per kilowatt hour of energy sold by BPA.²⁴⁶ Recently, these figures were refined in a "Preliminary Implementation Plan" commissioned by the National Marine Fisheries Service, which estimated ten-year costs to be around \$371 million, or an average of \$37 million per year.²⁴⁷ Not all of these costs will come

(funding assistance to help implement the plan) require a certification that the entity has adopted the recommended objective and BPA has reviewed it. Id. § 1404(b)(2)(E), at 14-2.

243. Id. §§ 1404(6)(3) and (4), at 14-2 to 14-3. Recommended amendments from the fish and wildlife agencies and Indian tribes will be requested by the Council. Id. § 1404(c), at 14-3.

244. See, e.g., the studies described in note 282 and accompanying text below. However, where the Council has specified that BPA will fund a measure "upon Council approval," an amendment is not required. Id. § 1304(e)(3), at 13-4. See also id., App. II-22.

245. E.g., the Water Budget suggested by the Columbia River Inter-Tribal Fish Commission (note 86 above and accompanying text), the temperature control measures suggested by Dr. Stafford (note 147 above), the Clackamas and Clark River flows suggested by the Portland Angler's Club and the Skamania Flyfishers (note 149 above), and the resident fish and passage restoration program suggested by the Colville Tribe (note 193 above).

246. Fish and Wildlife Program § 105, at 1-5. These estimates do not include power losses associated with the implementation of the Council's Water Budget. These estimated power losses have cascaded downward from 780 megawatts to 550 megawatts to 450 megawatts. See note 85 and accompanying text above. Recently, in the 1983 BPA Rate Case, a power loss figure of 410 megawatts was mentioned. See Direct Case of Public Power Council (May 23, 1983) at 13.

247. Northwest Economic Associates, Preliminary Implementation Plan for the Columbia River Basin Fish and Wildlife Program (April 1983) at 16 (containing year-by-year estimates of both BPA and non-BPA funding levels necessary to implement the Program--e.g., FY 1984 estimates are \$24.5 million for BPA and \$16.8 million for non-BPA). See also id., Preliminary (con't.)

directly from increases in BPA wholesale power rates, however: about one-third of the costs will be supplied by other federal agencies and nonfederal project operators.²⁴⁸

Although the Council did make an estimate of the cost of Program implementation, it quite correctly declined to condition Program measures on satisfying a cost-benefit test.²⁴⁹ Use of such a litmus would have repeated past mistakes and delayed Program implementation, contrary to the congressional intent, indicating a necessity for expeditious action.²⁵⁰ In addition to the inherent unreliability of both benefit and cost figures, use of a cost-benefit test to determine the suitability of Program measures would have conflicted with a number of statutory directives.²⁵¹ Since Congress declined to authorize

Five-Year Research Plan for the Columbia Basin Fish and Wildlife Program (May 1983) (prepared pursuant to § 1104(c)(1)(C) of the Council's Program, calling for a 5-year research plan). Interestingly, the 10-year, \$371 million cost estimate represents the equivalent of the economic losses sustained by salmon and steelhead each year by current hydroelectric operating practices, at least according to a study performed by economist Phillip Meyer. See Anadromous Fish Law Memo #18 (May 1982) at 9 (estimating \$370 million in annual losses, cumulative losses since 1960 of \$6.5 billion (1982 dollars), and prospective losses of \$3.7 billion per decade).

248. Section 4(h)(10)(A) of the Act requires BPA expenditures to be "in addition to, not in lieu of expenditures authorized or required from other entities under other agreements or provisions of law"; § 4(h)(10)(C) authorizes BPA to allocate costs among various federal project purposes in consultation with the Corps of Engineers and the Bureau of Reclamation and in accordance with existing accounting procedures. An estimated \$135 million of the total 20-year cost of \$371 million is expected to be supplied by non-BPA sources. Preliminary Implementation Plan, note 247 above, at 16.

249. Fish and Wildlife Program § 105, at 1-5 (determining that the cost of implementing the Program is consistent with § 4(h)(5) of the Act, which directs the Council's Program to protect and restore Columbia Basin fish and wildlife "while assuring the Pacific Northwest an adequate, efficient, economical, and reliable power supply").

