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## **Executive Summary**

The final version of the program will contain an executive summary.

## I. Introduction

### A. The Northwest Power Planning Council

The Northwest Power Planning Council, unique in the nation, is the only government agency with a statutory obligation to protect and enhance fish and wildlife affected by hydropower dams while at the same time assuring that the regional power supply remains adequate, efficient, economical and reliable. This is challenging in the Pacific Northwest, a region that depends on hydropower for about 55 percent of its electricity<sup>1</sup> -- most of it generated by the 29 federal dams and one nonfederal nuclear plant of the Federal Columbia River Power System. It is also challenging in an era of increasing electricity industry deregulation, as price competition among energy suppliers discourages new investment in power plants and threatens the reliability of the region's power supply.

The Council's responsibilities are embodied in the Pacific Northwest Electric Power Planning and Conservation Act of 1980, which directs the Council to develop a program to "protect, mitigate and enhance fish and wildlife, including related spawning grounds and habitat, on the Columbia River and its tributaries ... affected by the development, operation and management of [hydroelectric projects] while assuring the Pacific Northwest an adequate, efficient, economical and reliable power supply." The Act pays particular attention to anadromous fish -- primarily in the Columbia Basin, these are salmon and steelhead -- and the impact of hydroelectric dams on these fish. The Columbia Basin's anadromous fish, the Act says, "...are of particular significance to the social and economic well-being of the Pacific Northwest and the Nation and are dependent on suitable environmental conditions substantially obtainable from the management and operation of the Federal Columbia River Power System and other power generating facilities on the Columbia River and its tributaries."

The Council, an interstate compact with eight members (two each from Idaho, Montana, Oregon and Washington), was created by the four Northwest states under authority of the Northwest Power Act to: 1) conduct long-range electric energy planning for the Northwest focusing on least-cost resources to meet future demand; 2) provide an opportunity for the public to participate in decision-making and, most significant for purposes of this document; 3) protect and enhance all anadromous and resident fish and wildlife in the Columbia Basin that have been affected by hydropower. Thus, the Council's fish and wildlife program, and the Council's responsibilities, are distinct from the responsibilities of federal fish and wildlife agencies and their narrowly focused recovery programs for threatened and endangered species -- programs developed with comparatively less public input primarily in Washington, D.C., or in federal court.

In addition to the requirements of the Northwest Power Act and Endangered Species Act, the region has other legal obligations that must be met regarding fish and wildlife. These

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<sup>1</sup> Pacific Northwest Utilities Conference Committee, *Northwest Regional Forecast of Power Loads and Resources*, June 1999. The other components are coal, 17 percent; imports and misc., 12 percent; nuclear, 4 percent; combustion turbines, 4 percent; cogeneration, 7 percent; and renewables, 1 percent.

1 obligations, which are complemented by the Council's program, include tribal treaty fishing  
2 rights, Executive Order tribal rights, salmon rebuilding obligations of the Pacific Salmon Treaty  
3 and Columbia River Treaty with Canada and requirements of the federal Clean Water Act. For  
4 example, habitat conservation requirements implicit in the Pacific Salmon Treaty may be  
5 satisfied by habitat conservation projects funded through the Council's program.  
6

## 7 **B. Long-term Problem, Long-term Solution**

8

9 During the past 20 years, significant efforts and money have been spent to protect and rebuild  
10 fish and wildlife populations that have been affected by hydropower, particularly anadromous  
11 fish. Today, however, many populations continue to decline. In all, 12 species of anadromous  
12 fish and two species of resident (non ocean-going) fish in the Columbia River Basin are listed for  
13 protection under the federal Endangered Species Act.  
14

15 The problem is not limited to these particular populations. Despite the region's significant --  
16 and costly -- efforts to protect and rebuild fish and wildlife over the last 20 years, efforts that  
17 appear to have at least slowed the steady decline of many populations while helping some to  
18 actually improve, the overall trend is one of decline. It is a decline, however, that began long  
19 before Congress passed the Endangered Species Act in 1973 and the Northwest Power Act in  
20 1980. It is well-documented that Columbia River salmon practically were fished to extinction  
21 around the turn of the 20<sup>th</sup> century and that the rapid industrialization of the Columbia Basin  
22 since that time affected spawning and rearing habitat and river conditions, contributing to the  
23 decline.  
24

25 Columbia River salmon and steelhead, noteworthy for their resilience, have contended with a  
26 host of problems: habitat alteration, water pollution, overharvest, agricultural practices that  
27 impact spawning and rearing streams, overproduction of hatchery fish that masks the continuing  
28 decline of wild fish as the result of competition and harvest, and the impact of hydropower dams  
29 that block migratory routes, slow the current, raise water temperatures and infuse the rivers with  
30 dissolved gasses as water tumbles down spillways. Predators, including other fish, fish-eating  
31 birds and marine mammals, as well as drought and poor feeding conditions in the ocean also  
32 have contributed to the decline.  
33

34 In response, particularly in the last 18 years through the Council's Columbia River Basin  
35 Fish and Wildlife Program, turbine screens and fish bypass systems have been installed at nearly  
36 all mainstem Columbia and Snake river dams, additional water has been provided to boost flows  
37 and cool river temperatures when fish are migrating, water withdrawals have been screened to  
38 protect juvenile fish, habitat has been improved and, in some cases, acquired for the benefit of  
39 fish and wildlife, hatcheries have been constructed that focus on producing fish to rebuild  
40 naturally spawning runs, predation has been reduced, and the region has gained considerable  
41 knowledge through new scientific research -- knowledge that will inform future actions and  
42 decisions. In 1996, Congress amended the Northwest Power Act to direct the Council to appoint,  
43 from recommendations of the National Academy of Sciences, the Independent Scientific Review  
44 Panel to conduct an annual review of every project proposed for funding through the Council's  
45 program. The ISRP ensures that each project: 1) is based on sound science principles; 2)  
46 benefits fish and wildlife; 3) has a clearly defined objective and outcome with provisions for

1 monitoring and evaluation of results; and 4) employs cost-effective measures to achieve its  
2 objective. The Power Act amendment also requires the Council to consider the impact of ocean  
3 conditions on fish and wildlife populations when making its annual project funding  
4 recommendations to the Bonneville Power Administration. Bonneville, a division of the U.S.  
5 Department of Energy, sells the electricity generated by the Federal Columbia River Power  
6 System and uses a portion of its revenue from power sales to implement the Council's program,  
7 consistent with provisions of the Power Act.

8  
9 In short, the problem was more than 100 years in the making, and it will take significant  
10 time and investment to repair the damage and rebuild the runs -- much longer than the four or  
11 five generations of salmon that have benefited from the Council's actions to date. Through the  
12 Council's publicly developed, scientifically credible fish and wildlife program, the region is  
13 committed to an aggressive, long-term and carefully monitored effort to protect, mitigate and  
14 enhance fish and wildlife affected by the hydropower system while also assuring the region an  
15 adequate, efficient, economical and reliable power supply. The Council understands that this  
16 effort to improve conditions for fish and wildlife while also providing for environmentally  
17 responsible energy production will take time; results will not be immediate.

## 18 19 **C. Role of the Council and Other Agencies in Program Development and** 20 **Implementation**

### 21 **1. Developing the Program**

22  
23 The Council is a planning, policy-making and reviewing body. It develops and monitors  
24 implementation of this fish and wildlife program, which is implemented by the Bonneville Power  
25 Administration, the U.S. Army Corps of Engineers, the Bureau of Reclamation and the Federal  
26 Energy Regulatory Commission and its licensees.

27  
28 The Northwest Power Act directs the Council to develop its program and make periodic  
29 major revisions by first requesting recommendations from the region's federal and state fish and  
30 wildlife agencies, appropriate Indian tribes (those within the basin) and other interested parties.  
31 These recommendations are to include 1) measures that Bonneville and other federal agencies  
32 can implement to protect, mitigate and enhance fish and wildlife affected by hydroelectric dams;  
33 2) objectives for developing and operating dams in a manner that will protect, mitigate and  
34 enhance fish and wildlife; and 3) methods for coordination of fish and wildlife management,  
35 research and development (including funding). In developing this program, the Council received  
36 more than 50 recommendations totaling more than 2,000 pages.

37  
38 When the Council issues a draft amended program, an extensive public comment period is  
39 initiated that includes public hearings in each of the four states and consultations with interested  
40 parties.

41  
42 After closing the comment period, and following a review and deliberation period, the  
43 Council adopts the revised program. This must occur within a year of the deadline for receiving  
44 recommendations for amendments. When the Council declines to adopt any recommendation, it  
45 must explain, as part of the program, why the recommendation is less effective than the existing

1 program measures or why it is inconsistent with the standards for program measures specified in  
2 the Act.

3  
4 The Council amended the program in 1984, 1987, 1991-1993 and 1994-95. This version of  
5 the program supersedes previous versions and includes some measures from previous programs  
6 that were not completed, but remain relevant.

## 7 **2. The role and responsibilities of federal agencies**

### 8 **a) Statutory responsibilities**

9  
10 In adopting the Northwest Power Act, Congress expected to overcome the harm to fish and  
11 wildlife caused by Columbia River hydroelectric dams. To that end, the Act anticipates that the  
12 Council and the federal implementing agencies will cooperate to achieve the goals set by  
13 Congress, as well as respect the role each has to play. In developing this program, the Council  
14 consulted and collaborated with federal agencies, particularly the National Marine Fisheries  
15 Service (NMFS), which is responsible for recovery planning for anadromous fish under the  
16 Endangered Species Act. Collaboration between the Council and NMFS does not stop with  
17 program amendments. For example, the Council and NMFS jointly appointed the Independent  
18 Scientific Advisory Board to offer objective advice to both agencies.

19  
20 The Northwest Power Act requires changes in planning, operations, regulation and other  
21 decision-making processes to implement this program and fulfill the Act's fish and wildlife  
22 objectives. The Council views the program as a hard constraint on the hydroelectric power  
23 system and expects federal river-operating and power agencies to account for the program in  
24 decision-making to the full extent required by the Act. The Act requires Bonneville to act in a  
25 manner that is consistent with the program when it signs contracts, grants billing credits, acquires  
26 resources and takes other action pertinent to this program. Bonneville and the U.S. Army Corps  
27 of Engineers, U.S. Bureau of Reclamation and the Federal Energy Regulatory Commission are  
28 required to take the program into account to the fullest extent practicable at each relevant stage  
29 of decision-making processes.

### 30 31 **b) Fish and Wildlife Program responsibilities:**

32  
33 All federal project operators and regulators are expected to integrate program water flow  
34 measures into power system rule curves, consider the use of Canadian storage as a source of  
35 water for fish flows and maintain all fish facilities at their projects in good repair. The Council  
36 also urges these operators and regulators to develop mutually satisfactory consultation and  
37 coordination arrangements with fish and wildlife agencies and tribes. Ultimately, the Council  
38 expects federal project operators and regulators to implement program measures or explain in  
39 detail why they cannot do so.

40  
41 The Council believes its program, developed with regional input, should prove to be an  
42 essential guide for federal agencies. A regional plan, based on extensive input from all the  
43 basin's interest groups as well as Northwest citizens, has the advantage of reflecting the unique

1 values, perspective and interests of the region. This is particularly relevant for the federal fish  
2 and wildlife agencies, as the Council sees an opportunity for consistent planning processes as the  
3 result of the focus on subbasin planning in this revised program. The Council is aware that these  
4 agencies, led by the National Marine Fisheries Service with its responsibility for consultations  
5 and recovery planning for anadromous fish species listed under the Endangered Species Act, are  
6 considering subbasin assessments and planning as a possible vehicle for implementing habitat  
7 changes needed under the ESA.  
8

### 9 **c) A role for state agencies**

10  
11 The Council is also aware that at least three of the states of the Columbia Basin are  
12 developing watershed or subbasin plans for purposes under state law. The Council aims to  
13 maximize coordination and cooperation and avoid duplication among fish and wildlife recovery  
14 plans. Thus, it is the Council's intent that the subbasin assessments and plans developed under  
15 this program also contain any elements that the National Marine Fisheries Service (or the U.S.  
16 Fish and Wildlife Service) may require so that the plans can address endangered species  
17 considerations. As well, the Council intends that subbasin assessments and plans developed for  
18 the purposes of the fish and wildlife program be coordinated with the relevant state planning  
19 processes, and to the maximum extent possible, be consistent with or even the same as the plans  
20 developed for the states.  
21

## 22 **D. Costs of the program**

### 23 **1. Three kinds of costs**

24  
25 The cost of implementing the Council's program is significant. In the Northwest Power Act,  
26 Congress established three major principles to govern the economic costs for program measures.  
27 First, hydropower ratepayers are to pay only for those measures designed to deal with the effects  
28 of hydropower development and operations. Second, measures must protect, mitigate and  
29 enhance fish and wildlife while assuring the region an adequate, efficient, economical and  
30 reliable power supply. Third, program measures must use the alternative with the lowest  
31 economic cost where equally effective means of reaching the same sound biological objective  
32 exist.  
33

34 The Bonneville Power Administration is the source of funding for the Council's program.  
35 Bonneville's fish and wildlife expenditures fall into three categories. The first is for the direct  
36 program. These expenditures are for actions that implement the program, such as construction of  
37 hatcheries, habitat enhancement projects, research and other projects that directly benefit or  
38 increase our knowledge about Columbia River Basin fish and wildlife. The budget for these  
39 projects currently is about \$127 million a year, an average established in a 1996 Memorandum of  
40 Agreement between the Clinton Administration, Columbia Basin Indian tribes and the Council.  
41 That agreement expires in 2002.  
42

43 The two other categories of expenses are: 1) repayment obligations, in which Bonneville  
44 repays the U.S. Treasury for most of the costs of fish-passage facilities at the Columbia and

1 Snake river federal dams, such as fish ladders, turbine screens, bypass systems and the juvenile  
2 salmon transportation facilities, and 2) foregone revenues and replacement power purchases.  
3 Foregone revenues arise as the result of measures in the Council's program that change river  
4 operations to provide improved flows for salmon. Collectively, these river-operations measures  
5 are known as the "water budget," and currently the water budget averages 13 million acre feet  
6 per year. The water budget is stored in upriver reservoirs through the winter for release in the  
7 spring, when juvenile fish are migrating to the ocean. As a result of this storage, Bonneville is  
8 not able to make as much money from power sales as it would if it were able to use the stored  
9 water for power generation. In many winters, as a result, Bonneville must buy power from other  
10 suppliers so that the water budget can be stored. These power purchases also are charged against  
11 the fish and wildlife program as an expense. Spilling water at dams and fluctuating mainstem  
12 reservoir levels also can reduce the ability of individual dams to generate electricity.  
13

14 Under terms of the 1996 Memorandum of Agreement, reimbursable expenses are estimated  
15 at \$125 million per year and foregone revenues (plus any attendant power purchases) at \$183  
16 million per year, although both have been less in actual practice since the agreement went into  
17 effect.  
18

## 19 **2. Other funding responsibilities**

20  
21 Because of its regional nature, the Council's program calls for participation and funding by  
22 state and federal entities and others. All levels of government must bear responsibility for  
23 adequately funding and staffing salmon rebuilding measures, or run the almost certain risk that  
24 the recovery effort will be delayed, with potentially disastrous results.  
25

26 Until now, most salmon rebuilding costs have been borne by electric power consumers  
27 through the Bonneville Power Administration pursuant to the provisions of the Northwest Power  
28 Act. To the extent that measures -- including off-site measures and programs -- respond to the  
29 impacts on salmon by the region's hydroelectric system, these costs are appropriate. But salmon  
30 runs were diminished, and rebuilding measures are required, because of a variety of other causes.  
31 The costs of responding to these other causes should continue to be shared by all responsible  
32 parties.  
33

## 34 **3. Financial impacts on Bonneville**

35  
36 The Council recognizes that care must be taken to ensure that Bonneville's financial  
37 obligations, including the cost of protecting fish and wildlife from the adverse effects of the  
38 hydropower system, do not make Bonneville uneconomic and unable to carry out the purposes of  
39 the Northwest Power Act. Bonneville is an integral part of the region's power supply, and its  
40 revenues are the principal means for financing energy conservation and fish and wildlife  
41 initiatives under the Northwest Power Act. In theory, rising fish and wildlife recovery costs  
42 could push Bonneville's power costs above the market rate -- or at least cause an expectation that  
43 rates will be over market in the future. In that event, if a significant number of utilities decided  
44 to seek other supplies of electricity, Bonneville might no longer be able to collect sufficient

1 revenue to fund fish and wildlife mitigation and other purposes of the Act, including repayment  
2 of its debt to the federal Treasury.

3  
4 The factors affecting Bonneville's financial position obviously are not limited to the costs of  
5 the fish and wildlife program. The federal hydropower system must repay the substantial debt  
6 remaining from past regional investments in thermal generation, for example. In addition,  
7 federal legislation affords unique advantages to Bonneville's regional customers that may impair  
8 Bonneville's competitive position. Bonneville has assured the Council that it can absorb  
9 additional fish recovery costs, and in fact plans to do so in its next rate period, 2002-2006. It is  
10 less clear whether the agency could absorb still higher costs in the subsequent rate period, but the  
11 Council is committed to working with Bonneville to ensure that it meets the fish and wildlife  
12 mitigation requirements of the Act while remaining financially viable.

## 13 14 **E. How This Version of the Program is Different**

### 15 **1. Vision, goals and objectives, not specific measures**

16  
17 This is the fifth revision of the Columbia River Basin Fish and Wildlife Program since the  
18 Council adopted its first program in November 1982. This time, as in the series of program  
19 amendments between 1991 and 1995, the program is being revised in phases.

20  
21 Unlike past versions of the program, which were criticized by scientists for consisting  
22 primarily of a number of measures that called for specific actions without a clear, programwide  
23 foundation of scientific principles, this version of the program expresses goals and objectives for  
24 the entire basin based on a scientific foundation of ecological principles.

25  
26 In the future, the Council will amend into the program locally developed plans for the 53  
27 tributary subbasins of the Columbia River. These plans will be consistent with the goals and  
28 objectives for the basin and also with goals and objectives that will be developed for the 11  
29 ecological provinces of the basin. The provinces are groups of related subbasins.

30  
31 The Council believes this unique program structure, goal-oriented and science-based, will  
32 result in a more carefully focused, scientifically credible and publicly accountable program that  
33 will direct the region's substantial fish and wildlife investment to the places and species where it  
34 will do the most good.

### 35 **2. Revisiting the Systemwide Perspective**

36  
37 The Northwest Power Act directs the Council to design its program to deal with the  
38 Columbia River and its tributaries as a system. Through the program, the region is taking a  
39 coordinated approach to fish and wildlife mitigation involving fish habitat, anadromous fish  
40 passage down the rivers (particularly the mainstems of the Columbia and Snake), fish harvest,  
41 and fish production (both natural and artificially aided). This coordination is consistent with the  
42 federal agencies' intent to take an ecosystem approach to recovery under the Endangered Species  
43 Act.

