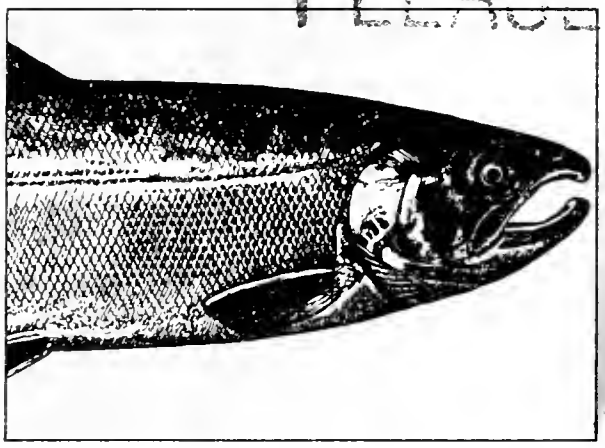
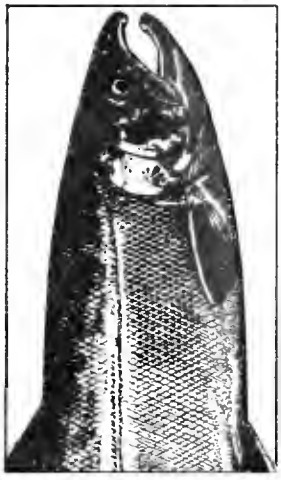
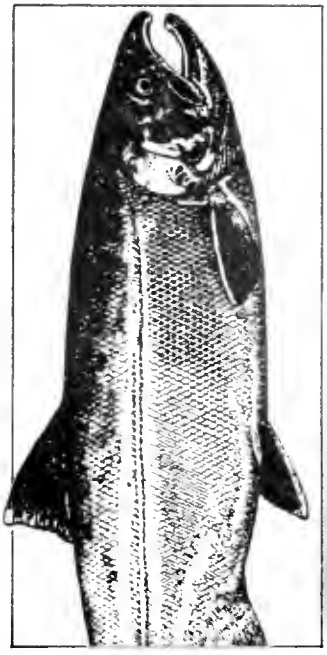
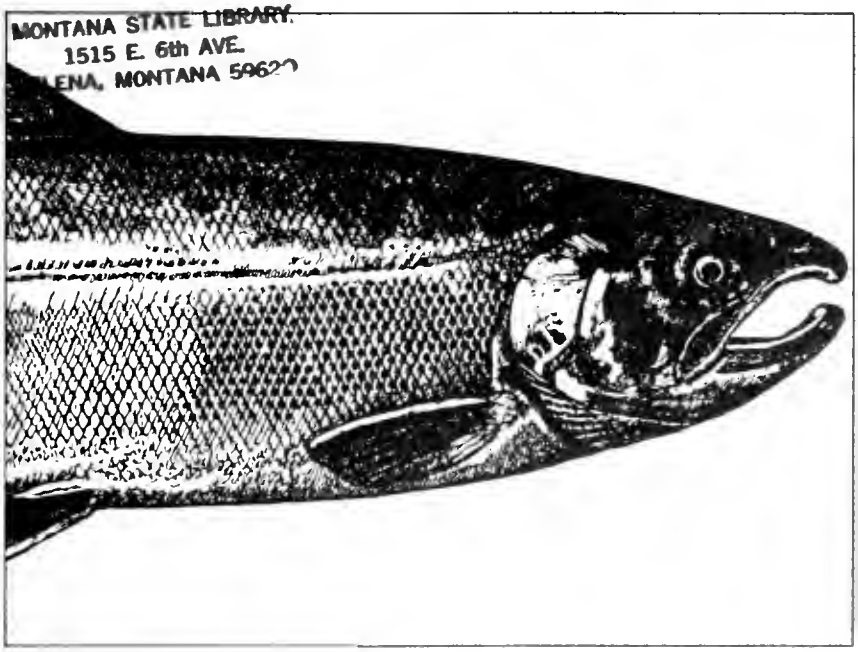
COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM
1986
DRAFT AMENDMENT DOCUMENT

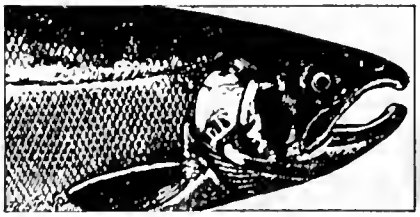
NORTHWEST
POWER PLANNING
COUNCIL











Idaho

Northwest Power Planning Council
Statehouse Mail
450 West State
Boise, Idaho 83720
Telephone: 208-334-2956
Council Members:
W Larry Mills
Robert Saxvik, chairman

Montana

Northwest Power Planning Council
Capitol Station
Helena, Montana 59620
Telephone: 406-444-3952
Council Members:
Morris Brusett
Gerald Mueller

Oregon

Northwest Power Planning Council
1400 S.W. Fifth Avenue
Portland, Oregon 97201
Telephone: 503-229-5171
Council Members:
Robert Duncan
Donald Godard

Washington

Northwest Power Planning Council
Olympic Tower Bldg., Suite 700
217 Pine Street
Seattle, Washington 98101
Telephone: 206-464-6519
Council Member:
Kai Lee, vice chairman

Northwest Power Planning Council
Anderson Hall #34-36
North Ninth and Elm Streets
P.O. Box B
Cheney, Washington 99004
Telephone: 509-359-7352
Council Member:
Tom Trulove

Central

Northwest Power Planning Council
850 S.W. Broadway, Suite 1100
Portland, Oregon 97205
Telephone: 503-222-5161
Toll Free 1-800-222-3355
(1-800-452-2324 in Oregon)
Executive Director: Edward Sheets
Information Director: Dulcy Mahar

cover art by Portland artist Tom Prochaska

COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM:

1986 DRAFT AMENDMENT DOCUMENT

September 1, 1986

NORTHWEST POWER PLANNING COUNCIL
850 S.W. Broadway
Suite 1100
Portland, Oregon 97205

NOTE Whenever possible, the Northwest Power Planning Council prints its documents on both sides of a sheet in order to conserve paper. However, the purpose of this document is to invite editing. Many people may find it convenient to make their comments right on the document and use the back side of the paper if they need extra room. For this reason, the one-sided format has been used. The Council recycles all of its paper and will recycle all copies of the draft that are returned, once any comments on those copies are recorded into the administrative record.

TABLE OF CONTENTS

INTRODUCTION TO THE DRAFT

INTRODUCTION TO THE DRAFT

On August 6, 1986, the Northwest Power Planning Council approved release of this document to provide the citizens of the Pacific Northwest region with an opportunity to comment on proposed amendments to the Council s Columbia River Basin Fish and Wildlife Program The public comment period will run through 5 p m Monday, December 15, 1986 During this period, an individual or organization may submit written comments on the amendments In addition, there will be opportunity for oral testimony at public hearings in each of the region's four states, as follows:

Thursday, October 2 1 p m - evening	Cavanaugh s Inn at the Park W. 303 N. River Drive, Ballroom B Spokane, Washington
Wednesday, October 8 1 p.m. - evening	1120 S.W. 5th Avenue Second floor auditorium Portland, Oregon
Tuesday, October 21 1:30 p.m. - evening	Red Lion Riverside Boise, Idaho
Wednesday, October 22 7 p.m.	Outlaw Inn Kalispell, Montana
Thursday, October 23 7 p.m.	Village Red Lion Missoula, Montana

The Council will consider all comments, written and oral, before making a final decision on the proposed amendments. Instructions for commenting are included in this document.

BACKGROUND

1. The Council

The Northwest Power Planning Council was established by the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (known as the Northwest Power Act) to provide a publicly accountable body to conduct regional electrical power planning The governors of the region s four states–Idaho, Montana Oregon and Washington--each appointed two members to the Council. Congress gave the Council two major charges: to develop an electrical power plan to meet regional needs, and to develop a program to "protect, mitigate, and enhance" fish and wildlife and habitat affected by hydropower development and operation in the Columbia River Basin.

2. The Program

The dams in the Columbia River Basin brought the Northwest a mixed blessing. On the one hand, hydroelectric development provided the region with a relatively inexpensive renewable power resource. On the other hand, hydroelectric construction and operation resulted in major damage to another resource--the fish and wildlife of the basin. The dams created major barriers to migrating fish--principally salmon and steelhead trout. Changes in water flows, levels, and temperatures also decreased the survival of fish. As the dams turned the river into a series of lakes, natural spawning and rearing habitats for the fish and shoreline habitats for wildlife were diminished.

On November 15, 1982, the Council's Columbia River Basin Fish and Wildlife Program was adopted to address these problems. It was amended on October 10, 1984 (programwide amendments), February 21, 1985 (goals sections), and February 13, 1986 (mainstem passage sections). It has seven major objectives:

1. To help juvenile salmon and steelhead downstream to the ocean.

2. To improve survival once the fish reach the ocean.

3. To help the adult fish return upstream to spawn.

4. To augment propagation of salmon and steelhead.

5. To enhance resident fish.

6. To enhance wildlife.

7. To ensure careful planning of future hydroelectric projects to minimize further negative impacts on fish and wildlife.

All of these objectives are to be achieved within the scope of hydropower responsibility for fish and wildlife losses, so that ratepayers bear the costs only of measures addressing hydropower impacts. The Northwest Power Act designates the Bonneville Power Administration, the Bureau of Reclamation, the Corps of Engineers, and the Federal Energy Regulatory Commission as primarily responsible for carrying out the Council's program.

THE AMENDMENT PROCESS

The Council recognizes the program will be most effective if it is flexible and responsive to new information and new technology. It has incorporated an amendment process into the program to allow for correction and refinement through submission of applications for amendment. The deadline for submitting applications in the current amendment process was February 18, 1986.

Eighty-five amendment applications were received by the February deadline. In addition, the Council voted on June 10, 1986, to consider another application, 704(b)/ Umatilla, submitted after the deadline. A summary of the amendment proposals as well as their complete texts were made available to all interested parties. Through the spring and over the summer of 1986, the Council and its staff considered the amendment applications and consulted with interested parties.

This draft document includes proposals based on the amendment applications and proposals initiated by the Council or its staff. Council approval of release of this document does not constitute final Council endorsement of the proposals in the document. It simply represents a Council decision to seek public review of and comment on the proposals and expresses the Council's willingness to consider changing all or part of this document when it takes final action in February 1987. The Council will review all oral and written comments before making final decisions on the amendments. All comments will become part of the Council's administrative record and will be available for public review at the Council's central office, Suite 1100, 850 S.W. Broadway, Portland, Oregon 97205, weekdays between 8:30 a.m. and 5 p.m.

FEATURES

Some of the major features of this draft amendment document include these proposals:

- A statement of hydropower responsibility for salmon and steelhead losses, proposed by the Council last spring.
- A description of the Council's approach to system planning for salmon and steelhead, based on a June 1986 Council staff issue paper on the same subject.
- Guiding principles and areas of emphasis for salmon and steelhead research.
- Provision for Bonneville funding of collection of data on hatchery and natural production.
- A policy on resident fish substitutions (proposed by the Council last spring) and the proposed addition of a variety of resident fish "substitution" projects to mitigate the effects of hydropower development in the blocked areas above Chief Joseph and Hells Canyon dams.
- Changes in Water Budget accounting and transportation policy and rejection of spill increases, proposed by the Council at its July meeting in Spokane.
- Changes in funding of habitat and tributary passage projects.
- Support for Bonneville funding of a spring chinook hatchery in northeastern Oregon.
- Provision of Bonneville power for a Umatilla pumping project to aid provision of flows for fish.
- Recognition of the Montana Power Company agreement to fund the purchase of water from Painted Rocks Reservoir to maintain flows for fish.
- Wildlife plans to mitigate the effects of Libby and Hungry Horse dams in Montana.
- No definite schedule for future amendment proceedings.

HOW TO READ THIS DOCUMENT

1. General

This document is divided into two parts. Part 1 includes those amendments proposed for

adoption. Legislative drafting style is used in Part 1. Language currently in the program which is proposed for deletion is lined through. Example: ~~(This language should be deleted.)~~ Language which is proposed for addition to the program is in boldface. Example: **This language should be added.** Part 2 outlines those amendment applications indicated by code numbers which the Council or Council staff proposes to reject and the reasons for the proposed rejection. The Council welcomes comments on both parts of the amendment document.

Sections 100 to 1404 of Part 1 reprint only new measures and those existing measures which are proposed for change, not existing measures in which no change is proposed. In some cases, the reader may wish to refer to the full program. Copies are available from the Council's Portland office. (See the order form on the last page of this introduction.) The section 1500 action plan is reprinted in its entirety because of its special importance over the next five years.

The background sections of the program (e.g., sections 301-303 and 401-403) are not reprinted in this document. Appropriate changes in those sections will be made in the amended program to reflect the changes in the program measures (e.g., in sections 304 and 404).

2. Sources of Applications

The source of each proposed amendment is indicated in brackets at the end of each proposal. In many cases, the source is an amendment application, indicated by a code number (as explained below). In other cases, the source of the proposed amendment is the Council itself or the Council staff. In some instances, a brief explanation of the proposed amendment also is given in brackets. Further background information is provided in staff issue papers and in the amendment applications. (See order form on the last page of this introduction.)

Each amendment application is indicated by a code number followed by letters of the alphabet. The number refers to the specific program section addressed by the amendment application. The letters are an acronym for the party submitting the amendment. For example, "704(d)(1)/BLM" would indicate an application submitted by the U.S. Bureau of Land Management to amend program section 704(d)(1). The code for each applicant is listed below.

AEI	Automation Engineering, Inc.
BLM	U.S. Bureau of Land Management
CBFWC	Columbia Basin Fish and Wildlife Council
COE	U.S. Army Corps of Engineers
COY	City of Yakima
CRITFC	Columbia River Inter-Tribal Fish Commission
FOE	Northwest Friends of the Earth
IDFG	Idaho Department of Fish and Game
MDFWP	Montana Department of Fish, Wildlife and Parks
MFCC	Milton-Freewater Chamber of Commerce
NRIC	Northwest Resource Information Center, Inc.
ODFW	Oregon Department of Fish and Wildlife
OT	Oregon Trout
PF	The Peregrine Fund, Inc.
PNUCC	Pacific Northwest Utilities Conference Committee
SB	Shoshone-Bannock Tribes
SK	Confederated Salish and Kootenai Tribes
SP	Shoshone-Paiute Tribes

UCUT	Upper Columbia United Tribes
Umatilla	Umatilla Basin Project Steering Committee
USFS	U S Forest Service
WDG	Washington Department of Game
WG	William G Gray
WSCT	Warm Springs Confederated Tribes
YIN	Yakima Indian Nation

3. Appendices

The draft amendment document includes three technical appendices

1 Completed Program Actions

2 Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin

3 Alternative Estimates of Hydropower Responsibility

Technical Appendix 1 is included here Technical Appendices 2 and 3 are not due to their length See the last page of this introduction for information on how to order copies of those appendices

GUIDELINES FOR PUBLIC COMMENT

1. Written Comment

a Comments should be limited to the draft amendment document All written comments must be received in the Council's central office 850 S W Broadway Suite 1100 Portland Oregon 97205, no later than 5 p m on Monday December 15 1986 Comments received in the central office after that time will not be considered

b Written comments should be marked "Draft Amendment Comments"

c Comments should be specific and concise Refer to the amendment being addressed by its code number Alternative language may be submitted if a change is being proposed

d A marked-up copy of this draft (or the appropriate section) indicating suggestions and/or revisions may be submitted Suggested deletions should be lined out, like this (~~Line-out-portions-of-the-draft-to-be-deleted~~) Suggested new language should be underlined like this Underline new language, or in boldface type like this **Use boldface type for new language**

e All comments should be typed if possible and double-spaced It also would be helpful if comments on each proposed amendment or rejection were placed on separate pages

f Provide ten (10) copies of all comments, if possible

2. Oral Comments

Opportunities for oral comments will be provided during the public hearings. Dates, times and places for hearings are listed above.

a. Prior to the hearings, requests for time slots may be made through Ruth Curtis, Information Coordinator, at the Council's central office, Suite 1100, 850 Southwest Broadway, Portland, Oregon 97205 (503-222-5161 or toll free 1-800-222-3355 outside Oregon or 1-800-452-2324 in Oregon).

b. Those who do not sign up for time slots in advance will be allowed to testify as time permits.

c. Hearings should be used to summarize written comments. Comments should not be read. Comments should be limited to the draft amendment document.

d. If possible, 10 copies of testimony should be submitted to the Council recorder at the hearing. This person will be sitting at a table near the Council members. (See instructions for written comment.)

e. Those persons officially representing an organization will have 15 minutes to summarize their written testimony. (Organizations should designate one official representative.) Other individuals will be limited to five minutes. Time limits will be observed strictly in order to allow all parties to testify.

f. Council members may ask questions for clarification. If so, this will be over and above the time limits described above.

g. A written record of each hearing will be made.

h. Appearance at more than one hearing is unnecessary. Scheduling preference will be given to individuals and groups which have not testified at other hearings.

3. Consultations

Individuals or groups wishing to discuss portions of this document, in addition to testifying at the public hearings and submitting written comments, may contact the central or state offices of the Council, as follows:

Central Office
850 S.W. Broadway
Suite 1100
Portland, Oregon 97205
503-222-5161
1-800-222-3355 (regional toll-free number)
1-800-452-2324 (Oregon toll-free number)

Idaho: Chairman - Robert Saxvik
Member - W. Larry Mills
Northwest Power Planning Council
Statehouse Mail, Towers Building
450 West State
Boise, Idaho 83720
208-334-2956

Montana Member - Morris Brusett
Member - Gerald Mueller
Northwest Power Planning Council
Capitol Station
Helena, Montana 59620
406-444-3952

Oregon Member - Don Godard
Member - Robert Duncan
Northwest Power Planning Council
505C State Office Building
1400 S W 5th Avenue
Portland Oregon 97201
503-229-5171

Washington Vice Chairman - Kai N Lee
Northwest Power Planning Council
Olympic Tower Building, Suite 700
217 Pine Street
Seattle, Washington 98101
206-464-6519

Washington Member - Tom T Trulove
Northwest Power Planning Council
P O Box B
Cheney, Washington 99004
509-359-7352

Some of the Council's committees also may discuss portions of this document at their meetings To receive notices of those meetings see the order form on the last page of this introduction.

ISSUES FOR COMMENT

The Council is particularly interested in comments on the following issues raised by this document.

1. Standards

The Northwest Power Act specifies the standards for program measures. See 16 U S C 839b(h)(5),(6) To be adopted by the Council, a proposal for amendment must:

a. Protect, mitigate, and enhance fish and wildlife affected by development, operation, and management of Columbia Basin hydropower facilities while assuring the region an adequate, efficient, economical, and reliable power supply

b. Complement existing and future activities of fish and wildlife agencies and Indian tribes.

c. Be based on, and supported by, the best available scientific knowledge

d. Where equally effective alternative means of achieving the same sound biological objective exist, use the alternative with the minimum economic cost

e Be consistent with legal rights of the Indian tribes

f With respect to anadromous fish, provide for improved survival at Columbia Basin hydropower facilities and provide flows of sufficient quality and quantity between facilities to improve production, migration, and survival as necessary to meet sound biological objectives.

The Council seeks comment on whether the amendments proposed for adoption in Part 1 of this document meet these standards. The Council or Council staff has concluded, tentatively, that

the applications discussed in Part 2 of the document do not meet these standards. The Council welcomes comment on the proposed rejections as well.

2. Five-Year Action Plan

In Section 1504, the Council staff proposes revisions to the five-year action plan. The action plan is a scheduling section indicating which of the hundreds of program measures should be implemented, in whole or in part, between 1987 and the end of 1991. It indicates the Council's expectations of the Bonneville Power Administration, Bureau of Reclamation, Corps of Engineers, and Federal Energy Regulatory Commission, the federal agencies given responsibilities by Congress in sections 4(h)(10) and 4(h)(11) of the Northwest Power Act, to help make the Council's program work. Some action items also are included for the fish and wildlife agencies and Indian tribes and for the Council.

The Council asks that commentors focus special attention on the proposed five-year action plan and provide their views on these questions: a) Does the proposed action plan reflect reasonable expectations of effort by each of the four agencies? b) If not, what alternative action packages would be more reasonable for each agency?

3. Bonneville Budget

In Action Item 39.2, the Council asks that Bonneville provide fish and wildlife program work and expenditure plans to the Council by September 15 of each year, for the subsequent fiscal year. However, receipt of plans on September 15 for a fiscal year starting October 1 leaves no time for the Council and Bonneville to engage in a meaningful public dialogue on a reasonable amount for Bonneville's total annual fish and wildlife budget or on the allocation of the total among various spending categories. Nor does it allow for a discussion and determination of reasonable levels of effort and pace of spending over the entire five-year action plan and beyond. The Council would appreciate comment on how it can work more closely with Bonneville and others to use the Bonneville budgeting process as a means for publicly setting a fiscal pace for program implementation. Suggestions on ways to improve the annual work planning process also are welcome.

4. Funding of Resident Fish Substitutions in Idaho

In section 206 of the draft, the Council recognizes that some areas in the basin where salmon and steelhead once were produced have been blocked by hydropower projects that make salmon and steelhead production infeasible. In those "blocked areas," resident fish "substitutions" appear to be the best means for addressing the salmon and steelhead losses. As a result, the Council has proposed a resident fish substitutions policy focusing on the major blocked areas above Chief Joseph/Grand Coulee and Hells Canyon dams. It also proposes criteria to ensure that only well-considered substitutions projects are funded by hydropower ratepayers.

In response to the Council's proposed policy, five groups submitted a total of 10 amendment applications to add resident fish substitution projects to the program. Of those 10 applications, four are for projects above Chief Joseph Dam, to be funded by Bonneville on the ground that federal projects clearly were primarily responsible for the blockage. The Council staff has reviewed those applications, found them to satisfy the substitutions criteria, and proposed them for Bonneville funding, with some modifications, in draft section 804(g)(1).

Six other applications propose projects above Hells Canyon Dam. The Council staff also has reviewed those applications and found that they generally meet the substitutions criteria. They are included in draft section 804(g)(2). However, the appropriate funding source for those projects is not as clear as for the projects above Chief Joseph Dam, because the blockages at and above Hells Canyon Dam came from a variety of sources over an extended period of time. This program is not intended to compensate for the effects of water project development for irrigation or other nonhydropower purposes. However, the blocked area at issue has been subject to substantial hydropower development, as shown in Table 1 attached to this introduction (see page xiv). The Council staff has included these substitutions projects in draft section 804(g)(2) for funding "by the appropriate party or parties." Theoretically, the funding sources could include the Bonneville Power Administration, Bureau of Reclamation and/or Federal Energy Regulatory Commission licensees. Implementation cannot proceed, of course, until the funding sources are identified. As a result, the Council staff solicits comments on these issues:

a. Are the data displayed in Table 1 accurate? If not, what corrections are needed?

b. The six projects in draft 804(g)(2) would cost an estimated $3.5 million total in construction and related development costs and about $223,000 in total annual operation and maintenance costs. The Council prefers that time and effort be spent on funding projects rather than on arguments over responsibility in this complex situation. Are any entities willing to fund any of the projects listed in draft 804(g)(2)? If the identity of the appropriate funding sources for the draft 804(g)(2) projects cannot be readily ascertained or agreed to, what process should be used to identify funding sources?

c. Which project or projects permanently blocked[1] the area to salmon and steelhead production? To what extent are those projects operated for hydropower purposes?

d. To what extent have salmon and steelhead losses due to hydropower development and operations in this area already been mitigated? By whom? In what way?[2] Are there any unmitigated damages attributable to hydropower development or operations?

5. Numerical Targets for Resident Fish Substitutions

The Council's proposed resident fish substitutions policy, in draft section 206, states that proposed projects must "incorporate adaptive management principles," "achieve significant biological results," and "reflect a management plan with sound biological objectives." To that end, the Council requests comment on whether project proponents should be asked to state numerical production targets, as a way to measure results against quantified objectives.

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1 In this document, the term "permanent blockage" means blockage to upstream or downstream migration to the extent that it is not feasible to provide passage by using bypass systems, ladders, or other practical technology.

2 The Council notes material submitted by the Idaho Power Company related to a settlement agreement signed by the National Marine Fisheries Service, the Idaho Department of Fish and Game, Oregon Department of Fish and Wildlife, Washington Department of Fisheries, Washington Department of Game, and the Idaho Power Company.

6. Fish Passage Center

In draft sections 304 and 404, the Council has proposed the Fish Passage Center as the point of contact between the fish and wildlife agencies and Indian tribes and the hydropower system on Water Budget and spill issues. Should the Center also serve as the point of contact on bypass and transportation issues?

The program now provides for two fish passage managers, one to represent the Indian tribes and one to represent the fish and wildlife agencies. Would it be more appropriate to fund one fish passage manager to represent both the Indian tribes and the fish and wildlife agencies?

7. Protected Areas

In section 1503 of the current program, the Council states that one program goal is to protect the ratepayer investment in the program and that an important way to do so is to ensure that new hydroelectric development is conditioned to protect salmon and steelhead, resident fish, and wildlife. Section 1204(c) of the current program reflects that goal in the Council's commitment to designate stream reaches and wildlife habitat areas in the Columbia River Basin to be protected from further hydroelectric development. The Council states that it will designate protected areas on the basis of the requirements of the Northwest Power Act and the results of a study of the hydroelectric potential of streams in the Columbia River Basin and the value of their fish and wildlife resources. The Council and Bonneville are nearing completion of that study, and it soon will be important to identify the appropriate criteria for the study information to decide which areas in the basin should be designated for protection from hydropower development.

With respect to salmon and steelhead, Bonneville has dedicated substantial funds to increasing natural and wild runs by providing spill and the Water Budget flows (resulting in lost power revenues) and by funding habitat and tributary passage projects. In light of those investments, it may make sense for the Council to designate all natural and wild production areas in the basin for protection from new hydropower development. The Oregon legislature recently enacted a statute to that effect within its boundaries. The Council welcomes comments on whether such an approach should be taken basinwide and suggestions for any alternative ways to choose protected areas for wildlife and resident fish, as well as salmon and steelhead.

8. System Alternatives for Salmon and Steelhead

In sections 203 and 204 of this draft document, the Council staff describes a planning process designed to lead to discussion of and choices among broad harvest, production and passage alternatives, as well as the institutional framework needed to further those choices. The Council staff will circulate an issue paper on system alternatives in mid-October. That paper could address a number of broad, long-term issues related to salmon and steelhead in the basin and the future of the Council's program. It could result in program amendments in addition to those proposed in this document. All recipients of this draft amendment document will receive that paper as well. The Council will schedule a second round of hearings on the paper, solicit written comment, and otherwise urge full and special attention to the issues it raises.

ADDITIONAL INFORMATION

For additional information on the proposed amendments and rejections, readers may wish to refer to the amendment applications, summary of applications, issue papers, minutes of Council

meetings and written comments submitted to the Council on applications and issue papers. All of those materials are available in the Council's administrative record of these amendment proceedings. The record is maintained in the Council's public reading room in its Portland office and is available for review and copying during regular business hours. Certain parts of the record can be ordered by mail. (See order form on the last page of this introduction.) As noted above, an issue paper on salmon and steelhead policies, to be distributed in October 1986, also may affect the proposed amendments. That issue paper also may be requested on the order form.

For further assistance, contact Dulcy Mahar, Director of Public Information and Involvement for the Northwest Power Planning Council, 850 S.W. Broadway, Suite 1100, Portland, Oregon 97205. (Telephone 503-222-5161 or toll free 1-800-222-3355 outside Oregon and 1-800-452-2324 in Oregon.)

COUNCIL ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council

___ The Columbia River Basin Fish and Wildlife Program (1984)

___ Summary of 1986 amendment applications

___ Complete text of all 1986 amendment applications (5 volumes)

___ Specific amendment application. Specify Code Number

___ Technical Appendix 2: Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin

___ Technical Appendix 3: Alternative Estimates of Hydropower Responsibility

Council Staff Issue Papers:

___ Salmon and Steelhead System Alternatives (to be available mid-October 1986)

___ Columbia River Basin Fishery Planning Model (June 18, 1986)

___ Salmon and Steelhead Research (June 3, 1986)

___ Salmon and Steelhead Planning (June 3, 1986)

___ Genetic Considerations in Salmon and Steelhead Planning (June 3, 1986)

___ Hydropower Responsibility for Salmon and Steelhead Losses in the Columbia River Basin (April 3, 1986)

___ Hungry Horse Dam: Wildlife Mitigation Proposal (February 13, 1986)

Advisory Committee Notices

___ Hydro Assessment Steering Committee

___ Mainstem Passage Advisory Committee

___ Production Planning Advisory Committee

___ Resident Fish Substitutions Advisory Committee

NAME _____

ORGANIZATION _____

STREET _____

CITY STATE ZIP _____

Mail this form to Judy Allender, Northwest Power Planning Council, 850 S.W. Broadway, Suite 1100, Portland, Oregon 97205, or call her at 503-222-5161 (1-800-222-3355 toll-free from Idaho, Montana, and Washington or 1-800-452-2324 from within Oregon).