250. See Anadromous Fish Law Memo #17 (April 1982) at 12; Promising Parity, note 3 above, at 125.

251. E.g., Power and Conservation Act, § 4(h)(6)(C) (use minimum cost alternatives only where there are equally effective alternative means of achieving the same sound biological objective); § 4(h)(6)(D) (be consistent with Indian treaty rights). See Anadromous Fish Law Memo #17 (April 1982) at 15-22; Promising Parity, note 3 above, at 131-52.

...[A] cost-benefit test will not only conflict with a number of 4(h) Program approval standards, it will lead to poor policy choices. Such a test is (con't.)

the Council to employ such a test, the Council wisely respected this decision in formulating the Program.²⁵²

There remains some question, however, whether the implementing agencies understand this principle. While fears that BPA might employ its asserted authority to ensure the "cost effectiveness" of Program measures²⁵³ to effectively "second guess" the wisdom of the measures themselves have not thus far proved out,²⁵⁴ funding questions continue to threaten effective implementation of the Program. Of particular concern are those Program measures which are dependent on congressional appropriations made available to federal water managers (e.g., the Corps of Engineers and the Bureau of Reclamation).

Ratepayer funding of fish and wildlife measures was one of the foremost innovations of the Power and Conservation Act, an innovation necessitated by the inadequacy of relying on the congressional appropriations process.²⁵⁵ Assigning to agency appropriations the costs of certain Program measures may appear to reduce regional ratepayer obligations, but the results may amount to a Faustian bargain. Not only are implementation delays more probable,²⁵⁶

particularly inappropriate where it increases the influence of those who have control over cost figures, where the risks of failing to take protective action are not known, where innovation and technological breakthroughs may reduce implementation costs significantly, and where equity concerns outweigh efficiency concerns.

Id. at 147.

^{252.} The Supreme Court has ruled that when Congress intends to authorize use of a cost-benefit test, it does so expressly. See Fulfilling Parity, note 3 above, at 136.

^{253.} Remarks of BPA Administrator Peter Johnson Before the Northwest Power Planning Council (Oct. 18, 1982); Memorandum of Peter Johnson to Dept. of Energy Asst. Secy. for Environmental Protection, Safety and Compliance on BPA's NEPA Compliance for the Northwest Power Planning Council's Fish and Wildlife Program (June 30, 1982).

^{254.} Risk Management Lessons, above note 10, at 766. At least, disagreements between BPA and the Council concerning funding of proposed projects to carry out Program measures have been resolved without controversy through the procedures established by the Intergovernmental Agreement between the two agencies. See note 210 above.

^{255.} See notes 9 and 10 and accompanying text above.

^{256.} For example, installation of juvenile bypass facilities at the Corps' John Day Dam may be delayed until 1989, a three-year delay from the 1986 date called for in the Council's Program (see note 120 above). Similar delays may be encountered in the installation of temperature control devices at the Cougar and Blue Dams on the McKenzie River (see note 147 and (con't.))

appropriation levels are determined in low visibility negotiations in Washington, D.C.--in the agencies themselves, at the Office of Management and Budget, and in congressional Appropriations Committees. The Northwest public has little or no opportunity to influence such decisions. While it is true that BPA rate proceedings are complex, technical, and suffer from some of the same deficiencies as the appropriations process, they are conducted within the region and the participants increasingly include fish and wildlife and other non-utility interests.²⁵⁷ Moreover, the Power and Conservation Act requires BPA ratemaking to be consistent with the implementation of the Fish and Wildlife Program.²⁵⁸ Consequently, the region retains much more control over BPA rates than the appropriations available to federal project operators. Therefore, where these appropriation levels jeopardize expeditious implementation of Program measures, they should be funded from BPA rates.²⁵⁹ Any overcharges to regional ratepayers could be reimbursed by subsequent congressional appropriations or future BPA ratemaking decisions.²⁶⁰

Although BPA's rate structure provides the surest means of implementing the Fish and Wildlife Program, there remain a number of unresolved issues of concern to fish and wildlife interests in the current BPA rate case. Of pri-

accompanying text above). And, according to BPA and the Bureau of Reclamation, implementation of Yakima Basin enhancement measures must await passage of federal legislation (see notes 173-77 and accompanying text above).