1 The Columbia River system -- an ecosystem -- obviously incorporates a broad range of  
2 human activities including hydropower production, navigation, flood control, agriculture,  
3 recreation and many other land and water development activities. Opportunities for improved  
4 coordination and cooperation, as well as for increased conflict, are enormous. Building a fish  
5 and wildlife program that properly accounts for these activities requires the broadest possible  
6 involvement of the public and affected interests.  
7

8 One frequently heard criticism of the Council's program is that it was a collection of  
9 individual measures proposed by regional parties without reference to an explicit, common  
10 scientific framework or conceptual foundation. Measures in the program were logically grouped  
11 by topic -- in essence, a list of items compiled primarily through political agreement. If the  
12 program is no more than a list of measures loosely tied to topic-specific goals and without the  
13 support of a broad scientific foundation, then it begins to lose its systemwide focus.  
14

15 In fact, it is more appropriate to focus on protecting, mitigating and enhancing ecosystem  
16 properties, addressing the problems and opportunities that are unique to specific subbasins of the  
17 Columbia River. An ecosystem approach implies a greater degree of integration and cooperation  
18 than a mere listing of actions that address impacts of dams. The ecosystem approach by  
19 definition is systemwide, and it requires broad public participation in addressing the biological  
20 needs of fish and wildlife while also providing for a reliable power supply.  
21

22 An ecosystem approach also implies a broad geographic scale. The Columbia River  
23 watershed is international, with about 15 percent of the basin in British Columbia. While United  
24 States entities have no authority over land and water uses or fish and wildlife in Canada, the  
25 Council believes that to fully address the Columbia River ecosystem it is necessary to account  
26 for the Canadian portion as much as possible in decision-making.  
27

28 The Columbia, Kootenai (Kootenay in B.C.), Okanagon (Okanagan in B.C.), Similkameen,  
29 Pend Oreille and other smaller rivers in the Columbia Basin -- the Kettle, for example -- flow  
30 across the international border in one direction or another. The 1994-95 version of the program  
31 recognized the importance of the Canadian, headwaters portion of the basin in terms of providing  
32 water for fish flows downstream in the United States, and the program also called for  
33 investigating the possibility of spending Bonneville ratepayer funds to enhance fish and wildlife  
34 populations that have been affected by hydropower in the transboundary river reaches of  
35 Montana, Idaho, Washington and British Columbia. The program also recognized the  
36 importance of considering the Canadian portion of the Columbia Basin in systemwide, basinwide  
37 ecosystem management, a concept embraced in the current program's focus on basinwide goals  
38 and objectives.  
39

40 In late 1996, the Council began working to improve its understanding of transboundary fish,  
41 wildlife and water issues and its relations with provincial, federal and tribal agencies that have  
42 responsibility for fish and wildlife in the Canadian Columbia Basin. To that end, the Council  
43 established a formal liaison with the Columbia Basin Trust, the Council's closest counterpart  
44 agency. Like the Council, the Trust has a mandate to mitigate the impact of hydropower dams,  
45 and in particular the Mica, Duncan and Keenleyside dams built under the 1964 Columbia River  
46 Treaty.

1 **3. Revisiting the program's goals**

2  
3 While the foundation articulated in the Council's program in the past decade for a  
4 systemwide approach was sound, the focus of the 1980s and 1990s proved too narrow. The  
5 1994-95 program established interim, systemwide goals of 1) doubling the anadromous fish runs,  
6 2) protecting, mitigating and enhancing the viability of resident fish populations to meet  
7 consumptive and non-consumptive needs in the region; and 3) fully mitigating the impact of  
8 hydropower on wildlife. While these are laudable goals, they do not necessarily address the  
9 entire Columbia Basin ecosystem, and they do not focus on improving ecological conditions in  
10 individual subbasins. In addition, the three goals do not share a common foundation in  
11 ecological science, a foundation that could direct implementation of actions to achieve them.  
12

13 Clearly, it is time to rethink the program's goals and objectives within the systemwide  
14 planning requirement of the Northwest Power Act.

15 **4. A framework to guide program implementation**

16  
17 In the 1994-95 program, the Council introduced the idea of a "framework" for the program  
18 and for the region's fish and wildlife recovery efforts at large. The framework would establish a  
19 logical structure for the measures in the Council's program. Based on the framework concept,  
20 the program also would contain explicit goals and objectives and state the program's scientific  
21 basis.  
22

23 The framework concept was not further developed in the 1994 amendments. A number of  
24 reviews of the Council's program, especially the 10-member Independent Scientific Group's  
25 1996 *Return to the River* review requested by the Council, subsequently criticized the program  
26 for lacking an explicit statement of its underlying scientific foundation and, especially, for being  
27 a collection of measures not well tied to a comprehensive framework of goals and objectives.  
28 The annual reviews of project proposals by the Independent Scientific Review Panel have also  
29 repeatedly criticized the program for its failure to provide an adequate context for evaluating  
30 projects.  
31

32 In addition, the number of fish and wildlife populations in the Columbia River Basin that have  
33 been listed under the Endangered Species Act continues to increase. But the region's experience  
34 with responding to these listings has also highlighted the need to think and plan for the needs of  
35 fish and wildlife populations in an integrated, comprehensive way. Piecemeal solutions can  
36 mean that efforts to recover one population jeopardize other populations. Relying on the  
37 Endangered Species Act as the centerpiece of fish and wildlife recovery efforts in the region  
38 diverts our attention from the broader task of protecting biological diversity and ecosystem  
39 function, which actually may be the best way to benefit both the listed and unlisted species.  
40

41 In the *Return to the River* report, the Independent Scientific Group proposed a conceptual  
42 foundation for the program designed to form a framework into which mitigation actions can be  
43 integrated. The conceptual foundation, in essence, is a set of scientific principles and  
44 assumptions that give direction to management activities, including biological restoration  
45 activities. It can be changed over time to reflect new information about problems and solutions.

1  
2 This program is organized around the framework concept. The program is intended to bring  
3 together, as closely as possible, Endangered Species Act requirements, the broader requirements  
4 of the Northwest Power Act and the policies of the states and Indian tribes of the Columbia River  
5 Basin into a comprehensive program that has a solid scientific foundation. The program also  
6 states explicitly what the Council is trying to accomplish, links the program to a specific set of  
7 objectives, describes the strategies to be employed and establishes a scientific basis for the  
8 program. Thus, the program guides decision-making and provides a reference point for  
9 evaluating success.  
10

### 11 **a) The Multi-Species Framework Project**

12  
13 To develop a framework for the program, in November 1998 the Council initiated the Multi-  
14 Species Framework Project. The Framework Project was managed by a state-federal-tribal  
15 committee and administered by the Council. The project brought together hundreds of  
16 individuals representing state and federal agencies, Indian tribes, environmental and industry  
17 groups and interested citizens to propose and discuss potential fish and wildlife recovery actions.  
18 The actions ranged from breaching dams to leaving them in place, and from shutting down fish  
19 hatcheries and fish harvest to boosting artificial production of fish. From more than 100 actions  
20 proposed in the process, the Council assembled seven alternatives for analysis using a state-of-  
21 the-art analytical system called Ecosystem Diagnosis and Treatment (EDT). The EDT analysis  
22 addressed the biological benefits of each alternative, and a separate Human Effects Analysis  
23 addressed the economic and social impacts and benefits of the alternatives.<sup>2</sup>  
24

25 The seven options represented seven different approaches to managing the Columbia River  
26 and its tributaries. The EDT analysis found that the most environmentally aggressive  
27 alternatives -- such as breaching dams -- yield the greatest likelihood of producing the most  
28 naturally spawning salmon in the Snake River. But those options also carry the greatest  
29 economic risks for the region. Options that have less economic risk can also increase the number  
30 of fish, but they rely on measures like hatcheries that carry greater biological risk.  
31

32 The Council did not choose a specific alternative for the current version of the program.  
33 Rather, the goals and objectives in this program were assembled from among several of the  
34 Framework Project alternatives.  
35

### 36 **b) Framework gives structure to the program**

37  
38 Through an amendment proceeding that began in January 2000, the Council restructured the  
39 program with a comprehensive, underlying framework of general scientific and policy principles  
40 that apply to the entire Columbia River Basin. Ultimately, as noted earlier in this chapter, the  
41 Council will amend into the program specific subbasin plans that are consistent with the

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<sup>2</sup> See: *The Year of Decision: Renewing the Northwest Power Planning Council's Fish and Wildlife Program*, Northwest Power Planning Council, December 1999; *Human Effects Analysis of the Multi-Species Framework Alternatives*, Northwest Power Planning Council, Document 2000-5, March 2000.

1 basinwide goals and objectives in the program, and also consistent with goals and objectives that  
2 will be developed for the 11 ecological provinces, or groups of adjacent subbasins, in the  
3 Columbia Basin.

4  
5 With the subbasin plans in place, the program will be organized in three levels: 1) a  
6 basinwide level that articulates objectives, principles and coordination elements that apply  
7 generally to all fish and wildlife projects, or to a class of projects, that are implemented  
8 throughout the basin; 2) an ecological province level that addresses the 11 unique ecological  
9 areas of the Columbia River Basin, each representing a particular type of terrain and  
10 corresponding biological community; and 3) a level that addresses the 53 subbasins, each  
11 containing a specific waterway and the surrounding uplands.

### 13 c) Details of the program

14  
15 The fundamental elements of the program are:

- 17 1. The *vision*, which describes what the program is trying to accomplish with regard to  
18 fish and wildlife and other desired benefits from the river;
- 19  
20 2. The *biological objectives*, which describe the environmental conditions needed to  
21 achieve the vision; and
- 22  
23 3. The implementation *strategies, procedures and guidelines*, which guide or describe  
24 the actions leading to the desired ecological conditions.

25  
26 In other words, the vision implies biological objectives that set the strategies. In turn,  
27 strategies address biological objectives and fulfill the vision. The scientific foundation links the  
28 components of the framework, explaining why the Council believes certain kinds of management  
29 actions will result in particular physical habitat or ecosystem conditions of the basin, or why the  
30 ecosystem conditions will affect fish and wildlife populations or communities. Based on the  
31 framework, the Council will implement the program at three geographic levels: 1) the basin as a  
32 whole; 2) the 11 ecological provinces; and 3) the 53 subbasins.

33  
34 Framework elements, especially biological objectives and strategies or implementation  
35 guidelines, at the basin and province levels will guide a subbasin planning process to complete  
36 the program framework and provide the vehicle for implementation of actions intended to  
37 achieve the objectives and for evaluating the actions taken.

38  
39 Under the Northwest Power Act, the Council's fish and wildlife program is not intended to  
40 address all fish and wildlife problems in the basin from all sources. But the Council adopted the  
41 vision, objectives, strategies and scientific foundation with the belief that they can apply to all of  
42 the region's fish and wildlife recovery actions. That is, the Council's program links to and  
43 accommodates the needs of other programs in the basin that affect fish and wildlife. The  
44 Council's program also could unify and coordinate a framework for fish and wildlife mitigation  
45 and recovery activities across the basin. This includes meeting the needs of the Endangered

1 Species Act by describing the kinds of ecological change needed to improve the survival and  
2 productivity of the diverse fish and wildlife populations in the basin.

3  
4 Here is a closer look at the key organizing elements of the program:

5  
6 **Vision:**

7  
8 The vision is the basis for the Council's program. At each ecological level, it indicates the  
9 choice of biological objectives and, in turn, the selection of strategies. The vision is a pragmatic  
10 statement of intent that drives the rest of the program. The vision describes a future state for the  
11 Columbia River Basin (or for a respective province or subbasin). The Council chose the word  
12 "vision" rather than "goal" to stress the need for long-term considerations. A set of policy  
13 judgments and planning assumptions is included as part of the vision. The objectives and  
14 strategies relate to the vision.

15  
16 **Biological objectives:**

17  
18 Biological objectives are the characteristics of the ecosystem that we need to reach the vision  
19 based on the information we now have. They are intended to be empirically measurable, and  
20 will be reached through strategies. Biological objectives address attributes of the ecosystem, the  
21 biological communities and the populations of specific species and the habitat in which they live.  
22 The Multi-Species Framework Project distinguished between two types of objectives:  
23 *environmental attributes* that describe the physical and biological habitat, including measures of  
24 habitat such as flow, water quality, vegetation and land use, and *biological performance*  
25 objectives that describe the biological response of a particular species or assemblage to habitat  
26 conditions, measured especially in terms of capacity, productivity and life history diversity. The  
27 Council expects that at the finer geographic levels (especially the subbasins), objectives will  
28 include many that are specific and quantified or otherwise measurable.

29  
30 **Strategies:**

31  
32 Strategies are plans of action to accomplish the objectives and thereby fulfill the vision.  
33 Because most of the specific actions will be addressed at the subbasin level, most of the  
34 strategies will be developed there. However, it is important that the strategies at the province  
35 and subbasin levels be consistent with the basinwide guidelines, guiding actions toward the basin  
36 objectives and vision and the scientific foundation. Thus, at the basin level, there are guidelines  
37 for implementation. Also at the basin level, strategies will be developed in areas that transcend  
38 one or more of the provinces, such as data management, research, monitoring and evaluations.

39  
40 **Scientific foundation:**

41  
42 The scientific foundation for the program provides an explicit scientific basis for developing  
43 biological objectives, and for linking strategies, objectives and visions at the subbasin, province  
44 and basin levels. Thus, the scientific foundation links the functional components of the program  
45 framework. It comprises a set of scientific principles and hypotheses. In the development of the  
46 framework concept to initiate the Multi-Species Framework Project, the Council described a set

1 of general scientific principles, stating a view of how species, including humans, relate to their  
2 environment. After further refinement, including a review by the Independent Scientific  
3 Advisory Board, the Council adopted the principles in the program as the scientific foundation.  
4

## 5 **F. How the amended program works**

6

7 In this program, for the first time, the Council adopts a vision and consistent objectives,  
8 strategies and scientific principles for the basin and program as a whole and for the unique  
9 ecological provinces. A subbasin assessment and planning process will complete the program at  
10 the subbasin level and provide the implementation plans out of which fish and wildlife projects  
11 are proposed for Bonneville funding to implement the program.  
12

13 The subbasin assessment is a technical exercise designed to identify the biological potential  
14 of each subbasin and the opportunities for restoration. Based on this, fish and wildlife managers,  
15 land managers, private landowners, and other people responsible for fish and wildlife and habitat  
16 conditions in the respective subbasins can develop subbasin plans consisting of goals, objectives,  
17 strategies, and proposed actions that are consistent with the objectives and criteria in the  
18 program. Depending on the extent and quality of past assessment and planning work, the  
19 planning process in a particular subbasin could range from a relatively quick and straightforward  
20 review and updating of existing plans to a fundamental and extensive development process.  
21 Using the program amendment procedures in the Northwest Power Act, the Council intends to  
22 review subbasin plans and adopt agreed-upon plans into the program.  
23

24 Meanwhile, the Council will continue to make annual recommendations to Bonneville  
25 regarding funding of projects to implement the program. The Council relies on the  
26 recommendations of the Independent Scientific Review Panel (ISRP) as a primary basis for its  
27 funding recommendations. The Council and the ISRP also have a responsibility for reviewing  
28 other fish and wildlife projects proposed for funding by federal agencies and reimbursed by  
29 Bonneville.  
30

31 The program describes a rolling project review process in which one-third of the program  
32 and fish and wildlife projects funded by Bonneville are reviewed each year in some depth by the  
33 ISRP and the Council. An important criterion for a funding recommendation is consistency with  
34 the vision, objectives and strategies in the revised program and in the relevant subbasin plan,  
35 when adopted. In the rolling project review, the priorities for actions at the basin, province, and  
36 subbasin level will be reflected as budget priorities for implementation of specific projects.  
37

38 The program includes procedures for monitoring and evaluating the biological benefits  
39 gained by actions taken under the program. The evaluation process feeds information back into  
40 the program planning and project review process, with adaptive management mechanisms for  
41 revising program objectives or actions if what has been adopted proves unsuccessful.  
42

43 Because this program has a significantly different structure and implementation procedure  
44 than past versions of the program, the Council wanted to make a provision for projects initially  
45 funded under previous versions of the program to continue -- as long as they are approved by the

1 ISRP. Thus, unless expressly modified by the provisions of this program, existing projects will  
2 continue to be in effect.

3  
4 Most of the existing projects in the program are specific items for implementation at specific  
5 locations. As part of the subbasin planning process described above, these measures will be  
6 reviewed, together with proposals for new measures, for inclusion in subbasin plans. When a  
7 subbasin plan is adopted, it will include both the new measures for that subbasin and the existing  
8 measures that will be continuing. At that time, the measures currently in the program for that  
9 subbasin will be replaced by the subbasin plan.

## 10 11 **G. Council Commitments**

12  
13 The Council finds this program to be consistent with the purposes of the Northwest Power  
14 Act. The Council has evaluated the program on the basis of the recommendations, supporting  
15 documents, consultations and public comment contained in its record. The Council has  
16 determined the program will protect, mitigate and enhance fish and wildlife affected by the  
17 development, operation and management of hydroelectric facilities located on the Columbia  
18 River and its tributaries, while assuring the Pacific Northwest an adequate, efficient, economical  
19 and reliable power supply. The Council also has determined that the program meets the list of  
20 program requirements contained in Section 4(h)(6) of the Act.

21  
22 The Council is committed to a stringent program of monitoring and evaluating progress to  
23 ensure that the region's investment in fish and wildlife pays off. The Council will modify or  
24 eliminate activities that do not provide sufficient progress toward stated goals and objectives, and  
25 will consider other actions as necessary.

26  
27 The Council also commits itself to work with federal agencies to integrate this program into  
28 planning and recovery processes under federal laws including the Endangered Species Act,  
29 Clean Water Act, National Environmental Policy Act, and others.

## 30 31 **H. Water rights**

32  
33 Congress and the Council recognize that this program must be implemented within a  
34 complex scheme for allocating rights to use Columbia River Basin water. As noted in the  
35 Northwest Power Act, nothing in this program authorizes appropriation of water, affects rights to  
36 water or jurisdictions over water, or establishes the respective rights to water of the federal  
37 government, individual states, Indian tribes or individuals.

38  
39 *The Council solicits comments about which of two alternatives should appear at this point:*

40  
41 [Alternative A] As required by the Northwest Power Act, water management operations for the  
42 mainstem Columbia and Snake river systems shall not infringe on state jurisdiction over water  
43 rights and water management.

44  
45 [Alternative B] Nothing in this program shall affect the rights or jurisdictions of the United  
46 States, the States, Indian tribes, or other entities over waters of any river or stream or over any

1 groundwater resource or otherwise be construed to alter or establish the respective rights of  
2 States, the United States, Indian tribes, or any person with respect to any water or water-related  
3 right.

4  
5 The Council assumes that the federal implementing agencies will work hard to develop  
6 cooperative and creative ways to implement the program's water flow measures with those  
7 requirements in mind.

8  
9 The Council will continue to consult with Indian tribes, state water agencies, and the federal  
10 project operators and regulators to provide assistance in these matters. The Council is  
11 particularly mindful that the states are considering the increasing effects on fish of water  
12 diversions in the Columbia and Snake river systems, and taking into account both those effects  
13 and this program as they develop their individual water resource management programs.

14  
15

## II. Basinwide Provisions

### A. Vision for the Columbia River Basin

The vision is the outcome intended for this program. Actions taken at the basin, province, and subbasin levels should be consistent with, and designed to fulfill, this vision. Thus, this vision guides the choice of biological objectives and, in turn, the selection of strategies. Ultimately, this is how the Council fulfills its duty to “protect, mitigate, and enhance” fish and wildlife affected by the Federal hydrosystem.

#### 1. The overall vision for the fish and wildlife program:

The vision for this program is a Columbia River ecosystem that sustains an abundant, productive, and diverse community of fish and wildlife, mitigating across the basin for the adverse effects to fish and wildlife caused by the development and operation of the hydrosystem and providing the benefits from fish and wildlife valued by the people of the region. This ecosystem provides abundant opportunities for tribal trust and treaty right harvest and for non-tribal harvest and the conditions that allow for the recovery of the fish and wildlife affected by the operation of the hydrosystem and listed under the Endangered Species Act.

Wherever feasible, this program will be accomplished by protecting and restoring the natural ecological functions, habitats, and biological diversity of the Columbia River Basin. In those places where this is not feasible, other methods that are compatible with naturally reproducing fish and wildlife populations will be used. Where impacts have irrevocably changed the ecosystem, the program will protect and enhance the habitat and species assemblages compatible with the altered ecosystem. Actions taken under this program must be consistent with an adequate, efficient, economical and reliable electrical power supply.

#### 2. Specific planning assumptions:

As part of this vision, the Council also adopts the following policy judgments and planning assumptions for the fish and wildlife program.

- No single activity is sufficient to recover and rebuild fish and wildlife species in the Columbia River Basin. Successful recovery efforts and mitigation must involve a broad range of strategies for habitat protection and improvement, hydrosystem reform, artificial production, and harvest management.