TABLE 1
HYDROPOWER DEVELOPMENT
IN IDAHO, HELLS CANYON COMPLEX AND ABOVE

Key to Table 1

Purpose

H	=	Hydropower	S	=	Water supply
I	=	Irrigation	R	=	Recreation
C	=	Flood control	O	=	Other

Year Completed — Year in which main structure completed

Comments — Present anadromous salmonid use or past occurrence within the drainage or stream

Y	=	Yes, good documentation
UK	=	Unknown, but possible due to location
UU	=	Unknown, but unlikely due to location or type of structure
UP	=	Unknown, but probable due to location
N	=	No, good documentation

Sources for Table 1 — Council Staff Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin, Appendix C (Proposed as Technical Appendix 2 to the Fish and Wildlife Program. More detailed information is available from this source.) Personal communication with Terrald Kent (Bureau of Reclamation), Mike Henry and Antonia Lattin (Federal Energy Regulatory Commission), and Larry Wimer (Idaho Power Company)

Table 1
Hydropower Development in Idaho, Hells Canyon Complex and Above

Dam Name	Stream	Purpose	Year Completed	Dam Owner	Hydropower Operational	Hydropower Operator	Comments
Boise Diversion	Boise River	I,H	1908	Bureau of Reclamation	1912	Bureau of Reclamation	Y no passage facilities
Anderson Ranch	S Fork Boise River	I H C R	1950	Bureau of Reclamation	1950	Bureau of Reclamation	Y passage blocked by downstream dams
Lucky Peak	Boise River	C,R,H,I	1955	Corps of Engineers	---[1]	--[1]	Y runs blocked by downstream dams
Owyhee	Owyhee River	I,C,R,H	1932	Bureau of Reclamation	1985	North Board of Control (Irrigation District)	Y no passage facilities
Black Canyon Diversion	Payette River	I,H,R C	1924	Bureau of Reclamation	1925	Bureau of Reclamation	Y no passage facilities
Cascade	N Fork Payette R	I,C,R,H	1948	Bureau of Reclamation	1948	Idaho Power Company	UP
Rock Creek	Powder River Rock Creek	H	1905	C P National	1951[2]	C P National	UP, diversion dam to off-stream storage site

[1] Hydropower facilities currently under construction. FERC licensee is the Boise Board of Control (Irrigation Districts)
[2] Date FERC license issued

Dam Name	Stream	Purpose	Year Completed	Dam Owner	Hydropower Operational	Hydropower Operator	Comments
Idaho Falls Lower	Snake River	H	1904	City of Idaho Falls	1982	City of Idaho Falls	N, natural barrier downstream
Minidoka	Snake River	I,H C,R	1906	Bureau of Reclamation	1909	Bureau of Reclamation	N above historical run limits
Shoshone Falls	Snake River	H	1907	Idaho Power Company	1907[3]	Idaho Power Company	UP at upper limits of historical runs
Swan Falls	Snake River	H	1901	Idaho Power Company	1901[4]	Idaho Power Company	Y no passage facilities
Lower Malad	Malad River	H	1911	Idaho Power Company	1911[5]	Idaho Power Company	UP
Thousand Springs	Thousand Springs	H	1912	Idaho Power Company	1912[6]	Idaho Power Company	N offstream generating facility
Idaho Falls	Snake River	H	1913	City of Idaho Falls	1982	City of Idaho Falls	N natural barrier downstream
Ashton	Henrys Fork	H	1917	Utah Power & Light	1917[7]	Utah Power and Light	N natural barrier downstream

3 Built by the Great Shoshone and Twin Falls Water Power Company Acquired by Idaho Power Company in 1915
4 Built by Beaver River Power Company Acquired by Idaho Power Company in 1915
5 Built by Trade Dollar Consolidated Mining Company Acquired by Idaho Power Company in 1915
6 Built by Thousand Springs Power Company 1912 Acquired by Idaho Power Company in 1915
7 Acquired by Utah Power and Light in 1924

Dam Name	Stream	Purpose	Year Completed	Dam Owner	Hydropower Operational	Hydropower Operator	Comments
American Falls	Snake River	I,C H,S	1902[8]	Bureau of Reclamation	1902[9]	Idaho Power Company	N natural barrier downstream
Twin Falls	Snake River	H	1935	Idaho Power Company	1935	Idaho Power Company	N natural barrier downstream
Clear Lake	Snake River	H	1937	Idaho Power Company	1937[10]	Idaho Power Company	N offstream generating facility
Idaho Falls-Upper	Snake River	H	1937	City of Idaho Falls	1982	City of Idaho Falls	N natural barrier downstream
Upper Salmon Falls A	Snake River	H I S	1937	Idaho Power Company	1937	Idaho Power Company	UU offstream generating facility
Upper Salmon Falls B	Snake River	H	1947	Idaho Power Company	1947	Idaho Power Company	Y runs blocked by downstream dams
Upper Malad	Malad River	H	1948	Idaho Power Company	1948	Idaho Power Company	UP

[8] Replacement dam built in 1970s

[9] Built by American Falls Power, Light and Water Company. Acquired by Idaho Power Company in 1915. Rebuilt in 1970s

[10] Built by Utah Power and Light Company. Acquired by Idaho Power Company in 1937

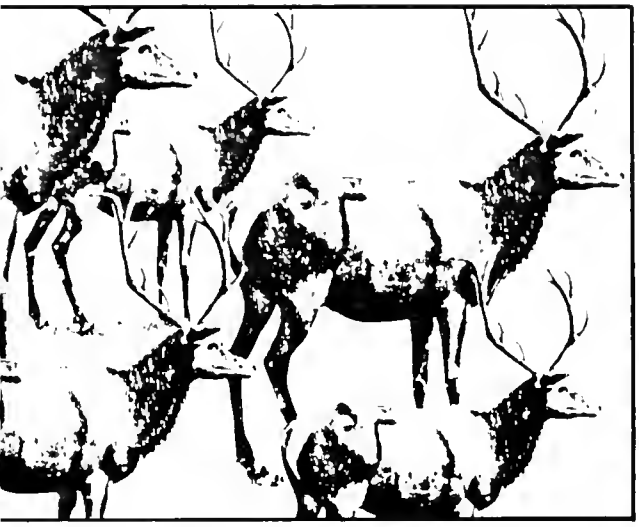
Dam Name	Stream	Purpose	Year Completed	Dam Owner	Hydropower Operational	Hydropower Operator	Comments
Lower Salmon Falls	Snake River	H	1910	Idaho Power Company	1910[11]	Idaho Power Company	Y fish runs blocked by downstream dams
Bliss	Snake River	H	1949	Idaho Power Company	1949	Idaho Power Company	Y fish runs blocked by downstream dams
C J Strike	Snake River	H S	1952	Idaho Power Company	1952	Idaho Power Company	Y, runs blocked by downstream dams
Palisades	South Fork Snake River	H I C R	1957	Bureau of Reclamation	1957	Bureau of Reclamation	UU natural barrier down stream
Brownlee	Snake River	H C	1958	Idaho Power Company	1958	Idaho Power Company	Y no passage facilities fish hatcheries provided
Oxbow	Snake River	O H	1914	Idaho Power Company	1914[12]	Idaho Power Company	Y no passage facilities fish hatcheries provided
Hells Canyon	Snake River	H	1967	Idaho Power Company	1967	Idaho Power Company	Y, no passage facilities, fish transportation and hatcheries provided

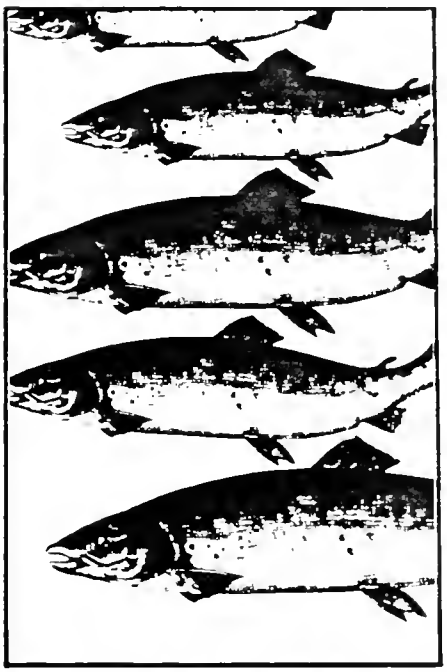
[11] Built by Great Shoshone and Twin Falls Water Power Company Acquired by Idaho Power Company in 1915

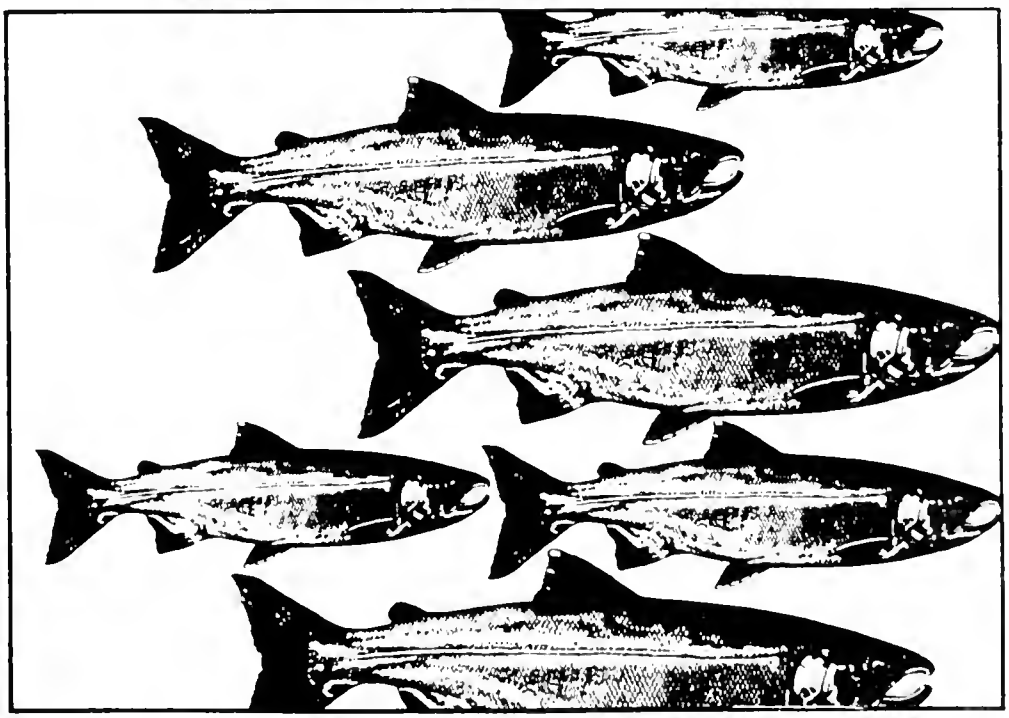
[12] Built by Idaho and Oregon Light and Power Company Acquired by Idaho Power Company in 1915 Rebuilt in 1961

PART 1:
PROPOSED ADOPTION LANGUAGE

Section 100.
Introduction







SECTION 100. INTRODUCTION

105. COSTS

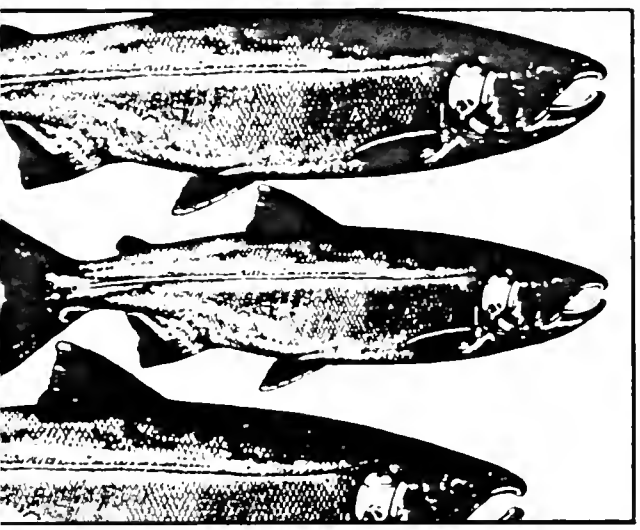
[Council staff believes the cost analysis in this section may need to be revised in light of the Council's amendment decisions in February 1987 As a result, this section of the program may be changed, when the program is republished]

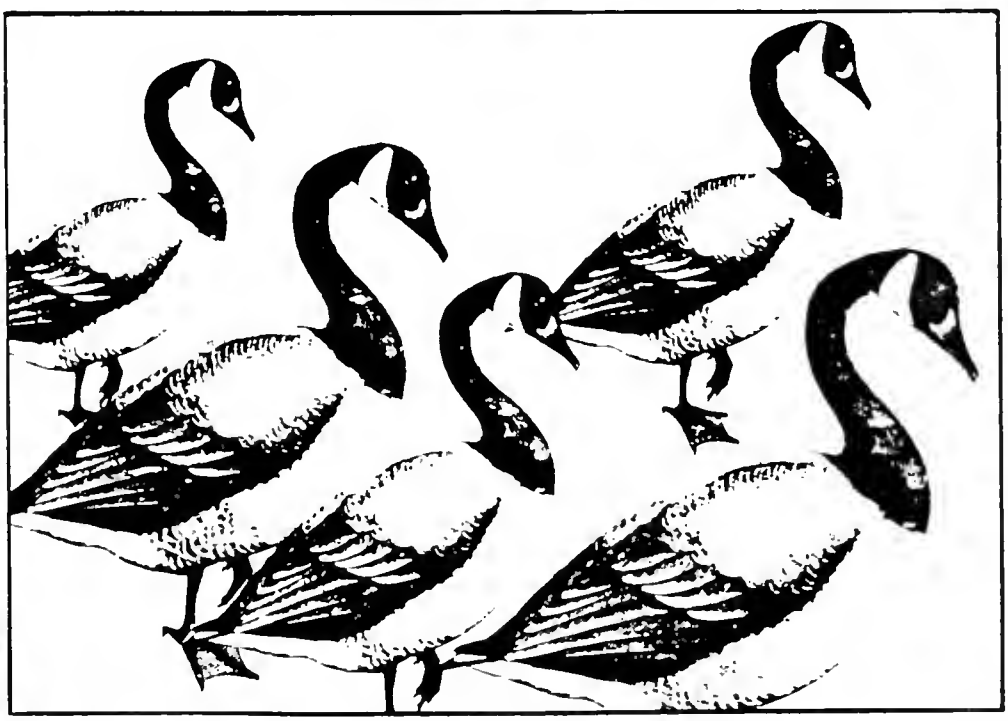
Change program section 105 at page 5, paragraph 7, as follows:

The Council is taking the following steps in this program to ensure that costs are reasonable and that the desired results are achieved

a In section 200, the Council ~~establishes a process for setting program goals to ensure that program measures achieve desired results~~ **estimates the number of salmon and steelhead damaged by the development and operation of the hydropower system. The Council believes that because of the Columbia River Basin hydropower system, current annual run sizes of adult salmon and steelhead are about 5 to 11 million lower than they would have been without losses caused by the hydropower system. The Council intends to ensure that ratepayers' funds are not used for losses beyond those caused by hydropower development and operation, as provided by the Northwest Power Act.** [Source: Council.]

Section 200.
Program Goals





SECTION 200. PROGRAM GOALS

201. ANADROMOUS FISH STATEMENT OF LOSSES OF SALMON AND STEELHEAD

The Council will assess salmon and steelhead losses attributable to hydropower development and operations, state goals, adopt objectives, develop methods for measuring progress toward goals and objectives and otherwise provide a systemwide framework for program measures and action items, following the guidelines listed in Action Item 36.

The Northwest Power Act directs the Council to develop a Columbia River Basin Fish and Wildlife Program to protect, mitigate, and enhance fish and wildlife "affected by the development, operation and management" of hydroelectric facilities in the basin. Because Congress stressed action over prolonged study, the Council's 1982 fish and wildlife program included more than 200 action items calling for prompt implementation of fish and wildlife projects. However, the Council recognized that long-term program planning would require further definition of the scope of the fish and wildlife program. Essential to this definition is an understanding of the extent to which salmon and steelhead have been affected by the development and operation of the hydroelectric system and facilities. To serve these ends, the Council initiated a process in 1985 to gather information on salmon and steelhead losses in the basin. (See Technical Appendix 2.) Over the 1985-1986 period, public debate took place on the nature and limitations of that information.

From the beginning, the Council has been aware that any statement of total losses and of hydropower responsibility for those systemwide salmon and steelhead losses likely would call for a judgment which could be informed by data, but not driven by data. Reliable data are scarce for the era prior to the major development of the basin that severely reduced fish runs (pre-1850). More recent data are plentiful, but often are not expressed in a way that enables unequivocal comparative judgments (e.g., among fishing efforts, timber harvest and trends in fish runs). As a result, more than one reasonable interpretation of the data can be made. After an intensive review of the available data, the Council believes the data reasonably support the following broad conclusions regarding salmon and steelhead losses:

(a) Changes in Size of Salmon and Steelhead Runs

Estimates of the average annual salmon and steelhead runs before development of the basin range from about 10 to 16 million adult fish. In contrast, the estimated current average annual run size is about 2.5 million adult fish. These estimated numbers include fish caught in the ocean and Columbia River system and those that escape harvest and return to hatcheries and natal streams to reproduce. These estimates indicate a net basinwide loss of about 7 to 14 million adult fish, attributable to all causes.

(b) Effects on Tribes

The data show extensive historical reliance of Indian tribes on salmon and steelhead. While this reliance has not been determined with numerical precision, either in the

aggregate or with respect to specific groups, there is no doubt that salmon and steelhead were a dominant factor in the cultures, religions and economies of many tribes. Because most of the tribes were and still are located primarily in the upper portion of the Columbia River Basin, the decline in numbers of fish, combined with the shift of fish production from the upper to lower basin (discussed below), has had a serious effect on those tribes, and an incalculable effect on their economies, cultures and religions.

(c) Habitat Loss and Degradation: General

There have been significant losses and degradation of salmon and steelhead habitat in the Columbia River Basin. Particularly severe was permanent blockage of large areas of habitat above Chief Joseph/ Grand Coulee dams and the Hells Canyon Complex. The harmful effects of such projects are irreversible because it has not been feasible to provide fish passage facilities for them. Moreover, even dams that permit fish passage have inundated habitat, destroying spawning and rearing areas, and increasing downstream and upstream migration time. It is estimated that salmon and steelhead habitat in the entire basin has decreased from about 14,700 miles of stream before 1850 to about 10,100 miles of stream in 1976, a 31 percent loss. Salmon and steelhead habitat in the Columbia River above Bonneville Dam has decreased from about 11,700 miles of stream before 1850 to about 7,600 miles of stream in 1976, about a 35 percent loss.

The lower river area below Bonneville Dam has suffered significant losses of spring chinook habitat. However, there has been much less habitat loss for salmon and steelhead in the lower river area overall compared to upriver areas. In the Willamette River, habitat

has been opened to additional anadromous fish species (fall chinook, summer steelhead) due to the construction of the fishway at Willamette Falls. Throughout the Columbia River system below Bonneville Dam, salmon and steelhead habitat has decreased from about 2,925 miles of stream to about 2,491 miles of stream, about a 15 percent loss.

Additional salmon and steelhead habitat throughout the Columbia Basin has been degraded by forest and farming practices, waste disposal and other factors. In some areas such habitat degradation has been extensive; these effects are, in principle, reversible. Some rehabilitation has been carried out and more is anticipated as a result of a variety of federal, state, local and private efforts.

(d) Losses of Upriver Fish Runs and Habitat

The greatest losses of fish runs and habitat have occurred in the upper Columbia and upper Snake areas. These losses are largely unmitigated. Three general factors are responsible for losses of upriver fish runs: a) Loss of habitat. As described in subsection (c) above, habitat losses have been extensive. b) Mainstem passage mortality. Passage mortality occurs at the mainstem dams and in the reservoirs formed by these dams. Passage mortality currently is estimated to average about 15 to 30 percent per dam for downstream migrants and 5 to 10 percent for upstream migrants. This has enormous effects on upriver runs. As an example, cumulative juvenile passage mortality for fish migrating downstream past nine dams can be estimated to be 77 to 96 percent, depending on the volume and timing of runoff. Cumulative adult passage mortality for fish passing nine dams upstream to spawning areas can be estimated to be 37 to 51 percent. These

mortality rates reflect current passage conditions. Juvenile passage conditions have been improved by installation of bypass systems and spilling of water over some of the dams. These rates do not include higher survival that may be attainable by transporting juvenile fish around the dams. c) Mixed-stock fishery. In a mixed-stock fishery, upriver and wild runs already weakened by habitat and passage losses are fished at the same rate as hatchery-supplemented lower-river runs. Weakened upriver runs may be overfished.

(e) Effects of Mitigation

Efforts have been made to mitigate the effects of development. Some of these efforts have had major implications for the salmon and steelhead fisheries. First was a series of fishing regulations that contributed to a shift from inriver harvest to ocean harvest of some stocks. Ocean fisheries (including those in Canada and Alaska) now account for about 73 percent of total Columbia River chinook harvested. Second was the development of large-scale hatchery production of salmon and steelhead. In 1949, hatchery programs were developed with federal appropriations under legislation called the Mitchell Act (16 U.S.C. 755). The majority of Mitchell Act hatchery fish are raised and released in the lower river, supporting the expansion of the lower river and ocean commercial fisheries. By the late 1960s, hatchery production of fall chinook and coho salmon and steelhead far surpassed natural production. Extensive production of hatchery fish has, along with permanent blockage by dams which eliminated some stocks, probably changed the genetic character of Columbia River Basin stocks. In addition, as noted above, availability of large numbers of lower-river hatchery fish led to overfishing of wild and upriver stocks in the mixed-stock harvest. [Source Council]

202. STATEMENT OF HYDROPOWER RESPONSIBILITY[1]

In 1985-86, the Council conducted an extensive public process on the extent of the responsibility of the hydropower system for the declines in salmon and steelhead runs and habitat. Through the use of issue papers, public comment (oral and written) and hearings, the Council has had the benefit of many thoughtful and constructive suggestions and criticisms. Based on the salmon and steelhead losses data (see Technical Appendix 2), the Council has estimated the responsibility of the hydropower system for losses of salmon and steelhead and their habitat. The Council has not estimated the specific responsibility of each individual hydropower project in that system.

Any detailed analysis of the hydropower responsibility is necessarily limited by the quality and availability of the data. Recognizing this, the Council developed several methods for estimating hydropower responsibility. These methods result in estimated declines in run size due to hydropower development and operation of 5 to 11 million adult fish, compared to a total decline of 7 to 14 million adult fish. The methods used to reach this estimate are explained in Technical Appendix 3. The Council recognizes that other approaches may be suggested. It believes, however, that all reasonable approaches result in a loss estimate in this range.

The total estimated hydropower responsibility range of about 5 to 11 million adult salmon and steelhead compares to present runs of about 2.5 million adult fish. Present

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1./ This section is likely to change considerably in light of the system policies issue paper to be released in October. See introduction to this document.

runs would have to be increased by a factor of three to reach the bottom end of this range, an increase that may not be feasible. Until it is more apparent that the low end of the range may be achieved, the Council has chosen not to attempt a more refined judgment of hydropower responsibility.

The range is stated in terms of a net loss or reduction in run size. It does not take into account the hydropower-caused losses of salmon and steelhead each year since hydropower development started. Of course, such "cumulative" losses would be far beyond the 5 to 11 million range.

It is clear that hydropower development and operations are not the only causes of declines in salmon and steelhead runs and diminishment of their habitat. Irrigation, fishing, and other factors also share in the total responsibility for the losses. Moreover, the hydropower system's responsibility should not be seen in isolation. The Council recognizes that the activities of the fish and wildlife agencies, tribes, land managers, and water managers could affect the success of ratepayer investments in improving salmon and steelhead production. The Northwest Power Act suggests the development of agreements to coordinate administration and funding of measures addressing hydropower impacts with those activities addressing nonhydropower impacts (16 U.S.C. 839b(h)(8)(C)). The Council urges such agreements to ensure that nonhydropower activities do not negate the effects of expenditures under the Council's program.

Analysis of the hydropower responsibility issue is limited by availability of data. Yet it is unlikely that new information will become available because the necessary historical data were not collected at the time losses occurred and cannot be reconstructed with

confidence. Nevertheless, if significant new information were available, section 1400 provides a process for amendment.

The 5 to 11 million range represents the upper limits of the hydropower system's responsibility for the loss of adult salmon and steelhead. These limits may never be achieved because of biological, socio-economic or other limits on fish production. The hydropower responsibility is not an absolute obligation that requires full compensation. The Northwest Power Act requires a program "to protect, mitigate, and enhance fish and wildlife" and their habitat. Monetary compensation for injury to fish and wildlife is not implied or warranted under the Council's program.

The Council does not purport to quantify any legal obligation of the hydropower system to individual parties, including any Indian tribes. The estimated hydropower responsibility of 5 to 11 million adult salmon and steelhead is incorporated into the program as a "cap." It does not constitute a judgment that even the bottom end of the hydropower responsibility range can or will be achieved through the program. Increases in the salmon and steelhead runs will come through specific program measures, consistent with the system policies and coordinated in large part in a subbasin planning process (see sections 203 and 204). If those measures achieve run sizes comparable to the bottom end of the hydropower responsibility range, the Council may review its statement of the hydropower ratepayers' share of responsibility for protecting, mitigating, and enhancing salmon and steelhead runs under the Council's program.

As long as the hydropower system continues to exist, its responsibility to salmon and steelhead will continue. Moreover, any new hydropower development (at new projects or

through changes in existing projects) must be conditioned to avoid or mitigate additional salmon and steelhead losses. (See program section 1200.) [Source Council.]

203: SYSTEM PLANNING[2]

Within the scope of hydropower responsibility, the Council intends to evaluate salmon and steelhead restoration efforts from a "system" perspective. The Northwest Power Act emphasizes the need for such a perspective, and the biological, hydrological, and institutional complexities of the basin demand it. Specifically, the Council proposes that the protection, mitigation and enhancement of salmon and steelhead in the basin be accomplished through three interdependent types of action--passage improvement, fish production and harvest management--all coordinated in a systemwide fashion.

The Council believes a system approach can be founded on the following general objectives already shared by the fishery agencies, Indian tribes, and land and water managers, hydropower project operators and regulators, and the Council:

(a) Work together to protect, mitigate and enhance salmon and steelhead to increase yields to commercial, Indian and sport fisheries and to sustain these increased yields.

Salmon and steelhead fisheries are an important part of the Northwest's culture and economy. Commercial fisheries contribute to the food supply and economic health of the

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2 This section is likely to change considerably in light of the system alternatives issue paper to be released in October. See introduction to this document.

Northwest. Salmon and steelhead fisheries are key in the cultures and economies of many Indian tribes of the Columbia River Basin. Salmon and steelhead also provide valuable recreational experience for citizens from all areas of the United States, and the recreational fishery contributes substantially to many local economies of the Columbia River Basin.

Increased yields should not be transitory, but should be maintained into the future. An important component of sustaining an increased fisheries yield is maintaining genetic integrity and variability of salmon and steelhead stocks, to enable them to resist the evolution and spread of disease organisms and to adapt to new or changed environments.

(b) Protect, mitigate and enhance salmon and steelhead and their habitat affected by the hydropower system while assuring an adequate, efficient, economical, and reliable power supply.

Low-cost hydropower is a mainstay of the Northwest economy. Activities to protect fish, such as spill and alteration of flows, can affect the power supply. Through the Northwest Power Act, Congress expressed its belief in the compatibility of healthy fisheries and economical power operations. The Council is charged with ensuring this compatibility in developing its fish and wildlife program.

(c) Increase the level of scientific knowledge about salmon and steelhead by learning from the actions undertaken on their behalf.

There is much uncertainty about the biology of salmon and steelhead. Learning from actions that are undertaken decreases the level of uncertainty; increases the level of

scientific knowledge, and thereby facilitates protection, mitigation and enhancement of salmon and steelhead. Designing actions in such a way that learning is fostered makes it possible to act in the face of uncertainty.

(d) Take action with a reasonable understanding of potential risks and benefits (including biological, economical, and social risks).

If risks are understood, it is more likely that efforts to restore salmon and steelhead will be effective and that time and money will not be wasted on actions that are ineffective or harmful.

(e) Address the hydropower responsibility.

To achieve these common objectives, a system perspective is needed to guide the three interdependent types of action needed to restore salmon and steelhead in the Columbia River Basin: passage improvement, increased fish production, and harvest management. Production of fish may be increased through hatcheries, improving habitat and improving passage in tributaries. Passage of fish at mainstem dams may be increased through bypass, regulation of spill and flows, and transportation. Harvest management may be improved through changing fishing regulations. All three types of action are under way in the Columbia River Basin.

Several factors give rise to the need for a system approach to restoration. The Columbia River Basin is extremely complex with a multitude of natural environments supporting a multitude of salmon and steelhead stocks. These fish migrate through many

jurisdictions and environments, including the ocean, during their life cycles. The Salmon and Steelhead Advisory Commission described this problem:

> Spring chinook produced in Idaho headwaters of the Columbia River, for example, are subject to diverse fisheries regulated by twenty separate governmental entities--more if one includes the courts--over a several thousand mile-long migratory range. Jurisdictions that produce fish often have little or no regulatory authority over areas in which most of the fish are caught. Jurisdictions that compete for the same fish often wind up managing radically different fisheries for radically different ends. The sheer number and variety of competing jurisdictions make coordinated management difficult even with determined effort, and highly improbable without it.[3]

The number of entities involved in fishery, land and water management, hydropower operations, and other fish-related activities results in great institutional complexity. This complexity makes institutional coordination extremely difficult. Several forums for partial coordination exist, but often there is insufficient communication among them.

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3. From "A New Management Structure for Anadromous Salmon and Steelhead Resources and Fisheries of the Washington and Columbia River Conservation Areas" (1984). Report of the Salmon and Steelhead Advisory Commission authorized by the Salmon and Steelhead Conservation and Enhancement Act, 16 U.S.C. 3301 et seq. Refer to this report for more information on the coordination problem and its origin.

A gamut of potential problems may result when production, passage and harvest actions are not coordinated. Fish production investments may be in conflict. Power system operations may diminish production or offset increases in production. The mixed-stock harvest, in which weaker stocks may be harvested at the same rate as more abundant stocks, may undermine passage actions designed to protect or enhance certain stocks of fish. Further, land and water management actions may undermine fish production investments.

When actions are taken in the absence of a system perspective, there also may be too little recognition of the spectrum of choices among production, passage and harvest actions. Actions may be taken with inadequate analysis of their likely effectiveness, providing no assurance that a given action effectively achieves sound biological objectives at the minimum economic cost. Monitoring and evaluation of actions may be absent, uncoordinated, short-term, sporadic or narrow in focus. As a result, there is too little real opportunity to learn from actions and compare their effectiveness.

This is an opportune, perhaps critical, time to address the need for a system perspective, while the major effort represented by the Council's Columbia River Basin Fish and Wildlife Program is in its early years, and much planning has been initiated under other forums. The Pacific Salmon Treaty,[4] ratified March 18, 1985, addresses allocation of harvest opportunities in the Pacific Ocean and the need to rebuild stocks. Implementation of the treaty requires data collection and long-term monitoring of harvest and production. The United States v. Oregon negotiations concern allocation of Columbia River harvest

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4./ Treaty between the governments of the United States and Canada concerning Pacific Salmon (1985).

opportunities among Indian tribes and non-Indian fishermen. The negotiators also are attempting to coordinate harvest and production throughout the migratory range of Columbia River salmon and steelhead, including the ocean.

Ratification of the Pacific Salmon Treaty has brought an increasing awareness of how the actions of managers in one jurisdiction can undermine or enhance the efforts in other jurisdictions. This awareness has allowed the fishery agencies and tribes to make real progress in planning so that management actions can be coordinated. This progress is evident in the planning under way as part of the United States v. Oregon settlement negotiations.[5] The Council remains interested in cooperating in these efforts, and in relying on them as a starting point for its own planning and decision-making process, which includes participation by the Bonneville Power Administration, the hydropower project operators and regulators, water and land management agencies, and the public, as well as the fishery agencies and tribes.

The rebuilding effort may be large, but the extent of what can and should be undertaken, and how fast it should occur, needs to be addressed in a production planning process. As Congress has said, "Improved management and enhancement planning and coordination among salmon and steelhead managers will help prevent a further decline of salmon and steelhead stocks and will assist in increasing the supply of these stocks." [Salmon and Steelhead Conservation and Enhancement Act, 16 U.S.C. 3301 et seq.]