^{257.} For example, the 1983 BPA Rate Case includes as "parties" the Columbia River Inter-Tribal Fish Commission, the National Marine Fisheries Service, and the Northwest Environmental Defense Center. The Regional Council, while not a "party" to the proceeding, is a "participant." The Council chose not to participate as a party because it does not believe that its Fish and Wildlife Program and its Conservation and Electric Power Plan, "developed through a region-wide two-year public process, needs to be argued before the [BPA] Administrator in the Bonneville rate case." Northwest Power Planning Council, Answers to Questions by the [House] Subcommittee on Energy and Conservation, Committee on Energy and Commerce (n.d.), at 10.

^{258.} Power and Conservation Act § 4(h)(10)(A).

^{259.} While the Power and Conservation Act requires BPA expenditures to be "in addition to, not in lieu of" fish and wildlife expenditures required by provisions of other laws (note 248 above), this directive was intended to preserve other programs such as Mitchell Act funding of Columbia River hatcheries (note 151 above). It was not intended to result in the delay of Program measures, a fact the Council appears to recognize in § 1304(e)(2) of its Program which requires federal water managers to determine the "most expeditious means" of funding program measures (see note 222 and accompanying text above).

^{260.} See note 225 above.

mary interest is the level of funding to carry out Fish and Wildlife Program measures. BPA's proposed expenditures of \$23.1 million in fiscal year 1984 (of a total budget of \$2.6 billion) and \$24.5 million are sufficient to implement the Program only if substantial amounts of federal water manager funds are forthcoming.²⁶¹

Moreover, the Council's role in the ratemaking process has been ambiguous. Although it has stated that it expects BPA to include revenues sufficient to implement its Program measures,²⁶² it has not estimated what revenues might be necessary. And, although it stated that the Fish and Wildlife Program "only includes measures that address the adverse effects on fish and wildlife on the Columbia River hydroelectric system,"²⁶³ BPA apparently believes that some measures are not attributable to hydroelectric facilities (and therefore, not BPA's responsibility).²⁶⁴ Part of the problem is that the Council has a limited role in reviewing BPA's budget.²⁶⁵ Proposed legislation would supply an opportunity for the Council to assume a more active role in BPA's budget process, although the bill does not clearly specify whether BPA has the responsibility to involve the public.²⁶⁶

A related problem concerns the ability of BPA to respond to Program amendments, which

261. See note 247 above.

262. Northwest Power Planning Council, Statement Before the House Subcommittee on Energy, Conservation and Power of the Committee on Energy and Commerce (June 13-14, 1983) at 3 ("The Council does not view this process [the BPA rate case] as a means for determining whether specific program measures merit funding"). See also *id.* at 13.

263. Fish and Wildlife Program § 200, at 2-1. See also *id.* § 101, at 1-1.

264. BPA 1983 Rate Case Transcript at 2644-45 (testimony of Janet McLennan and John Palensky).

265. The Council's official access to BPA's budget process is the same as that of the general public, which the Council has determined to be inadequate. Council Answers to Subcommittee Questions, note 257 above, at 12-13. BPA began developing its fiscal year 1984 budget in June and July of 1982 and in September, submitted its proposed budget to the Department of Energy. Review of the Department's budget by the Office of Management and Budget followed. The first opportunity the Council and the public had to officially review the budget was in January 1983, when the President submitted his proposed budget to Congress. Although congressional hearings were conducted in March, they were held in Washington, D.C. And while BPA attempted to increase Council access to its budget process through informal consultation, the Council claimed this opportunity was insufficient to investigate decisions underlying the budget and recommended to Congress that BPA be required to allow the Council and the public to review and comment on the budget in draft form. *Id.* at 13.

266. See *id.* at 13-14 (discussing H.R. 2098, 98th Cong., 1st Sess.). See also Council Statement to Subcommittee, note 262 above, at 12-13.

might require increased funding. In its rate case, BPA has stated that it lacks authority to include such "contingency funds."²⁶⁷ If so, perhaps the bill under consideration by Congress should be amended to increase BPA's flexibility.