- 1 • This is a habitat-based program, rebuilding healthy, naturally producing fish and wildlife  
2 populations by protecting and restoring habitats and the biological systems within them,  
3 including anadromous fish migration corridors. Artificial production and other non-  
4 natural interventions should be consistent with the central effort to protect and restore  
5 habitat and avoid adverse impacts to native fish and wildlife species.  
6
- 7 • Management actions must be taken in an adaptive, experimental manner because  
8 ecosystems are inherently variable and highly complex. This includes using experimental  
9 designs and techniques as part of management actions, and integrating monitoring and  
10 research with those management actions to evaluate their effects on the ecosystem.  
11
- 12 • Actions to improve juvenile and adult fish passage through mainstem dams, including  
13 fish transportation actions and capital improvement measures, should protect biological  
14 diversity by benefiting the range of species, stocks and life-history types in the river, and  
15 should favor solutions that best fit natural behavior patterns and river processes, while  
16 maximizing fish survival through the projects. Spill should be the baseline against which  
17 to measure the effectiveness of other passage methods.  
18
- 19 • For the purpose of planning for this fish and wildlife program, and particularly the  
20 hydrosystem portion of the program, the Council assumes that, in the near term, the  
21 breaching of the four federal dams on the lower Snake River will not occur. However,  
22 the Council is obliged under law to revise its fish and wildlife program every five years,  
23 at a minimum. If within that five-year period, the status of the Lower Snake river dams  
24 or any other major component of the Federal Columbia River Power System has changed,  
25 the Council can take that into account as part of the review process.  
26
- 27 • Mainstem hydrosystem operations and fish passage efforts should be directed at re-  
28 establishing natural river processes where feasible.  
29
- 30 • Systemwide water management, including flow augmentation from storage reservoirs,  
31 should balance the needs of anadromous species with those of resident fish species in  
32 upstream storage reservoirs so that actions taken to advance one species do not  
33 unnecessarily come at the expense of other species.  
34
- 35 • There is an obligation to provide fish and wildlife mitigation where habitat has been  
36 permanently lost due to development. Artificial production of fish may be used to  
37 replace capacity, bolster productivity, and alleviate harvest pressure on weak naturally  
38 spawning resident and anadromous fish populations.  
39
- 40 • Artificial production actions must have an experimental, adaptive management design.  
41 This design will allow the region to evaluate benefits, address scientific uncertainties, and  
42 improve hatchery survival while minimizing the impact on, and if possible benefiting,  
43 fish that spawn naturally.  
44
- 45 • Harvest can provide significant cultural and economic benefits to the region, and the  
46 program should seek to increase harvest opportunities consistent with sound biological

1 management practices. Harvest rates should be based on population-specific adult  
2 escapement objectives designed to protect and recover naturally spawning populations.

- 3
- 4 • Achieving the vision requires that habitat, artificial production, harvest, and hydrosystem  
5 actions be thoughtfully coordinated with one another. There also must be a coordination  
6 among actions taken at the subbasin, province, and basin levels, including actions not  
7 funded under this program. Accordingly, creating an appropriate structure for planning  
8 and coordination is a vital part of this program.
- 9

1 **B. Scientific Foundation and Principles**  
2  
3

The scientific foundation reflects the best available scientific knowledge. The scientific principles summarize this knowledge at a broad level. The actions taken at the basin, province, and subbasin levels to fulfill the vision should be consistent with, and based upon these principles.

4

5 **1. Purpose of the Scientific Foundation**  
6

7 In developing a program to fulfill the vision statement above, the Council is relying on the  
8 best available scientific knowledge. While the vision is a policy choice about what the program  
9 should accomplish, the scientific foundation describes our best understanding of the biological  
10 realities that will govern this accomplishment. The program can succeed only as it recognizes  
11 these realities and builds upon them.  
12

13 Thus, the scientific foundation is the basis for the working hypotheses that underlie this  
14 program. It also provides specific guidance for program measures. For example, the strategies  
15 for the use of artificial production are an application of the scientific foundation to the use of  
16 hatcheries for raising fish within the Columbia River Basin.  
17

18 The scientific foundation consists of the scientific principles, a detailed discussion of those  
19 principles, the geographic structure of the program, and a set of more specific scientific rules and  
20 hypotheses. Only the scientific principles and the geographic structure appear in this volume of  
21 the program; the remainder of the foundation is in the Technical Appendix for this program.  
22

23 The rules and hypotheses in the Technical Appendix will change over time in response to  
24 new scientific information. These rules and hypotheses will continue to be evaluated as the  
25 program is implemented and will be revised as needed.  
26

27 In contrast, the scientific principles below are intended to be relatively fixed points of  
28 reference. Although scientific knowledge will improve over time, modification of the principles  
29 should occur only after due scientific deliberation. The Council charges the Independent  
30 Scientific Advisory Board with the primary role in reviewing and recommending modifications  
31 to the Scientific Principles in the future prior to any major revision of this program.  
32

33 **2. Scientific Principles**  
34

35 As part of the scientific foundation, the program recognizes eight principles of general  
36 application. It is intended that all actions taken to implement this program be consistent with  
37 these principles.

1  
2 The Scientific Principles are grounded in established scientific literature to provide a stable  
3 foundation for the Council's program. A more detailed discussion of the implications of these  
4 principles, together with citations to the supporting references, is included in the Technical  
5 Appendix.  
6

7 **Principle 1. The abundance, productivity and diversity of organisms are integrally linked**  
8 **to the characteristics of their ecosystems.**

9 The physical and biological components of ecosystems are inseparably related to produce the  
10 diversity, abundance and productivity of plant and animal species including humans. The  
11 combination of suitable habitats and needed ecological functions combine to form the  
12 ecosystems needed to provide the desired abundance and productivity of specific species.  
13

14 **Principle 2. Ecosystems are dynamic, resilient and develop over time.**

15 Although ecosystems have definable structures and characteristics, their behavior is highly  
16 dynamic, changing in response to internal and external factors. The system we see today is the  
17 product of its biological, human and geological legacy. Disturbance and change are normal  
18 ecological processes and are essential to the structure and maintenance of habitats.  
19

20 **Principle 3. Biological systems operate on various spatial and time scales that can be**  
21 **organized hierarchically.**

22 Ecosystems, landscapes, communities and populations are usefully described as hierarchies of  
23 nested components distinguished by their appropriate spatial and time scales. Higher level  
24 ecological patterns and processes constrain, and in turn reflect, localized patterns and processes.  
25 There is no single, intrinsically correct description of an ecosystem, only one that is useful to  
26 management or scientific research. The hierarchy should clarify the higher-level constraints as  
27 well as the localized mechanisms behind the problem.  
28

29 **Principle 4. Habitats develop, and are maintained, by processes related to climate, geology**  
30 **and hydrology.**

31 Habitats are created, altered and maintained by processes that operate over a range of scales.  
32 Locally observed conditions often reflect more expansive or non-local processes and influences,  
33 including human actions. The presence of essential habitat features created by these processes  
34 determines the abundance, productivity and diversity of species and communities. Habitat  
35 restoration actions undertaken without appreciation of the underlying habitat-forming processes  
36 will not be effective in the long term.  
37

38 **Principle 5. Species play key roles in developing and maintaining ecological conditions.**

39 Each species has one or more ecological functions that may be key to the development and  
40 maintenance of ecological conditions. Species, in effect, have a distinct job or occupation that is  
41 essential to the structure, sustainability and productivity of the ecosystem over time. The  
42 existence, productivity and abundance of specific species depend on these functions. In turn, loss  
43 of species and their functions lessens the ability of the ecosystem to withstand disturbance and  
44 change.  
45

1 **Principle 6. Biological diversity allows ecosystems to accommodate environmental**  
2 **variation.**

3 The diversity of species, traits and life histories within biological communities contributes to  
4 ecological stability in the face of disturbance and environmental change. Loss of species and  
5 their ecological functions can decrease ecological stability and resilience. It is not simply that  
6 more diversity is always good; introduction of non-native species, for example, can increase  
7 diversity but disrupt ecological structure. Diversity within a species presents a greater range of  
8 possible solutions to environmental variation and change. Maintaining the ability of the  
9 ecosystem to express its own species composition and diversity allows the system to remain  
10 productive in the face of environmental variation.

11  
12 **Principle 7. Ecological management is adaptive and experimental.**

13 Many of the features of ecological systems counsel against the notion of command and control of  
14 the environment. Adaptive management – the use of management experiments to investigate  
15 biological problems and to test the efficacy of management directions—provides a model for  
16 experimental management of ecosystems. Experimental management does not mean passive  
17 “learning by doing”, but rather a directed program aimed at understanding key ecosystem  
18 dynamics and the impacts of human actions using scientific experimentation and inquiry.

19  
20 **Principle 8. Ecosystem function, habitat structure and biological performance are affected**  
21 **by human actions.**

22 As humans, we often view ourselves as separate and distinct from the natural world. However,  
23 we are integral parts of ecosystems. Our actions have a pervasive impact on the structure and  
24 function of ecosystems, while, at the same time, our health and well-being are tied to these  
25 conditions. The issue is to what extent we are able to control our impacts so as to balance the  
26 various services potentially provided by the Columbia River Basin. It is a question of the type of  
27 environment in which we choose to live and how much we are willing to limit our actions to  
28 encourage it to develop.

1 **C. Biological Objectives**  
2

The biological objectives describe the conditions that are needed to reach the vision, consistent with the scientific principles. The program fulfills the vision by achieving these objectives.

3

4 **1. Overarching objectives**  
5

6

7 The Northwest Power Act directs the Council to develop a program to “protect, mitigate, and  
8 enhance” fish and wildlife on the Columbia River and its tributaries, included related spawning  
9 grounds and habitat, affected by the development and operation of the federal hydrosystem. In  
10 the vision, the Council has stated four overarching biological objectives for this program. They  
11 are:

12

13 • A Columbia River ecosystem that sustains an abundant, productive, and diverse  
14 community of fish and wildlife.

15

16 • Mitigation across the basin for the adverse effects to fish and wildlife caused by the  
17 development and operation of the hydrosystem.

18

19 • Sufficient populations of fish and wildlife for abundant opportunities for tribal trust and  
20 treaty right harvest and for non-tribal harvest.

21

22 • Recovery of the fish and wildlife affected by the development and operation of the  
23 hydrosystem that are listed under the Endangered Species Act

24

25 The Council recognizes that achieving these broad objectives is not the sole responsibility of  
26 this fish and wildlife program nor the Bonneville Power Administration. Complementary actions  
27 by other governmental agencies and funding sources, including Canadian entities where  
28 appropriate, as well as the support and participation of the citizens of the Northwest, will be  
29 needed for these objectives to be fully achieved. Consequently, the focus of the program is  
30 limited to fish and wildlife affected by the development, operation, and management of the  
31 hydrosystem.

32

33 **2. Development of specific biological objectives at the basin level**  
34

35

36 This program anticipates that biological objectives identifying needed changes in specific  
37 characteristics of the environment and target populations (such as the number of fish in a  
38 particular population or measured productivity levels) will be established at the province level  
and in subbasin plans. In addition, the assessment and planning preceding the adoption of  
province- and subbasin-level biological objectives will likely also identify specific, quantified

1 biological objectives for the program as a whole. Examples might include abundance and  
2 performance objectives for fish populations that transcend more than one province, specific  
3 programwide objectives for improvement in certain habitat types, and specific objectives for  
4 water management and coordinated operation of the hydrosystem to benefit fish and wildlife.  
5

6 These basinwide objectives will help determine the amount of change needed across the  
7 basin to fulfill the vision. They will also help determine the cost-effectiveness of program  
8 strategies, and provide a basis for monitoring, evaluation, and accountability. These more  
9 specific objectives will be considered for adoption when the Council considers adoption of  
10 province-level biological objectives, and, if appropriate, when the Council considers subbasin  
11 plans for adoption.  
12

### 13 **3. Linkage of general biological objectives for habitat protection and restoration with** 14 **strategies**

15  
16 Because this is a habitat-based program, implementation strategies will vary depending on  
17 the current condition and the restoration potential of the habitat<sup>3</sup> for the species and life stages of  
18 interest. For example, with regard to fish spawning and rearing in either the mainstem and  
19 tributaries, the first consideration in any particular area is the current condition of the habitat for  
20 spawning and rearing and the potential for protection or restoration of that habitat for natural  
21 production. If the potential for restoring the natural production of the habitat is low, or the  
22 biological potential<sup>4</sup> of the target population<sup>5</sup> is low because of survival problems elsewhere in  
23 its life cycle, the area may become a candidate for certain types of artificial production.  
24

25 The following table illustrates possible applications of these biological objectives to  
26 strategies within this program.

---

<sup>3</sup> As used in this section, “habitat” includes the ecological functions of the habitat and the habitat structure.

<sup>4</sup>The “biological potential” of a species means the potential capacity, productivity, and life history diversity of a population in its habitat at each life stage.

<sup>5</sup> “Target species” or “target population” means a species or population singled out for attention because of its harvest significance or cultural value, or because it represents a significant group of ecological functions in a particular habitat type.

1

Criteria			Examples of Possible Strategies	
Habitat condition	Description	Biological Potential of Target Species	Habitat Strategy	Artificial Production Strategy
Intact	Ecological functions and habitat structure largely intact.	High	Preserve	No artificial production
		Low	Preserve	Limited supplementation
Restorable	Potentially restorable to intact status without heroic measures.	High	Restore to intact	Interim supplementation
		Low	Moderate restore	Limited supplementation
Compromised	Ecological function or habitat structure substantially diminished	High	Moderate restore	Limited supplementation
		Low	Low restore	Supplementation
Eliminated	Habitat fundamentally altered or blocked	High	Substitute	Replacement Hatchery
		Low	Substitute	Replacement Hatchery

2

3

4

5

Intact habitat: Where the habitat for a target population is largely intact, then the biological objectives for that habitat will be to preserve the habitat and restore the population of the target species up to the sustainable capacity of the habitat.

8

9

When the biological potential of a target population is high, restoration should be by means of natural spawning and rearing. When the biological potential of the target population is limited by external factors, such as the presence of mainstem dams or other factors, supplementation is a possible policy choice to augment natural capacity and productivity, in a limited fashion that ensures that the majority of production will be the result of natural spawning.

14

15

Restorable habitat: Where the habitat for a target population is absent or severely diminished, but can be restored without heroic efforts, then the biological objective for that habitat will be to restore the habitat with the degree of restoration depending on the biological potential of the target population. Where the target population has high biological potential, the objective will be to restore the habitat to intact condition, and restore the population up to the sustainable capacity of the habitat. In this situation, if the target population had been severely reduced or eliminated as a result of the habitat deterioration, the use of artificial production in an interim way is a possible policy choice to hasten rebuilding of naturally spawning populations after restoration of the habitat.

24

25

Where the target population has low biological potential -- for example, when downstream rearing conditions severely limit the survival of juveniles from a given spawning area -- the objective will be to restore the habitat up to the point that the sustainable capacity of that habitat

26

27

1 is no longer a significant limiting factor for that population. In this situation, sustained but  
2 limited supplementation is a possible policy choice.

3  
4 Compromised habitat: Where the habitat for a target population is absent or substantially  
5 diminished and cannot reasonably be fully restored, then the biological objective for that habitat  
6 will depend on the biological potential of the target species.

7  
8 Where the target species has high biological potential, the objective will be to restore the  
9 habitat to the extent practicable, and restore the population of the target species up to the  
10 sustainable capacity of the restored habitat. Sustained supplementation in a limited fashion is a  
11 possible policy choice in this instance.

12  
13 Where the target species has low biological potential, the objective will be to restore the  
14 habitat up to the point that the sustainable capacity of that habitat is no longer a significant  
15 limiting factor for that population. In this instance, a possible policy choice is expanded artificial  
16 production that utilizes the natural selection capabilities of the natural habitat to maintain fitness  
17 of both natural and artificial production.

18  
19 Eliminated habitat: Where habitat for a target population is fundamentally altered or  
20 blocked, and therefore there are no opportunities to rebuild the target population by improving its  
21 opportunities for growth and survival in other parts of its life history, then the biological  
22 objective will be to provide a substitute. In the case of wildlife, where the habitat is inundated,  
23 substitute habitat would include setting aside and protecting land elsewhere that is home to a  
24 similar ecological community. For fish, substitution would include an alternative source of  
25 harvest (such as a hatchery stock) or a substitution of a resident fish species as a replacement for  
26 an anadromous species.

#### 27 28 **4. Significance of objectives:**

29  
30 These objectives are to be used as guidance for developing province and subbasin plans, as  
31 the basis for development of more specific objectives, and as a basis for Council  
32 recommendations to the Bonneville Power Administration regarding project funding. Proposed  
33 measures will be evaluated for consistency with these objectives. A primary function of the  
34 monitoring and evaluation components of this program is to measure progress toward achieving  
35 these objectives.

36  
37 All province and subbasin plans must be consistent with these objectives.

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**D. Strategies**

Strategies are plans of action to accomplish the biological objectives. In developing strategies, the program takes into account not only the desired outcomes, but also the physical and biological realities expressed in the scientific foundation.

**1. Introduction**

This program anticipates that detailed plans, consistent with the biological objectives, will be developed locally for each of the 53 subbasins in the Columbia River Basin. Because most of the specific actions will be addressed at the province and subbasin levels, most of the strategies will be developed there. At the subbasin level, “strategies” will include the particular measures to be implemented within a given subbasin.

Thus, at the basin level, most of the strategies are guidelines for implementation at other levels of the program. However, these strategies also include specific measures for subjects that transcend one or more of the provinces, such as data management, research, monitoring and evaluations.

In general, the purpose of the strategies at the basin level is to allow maximum local flexibility while assuring that subbasin plans follow the best available scientific knowledge, are consistent with one another, and, together, form a well-integrated, well-organized, and comprehensive fish and wildlife program.

These strategies are presumed to be applicable to all subbasin plans and projects proposed for funding. This presumption may be overcome by a showing, to the satisfaction of the Council, of compelling reasons why the particular action proposed will be a greater benefit to fish and wildlife than one that is in accordance with these strategies. In addition, in the case of subbasin plans, when a plan proposed for adoption is not consistent with these strategies, the proponent may also propose that these strategies be amended so that the plan will be in compliance. Again, such amendments will require a showing of compelling reasons why the amendment will result in greater benefit to fish and wildlife.

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## 2. Habitat Strategies

**Primary strategy: *Identify the current condition and biological potential of the habitat, and then protect or restore it to the extent described in the biological objectives.***

This program relies heavily on protection of, and improvements to, inland habitat as the most effective means of restoring and sustaining fish and wildlife populations. However, it also recognizes that depending on the condition of the habitat and the target species, certain categories of mitigation investments are likely to be more effective than others. Thus, an important function of this strategy is to direct investments to their most productive applications.

Changes in the hydrosystem are unlikely within the next few years to fully mitigate impacts to fish and wildlife. However, the Northwest Power Act allows off-site mitigation for fish and wildlife populations affected by the hydrosystem. Because some of the greatest opportunities for improvement lie outside the immediate area of the hydrosystem --- in the tributaries and subbasins off the mainstem of the Columbia and Snake Rivers --- this program seeks habitat improvements outside the hydrosystem as a means of off-setting some of the impacts of the hydrosystem.

For example, passage through the hydrosystem causes injury to spring chinook. While measures at the dams can and should be taken to reduce this injury, as long as the dams exist they will continue to cause some of this injury. As an offset, the program may call for improvements in spawning and rearing habitats in tributaries where there are no dams present. By restoring these habitats, which were not damaged by the hydrosystem, the program helps compensate for the existence of the hydrosystem.

Habitat considerations extend beyond the tributaries, however. Historically, the mainstem Columbia and Snake rivers were among the most productive spawning and rearing habitats for salmonids and provided essential resting and feeding habitat for mainstem resident and migrating fish. Protection and restoration of mainstem habitat conditions must be a critical piece of this habitat-based program.

As explained further in other parts of this program, a specific plan will be developed for each of the subbasins in the Columbia River Basin and for related sections of the mainstem Columbia and Snake rivers, as well as objectives and strategies for each ecological province. Each subbasin plan will begin with an assessment of the current physical and biological conditions, and then address the improvements that are needed.