5. United States et al. v. State of Oregon et al. Civil No. 68-513 (D. Ore.). Parties include: Confederated Tribes of the Warm Springs Reservation of Oregon, Confederated Tribes and Bands of the Yakima Indian Nation, Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Tribe, the Shoshone-Bannock Tribe, the States of Oregon, Washington, and Idaho, and the United States.

Recent Efforts

Planning activities in the Columbia River Basin included a series of planning workshops sponsored by the Council. These workshops provided an opportunity for representatives of disparate entities to communicate across geographic, institutional and managerial boundaries and to share their expertise. Information on habitat- and hatchery-related production opportunities provided by workshop participants was recorded. A system planning model also was developed which simulates all phases of the salmon and steelhead life cycle, from hatching and development of juveniles to harvest and return of adults. Approaches to considering genetics issues in planning that were discussed in the workshops were summarized in a discussion paper. In addition, workshop participants identified information needs. As noted above, other systemwide planning activities in the Columbia River Basin include those related to implementation of the Pacific Salmon Treaty and to negotiations in the United States v. Oregon litigation.

Future Actions

The Council believes the following system-driven approach is the best way to solve the problem of uncoordinated actions:

(1) Refine the system planning model to provide a better means for evaluating and comparing production, passage and harvest choices.

(2) Use the model to conduct a technical analysis of general harvest, passage and production alternatives. This analysis is intended to study the feasibility of a broad range of fish production scenarios against a broad range of passage and harvest scenarios. In this way, the feasible ranges of passage, production and harvest policies can be initially identified. Any production and changed harvest parameters available as a result of United States v. Oregon agreements can be included in the technical analysis.

(3) Identify major system policy alternatives. Any United States v. Oregon agreements can be included at this stage. The numerical output of the technical analysis and non-numerical factors, such as genetics, also can be considered. Policy alternatives are intended to define explicitly the relative roles of passage, production and harvest in restoring salmon and steelhead, and to provide guideposts against which to measure the effectiveness of actions. Policy alternatives may include statements of the scientific uncertainties associated with each alternative and approaches to resolving them. Alternatives may be in the areas of harvest needs and management policies for meeting them; passage survival level consistent with assuring an adequate, economical, efficient, reliable power supply; and production levels and types needed and management policies for achieving them, compatible with harvest needs and passage constraints.

(4) Discuss the major policy alternatives with the fishery agencies, tribes, land and water managers, utilities and other interested parties. Also, hold hearings, sponsor consultations and receive written comment.

(5) Make choices among the alternatives.

(6) Incorporate policy choices and plans for future action into the Council's fish and wildlife program, through amendment proceedings.

(7) Undertake more specific planning and, ultimately, identify planning cycles with regular checkpoints for evaluating progress and failure and for making appropriate adjustments. See sections 204 and 205. [Source Council staff.]

204. SUBBASIN PLANNING FOR SALMON AND STEELHEAD PRODUCTION[6]

(a) After adoption of system policies, the Council will fund the fish and wildlife agencies and tribes to develop coordinated subbasin plans consistent with system policies described in section 203, for production of salmon and steelhead in each major salmon and steelhead producing subbasin in the Columbia River Basin. The fish and wildlife agencies and tribes also will be expected to provide funding or other support for the planning process.

(b) Plans will be developed for the following subbasins:

Idaho

Clearwater River

Salmon River

Snake River Mainstem

6./ This section is likely to change considerably in light of the system alternatives issue paper to be released in October. See introduction to this document.

Oregon

Willamette River	Umatilla
Sandy River	Walla Walla River (with Washington)
Hood River	Grande Ronde River (with Washington)
Deschutes River	Imnaha River
John Day River	Columbia River Mainstem (with Washington)

Washington

Grays River	Klickitat River
Elochoman River	Yakima River
Kalama River	Wenatchee River
Washougal River	Entiat River
Lewis River	Methow River
Cowlitz River	Okanogan River
Big White Salmon River	Columbia River Mainstem (with Oregon)
Wind River	Tucannon River

(c) Each subbasin plan will:

(1) Provide a detailed plan for the period 1989-1998 and a general plan for the longer term.

(2) Rely on currently available information, and use the Council's salmon and steelhead data base and system planning model.

(3) State biologically sound objectives that reflect system policies (section 203), complement objectives for other subbasins, consider potential effects on wild or naturally-spawning runs, and take into account major limiting factors.

(4) Contain a short summary of current conditions and related plans. Each summary will include a brief description of: salmon and steelhead species and stocks produced with current management strategy for each stock, and management opportunities that are present according to genetic considerations;[7] availability and current and potential use of habitat; current and potential hatchery production; current harvest rates; and major factors limiting production of each stock.

(5) Summarize major uncertainties and research monitoring and evaluation needs for each stock, in consultation with the system monitoring and evaluation work group (section 205).

(6) Summarize changes that are planned by fishery agencies, Indian tribes, land and water managers, utilities, Bonneville and other implementers of the Council's fish and wildlife program, local governments, developers, ranchers and farmers, etc., and the likely effects of these proposed changes on each stock

(7) Propose major alternatives for achieving subbasin objectives, as follows:

(A) For each objective, a comparison of the estimated effectiveness of alternatives;

7./ Categories of management opportunities are described in the Council staff's technical discussion paper, "Genetic Considerations in Salmon and Steelhead Planning" (June 3, 1986).

(B) For each objective, a general comparison of estimated costs of alternatives: and

(C) For each alternative, a statement of the hypothesis that may be tested in implementing the measure.

(8) Develop a prioritized inventory of projects, including the projects listed in section 704(d)(1) at Table 2, to implement the alternatives.

(d) The subbasin plans will be developed through cooperative efforts of the fishery agencies and Indian tribes, in consultation with land and water managers, Bonneville, and project operators.

(e) Development of subbasin plans will be coordinated by a planning work group, which will prepare work plans for subbasin planning; provide system integration during development of subbasin plans; review data and data analysis and resolve data disputes; assure that compatible passage and harvest rates are used in analyses for all subbasins; identify and resolve any incompatibilities among subbasin objectives; and work with a system monitoring and evaluation work group (section 205). The planning work group will be composed of two subgroups: a management subgroup composed of representatives of the fishery agencies and Indian tribes, and a review subgroup composed of representatives of the Council, land and water managers, utilities, Bonneville and the public. The planning work group will be composed primarily of technically-oriented individuals who will be expected to report to and obtain feedback from appropriate policy-level individuals or groups. [Source: 201/CBFWC and Council staff]

205. SALMON AND STEELHEAD RESEARCH AND EVALUATION

(a) The Problem

In the past, salmon and steelhead research in the Columbia River Basin has been carried out by numerous federal and state agencies, Indian tribes and utilities, each with its own interests and management objectives. As a result, research in the initial Columbia River Basin Fish and Wildlife Program lacked a systemwide perspective. There was no long-term strategy that set research priorities based on uncertainties associated with long-term production objectives for salmon and steelhead in the basin. There was no system monitoring or evaluation of program measures to assess the effect of management actions and policies. Consequently, there are major gaps in the understanding of upriver Columbia River stocks, their life history patterns and their survival at different points in the life cycle. This is particularly true of wild and natural stocks.

Recently, however, negotiations between the numerous federal and state fisheries agencies and the Indian tribes in the Columbia River Basin have resulted in improved coordination and identification of basinwide goals and objectives. Subbasin planning also will improve coordination. As a result, there are new opportunities for making research relevant to management needs and for taking a systemwide perspective on setting priorities. With common biological and system objectives, it is possible to identify immediate short-term research needs and to establish a framework for monitoring and evaluation so that long-term research needs can be assessed on an ongoing basis.

Another problem has been that the fishery agencies and tribes in the basin do not believe they have been allowed to participate adequately in decisions on the type of research funded by Bonneville. The Council believes it is the intent of the Northwest Power Act that the fish and wildlife agencies and tribes have an integral role in research planning.

There also has been no central policy forum where results of salmon and steelhead research funded under the program can be evaluated to determine their quality as well as their implications for management decision making. As a result, there is no way to ensure new knowledge is distributed so that all affected agencies and tribes, power managers and other resource managers are working with the same information.

Finally, in the past there have been disagreements about how to allocate test fish. In some cases there have not been enough fish to carry out all the experiments scheduled. In part, this is because test fish requirements were identified after the hatchery production schedules had been met. New procedures to allocate test fish before production schedules are set have been initiated by the fish and wildlife agencies. However, it appears disagreement will continue about allocation of test fish until long-term research plans and priorities are identified.

The Council proposes to address these problems in the following ways. First, the Council proposes guiding principles which will provide the foundation and direction for the development of a comprehensive salmon and steelhead research program geared to meeting the objectives of the program itself. Second, the Council proposes six areas of emphasis for allocation of research funds by the Corps and Bonneville over the next five years. Third, the Council proposes to establish a system monitoring and evaluation work

group. This group would help develop a system monitoring and evaluation plan to monitor program progress and assess long-term research needs. Finally, the Council expects that once these research plans are in place, the fish and wildlife agencies and tribes will ensure that test fish are available to carry out the research.

(b) Guiding Principles for the Columbia River Basin Salmon and Steelhead Research Program

(1) Salmon and steelhead research under this program should be designed to reduce scientific uncertainty and increase knowledge to achieve the salmon and steelhead objectives of the program.

(2) Research priorities should be based on a systemwide analysis of the major uncertainties and problems associated with increasing production in a biologically-sound manner.

(3) The level of funding of different research areas by Bonneville and the Corps shall be consistent with the areas of emphasis identified by the Council. Those areas may be modified over time as new problems are identified through monitoring and evaluation of program implementation.

(4) Knowledge gained as a result of the research program should be reviewed and evaluated in a central policy forum and made available to policy makers, resource managers, biologists and hydroelectric project operators and regulators in a timely manner.

(5) The fish and wildlife agencies and tribes should participate in the development and ongoing review of the research program.

(6) Bonneville, other federal agencies, and FERC-regulated utilities responsible for operating hydropower projects shall provide the funding and resources necessary to implement the research program.

(7) Research funded by Bonneville under the program shall be coordinated with research funded by other entities to ensure efficient use of funds and maximum return on research investments.

(c) Areas of Emphasis for Immediate Funding by Bonneville

(1) Bonneville shall fund technical work groups containing representatives from the fisheries agencies, tribes and hydropower project operators to aid in the development of five-year work plans for each of the areas listed below. Each work plan must include objectives, tasks and schedules, including major milestones and check points, and estimated costs. To the extent appropriate, they should incorporate work planning previously conducted in each area. The work plans also will identify test fish needs and how those needs will be met. Members of a work group should have technical expertise in the research area. The reservoir mortality/Water Budget work group shall include representatives of the Fish Passage Center. The Council will review the work plans as a package prior to their funding by Bonneville.

(A) Solving disease problems affecting spring and summer chinook.

Hatchery production of upriver spring chinook has been seriously hampered by the prevalence of bacterial kidney disease (BKD). This disease must be controlled or other enhancement efforts, such as improved passage and flows, will be undermined. See program section 704(h)(2)(D).

(B) Exploring methods for substantially increasing and improving hatchery production at existing hatcheries within the next 10 years.

It has been estimated that production at existing hatcheries could be increased substantially. Before the Council can assess adequately the need for new hatcheries, it must have a better understanding of the potential at existing hatcheries. See program section 704(f).

(C) Improving supplementation techniques.

Supplementation is a technique proposed for quickly rebuilding natural runs. It involves planting hatchery fry and juveniles in the natural environment. However, documentation of successful supplementation efforts is minimal, and previous experiments have shown that, if proper attention is not paid to stock selection, timing of release and other factors, supplementation easily can fail. A better understanding of supplementation methods is needed to assess the potential of natural production. See program sections 704(i)(3) and 704(k)(1)-(2).

(D) Understanding and evaluating reservoir mortality and the effectiveness of the Water Budget.

Estimates of reservoir mortality range from 10 to 30 percent for an average reservoir. If these estimates are confirmed, reservoir mortality would be the major cause of mortality in the system. A better understanding of the extent and causes of reservoir mortality is needed to assess the effectiveness of measures such as the Water Budget. See program sections 304(d) and 404.

(2) Bonneville shall fund the technical work groups to participate in the ongoing review and implementation of the five-year work plans. Specifically, the groups will:

(A) Develop statistical and design standards for research in the areas of emphasis.

(B) Assist in developing, reviewing and evaluating requests for proposals, project work statements, and other related documents.

(C) Provide an annual summary of the status of research in each area of emphasis, including an analysis of the extent to which research objectives have been achieved and of any new problem areas that have been identified. [Source: 1304(c)(3) CBFWC-2, modified by the Council]

(d) Areas of Emphasis for Immediate Funding by the Corps

(1) The Corps will continue to develop five-year work plans as part of its Fish Passage Development and Evaluation Program.

(2) The two main areas of emphasis for the next five years shall be:

(A) Improving bypass at mainstem projects.

Effective bypass at mainstem projects is critical for improving survival of juvenile salmon migrating downstream and for reducing reliance on spill that otherwise could be used to generate power. See program section 404.

(B) Evaluating and improving the effectiveness of transportation.

Transportation has been shown to be an effective means of moving juvenile steelhead downstream. Considerable controversy exists, however, about its effectiveness for other species, such as spring chinook. See program section 404.

(e) System Monitoring and Evaluation

(1) The Council will develop a system monitoring and evaluation program to achieve the following objectives:

(A) Account for program progress.

To develop and implement a biologically-sound and economically-responsible program, the Council must have a way to measure program progress. In fact, the Northwest Power Act requires the Council to submit a detailed annual report evaluating the effectiveness of its program. See 16 U.S.C. 839b(h)(12)(A). To this end, the Council intends to develop a systemwide monitoring and evaluation program keyed to the objectives identified as part of its system and subbasin planning.

(B) Reduce biological and economical risks of action.

A sound monitoring and evaluation program is particularly important when management and enhancement decisions must be made against a background of biological uncertainty. Because there are major gaps in knowledge about the life cycles of the different salmon and steelhead stocks in the Columbia River Basin and the impact of the hydropower system on those life cycles, the Council must make decisions despite the possibility of a range of outcomes, including failure. To minimize the possibility of biological disasters and costly mistakes, actions must be complemented by a monitoring and evaluation system so failures can be identified early and management strategies modified accordingly.

(C) Increase knowledge about the biological system.

As the efforts of the Council's modeling technical work group have shown, it is difficult to predict accurately the effects of management actions. This is because the data needed to describe the system and its interactions are so limited. A system monitoring and evaluation program could help fill in some of those information gaps so that the analytical basis for predicting system responses would be improved. Specifically, it would provide the basis for assessing whether harvest actions are consistent with mainstem passage and production, the need for additional habitat improvements and hatchery capability, and whether production increases are proceeding without detrimental effects on existing stock strengths.

(D) Identify long-term research needs.

Monitoring and evaluation also can help identify surprises or anomalies in the biological system that have important management and policy implications. Understanding those surprises can be the basis of new research priorities.

(2) Establish a system monitoring and evaluation work group.

(A) Composition

The Council will fund a work group composed of no more than five representatives from the fish and wildlife agencies (including one from the Fish Passage Center) and no more than one representative each from Bonneville and the hydropower project operators. Representatives from the different entities

would be experienced scientists and managers with knowledge of the management and enhancement objectives of the entity they represent. The group would work closely with the Subbasin Planning Work Group.

(B) Responsibilities

This work group will assist the Council staff in making proposals to the Council in the following areas:

(i) Development of alternative system monitoring and evaluation programs. The work group would assist in the development of a range of alternatives for monitoring and evaluating the program for presentation to the Council. The alternatives would represent a range of complexity and costs.

(ii) Identification of any data collection needs in addition to those listed in section 205(f) below.

(iii) Coordination of planning of data collection, fish tagging, release and recapture studies with other planning entities in the Columbia River Basin, such as the International Pacific Salmon Commission, the Pacific Fisheries Management Council, the Fish Passage Center and others. This coordination would include the development of proposals for experimental design standards and techniques in the area of fish marking or tagging (including laser branding, if appropriate), and

release and recapture studies that could be used systemwide by all planning entities to maximize the benefits of the studies by assuring compatibility of data and experiment results. [Source 404 AEI as modified by the Council]

(iv) Identification of any additional test fish needs associated with items (i) to (iii) above and proposals for ways to meet those needs.

(v) Provision of a central forum for evaluating and reviewing research results and assessing their implications for program objectives and policies.

(f) Data Collection

System monitoring and evaluation will require adequate collection and coordination of data on a yearly basis. To this end, Bonneville shall fund the data bases described below. Bonneville shall consult with the subbasin planning work group and the system planning and evaluation work group to ensure that the data base meets their needs.

(1) Hatchery Data Base

Bonneville shall fund collection of Columbia River Basin hatchery data for anadromous fish. Data to be collected on a yearly basis shall include: counts of returning adults; disposition of returning adults; source and description of brood stock; actions taken

to maintain genetic diversity and size, location, and time of release of juvenile fish. Data collection shall be stored in the Council's anadromous fish data base. [Source 704(f)(2)/CRITFC.]

(2) Natural Production Data Base

Bonneville shall fund collection of information on the natural production of anadromous fish in the Columbia River Basin. Data to be collected shall include, at a minimum, adult escapement and spawning successes for key index streams, established by the Council, in the Columbia River Basin. The key index streams shall be consistent with key index areas identified through the Pacific Salmon Treaty, U.S. v. Oregon, and the Council's production planning process. Data collected shall be stored in the Council's anadromous fish data base. [Source: 704(l)/CRITFC.]

[Source of all of draft section 205: Council, except as otherwise noted.]

206. RESIDENT FISH SUBSTITUTIONS POLICY

There are some areas of the basin to which anadromous fish probably will never be able to return because of blockages by dams. These include the areas above Chief Joseph/Grand Coulee dams, the Hells Canyon dam complex and other smaller "blocked areas. One of the issues the Council addressed in its hydropower responsibility analysis is the extent to which "resident fish substitutions" should be used to mitigate losses of salmon and steelhead production in these areas.

The Council used several principles in developing its policy on resident fish substitutions. First, it concluded that mitigation in blocked areas is appropriate where salmon and steelhead were affected by the development and operation of the hydroelectric projects. Second, in order to treat the Columbia River and its tributaries as a system, some level of substitution will be reasonable for lost salmon and steelhead in areas where in-kind mitigation cannot occur. Finally, some flexibility in approach is needed to develop a program that complements activities of the fish and wildlife agencies and tribes and is based on the best available scientific knowledge.

Applying these principles, the Council has determined that it will approve resident fish substitutions projects in the blocked areas above Chief Joseph and Hells Canyon dams first. The Council will consider projects in other blocked parts of the basin later, when the level of performance or accomplishment in anadromous fish restoration and in upper basin substitutions is known. In addition, resident fish substitution projects must:

(a) Incorporate adaptive management principles (see section 1503);

(b) Complement activities of fish and wildlife agencies and tribes;

(c) Address unmitigated losses of salmon and steelhead attributable to development or operation of hydropower projects;

(d) Appear likely to achieve significant biological results;

(e) Avoid conflict with anadromous fish;

(f) Reflect a management plan with sound biological objectives;

(g) Reflect consultation and coordination with affected parties;

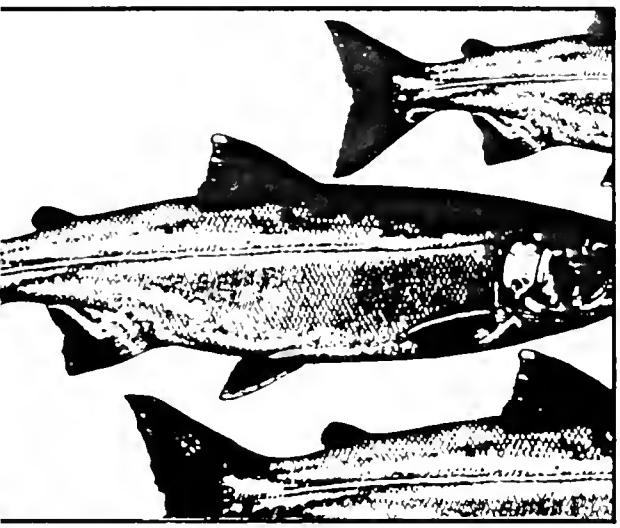
(h) Include a schedule for implementation and evaluation; and

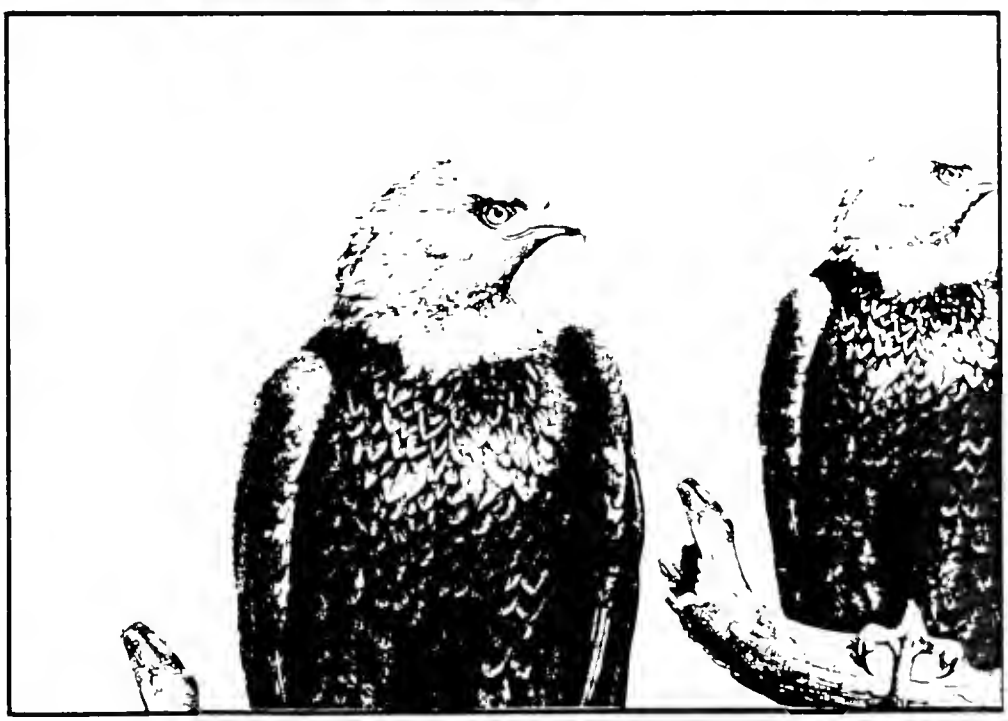
(i) Otherwise meet the standards in the Northwest Power Act.

Resident fish substitutions projects approved by the Council are included in program section 804(g). [Source Council.]

Section 300.

Anadromous Fish:
Downstream Migration - Water Budget





SECTION 300. ANADROMOUS FISH:

DOWNSTREAM MIGRATION - WATER BUDGET

304. MEASURES

(a) Establishment and Use of the Water Budget

(1) The federal project operators and regulators shall provide the fish and wildlife agencies and tribes with a total Water Budget of 78 kcfs-months (4 64 Maf). It is to be divided into 58 kcfs-months (3 45 Maf) at Priest Rapids Dam and 20 kcfs-months (1 19 Maf) at Lower Granite Dam The fish and wildlife agencies and tribes will specify the use of the Water Budget during the period April 15 through June 15 **according to the following procedures:-** ~~The Water Budget may be used by the fish and wildlife agencies and tribes to implement any flow schedule which provides maximum juvenile salmon survival within the limits of firm non-power requirements, physical conditions, and flows required for firm loads.~~

(A) **The Corps, in consultation with Bonneville and the Bureau of Reclamation, shall provide weekly average flow projections at Priest Rapids Dam on the mid-Columbia River and at Lower Granite Dam on the Snake River to the fish passage managers on each Wednesday for the next Monday-through-Sunday period. These flow projections shall be composed of both power and nonpower components.**

(B) The fish passage managers, given the average weekly flow projections, will have 24 hours to decide whether or not to submit a Water Budget request to augment the projected flow at either control point.

(C) The Water Budget request, submitted to the Corps on each Thursday by the fish passage managers, will be for weekly average flows at Priest Rapids and Lower Granite dams during the next Monday through Sunday period.

(D) If the fish passage managers decide not to augment flows with the Water Budget during a given week, the actual weekly average flow for that week shall not be less than the projected weekly average flow identified by the Corps in part (A), above.

(E) Throughout the April 15 to June 15 period, the Corps, Bonneville and the Bureau of Reclamation shall provide average weekend flows (including Memorial Day) at Priest Rapids and Lower Granite dams which are no lower than 80 percent of the average of the preceding five weekday flows, unless otherwise authorized in writing by the fish passage managers. [Source: Council.]

(2) To provide a base from which to measure Water Budget use, the Council has established the firm power flows listed in Table 1. Water Budget fish passage managers will request average weekly flows for Priest Rapids and Lower Granite dams and dates on which these flows are desired according to the procedures specified in section 304(a)(1). The flow requests must be greater than the firm power flows and less than 140 kcfs. Water Budget use will be measured as the

difference between the actual average weekly flows ~~which result from~~ (or the Water Budget fish passage managers' average weekly flow requests, at Priest Rapids or Lower Granite dams, whichever is less) and the firm power flows.

Table 1

Firm Power Flows

(average weekly kcfs)

	Priest Rapids	Lower Granite
April 15 through April 30	76	50
May 1 through May 31	76	65
June 1 through June 15	76	60

[Source: Council.]

(3) The federal project operators and regulators shall incorporate the Water Budget requirement in all system planning and operations performed under the Columbia River Treaty, the Pacific Northwest Coordination Agreement, all related rule curves, and in other applicable procedures affecting river operations and planning. All parties will act in good faith in implementing the Water Budget as a "firm" requirement. The Council expects that in order to reduce power system effects, thermal plant maintenance will be moved into the April 15 to June 15 period. ~~The fish and wildlife agencies and tribes must give the Corps of Engineers three days written notice of changes in the planned flow schedule under the Water Budget.~~ [Source: Council.]

(7) ~~In designing and scheduling~~ making weekly average flows requests ~~through use of~~ for the Water Budget, the fish and wildlife agencies and tribes shall take into account flow and reservoir level fluctuation requirements for resident fish. [Source: Council.]

(b) ~~Water Budget Manager~~ Fish Passage Center

(1) Bonneville shall fund the establishment and operation of a Fish Passage Center, including funds for two fish passage manager positions, technical support, the services of consultants when necessary and clerical staff for the fish passage managers. This support will assist the fish passage managers in: (A) researching and implementing the annual smolt monitoring programs called for in section 304(d)(2) consistent with the research policies specified in section 205; (B) developing and implementing flow and spill operational requests; and (C) analyzing research, monitoring results, and preparing a draft and final reports. [Source: Council, 304(a)-(d)/CBFWC.]

(2) The Fish Passage Center will house the fish passage managers and their staff and will function as the primary center for housing data and information regarding juvenile fish passage. All data collected and stored at the Fish Passage Center will be available upon request to all interested parties. [Source: Council 304(a)-(d)/CBFWC.]

~~(1)~~(3) ~~Bonneville shall provide funds to establish two "Water Budget manager" positions.~~ One ~~Water Budget~~ fish passage manager will work for the entity (or entities) designated by a majority of the federal and state fish and wildlife agencies and one will work for the entity (or entities) designated by a majority of the Columbia River Basin Indian tribes. The ~~Water Budget~~fish

passage managers will provide expert assistance to the designated entities in working with the power project operators and regulators to ensure that requirements for fish are made a part of **all** river system planning and operations. They will be selected on the basis of their knowledge of the **multiple purposes of the** regional hydroelectric power system as well as the water needs of fish and wildlife, and their ability to communicate and work with the fish and wildlife agencies, tribes, project operators and regulators and other interested parties, including members of the public. The Council will provide a ~~Water Budget~~**fish passage** advisor on its staff to review the operation of the Water Budget, advise the Council on all matters related to the ~~Water Budget~~ **fish passage**, and to assist in resolving ~~Water Budget~~ **fish passage** disputes. [Source: Council, 304(a)-(d)/CBFWC.]

~~(2)~~**(4)** The ~~Water Budget~~**fish passage** managers will be the primary points of contact between the power system and the fish and wildlife agencies and tribes on matters concerning the ~~Water Budget~~ **all Water Budget and spill operations affecting juvenile fish migrating downstream at hydroelectric projects operated by the Corps of Engineers on the mainstem of the Columbia and Snake rivers.** They will be responsible for informing the Corps of Engineers when and to what extent they wish to draw on the Water Budget. ~~They also will be responsible for in-season communications regarding spill.~~ The Corps will inform the other project operators and regulators of ~~the request~~ **Water Budget requests and spill communications** to the extent necessary. **The Corps shall manage and implement annual juvenile fish passage plans and make in-season spill decisions and adjustments in consultation with the fish passage managers.** [Source: Council's February 1986 decision and 304(a)-(d)/CBFWC.]