Finally, an issue of concern to public power consumers is BPA's proposed allocation of all Fish and Wildlife Program costs to its preference customers by including such costs in the definition of Federal Base System costs under § 7(b) of the Act. The Public Power Council has objected to this allocation, alleging that since all power users are beneficiaries of the hydroelectric dams,²⁶⁸ Fish and Wildlife Program costs should be allocated to all BPA customers.²⁶⁹ The public power representatives also vigorously asserted that fish and wildlife expenditures conferred widespread regional benefits:

...everyone benefits from the expenditure of money to protect, mitigate, and enhance fish and wildlife. Certainly, all who consume salmon or fish for them, either for sport or for a living, benefit from such expenditures. Also, the preservation of an important natural resource clearly is to the general good. Congress recognized this when it declared the protection, mitigation and enhancement of fish and wildlife to be a principal purpose of the Regional Power Act.²⁷⁰

Fish and wildlife advocates certainly welcome this recognition on the part of the Public Power Council.

CONCLUSION

The length of this Memo is a reflection of the complex task that Congress assigned to the Regional Council in the Power and Conservation Act.²⁷¹ The Act's precedent-setting directives--such as full compensation for fish and wildlife losses, offsite enhancement, ratepayer financing, and changed burdens of proof²⁷²--envisioned a new era for the fish and wildlife

267. BPA 1983 Rate Case Transcript at 1250 (testimony of John Palensky).

268. For example, Direct Service Industries benefit from the hydroelectric system's flexibility, enabling "shifts" of Firm Energy Load Carrying Capability that supply greater reliability and lower costs of serving the "top quartile" of industrial loads. See generally Anadromous Fish Law Memo #18 (May 1982).

269. Direct Case of Public Power Council (May 23, 1983) at 14-15.

270. *Id.* at 15.

271. And, of course, this Memo describes only those issues pertaining to the development and implementation of the Fish and Wildlife Program. It does not attempt to evaluate the equally complex task of formulating and implementing the Council's Conservation and Electric Power Plan.

272. See § I.A above.

resources of the Pacific Northwest. But, statutory directives without administrative implementation would have produced a pyrrhic victory. And, unfortunately, the region's federal water managers had demonstrated a consistent facility for discovering obstacles which prevented them from undertaking significant fish and wildlife remedial efforts.²⁷³ To avoid a recurrence of these obstacles, Congress restructured institutional responsibilities for designing and carrying out fish and wildlife measures.

The Act's most notable institutional innovation was, of course, the Regional Council. Neither a federal nor a state entity,²⁷⁴ neither a "power agency" nor a fish and wildlife agency, the Council employed its unique status to considerable advantage, maximizing the benefits of its "nonpartisan" character and its region-wide focus. The Council also took seriously the Act's directives of public participation and pluralistic review, ushering in an unprecedented

273. For example, before the passage of the Power and Conservation Act, federal water managers asserted that they either lacked legislative authority to alter project operations for the benefit of migratory fish (Hydropower vs. Salmon, note 81 above, at 221-22 n.43), or they could not make such changes until fish and wildlife agencies could "prove" that power operations were damaging fish and wildlife resources (id. at 256-57, 298; Fulfilling Parity, note 3 above, at 122, n.80). During congressional consideration of the Act, although power interests asserted they were "anxious to accommodate fish and wildlife needs" (id. at 122), there is little doubt that they helped to construct an eleventh-hour colloquy on the floor of the Senate designed to emasculate the Act's fish and wildlife provisions (see Blumm, Promising A Process for Parity: The Pacific Northwest Electric Power Planning and Conservation Act and Anadromous Fish Protection, 11 Env'tl. L. 497, 537-39 (1981). During the Fish and Wildlife Program's approval process, water managers advanced questionable interpretations of the Act's assignment of the burden of proof Program measures must meet (arguing for reliance on truck and barge programs, not streamflows, to transport juvenile salmonids downstream. Fulfilling Parity, at 132, n.124), advocated use of a cost-benefit test to judge the merits of Program measures (id. at 147 n.195), and were slow to implement the Act's fish and wildlife directives that exist independent of the Program (id. at 154-55). The latest assertions of a lack of authority to implement expeditiously certain Program measures (notes 173-77, 223-25, and 256 and accompanying text above) should be evaluated in light of this record of recalcitrance.