The Council believes there is a wide variety of potentially successful approaches that may be used to improve and maintain habitat, and also believes that the choice of which approach to use is best left to a local, site-specific decision, subject to scientific review. However, all subbasin plans, and measures within those plans, should be consistent with the vision and biological objectives, and the following strategies:

- 1       • **Build from strength:** Efforts to improve the status of fish and wildlife populations in the  
2 basin should focus first on habitat that supports existing populations that are healthy and  
3 productive. Next, we should expand adjacent habitats that have been historically  
4 productive or have a likelihood of sustaining healthy populations by reconnecting or  
5 improving habitat. In a similar manner, this strategy applies to the restoration of weak  
6 stocks: the restoration should focus first on the habitat where portions of that population  
7 are doing relatively well, and then extend to adjacent habitats.  
8
- 9       • **Restore ecosystems, not just single species:** Increasing the abundance of single  
10 populations will not, by itself, result in long-term recovery. Restoration efforts must  
11 focus on restoring habitats and developing ecosystem conditions and functions that will  
12 allow for expanding and maintaining a diversity within and among species in order to  
13 sustain a system of robust populations in the face of environmental variation.  
14
- 15       • **Use native species wherever possible:** Even in degraded or altered environments, native  
16 species in native habitats provide the best template and direction for needed biological  
17 conditions in most cases. Where a species native to that particular habitat cannot be  
18 restored, then another species native to the Columbia River Basin should be used. Any  
19 proposal to produce or release non-native species, including resident fish substitution  
20 programs, must overcome this strong presumption in favor of native species and habitats  
21 and be designed to avoid adverse impacts on native species.  
22
- 23       • **Substitution:** Mitigation in areas blocked to salmon and steelhead by the development  
24 and operation of the hydropower system is appropriate, and flexibility in approach is  
25 needed to develop a program that provides resident fish substitutions for lost salmon and  
26 steelhead where in-kind mitigation cannot occur.  
27
- 28       • **Include the estuary:** The estuary is an important ecological feature that is negatively  
29 impacted by upriver management actions and local habitat change. While less is known  
30 about the potential for improvement in the estuary than is known about the potential for  
31 improvement in most other parts of the Columbia River Basin, there are indications that  
32 substantial improvements are possible and that these improvements may benefit most of  
33 the anadromous fish populations. The estuary will be included as one of the planning  
34 units for this program. (The freshwater plume and the ocean itself are also important  
35 habitats for salmon and are addressed in the Ocean Conditions section of this program.)  
36
- 37       • **Address transboundary species:** Because about 15 percent of the Columbia River  
38 Basin is in British Columbia, including the headwaters of the Columbia and several of its  
39 key tributaries, ecosystem restoration efforts should address transboundary stocks of fish  
40 and wildlife and transboundary habitats. Where mitigation measures are designed to  
41 benefit both U.S. and Canadian fish and wildlife populations, U.S. ratepayer funding  
42 should be in proportion to anticipated benefits to the U.S. populations.

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### 3. Artificial Production Strategies

**Primary strategy: Use artificial production to (1) complement habitat improvements by supplementing native fish populations up to the sustainable carrying capacity of the habitat with fish that are as similar as possible, in genetics and behavior, to wild native fish, and (2) replace lost salmon and steelhead in blocked areas.**

The critical issue that the region faces on artificial production is whether artificial production activities can play a role in providing significant harvest opportunities throughout the basin while also acting to protect and even rebuild naturally spawning populations. Artificial production must be used in a manner consistent with ecologically based scientific principles for fish recovery. Fish raised in hatcheries for harvest should have a minimal impact on fish that spawn naturally. Fish reared in hatcheries or by other artificial means for the purpose of supplementing the recovery of a wild population should clearly benefit that population.

The science on this issue is far from settled. Improperly run, artificial production programs can do damage to wild fish runs. However, when fish runs fall to extremely low levels, artificial production may be the only way to keep enough of that population alive in the short term so that it has a chance of recovering in the long term. What is not so clear is the extent to which artificially produced fish can be mixed with a wild population in a way that sustains and rebuilds the wild population.

The Council has weighed these uncertainties, and, recognizing that inaction also holds a large risk, has adopted the strategies in this section. These strategies, which are summarized in the Biological Objectives table, are intended to address the limitations and opportunities of specific habitat conditions.

- **Implementation of recommendations from Artificial Production Review:** The Council and the region’s fish and wildlife managers recently completed a multiyear review of artificial production in the Columbia River Basin. This review established a set of standards to be applied in all artificial production programs in the Columbia River Basin, and this program incorporates these standards as minimum standards for all artificial production projects. The full description of these standards is in the Artificial Production Review section of the Technical Appendix. In summary, the policies are:
  - a. The manner of use and the value of artificial production must be considered in the context of the environment in which it will be used.
  - b. Artificial production must be implemented within an experimental, adaptive management design that includes an aggressive program to evaluate benefits and address scientific uncertainties.

- 1 c. Hatcheries must be operated in a manner that recognizes that they exist within  
2 ecological systems whose behavior is constrained by larger-scale basin, regional and  
3 global factors.  
4
- 5 d. A diversity of life history types and species needs to be maintained in order to sustain  
6 a system of populations in the face of environmental variation.  
7
- 8 e. Naturally selected populations should provide the model for successful artificially  
9 reared populations, in regard to population structure, mating protocol, behavior,  
10 growth, morphology, nutrient cycling, and other biological characteristics.  
11
- 12 f. The entities authorizing or managing an artificial production facility or program  
13 should explicitly identify whether the artificial propagation product is intended for the  
14 purpose of augmentation, mitigation, restoration, preservation, research, or some  
15 combination of those purposes for each population of fish addressed.  
16
- 17 g. Decisions on the use of the artificial production tool need to be made in the context of  
18 deciding on fish and wildlife goals, objectives and strategies at the subbasin and  
19 province levels.  
20
- 21 h. Appropriate risk management needs to be maintained in using the tool of artificial  
22 propagation.  
23
- 24 i. Production for harvest is a legitimate management objective of artificial production,  
25 but to minimize adverse impacts on natural populations associated with harvest  
26 management of artificially produced populations, harvest rates and practices must be  
27 dictated by the requirements to sustain naturally spawning populations.  
28
- 29 j. Federal and other legal mandates and obligations for fish protection, mitigation, and  
30 enhancement must be fully addressed.  
31
- 32 • **Wild salmon refuges:** Where the critical habitat is largely intact, artificial production is  
33 not currently occurring, and the fish population has good potential, then no artificial  
34 production should be used. Those populations and their associated spawning and early  
35 rearing habitat should be preserved and protected.  
36
  - 37 • **Harvest hatcheries:** Hatcheries intended solely to produce fish for harvest may be used  
38 to create a replacement for the lost or diminished harvest. The hatchery must be located  
39 and operated in a manner that does not lead to adverse effects on other stocks through  
40 excessive straying or excessive take of weak stocks in a mixed-stock fishery.  
41
  - 42 • **Restoration:** Except for wild salmon refuges or areas where the habitat is blocked or  
43 eliminated, supplementation of natural runs with artificially produced fish may be used  
44 for the purpose of rebuilding the natural runs, although the decision of whether to employ  
45 supplementation for this purpose is one that should be made locally, as part of the  
46 subbasin plan. The object of such supplementation is to restore and maintain a healthy

1 fish population that eventually, after appropriate habitat improvements, will become self-  
2 sustaining.

- 3
- 4 • **Experimental approach:** In recognition of the risk and uncertainty associated with  
5 artificial production, each artificial production activity must be approached  
6 experimentally with a plan detailing the purpose and method of operation, the  
7 relationship to other elements of the subbasin plan, including associated habitat and other  
8 projects within the subbasin plan, specific measurable objectives for the activity, and a  
9 regular cycle of evaluation and reporting of results. This approach will allow the region  
10 to address the remaining uncertainties on a case-by-case basis and quickly make  
11 adjustments in artificial production activities where warranted.  
12
  - 13 • **Initial review:** Over the next three years, every artificial production program and facility  
14 in the basin, federal and non-federal, should undergo a review to determine its  
15 consistency with these strategies, scientific principles, and policies. These evaluations  
16 will be a prerequisite for seeking continued funding and/or adopting a subbasin plan into  
17 the program in the next phase of the amendment process. These evaluations must be  
18 guided in part by basin, province-level and subbasin-level visions, goals and objectives,  
19 overarching policies for artificial production based on the policies stated above.  
20
  - 21 • **Annual reporting and five-year review:** After five years, the Council, other regional  
22 decision-makers and Congress should assess whether existing review, funding and  
23 planning processes are successful in implementing needed reforms in artificial production  
24 practices. In the interim, the entities responsible for artificial production programs should  
25 issue annual reports on their progress in achieving the policies and standards called for in  
26 the Artificial Production Review. The Council will act as a clearinghouse to obtain,  
27 compile, and distribute these annual reports for review by decision-makers and the  
28 public.

1 **4. Harvest**

2  
3 **Primary strategies: *Assure that subbasin plans are consistent with harvest management***  
4 ***practices and increase opportunities for harvest wherever feasible.***  
5

6 The Council makes no claim to regulatory authority over harvest of fish and wildlife. It  
7 recognizes and affirms the fish and wildlife managers' legal jurisdiction and tribal treaty rights.  
8

9 However, there is little point in recommending funding for implementation of a subbasin  
10 plan when the objectives for the plan cannot be reached under current harvest regimes. If, for  
11 example, a wildlife mitigation project aims to re-establish an elk herd in a subbasin, and existing  
12 regulations will allow for overly aggressive harvest of the herd while it is first being established,  
13 there is good reason to doubt whether the project can succeed.  
14

15 On the other hand, there is also no advantage to increasing fish populations in the interest of  
16 greater harvest if the anticipated harvest regimes will not allow that harvest to take place. A  
17 hatchery that rears fish solely for harvest is of little benefit if the majority of those fish go  
18 uncaught because the potential harvest is restricted by the presence of another, much weaker  
19 stock.  
20

21 Therefore the Council adopts the following harvest strategies:  
22

- 23 • **Contributions to harvest and escapement goals:** Each subbasin plan and hatchery  
24 management plan must explicitly describe the expected contribution to harvest for each  
25 of the harvested stocks or species. In the case of wildlife, the plan must indicate the area  
26 in which the wildlife will be harvested. In the case of fish, the plan must indicate the  
27 expected contribution to specific fisheries. In both instances, the plan must identify clear  
28 escapement goals for each species or stock and explain the basis on which that goal was  
29 chosen.  
30
- 31 • **Compatibility with harvest regimes:** Each subbasin plan and hatchery management  
32 plan must state the likelihood that adequate numbers of adults will remain or return to the  
33 subbasin to assure reproductive success and meet subbasin goals for the next generation.  
34 If the escapement required for the plan to succeed is greater than that which occurs under  
35 current harvest regimes, then the plan should also indicate how the current regimes will  
36 be adjusted and whether the managers for that harvest have concurred with the  
37 adjustment.  
38
- 39 • **Artificial production:** Artificially produced fish created for harvest should not be  
40 produced unless they can be effectively harvested in a fishery.  
41
- 42 • **Opportunities for increased harvest:** Each subbasin plan and hatchery management  
43 plan should identify (a) where there is an opportunity for a terminal fishery and (b) any  
44 instance in which increased harvest is possible but will not occur under the existing  
45 harvest regime, and the changes that would be necessary to allow the harvest to occur.

1 The plan may also identify, and propose for funding if needed, equipment, marking  
2 techniques, management costs, and monitoring and evaluation costs required to establish  
3 the feasibility of selective harvest techniques that allow for additional harvest of species  
4 and stocks originating in that subbasin or at that hatchery.  
5

- 6 • **Monitoring and reporting :** The Council recommends the following practices in harvest  
7 management, and will seek to encourage the region’s fish and wildlife managers to adopt  
8 them:  
9
  - 10 a. Maintain an open and public process, allowing public observation of harvest and  
11 allocation discussions and timely dissemination of harvest-related information.
  - 12 b. Integrate harvest management to assure that conservation efforts made in one fishery  
13 can be passed through subsequent fisheries.
  - 14 c. Revise harvest management to more adequately spread the risk of imprecision and  
15 error in predicted run size. Enact more conservative harvest limits on fisheries  
16 farthest from the spawning grounds, for which information is less adequate.
  - 17 d. Develop adequate escapement, catch and age data on important natural spawning  
18 populations.
  - 19 e. Establish in-season management protocols that can better estimate abundance and  
20 stock composition.
  - 21 f. Improve harvest data and stock information to promote better harvest management  
22 and protect weaker stocks. Where stock information is inadequate or absent,  
23 managers should acknowledge this uncertainty and manage conservatively. Expand  
24 marking and catch sampling programs for ocean and inriver fisheries where Columbia  
25 River stocks are caught.
  - 26 g. Harvest managers must acknowledge that salmon productivity varies over time and  
27 should act conservatively to account for limitations in assessment information and  
28 management capabilities.
  - 29 h. Consolidate and unify harvest data -- both from marine and inriver fisheries, counts  
30 and samples -- into an accessible database. Provide real-time information for use by  
31 fisheries managers and planners.
  - 32 i. Conduct a regularly scheduled scientific review of harvest data and harvest practices.

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**5. Hydrosystem passage and operations**

**Primary strategies: *Provide conditions within the hydrosystem for adult and juvenile fish that most closely approximate the natural physical and biological conditions, provide adequate levels of survival to support fish population recovery based in subbasin plans, support expression of life history diversity, and assure that flow and spill operations are optimized to produce the greatest biological benefits with the least adverse effects.***

The development and operation of the hydrosystem has major impacts on fish: (1) The dams themselves are barriers to upstream and downstream migration. (2) The dams, and the reservoirs behind them, reduce the velocity of the river, affecting juvenile and adult migration speed. (3) The storage, release, and impoundment of water changes the pattern of water flows and water temperatures above, through and below the hydroelectric dams and changes the characteristics of the estuary. (4) The reservoirs eliminate spawning and rearing areas in the mainstem by increasing the river depth, decreasing water velocity, and retaining sediments. (5) Changes in reservoir elevation affect the access of fish to adjoining streams, and affect the availability of food for fish living in the reservoirs.

These impacts are not restricted to anadromous fish. White sturgeon spawning depends on certain patterns of spring flow; trout and other species migrate between reservoirs and adjoining streams and are affected by reservoir levels. High rates of discharge from a reservoir may reduce the food supply available to fish in that reservoir, and even entrain those fish, sending them downstream. Even fish living in free-flowing stretches below reservoirs can be strongly impacted by sudden changes in river elevation or water temperature resulting from operation of the upstream project.

Wildlife are also affected by the development and operation of hydroelectric projects. In particular, reservoir levels greatly affect the trees, shrubs, and grasses that would normally grow at the water's edge and provide wildlife nesting and feeding habitat.

All of these impacts are basically habitat issues. The strategies identified above in the habitat section are applicable here as well, and several of the strategies in this section are simply specialized applications of those in the habitat section.

The Council recognizes that the National Marine Fisheries Service and U.S. Fish and Wildlife Service, acting under the authority of the Endangered Species Act, will be prescribing detailed conditions for the improvement and operation of the hydrosystem. These conditions focus on the needs of listed fish species, especially migration and passage needs. Thus, this program does not contain specific operating conditions where the federal agencies are already prescribing such conditions, except to the extent called for below in the strategies.

The Council will review the proposed federal hydrosystem operations, however, to determine their adequacy in meeting the broader mitigation obligations of the Power Act. When the Council further amends the program to incorporate specific objectives and measures through

1 subbasin plans, it may also consider and adopt specific objectives and measures for operation of  
2 the hydrosystem beyond the principles stated here.

3  
4 The Power Act requires the Council, in this program, to adopt measures to “protect, mitigate,  
5 and enhance” all fish and wildlife affected by the operation of the hydrosystem, and to include  
6 measures that provide for improved survival of fish at hydroelectric facilities and for flows of  
7 sufficient quality and quantity to improve production, migration and survival. The Act also  
8 requires the Council to assure that the measures in this program are consistent with “an adequate,  
9 economical, efficient, and reliable power supply.”

10  
11 While the Council must consider the impacts of the conditions imposed by the federal  
12 agencies under the Endangered Species Act, the Council has broader concerns. The Council  
13 must assure that the needs of fish and wildlife are met as efficiently as possible, while also  
14 assuring the continued reliability, adequacy and affordability of the regional power supply.

15  
16 A further difference between the Endangered Species Act requirements and the Council’s  
17 mandate is the planning “horizon”. The ESA emphasizes immediate actions, while the Council  
18 is required to take a long-term perspective. That perspective is especially valuable to the Council  
19 on issues of system configuration and habitat protection and restoration.

20  
21 The Council believes that the federal agencies operating the hydrosystem will have some  
22 flexibility in implementing the conditions imposed under the Endangered Species Act. In  
23 addition, the manner in which the hydrosystem is operated outside of the circumstances regulated  
24 by the Endangered Species Act may still have important consequences for fish and wildlife.

25  
26 The Council adopts the following strategies:

- 27  
28 • **Strategy: Provide conditions in the hydrosystem for adult and juvenile fish that**  
29 **most closely approximate natural physical and biological conditions.**

30  
31 **Background:** In its appropriations bill for Fiscal Year 1998, Congress asked the Council,  
32 with the assistance of the Independent Scientific Advisory Board, to review the capital  
33 improvements at mainstem dams proposed by the Corps of Engineers. The reports  
34 produced by this review contain a set of technical findings and recommendations. The  
35 reports are included in the Technical Appendix. Based on these reports, and the  
36 recommendations of others, the Council is adopting this general strategy, which includes,  
37 but is not limited to, the elements noted below.

- 38  
39 a. **Protect biological diversity:** Actions to improve juvenile and adult fish passage  
40 through mainstem dams, including the use of fish transportation, should protect  
41 biological diversity by benefiting the range of species, stocks and life-history types in  
42 the river, and should favor solutions that best fit natural behavior patterns and river  
43 processes. Spill should be the baseline against which to measure the effectiveness of  
44 other passage methods. To meet the diverse needs of multiple species and allow for  
45 uncertainty, multiple juvenile passage methods may be necessary at individual  
46 projects.

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- b. **Surface bypass systems:** To provide passage for juvenile fish that closely approximates natural physical and biological conditions, and to increase the energy produced by the hydrosystem, the US Army Corps of Engineers should continue testing and development of surface bypass systems taking into account the widest range of biological diversity, utilizing an aggressive, non-traditional approach to prototype development, and ensuring full evaluation for the developmental phase.
  - c. **Adult passage:** The US Army Corps of Engineers should improve the overall effectiveness of the adult fish passage program. More emphasis should be placed on monitoring and evaluation, increased accuracy of fish counts, installation of PIT-tag detectors, evaluation of escapement numbers to spawning grounds and hatcheries, research into temperature, and the connection between fish passage design and fish behavior.
  - d. **Annual report on capital improvements:** The Corps of Engineers, working within the regional prioritization process, should report to the Council annually on how the prioritization criteria and decisions on passage improvements take into account these principles.
  - e. **Implementation of these principles:** The Council (1) expects that the Independent Scientific Review Panel (ISRP) will apply these principles during the Panel's review of the reimbursable portion of the Bonneville fish and wildlife budget, which includes the Corps' passage program; (2) will itself apply these standards in its review of any ISRP report and resulting recommendations to Congress on these passage budget items; and (3) will recommend to Congress, in its reimbursable budget recommendations, that budget requests from the Corps of Engineers be evaluated for consistency with these principles.
  - f. **Protect and expand mainstem spawning and rearing habitat:** The operation of the hydrosystem should protect, and where possible, expand, mainstem spawning and rearing areas. In instances where this strategy conflicts with flows for juvenile migration or temperature control, the system operators should identify the potential conflict and seek recommendations from state and federal agencies and tribes on how to best balance the two needs.
  - g. **In-river migration and transportation:** Since the existence of the dams and reservoirs creates conditions that are not natural, the Council, while seeking to improve in-river conditions, recognizes that there are survival benefits from transportation of migrating juvenile salmon. Therefore, the Council (1) accepts juvenile fish transportation as a transitional strategy, (2) will give priority to the funding of research that more accurately measures the effect of improved in-river migration compared to transportation, and (3) will recommend increasing in-river migration when research demonstrates that salmon survival would be improved as a result of such migration.