(5) The Council expects Bonneville and the fish and wildlife agencies and tribes to cooperate fully in developing the contractual agreements necessary to carry out tasks described in sections 304(b)(1), (2) and (3). Pursuant to this expectation the Council will

review all contracts related to the Fish Passage Center and the fish passage managers as provided in section 1104 (b)(1). [Source Council]

(c) Coordination of the Water Budget

(3) By November 1 of each year the ~~Water Budget~~ **fish passage** managers will submit a single report to the Council that explains the scheduling of the Water Budget and supporting rationale for that calendar year. This report will include

(A) The actual flows achieved for that calendar year

(B) A record of the ~~estimated~~ **annual passage indices or an estimate of the** number of smolts which passed Lower Granite and Priest Rapids dams, and the period of time over which the migration occurred; and

(C) A description of the flow shaping used for that calendar year to achieve improved smolt survival;

(D) **A description of spill operations which were requested and which occurred relative to the Corps' Juvenile Fish Passage Plan for that year; and**

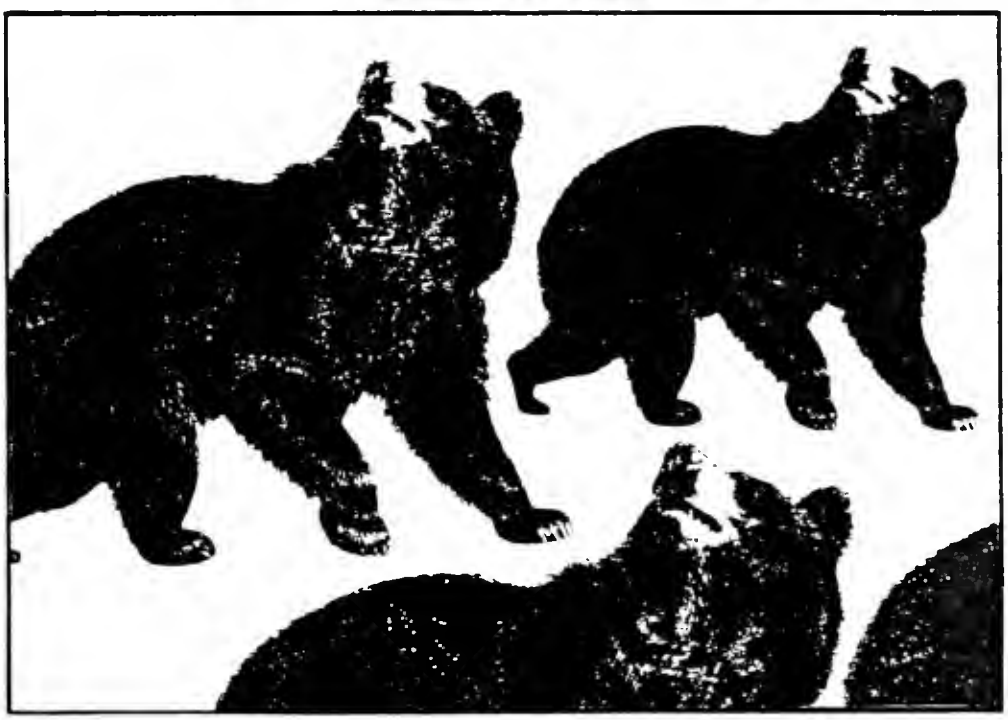
(E) **An assessment of juvenile fish passage conditions which occurred that year, including the general effect of program measures implemented such as Water Budget, spill and juvenile fish facilities improvements.** [Source Council and 304(a)-(d)/CBFWC.]

(d) Research and Monitoring

(1) As part of its five-year research work plan on reservoir mortality and Water Budget effectiveness, Bonneville shall fund a study to gather additional evidence on the relationship among flows, spills, travel time and smolt survival (see section 205(c)). This study will include an analysis of the relationship between flows and survival of the late-summer migrating chinook stocks, which migrate during earlier life stages than the smolts that migrate in the spring. Based on the results of the study, the Council will determine whether the Water Budget is successful in achieving smolt survival and to what degree. Annually, it will review the operation of the Water Budget. Pursuant to section 1400, the Council will consider proposed alternatives to the Water Budget designed to be more effective in improving downstream migration or in reducing power system effects. **Bonneville also shall include, in its five-year research work plan, investigations of spill effectiveness, hourly fish passage patterns, and reservoir mortality at mainstem federal projects, in consultation with all interested parties. These studies shall be consistent with the research policies specified in section 205.** [Source: Council decision in February 1986.]

Section 400.

Anadromous Fish:
Downstream Migration - Passage



SECTION 400. ANADROMOUS FISH:

DOWNSTREAM MIGRATION - PASSAGE

403. COUNCIL RESPONSE

[Add this paragraph at the end of current section 403]

In 1986 the Council considered a number of alternatives to the 90 percent survival standard. To provide greater protection for upriver natural and wild runs, the Council extended the spill season to cover all but the first and last 10 percent of the fish migrating during the spring and summer migration periods. The Council determined that spill should be provided regardless of any impacts on firm hydropower, but in no event after August 15 of the year. [Source Council's February 1986 decision]

404. MEASURES

(b) Lower Columbia River and Tributary Passage

(3) In consultation with the fish and wildlife agencies and tribes the Corps of Engineers shall develop and implement a plan for spills **at John Day Dam** which will achieve a level of smolt survival comparable to or better than that achievable by the best available bypass and screening systems, **and at least 90 percent smolt survival.** This shall be done by April 1 of each year. The

~~Corps shall implement such plans until the bypass and screening systems at John Day Dam are~~ is completed and ~~operating~~. Spill operations shall begin when the first 10 percent of the spring migrants has passed the dam and shall protect 80 percent of the spring migration. Spill shall continue or ~~begin~~ again when the first 10 percent of the summer migration has passed the dam, and shall protect 80 percent of the summer migration. Spill shall occur regardless of any impact on firm energy. No spill, however, shall be required after August 15 of each year.

Before the juvenile passage season, the fish and wildlife agencies and tribes will identify "spill criteria:" the spring and summer periods that include 80 percent of the typical spring and summer migrations, the daily hours of spill, and the numbers of fish that will trigger spill operations. These spill criteria will guide spill operations at the project consistent with the 90 percent survival objective. The Corps shall develop, in consultation with the fish and wildlife agencies and tribes, an annual juvenile fish passage plan that is consistent with program standards and incorporates the spill criteria. The Corps shall be responsible for managing and implementing the annual juvenile fish passage plan and shall make in-season spill decisions or adjustments in consultation with the fish passage managers. [Source: Council's February 1986 decision]

(4) The Corps of Engineers, having studied bypass efficiency of the sluiceway at The Dalles Dam and reported to the Council on study results, shall implement

(A) A coordinated interim juvenile passage plan which will result in at least a 90 percent ~~level of~~ smolt survival of **spring and summer migrants** at this project. ~~This plan shall be developed in consultation with the fish and wildlife agencies and tribes and shall~~

~~include project operating criteria for fish passage.~~ The fish and wildlife agencies and tribes will prescribe the method for determining smolt survival at this project. **Spill operations shall begin when the first 10 percent of the spring migration has passed the dam and shall protect 80 percent of the spring migration. Spill shall continue or begin again when the first 10 percent of the summer migrants has passed the dam, and shall protect 80 percent of the summer migration. Spill shall occur regardless of any impact on firm energy. No spill, however, shall be required after August 15 of each year.**

Before the juvenile passage season, the fish and wildlife agencies and tribes will identify "spill criteria:" the spring and summer periods that include 80 percent of the typical spring and summer migrations, the daily hours of spill, and the numbers of fish that will trigger spill operations. These spill criteria will guide spill operations at the project in a manner consistent with the 90 percent survival objective. The Corps shall develop, in consultation with the fish agencies and tribes, an annual juvenile fish passage plan that is consistent with program standards and incorporates the spill criteria. The Corps shall be responsible for managing and implementing the annual juvenile fish passage plan, making in-season spill decisions and adjustments in consultation with the fish passage managers. [Source: Council's February 1986 decision.]

(8) The Corps of Engineers shall implement at Lower Monumental Dam:

(A) A coordinated interim juvenile passage plan which will result in at least a 90 percent level of smolt survival of **spring and summer migrants** at this project. ~~This plan shall~~

~~be developed in consultation with the fish and wildlife agencies and tribes and shall include project operating criteria for fish passage~~—The fish and wildlife agencies and tribes will prescribe the method for determining smolt survival at this project. **Spill operations shall begin when the first 10 percent of the spring migration has passed the dam and shall protect 80 percent of the spring migration. Spill shall continue or begin again when the first 10 percent of the summer migrants has passed the dam, and shall protect 80 percent of the summer migration. Spill shall occur regardless of any impact on firm energy. No spill, however, shall be required after August 15 of each year.**

Before the juvenile passage season, the fish and wildlife agencies and tribes will identify "spill criteria:" the spring and summer periods that include 80 percent of the typical spring and summer migrations, the daily hours of spill, and the number of fish that will trigger spill operations. These spill criteria will guide spill operations at the project consistent with the 90 percent survival objective. The Corps shall develop, in consultation with the fish agencies and tribes, an annual juvenile fish passage plan that is consistent with program standards and incorporates the spill criteria. The Corps shall be responsible for managing and implementing the annual juvenile fish passage plan, making in-season spill decisions and adjustments in consultation with the fish passage managers. [Source: Council's February 1986 decision.]

(9) The Corps of Engineers, having evaluated effectiveness of the sluiceway as a fish bypass system at Ice Harbor Dam, shall implement

(A) ~~A coordinated interim juvenile passage plan which will result in at least a 90 percent level of~~ smolt survival **of spring and summer migrants** at this project. ~~This plan shall be developed in consultation with the fish and wildlife agencies and tribes and shall include project operating criteria for fish passage.~~ The fish and wildlife agencies and tribes will prescribe the method for determining smolt survival at this project. **Spill operations shall begin when the first 10 percent of the spring migration has passed the dam and shall protect 80 percent of the spring migration. Spill shall continue or begin again when the first 10 percent of the summer migrants has passed the dam, and shall protect 80 percent of the summer migration. Spill shall occur regardless of any impact on firm energy. No spill, however, shall be required after August 15 of each year.**

Before the juvenile passage season, the fish and wildlife agencies and tribes will identify "spill criteria:" the spring and summer periods that include 80 percent of the typical spring and summer migrations, the daily hours of spill, and the number of fish that will trigger spill operations. These spill criteria will guide spill operations at the project consistent with the 90 percent survival objective. The Corps shall develop, in consultation with the fish agencies and tribes, an annual juvenile fish passage plan that is consistent with program standards and incorporates the spill criteria. The Corps shall be responsible for managing and implementing the annual juvenile fish passage plan, making in-season spill decisions and adjustments in consultation with the fish passage managers.

[Source: Council's February 1986 decision]

~~(13) The FERC shall require Pacific Power and Light Company (PP&L) to operate its Albany Hydroelectric Project on Lebanon Canal in accordance with the existing agreement between PP&L and the Oregon Department of Fish and Wildlife. If changes to existing operations are proposed, the FERC shall require PP&L to conduct studies that evaluate the need for additional measures to protect migrating juveniles and to determine the most effective alternatives available.~~

~~**Background.** Water is diverted at Lebanon Dam on the South Fork Santiam River into Lebanon Canal for municipal and power uses. Flows in the canal are approximately 100 cfs. PP&L operates a small turbine on the canal. No fish protection screens exist at the entrance to Lebanon Canal. However, the existing agreement between PP&L and the Oregon Department of Fish and Wildlife requires the powerhouse on the canal to be shut down from November 1 to December 31 and from February 16 to June 15 to protect migrating juvenile salmon and steelhead. Power operations from January 1 to February 15 are subject to modification or shutdown if necessary to improve fish passage on the South Santiam River.~~ [Source: Council staff. Pacific Power and Light Company no longer owns this project. The project has been turned over to the city of Albany, Oregon and is being used for the municipal water supply. The project is not being operated for power purposes.]

(17) Transportation

(A) The Corps shall conduct an annual smolt transportation program in accordance with provisions developed by the fish and wildlife agencies and tribes. These provisions will include the criteria and periods for transporting the various species as well as operating criteria for the collection and transport facilities. This program is not to begin earlier than April 1 of each year unless agreed to by all parties. [Source: Council.]

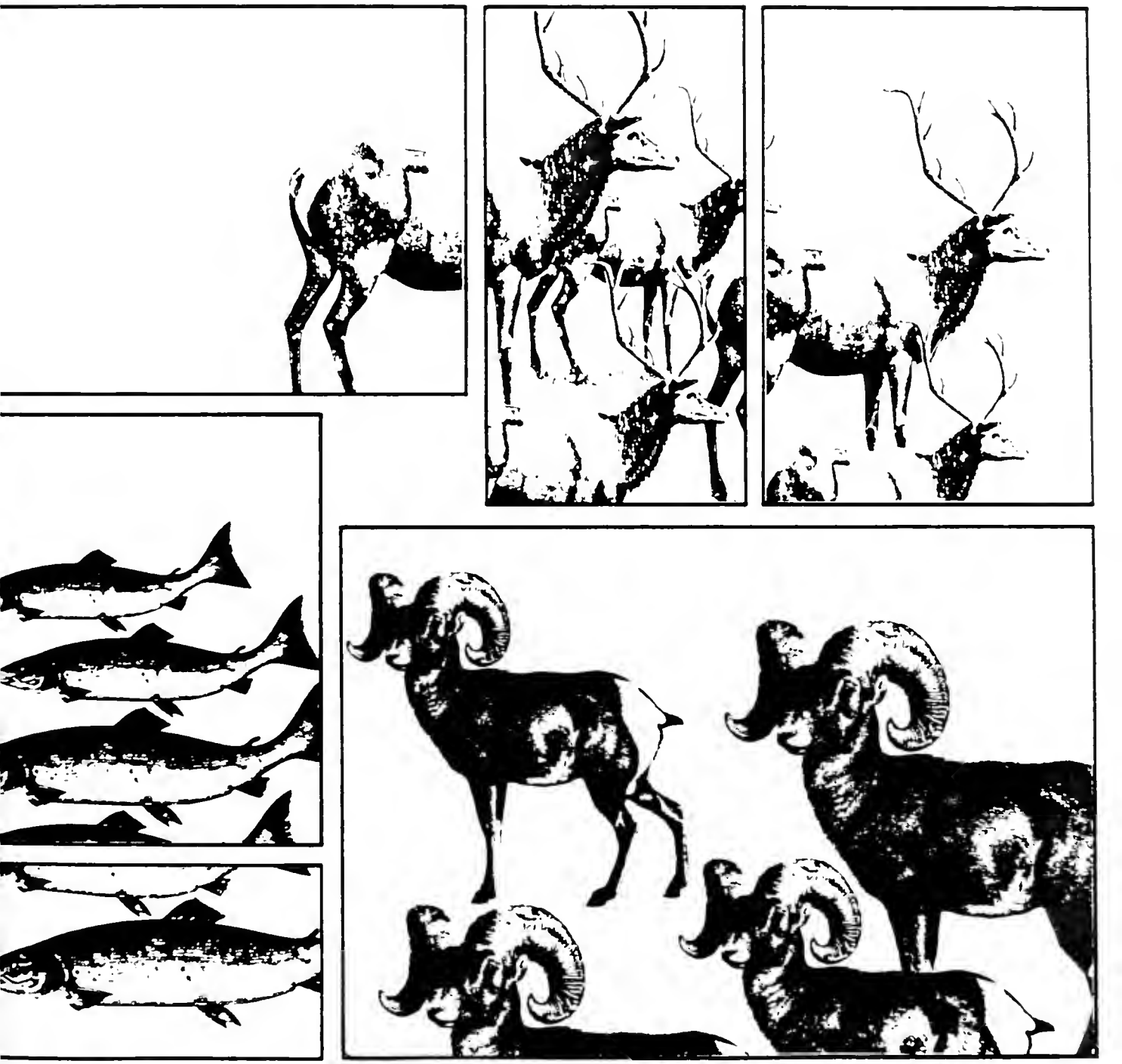
(B) The Council supports the funding of the barges, equipment, facilities and other expenses necessary to conduct the annual smolt transportation program, including full transportation, if in accordance with the provisions developed by the fish and wildlife agencies and tribes. [Source: Council.]

(C) The Corps of Engineers shall conduct studies to evaluate and improve the success of juvenile fish transportation ~~transport operations~~ at Lower Granite, Little Goose, and McNary dams. The evaluation studies should place particular emphasis on identifying the transportation benefits for spring (yearling) chinook salmon. These studies shall be designed to yield results with a high degree of statistical reliability and to evaluate the effects of collection site, inriver passage conditions, and post-release survival on the benefit ratio of transported and nontransported fish. Study designs shall be developed jointly with the fish and wildlife agencies and tribes and as part of a five-year research work plan on transportation (see section 205(d) and action item 39.06). These shall be consistent with the research policies specified in section 205. ~~These studies shall consist of testing and analysis of various portions of the collection, bypass, and transportation systems, including a study of fish densities in the holding and loading facilities and barges. The Corps shall prepare a comprehensive report to the Council containing a complete evaluation of all past transportation activities and including proposals for future actions. Proposals shall be developed in consultation with the fish and wildlife agencies and tribes and shall include a detailed schedule and recommendations for future actions.~~ [Source: 404(b)(17)/COE and Council.]

(d) Dispute Settlement

If Bonneville, the Corps, or other project operators cannot resolve planning or operational disputes with the fish and wildlife agencies and tribes related to carrying out the spill measures in this section, the Council will meet with those entities to facilitate resolution of the dispute. [Source 403.404(b) CBFWC]

Section 500.
Anadromous Fish: Ocean Survival



SECTION 500. ANADROMOUS FISH:

OCEAN SURVIVAL

504. MEASURES

(a) Establishment of Escapement Objectives

(1) The Council will identify spawning escapement objectives and rebuilding schedules that will achieve the production goals **consistent with the system policies and subbasin plans** adopted by the Council ~~upon establishment of goals pursuant to Section 201~~. The Council will support adoption by the fisheries management entities of these escapement objectives and rebuilding schedules. [Source: Council staff.]

(c) Known-Stock Fisheries

(2) Research

- Bonneville shall fund research to improve stock identification methods. ~~Proposals for further action will be reviewed on completion of the research.~~ **Research in this area will be consistent with needs identified by the Council's system monitoring and evaluation work group. (See section 205(c).)**

(3) Known-Stock Fishery Demonstration Programs

Bonneville shall fund known-stock fishery demonstration programs where it can be shown these programs **are consistent with the system policies and subbasin plans adopted by the Council,** including protection of wild stocks of salmon and steelhead.

Background. The development of known-stock fisheries has the potential for allowing the fish and wildlife program goals **system policies and subbasin plans** to be achieved in a more timely and cost-effective manner. Programs using new and existing techniques to demonstrate the effectiveness of known-stock fisheries **on Columbia River Basin stocks** are in the ratepayers' interest. [Source: Council staff.]

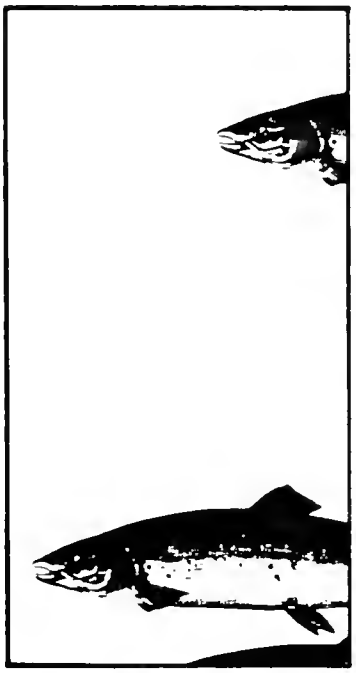
(e) Ocean Plume Research

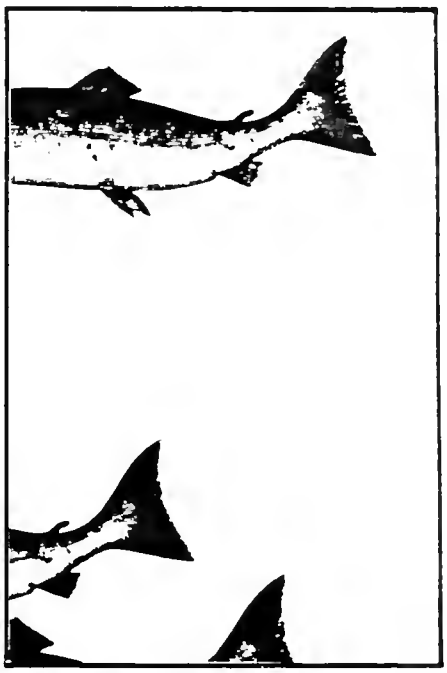
(1) Bonneville will fund research on the influence of oceanographic factors (temperature, salinity, currents, upwelling) in the nearshore Columbia River plume area on the distribution, survival, and growth of juvenile Columbia River salmon. Proposals will be in accord with the research ~~objectives established pursuant to section 1104(c)(1)~~ **and monitoring needs identified by the Council's system monitoring and evaluation work group. (See section 205(c).)**

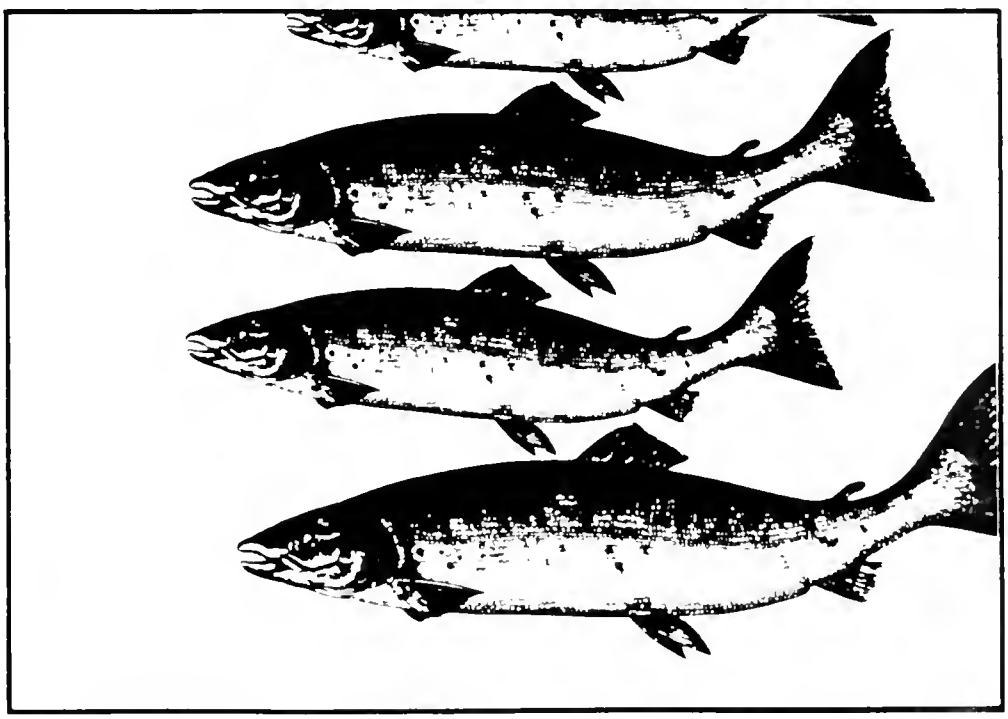
Background: Early ocean growth and survival play a vital role in the ultimate abundance of adult Columbia River salmonids. Small changes in survival during the first two to three months in the nearshore ocean environment can result in large differences in adult abundance. The Columbia River plume, the freshwater extrusion from the mouth of the Columbia, is a major element of the

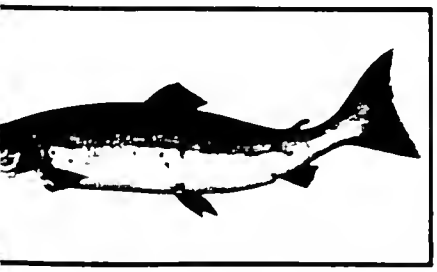
nearshore ocean environment. Changes in river flows to meet hydroelectric needs can influence the character of the plume and thereby the distribution and growth of juvenile salmon

Section 600.
Anadromous Fish: Upstream Migration









SECTION 600. ANADROMOUS FISH: UPSTREAM MIGRATION

604. MEASURES

(a) Flows and Spill Criteria

(5) The Corps of Engineers shall continue to fund studies to investigate the causes of adult fish passage delays at John Day Dam.

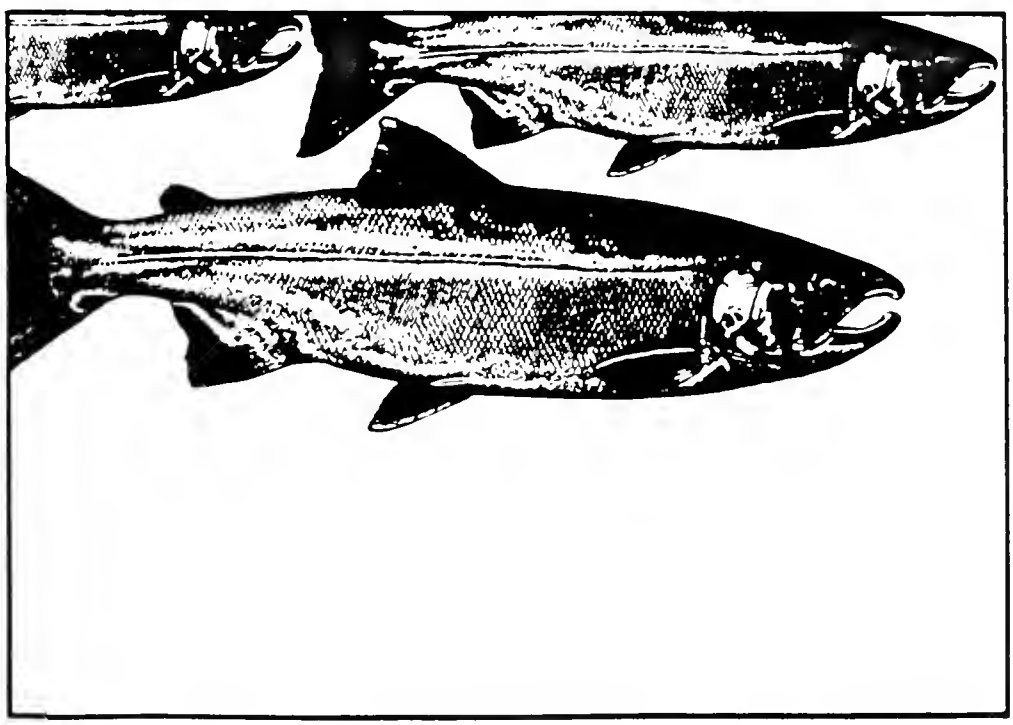
Background: The fish and wildlife agencies and the Corps of Engineers have indicated that studies need to be performed to determine if (a) structural modifications of fishway entrances are necessary, (b) present flows for attracting fish might be used more effectively, (c) water quality or flow condition problems exist within the fishway, and (d) the unaccounted losses of adult fall chinook between The Dalles and John Day dams are due to passage conditions at John Day Dam. [Source: Council staff]

(b) Operation and Maintenance of Adult Fishways

(3) The Corps of Engineers shall install a new vertical slot counter at the existing east fishway and then proceed to design and install a vertical slot counter at the north shore fishway at The Dalles Dam to count adult runs accurately and to improve adult fish passage

Background.—The Dalles Dam is the only federal project that has horizontal rather than vertical counting boards in the counting stations. Accurate identification and counting of fish is necessary for management. The existing counting facility is inadequate. Preliminary design of new counting boards by the Corps of Engineers has been approved by the fish and wildlife agencies. [Source Council staff.]

Section 700.
Wild, Natural and Hatchery Propagation



SECTION 700. WILD, NATURAL AND HATCHERY PROPAGATION

704. MEASURES

-

(a) Coordination of Propagation Measures

-

(1) The Council will explore alternative means, including consultation with the fish and wildlife agencies, tribes and utilities, for obtaining the best available scientific knowledge in the following areas:

-

(A) Salmon and steelhead biology, specifically reproduction;

-

(B) Propagation of wild, natural and hatchery fish;

-

(C) Techniques for improvement of habitat;

-

(D) Columbia Basin geography, hydrology, and meteorology;

-

(E) Hatchery biology;

-

(F) Genetics, diagnosis, and control of disease and parasites;

~~(G) Engineering necessary to support (A) through (F).~~

~~(H) Current status of Columbia Basin fish stocks.~~

~~(I) Management of commercial and recreational harvest of anadromous fish; and~~

~~(J) Indian treaty rights.~~

~~The Council will rely on a broad base of scientific information to determine the most effective and impartial means of achieving protection, mitigation and enhancement of Columbia River Basin fish and wildlife.~~ [Source: Technical proposal by Council staff, on the basis that these needs are addressed more effectively in the planning sections and in specific measures.]

~~(b)~~(a) Providing Suitable Flows

(1) In accordance with the mid-Columbia FERC settlement agreement of March 20, 1980, **and other applicable settlements,** the FERC shall require Grant County PUD to ~~continue studies to determine the effect of varying~~ **provide suitable** flows ~~to~~ **on the protect** spawning, incubation, **emergence** and rearing of fall chinook salmon ~~from~~ **below** Priest Rapids Dam through the Hanford Reach. Results shall be reported to the Council and to the FERC. [Source: Council staff.]

(17) Bonneville shall provide power or repayment for operation and maintenance costs associated with provision of power to Bureau of Reclamation pumping plants designed to exchange Columbia River water for Umatilla River water. The Bureau of Reclamation must

obtain consent from all affected water users and regulators and provide assurance that the pumping operations will result in specified flows for salmon and steelhead in the Umatilla Basin at levels which the fish and wildlife agencies and tribes agree are suitable for low, average, and above average water conditions. The Bureau of Reclamation shall fund state and tribal fish and wildlife agency monitoring and evaluation studies to determine the biological effectiveness of this measure. [Source 704(d)(2)/Umatilla]

(18) After development of relevant subbasin plans under program section 203, in consultation with the fish and wildlife agencies and tribes, the Corps of Engineers shall fund studies to determine the feasibility of constructing a reservoir for storage and flow augmentation in the Walla Walla River for the protection, mitigation and enhancement of anadromous fish. The study also will consider the need for additional stream gauge stations. As a part of the study, the existing river flow regime should be documented along with the development of instream flow incremental method data and estimates of weighted usable area with existing and augmented storage conditions. A water flow management plan will be developed demonstrating how existing water rights and instream flows for fish will be achieved under varying water conditions. [Sources. 704(b)/WDG-2. 704(d)/MFCC]

(d) Habitat Improvement and Passage Restoration

(1) Upon approval by the Council, Bonneville shall provide funds for habitat improvement and passage restoration or improvement measures in the Columbia River Basin as specified in Table 2. Until program goals are established through Section 201, Bonneville shall develop an annual work plan for funding projects from the table. Bonneville shall present its plan for project selection and

funding for the following fiscal year to the Council. The plan shall be developed in consultation with the fish and wildlife and land management agencies and tribes. Bonneville's plan shall include:

(A) An explanation of the sound biological basis for project selection taking into account these factors:

(i) Existing smolt production, existing potential for smolt production, and potential with habitat or passage improvement;

(ii) Existing escapement and potential escapement;

(iii) Existing wild and naturally spawning stock trends and conditions;

(iv) Benefits to multiple anadromous species and runs;

(v) Extent and condition of habitat available through passage restoration;

(vi) Requirements for hatchery supplementation, including genetic and disease considerations;

(vii) Ocean and river harvest management considerations;

(viii) Status of diversion screening and requirements for improvement;

(ix) Effects of project on resident fish stocks;

(x) Analysis of all factors limiting existing and potential production.

(xi) Emphasis on protection, mitigation and enhancement of upriver stocks of anadromous fish.

(xii) The extent of coordinated tributary subbasin planning for habitat management, improvement and passage restoration.

(xiii) Plans for protection of the enhancement investment from land use and other activities in the tributary subbasin.

(xiv) A means to evaluate the effectiveness of the projects.

(B) Cost estimates.

(C) Time schedules.

(D) A description of coordination and consultation efforts, including:

(i) History of cooperative efforts by fish and wildlife agencies, tribes, utilities and private landowners regarding offsite enhancement in the tributary subbasin.