274. See Promising Parity, note 273 above, at 508-12. Nor was it entirely clear whether the Council considered the task of developing its Fish and Wildlife Program a rulemaking, an adjudication, or a quasi-legislative function. The latter role no doubt contributed to the Council's apparent assumption that it did not have to justify its Program measures in terms of the statutory standards (note 45 and accompanying text above).

era of public and interagency involvement in hydroelectric planning and fish and wildlife restoration. Widespread interest and participation in this "open processes"²⁷⁵ approach to problem solving contributed significantly to the political legitimacy of the Council's programs--the Council's awareness of its accountability to the general public stands in stark contrast to BPA's pre-Act programs.²⁷⁶

But, of course, the procedural changes envisioned by the Act and implemented by the Council were only a means to achieve the fundamental congressional goal--substantive changes in power system decision-making to elevate fish and wildlife considerations to a "co-equal" status with power production.²⁷⁷ And the Program approved by the Council promises significant steps towards achieving this objective. The Program's Water Budget concept (if not the amount of water in the Budget), its schedule of bypass installation for most of the mid-Columbia PUDs, its emphasis on propagation of wild stocks and offsite enhancement measures, its provisions establishing the Council's oversight role of research initiatives and management operations, and its promise of protective measures to ensure the compatibility of future hydroelectric developments with fish and wildlife protection make the Columbia Basin Fish and Wildlife Program the most ambitious and innovative region-wide effort to restore fish and wildlife resources ever undertaken.²⁷⁸

There are, however, shortcomings in the existing Program. The amount of water in the Snake River Water Budget, the "short haul" transportation study at Priest Rapids Dam on the mid-Columbia, and the ambiguity of directives to the Corps of Engineers concerning bypass and transportation measures on the lower Snake River should be carefully scrutinized by the public during the Program amendment process.²⁷⁹ In particular, the Council should be urged by both the public and Congress to explain how these measures fulfill the statutory standards.²⁸⁰ More detailed rationales supporting measures that must be implemented by federal water managers would also foster expeditious implementation.²⁸¹

275. See Risk Management Lessons, note 10 above, at 758.

276. Id. at 755-56 (describing the lack of political legitimacy of BPA's Hydro-Thermal Power Programs).

277. See Fulfilling Parity, note 3 above, at 137, 155.

278. See §§ III.B (Water Budget), III.C (Bypass), III.E and F (Propagation and Offsite Enhancement).

279. See notes 80-90 and accompanying text above (Snake Water Budget) notes 101-110 and accompanying text above ("short haul" transportation), and notes 117-19 and accompanying text above (bypass and transportation on lower Snake).

280. Congress could require the Council to supply such explanations in its annual report to Congress, required by § 4(h)(12)(A) of the Power and Conservation Act.

(con't.)

A good deal of the amendment process will focus on measures based on the results of the numerous studies the Council has commissioned. Particularly important are the fishery goals study, the fish flows improvement study, the hatchery reprogramming study, and the studies of critical habitat, cumulative impacts, and site ranking.²⁸² The number and complexity of these studies call into question the Council's staffing for fish and wildlife activities, which is only a fraction of its staffing for power and conservation activities.

Establishing the Regional Council was not, however, the only institutional innovation effectuated by the Power and Conservation Act. The Act unmistakably elevated the role of the region's fish and wildlife agencies and Indian tribes in hydroelectric system decision-making. The agencies and tribes proved equal to this expanded role, particularly in forming the coalition that developed the detailed recommendations upon which most of the Council's Program is based.²⁸³ Clearly, a considerable measure of the Program's innovativeness and comprehensiveness is due to the fact that the agencies and tribes possessed the expertise and information to formulate a well-founded, pragmatic set of recommendations that power interests had difficulty in refuting. Regrettably, this coalition seems to have broken apart recently, as some of the state agencies have not been able to overcome their historic animosity towards the tribes' assertion of separate governmental status, a status implicitly recognized in the Power and Conservation Act.²⁸⁴ There is little question that the region's fish and wildlife resources and those who depend upon them would be better served if the state agencies could maintain a spirit of cooperation with the tribes.