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- **Strategy: Manage the hydrosystem so that patterns of flow tend more than at present toward the natural hydrographic pattern, and assure any changes in water management are premised upon, and proportionate to, fish and wildlife benefits.**

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- a. **Balance systemwide water management among different species and life stages:**

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Systemwide water management, including flow augmentation from storage reservoirs, should balance the needs of resident fish with those of anadromous fish, and the needs of migrating fish with those of spawning and rearing fish. In instances where flow management needs conflict with this program, the system operators should identify the potential conflict and seek recommendations from the Council, fish and wildlife agencies and tribes and other affected entities on how best to balance the different needs. Conflicts shall be reported to the Council through its advisory committee on hydropower operations.

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- b. **Coordination:** In fulfilling the operating conditions for the hydrosystem established under the Endangered Species Act, the federal system operating agencies shall, to the fullest extent practicable, meet those conditions in a manner which protects other fish and wildlife species affected by the operation of the hydrosystem. In making requests for specific operations to meet the needs of a particular species or set of species, the Fish Passage Center shall address the needs of other species and indicate how these needs can best be balanced or accommodated. On an interim basis, the operating conditions needed to protect other species are those which were adopted by the Council in its 1994 and 1995 program amendments. When the mainstem coordination plan and subbasin plans are adopted by the Council, the relevant conditions will be included in the plans.

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- **Strategy: Assure that flow and spill operations are optimized to produce the greatest benefits with the least adverse effects.**

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**Background:** The Council’s program must be consistent with “an adequate, economical, efficient, and reliable power supply.” The Council will analyze potential impacts to the power system of different water management and operation strategies, including proposed federal operations to meet Endangered Species Act requirements, determine if the operations ensure an adequate, economical, efficient and reliable power supply, and recommend operational changes if not. The Council is particularly interested in the efficiency and effectiveness of the operations undertaken for fish and wildlife. The Council will be preparing recommendations that optimize energy production, capacity and especially reliability while meeting diverse fish and wildlife needs.

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- a. **In-season changes:** Bonneville Power Administration, in consultation with the US Army Corps of Engineers and the Bureau of Reclamation, before undertaking a particular operation of the hydrosystem to benefit or adversely effect fish or wildlife shall provide a written statement of the estimated cost or benefit and impact on the power system of the proposed action. The Fish Passage Center shall provide a brief written statement of the incremental benefit or detriment to fish or wildlife anticipated

1 from the proposed change. In the event that a fish and wildlife agency or tribe  
2 believes that the proposed action will have an adverse effect on fish and wildlife,  
3 Bonneville should also obtain a brief written statement of the adverse effect. Copies  
4 of these statements should be furnished to those parties considering the request, to the  
5 Council, and made available to the public. This provision shall not apply to an  
6 operation in response to a Biological Opinion requirement if the requirement is so  
7 specific that it leaves essentially no discretion to the operating agencies on how to  
8 fulfill the requirement.  
9

10 b. **Annual hydrosystem accountability report:** Bonneville and the operating agencies  
11 shall assist the Council to produce a report which shall provide an accounting of  
12 Bonneville's fish and wildlife expenditures and hydropower operations costs. For  
13 example, the report should summarize a) the overall cost and impact to the hydro and  
14 transmission system of operations for fish and wildlife and other non-power needs, b)  
15 a summary of each change requested, the outcome of that request, and the reason for  
16 approving or denying that request and c) recommendations from fish and wildlife  
17 managers and tribes for modifications to the operating regimes or investments in  
18 facilities to improve fish and wildlife habitat within the hydrosystem without undue  
19 effect on the costs to or impacts on the hydrosystem.  
20

21 c. **Biennial report on flow augmentation:** Bonneville, in consultation with the  
22 National Marine Fisheries Service and the US Fish and Wildlife Service, shall  
23 prepare a biennial report for review by the Independent Science Advisory Board that  
24 documents the benefits of flow augmentation for fish survival and the precise  
25 attributes of flow that may make it beneficial.  
26

27 d. **Fish Passage Center:** This program continues the operation of the Fish Passage  
28 Center, including a fish passage manager, technical and clerical support, and the  
29 services of consultants when necessary. This support will assist the fish passage  
30 manager in (1) planning and implementing the annual smolt monitoring program, (2)  
31 developing and implementing flow and spill requests, and (3) monitoring results to  
32 assist in implementing the biological opinions, spill planning, and in preparing  
33 reports. Council will establish an oversight board for the Fish Passage Center, with  
34 representatives from the National Marine Fisheries Service, the tribes, the  
35 Independent Science Advisory Board, and the Council, to provide policy guidance  
36 and assure regional accountability. The Fish Passage Center shall prepare an annual  
37 report to the Council and the oversight board, summarizing its activities and  
38 accomplishments.  
39

40 • **Strategy: Establish and maintain a plan to assure coordination of mainstem  
41 operations and improvements.**  
42

43 a. **Plan:** The Council will assist interested parties to develop and recommend for  
44 adoption into this program a mainstem coordination plan, similar to the subbasin  
45 plans described in this program. This plan will develop standards for system-wide  
46 coordination, such as flow regimes, spill, effects on reservoir elevations, water

1 retention times, passage modifications at mainstem dams, and operational  
2 requirements to protect mainstem spawning and rearing areas.

3  
4 b. **Key uncertainties:** As part of its cycle for project funding recommendations, the  
5 Council will regularly convene a meeting of fish and wildlife agencies and tribes and  
6 hydrosystem operating agencies for the purpose of identifying key uncertainties about  
7 the operation of the hydrosystem and associated mainstem mitigation activities such  
8 as transportation of juvenile fish. This list of key uncertainties will be the starting  
9 point for targeted requests for research proposals.

10  
11 c. **Specific biological objectives and measures relevant to hydrosystem operations:**  
12 As the Council considers and adopts specific objectives and measures at the system,  
13 province, and subbasin levels, the Council may adopt more specific biological  
14 objectives and measures for mainstem operations. The mainstem coordination plan  
15 will be the vehicle for considering and adopting these specific objectives and  
16 measures. Specific objectives and measures will be coordinated with the mainstem  
17 and hydrosystem standards and actions contained in the National Marine Fisheries  
18 Service's and U.S. Fish and Wildlife Service's Biological Opinions.

19  
20 d. **Longer-term planning perspectives:** The region is in need of long-term planning  
21 regarding the current constraints on and objectives of water management, including  
22 current flood control requirements; the limitations on the purposes of managing water  
23 under the Columbia River Treaty; the limited focus of fish and wildlife operations on  
24 migration conditions for upriver Snake River populations; the requirements,  
25 opportunities and challenges of considering broader habitat needs, such as mainstem  
26 spawning and rearing habitat and estuary/plume considerations; and the region's  
27 long-term energy and capacity power system needs in the context of a changing  
28 energy industry, and the potential implications for fish and wildlife.

29  
30 Working with federal agencies in the region, the tribes and the state fish and wildlife  
31 agencies, the Council will facilitate a long-term planning study to include  
32 consideration of reconfiguration and operational alternatives that could provide  
33 benefits for fish and wildlife on a broad scale. The study should also assess the  
34 economic and hydropower impacts of all reconfiguration and operational alternatives.

35  
36 • **Strategy: Assure that hydroelectric relicensing and future development provides  
37 protection for fish and wildlife.**

38  
39 a. **Protected Areas:** The Council has adopted a set of standards to apply to the  
40 development and licensing of hydroelectric facilities in the Columbia River Basin.  
41 This includes designating certain river reaches in the basin as "protected areas",  
42 where the Council believes that hydroelectric development would have unacceptable  
43 risks of loss to fish and wildlife species of concern, their productive capacity, or their  
44 habitat. The standards, the river reaches to be protected, and the conditions relating  
45 to that protection, are identified in the Future Hydroelectric Development section of  
46 the Technical Appendix to this program.

1 **6. Wildlife**

2  
3 **Primary strategy: *Include wildlife mitigation as an integrated part of habitat protection***  
4 ***and restoration.***  
5

6 Previous fish and wildlife programs have treated wildlife mitigation measures as separate  
7 from fish mitigation measures. While this approach has resulted in the acquisition and protection  
8 of a number of lands significant to wildlife, it has also resulted in a fractured approach to habitat  
9 protection and enhancement. Rather than treating a given habitat as an ecosystem that includes  
10 both fish and wildlife, this approach tends to focus attention only on one part of the ecological  
11 community, usually to the detriment of the other parts.  
12

13 Table 11-4 of the Council's 1994 Fish and Wildlife Program estimated wildlife losses due to  
14 hydropower construction. The 1994 Program called upon the fish and wildlife managers and  
15 Bonneville to use this table as the starting point for wildlife mitigation measures and short- and  
16 long-term mitigation agreements. The program also called upon these parties to reach agreement  
17 on how wildlife mitigation projects and fish mitigation projects should be credited toward  
18 identified losses.  
19

20 A portion of the habitat units identified in Table 11-4 have been acquired in the wildlife  
21 mitigation projects to date and some mitigation project agreements establish the basis on which  
22 the project will be credited toward these losses. However, there is not yet general agreement that  
23 the acquisitions to date are adequate mitigation for the construction losses. In addition there is  
24 not general agreement on the extent of wildlife losses due to the operations of the hydrosystem,  
25 nor is there agreement on how to credit wildlife benefits resulting from riparian habitat  
26 improvements undertaken to benefit fish.  
27

28 The extent of the wildlife mitigation is of particular importance to agencies and tribes in the  
29 so-called "blocked" areas, where anadromous fish runs once existed, but were blocked by  
30 development of the hydrosystem. While there are limited opportunities for improving resident  
31 fish in those areas, resident fish substitution alone seldom is an adequate mitigation  
32

33 Given the vision of this program, the strong scientific case for a more comprehensive,  
34 ecosystem-based approach, and the shift to implementation of this program through provincial  
35 and subbasin plans, the Council believes that the wildlife mitigation projects should be integrated  
36 with the fish mitigation projects. Therefore the Council adopts the following wildlife strategies:  
37

- 38 • **Completion of current mitigation program:** To provide an orderly transition between  
39 the past fish and wildlife program and this program, Bonneville and the fish and wildlife  
40 managers should complete mitigation agreements for habitat units equal to \_\_\_\_% of the  
41 habitat units identified in Table 11-4. In addition, for each wildlife agreement that does  
42 not already provide for long-term maintenance of the habitat, Bonneville and the  
43 applicable management agency shall propose for Council consideration and  
44 recommendation, a maintenance agreement adequate to sustain the minimum credited  
45 habitat values over a term of at least 50 years.  
46

- 1 a. **Allocation of habitat units:** Habitat acquired as mitigation for lost habitat units  
2 identified in Table 11-4 must be acquired in the subbasin in which the lost units were  
3 located unless otherwise agreed by the fish and wildlife agencies and tribes in that  
4 subbasin.  
5
- 6 b. **Habitat enhancement credits:** Habitat enhancement credits should be provided to  
7 Bonneville when habitat management activities funded by Bonneville lead to a net  
8 increase in habitat value when compared to the level identified in the baseline habitat  
9 inventory and subsequent habitat inventories. This determination should be made  
10 through the periodic monitoring of the project site using the Habitat Evaluation  
11 Procedure (HEP) methodology. Bonneville should be credited for habitat  
12 enhancement efforts at a ratio of one habitat unit credited for every habitat unit  
13 gained.  
14  
15

16 *Note: Past fish and wildlife programs have recommended that Bonneville and the fish and*  
17 *wildlife agencies and tribes attempt to reach agreement on the ratio at which replacement*  
18 *habitat units should be credited toward lost habitat units. The Council would prefer that all*  
19 *parties reach consensus on this issue, and therefore provides 45 days from the release of this*  
20 *draft agreement for all of these parties to meet and reach agreement on what the crediting*  
21 *ratio should be. In the event that the parties are unable to reach agreement, the Council will*  
22 *determine this ratio based on the recommendations and comments received.*  
23

- 24 • **Integration of wildlife and fish mitigation at the subbasin level:** The subbasin plans to  
25 be adopted under this program will include mitigation for both fish and wildlife. In most  
26 instances, actions affecting habitat within the subbasin will benefit wildlife as well as  
27 fish. In evaluating and recommending funding for these projects, the reviewers and the  
28 Council will take into account all of the species benefited.  
29  
30

1 **7. Ocean Conditions**

2  
3 **Primary strategy: *Identify the effects of ocean conditions on anadromous fish and use***  
4 ***this information to evaluate and adjust inland actions.***  
5

6 The Council considers the ocean environment an integral component of the Columbia River  
7 ecosystem. Freshwater and marine environments are not independent from one another and are  
8 linked via large-scale atmospheric and oceanographic processes. The Council recognizes that  
9 these environments are utilized differently by different salmonid species and may serve different  
10 purposes.

11  
12 The ocean is not a constant environment. Variations in ocean conditions occur over  
13 relatively short periods of a few years, as well as over longer-term cycles measured in decades.  
14 Within any time period, geographic variation in conditions can be pronounced as well. As a  
15 result, salmon populations are constantly fluctuating, and may pass through decade-long cycles  
16 of abundance, followed by equally long cycles of scarcity.

17  
18 While we cannot control the ocean itself, we can take actions to assure that the salmon of the  
19 Columbia River Basin are well prepared to survive in varying conditions. Better understanding  
20 of the conditions faced in the ocean by salmon can suggest which factors will be most critical to  
21 survival, and thus give insight as to which actions taken inland will be the most valuable.

22  
23 An accurate and timely understanding of the survival in the ocean of each of the Columbia  
24 River Basin stocks also helps us assess the value of measures undertaken in this program. Since  
25 the ultimate measure of success is the number of adult fish returning, accurate monitoring and  
26 evaluation of inland efforts depends on our ability to isolate the effects of the ocean on a stock  
27 from the effects of those inland actions.

28  
29 Without the ability to distinguish ocean effects from other effects, we may be tempted to  
30 confuse large returns with successful mitigation practices. Or, poor returns of adult fish may be  
31 lead to abandonment of mitigation actions that are in fact highly beneficial unless we can  
32 recognize that the poor returns are in spite of, and not because of, these mitigation actions.

33  
34 The estuary is addressed in the habitat strategy section because protecting and restoring  
35 estuarine habitat is feasible and involves some of the same strategies as habitats further inland.  
36 This section addresses the freshwater plume, the near-shore conditions, and the high seas, which  
37 are less subject to human control.

38  
39 The Council adopts the following ocean strategies:

- 40  
41 • **Manage for variability:** Ocean conditions and regional climates play a large role in the  
42 survival of anadromous fish and other species in the Columbia River Basin. Management  
43 actions should strive to help those species accommodate a variety of ocean conditions by  
44 providing a wide range of life history strategies.  
45

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- **Distinguish ocean effects from other effects:** Monitoring and evaluation actions should recognize and take into account the effect of varying ocean conditions and, to the extent feasible, separate the effects of ocean-related mortality from that caused in the freshwater part of the life cycle.

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## 8. Research, Monitoring, and Evaluation

**Primary strategies:** *(1) Identify and resolve key uncertainties for the program,(2) monitor, evaluate, and apply results, and (3) make information from this program readily available.*

The heart of this program is a set of immediate actions to improve conditions for fish and wildlife. Despite a large body of knowledge about the needs of fish and wildlife, there are still many instances in which there is not yet enough information to fully understand which actions will be most effective. The intention of the Council --- and the Northwest Power Act --- is for the region to make the best possible choice of actions based on the available information. Thus, lack of perfect information is not grounds for inaction.

On the other hand, the long-term success of this program requires that we have a better understanding of the problems so that we choose the most effective actions. The strategies in this section are intended to lead to that improved understanding.

The purpose of the research strategies under this program is to identify and resolve key uncertainties.

The purpose of the monitoring and evaluation strategies is to assure that the effects of actions taken under this program are measured, that these measurements are analyzed so that we have better knowledge of the effects of the action, and that this improved knowledge is used to choose future actions.

The purpose of the data management strategies is to support the research, monitoring, and evaluation strategies by making the results readily available. The data management strategy is also intended to increase the public accountability of this program by making the results accessible not only to specialists, but also to the public at large.

### **Research:**

- **Research plan:** The Council will establish a basinwide research advisory committee. The committee will recommend, for adoption by the Council following ISRP review, a research plan, similar to the subbasin plans, which identifies key uncertainties for this program and its biological objectives and the steps needed to resolve them. The committee will annually recommend for Council approval major research topics and priorities for research funding.
- **Coordination:** The research plan will be coordinated with the research elements of the mainstem plan and the subbasin plans. The process for developing the plan and associated budgets will ensure input from fish and wildlife agencies and tribes, independent scientists, and the entire region.

- 1 • **Open access to results:** All completed research funded by Bonneville will be made  
2 readily available to all interested parties through the internet and a library open to the  
3 public. This includes abstracts and information about how to obtain the full text of any  
4 report. Research projects will be required to submit all necessary information including  
5 abstracts within six months after research is conducted.  
6
- 7 • **“State of the science” review:** The Council will implement projects to review the  
8 current state of the science in key research areas. This effort may include the use of  
9 reports, surveys, conferences, and journals. In particular, the Council will work with the  
10 Independent Science Advisory Board to develop a series of reports to survey past  
11 research and summarize the state of the science in key areas.  
12

### 13 **Monitoring and Evaluation**

- 14
- 15 • **Guidelines for reporting results:** The Council will initiate a process involving all  
16 interested parties in the region to establish guidelines appropriate for the collection and  
17 reporting of data in the Columbia River Basin.  
18
- 19 • **Project standards for monitoring and evaluation:** Except where these criteria are  
20 clearly inapplicable, each project proposed for funding under this program must satisfy  
21 the following monitoring and evaluation criteria:  
22
- 23 1. The project must have measurable, quantitative biological objectives. (Related  
24 projects may rely on a single set of biological objectives.)  
25
  - 26 2. The project must either collect or identify data that are appropriate for measuring the  
27 biological outcomes identified in the objectives.  
28
  - 29 3. Projects that collect their own data for evaluation make this data and accompanying  
30 metadata available to the region in electronic form. Data and reports developed with  
31 Bonneville funds should be considered in the public domain. Data and metadata must  
32 be submitted within six months of their collection.  
33
  - 34 4. The methods and protocols used in data collection must be consistent with guidelines  
35 approved by the Council.  
36

37 Bonneville, in its contracting process, should ensure that each project satisfies these four  
38 criteria.  
39

- 40 • **Standards for monitoring and evaluation of subbasin plans:** Subbasin plans will  
41 contain biological objectives as well as a plan for monitoring and evaluation to assess  
42 whether the projects implemented under the subbasin plan are achieving the objectives.  
43 The monitoring and evaluation portion of a subbasin plan should identify the monitoring  
44 and evaluation tasks related to the objectives; identify who will do the evaluation and on  
45 what schedule; if the main part of the monitoring and evaluation will be done by a main  
46 participant in the plan implementation, what kind of independent review will be

1 incorporated; and a budget for the monitoring and evaluation work. The project-specific  
2 monitoring and evaluation described above should feed information into the subbasin  
3 level evaluation.  
4

- 5 • **Standards for evaluation whether objectives of the program as a whole at the basin  
6 and province levels are being achieved:** Program implementation must also include as  
7 a systemwide project a program to evaluate whether the individual actions in the various  
8 subbasins are achieving the objectives of the program stated at the basin and province  
9 levels. The Council will work with other relevant parties in the basin to design this  
10 program –level monitoring and evaluation program, including describing the evaluation  
11 tasks, who will do the work, the possible budget, and the possible use of the independent  
12 science panels in assisting with this evaluation effort. The goal should be for the Council  
13 to produce an annual or biennial evaluation report of the success of the report in meeting  
14 its objectives.  
15

## 16 **Data Management**

- 17  
18 • **Data gaps:** The Council will initiate a process for identifying data needs in the basin,  
19 surveying available data, and filling any data gaps.  
20
- 21 • **Dissemination of data via the Internet:** The Council will initiate a process for  
22 establishing an Internet-based system for the efficient dissemination of data for the  
23 Columbia Basin. This system will be based on a network of data sites, such as Streamnet,  
24 Northwest Habitat Institute, Fish Passage Center, DART, and others, linked by Internet  
25 technology. The functions of each data site, or module, will be clearly articulated and  
26 defined.  
27  
28

### III. Ecological Provinces

The program organizes the 53 subbasins of the Columbia River Basin into 11 Ecological Provinces, which are groups of adjoining subbasins with similar climates and geology. Because each province has its own distinct environment and fish and wildlife populations, each will have its own vision, biological objectives, and strategies. Those elements will be adopted in a later rule making. The province-level visions, objectives, and strategies will be consistent with those adopted at the basin level.