(ii) Information on whether the fish and wildlife agencies, tribes, and land management agencies concur in the annual work plan.

~~To the greatest extent feasible, Bonneville shall focus its annual work plans in a limited number of tributary subbasins. It also shall select projects which will provide information which can be applied elsewhere in the Columbia River Basin. The work plan shall provide for evaluation of effectiveness which shall be in terms of specific subbasin production enhancement and applicability to other subbasins. The Council also encourages the development of agreements providing for cost sharing between Bonneville and appropriate entities for the implementation of those measures which are necessary to mitigate non-hydroelectric effects.~~

Bonneville shall fund the habitat and tributary passage projects from Table 2 as provided in section 1504, action item 34.5. The Council expects other projects listed in Table 2 to be considered in subbasin planning conducted pursuant to section 204. [Source: Council staff. Concepts now reflected in section 204 and action item 34.5 of section 1504.]

ADDITIONS TO TABLE 2, SECTION 704(d)

Area: Subbasin / Project Site	Habitat/Passage Problem	Solution (Enhancement Projects)	Species Benefitted	Source
COLUMBIA RIVER BELOW BONNEVILLE DAM:				
Willamette Subbasin				
• Mohawk River	• Logging Activities	• Improve Rearing Habitat/ Construct Pools • Provide Passage • Off-Channel Development	• Steelhead	704(d)(1), BLM
COLUMBIA RIVER BETWEEN BONNEVILLE DAM AND CONFLUENCE WITH SNAKE RIVER:				
Deschutes Subbasin				
• Deschutes River, mainstem above Pelton Dam and Tributaries	• Adult/Juvenile Passage • Habitat Study	• Feasibility Study • Provide Passage • Habitat Study	• Chinook • Sockeye • Steelhead	704/WSCT
• ~~White River Falls~~	• ~~Adult/Juvenile Passage~~	• ~~Feasibility Study~~ • ~~Adult/Juvenile Passage~~	• ~~Chinook~~ • ~~Steelhead~~	Council staff [Feasibility study complete, passage not complementary to actions of fish and wildlife agencies]
Walla Walla Subbasin[1]				
• Walla Walla River • Mill Creek • Henry Canyon Creek	• Rearing Habitat • Adult Holding Habitat	• Feasibility Study • Improve Flows • Control Water Flows	• Chinook[2] • Coho[2] • Steelhead	704(d)/WDG

[1] One or more problem(s) and solution(s) listed occur for each project site.
[2] Potential for reintroduction.

Subbasin Project Site	Habitat/Passage Problem	Solution (Enhancement Projects)	Species Benefitted	Source
• Tiger Creek • Couse Creek • North Fork Walla Walla River and Tributaries • South Fork Walla Walla River and Tributaries • South Fork Touchet River • North Fork Touchet River • Burnt Fork Creek • Griffin Fork Creek • Robinson Fork Creek • Lewis Creek • Spangler Creek	• Low Flows • Adult/Juvenile Passage • Bank Instability	• Bank Stabilization • Improve Rearing Habitat/ Construct Pools		
COLUMBIA RIVER BETWEEN CONFLUENCE OF SNAKE RIVER AND CHIEF JOSEPH DAM:				
Yakima Subbasin				
Upper Yakima River (above Naches River)				
• Selah - Moxee, Ellensburg Mill, Tjossem, Fogarty, Vertree I & II, Old Cascade, Bull, Peterson, McAusland Broadbank, Younger, O'Connor Diversion,	• Irrigation Diversion-Adult/Juvenile Passage	• Improve Fish Screening Facilities	• Spring Chinook • Steelhead	900/YIN-4

Subbasin Project Site	Habitat/Passage Problem	Solution (Enhancement Projects)	Species Benefitted	Source
• New Cascade Diversion	• Irrigation Diversion-Adult/Juvenile Passage	• Improve Fish Bypass, Replace Fish Pump with Gravity Bypass, Install Trash Rack, Install Gantry Crane	• Spring Chinook • Steelhead	900/YIN-4
• Teanway River - Musetti, Bussoli, Bugni, Guistetti - Busoli, Contratto, Seaton, Ballard, Guistetti-Contratto, Favro, Contratto-Banchi, Cooper-Masterson Peterson, Broadbank Diversons	• Irrigation Diversion-Adult/Juvenile Passage	• Improve Fish Screening Facilities	• Spring Chinook • Steelhead	900/YIN-4
Naches River				
• Selah-Naches, Congdon, Old Union, Fruitvale, Naches-Cowiche, Gleed, Kelly-Lowery, Powell, LaFortune, Lindsay, Scott, Clark, Mill, Anderson, Emerick, Brewer, Foster-Naches, Taylor, Ireland Diversions	• Irrigation Diversion-Adult/Juvenile Passage	• Improve Fish Screening Facilities	• Spring Chinook • Summer Chinook • Steelhead	900 YIN-4
• Tleton River - Sinclair-Cobb, Tennant, Yakima-Tieton, Gnavaugh Diversions	• Irrigation Diversion-Adult/Juvenile Passage	• Improve Fish Passage Facilities	• Spring Chinook • Summer Chinook • Steelhead	900 YIN-4

Area: Subbasin Project Site	Habitat/Passage Problem	Solution (Enhancement Projects)	Species Benefitted	Source
• Rattlesnake Creek-McDaniels, Beck Diversions	• Irrigation Diversion-Adult/Juvenile Passage	• Improve Fish Passage Facilities	• Spring Chinook • Summer Chinook • Steelhead	900/YIN-4
Lower Yakima River (below the Naches River)				
• Union Gap, Moxee-Hubbard, Kiona, Moxee, Boise-Cascade Diversions	• Irrigation Diversion-Adult/Juvenile Passage	• Improve Fish Screening Facilities	• Fall Chinook • Steelhead	900, YIN-4
• Ahtanum River - Wapato Diversions	• Irrigation Diversion-Adult/Juvenile Passage	• Improve Fish Screening Facilities	• Fall Chinook • Steelhead	900 YIN-4
• Satus Creek - Shattuck Diversions	• Irrigation Diversion-Adult/Juvenile Passage	• Improve Fish Screening Facilities	• Fall Chinook • Steelhead	900 YIN-4
SNAKE RIVER BELOW HELLS CANYON DAM:				
Clearwater Subbasin				
• Lolo Creek	• Rearing Habitat	• Improve Rearing Habitat/ Construct Pools	• Chinook • Steelhead	704(d)(1) USFS-1
• American River	• Rearing Habitat	• Protective Fencing • Bank Stabilization • Improve Rearing Habitat/ Construct Pools • Off-Channel Development	• Chinook • Steelhead	704(d)(1) USFS-2

Subbasin Project Site	Habitat/Passage Problem	Solution (Enhancement Projects)	Species Benefitted	Source
• South Fork Clear-water Tributaries	• Adult/Juvenile Passage	• Provide Passage	• Chinook • Steelhead	704(d)(1)/USFS-3
• Meadow Creek	• Rearing Habitat	• Protective Fencing • Riparian Revegetation • Improve Rearing Habitat/ Construct Pools	• Chinook • Steelhead	704(d)(1)/USFS-4
• Selway River Tributaries	• Adult/Juvenile Passage	• Provide Passage	• Chinook • Steelhead	704(d)(1)/USFS-5
• South Fork White-bird Creek	• Adult/Juvenile Passage	• Provide Passage • Unspecified Habitat Improvements	• Chinook • Steelhead	704(d)(1)/USFS-6
• Little Slate Creek	• Adult/Juvenile Passage	• Provide Passage • Unspecified Habitat Improvements	• Chinook • Steelhead	704(d)(1)/USFS-7
Salmon Subbasin				
• East Fork, South Fork Salmon River	• Sedimentation/ Pollution • Mining/Dredging • Adult/Juvenile Passage	• Channel Rehabilitation • Provide Passage	• Chinook • Steelhead	704(d)(1) IDFG 3
• South Fork Salmon River	• Sedimentation/ Pollution • Mining/Dredging • Riparian Degradation • Channel Degradation/ Bank Instability	• Riparian Revegetation • Bank Stabilization • Channel Rehabilitation	• Chinook • Steelhead	704(d)(1) IDFG-1
• Little Salmon River Boulder Creek	• Adult/Juvenile Passage	• Provide Passage	• Chinook • Steelhead	704(d)(1) IDFG-2

(g) Release Sites for Hatchery-Reared Fish

(1) Bonneville shall provide funds to evaluate sites suitable for release of hatchery fish and the levels of release compatible with natural propagation and harvest management. Initial efforts shall focus on the needs of upriver stocks. The Council will adopt **review** a comprehensive plan for reprogramming lower river hatcheries **developed by the fish and wildlife agencies and tribes.** Where current knowledge is sufficient, certain stocks may be moved to particular upriver streams. ~~The fish and wildlife agencies and the tribes will cooperate in this effort.~~ [Source: Council staff.]

(2) ~~Upon approval by the Council of the plan,~~ Bonneville shall provide funds to transfer a portion of the fish from existing lower Columbia River hatcheries to release sites in the upper Columbia River system to assist in restoring naturally spawning stocks.

Background. The Mitchell Act and John Day hatcheries were provided to mitigate fishery losses because of the hydroelectric development of the Columbia River. A reprogramming of hatchery operations and release strategies will rebuild upriver runs and improve tribal fisheries. ~~The tribes already have submitted to the Council a detailed plan for reprogramming lower river hatchery releases into the upper Columbia.~~ **Fish and wildlife agencies and the tribes currently are negotiating harvest and rebuilding plans, which include reprogramming production, in United States v. Oregon.** The Council strongly supports restoration of naturally spawning upriver stocks, but further consultation is required with the fish and wildlife agencies and tribes to determine a final release plan. [Source: Council staff.]

(h) -- Improved Propagation at Existing Facilities

~~(2) (E) The Pacific Northwest Fish Health Protection Committee is expected to develop a coordinated comprehensive fish health protection policy and supporting program.~~

~~**Background.** The Pacific Northwest Health Protection Committee was established in 1984. It is comprised of representatives from state and federal fish and wildlife agencies, Indian tribes, and private fish culturists. [Source Council staff Completed action.]~~

(i) Construction of Major Hatchery Facilities

(3) Bonneville shall fund design, construction, operation and maintenance of a hatchery to enhance the fishery for the Yakima Indian Nation as well as other harvesters. [See also section 904(e)(1).] The hatchery will be a central outplanting facility used to raise juvenile fish for release in the Yakima Basin and elsewhere in the Columbia River Basin. The purpose of the hatchery will be to supplement natural runs. Nothing in this measure is intended to imply that this will be the only outplanting facility for the Yakima Basin or the Columbia River Basin.

(A) Prior to design of the central outplanting facility, the Council will fund the development of a master plan for the facility. During development of the plan, the fisheries agencies and tribes will be consulted. The plan will provide the following:

(i) Release sites in the Yakima Basin and elsewhere in the Columbia River Basin that will benefit from hatchery supplementation

(ii) A detailed production profile that includes the number of fish to be released annually and expected annual adult returns. Stocks identified will be consistent with the goals **system policies** established by the Council under program section 20[1].

[Continue with rest of measure as in current program.] [Source: Council staff.]

(5) Bonneville shall fund evaluation, design, construction, operation and maintenance of an artificial production facility or facilities to raise spring chinook salmon for enhancement of spring chinook in the Hood, Umatilla, Walla Walla, Grande Ronde, and Imnaha rivers in Oregon as partial mitigation for losses at federal mainstem Columbia River dams. The artificial production facility or facilities would be used for outplanting to supplement natural production in these rivers.

(A) Prior to design of the production and outplanting facility or facilities, Bonneville shall fund the fish and wildlife agencies and tribes to evaluate alternative facilities and develop a master plan for the outplanting facility or facilities. The plan will include the following:

(i) A description of release sites in northeastern Oregon that may benefit from hatchery supplementation, including the management history of each stock to be supplemented.

(ii) A detailed production profile that includes the number of fish to be released annually and expected annual adult returns.

(iii) A conceptual design that includes all elements for outplanting, such as satellite acclimation ponds, adult traps or transportation facilities.

(iv) Proposed management policies and procedures that would ensure hatchery releases are consistent with the system policies and subbasin plans adopted by the Council.

(v) An evaluation of sites to verify suitability for outplanting facilities. Evaluations shall include recommendations for using sites as efficiently as possible.

(vi) A proposal for biological monitoring and evaluation studies to assess the effectiveness of outplanting facilities in supplementing natural production of spring chinook stocks in a biologically sound manner.

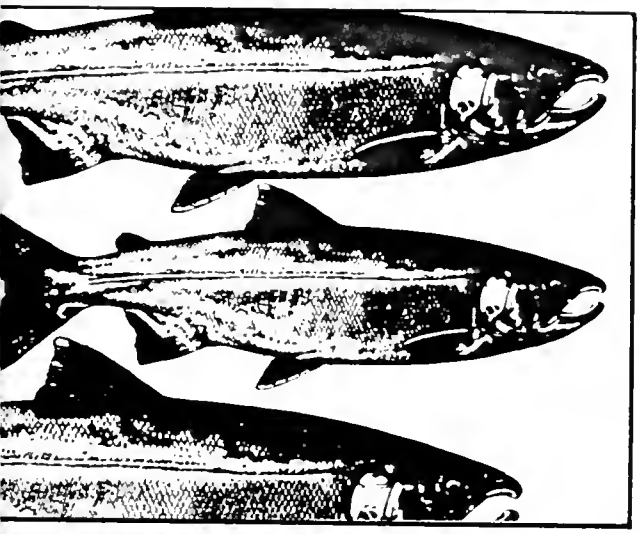
(vii) Preliminary cost estimates.

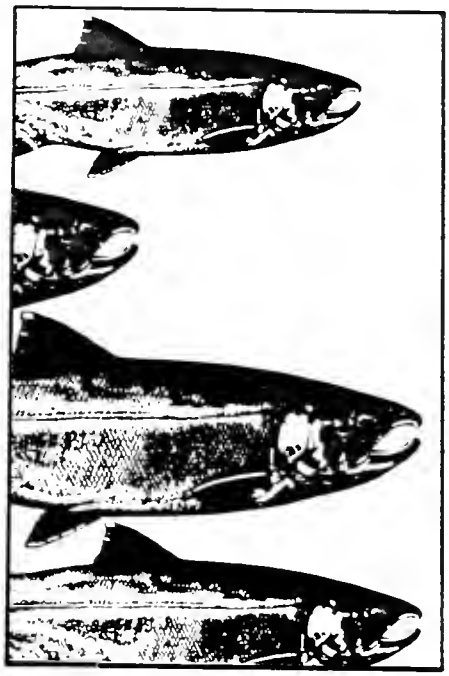
[Source: 704(i) CBFWC.]

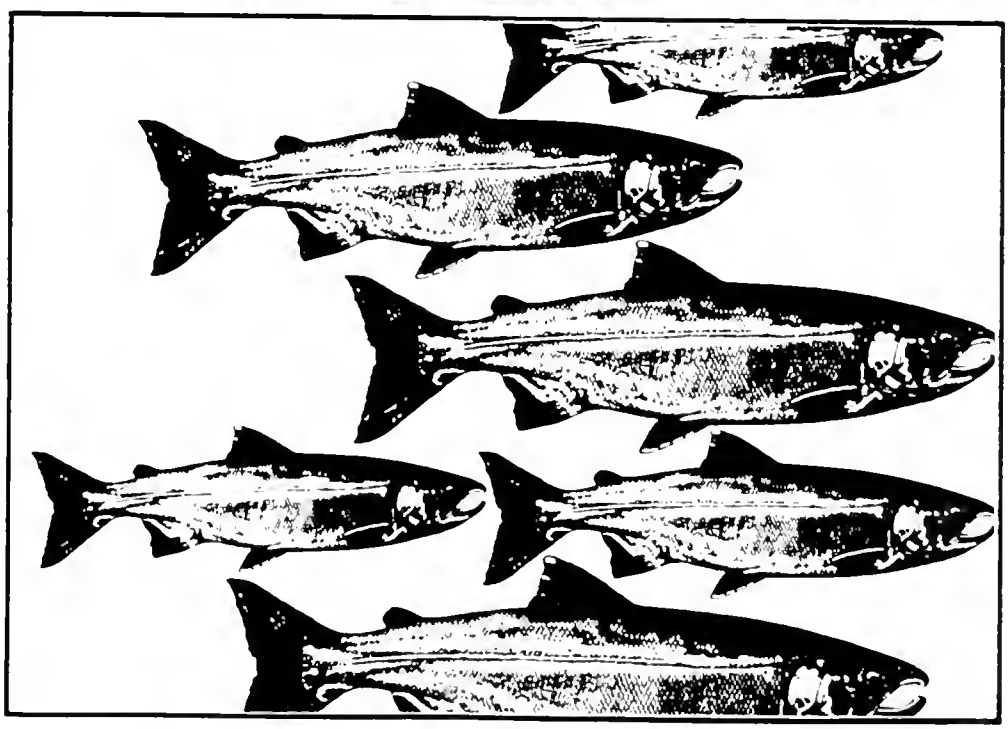
(j) Construction of Low-Capital Propagation Facilities

(3) Bonneville shall fund propagation of salmon and or steelhead smolts in the 2.8-mile long fish ladder located at Pelton Dam on the Deschutes River in Oregon. This production shall be in addition to the fish propagated in the ladder by Portland General Electric to mitigate the effects of Pelton and Round Butte dams and will not affect Portland General Electric's mitigation responsibilities. [Source 704(j) ODFW.]

Section 800.
Resident Fish







SECTION 800. RESIDENT FISH

801. THE PROBLEM

[Add to end of existing section 801]

This section of the program addresses losses of resident fish caused by hydropower development and operation as well as resident fish substitutions for losses of salmon and steelhead pursuant to the policy stated in section 206 of the program. [Source Council]

804. MEASURES

(a) Flow Requirements

(2) Bonneville shall continue to fund a study to evaluate the effects of discharges from Hungry Horse Dam on the distribution and migration of kokanee spawners in the Flathead River and associated effects on power generation Bonneville shall continue to fund the study of the success of kokanee reproduction in Flathead Lake under controlled flows All studies conducted under this measure shall be coordinated to the fullest extent practicable. ~~Preliminary results of these studies shall be completed by November 15, 1985—Proposals for further action shall be made to the Council at that time.~~ **By October 1, 1989, Bonneville shall present to the Council**

recommendations for further action coordinated with other Montana resident fish studies. [Source: 804(a)(2)/MDFWP.]

(3) Upon approval by the Council, Bonneville shall fund a study to evaluate the effects of river level fluctuations resulting from the operation of Kerr Dam on certain game fish in the lower Flathead River and tributaries. ~~These studies shall be completed by November 15, 1988. Proposals for further action shall be made to the Council at that time.~~ By October 1, 1989, Bonneville shall present to the Council recommendations for further action coordinated with other Montana resident fish studies. [Source: 804(a)(3)/SK.]

(4) The FERC shall continue to require Pacific Power and Light Company (PP&L) to ~~maintain the present minimum flow of 40 cfs between Big Fork Dam and the powerhouse. The FERC shall require PP&L to fund a study to determine whether such flow is sufficient to ensure successful reproduction and rearing of resident species such as rainbow trout~~ operate the Big Fork Hydroelectric Project under provisions included in the project's FERC license. PP&L and the Montana Department of Fish, Wildlife and Parks (MDFWP) will continue to work together to ensure coordination of project operations with MDFWP fish management objectives. The FERC shall require MDFWP and PP&L to examine mitigation alternatives to address losses of westslope cutthroat, rainbow, bull trout, and kokanee to the Flathead River system. [Source: 804(a)(4)-(6)/MDFWP.]

~~(5) Upon approval by the Council, the FERC shall require Pacific Power and Light Company to fund studies to:~~

~~(A) Establish the effect of a minimum flow of 20 cfs on reproduction and incubation of kokanee salmon;~~

(B) Establish the effect of a surge flow of 150-250 cfs on migration, spawning, and incubation survival of kokanee during the hours of 2 a.m. to 6 a.m. at least two days per week, and

(C) Determine whether kokanee movement downstream out of Swan Lake is prevented by diversion through the Big Fork powerhouse and investigate appropriate measures to reduce entrainment, if necessary. [Source: 804(a)(4)-(6) MDFWP.]

(6) Bonneville shall continue to provide funds to the Montana Department of Fish, Wildlife and Parks for the placement of spawning sized gravel downstream from Big Fork Dam, and shall provide funds to determine whether the reproduction success of kokanee is improved as a result of the implementation of Section 804(a)(4), (5), and (6). Pacific Power and Light Company will be consulted in the course of all studies conducted in relation to the operation of Big Fork Dam. [Source: 804(a)(4)-(6) MDFWP.]

(9) Upon approval by the Council, Bonneville shall fund studies to determine the flows required to ensure successful migration, spawning, and rearing of rainbow and cutthroat trout in certain tributaries to the Kootenai River (Callahan, Quartz, Libby, and O'Brien creeks, and the Fisher River) and tributaries to Lake Kookanusa (Graves, Deep, Big, Bristow, Barron, and Five-Mile creeks). [Source: Council staff.]

(b) Drawdown Requirements

(1) The Bureau of Reclamation and the Corps of Engineers, in consultation with the Council and

the Montana Department of Fish, Wildlife and Parks shall develop operating procedures which will limit drawdown of Hungry Horse and Libby reservoirs for power purposes to protect resident fish to the fullest extent practicable. These procedures shall be developed by November 15, 1987, and shall incorporate the following conditions:

(C) ~~Upon approval by the Council,~~ Bonneville shall fund studies to evaluate the effect of the operating procedures on resident fisheries. These shall include a study of the effects of Libby Dam operations on reproduction and rearing of white sturgeon in the Kootenai River. The study shall assess when and where fish are present, food requirements and sources, effects of pollutants, population recovery and propagation methods, and [Source: Council staff.]

(2) ~~Upon approval by the Council,~~ The Bureau of Reclamation and the Corps of Engineers shall implement the operating procedures for Hungry Horse and Libby reservoirs. In the meantime, these agencies shall make every effort to comply with the drawdown limits. [Source: Council staff.]

(3) ~~Upon approval by the Council,~~ Bonneville shall fund the following research to develop reservoir operating procedures:

~~These studies shall be completed~~ **Bonneville shall present recommendations concerning these studies to the Council** by November 15, ~~1986~~7. Proposals for further action shall be submitted to the Council at that time. [Source: 804(b)(3), MDFWP, Council staff.]

(4) ~~Upon approval by the Council~~ Bonneville shall fund the design, construction, operation and maintenance of ~~a spawning channel along~~ **mitigation projects in** the Flathead River-**Lake system** to supplement propagation of natural fish in the river as mitigation for habitat loss in the South Fork and Flathead rivers caused by **dam construction, and** drawdown of and discharges from Hungry Horse Reservoir. Bonneville shall fund a study to determine levels of production necessary to mitigate the effects of the hydroelectric system, and shall submit the results of the study to the Council for review prior to approval of ~~a spawning channel. Construction of the channel~~ **mitigation measures. The study** shall be completed **and Bonneville shall present recommendations for further action to the Council** by November 15, 1987. [Source 804(b)(4), MDFWP, Council staff.]

(5) In coordination with section 804(a)(2), Bonneville shall continue to fund the study designed to develop measures to improve the success of the reproduction of kokanee in Flathead Lake. The study shall investigate the following factors related to lake drawdown caused by the operation of Hungry Horse and Kerr dams for hydroelectric purposes:

These studies shall be conducted in cooperation with the Confederated Salish-Kootenai Tribes, Montana Power Company and the Bureau of Reclamation. ~~The studies shall be completed by November 15, 1987.~~ **By October 1, 1989, Bonneville shall present the Council with recommendations regarding these studies. The recommendations shall be coordinated with the above agencies, tribes and other Montana resident fish projects.** Proposals for further action **also** shall be submitted to the Council at that time. [Source: 804(b)(5), MDFWP.]

(6) ~~Upon approval by the Council,~~ Bonneville shall fund a study to evaluate the effects from the operation of Kerr Dam on certain game fish, including bass, Dolly Varden and kokanee, in South

Bay of Flathead Lake. ~~These studies shall be completed by November 15, 1987. Proposals for further action shall be submitted to the Council at that time.~~ **All studies conducted under this measure shall be coordinated to the fullest extent practicable. By October 1, 1989, Bonneville will present the Council with recommendations regarding these studies. The recommendations shall be coordinated with other Montana resident fish studies.** [Source: 804(b)(6) SK]

(c) Temperature Control

(1) The Bureau of Reclamation, the Corps of Engineers and other project operators, in consultation with the Council, tribes, and fish and wildlife agencies, shall use storage, where existing structures allow, to maintain water temperatures within those ranges which are best for fish habitat. [Source: Council staff]

(e) Additional Restoration Measures

(1) ~~Upon approval by the Council, Bonneville shall provide interim funding for the purchase of 10,000 acre-feet of water from Painted Rocks Reservoir to maintain summer and fall flows for resident fish in the Bitterroot River. This action will compensate for loss of a significant fishery in the upper Clark Fork drainage. The Council will explore whether the 10,000 acre-feet of water can be purchased in perpetuity and whether additional stream guaging stations, a water commissioner or water plan would be necessary to ensure that water purchased and discharged for fish is not diverted for other purposes.~~ **FERC shall require Montana Power Company to provide permanent funding to purchase 10,000 acre-feet of water from Painted Rocks Reservoir to**

maintain summer and fall flows for resident fish in the Bitterroot River as mitigation for the impacts of the Thompson Falls projects on resident fish. The 10 000 acre-feet will be in addition to the 3 200 acre-feet base flow and 5 000 acre-feet already purchased in perpetuity by the Montana Department of Fish Wildlife and Parks Western Mountain Fish and Game Association and Ravalli County Fish and Wildlife Association ~~FERC shall require the project operators to reimburse Bonneville and to provide permanent funding or other full mitigation for the impacts of the projects on resident fish.~~ [Source 804(e)(1) MDFWP]

~~(2) Upon approval by the Council, Bonneville shall fund an evaluation of the effectiveness of the additional water in enhancing resident fish in the Bitterroot River.~~ [Source 804(e)(1) MDFWP]

(3) ~~Upon approval by the Council,~~ Bonneville shall fund efforts to increase the number of rainbow trout in the Kootenai River by planting fingerling trout of a suitable stock for the river habitat, and to restore sturgeon and ling (burbot) populations in that river [Source Council staff]

~~(4) Upon approval by the Council, Bonneville shall fund an evaluation of the degree to which the Albeni Falls and Cabinet Gorge projects are responsible for the decline of the Lake Pend Oreille fishery, and the level of mitigation necessary to restore a reasonable number of fish in Lake Pend Oreille.~~ [Source: Council staff Measure completed]

~~(5) Upon approval by the Council, Bonneville shall fund the design, construction, operation, and maintenance of a hatchery on the Clark Fork River to achieve the level of fish restoration defined in Section 804(e)(4).~~ [Source Council staff Measure completed]

~~(6) The Idaho Department of Fish and Game will provide further evidence to the Council that increased levels of stocking with hatchery fish will mitigate the effects of construction and operation of Cascade Reservoir. Upon approval by the Council, Bonneville shall fund the propagation and release of additional fingerlings in the reservoir.~~ [Source: Council staff. Because Cascade Dam is a nonhydroelectric facility, the Council staff proposes to delete this measure since there is no evidence that it is directed at the effects of hydropower operation and development.]

(7) The Bureau of Reclamation shall fund ~~installation and maintenance of a~~ **the** barrier net system at the outlet from Banks Lake into the main irrigation canal to conserve the spawning population of kokanee in the lake. The purpose of this measure is to prevent the migration of kokanee that results from reservoir fluctuations caused by hydroelectric operation of Grand Coulee Dam. [Source: Council staff.]

(10) The Idaho Department of Fish and Game will provide information to the Council on whether habitat in the Clearwater River below its north fork is suitable for rainbow trout. If the habitat is suitable **and there will be no conflict with production of chinook salmon**, the Department will provide a plan to stock the river with rainbow trout. ~~Upon approval by the Council,~~ Bonneville shall fund the program for stocking. [Source: Council staff.]

(11) ~~Upon approval by the Council, Bonneville shall fund the following research in the lower Clark Fork drainage, which shall be completed by November 15, 1987~~**The Montana Department of Fish, Wildlife and Parks and the Washington Water Power Company will conduct the following research in the lower Clark Fork drainage:**

(A) Assess the existing habitat suitability for species now present and those designated for possible introductions and assessment of spawning, rearing, food, and cover habitats and hydrological, limnological, and water quality conditions; and

(B) Determine the most feasible methods to improve habitat suitability or increase habitat availability for desirable species, considering particular species needs, project operations, costs and other constraints. [Source: 804(e)(11), MDFWP.]

(16) **The Corps shall fund a study to evaluate the existing and potential salmonid and spiny-rayed fisheries in the Pend Oreille River from Lake Pend Oreille downstream to Albeni Falls Dam.** [Source: 804(e)(4), IDFG.]

(f) Review of Amendment Applications

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(16)**(1)** In reviewing applications to amend the program to add resident fish projects, the Council will consider whether the proposed projects are supported by: a) documentation of or agreement on resident fish losses attributable to the hydroelectric facility at issue; b) evidence that significant biological gains will be achieved by the expenditure; and c) evidence that the project will result in no significant conflict with efforts to restore anadromous fish.

Background. Resident fish have been significantly affected by changes in habitat and blockage of migration due to hydroelectric development. The nature and extent of those effects have not been identified sufficiently to permit development of specific goals for onsite or offsite mitigation. It is even arguable that in some cases resident fish have been enhanced by hydroelectric development. [Source: Council staff. Formerly section 804(e)(16).]

(g) Resident Fish Substitutions (See associated policy in section 206.)

[Note: All 804(g) proposals also reflect modifications by Council staff.]

(1) Bonneville shall fund the following resident fish substitution actions in the blocked area above Chief Joseph Dam to partially mitigate for salmon and steelhead losses incurred as a result of the construction and operation of Chief Joseph and Grand Coulee dams:

(A) ~~Bonneville shall fund the d~~Design, construction, operation and maintenance of a resident trout hatchery on the Colville Indian Reservation. ~~to partially mitigate for anadromous and other fish losses resulting from the construction and operation of the Chief Joseph Dam and Grand Coulee Dam hydroelectric projects.~~ The Council expects that state-of-the-art technologies will be used in the design of the hatchery. [Source: Council staff. Formerly section 804(e)(15).]

(B) **A baseline stream survey of tributaries located on the Coeur d'Alene Reservation. The survey will compile information pertaining to improving spawning habitat, rearing habitat, and access to spawning tributaries for cutthroat and bull trout, and evaluating the existing fisheries. If justified by the results of the survey, fund the design, construction and operation of a cutthroat and bull trout hatchery on the Coeur d'Alene Reservation, necessary habitat improvement projects, and a three-year monitoring program to evaluate the effectiveness of the hatchery and habitat improvement projects.** [Source: 804(e)/UCUT-1.]