Ironically, as cooperation between some of the agencies and tribes has declined, the Council appears to be meeting with some success in its efforts to develop a cooperative spirit among at least some of the federal water managers in carrying out some of the Program's measures.²⁸⁵ A key to this development may be the

existence of the Council's Fish and Wildlife Committee,²⁸⁶ which is providing a public forum for discussion by the water managers and the agencies and tribes of the challenges and problems encountered in implementing the Program.

However, despite these encouraging signs, numerous implementation questions remain. A good deal of the uncertainty that persists can be attributed to the fact that Congress did not formulate clear directives to federal agencies concerning their implementation directives.²⁸⁷ The result has been unnecessary questions about the authority of federal agencies to implement some measures,²⁸⁸ while at the same time the agencies seem to assert the authority to second-guess other measures.²⁸⁹ Congress could speed implementation of the Program by directing the federal agencies to implement all Program measures that do not specifically conflict with other statutory directives.²⁹⁰

The Columbia Basin Fish and Wildlife Program represents an ambitious, innovative attempt to repay a debt owed to the region's fish and wildlife resources accumulated over a half century. It may take some years before the Basin's fish and wildlife populations reflect the efforts initiated in 1982. However, if the fruits of the Program are as bountiful as its promise, the Program will not only restore the Northwest's most unique natural resource, it also may serve as a useful precedent for other regions of the country.

agencies have proved to be as cooperative, however (see especially note 115 above, concerning FERC's implementation efforts). Moreover, it is also clear from General van Loben Sels' statements and from the Corps' summary of its implementation efforts (note 75 above) that the Corps believes it may evaluate the propriety of Program measures in terms of its own view of the public interest. Further, while no one doubts the General's personal commitment to the Program, it is not entirely clear that all members of his staff share his commitment. Since the latter are likely to have implementation responsibilities long after the General's tour in the North Pacific Division is over, it is particularly important for the Corps staff to understand their implementation responsibilities.

286. See note 208 and accompanying text above.

287. See, e.g., note 111 and accompanying text above.

288. See, e.g., notes 174-77 and accompanying text (Yakima Basin measures), 198 Kootenai River tributary deltas), 256 (John Day bypass facilities and temperature controls on McKenzie River Dams), and 267 (BPA "contingency funding") and accompanying text above.

289. See, e.g., notes 115 (FERC implementation), 195 (Libby Dam drawdown requirements), 253 and 264 (BPA funding questions), and 285 (Corps implementation) and accompanying text above.

290. Congress should also provide the Council and the public with an opportunity to review and comment on BPA's draft budgets. See notes 265-66 and accompanying text above.

281. This is particularly true of FERC actions--see notes 104 and 116 above, §§ III.I (Council oversight) and III.J (new hydroelectric development).

282. See notes 55 (fishery goals), 146 (fish flows), 150 (reprogramming), 234 (critical habitat), 237 (cumulative impacts), 239 (site ranking) and accompanying text above.

283. See notes 22-24 and accompanying text above.

284. See notes 15-16 and accompanying text above.

285. The North Pacific Division Engineer of the Corps, General van Loben Sels expressed his commitment to implementing the Fish and Wildlife Program in general and the Water Budget in particular at the Council's Fish and Wildlife Committee meeting on June 15, 1983. And BPA and the Council managed to resolve most of their disagreements over the funding of research measures (see note 210 above). Not all federal (con't.)

Comments, suggestions, and criticisms of this Memo are welcomed. A revised version of this analysis will be published in a future issue of Environmental Law. Comments received by early September will be incorporated into that analysis and will be described in a subsequent issue of the Memo.

In addition, suggestions for future Memos (or "Briefs") are always welcomed, particularly if they are accompanied by some documentation. Our readers are often our best sources of information. Address correspondence to:

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