#### A. Geographical Structure

The Columbia River is an integrated biophysical system, but the basin is too large and complex for us to understand or manage as a single entity. At the same time, managing each piece as an independent entity risks losing appreciation for the interaction between components and their collective performance as a system. For this reason, the Council is adopting an ecologically based structure for the Columbia River ecosystem that emphasizes the interrelationships of the parts, including the Canadian portion of the basin to the extent information is available.

Within the Columbia River ecosystem, the scientific foundation defines areas with distinct ecological character that it termed ecological provinces (Figure 1). Ecological provinces are distinct subdivisions of the landscape containing ecologically related subbasins. The provinces are distinguished primarily on patterns related to hydrology, climate and regional geology.

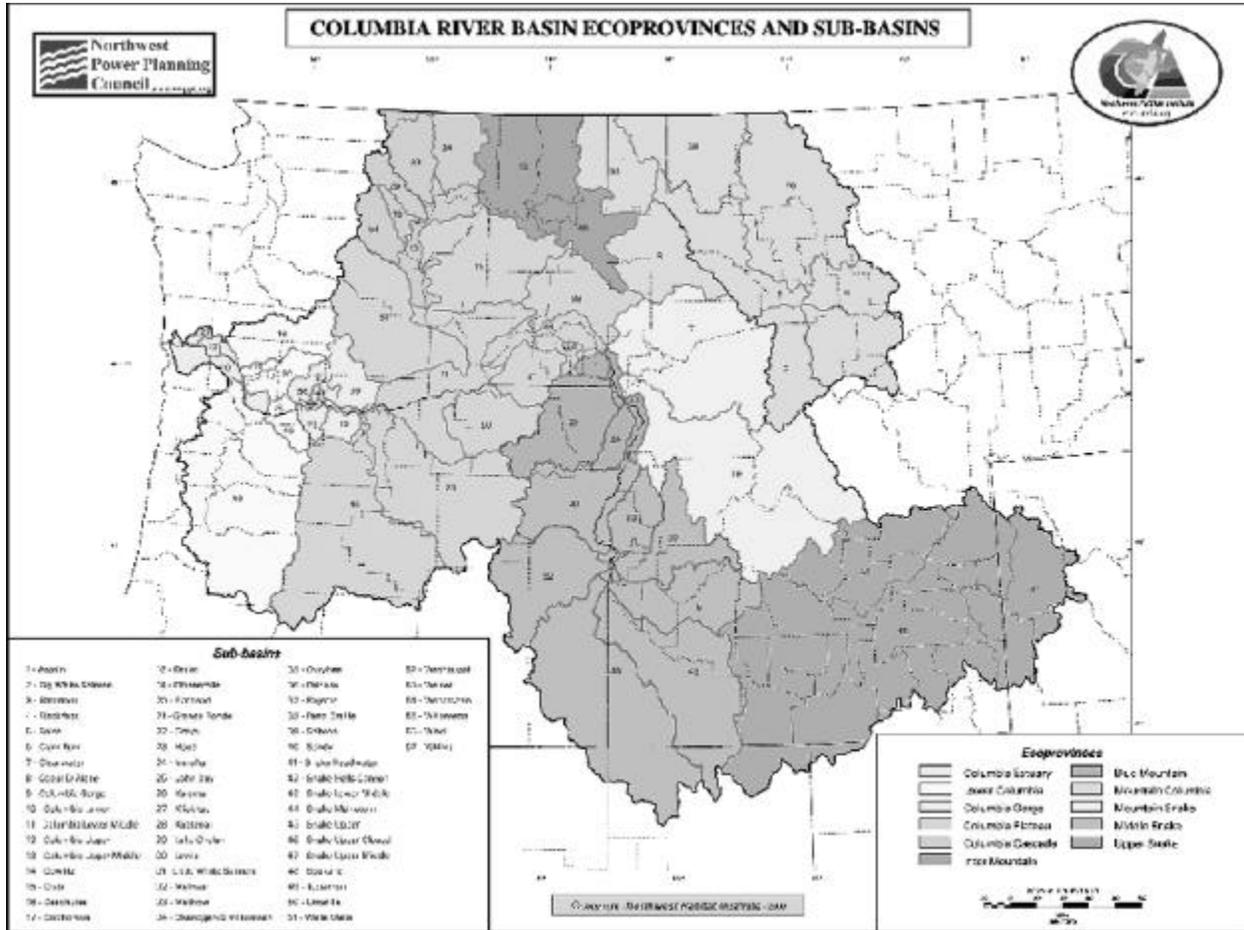
These physical patterns relate to biological population patterns as well. Populations within a province are more likely to be related to other populations within that province than to populations in other provinces. Life history and other characteristics should group into patterns that reflect physical habitat structure.

Each province consists of a set of adjoining watersheds with similar ecological conditions and tributaries that ultimately connect, flowing into the same river or lake. These provinces are thus appropriate units around which to organize and evaluate recovery objectives and efforts.

For our purposes, a subbasin can only be in one province; boundaries do not cut across subbasins (an exception was made for the Spokane River, split between two provinces at Lake Coeur d'Alene). Hydroelectric dams, including the major dams on the Columbia and Snake rivers, are also considered to be with provinces.

1 Based on patterns of terrestrial vegetation, the headwaters of a subbasin are often distinct  
 2 from the lower reaches and have been put into separate areas in other schemes. However, for  
 3 purposes of planning it makes little sense to split subbasins. Instead, we treat each subbasin as  
 4 an integral component of a set of related subbasins forming a province. Table 1 displays the  
 5 provinces and subbasins of the Columbia River Basin.

6  
 7  
 8 **Figure 2. Ecological Provinces of the Columbia River Ecosystem**



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**Table 1**

**Geographic Structure of the Columbia River Ecosystem excluding the Marine Landscape**

<b>Landscape</b>	<b>Province</b>	<b>Subbasin</b>
Columbia River Basin	Columbia River Estuary	<ul style="list-style-type: none"> <li>• Youngs</li> <li>• Grays</li> <li>• Elochoman</li> <li>• Columbia River and all tributaries downstream of the Cowlitz River confluence</li> </ul>
	Lower Columbia	<ul style="list-style-type: none"> <li>• Cowlitz</li> <li>• Kalama</li> <li>• Lewis</li> <li>• Willamette</li> <li>• Washougal</li> <li>• Sandy</li> <li>• Columbia River and all tributaries above the estuary and downstream of, but not including, Bonneville Dam</li> </ul>
	Columbia Gorge	<ul style="list-style-type: none"> <li>• Wind</li> <li>• White Salmon</li> <li>• Little White Salmon</li> <li>• Klickitat</li> <li>• Hood</li> <li>• Fifteenmile Creek</li> <li>• Columbia River and all tributaries between, and including, Bonneville and The Dalles dam</li> </ul>
	Columbia Plateau	<ul style="list-style-type: none"> <li>• Deschutes</li> <li>• John Day</li> <li>• Yakima</li> <li>• Umatilla</li> <li>• Walla Walla</li> <li>• Crab Creek</li> <li>• Tucannon</li> <li>• Columbia River and all tributaries upstream of The Dalles up to and including Wanapum Dam</li> <li>• The Snake River and all tributaries from Lewiston, Idaho, to the confluence with the Columbia River</li> </ul>

<b>Landscape</b>	<b>Province</b>	<b>Subbasin</b>
	Columbia Cascade	<ul style="list-style-type: none"> <li>• Wenatchee</li> <li>• Entiat</li> <li>• Lake Chelan</li> <li>• Methow</li> <li>• Okanogan</li> <li>• Columbia River and all tributaries downstream from, but not including, Chief Joseph Dam to Wanapum Dam</li> </ul>
	Inter-Mountain	<ul style="list-style-type: none"> <li>• Powder</li> <li>• San Poil</li> <li>• Spokane downstream of Lake Coeur d'Alene</li> <li>• Columbia River and all tributaries between and including Chief Joseph Dam and the US/Canada border</li> </ul>
	Mountain Columbia	<ul style="list-style-type: none"> <li>• Pend Oreille</li> <li>• Spokane above and including Lake Coeur d'Alene</li> <li>• Priest</li> <li>• Kootenai</li> <li>• Clark Fork</li> <li>• Flathead</li> <li>• Blackfoot</li> <li>• Bitterroot</li> </ul>
	Blue Mountain	<ul style="list-style-type: none"> <li>• Grande Ronde</li> <li>• Asotin</li> <li>• Imnaha</li> <li>• Snake River and all tributaries from Lewiston to Hells Canyon Dam</li> </ul>
	Mountain Snake	<ul style="list-style-type: none"> <li>• Clearwater</li> <li>• Salmon</li> </ul>
	Middle Snake	<ul style="list-style-type: none"> <li>• Burnt</li> <li>• Powder</li> <li>• Weiser</li> <li>• Boise</li> <li>• Owyhee</li> <li>• Bruneau</li> <li>• Snake River and all tributaries from Hells Canyon Dam to Shoshone Falls</li> </ul>

1

Landscape	Province	• Subbasin
	Upper Snake	<ul style="list-style-type: none"> <li>• Big Wood</li> <li>• Little Wood</li> <li>• Little Lost</li> <li>• Henry’s Fork</li> <li>• Snake River and all tributaries from Shoshone Falls to headwaters, all closed basins within the Columbia Basin east of Shoshone Falls</li> </ul>

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### **B. Province Visions, Objectives, and Strategies**

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7

The Council has not yet adopted specific visions, objectives, or strategies for ecological provinces. Before offering more specific guidance at the province level, the Council believes that it is important to complete a preliminary assessment at the province level, identifying the attributes, needs, and opportunities that are unique to each province. That assessment is expected to be completed by early 2001. Upon completion, the Council intends to enter into a brief rulemaking to consider appropriate visions, objectives, and strategies for the provinces.

13

14

Biological objectives at the province scale guide development of the program at the subbasin scale. It is likely that there will be some iteration among biological objectives at the various scales as information is developed. However, the Council intends to develop a provisional set of objectives at the province scale to provide planning guidelines for subbasin planning. These may be revisited in the future to reflect the experience gained in planning at the subbasin level.

19

20

Biological objectives at the province level will be used to 1) “size” the program and describe the amount of change needed across the province, 2) help determine cost effectiveness of program measures, and 3) provide the basis for program accountability and the monitoring, evaluation and research associated with this program. The biological objectives at the province level are not intended to be prescriptive or regulatory in nature. Instead, they provide guidance for planning at the subbasin level.

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## IV. Subbasins

The preceding sections of this program address fish and wildlife needs on two different levels: the Columbia River Basin as a whole and at the next level, the 11 Ecological Provinces within the basin. This section addresses the third level, the 53 subbasins within those Ecological Provinces. For each of these subbasins a locally developed “plan” will be adopted into the program. Each plan will have its own vision and biological objectives and will identify specific actions needed for fish and wildlife in that subbasin. The plans must be consistent with the visions, biological objectives, and strategies adopted at the basin and province levels, but otherwise are free to make unique choices and reflect local policies and priorities. The subbasin plans will be the basis for review and funding of most fish and wildlife projects in this program.

### A. Subbasin Plans

The fish and wildlife program is implemented principally at the subbasin level. It is at this subbasin level that the more general guidance provided by the basin and province level visions, principles, objectives, and strategies is refined in light of local scientific knowledge, policies, and priorities.

The subbasin plans will be adopted into the program, becoming the third tier of the program structure. If the vision for the basin is to be realized, it will be through successful selection and implementation of subbasin level goals, objectives, and strategies. Plans at this level will guide Bonneville funding of fish and wildlife activities. Subbasin level plans should also provide an opportunity for the integration and coordination of projects and programs funded by entities other than Bonneville, including Canadian entities in transboundary areas of the subbasins.

Subbasin plans will be reviewed for their consistency with biological objectives and strategies at the basin and province levels. Similarly, as subbasin plans are adopted into the program, higher-level objectives and strategies may be modified to reflect and accommodate the information and initiatives of the plan.

Subbasin plans will also be the context for the Independent Scientific Review Panel (ISRP) and Council review of proposals for Bonneville funding each year. Once subbasin plans are approved, the ISRP and Council will be able to review the projects proposed for Bonneville funding annually to determine if they are scientifically sound in light of existing and desired ecological conditions in the subbasin and the goals and objectives presented in subbasin plans.

1 **1. Required Elements of Subbasin Plans**

2  
3 For purposes of the program a subbasin level plan must include the following three general  
4 components in order to be eligible for adoption into the fish and wildlife program:

- 5  
6 • A *subbasin assessment* providing a description of historical and existing conditions;  
7  
8 • A clear and comprehensive *inventory of existing projects* and past accomplishments;  
9  
10 • A 10-15 year *management plan*.

11  
12 Each of these components is discussed below. The Technical Appendix contains a detailed  
13 description of each element and of the process that the Council will use to develop the subbasin  
14 level of the program.

15  
16 It is anticipated that subbasin plans will be revised and updated every three to five years as  
17 new information becomes available and conditions change.  
18

19 **2. Subbasin Assessment**

20  
21 The assessment is a technical phase that describes existing and historic resource conditions  
22 and characteristics. The assessment scope covers both aquatic and terrestrial environments and  
23 addresses anadromous and resident fish, and wildlife. This initial assessment will rely primarily  
24 on existing information already compiled by fish and wildlife agencies, water resource agencies,  
25 and others within the subbasins.

26  
27 A template for subbasin assessment has been developed for this program through the  
28 collaborative efforts of regional scientists. This template has broad support, and will be accepted  
29 for both the plans adopted as part of the fish and wildlife program and also ESA recovery  
30 planning activities.

31  
32 A full copy of the assessment template is contained in the Technical Appendix. The template  
33 has seven separate sections:

- 34  
35 1. Background and Introduction;  
36 2. Subbasin description;  
37 3. Habitat condition and trends, historic and current (6<sup>th</sup> HUC level)  
38 4. Synthesis and interpretation (narrative descriptions coupled with maps indicating habitats  
39 and species of interest);  
40 5. Summary;  
41 6. Assessment validation and monitoring;  
42 7. References.  
43

44 The Council will provide assistance and work with the region's federal, state, and tribal fish  
45 and wildlife managers and all other interested parties to complete assessments, using this

1 template, for each of the subbasins by early 2001. These assessments will then be made  
2 available to local, state, federal, and tribal planners to use as a foundation for developing the  
3 management plan component of subbasin plans.  
4

5 The Council is aware that there is a large number of watershed and subbasin level activities  
6 throughout the basin that are using a wide variety of formats for assessments and planning. The  
7 Council intends to rely on the information gathered in those activities as much as possible and  
8 does not intend this template to undermine or displace these on-going efforts. However, for  
9 purposes of this program it is important to compile this information in a consistent format that  
10 permits the coordination of Bonneville-funded activities and ESA-based planning.  
11

12 The Council expects that the initial assessments in some subbasins will encounter significant  
13 data gaps requiring additional information. In such cases, the subbasin plan should identify this  
14 need, and include the measures necessary to meet it. In all cases, it is expected that the body of  
15 information on which the assessment is based will continue to grow, and that, as a regular part of  
16 each project review and funding cycle, the assessments and plans will be updated.  
17

18 Most of the fish species of interest for subbasin planning move beyond their subbasins of  
19 origin for at least some stages of their life cycle. Subbasin planners will need information and  
20 analytical tools that allow them to understand the biological constraints on their fish populations  
21 that stem from areas outside the subbasin, such as mainstem survival rates, ocean and inriver  
22 harvest rates, effects of interactions with fish from other subbasins, and ocean conditions. The  
23 Council will ensure that subbasin planners have access to information of this type.  
24

### 25 **3. Inventory of Existing Activities**

26

27 In most subbasins, there are already several programs underway that in some way are  
28 involved in watershed planning or restoration. The Council believes that, as much as possible,  
29 the projects funded under its program should take into account these existing programs and be  
30 coordinated with them. This coordination will yield a more scientifically and biologically sound  
31 fish and wildlife plan and reduce costs.  
32

33 Thus, the second general component of a subbasin level plan will be a description of the  
34 existing fish and wildlife and habitat projects that are occurring or have occurred in the recent  
35 past in the subbasin. This element should include 1) all activities that are taking place or are  
36 planned in the subbasin and 2) objectives related to protecting, mitigating, or enhancing fish,  
37 wildlife, or their habitats, regardless of funding source or management entity. Both  
38 implementation and planning activities should be addressed. The description for each project or  
39 activity should include:  
40

- 41 • Description of activity, including its term, its monitoring and evaluation elements, and its  
42 goals and objectives;
- 43
- 44 • Identification of management or lead entities for each activity;
- 45

- 1 • Identification of authorizing process or entity (NPPC, NMFS, FERC, OWEB, etc.);
- 2
- 3 • Identification of relationship to other activities in the subbasin;
- 4
- 5 • Identification of funding source;
- 6
- 7 • Synopsis of accomplishments or failures of activity -- relate to established goals and
- 8 objectives where possible;
- 9
- 10 • Identification of limiting factors or ecological processes the activity is designed to
- 11 address.
- 12

#### 13 **4. Management Plan**

14  
15 The management plan is the heart of the subbasin plan. It sets forth the strategies that will be  
16 implemented at a local level. The management plan should be the last major component of the  
17 subbasin plan to be developed because the goals and objectives that are included within it will  
18 need to reflect what is learned in the assessment and inventory work. It is in the management  
19 plan that policy, legal, and ecological considerations are merged. The management plan should  
20 have a 10-15 year horizon. Necessary elements of the management plan include:

- 21 • A vision for the subbasin.
- 22
- 23 • Biological objectives for fish and wildlife that:
  - 24
  - 25
  - 26 1. are consistent with province and basin level visions, objectives, and strategies
  - 27 adopted in the program;
  - 28
  - 29 2. are responsive to the subbasin assessment findings;
  - 30
  - 31 3. are consistent with legal rights and obligations of fish and wildlife agencies and tribes
  - 32 with jurisdiction over fish and wildlife in the subbasin, and agreed upon by co-
  - 33 managers in the subbasin. Where there are disagreements among co-managers that
  - 34 translate into differing biological objectives, the differences and the alternative
  - 35 biological objectives should be fully presented.
  - 36
  - 37 4. complement the programs of tribal, state and federal land or water quality
  - 38 management agencies in the subbasin;
  - 39
  - 40 5. integrate Endangered Species Act and Clean Water Act requirements as fully as
  - 41 possible
  - 42
  - 43 6. have measurable outcomes.
  - 44

- 1 • Strategies that will be employed over the term of the plan to meet the established vision  
2 and biological objectives, including:  
3
  - 4 1. An explanation linking the strategies to the established subbasin biological objectives  
5 and vision and the subbasin assessment;  
6
  - 7 2. An explanation of how and why the strategies presented were selected over other  
8 alternative strategies (e.g. passive restoration strategies v. intervention strategies)  
9
  - 10 3. A proposed sequence and prioritization;  
11
  - 12 4. Additional steps required to compile a more complete or detailed assessment  
13
- 14 • A projected budget for the term of the subbasin plan, including:  
15
  - 16 1. A detailed three year implementation budget  
17
  - 18 2. A more general long-term (10-15 year) budget  
19
- 20 • A monitoring and evaluation plan which will show whether the actions taken to  
21 implement the subbasin plan are achieving their objectives.  
22
- 23 • Any additional steps that are necessary to achieve compliance with Endangered Species  
24 Act and Clean Water Act requirements applicable to that subbasin.  
25