(C) (1) Design, construction, operation and maintenance of two kokanee salmon hatcheries: one at Galbraith Springs and one at Sherman Creek. The Spokane Tribe will be responsible for the facility to be located at Galbraith Springs. The Washington Department of Game will be responsible for the facility to be located at Sherman Creek. The Sherman Creek hatchery will be used as an imprinting site and egg collection facility to provide a source of kokanee fry for: i) stocking into Banks Lake and ii) transfer to Galbraith Springs hatchery for rearing to fingerling size before planting into Lake Roosevelt. Decisions on hatchery production, stocking and outplanting locations will be coordinated by a three-member committee consisting of one representative each appointed by the Colville Confederated Tribes, Spokane Tribe, and Washington Department of Game.

(2) Capital, operation, and maintenance costs of pilot projects for improving habitat and passage into and out of Lake Roosevelt tributary streams for rainbow trout. The aim of this measure is to emphasize natural production by: i) facilitating passage of migratory rainbow trout between Lake Roosevelt and its tributary streams, and ii) improving fry and fingerling rearing habitat in these streams. The Spokane Tribe, Colville Confederated Tribes, and Washington Department of Game will be responsible for these improvements.

(3) Monitoring by the Spokane Tribe, Colville Confederated Tribes, and Washington Department of Game to evaluate the effectiveness of the above measures. The monitoring program shall include the following components: i) a year-round creel census survey to collect information about angler use,

composition and rates of catch; growth and condition of fish; ii) assessment of feeding habitats of kokanee, rainbow, and walleye and densities of their preferred prey; iii) a mark-recapture study designed to assess the effectiveness of different kokanee release and outplanting sites in terms of migratory tendencies and distribution in Lake Roosevelt after release and homing back to those sites during the spawning migration; and iv) comparison of rainbow adults and fingerling abundance in tributaries before and after habitat and passage improvements are made.

(4) These measures shall not be implemented to affect drawdown of Lake Roosevelt and Banks Lake as needed for power and/or downstream salmon and steelhead purposes. [Source 804(e)/UCUT-2.]

(D) A three-year fisheries survey of the Pend Oreille River within the boundaries of the Kalispel Indian Reservation. This survey will provide: (1) baseline information about the existing yellow perch fishery; (2) a means to determine the feasibility of a yellow perch aquaculture facility; and (3) information on the possibility of establishing spawning structures for largemouth bass to overcome fluctuating water levels during egg incubation. If justified by the results of the feasibility study, fund the design, construction, operation and maintenance of a yellow perch hatchery on the Kalispel Indian Reservation. [Source 804(e)/UCUT-3.]

(E) (1) Design, construction, operation and maintenance of a sturgeon and kokanee hatchery on the Kootenai Indian Reservation. The Kootenai Tribe, in

coordination with the Idaho Department of Fish and Game, will be responsible for the hatchery facility.

(2) A survey of the Kootenai River downstream from Bonners Ferry, Idaho to the Canadian border to: (i) evaluate the effectiveness of the hatchery, and (ii) assess the impact of water level fluctuations caused by Libby Dam on hatchery operation for outplanting of sturgeon and kokanee in the Idaho portion of the Kootenai River. The Kootenai Tribe will design and conduct the survey in coordination with the Idaho Department of Fish and Game. [Source 804(e); UCUT-4]

(2) The following resident fish substitution actions in the blocked area above Hells Canyon Dam will be funded by the appropriate party or parties[8] to partially mitigate for salmon and steelhead losses incurred as a result of the construction and operation of federal and private hydropower projects in this blocked area:

(A) Resident fish projects at the Duck Valley Indian Reservation as offsite enhancement to include: i) annual stocking of catchable and fingerling trout of the appropriate stock(s) in reservation lakes and streams; ii) review of reservation surface and groundwater suitability for resident fish production facilities; and iii) evaluation of alternative sources of catchable and fingerling resident fish. [Source 201 SP]

8./ See discussion in introduction to this document.

(B) Design, construction, placement and evaluation of shoreline habitat in C.J. Strike Reservoir to provide for improvement of resident fish populations. [Source 804(e) IDFG-4]

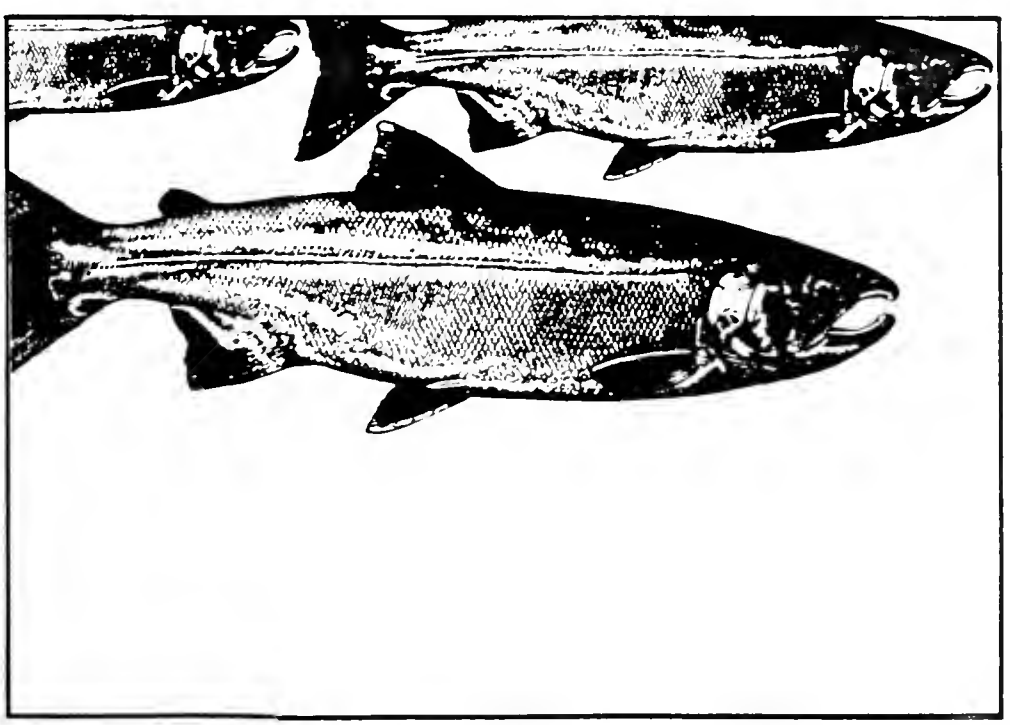
(C) Propagation and release of 400,000 kokanee fry annually into Lucky Peak Reservoir and the construction and operation of a kokanee spawning trap at Lucky Peak Reservoir to take approximately 500,000 eggs. [Source 804(e) IDFG-3]

(D) Design, construction, operation and maintenance of a resident trout hatchery on the Fort Hall Reservation. [Source 804(e)/SB-1.]

(E) Habitat restoration and enhancement activities in Spring Creek and Clear Creek along the Fort Hall Bottoms, located on the Fort Hall Indian Reservation. [Source 804(e)/SB-2]

(F) Habitat improvement measures to enhance redband trout and smallmouth bass in the Malheur River Basin. [Source 804(f)(1)/ODFW]

Section 1000.
Wildlife



SECTION 1000. WILDLIFE

1003. COUNCIL RESPONSE

In 1986, the Council reviewed wildlife plans for the Hungry Horse and Libby projects in Montana. In doing so, the Council determined that wildlife plans should be considered in section 1400 amendment proceedings before they are added to the program for funding. In light of this action, the Council has deleted former Table 5, "Acquisition of Offsite Wildlife Habitat," because it is premature to include land acquisition projects before they are approved and amended into the program. [Source: Council staff]

(b) Mitigation

(4) Upon approval Council review of the mitigation plans ~~by the Council~~ developed pursuant to sections 1004(b)(3) or (5), ~~Bonneville or the appropriate project operator shall fund implementation of the plans developed pursuant to 1004(b)(3) or those options for wildlife mitigation and enhancement projects agreed upon pursuant to 1004(b)(5).~~ the Council will amend appropriate portions of the mitigation plans into the Columbia River Basin Fish and Wildlife Program in accordance with section 1400 of the program. After mitigation plans are amended into the program, Bonneville or the appropriate project operator shall fund implementation as specified in Table 5. [Source: Council staff]

Table 5

Acquisition of Offsite Wildlife Habitat

Project	
Hells Canyon Complex	Acquisition of suitable offsite wildlife range in the states of Idaho and Oregon near the Hells Canyon hydroelectric complex.
Libby Dam	Acquisition of suitable offsite wildlife range as mitigation for the remaining balance of 9,500 acres of an amount previously authorized by Congress.
Grand Coulee Dam	Acquisition of suitable offsite winter range near the Grand Coulee project. The number of acres to be acquired will be determined in the mitigation plan developed under Section 1004(b)(2).
Willamette River Projects	Acquisition of suitable onsite or offsite wildlife range for the four Willamette River Projects. The number of acres to be acquired will be determined in the mitigation plan developed under Section 1004(b)(2).

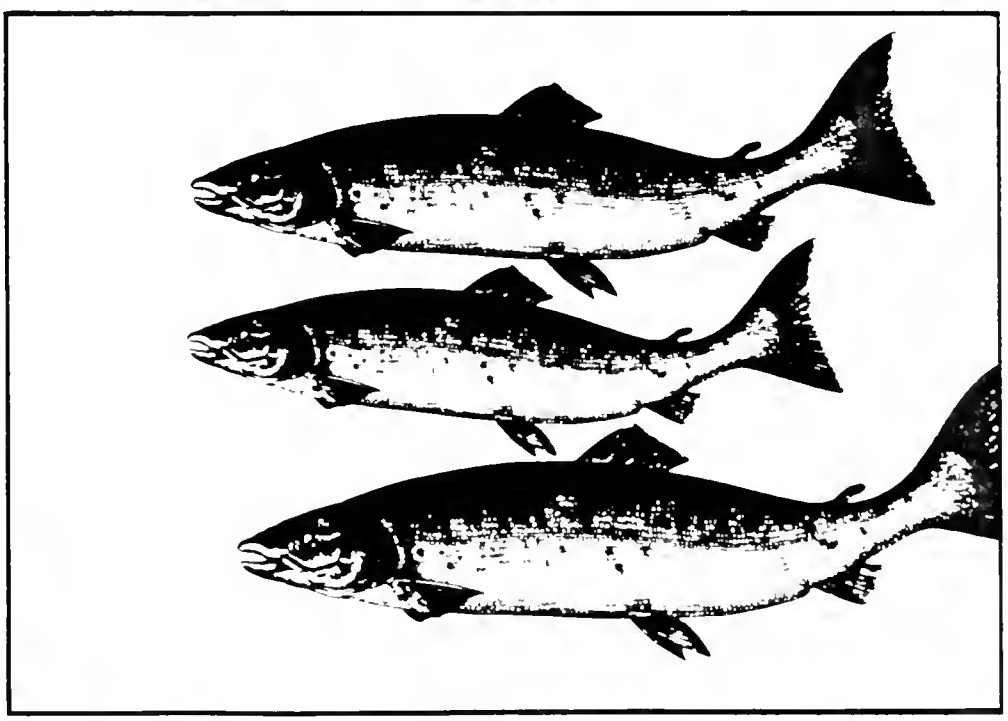
[Source: Council staff]

Project or Area	Target Species	Wildlife or Habitat Losses	Hydropower Obligation Projects Schedule
Hungry Horse Dam	Elk Mule Deer	175 Elk	Bonneville shall fund projects to enhance winter range on Flathead National Forest lands to support an additional 133 elk. Prototype project to test assumption of increased carrying capacity. Total number of acres to be treated will remain flexible until theory of increased carrying capacity is tested. Year 1, prototype advanced design. Years 1-5, implement test and monitor; report to Council for further action. Memoranda of understanding will be signed by Montana Department of Fish, Wildlife and Parks, Flathead National Forest, and Bonneville to ensure that funding for projects is in addition to, and not in lieu of, other expenditures authorized or required from other entities under other agreements or provisions of law. Bonneville shall examine the possibility of establishing a trust account to fund these wildlife projects and others.
	Black Bear	36-45 animals	Bonneville shall fund projects to protect 8,590 acres of riparian habitat and travel corridors through the acquisition of conservation easements. Year 1, advanced design; interagency coordination; prioritizing sites; appraisals. Upon completion, acquire easements.
	Grizzly Bear	3-5 animals	
	Waterfowl	1,508 acres	Bonneville shall fund projects to protect and/or enhance 1,146 acres of wetland habitat in Flathead Valley. Same schedule as bear projects.
	Terrestrial Furbearers	14,542 acres	Bonneville shall negotiate cooperative agreements with state and federal agencies and private landholders to protect 11,050 acres of selected old growth forest stands. Same schedule as bear projects. Initiate agreements in Year 2.

Libby Dam	White-tailed Deer	1,340 animals	Bonneville shall fund projects to enhance and maintain winter range in northwestern Montana to support an additional 1,059 white-tailed deer. Prototype project to test assumption of increased carrying capacity. Total number of acres to be treated will remain flexible until theory of increased carrying capacity is tested. Year 1-3, advanced design: years 3-10, implement and monitor.
	Mule Deer	485 animals	Bonneville shall fund projects to enhance and maintain winter range on Kootenai National Forest lands adjacent to Lake Koocanusa to support an additional 383 mule deer. Prototype project to test assumption of increased carrying capacity. Total number of acres to be treated will not be established until theory of carrying capacity has been tested. Year 1, advanced design. Years 2-10, implement and monitor.
	Bighorn Sheep	89 sheep	Bonneville shall fund projects to enhance and maintain winter/spring range on Kootenai National Forest lands adjacent to Lake Koocanusa to support an additional 70 sheep. Prototype project to test assumption of increased carrying capacity. Total number of acres to be treated will remain flexible until theory is tested. Year 1, advance design. Years 2-10, implement and monitor.
	Columbian Sharp-tailed Grouse	3,116 acres	Bonneville shall fund projects to protect 2,462 acres of prairie habitat within the vicinity of Tobacco Plains. Year 1, advanced design. Years 2-10, acquire easements.
	Waterfowl	13,241 acres	Bonneville shall fund projects to protect and/or enhance 3,418 acres of wetland habitat within the Flathead Valley. Year 1, advanced design. Upon completion of design, implement projects in years 2-10.

[Source: MDFWP proposals, as modified by Council staff]

Section 1100.
Establishment of Fish and Wildlife Committee



SECTION 1100. ESTABLISHMENT OF FISH AND WILDLIFE COMMITTEE

1104. MEASURES

(c) Specific Duties and Functions of Fish and Wildlife Committee

~~(1) The Committee will develop research objectives to carry out this program. This effort will include the following:~~

~~(A) Assess past and present fish and wildlife research projects and determine their relationship to the Council's fish and wildlife program;~~

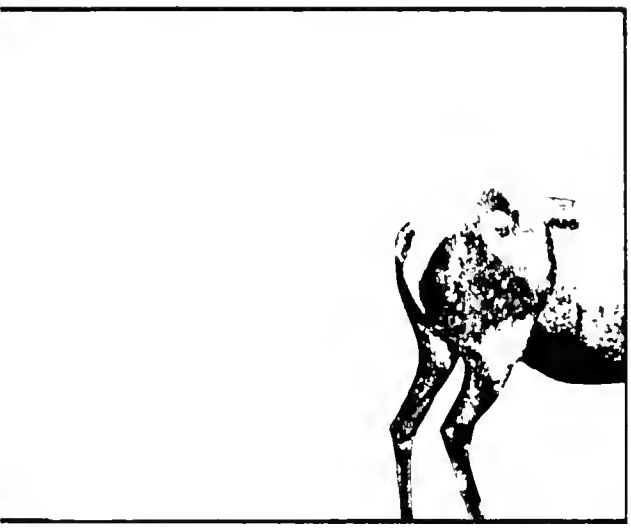
~~(B) Prepare a report on data needs or provide comments on the adequacy of such a report prepared by others;~~

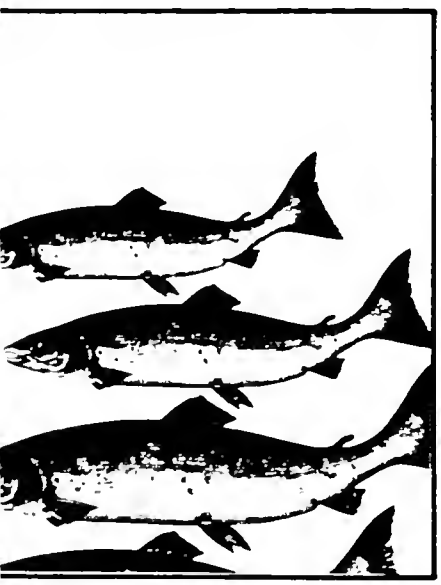
~~(C) Prepare a research plan to be carried out over five years; and~~

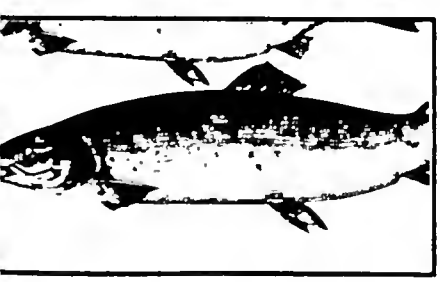
~~(D) Provide the Council with information on the scope of work presented in each research proposal and on the proposed selection of contractors.~~

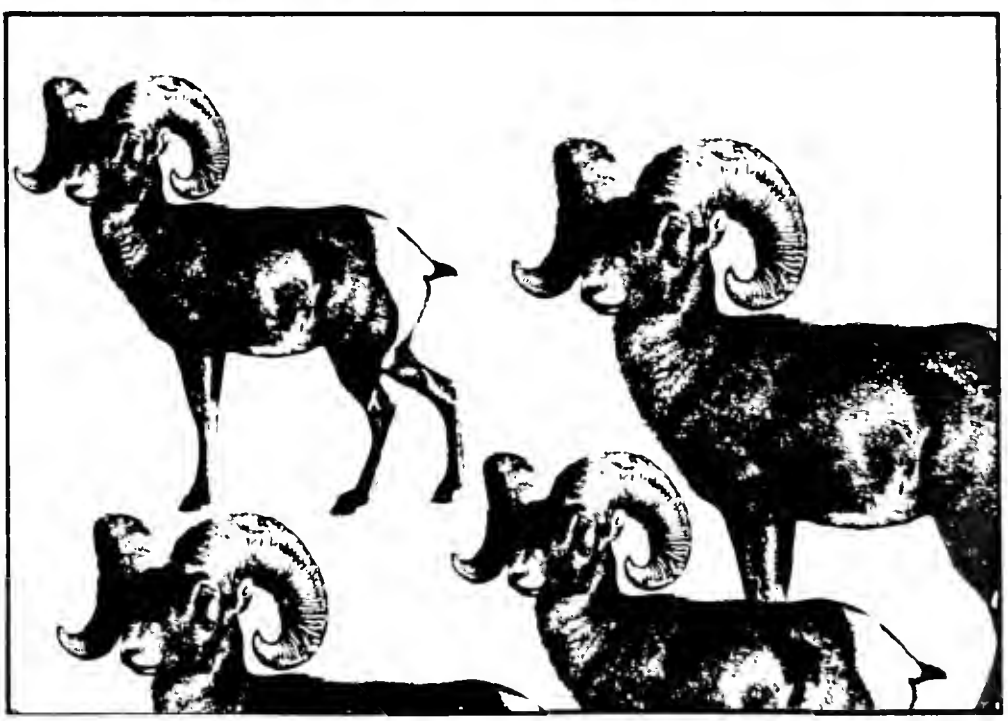
[Source. Council staff in light of research proposal in section 200 of this document]

Section 1200.
Future Hydroelectric Development





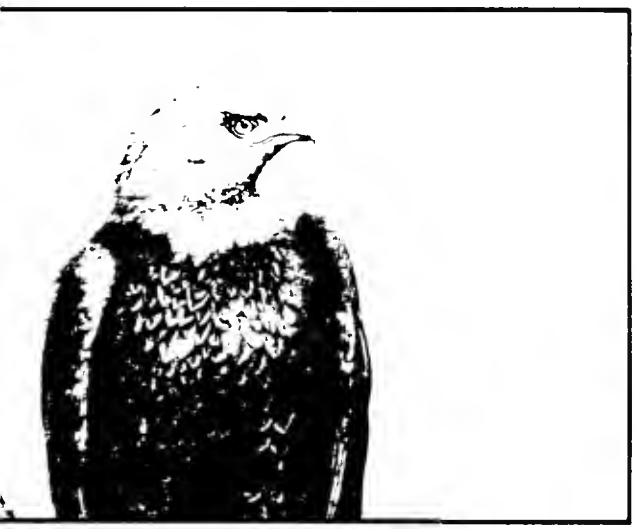


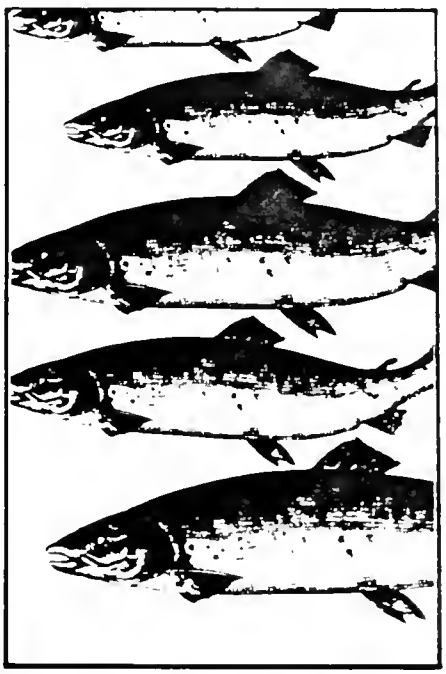


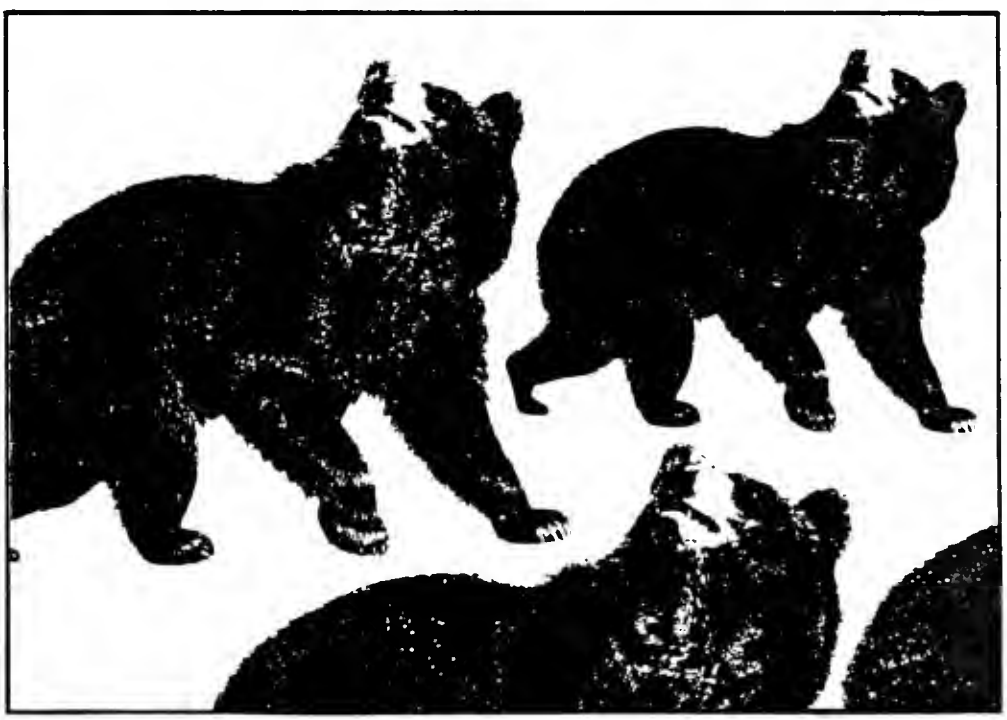
SECTION 1200. FUTURE HYDROELECTRIC DEVELOPMENT

[Note See discussion of protected areas in introduction to this document]

Section 1300.
Coordination of River Operations







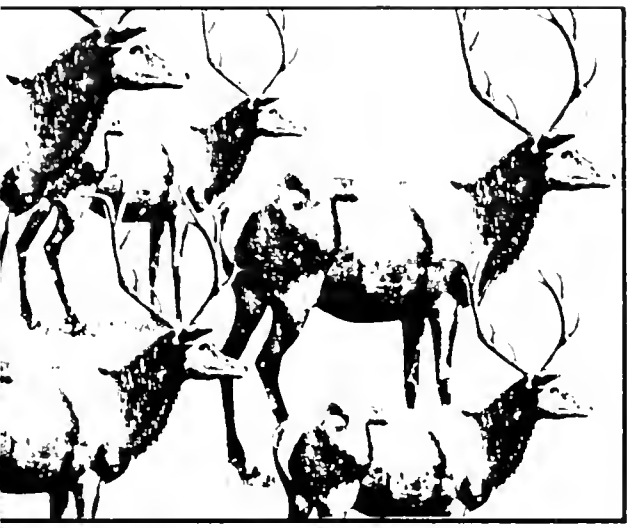
SECTION 1300. COORDINATION OF RIVER OPERATIONS

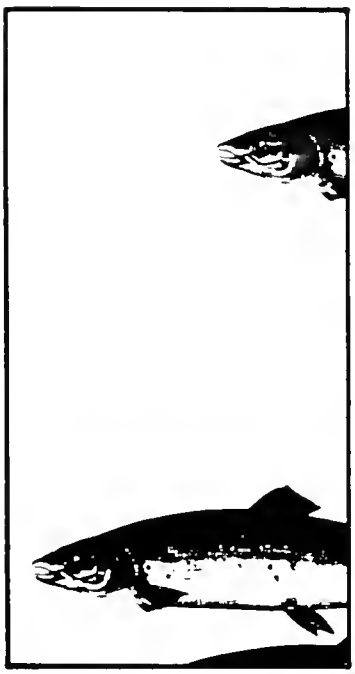
1304. MEASURES

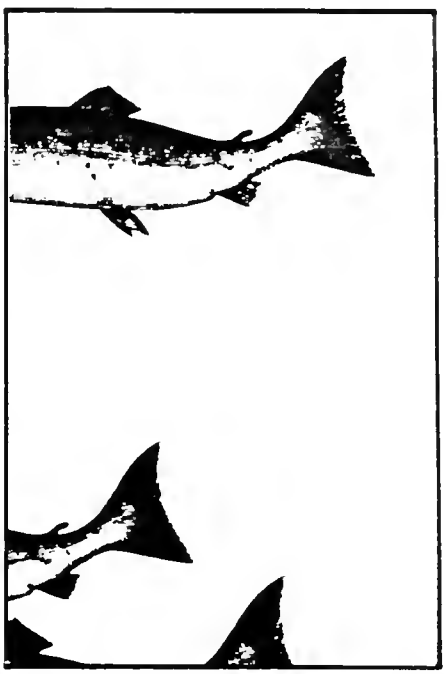
(e) Bonneville Funding

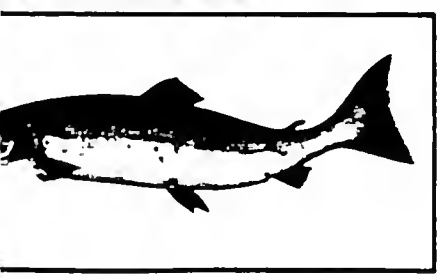
(5) Monetary costs and electric power losses resulting from the implementation of the program shall be allocated by the Administrator consistent with individual project impacts and systemwide objectives of section 4(h) of the Northwest Power Act. [Source: Council staff This language is from the Northwest Power Act. 16 U S C 839b(h)(8)(D).]

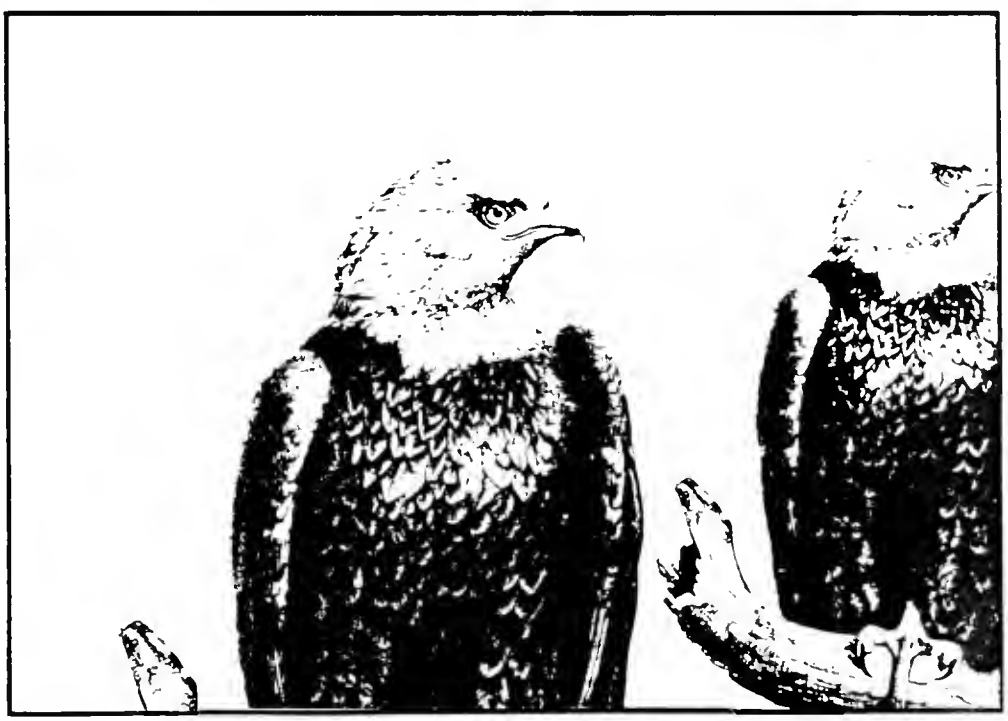
Section 1400.
Amendments











SECTION 1400. AMENDMENTS

1401. THE PROBLEM

Congress gave the Council one year to develop a program that would address the complex technical, legal, economic and political problems associated with the effects of hydroelectric power development on fish and wildlife in the Columbia River Basin. The Council has developed a fish and wildlife program which it believes responds to these problems **and amended it in 1984 and 1987.** The Council is aware, however, that this program is unlikely to please all interested parties or anticipate all implementation problems. The Council must be able to change the program as needed if the program is to be effective. Also, the program must be improved on the basis of evaluating program measures, research results, changing technology, legal developments, efforts to coordinate the Council's program with programs aimed at nonhydroelectric effects on fish and wildlife, and other significant development.

1403. COUNCIL RESPONSE

The Council provided for amendment of the program through motion of the Council and on recommendation of interested entities or individuals. The Council encourages critics of the program to resolve their concerns by consulting with the Council and undertaking to amend the program rather than engaging in divisive, time-consuming, and expensive court proceedings.

The Council believes that the program must be in operation for a reasonable time before its strengths and weaknesses become evident. To ensure that the recommended amendments are well-substantiated and clearly presented, the Council also has established requirements for applications to amend the program. The Council, on its own motion, may amend the program at any time.

Whether an amendment is proposed by the Council or recommended by another entity, amendments to the program must satisfy the criteria established by the Northwest Power Act, including the Act's requirements for public comment and consultation. The Council's amendment process also must accommodate the provision in section 4(g)(3) of the Act for incorporating objectives of the various states and tribes into the program, the requirement of section 4(h)(2) that the Council consider program amendments before review or major revision of the regional energy plan, and the direction in section 4(h)(9) to act on recommendations within one year after their receipt.

~~In 1984 the Council changed the Fish and Wildlife Program amendment cycle to alternate with the Council's Power Plan amendments.~~

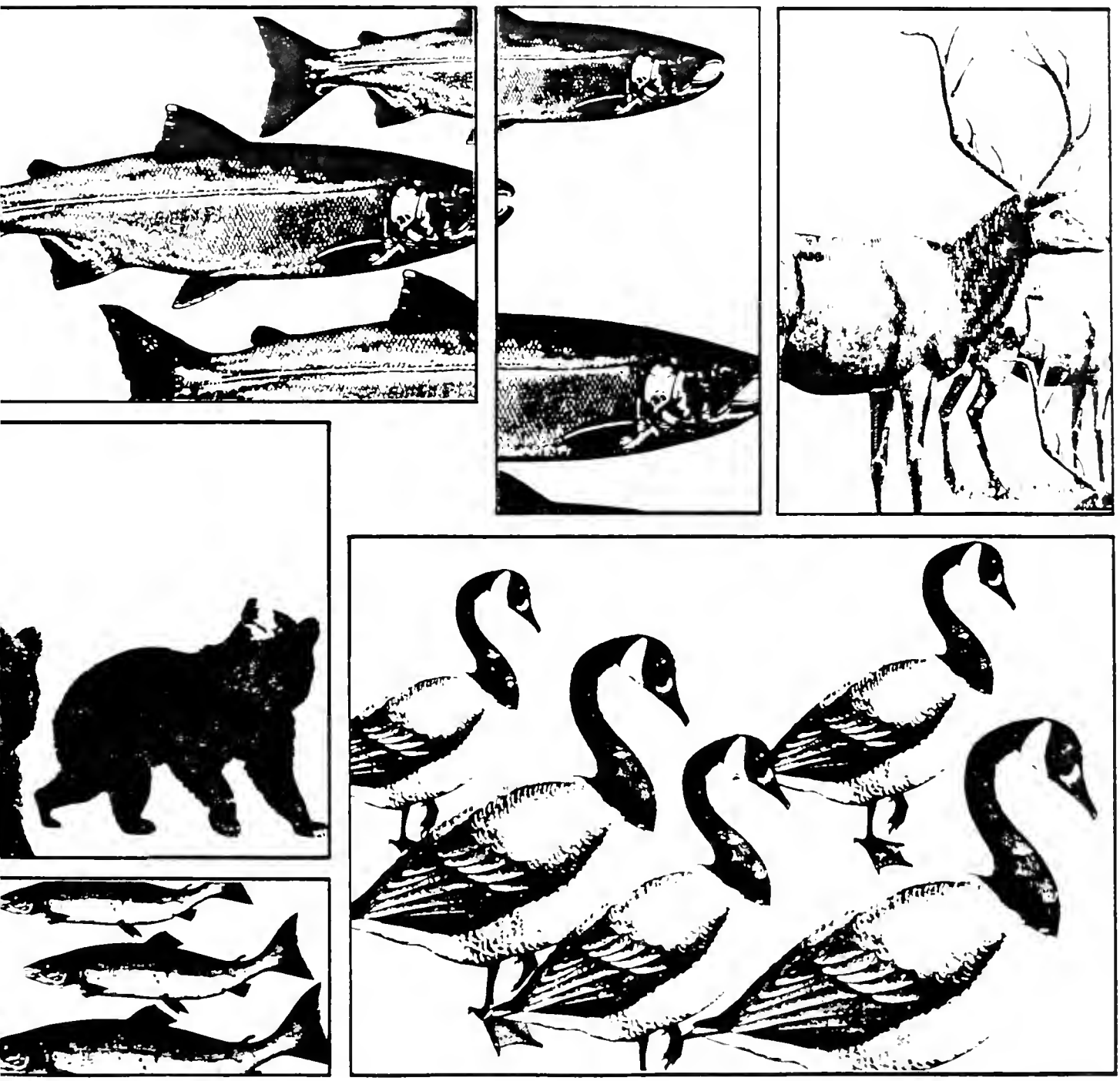
1404. MEASURES

(b) Applications for Amendment

(2) The Northwest Power Act requires the Council to review the Northwest Power Plan at least every five years and to request recommendations to amend the Columbia River Basin

Fish and Wildlife Program "prior to the development or review of the plan, or any major revision thereto." The Council may, in its discretion, request recommendations to amend the fish and wildlife program, or any portion of it, more frequently than every five years, and independently of Power Plan revisions. [Source: Council staff]

Section 1500.
Five-Year Action Plan: 1987-1991



SECTION 1500. FIVE-YEAR ACTION PLAN: 1987-1991[9]

1501. THE PROBLEM

As adopted in 1982, the Council's Columbia River Basin Fish and Wildlife Program contained more than 220 action items. It included deadlines for completion of some of those action items. Otherwise, it left the details of implementation to Bonneville, the other federal implementing agencies, and the fish and wildlife agencies and tribes. Unfortunately, those entities experienced difficulty in agreeing on the appropriate sequence for implementation, scheduling priorities, objectives and mechanisms for measuring progress and evaluating results. Many of these issues ~~continue to~~ plague**d** program implementation. Consequently, implementation of some measures ~~has been~~ **was** delayed while interested parties debate**d** priorities. Given the number of program measures and the complexity of their implementation and funding, designation of interim objectives and more definite scheduling direction clearly ~~are~~ **was** warranted.

In the 1984 amendments to the program, the five-year action plan (section 1500) was added to provide interim objectives and scheduling direction. In the 1986 amendment process, this section was refined, and the applicable duration was extended to 1991.

[Source: Council staff.]

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9 The Council staff has reprinted the five-year action plan in full in this draft because of its importance in identifying appropriate levels of effort through 1991.

It also appears that the Council must develop a systematic means for articulating and addressing the problems of scientific uncertainty. Congress directed the Council to develop a program to protect, mitigate and enhance fish and wildlife on the basis of the "best available scientific knowledge." Unfortunately, the Indian tribes, state and federal fish and wildlife agencies, Bonneville and its customers, and the other federal project operators and regulators sometimes disagree in matters related to the scientific basis for action in the fish and wildlife arena. In some instances, these disagreements involve policy disputes over the pace of funding, the distributional impact of program actions, and other nonscientific matters. However, in other situations the "available" scientific knowledge is sparse or inconclusive. Moreover, the biological consequences of some aspects of the program are unclear in some respects. The challenge for the Council is to develop a means to identify consistently and apply the best available scientific knowledge and continue to promote an action-oriented program in the face of scientific uncertainty.

1502. RECOMMENDATIONS

In 1983, the Council received eight applications for amendment which addressed scheduling problems. They proposed changes in deadlines for a limited number of measures, but none proposed a comprehensive solution to scheduling problems. However, most parties agreed, during the comment period and consultations, that an action planning approach to program implementation is sound. **In response to this need, the program was amended in 1984 to include an action plan that identifies schedules for implementation of program measures over the immediately following five-year period.**

In 1985 the Council received numerous applications for amendment of the action plan that addressed scheduling. These amendments called for rescheduling of action items to address unforeseen delays in implementation, completion, and extra time needs for coordination. In addition, the Council has updated the action plan by striking completed actions, modifying partially completed actions, performing nonsubstantive editing of actions where necessary, and substantive editing of actions to make them consistent with amendment of other portions of the program. [Source: Council staff]

1503. COUNCIL RESPONSE

The Council has adopted a five-year action plan to provide scheduling direction for fiscal years 19857-198991. The Council has concluded that an action plan will speed and improve program implementation by [Source: Council staff]

- Providing a more solid and focused basis for budgeting and planning by the implementing agencies.

- Establishing a clear way to judge the success of program implementation;

- Encouraging the fish and wildlife agencies and tribes to set short-term priorities and begin planning to meet long-term resource needs; and

- Helping the Council improve its efforts to report to the region and Congress on significant fish and wildlife issues.

The interim goals and objectives for this action are set forth below

The action plan indicates measures to be implemented within the next five years It also changes some of the original program deadlines, in response to amendment applications submitted in 1983 and 1985 Most dates in the original program have been deleted The action plan now serves as the primary scheduling section for program implementation The Council has given serious consideration to priorities and constraints in establishing the action plan schedules It expects the implementing agencies to explore every avenue available to them to ensure that these schedules are met (Source Council staff)

The action plan does not add new measures to the program or indicate that program measures not in the action plan should not be implemented It is simply a schedule for implementation Program measures which are not in the action plan should be implemented as soon as possible after measures in the action plan are completed or as soon as the implementing agency can, after giving first priority to action plan items All measures will be implemented over time The Council expects that program measures not in this action plan which require rescheduling will be brought to the attention of the Council, through the amendment process, when action on those measures is necessary

Flexibility

The Council chose a five-year action period to take into account the planning and budgeting requirements of the federal implementing agencies and the lead time needed for major capital expenditures on construction of fish screens, bypass systems and hatcheries The Council

recognizes that it will not be able to anticipate all scheduling difficulties for the next five years. It also appreciates the importance of maintaining a dynamic action plan which can be changed to accommodate new information, technological advances and unforeseeable problems, needs and solutions identified in regular program monitoring and upon completion of the ~~Section 204 goals~~ study, **system policies, subbasin plans,** the section 1204 protected areas study, and other major planning efforts. For this reason, the Council plans periodically to review and update the action plan to ensure that the schedules remain feasible and reflect other changes in circumstances. [Source: Council staff.]

Section 1400 of the Council's program provides two ways for changing the program or the action plan based on new information and developments. ~~First, the Council can change the program in the periodic amendment proceedings on the cycle specified in Chapter 11 of its Power Plan. Second, the Council may change the program on its own motion at any time, based on the recommendations of its staff or on the petition of any interested party. In either case,~~ **making changes,** the Council would provide for public review and comment on the proposed changes. ~~Both mechanisms will allow the Council to update and extend the action plan.~~ The Council has concluded that it could amend the program, including the action plan, on its own motion, in less than 60 days, or even faster in the case of an emergency. [Source: Council staff.]

Primary Action Parties

The Council has identified action items to be implemented by Bonneville, the Corps, the Bureau of Reclamation and FERC, which are the four federal agencies charged with program implementation under the Northwest Power Act. (See section 100.) The actions of those agencies

must complement the activities of the fish and wildlife agencies and tribes which are charged with enhancement and harvest management responsibilities in the Columbia River Basin. The Council also has identified key activities to be undertaken by the fish and wildlife agencies, tribes, and by the Council itself.

Annual Work Plans

The action plan calls on Bonneville to develop work plans for habitat and passage restoration projects under criteria specified in section 704(d), action item 34-5. Work plans also are requested of Bonneville on hatchery effectiveness studies under section 704(h) of the program (action item 34-23). All implementing agencies are to submit program work plans and budget evaluations for past and future activities to assist in the Council's overall evaluation of program effectiveness. (Section 1304(a) and (e), action item 39-2.) The form and content of work plans vary depending on the measure(s) or action item(s) but should be comprehensive in scope. The criteria identified in amended section 704(d) should provide a guide for work plan criteria on other measures or action items.—A program and budget work plan should include the implementing agency's rationale relative to funding one or more projects under a program measure or action item. The Council **staff** should be consulted whenever questions regarding work plans and evaluations arise. [Source: Council staff.]

Annual Reports

As part of this action plan, the Council has set a yearly reporting schedule for the major topics of emphasis in the next five years. The Council expects all pertinent implementing agencies

to follow this schedule in submitting reports on and evaluations of implementation. The schedule will provide a regular means of reviewing the progress toward implementation. The reporting provisions of the action items reflect the following schedule:

Yearly Reporting Schedule[10]

[Source: Council staff.]

Subject	Month Due
Mainstem Passage	January
Harvest Controls	April
Wildlife	April
Resident Fish	May
New Hydro Development	June
Hatcheries/Reprogramming	July
Habitat and Passage Improvement/Research	October
Water Budget	November

As part of this reporting, the Council expects the fish and wildlife agencies and tribes to evaluate progress as well. Annual reports from project operators will be made available to interested parties including members of the public. The availability of the reports will be announced in *Northwest Energy News*, a Council publication. The objective for the next five years will be to develop this process fully and to establish it as a regular means of evaluation. As a starting point, the reports should

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10. ~~Since these amendments were adopted in October 1984, those annual reports due between October 1984 and January 1985 will be due in January 1985. The above schedule will then be followed after January 1985.~~ [Source: Council staff.]

- Explain the relevancy of actions, research or development to specific fish and wildlife program measures as well as the interrelationship to other program measures.

- Provide a technical review of results to date.

- Describe the degree of program measure fulfillment and necessary further actions.

- Demonstrate interagency and tribal coordination efforts and those required to complete the program measure.

- Describe methods for determining the effectiveness of actions taken, research or development completed and the applicability of knowledge gained to future implementation.

- Describe methods used to ensure adequate and independent technical review of research and development designs, as appropriate.

Adaptive Management

The Council intends to clarify the responsibility to develop the program on the basis of the best available scientific knowledge by adopting a policy of adaptive management. Adaptive management is learning by doing. Faced with scientific uncertainty, the region should act affirmatively to protect and enhance fish and wildlife affected by hydroelectric development. However, such action must not be precipitous. Instead, action should be based on careful design so that information useful in guiding future action can be gained. In particular, measures affected

significantly by scientific uncertainty should be designed where possible, as experimental probes of the natural system so that monitoring can test the effectiveness of measures as quickly and unambiguously as the natural system permits.

Adaptive management is a scientific policy. It expresses a conscious effort to improve fish and wildlife management using elements of this program as experiments that can return valuable information not otherwise obtainable. Adaptive management is not a rationale for acting without scientific justification, nor is it a rubric within which any measure can be labeled "experimental" in the sense that other measures should be delayed pending the results of actions already underway. Adaptive management explicitly states a bias toward taking action for protection and enhancement, but it is not a substitute for meeting the legal, economic, and coordination requirements of the Northwest Power Act and this program.

The Council is mindful that a scientifically sophisticated approach to implementation will require extensive consultation, review by the scientific community, and appraisal of the utility of adaptive management within each of the program's principal sections. ~~In light of the basinwide effort to develop program goals under Program Section 204, the Council intends to carry out detailed planning which addresses adaptive management principles as part of the process of achieving goals. As a result, a~~**A**daptive management will be incorporated in ~~detail into the program only after full public review in a formal amendment process~~**planning and, as appropriate, in implementing specific measures** [Source: Council staff.]

~~The Council also intends to sponsor a workshop in fiscal year 1985 to which representatives of the scientific and resource management communities will be invited. The workshop should help develop a strategy for integrating adaptive management principles into the program; identify~~

sections and measures that offer important learning benefits to the program as a whole, and provide guidance to the Council on the practicality of adaptive management as an implementing philosophy. [Source: Council staff; completed action.]

Evaluations

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- The provisions for project evaluations were included in the action plan to provide the Council with information for decision making relative to ongoing research. The relationship between the presently funded research under measures identified in action item 39.1 and the program is not well understood. In an effort to define this relationship and future research objectives the Council is calling for (1) continuation of ongoing work under these measures; (2) evaluations which will address the relationship to program objectives and future research needs; and (3) no new project starts by federal implementing agencies until the Council identifies future research needs appropriate under the program and the Northwest Power Act.

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- At the present time some implementing agencies either lack such a comprehensive evaluation and reporting process or internalize it. This section is intended to encourage the development of a comprehensive analysis of research projects being undertaken as part of the program. The analysis not only should address the technical merits of the research project but also should focus on the relation between the federal implementing agency's program, the action plan, and the Fish and Wildlife Program. Research data and results should be in a form that allows independent evaluation. [Source: Council staff.]

Interim Goals and Objectives

Goal 1: Increase the quantity and quality of salmon and steelhead produced in the Columbia River Basin.

The Council has adopted an action plan which reflects the Congressional expectations that this program will emphasize prompt action over unnecessary study and delay. The Council has included five-year action items from the anadromous fish, resident fish, and wildlife sections of the program. However, it will give preference in the next five years to anadromous fish measures, in light of the jeopardized state of salmon and steelhead stocks and their special social and economic importance to the region and the nation. See 16 U.S.C. 839b(6). As a result, the primary goal of the five-year action plan is to direct action on those measures which are most likely to increase the number and quality of salmon and steelhead produced. The Council believes that goal can best be accomplished by selecting action items that meet the following objectives:

Improve Survival at Mainstem Hydroelectric Facilities.

Mainstem survival clearly is a key objective of the Northwest Power Act, which specifically directed the Council to adopt program measures which provide for "improved survival of [anadromous] fish at hydroelectric facilities..." 16 U.S.C. 839b(h)(6)(E)(i). Mainstem passage plans and improvements also are crucial to the success of all program measures. Without those improvements, the benefits of offsite and tributary work will be diminished or nullified. Because many of these improvements entail major capital expenditures, timely budgeting will be the main challenge.

Provide Mainstem Flows.

This objective also matches a key provision of the Northwest Power Act which calls for program measures to provide "flows of sufficient quality and quantity between [hydroelectric] facilities to improve production, migration and survival of [anadromous] fish as necessary to meet sound biological objectives." 16 U.S.C. 839B(h)(6)(E)(ii). By proposing this set of action items, the Council restates its commitment to the section 300 Water Budget measures as a keystone to program success.

Increase Systemwide Production Capability Through a Selective Mix of Offsite Enhancement Measures.

These action items respond to Congressional direction to the Council to develop a "systemwide" program which includes offsite enhancement as compensation for hydropower-related losses (such as the loss of habitat above Grand Coulee Dam). It also would help avoid the historical emphasis on lower river enhancement to the detriment of upriver fishing.

The primary ways to increase systemwide production capability are through: 1) habitat and passage restoration, to increase natural and wild production on major tributaries; 2) new hatchery construction; 3) improvements at existing hatcheries by correcting problems, such as disease, associated with hatcheries; and 4) reprogramming lower river hatcheries by changing the timing and locations for release of hatchery-propagated fish into rivers and streams, especially in the upper basin areas.

The Council believes that all four types of actions should be pursued vigorously in the next five years because no single type of action alone may be sufficient to slow the declines of the fish runs. In addition, a multifaceted approach to increasing production capability in the next five years makes sense from a planning point of view, for several reasons. First, habitat and passage restoration must begin now to prepare for increases in mainstem survival which should result from mainstem passage improvements and Water Budget flows. **As stated in program section 704(d)(1) and action items 34.02 and 37, Bonneville should complete the projects underway and start new ones as need for additional habitat is demonstrated.** Second, hatcheries require a long lead time to allow for siting, design, engineering and financing, as well as construction. Finally, control of fish disease, like human disease, may require long-term research to determine causes and cures. [Source: Council staff.]

Goal 2: Protect the ratepayer investment in the program.

At the same time that the Council supports an aggressive restoration program, it continues to recognize the importance of ensuring that ratepayers' expenditures for fish and wildlife measures are well spent. To that end, the Council proposes five-year action items which will help protect the ratepayer investment.

Improvement in mainstem passage to protect juvenile outmigrants is one major area of emphasis in this action plan. If survival of juveniles can be improved steadily over the next five years above present levels, adult returns also should improve. Expenditure in hatchery production, outplanting programs, offsite enhancement, and habitat passage restoration in tributaries represent major expenditures by the ratepayers in restoration of upriver runs. This investment must be protected, especially at mainstem projects, in order to assure an acceptable rate of return.

Key to that objective is ~~establishment of anadromous fish goals based~~ **the Council's statement of the hydropower responsibility in program section 202** on the extent of losses attributable to the hydropower system ~~Such an effort would reflect statutory directives to define~~ **The statement of hydropower responsibility reflects** the scope of the program within the limits of hydropower system liability **for losses** 16 U S C 839b(h)(5),(8),(10) ~~It would respond to Section 201 of the program~~ [Source Council staff]

Another important way to protect the ratepayer investment is to ensure that new hydroelectric development is conditioned from the beginning to protect salmon and steelhead, resident fish and wildlife That objective is central to the Council s power plan as well as its Columbia River Basin Fish and Wildlife Program.. It responds to the Congressional directive to devise a program which "protects" as well as "enhances" and "mitigates " It also responds to the preference, in the Council's power plan, for orderly planning and development of hydroelectric projects which will avoid adverse fish and wildlife impacts.

The Council also believes that improving harvest controls to increase salmon and steelhead returns to the Columbia River Basin is essential to protection of the ratepayer investment This objective reflects continuing concern that enhancement expenditures in the basin will benefit inadequately controlled ~~ocean fishing as long as there is no interception agreement between the United States and Canada along with other indicators of adequate harvest controls~~ **harvest without continued commitments to and improvements in harvest regulation by the fishery managers** Initiation of electrophoresis and known-stock fisheries studies under the program is an attempt to remedy this problem [Source Council staff.]

In response to ratepayer concerns, the Council also proposes development and refinement of mechanisms for reporting on and evaluating the effectiveness of program measures. Evaluation and reporting mechanisms already are included in some program measures (such as the Water Budget). The Council proposes to expand this important concept ~~by calling for prompt evaluation of ongoing activities, such as research and other studies, to determine their contribution to program effectiveness, and~~ by establishing a regular schedule for reporting progress in each of the key areas of action **and by establishing a work group to assist in the development of a system monitoring and evaluation plan for program progress and long-term research needs (see section 205).** Annual work plans are requested from federal implementing agencies, ~~for habitat and passage restoration projects and artificial production projects.~~ Further development of the adaptive management concept may lead to an integrated, comprehensive evaluation of funded activities. [Source: Council staff.]

Wildlife and Resident Fish

The action plan addresses the need to protect, mitigate and enhance wildlife, to the extent that they are affected by hydroelectric operation and development, by establishing a basis for proceeding with mitigation planning, starting mitigation where it is clearly indicated, and continuing to call for conditions on new hydroelectric development to avoid adverse effects on wildlife.

In the resident fish area, the action plan proposes action where conflicts with anadromous fish goals would be nonexistent or inconsequential, where significant biological gains can be achieved, and where there is a clear link to the effects of hydropower development and operation. The action plan calls for particular emphasis on resident fish measures in Montana and the upper-

~~Columbia River (Colville Reservation) where no conflicts with anadromous fish arise~~**areas now blocked to salmon and steelhead production by hydropower development and operation above Chief Joseph Grand Coulee dams and the Hells Canyon Dam** It also continues to call for conditions on new hydroelectric development to protect resident fish [Source Council staff.]

Format

The action plan includes no measures not already adopted by the Council in the other program sections As a result, the action items are abbreviated summaries of other program measures Cross-references to the complete program measures are provided at the end of each action item Reference to the complete measure is needed for a full understanding of the action expected The action item numbering starts with 32, where the power plan's action items end [11]

1504. ACTION ITEMS

32. Mainstem Passage

This section outlines a process for improving adult and juvenile passage at mainstem hydroelectric projects through use of spill, mechanical bypass systems, fishway operating procedures and other actions During the next five years, particular emphasis must be placed upon actions which improve passage and survival at all mainstem projects Thus, a high priority is assigned to installation and evaluation of juvenile and adult passage systems at those projects

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11 The 1983 power plan had action items numbered from 1 to 31, it was amended in 1986, and the format as amended, does not use numbered action items The Council may renumber the program to reflect this change in the final amendments [Source Council staff]

Early resolution of mainstem passage problems is a prerequisite to rebuilding upriver runs and protecting ratepayer investments in upriver mitigation and enhancement activities. To evaluate the success of measures in this part of the action plan, passage plans for individual projects are called for, along with annual systemwide passage plans that combine and coordinate the individual plans. Selected tributary passage work also is included in this section.

Bonneville Actions

32.1 Test and evaluate an alternative conduit system for juvenile fish by November 15, 1986~~7~~. Report results to the Council by January 1987~~8~~. [Section 404(c)(3).] [Source: Council staff.]. **Incorporate studies to investigate spill effectiveness, hourly fish passage patterns, and reservoir mortality at mainstem federal projects, into the five-year research work plan on reservoir mortality and Water Budget effectiveness (see program section 205(c)(1) and action item 39.1). These studies shall be consistent with the program research policies found in section 205. [Section 304(d)(1).]** [Source: Council's February 1986 decision.]

Corps Actions

32.2 All projects **except Bonneville Dam**

- Develop and implement a coordinated systemwide annual juvenile passage plan to achieve at least a 90 percent smolt survival ~~level at~~ **of spring and summer migrants passing** each project, **as described in section 404(b), exclusive of transportation benefits**. Include estimates of fish bypass efficiencies and smolt survival for each

project and for the system. Submit the plan to the Council by February 15 and implement it by April 1 of each year. [Sections 404(b)(1)-(9), (16)-(17).] [Source Council.]

- **Implement an annual smolt transportation program according to provisions developed by the fish and wildlife agencies and tribes. [Section 404(b)(17)(A).]** [Source: Council.]

- **Jointly develop with the fish and wildlife agencies and tribes a study plan for evaluating the benefits of smolt transportation, as specified in section 404(b)(17)(C), by February 1, 1988. The studies shall begin by April 1988 and be consistent with the program research policies found in section 205. [Section 404(b)(17)(C).]** [Source: Council.]

- Continue to implement adult fish criteria and evaluate measures to protect adult passage at each project. [Sections 604(a)(1), ~~604(a)(2), 604(a)-(3),~~ and 604(b)(1), ~~604(b)-(2).~~] [Source: Council staff.]

- ~~Submit a draft comprehensive transportation evaluation report and proposal for further action to the Council by March 1985. Submit a final report, incorporating a review of comments, to the Council by May 1985. [Section 404(b)(17).]~~ [Source: 404(b)(17) COE.]

- Present an annual report to the Council each January on each project's fish passage facilities, research results, and operations. Include proposals for future actions to improve fish passage facilities. [Section 404(b)(1)-(9), 604(a)(1)-(3).]

32.3 Bonneville Dam

- Develop and submit to the Council a coordinated interim juvenile passage plan by February 15, ~~1985~~ **and** implement the plan by April 1 ~~1985, and annually thereafter~~ **each year** until problems with juvenile fish passage efficiency at the second powerhouse are resolved. [Section 404(b)(5).] [Source: Council staff.]

- Evaluate effectiveness of screens and bypass at both powerhouses. Report results to the Council by January ~~1986~~ **1988**. [Section 404(b)(5)**(A)**.] [Source: Council staff.]

- For Bonneville Dam second powerhouse, develop a report on the feasibility and cost of all alternatives, including forebay excavation, and a work schedule for timely completion of all needed improvements to achieve 85 percent juvenile fish passage efficiency. Submit to the Council by ~~January 1986~~ **April 1987**. [Source: 1504(32.3)/COE.]

32.4 The Dalles Dam

- Develop and submit to the Council a coordinated interim juvenile passage plan each year by February 15. Implement the plan by April 1 each year until a bypass system is installed. [Section 404(b)(4).]

- ~~Complete biological and prototype testing by September 30, 1985, and report test results to the Council. [Section 404(b)(4).]~~ [Source: 1504(32.4)/COE.]

- Develop and submit to the Council a ~~permanent~~ **feasibility study of alternative** juvenile **fish** passage plans including estimated costs **and survival levels, recommendations** and ~~installation~~ **an implementation** schedule of **for installation of** a **permanent** bypass system~~s~~ by ~~July 31~~ **December 1**, 1986 [12] [Section 404(b)(4)] [Source 1504(32 4)/COE]

- Complete the design and installation of a juvenile **fish** bypass system by ~~the end of fiscal year 1989~~ **April 1, 1992** [Section 404(b)(4).] [Source: 1504(32.4)/COE]

- ~~Install a vertical slot counter at the east fishway by November 1985. [Section 604(b)(3).]~~ [Source: Council staff Completed action.]

- ~~Install a vertical slot counter at the north fishway by November 1989. [Section 604(b)(3).]~~ [Source: Council staff Completed action.]

32 5 John Day Dam

- Develop and submit to the Council a coordinated interim juvenile passage plan **each year** by February 15~~, 1985~~ Implement the plan by April 1~~, 1985~~ **of each year** [Section 404(b)(3).] [Source Council staff.]

- Complete installation of juvenile bypass system by March 30, 1986**7** [Section 404(b)(2)] [Source Council staff]

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12 This action item will be deleted in the final amendments if completed on schedule

- **Continue to e**Evaluate **and upgrade** the effectiveness of the juvenile bypass system--~~beginning with a partially completed facility in 1985~~. Report the results of annual research with proposals for improvements to the Council by January of each year [Section 404(b)(2)] [Source: Council staff.]

- ~~Complete investigation of adult passage delays—Report to the Council by January 1986 with proposals—[Section 604(a)(5)~~] [Source: Council staff.]

32.6 McNary Dam

- Continue to evaluate and upgrade juvenile bypass system. Report results of annual research with proposals for improvements to the Council by January of each year. [Section 404(b)(1)]

- **Design and construct expanded juvenile fish collection and holding facilities at McNary Dam, to be completed and operational by April 1, 1989. Provide for review of the final engineering design of the expanded facilities by the fish and wildlife agencies and tribes; if they disapprove the design, seek Council review before proceeding with construction. [Section 404(b)(16).]** [Source: 1504(32.6) CBFWC]

32.7 Ice Harbor Dam

- Develop and submit a coordinated interim juvenile passage plan to the Council each year by February 15. Implement the plan by April 1 each year until a bypass system is installed. [Section 404(b)(9)(A)]

- Complete biological and prototype testing by September 30, 19857, and report test results to the Council. [Section 404(b)(9)(C).] [Source: Council staff.]