## 26 **5. Process for Developing Plans at the Subbasin Level of the Program.**

27  
28 Within a short period of time after the Council completes the basin and province level  
29 elements of the fish and wildlife program in this amendment cycle, the Council will issue a  
30 formal request for recommendations for proposed amendments to fill in the subbasin level of the  
31 program. Thus, the Council intends to begin adopting subbasin-level plans in 2001.  
32

33 The Council knows that this schedule is very aggressive. However, there is little support in  
34 the region for either several more years of discussion and planning or for starting actions that are  
35 not grounded in science-based, subbasin-level plans. The Council believes that the first attempt  
36 to develop comprehensive subbasin plans must be completed as soon as possible, and that  
37 improvements can be made as new information and experience dictates.  
38

39 The Council sees subbasin plans as flexible documents that will be revised and updated  
40 approximately every three years. For those who are unable to participate in this timeframe, and  
41 for those topics that can not be addressed as fully as may be ideal, there will be other  
42 opportunities in the near future.  
43

44 The Council believes that subbasin plans must be developed within an open public process  
45 that provides ample opportunity for participation by a wide range of state, federal, tribal, and

1 local managers, experts, landowners, and stakeholders. The details of that process will vary from  
2 subbasin to subbasin, but there are essentially two stages:  
3

4 First, at the local level, interested parties need to work together to develop a plan that, as far  
5 as possible, embodies the knowledge, policies, and support of the people in that subbasin.  
6 Recognizing that this effort will need to be undertaken somewhat differently in each subbasin,  
7 the Council will work with state, tribal, federal, and local parties to determine which approach is  
8 most likely to succeed in a particular subbasin, and then help support that approach. The Council  
9 believes that other entities are better equipped to take the lead in the local effort, and does not  
10 intend to become a lead entity at the local level in the subbasin planning process.  
11

12 Second, when a subbasin plan is proposed for adoption into the program, the Power Act's  
13 program amendment standards require a public process with full opportunity for public comment  
14 and participation. The Act also requires that, at the end of the process, the Council make a  
15 decision based on statutory standards.  
16

17 It is important to recognize that, while the Council can encourage interested parties to work  
18 together on a common plan for each subbasin, it cannot preclude any person from submitting a  
19 plan. Under the Power Act, the Council is obliged to consider and make a decision on each  
20 recommendation it receives.  
21

22 After the basin and province levels are fixed in the current program amendment cycle, the  
23 Council will:  
24

- 25 • Make the subbasin assessments that it is completing by early 2001 available on its  
26 website and through other means to the planners, decision-makers, and the public as soon  
27 as they are completed.  
28
- 29 • Issue a formal notice and request for recommendations to amend the program. This notice  
30 will be limited, and explain that only recommendations at the subbasin level provisions of  
31 the program will be considered.  
32
- 33 • Take extra steps to target this subbasin notice at local stakeholders, planners, watershed  
34 groups and land and water managers in each subbasin.  
35
- 36 • Organize recommendations it receives subbasin by subbasin, for the statutory  
37 recommendation comment period. This is intended to facilitate coordination and  
38 discussion by those that have made recommendations in any particular subbasin.  
39
- 40 • Assist in facilitating the discussions in the subbasins aimed at reconciling the  
41 recommendations and ensuring that the program standards for plans are met.  
42
- 43 • Produce drafts of the subbasin plans that are crafted from the recommendations and the  
44 facilitated discussions for public comment.  
45

- 1       • Adopt into the program subbasin plans that meet the established standards. Where more  
2       time is needed, the Council may adopt placeholders for a subbasin, and establish a longer  
3       timeframe for adoption to facilitate continued discussions.  
4

5       The Act directs the Council to give special consideration to the recommendations of tribal,  
6       state and federal fish and wildlife management entities when considering matters related to fish  
7       and wildlife. Therefore, subbasin plans should be developed with the participation of fish and  
8       wildlife managers with jurisdiction in the subbasin.  
9

10       As outlined above, the Council will require that subbasin plans demonstrate their relationship  
11       to ESA and CWA requirements. This should best be achieved by the participation of the  
12       applicable regulatory entities in the subbasin-level amendment. Because the Council cannot  
13       compel this participation, the Council hopes these entities will participate voluntarily, and the  
14       Council expects that state and federal agencies and tribes will encourage and facilitate their  
15       involvement.  
16

17       Local, state, tribal and federal land and water management entities have programs, authority,  
18       and jurisdiction beyond that of the fish and wildlife managers. The Council will not require the  
19       participation of these entities, but will evaluate the level of involvement provided to them in the  
20       planning process, and the level of agreement that they have with the completed plan, when it  
21       considers adopting a plan into the program and/or in making its funding recommendations to  
22       Bonneville.  
23

24       Finally, it is anticipated that the Council and its staff will assist in a facilitation role as plans  
25       are developed, and will also seek to ensure that planners address all criteria that ultimately are  
26       developed.  
27

## 28   **6. Scientific review of subbasin plans**

29       The Council will utilize the expertise of independent scientists and boards to review subbasin  
30       plans. Examples of questions that may be asked of the reviewers are:  
31  
32

- 33       • Do the assessments contain the elements required by the criteria;  
34  
35       • Are the goals, objectives, and strategies scientifically appropriate in light of the  
36       assessment and inventory;  
37  
38       • Are the goals, objectives, and strategies consistent with those established at the province  
39       and basin levels;  
40  
41       • Do the plans demonstrate that alternative management responses have been adequately  
42       considered  
43  
44       • Are subbasin plans within each province collectively consistent with the province goals,  
45       objectives, and strategies?

1  
2  
3

In addition, the Council believes that independent review of the subbasin plans will be an important part of ensuring they are appropriate and useful.

1 **V. Implementation Provisions**

2  
3 This section contains the administrative provisions for the program.

4 **A. Project Implementation, Project Selection, and Management**

5  
6 Because this program involves hundreds of projects and many millions of  
7 dollars per year in funding, an orderly process is needed to decide which  
8 projects should be funded and to administer these decisions once they are  
9 made. This section describes that process.

10 The procedures for implementing this program should ensure that planning results in on-the-  
11 ground actions and that those actions feed information about their results back to the region to  
12 guide future decisions. The Council will use the procedures in this section to integrate  
13 Bonneville funding for this program with Endangered Species Act requirements and the  
14 collaborating programs of the states, tribes and federal and local governments. This section also  
15 incorporates the strides made in recent years to define improved selection and management  
16 practices for fiscal accountability and improved information about regional fish and wildlife  
17 efforts.

18 This section is intended to outline the essentials of the project selection process. A more  
19 detailed description is included in the Technical Appendix.

20 **1. Implementation Advisory Committees**

21 To ensure effective implementation of this program, the Council will establish three advisory  
22 committees: Hydrosystem operations, Subbasin planning coordination, and Artificial  
23 production. Membership of each committee will include representatives of Indian tribes within  
24 the Columbia River basin, state and federal fish and wildlife agencies, and other senior  
25 management representatives, including both power and fish and wildlife interests.

26  
27 **Subbasin Planning Coordination Committee:** The purpose of this advisory committee is  
28 to achieve a regional perspective and a unified approach to subbasin planning. This committee's  
29 tasks will include facilitating a coordinated subbasin planning effort and assisting in the  
30 development of subbasin-level biological objectives and in the implementation of adopted  
31 biological objectives. The advisory committee will report on a quarterly basis to the Council.  
32  
33

1       **Hydropower Operations Committee:** Through the biological opinions, the federal  
2 agencies have established an implementation structure for annual and in-season operations and  
3 for recommendations on funding for passage improvements. It is the Council’s perspective that  
4 the part of the implementation structure that allows for technical review functions adequately,  
5 although there is a need for greater openness and participation by affected entities. Broad  
6 management and policy review of hydrosystem operations and plans as well as specific  
7 implementation issues cannot be resolved in the technical teams. The Council recommends to  
8 the federal agencies that these portions of the operations implementation structure (the  
9 Implementation Team and the Executive Committee) be re-organized and jointly sponsored by  
10 the Council and the federal agencies, and allow for effective participation in these considerations  
11 by the relevant federal agencies, the Council and states, the tribes, and other affected entities in a  
12 highly public forum. The Council will initiate the discussions to form this committee.  
13

14       **Artificial Production Committee:** In order to achieve a regional perspective and a unified  
15 approach to artificial production reform, an advisory committee to the Council will be created.  
16 The advisory committee will be tasked with reporting, on a quarterly basis, implementation of  
17 artificial production reform across the basin in a consistent, coordinated and efficient manner. A  
18 small team of key agency personnel, independent scientists, and representatives of influential  
19 non-governmental organizations will be assigned to watch over and coordinate the reform effort  
20 One early task for the committee will be to further define the approach, work plan and decision  
21 points for evaluating the purpose of all the artificial production programs and facilities over the  
22 next three years.

## 23   **2. Project Selection -- basic requirements and roles**

24  
25       While the Council has always been involved in efforts to ensure that the program it adopts is  
26 being implemented effectively, Congress gave the Council an increased and explicit role in  
27 program implementation in a 1996 amendment to the Power Act. The Act now charges the  
28 Council, with the assistance of the Independent Scientific Review Panel, with the duty of making  
29 annual recommendations to Bonneville on projects to be funded through the Bonneville fish and  
30 wildlife budget to implement the program.  
31

32       The Power Act specifies certain standards and minimum procedures for the project review  
33 process, but otherwise affords the Council broad discretion to define the procedures for  
34 conducting project review and selection. The processes outlined below describe the statutory  
35 requirements and the particular approach that the Council intends to use for the foreseeable  
36 future to implement these requirements and implement the program. The Council will continue  
37 to refine and modify program implementation measures it finds necessary to best accomplish the  
38 fish and wildlife purposes of the Act.  
39

40       In 1998, the U.S. Congress’ Senate-House conference report on the fiscal year 1999 Energy  
41 and Water Development Appropriations bill directed the Council, again with the assistance of the  
42 Independent Scientific Review Panel, to also review on an annual basis the fish and wildlife  
43 projects, programs, or measures included in federal agency budgets that are reimbursed by  
44 Bonneville (the “reimbursable programs”). The four major components of the reimbursable  
45 program include: the Columbia River Fisheries Mitigation Program (Corps of Engineers); Fish

1 and Wildlife Operations and Maintenance Budget (Corps of Engineers), Lower Snake River  
2 Compensation Plan (U.S. Fish and Wildlife Service) and the Leavenworth Hatchery (Bureau of  
3 Reclamation). It is the Council's intent to integrate to the maximum extent possible the review  
4 of these reimbursable programs with the review of the projects funded by Bonneville to  
5 implement the Council's program.  
6

7 **a) Role of the ISRP**  
8

9 The 1996 amendment to the Power Act directed the Council to form the Independent  
10 Scientific Review Panel (ISRP) and Scientific Peer Review Groups (PRGs) to review  
11 projects proposed for funding to implement the Council's program through the Bonneville  
12 Power Administration's annual fish and wildlife budget. The Act requires the ISRP to  
13 determine whether projects proposed for funding:  
14

- 15 1. Are based on sound science principles;
- 16 2. Benefit fish and wildlife;
- 17 3. Have clearly defined objectives and outcomes;
- 18 4. Have provisions for monitoring and evaluation of results; and
- 19 5. Are consistent with the program.  
20  
21  
22  
23  
24

25 The ISRP then provides the Council its recommendations regarding project quality and  
26 priorities. The 1998 conference report directed the ISRP to also review the reimbursable  
27 projects using the same standards and provide recommendations to the Council.  
28

29 **b) Role of the Council**  
30

31 The Council's primary role in the project review process is to decide which projects to  
32 recommend to Bonneville for funding to implement the program. The Council is also to  
33 provide recommendations to Congress and to the federal agencies on funding for the  
34 reimbursable programs. Several considerations must go into those recommendations: the  
35 Council must allow for public review and comment on the projects proposed for funding and  
36 the ISRP's recommendations; the Council must fully consider and respond to the  
37 recommendations of the ISRP; the Council must review and determine for itself whether  
38 proposed projects are consistent with the Act and the program, including adopted subbasin  
39 plans; the Council must determine if proposed projects have met programmatic or project-  
40 specific conditions ; by statute the Council must take into consideration the effects of ocean  
41 conditions on fish and wildlife populations; and by statute the Council must determine that  
42 projects employ cost effective means to meet program objectives.  
43

1       **c) Role of the fish and wildlife managers**  
2

3           Currently, the fish and wildlife managers, through the Columbia Basin Fish and Wildlife  
4 Authority, develop a draft annual program implementation work plan from the projects  
5 proposed for funding. This draft annual work plan is the culmination of a technical and  
6 management review of all proposed projects, and it establishes a proposed annual budget and  
7 project priorities. The ISRP and the Council review the projects proposed for funding in the  
8 context of the managers' draft work plan. The Council anticipates that the fish and wildlife  
9 managers will continue to organize themselves and jointly provide these recommendations in  
10 the work plan to the Council.  
11

12           The project reviews and advice of the fish and wildlife managers are valuable to the  
13 Council as it deliberates on its funding recommendations. With the program's focus on  
14 subbasin level plans as the guiding documents for program implementation, it will be critical  
15 that the fish and wildlife managers involve others in the subbasins -- stakeholders, land  
16 owners and managers, other state and federal agencies, and other interested parties -- in a  
17 meaningful manner in the development of draft work plans proposed for funding for the  
18 Council to be able to continue using these work plan recommendations as the foundation for  
19 the Council's project recommendations.  
20

21       **3. Project Selection -- province based project review process**  
22

23           The Council is shifting the annual project solicitation, review and selection of projects from a  
24 basin-wide exercise to one that focuses on needs identified at a province and subbasin scale.  
25 This shift was made to better align the project selection process with this program's structure that  
26 focuses planning and implementation most directly at those levels. Further, in focusing the  
27 review on a limited number of provinces and subbasins each year, a more in-depth review of  
28 proposed projects can be accomplished. This in-depth review, conducted within a more  
29 structured subbasin and province context, will enable the Council to recommend multi-year  
30 funding for projects.  
31

32           Elements of province reviews include:  
33

- 34       1. The Council provides for a province meeting to explain the review process to those  
35       interested in how Bonneville funding may be used within that province. Lead groups are  
36       selected for each subbasin to develop subbasin summaries or, where completed and  
37       adopted by the Council, review subbasin plans to identify fish and wildlife project needs  
38       that may be proposed for Bonneville funding for the next three years.  
39
- 40       2. Fish and wildlife needs (from a summary or plan) are made widely available, and  
41       Bonneville solicits for project proposals to meet the identified needs.  
42
- 43       3. *Ongoing projects* submit project renewal proposals that include plans for the next three  
44       years, descriptions of results to date, and briefings on background documents. Ongoing  
45       projects will also submit all relevant planning, research, and background documents.

1 *New projects* submit proposals. *All projects* must be tied to the approved subbasin plan.  
2 Reimbursable programs that are within that province provide similar information.  
3

- 4 4. Bonneville should review proposed projects and budgets to ensure that regulatory needs,  
5 including Endangered Species Act requirements, are considered, that questions about the  
6 adequacy or appropriateness of proposed budgets are resolved in the Council's  
7 recommendation process and that any concerns Bonneville has about the performance of  
8 ongoing projects are identified.  
9
- 10 5. The ISRP reviews proposals and supporting documents in the context of subbasin plans  
11 and the fish and wildlife program.  
12
- 13 6. The ISRP conducts subbasin/province visits with project sponsors, managers and others.  
14 The visit includes an opportunity for project sponsors to present their proposals and for a  
15 subsequent question and answer session with the ISRP. In addition, the ISRP may  
16 conduct project-specific visits.  
17
- 18 7. After the visit, the ISRP produces a draft report on proposals recommended for funding,  
19 including specific questions, and provides it to project sponsors for comments and  
20 revisions.  
21
- 22 8. The project sponsors respond to the draft report.  
23
- 24 9. The ISRP addresses the responses and issues a final report and recommendations to the  
25 Council. The Council considers the ISRP report, other statutory and programmatic  
26 considerations, and makes final funding recommendations on program implementation to  
27 Bonneville. The Council also makes recommendations on the funding of projects within  
28 the reimbursable programs to Congress and the relevant federal agencies.  
29
- 30 10. Systemwide projects will be reviewed as a separate unit within the review schedule.  
31 Wherever possible, projects within the mainstem will be reviewed as part of the review of  
32 the province in which they are located, although certain projects that concern systemwide  
33 passage, water management and dissolved gas issues may be reviewed as part of a  
34 separate category of integrated mainstem passage activities.  
35

#### 36 **4. Project funding priorities**

37

38 The Northwest Power Act establishes Bonneville's obligation to fully mitigate for fish and  
39 wildlife impacts from the development and operation of the hydropower system. The Council  
40 recognizes its obligation, in turn, to construct a program that guides Bonneville's mitigation  
41 efforts. The Council recognizes that the work necessary to satisfy Bonneville's mitigation  
42 obligation must be staged to accommodate yearly budget limitations. The Council also believes  
43 that final determination of the yearly direct program budget may properly be reserved for a later  
44 phase of the program amendment process where the project funding needs will be more greatly  
45 informed by subbasin planning. However, the Council recommends that Bonneville should, on

1 an interim basis, increase the direct program budget in an amount sufficient to accommodate  
2 inflation since the current budget was established in the 1995 Memorandum of Agreement.  
3

4 To prioritize among the many needs to address fish and wildlife impacts throughout the  
5 Basin, the Council adopts the following allocation priorities for project funding:  
6

7 Maintain the current funding allocation for anadromous fish (70 percent), resident fish (15  
8 percent) and wildlife (15 percent) until a new budget allocation is adopted by the Council. The  
9 Council is interested in advice from the region about how to proceed with the funding allocation  
10 issue, and encourages comments on this and alternative approaches. While an alternative  
11 approach might consider a geographic priority for funding distribution, there may be other  
12 methods as well.  
13

## 14 **5. Coordination with other regional programs**

15

16 The Council will pursue opportunities to integrate program strategies with other federal,  
17 state, tribal, Canadian, and volunteer fish and wildlife restoration programs. The Council will  
18 use the subbasin planning process to identify coordination needs and opportunities. The  
19 subbasin planning process should inventory regulatory requirements, including Endangered  
20 Species Act measures; clarify water and land management objectives affecting fish and wildlife;  
21 and fit program funding to other programs for the maximum benefit.  
22

23 As the Council refines the province-based project review and funding process, it will focus  
24 the information requirements of the process to identify how project sponsors may link their  
25 efforts to address program objectives with the objectives or requirements of other programs.  
26

27 The Council will use the subbasin planning process to review Endangered Species Act  
28 requirements in more detail and obtain independent scientific review of both the program  
29 measures and the requirements of applicable biological opinions. The Council will present the  
30 results of these reviews and any revised recommendations to the National Marine Fisheries  
31 Service and the U.S. Fish and Wildlife Service to consider further revision or reconciliation of  
32 biological opinion requirements. The Council will also, pursuant to the requirements of the 1998  
33 Energy and Water Appropriations Act, report the results of these reviews to Congress as part of  
34 the annual review of reimbursable projects.  
35

36 The National Marine Fisheries Service intends to call on the federal action agencies to  
37 annually develop one- and five-year implementation plans and associated budgets for activities  
38 they intend to undertake to meet the performance standards and objectives for listed species. The  
39 Council endorses this approach and once the requirement is further defined, will seek to  
40 incorporate these plans into the subbasin review process.  
41

42 For non-operational measures proposed by Biological Opinions for Bonneville funding (such  
43 as research or off-site habitat measures), the Council will call on Bonneville, the National Marine  
44 Fisheries Service and the Fish and Wildlife Service to first define proposed projects consistently  
45 with the project proposal form and process for Bonneville's direct-funded program. The Council

1 will seek review of these proposals with the other projects proposed in the project review  
2 process.  
3

#### 4 **6. Project management**

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6 To facilitate multi-year funding and contracting, the Council will require projects to identify  
7 specific tasks, objectives, deliverables, and their associated costs. Bonneville and the Council  
8 will establish protocols to ensure that projects stay within their approved scope and funding  
9 authorizations.  
10

11 Bonneville shall define terms and conditions for project contracts that support timely and  
12 complete reporting by contractors of expenditures and progress towards defined project  
13 objectives. These requirements should ensure that project sponsors report expenditures and  
14 progress in enough detail to monitor performance of the specific tasks and objectives identified  
15 in the original project proposal from the Council.  
16

#### 17 **7. Annual Report to Governors**

18  
19 Bonneville and the federal operating agencies will work cooperatively with the Council to  
20 produce an annual report which will provide an accounting of its fish and wildlife expenditures  
21 and hydropower operation costs.  
22

#### 23 **8. Fund for habitat and water acquisitions**

24  
25 Experience implementing this program has shown great advantages in being able to move  
26 quickly and flexibly to acquire interests in land and water rights. Often the opportunity for an  
27 important acquisition exists only for a short period of time, and often there is a substantial price  
28 advantage in being able to quickly close the transaction. The time and uncertainty of the current  
29 project selection process, and the procedural constraints on real estate acquisition by the federal  
30 agencies have made these transactions relatively difficult and more costly than necessary.  
31

32 The Council therefore recommends that Bonneville establish a new mechanism for habitat  
33 and water acquisitions.  
34

35 *The Council has discussed two potential alternatives for this mechanism and solicits*  
36 *comment on which alternative should be chosen, as well as on the specific details of each*  
37 *alternative.*  
38

39 **Alternative A:** An independent trust for habitat acquisition. The primary elements would  
40 be:  
41

- 42 1. An oversight board including representatives from the following interests: Bonneville,  
43 federal fish and wildlife and land management agencies, Columbia Basin Indian tribes,

1 non-profit organizations specializing in habitat and water acquisitions, and the Council.  
2 The board would approve all acquisitions.

- 3 2. Specific criteria for determining which types of potential land acquisitions should receive  
4 priority, and a similar set of criteria for water acquisitions. These criteria will be  
5 reviewed by the Independent Science Advisory Board, but specific land acquisitions  
6 would not require ISAB review.
- 7 3. A budget establishing the amount of funding for land acquisitions available per year, for  
8 a multiyear period.
- 9 4. A budget establishing the amount of funding for acquisitions of water rights available per  
10 year, for a multiyear period.
- 11 5. A qualified manager (such as a non-profit or commercial management entity) with  
12 expertise in real estate and water right acquisition to carry out the negotiations of  
13 acquisitions in the most effective and least costly manner.

14  
15 **Alternative B:** An independent fund for habitat acquisition. The primary elements would  
16 be:

- 17  
18 1. An advisory committee including representatives from the following interests:  
19 Bonneville, federal fish and wildlife and land management agencies, Columbia Basin  
20 Indian tribes, non-profit organizations specializing in habitat and water acquisitions, and  
21 the Council. The Council would approve all acquisitions.

22  
23 [The remaining elements (2-5) would be the same as in Alternative A.]  
24

25 ***Regardless of the precise mechanism chosen, the following conditions would apply:***  
26

27 The Council will work with Bonneville and other interested parties to establish the details of  
28 this trust (or fund) and have it ready for acquisitions by January 1, 2001. All acquisitions must  
29 be on a willing buyer-willing seller basis, consistent with state water law, and consistent with the  
30 other provisions of this program.

31  
32 The trust (or the Council) will not take title to acquisitions except on an interim basis, but will,  
33 for each transaction, identify an appropriate entity to hold the interest acquired. The trust (or the  
34 Council) will work in cooperation other efforts that are already underway to benefit fish and  
35 wildlife through acquisitions of land and may provide cost sharing or full funding for  
36 transactions that have been arranged by others. In appropriate circumstances, the trust (or the  
37 Council) may provide for the continuing payment of local taxes and fees on an acquisition.

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## **B. Independent Scientific Review**

All projects funded under this program are required by law to undergo review by an independent science panel. In addition, the program uses a second, related panel of scientists to provide advice to the region on key scientific issues.

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Independent scientific review is an established tradition in research and development programs in the United States and much of the world. Independent scientific review can help decision-makers separate scientific variables from other considerations (political, economic, cultural, etc.) and help ensure that environmental decision-making reflects the best scientific knowledge of the day. In the Columbia River Basin, the magnitude of scientific research undertaken and uncertainties that remain are staggering. Independent scientific review can identify where there is consensus or disagreement among scientists and help focus implementation and research to those areas that are most relevant to management and policy decisions.

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Independent scientific review for the fish and wildlife program is implemented by two groups: the Independent Scientific Review Panel (ISRP) and the Independent Scientific Advisory Board (ISAB). Each group provides unique services to the program. The ISRP reviews individual projects in the context of the program and makes recommendations on matters related to those projects. The ISAB reviews programmatic and highly politicized scientific issues in the basin.

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The ISRP was created after the last Council program amendment, and the ISAB's role was expanded from the 1994 Program to meet the National Marine Fisheries Service's needs. This program amendment formalizes, distinguishes, and specifies the roles, responsibilities, and procedures of the two groups while maintaining a strong link between the groups. The background and responsibilities for each group are provided separately below, and a description of the shared administrative procedures for both groups follows.

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### **1. The Independent Scientific Review Panel**

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#### **a) Review Responsibilities**

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The 1996 amendment to the Power Act directed the Council to appoint an 11-member panel of independent scientists and additional peer review groups. These scientists provide advice and information regarding scientific aspects of projects that the Council may recommend for funding by Bonneville. The ISRP and peer review groups have responsibilities in three areas:

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- Review projects proposed for Bonneville funding to implement the Council’s program

The Power Act directs the ISRP annually to review projects that are proposed for Bonneville funding to implement the Council’s program. The Act specifies the review standards that the ISRP is to use and the kinds of recommendations to make to the Council. The Council must fully consider the ISRP’s report prior to making its funding recommendations to Bonneville, and must explain in writing wherever the Council’s recommendations differ from the ISRP’s.

- Retrospective review of program accomplishments

The 1996 amendment also directs the ISRP, with assistance from the Scientific Peer Review Groups, to annually review the results of prior-year expenditures based upon the project review criteria and submit its findings to Council.

The retrospective review should focus on the measurable benefits to fish and wildlife made through projects funded by Bonneville and previously reviewed. The ISRP’s findings should provide biological information for the Council’s ongoing accounting and evaluation of Bonneville’s expenditures and the level of success in meeting the objectives of the program, as described in the monitoring and evaluation section. Also as part of the ISRP’s annual retrospective report, the ISRP should summarize its province review efforts and identify the major basinwide programmatic issues gleaned from the province reviews.

- Review projects funded through Bonneville’s reimbursable program

In 1998, the U.S. Congress’ Senate-House conference report on the fiscal year 1999 Energy and Water Development Appropriations bill directed the ISRP to review the fish and wildlife projects, programs, or measures included in federal agency budgets that are reimbursed by Bonneville, using the same standards and making recommendations as in its review of the projects proposed to implement the Council’s program. Further details of the ISRP’s project review responsibilities are described above, in the section on project selection.

The ISRP is a standing group that meets throughout the year. Recommendations from the ISRP are reached by consensus. The ISRP may enlist Peer Review Group members to assist in reviews. From the pool of Peer Review Group members, the ISRP selects reviewers who have the appropriate expertise for the review at issue. The ISRP develops guidelines and criteria for reviews that include lists of materials reviewed, site-visit protocols, and limits to reviewer and project sponsor communication.

1 **2. The Independent Scientific Advisory Board**

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3 The Council and the National Marine Fisheries Service (NMFS) established the ISAB to  
4 provide independent scientific advice to the region through measures described in the Council's  
5 1994 Fish and Wildlife Program and NMFS's 1995 Proposed Recovery Plan for Snake River  
6 Salmon. Rather than establish two groups, NMFS and the Council created the ISAB. In creating  
7 the ISAB, NMFS and the Council hoped to avoid gridlock over scientific uncertainty,  
8 circumvent unnecessary additional research, and resolve conflicting advice and opinions on  
9 recovery issues and measures.

10  
11 **a. Review Procedures**

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13 The ISAB is a standing group that meets regularly throughout the year.  
14 Recommendations from the ISAB are reached by consensus. The ISAB may enlist ad  
15 hoc members to assist in reviews. Ad hoc members may include ISRP and Peer Review  
16 Group members. The ISAB conducts reviews in a manner consistent with its terms of  
17 reference and procedures policy.

18  
19 **b. ISAB Oversight Panel**

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21 The ISAB should be governed by an oversight panel consisting of the chair of the  
22 Northwest Power Planning Council, the regional director of the National Marine  
23 Fisheries Service, and a representative from the regional Indian Tribes. The oversight  
24 panel appoints ISAB members and helps develop and approve the ISAB work plan.  
25 Decisions of the panel shall be by majority vote. This appointment procedure is a change  
26 from past operation of the ISAB in that a representative from the regional Indian tribes is  
27 added to the Oversight Panel. The Council shall work with NMFS and the regional  
28 Indian tribes to amend the ISAB's terms of reference to provide this role for the regional  
29 Indian tribes and to define protocols for the Oversight Panel that ensure the ISAB's  
30 continued independence.

31  
32 **c. Specific tasks of the ISAB**

- 33  
34 1. Evaluate annually the program's scientific principles to ensure they are consistent  
35 with the best available science.  
36  
37 2. Evaluate the fish and wildlife program on its scientific merits in time to inform  
38 amendments to the fish and wildlife program and before the Council requests  
39 recommendations from the region.  
40  
41 3. Evaluate NMFS recovery plans for Columbia River Basin stocks and aspects of the  
42 recovery process when requested.  
43  
44 • Review the scientific and technical issues associated with efforts to improve  
45 anadromous fish survival through all life stages, based on adaptive management  
46 approaches.

- Review and provide advice on priorities for conservation and recovery efforts, including research, monitoring and evaluation.

4. Provide specific scientific advice on topics and questions requested from the region and approved by the Oversight Panel. Tribes, fish and wildlife agencies and others may submit questions to the ISAB through the Oversight Panel. The ISAB may also identify questions and propose reviews. The Oversight Panel and the ISAB reviews these questions in a timely manner and decides which are amenable to scientific analysis, are relevant to the Council's and NMFS's programs, and fit within the ISAB's work plan.

In 2000, NMFS established a Recovery Science Review Panel and Technical Review Teams that will provide scientific advice on West Coast salmon recovery efforts. The ISAB effort will be coordinated with NMFS's panel and teams to avoid redundancy.

### **3. Administration of the Independent Scientific Review Panel, the Scientific Peer Review Groups, and the Independent Scientific Advisory Board**

#### **a. Membership**

The ISRP and the ISAB shall each be comprised of eleven members. Peer Review Groups shall be comprised of a pool of scientists sufficient in size and expertise to assist the ISRP in its review responsibilities. To ensure coordination and avoid redundancy of efforts between the ISRP and the ISAB, at least two members of the ISRP shall be on the ISAB. Other ISAB members should be considered for appointment to the Peer Review Group.

Membership for each group shall include Pacific Northwest scientists with expertise in Columbia River anadromous and resident fish ecology, wildlife ecology, and ocean and estuary ecology. Membership may also include scientists with expertise in genetics, geomorphology, social economics, and other relevant disciplines. Members should have a strong record of scientific accomplishment, high standards of scientific integrity, the ability to forge creative solutions to complex problems, and a demonstrated ability to work effectively in an interdisciplinary setting.

ISRP and ISAB membership terms are for three years, not to exceed two terms. Term limits of the original members will be staggered to ensure continuity of effort. Peer Review Group members will not have specific terms, but the ISRP and the Council will review the pool of Peer Review Group members on an annual basis and update it when appropriate.

#### **b. Appointment Procedures**

The appointment procedures to fill vacancies on the ISAB and the ISRP, and to augment the pool of Peer Review Group members, follow three steps. The first two steps are the

1 same for each group. First, the Council, in cooperation with the ISAB Oversight Panel,  
2 invites the region to submit nominations. Second, an ad hoc National Academy of  
3 Sciences panel evaluates the credentials of the nominees, submits additional nominees if  
4 necessary, and recommends a pool of qualified candidates for potential appointment. This  
5 pool of candidates should span the areas of needed expertise and meet the membership  
6 criteria for the ISRP and ISAB. The pool should be robust enough to last through several  
7 rounds of appointments. The third step, the appointment procedure, varies for the ISAB  
8 and ISRP. The ISAB Oversight Panel appoints ISAB members. The Council alone  
9 appoints ISRP and Peer Review Group members.

10  
11 **c. Conflict of Interest**

12  
13 ISAB, ISRP and Scientific Peer Review Group members are subject to the conflict of  
14 interest standards that apply to scientists performing comparable work for the National  
15 Academy of Sciences. At a minimum, members with direct or indirect financial interest  
16 in a project shall be recused from review of, or recommendations associated with, such a  
17 project. The Council may create a Conflict of Interest Policy that satisfies the needs of the  
18 program, applies to the ISRP and the ISAB, and is at least as rigorous as the National  
19 Academy of Sciences standards.  
20  
21

## VI. Transition Provisions

**Continuation of Existing Measures:** Unless specifically stated otherwise, all measures not directly superceded by this program will continue to have force and effect until (a) a subbasin plan has been adopted by the Council for the subbasin in which the project is located (or, for research and mainstem measures, a research or mainstem plan); (b) the measure has been specifically repealed in a subsequent rulemaking; or (c) three years have elapsed following the final approval of this program, whichever occurs first.

## VII. Early Action Projects

The Council recognizes that, during the transition period while subbasin plans are being developed and adopted, certain types of projects should be allowed to proceed in advance of the subbasin plans. The Council therefore adopts the following criteria for “early action” projects.

All proposals must demonstrate that:

- The proposed action warrants expedited consideration and funding because it addresses imminent risks to the survival of one or more species and 1) represents a time-limited opportunity or 2) is broadly recognized as achieving direct fish and wildlife benefits.
- All planning, permitting (e.g. NEPA, ESA compliance, 404, Shorelines, etc.) and land owner agreements are completed so that work may begin not later than September 30, 2001. (Exceptions to this requirement will be provided for site proposals that are part of a larger program. For example, a program to fund habitat acquisitions may have NEPA and ESA consultation completed at the program level, but not at the site level.)
- The project will be consistent with the Power Act: to protect, enhance, and mitigate fish and wildlife impacted by the federal hydropower system in the Columbia River Basin.

In addition, a proposal should demonstrate that it would fulfill one or more of the following biological criteria:

- The proposal will produce largely self-sustaining habitat after activities are completed;
- The proposal has measurable, quantitative biological objectives and will result in clear benefits to species survival;
- The proposal will connect patches of high-quality habitat or extend habitat out from a core area;
- The proposal will improve conditions in a 303d water-quality limited stream; and/or,
- The proposal addresses a habitat enforcement issue and results in the protection of fish or wildlife habitat (including marine habitats of anadromous species).

Finally, proposals can improve their priority position by demonstrating that they:

- Fulfill more than one of the above criteria.
- Share some of the cost of the action with other entities.
- Are part of a collaborative effort with other entities or have synergistic effects with actions implemented by other entities.

- 1
- 2 • Are recommended by an action plan derived from a science-based assessment.
- 3
- 4 • Are high-priority actions approved by a tribal or state governmental authority with fish
- 5 and wildlife protection responsibility and identified by a tribal or state plan as necessary
- 6 to protect or rebuild fish and/or wildlife in the Columbia River Basin.
- 7
- 8 • Either collect or identify data that are appropriate for measuring biological outcomes
- 9 identified in the objectives.
- 10

11 Projects that collect their own data for evaluation shall make these data and accompanying  
12 metadata available to the region in electronic form. Data and reports developed with Bonneville  
13 funds should be considered in the public domain and made available within six months of  
14 collection.

15  
16 **Allocation process:** The Council will issue a request for proposals for projects (October  
17 1). There will be simultaneous review by CBFWA, ISRP, and Council staff (November 1). The  
18 Council will make a funding recommendation to Bonneville (December 15). (All dates are  
19 tentative, pending Council approval of a final schedule.)  
20

21 **Budget:** *The Council seeks comment from the region on the appropriate budget figure*  
22 *for this category.*  
23

24 **Examples:** Examples of immediate actions may include, but are not limited to, irrigation  
25 screens, replacement of culverts that are blocking fish runs, removal of other blockages,  
26 acquisition of key habitat and water rights, and support for local ESA recovery efforts.  
27 However, all expenditures under this program must be in addition to, and not in lieu of,  
28 expenditures authorized by or required of other entities.  
29

#### 30 **Coordination with other funding processes under this program:**

31  
32 **Project renewal process for Fiscal Year 2001.** The project renewal process is a one-  
33 time funding process that covers only on-going projects. Thus, there should be no  
34 overlap between the early action projects and those in the project renewal process.  
35 However, portions of projects identified as new or expanded scope and therefore not  
36 recommended for funding in the project renewal process may apply for funding as early  
37 action projects, provided that they meet the criteria for such projects.  
38

39 **Provincial rolling review process.** On behalf of its “rolling review,” which will review  
40 all of the projects proposed for funding over the next three years in an ecological  
41 province, the Council recently issued a call for project proposals in the Columbia Gorge  
42 and Intermountain provinces. Rather than disadvantage any proposal, any one submitted  
43 in the rolling review for these two provinces that meets the criteria for early action  
44 projects may be resubmitted for consideration as an early action project. Project funding  
45 decisions and ISRP reviews will be coordinated between the rolling review process and

1 the early action process to assure that the available funding is fairly distributed and that a  
2 project receives only one primary review.  
3

4 **Innovative project solicitation:** The Council has approved criteria for, and will soon be  
5 announcing, a solicitation for innovative projects. Given the difference in criteria, there  
6 is not likely to be major overlap between the innovative projects and the early action  
7 projects. However, any proposal submitted in the innovative project solicitation that  
8 meets the criteria for early action projects may also be submitted for consideration as an  
9 early action project. Project funding decisions and project reviews will be coordinated  
10 between the two processes.

## VIII. Technical Appendix

To conserve paper, the Technical Appendix to this draft program is not attached, but is posted on the Council's website at [www.nwppc.org](http://www.nwppc.org). The Technical Appendix includes two sections which are part of the Council's current program, and are proposed for adoption without change into the 2000 program. The remainder of the Technical Appendix is a set of reference materials that provide further information and assistance in implementing this program, but are not proposed for adoption into the program itself.

The contents of the Technical Appendix are:

1. Glossary
2. Key Principles from the Power Act. This section highlights important statutory provisions relating the Fish and Wildlife Program.
3. Chapter 12 ("Future Hydroelectric Development") of the current Fish and Wildlife Program. This chapter contains conditions to protect fish and wildlife that are applicable to FERC-licensed projects and also designates certain areas as Protected Areas, in which the Council recommends there be no new hydroelectric projects developed. This section is proposed for adoption into the 2000 Fish and Wildlife Program without change, except for changes necessary to conform it to the new program document.
4. From Chapter 11 ("Wildlife") of the current Fish and Wildlife Program, Section 11.2E ("Mitigation Priorities") and Table 11.4 ("Estimated Losses Due to Hydropower Construction"). These portions of Chapter 11 are proposed for adoption into the 2000 Fish and Wildlife Program without change, except for changes necessary to conform them to the new program document.
5. The Scientific Foundation. This document is a more detailed discussion of the information underlying the Scientific Principles and ecological provinces in the program.
6. Artificial Production Review Report (text from the APR including policies and purposes for artificial production).
7. Project management and implementation guidelines, including the subbasin assessment template, three step review procedures and implementation of statutory requirements regarding cost-effectiveness and consideration of ocean conditions.
8. Review of the US Army Corps of Engineers Capital Construction Program, a report of the Independent Scientific Advisory Board (1998).

The Technical Appendix may be expanded as appropriate to include other documents that will be valuable as references in implementing the Council's program.