- ~~Complete smolt~~ **When the fish and wildlife agencies and tribes approve the use of research fish for a sluiceway** injury and mortality study, ~~by September 30, 1985~~ **complete the study** and report ~~study~~ results to the Council. [Section 404(b)(9)(B).] [Source: 1504(32.7 COE.]

- Develop and submit to the Council a ~~permanent~~ **feasibility study of alternative** juvenile **fish** passage plan**s**, including estimated costs **and survival levels, recommendations** and an ~~installation~~ **implementation** schedule for **installation of** a **permanent** bypass system, by ~~July 31~~, **May 1**, 19868. [Section 404(b)(9)(D).] [Source: 1504(32.7)/COE.]

- Complete design and installation of juvenile **fish** bypass system by ~~the end of fiscal year 1989~~ **April 1, 1990**. [Section 404(b)(9).] [Source: Council.]

32.8 Lower Monumental Dam

- Develop and submit to the Council an annual coordinated interim juvenile passage plan by February 15. Implement the plan by April 1 each year until a bypass system is installed. [Section 404(b)(8)(A).]

- Complete biological and prototype testing ~~by September 30, 1985~~ and report test results to the Council. [Section 404(b)(8).] [Source: 1504(32.8) COE.][13]

- Develop and submit to the Council a ~~permanent~~ **feasibility study of alternative** juvenile **fish** passage plans, including estimated costs **and survival levels, recommendations**, and an ~~installation~~ **implementation** schedule for **installation of** a **permanent** bypass system by July 31, ~~1986~~**1987**. [Section 404(b)(8)(B).] [Source: 1504(32.8) COE.]

- Design and install a powerhouse collection and bypass system by ~~the end of fiscal year 1989~~ **April 1, 1990.** [Section 404(b)(8).] [Source: Council.]

32.9 Little Goose Dam

- ~~Evaluate an open flume as an alternative to a pressurized fish transport conduit~~ **Incorporate results of Bonneville's alternative conduit system study** in the design of scheduled bypass system improvements. Coordinate the study with Bonneville ~~and complete it in fiscal year 1985~~. [Sections 404(c)(3), 404(b)(7).] [Source: Council staff.]

- Continue to evaluate and upgrade the juvenile bypass system. Report progress to the Council with proposals for improvements by January of each year. [Section 404(b)(7).]

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13 This action item will be deleted in the final amendments, if completed on schedule.

- ~~Complete installation of juvenile bypass system~~ **Schedule final design and structural** modifications **so that improved juvenile fish bypass facilities are completed and operational** by ~~the end of fiscal year 1987~~ **April 1, 1989** [Section 404(b)(7)] [Source 1504(32 9- 10) CBFWC]

32 10 Lower Granite Dam

- Continue to evaluate and upgrade juvenile bypass system **Complete ongoing engineering feasibility study and initial design of test deflector and gate raise modifications to improve fish guidance efficiency in FY 1987.** Report progress to the Council with proposals for improvements by January of each year [Section 404(b)(6)] [Source 1504(32 9- 10)/CBFWC]

- **Schedule final design and structural modifications so that improved juvenile fish bypass facilities are completed and operational by April 1, 1989. [Section 404 (b)(6).]** [Source 1504(32 9- 10)/CBFWC]

FERC Actions

32 11 Grant County Public Utility District (PUD)--Priest Rapids Wanapum Dams[14]

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14 The Council did not receive any proposed amendments to change the dates contained in this action item and is soliciting public comment for more appropriate dates for this action item

- Continue short-haul transport research ~~in fiscal years 1985 and 1986~~ at Priest Rapids Report to the Council on study design and progress by January of each year [Section 404(a)(4), (5).] [Source: Council staff.]

- ~~Determine spill effectiveness at Priest Rapids by use of hydroacoustics. Report results of the studies conducted in 1983 and 1985 by January 1986 [Sections 404(a)(3) and (10).]~~ [Source: Council staff.]

- Develop a prototype intake deflection screen at Priest Rapids Dam. Conduct prototype tests ~~in 1986~~. Report results ~~by January 1987~~. [Section 404(a)(3).] [Source: Council staff.]

- ~~Report results of spill effectiveness tests at Wanapum Dam to the Council by January 1985 [Sections 404(a)(3) and (10).]~~ [Source: Council staff.]

- Develop an analysis of bypass alternatives and schedule for intake deflection screen installation at Priest Rapids and Wanapum dams. Report on analysis, results and progress annually to the Council in January. Complete and submit schedule by July 1987. [Section 404(a)(3).]

- Evaluate short-haul transport versus turbine bypass collection test results. Coordinate with the fish and wildlife agencies and tribes to report annually to the Council. [Sections 404(a)(4), (5), (8), (9).]

- Install permanent juvenile bypass systems by March 20, 1988, at Priest Rapids and Wanapum dams. [Sections 404(a)(3)-(9).]

32 12 Chelan County PUD--Rocky Reach Rock Island Dams[15]

- Continue design and modeling studies at Rock Island Dam to determine the most effective bypass system. Report results to the Council ~~by January 1986~~. [Section 404(a)(2).] [Source: Council staff.]

- Develop an analysis of bypass alternatives and schedule for an intake deflection screen system, or other equally effective bypass system, at Rock Island Dam. Report results of analysis and provide a schedule for implementation to the Council ~~by January 1986~~. [Section 404(a)(2).] [Source: Council staff.]

- ~~Report results of spill effectiveness tests to the Council by January 1985. [Sections 404(a)(2) and (10).]~~ [Source: Council staff.]

- Report results of bypass prototype testing and evaluation for Rocky Reach Dam ~~by October 15, 1985~~. [Section 404(a)(2).] [Source: Council staff.]

- Install permanent juvenile bypass system at Rocky Reach Dam by March 20, 1987. [Section 404(a)(2).]

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15 Ibid.

32 13 Douglas County PUD--Wells Dam[16]

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- ~~Report results of spill effectiveness tests by January 1985 (Section 404(a)(10).~~ [Source: Council staff.]

- Report results of 1984 prototype juvenile passage test to the Council ~~by January 1985~~ include work plan for further testing. [Section 404(a)(1).] [Source: Council staff.]

- Install permanent juvenile passage modifications by March 20, 1987. [Section 404(a)(1).]

32 14 All Mid-Columbia Projects (Grant, Chelan and Douglas PUDs)[17]

- Develop and implement annual juvenile passage plans in accordance with the terms of program section 404(a)(10). Report to the Council by January of each year. [Section 404(a)(10).]

- Develop and implement adult fishway operating criteria. Report progress to the Council by January ~~1985 and annually thereafter~~ **of each year**. [Section 604(a)(1), 604(a)(2), 604(b)(1).] [Source: Council staff.]

- Continue to evaluate adult fish counts as needed. Report to the Council by January of each year. [Section 604(d)(1).]

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16 Ibid.

17 Ibid.

- Prepare and present an annual report on passage survival and fish protective measures at each project in January of each year [Section 404(a)(10)]

- Consult and coordinate with all interested parties on all mid-Columbia passage flow and spill measures [Section 404(a)(11)]

32.15 Portland General Electric

- Report on the Willamette Falls adult trap program to the Council by March 1985. If modifications are required, initiate a design phase so that construction can commence no later than July 1986 and the project can be completed for the 1987 adult runs. [Section 604(c)(1).] [Source: Council staff]

32.16 Portland General Electric

- Complete juvenile bypass system studies at Marmot Dam and Sullivan and propose corrective action on or before November 15, 1986. [Sections 404(b)(10) and 404(b)(11)][18]

~~32.17 Pacific Power and Light~~

- ~~Operate the Albany facility on Lecanon Canal according to existing agreements and license requirements unless changes in operation or juvenile bypass systems are~~

18/ This action item will be deleted in the final amendments if completed on schedule.

required.—[Section 404(b)(13).] [Source: Council staff - This facility no longer is operated for power purposes.]

32.18 Eugene Water and Electric Board

- Report to the Council on the installation and operation of the best available juvenile bypass system at the Leaburg Canal facility by November 15, 1984. Complete additional changes or modifications to this **the bypass system at the Leaburg Canal** facility by November 15, 1987. [Section 404(b)(14).] [Source: Council staff.]

32.19 Eugene Water and Electric Board

- Report to the Council on juvenile migrant bypass facilities studies at the Walterville Canal power project by November 15, 1984**7**. Install facilities by November 15, 1986**9**. [Section 404(b)(15).] [Source: Council staff.]

Fish and Wildlife Agencies' and Tribes' Actions

32.01 In consultation with the Corps of Engineers, prepare annual provisions specifying the smolt transportation program to be implemented by the Corps as specified in section 404(b)(17)(A). Provide these provisions to the Corps of Engineers by January 15 of each year. [Section 404(b)(17)(A).] [Source: Council.]

32.02 **Resolve disputes related to spill at mainstem projects. [Section 404(d).]** [Source Council, 403, 404(b)/CBFWC]

33. Water Budget and ~~Other Mainstem Flows~~ Fish Passage Measures

[Source Council staff]

Implementation of the Water Budget is under way and will continue throughout the next five years The Council considers long-term evaluation and resolution of implementation problems to be essential The Council also recognizes the need for flows during other periods of the year to protect salmon and steelhead

The objectives for the next five years are to provide flows in the mainstem Columbia and Snake rivers during the April 15 through June 15 migration period to shorten smolt travel time and to continue to evaluate Water Budget effectiveness Emphasis should be placed on the need for sound biological information. Annual evaluation and monitoring of smolt migration and travel times also is expected to continue. A long-range goal is to provide necessary information for use in determining if and to what degree the present Water Budget is successful in improving smolt survival The Council supports efforts by the federal project operators to evaluate the feasibility of improving Water Budget flows by modifying flood control requirements, constructing new reservoirs, and using uncontracted storage water The Council recognizes that a number of implementation issues remain unresolved The Council plans to work with all parties to help resolve disputes

Bonneville Actions

33.1 Continue to implement Water Budget measures including funding of ~~Water Budget~~ **fish passage** managers and tribal coordination expenses [Sections 304(a)-(c).] [Source: Council staff.]

33.2 Continue to fund research and monitoring. Report on activities by November of each year. [Section 304(d).]

~~Water Budget~~ **Fish Passage Managers' Actions** [Source: Council staff.]

33.3 Provide an annual report by November 1 of each year. Provide a research and monitoring plan, noting the availability of test fish, by December 1 of each year. [Sections 304(c), 304(d).]

Corps Actions

33.4 Continue to implement Water Budget measures and coordinate with ~~Water Budget~~ **fish passage** managers. [Sections 304(a)-(c).] [Source: Council staff.]

33.5 Provide a report to evaluate feasibility of modifying flood control rule curves and constructing new reservoirs to provide improved Water Budget flows, particularly in the Snake River Basin. Report on rule curve modifications by ~~November 1985~~ **March 1987**. Report to the Council on all items by November 1988. [Sections 304(a)(6) and 704(b)(14)(A), (B).] [Source: Council staff.]

Bureau of Reclamation Actions

33.6 Continue to implement Water Budget measures. [Sections 304(a) and (c).]

33.7 Provide report to the Council by November 1988 to evaluate feasibility of constructing new reservoirs and using uncontracted stored water to provide improved Water Budget flows, particularly in the Snake River Basin. [Sections 704(b)(14)(B)-(C).]

FERC Actions (Mid-Columbia PUDs)

33.8 Provide suitable flows for spawning, incubation and rearing of fall chinook salmon at mid-Columbia projects. Complete flow studies, develop instream flow plan, implement the plan and report results to the Council. [Sections 704(b)(1)-(4).]

Council Actions

33.9 Continue to evaluate Water Budget reports and to help resolve Water Budget disputes. [Section 304(e)(1).]

34. Production Capability

In the next five years the Council expects to see the production capability of the basin improve through a mix of offsite enhancement measures. The particular emphasis of these measures is to improve all stocks of fish, but especially those that are wild or naturally spawning

stocks or are not subject to substantial ocean harvest such as Upper Columbia spring chinook and Snake river summer chinook, steelhead and sockeye. It is anticipated that the Council will play a more active role in defining the adequacy of harvest controls and through the ~~results of the 20-goals study in helping establish production goals throughout the basin~~ **establishment of system policies and development of subbasin plans.** [Source: Council staff.]

To provide a mix of measures, the following program areas will be emphasized: 1) habitat and passage restoration, 2) new hatchery construction, 3) improved production practices at existing hatcheries, and 4) ~~development of~~ cooperative hatchery reprogramming. The Council expects Bonneville to initiate evaluation of all of the ongoing research projects, in coordination with the fish and wildlife agencies and tribes. [Source: Council staff.]

Habitat and Passage Restoration

Bonneville/Bureau Actions

34.1 Complete construction of juvenile fish passage facilities at Roza Dam by March 1, 1986~~7~~. Complete construction of adult facilities by ~~December 1, 1986~~ **March 1, 1988**. [Section 904(d)(1).] [Source: Council staff.]

34.2 Complete construction of juvenile fish passage facilities at Prosser Dam by March 1, 1986~~7~~. Complete construction of adult facilities by December 1, 1986~~7~~. [Section 904(d)(2).] [Source: Council staff.]

34.3 Complete construction of all Yakima River fish passage improvements listed in Table 3 of section 904(d)(4) by December 1, 1987. Perform post-construction evaluations to determine the success of passage improvements. [Section 904(d)(4).]

34.01 Provide power or repay operating and maintenance costs associated with the implementation of a water exchange to improve instream flows in the Umatilla River to levels specified by fish and wildlife agencies and tribes, as specified in section 704(b)(17). Monitor and evaluate results. [Source: 704(d)(2)/Umatilla.]

Bonneville Actions

34.4 Design fishway and bypass for Ellensburg Town Diversion Dam by October 1987 and complete construction by October 1988. [Section 904(d)(5).]

34.5 Develop an annual work plan for submission to the Council by September 15 of each fiscal year for implementation of section 704(d). Prepare and submit to the Council an annual report on activities in October. ~~(For fiscal year 1985, Bonneville is expected to submit this work plan by January 15, 1985.)~~ [Source: Council staff.]

34.02 Complete the following ongoing projects from Table 2 of section 704(d)(1) by 1989.[19]

19./ **Source: BPA Project List dated June 26, 1986, and BPA 1985 Plans for Implementing the Columbia River Basin Fish and Wildlife Program in Fiscal Year 1986. Bonneville Power Administration, Division of Fish and Wildlife, Portland, Oregon. 86 pp. plus Appendices.**

Major Area:

Subbasin	Bonneville Project Number	Title
COLUMBIA RIVER BELOW BONNEVILLE DAM:		
Willamette Subbasin	83-385	• Fish Creek, Wash Creek Habitat Enhancement
	83-386	• Lake Branch Creek Habitat Improvement
	84-011	• Collawash Falls Passage
		• Fish Creek Habitat Improvement
		• Fish Creek Evaluation
		• Lake Branch Creek Habitat Improvement
		• Hot Springs Fork Passage and Habitat Improvement
		• Oak Grove Habitat Improvement
		• Fifteenmile Creek Habitat Improvement
	86-090	• Little Fall Creek Fish Passage
COLUMBIA RIVER BETWEEN BONNEVILLE DAM AND CONFLUENCE WITH SNAKE RIVER:		
Deschutes Subbasin	81-108	• Warm Springs Habitat Production Potential Assessment

	83-373	• Deschutes River Spawning Gravel Study and Plan
	84-007	• Trout Creek Riparian Enhancement Coordination
	84-062	• Trout Creek Riparian Enhancement Coordination
	86-093	• Trout Creek Benefit/Cost Analysis Refinement
	86-094	• Trout Creek Benefit/ Cost Analysis, Photomosaics Refinement
	86-121	• Trout Creek Enhancement--Implementation
John Day Subbasin	83-394	• Clear Creek, Granite Creek Habitat Improvement
	83-395	• North Fork John Day Habitat Improvement
	84-008	• North Fork John Day River Habitat Improvement • North Fork John Day River Tributaries, Habitat Improvement • Upper Mainstem, John Day River Habitat Improvement
	84-021	• Mainstem John Day River Habitat Improvement • Middle Fork John Day River Habitat Improvement

		• North Fork John Day River Habitat Improvement
	84-022	• Big Boulder Creek Habitat Improvement
		• Granite Creek Habitat Improvement
	85-071	• South Fork John Day River Habitat Improvement/ Izee Falls Passage
Umatilla[20] Subbasin	83-436	• Three Mile Dam Passage
	86-016	• Umatilla Habitat Improvement
	86-056	• Passage Improvement, Umatilla River Water Diversion

20. Umatilla subbasin projects should include the following specific actions: Lower Umatilla River Channel Modification, Brownell Diversion Downstream Passage Improvement, Three Mile Dam (West Extension) Upstream and Downstream Passage Improvement, Meacham Creek Habitat Improvement, North Fork Meacham Creek Habitat Improvement, Thomas Creek Habitat Improvement, Squaw Creek Habitat Improvement, Birch Creek Habitat Improvement, East Fork Birch Creek Habitat Improvement, West Fork Birch Creek Habitat Improvement, Buckaroo Creek Habitat Improvement, Ryan Creek Habitat Improvement, Mainstem Umatilla River Habitat Improvement, North Fork Umatilla River Habitat Improvement, South Fork Umatilla River Habitat Improvement, Westland Smolt Trapping Facility Expansion, Umatilla Adult and Smolt Trucking Program Expansion, Westland Diversion Upstream and Downstream Passage Improvement, Stanfield Diversion Upstream and Downstream Passage Improvement, Cold Springs Diversion Upstream and Downstream Passage Improvement, Maxwell Diversion Upstream and Downstream Passage Improvement, Dillion Diversion Downstream Passage Improvement.

COLUMBIA RIVER BETWEEN CONFLUENCE OF SNAKE RIVER AND CHIEF JOSEPH DAM:

Yakima Subbasin	86-075	• Little Naches River Passage
Wenatchee Subbasin	85-052	• Tumwater Falls Dam Passage
	85-053	• Dryden Dam Passage
	85-086	• Tumwater/Dryden Passage Environmental Assessment
Okanogan Subbasin	83-477	• Enloe Dam Passage

SNAKE RIVER BELOW HELLS CANYON DAM:

Clearwater Subbasin	83-501	• Red River Fish Habitat Improvement
	83-522	• Lolo, Crooked Fork, White Sands Creeks Habitat Improvement
	84-005	• Red River Habitat Improvement • Crooked River Habitat Improvement

	86-076	• Orofino Creek Passage
Grande Ronde Subbasin	84-009	• Chesnimus Swamp Creeks Habitat Inventory • Upper Grande Ronde Fly Creek Implementation Design Phase • Chesnimus Creek Riparian Planting • Swamp Creek Riparian Planting • Sheep Creek Riparian, Habitat Improvement
	84-025	• Sheep Creek Surveys, Onsite Preparation • Fly Creek Surveys, Onsite Preparation • Mainstem Grande Ronde Surveys, Onsite Preparation • Joseph Creek Plan, Surveys, Onsite Preparation • Elk Creek Habitat Improvement
	86-110	• Grande Ronde Monitoring
Salmon Subbasin		• South Fork Salmon River Fish Passage • South Fork Salmon River Tributaries Fish Passage
	83-359	• Bear Valley Creek Habitat Improvement • Yankee Fork Jordan Creek Habitat Improvement • East Fork Salmon River Habitat Improvement
	83-415	• Alturus Lake Creek Flow Augmentations

84-023 • Camas Creek Idaho Riparian. Instream Improvement

84-024 • Marsh Creek Habitat Improvement

• Elk Creek Habitat Improvement

• Upper Salmon River Habitat Improvement

• Bear Valley Creek Habitat Improvement

• Valley Creek Habitat Inventory

84-028 • Lemhi River Rehabilitation

84-029 • Panther Creek Habitat Evaluation

NON-SITE-SPECIFIC PROJECTS:

85-062 • Passage Improvement Evaluation

85-065 • Technical Assistance for Fish and Wildlife Protection

86-078 • Habitat Improvement Evaluation

86-107 • Evaluation and Monitoring Workshop

86-108 • Oregon General and Intensive Monitoring

Additional projects from 704(d)(1) may be added to this list upon a demonstration to the Council of a need for additional habitat which can be met best by the project proposed for funding. Following Council adoption of system policies and subbasin plans, under sections 203 and 204, all projects funded from 704(d)(1) must be consistent with those policies and plans. [Source: Council staff, using Bonneville project list.]

Bureau Actions

34.6 Provide minimum flows for fish in the Yakima Basin and report by October of each year to the Council on the status. [Sections 904(c)(1), 904(c)(2), and 904(c)(3).]

34.7 ~~By January 1985 and a~~**A**nnually ~~thereafter,~~ prepare and submit a report of the investigations on the feasibility of new storage to provide instream flows for anadromous fish. [Section 704(d)(2).] [Source: Council staff.]

FERC Actions

34.8 Provide for construction of passage facilities at Condit Dam by November 15, 1986. [Section 704(d)(3).][21]

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21 / This action item will be deleted in the final amendments, if completed on schedule.

Council Actions

34 9 Consult on water conservation, storage, and flows in the Yakima Basin on a regular basis [Sections 904(a) and (c)]

34 10 Continue monitoring of passage work under section 904(d)

Artificial Production

Bonneville Actions

34 11 Operate and maintain juvenile release and adult collection and holding facilities on the Umatilla Reservation [Section 704(i)(1)]

34 12 Submit siting, feasibility and preliminary design for a Umatilla steelhead hatchery to the Council by ~~July~~ **October** 1986 Upon Council approval, fund **design and** construction of expansion. [Section 704(i)(1)] [Source: Council staff][22]

34 13 John Day acclimation facility

- Upon approval by the Council of the plan prepared by the fisheries agencies and tribes (34 20), complete construction of temporary facilities by spring 1986**8** [Section 704(i)(2)] [Source Council staff.]

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22 The appropriate portion of this action item will be deleted in the final amendments if completed on schedule

34.14 Yakima Hatchery

- Upon approval by the Council of the master plan (34.21), fund design beginning in FY 1986~~8~~. [Section 704(i)(3).] [Source: Council staff.]

- Fund construction of hatchery and associated facilities upon completion of design. [Section 704(i)(3).]

34.15 Complete hatchery survey and **of existing and potential sites using data gathered by contractors in 1985. Identify top priority existing sites for expansion and potential sites for development. Complete the hatchery survey data base compiled by contractors under this program measure for publication and review. ~~r~~Report progress** to the Council by October 1985~~7~~. [Section 704(f)(1).] [Source: Council staff.]

34.16 ~~Report on the status of studies to d~~**Develop and test** low capital, **small-scale** production facilities **based upon the compendium developed by contractors in 1984. ~~b~~By** July 1985~~7~~ **coordinate this work with the study of potential hatchery sites as called for in action item 34.15** ~~Fund no more studies under this measure prior to report.~~ [Section 704(j)(1).] [Source: Council staff.]

34.17 Design low capital production facility on the Nez Perce Reservation, and initiate construction by May 1985~~9~~. [Section 704(j)(2).] [Source: Council staff.]

34.18 Fund the habitat survey associated with action item 34.17. [Section 704(e)(1).]

34.19 Prepare and submit to the Council an annual report on hatchery and other artificial production facilities in July [Section 704(f), (h) (i) (j)]

34.03 Northeastern Oregon Spring Chinook Outplanting Facility

- **Fund master plan for northeastern Oregon spring chinook production and outplanting facility or facilities in fiscal year 1988.**

- **Upon approval by the Council of the master plan, fund design beginning in fiscal year 1989.**

- **Fund construction upon completion of design.** [Source 704(.)/CBFWC.]

Fish and Wildlife Agencies and Tribes

34.20 John Day acclimation facilities

- Provide the Council with **the site survey report and** a plan for design, construction, and monitoring of John Day acclimation ponds by ~~April~~ **September** 19857 [Section 704(i)(2)] [Source: Council staff]

- Report to the Council on the results of the monitoring studies conducted to determine the effectiveness of acclimation ponds in improving adult smolt survival [Section 704(i)(2)]

Council Action

34.21 ~~Begin~~ **Complete** development of **and approve** a master plan for a Yakima ~~hatchery and associated facilities~~ **central outplanting facility** in fiscal year 1985~~7~~. [Section 704(i)(3).] [Source: Council staff.]

34.22 Review and evaluate work plans and progress reports associated with action items above. [Section 1304(a)(4).]

Improved Hatchery Effectiveness

Bonneville Actions

~~34.23 Evaluate ongoing work under 704(h) and submit a work plan to the Council for future efforts by October 1985. [Section 704(h)(2).]~~ [Source: Council staff.]

34.24 ~~Submit a work plan for funding supplementation studies by October 1985.~~ **Fund supplementation research consistent with the research policies specified in section 205. Report to the Council on the status of supplementation research by October 1989.** [Section 704(k)(1).] [Source: Council staff.]

34.25 Fund the Willamette Basin Study Plan. [Section 704(k)(2).]

Council Action

34-26 Complete study to aid development of research objectives by end of fiscal year 1985. See Action Item 39. [Section 1104(c)(1)] [Source: Council staff - Completed action.]

Development of Cooperative Reprogramming

[Source: Council staff]

Bonneville Actions

34-27 Fund an evaluation of hatchery fish release sites and levels of release compatible with natural propagation and harvest management by October 1985. [Section 704(g)(1)] [Source: Council staff, in light of U.S. v. Oregon negotiations and supplementation aspects of other program measures.]

34-28 Upon approval of a reprogramming plan **by the fish and wildlife agencies and tribes**, fund hatchery releases in the upper Columbia to assist in restoring naturally spawning stocks. [Section 704(g)(2).] [Source: Council staff.]

Fish and Wildlife Agencies and Tribes Action. [Source: Council staff.]

34-29 Upon completion of the study identified in 34-27, submit cost proposals for reprogramming hatchery operations to the Council by October 1985. [Section 704(g)(1)] [Source: Council staff, in light of U.S. v. Oregon negotiations.]

Council. [Source: Council staff.]

34.30 Utilizing the information available from the evaluation (34.27) and proposals (34.29) above, develop and adopt a comprehensive plan for reprogramming lower river hatcheries by December 1986. [Section 704(g)(1).] [Source: Council staff, in light of U.S. v. Oregon negotiations.]

35. Protection from New Hydroelectric Development

The Council has emphasized throughout its program that new hydroelectric development in the Columbia Basin must take into account fish and wildlife protection. The Council will continue to emphasize this in the next five years, particularly by developing methods for assessment of cumulative effects and by designating protected areas.

All Implementing Agencies

35.1 Continue to apply program sections 1204(a), (b), (c) and (e) to all new projects.

35.2 If new reservoirs are constructed, dedicate specific portions of storage to protect, mitigate and enhance fish and wildlife. [Section 704(b)(16).]

35.3 Prepare and submit to the Council annual reports on activities undertaken in this area each June. [Section 1304(a)(4), 1304(c).]

Bonneville Actions

35.4 Complete study and develop methods for assessing cumulative effects by November 1985 [Section 1204(b)(2).][23]

35.5 Complete the Bonneville portion of the protected areas study by January 1986. [Section 1204(c)(1).][24]

35.6 Develop new designs for turbine intake screens. Propose study design to the Council by January 1987. Complete tests and report to the Council by January 1989. [Section 1204(d)(1).][25]

Council Actions

35.7 Complete the Council portion of the protected areas study and designate protected areas in fiscal year 19867. [Section 1204(c)(2).] [Source: Council staff.]

35.8 Review action plan and other program sections in light of protected-area designations. [Section 1204(c).]

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23 This action item will be deleted in the final amendments if the the Bonneville report is available by February 1987. [Source: Council staff.]

24 This action item will be deleted in the final amendments if the work is completed in October 1986. [Source: Council staff.]

25 The appropriate portion of this action item will be deleted in the final amendments if the work is completed on schedule. [Source: Council staff.]

35.9 Work with FERC on assessment of new hydro projects. [Section 1204(e), 1304(a)(4)]

36. ~~Goals~~Salmon and Steelhead Planning [Source: Council staff]

~~Design of the goals study described in section 201 of the Fish and Wildlife Program is now underway. The Council feels that the establishment of goals is necessary to evaluate long-term responsibilities for Bonneville and the Northwest ratepayers and to guide future direction. The Council is committed to working with all entities to develop the goals.~~ [Source: Council staff.]

Council Actions

~~36.1 Request a supplemental budget to provide for initiation of Section 201 activities in fiscal year 1985. [Section 201.] [Source: Council.]~~

~~36.2 Develop a detailed work plan by assessing losses, stating goals, adopting objectives, developing methods for measuring progress toward goals and objectives, and otherwise providing a framework for program measures and action items following these general principles.~~

- ~~The Council will lead the effort to collect information on salmon and steelhead losses attributable to development and operation of hydroelectric projects in the Columbia River Basin.~~

- At approximately the same time that it begins to collect information on losses, the Council also will begin to collect information on existing and potential production of salmon and steelhead throughout the Columbia River Basin.

- The Council also will identify areas in the Basin where salmon and steelhead once were produced and no longer can be produced due to hydropower development and operations. Then it will collect information on potential resident fish production in those areas.

- In assessing losses, stating goals, developing objectives, and developing methods for measuring progress toward goals and objectives, including information gathering efforts, the Council will seek the advice of and exchange information with the fish and wildlife agencies, tribes, land management agencies, and other entities regulating harvest, planning enhancement, protecting habitat, and otherwise responsible for fishery management. It also will consult with project operators and regulators, Bonneville, and Bonneville customers.

- The Council will initiate amendment proceedings before incorporating any statements of losses, goals, and objectives into the program. [Section 201.] [Source: Council.]

36.01 Identify, analyze, refine and adopt system policies. [Section 203.] [Source: Council staff.]

36.02 Form a planning work group to oversee subbasin planning consistent with system policies. [Section 203, 204.] [Source: Council staff.]

36.03 **Form a work group to develop means for measuring and evaluating successes and failures in salmon and steelhead efforts funded by hydropower ratepayers. [Sections 203. 205.]** [Source: Council staff.]

Fish and Wildlife Agencies' and Tribes' Action

36.04 **Complete subbasin plans and submit them to the Council in early fiscal year 1987. [Section 204.]** [Source: 201/CBFWC Council staff.]

37. Limit Action Prior to ~~Goals~~-System Policies and Subbasin Plans [Source: Council staff.]

- The action plan does not include all measures in the fish and wildlife program. Until program ~~goals~~- **system policies and subbasin plans** are established, completion and evaluation of ongoing work will take priority over initiation of new work in many areas. Once ~~goals~~-**system policies and subbasin plans** are established, the Council will review the program, including the action plan, in light of the ~~goals~~**system policies and subbasin plans**. [Source: Council staff.]

38. Improve Harvest Controls

While most measures in the program are likely to benefit many runs of fish, it is particularly important to monitor and influence harvest management decisions for the benefit of all Columbia River anadromous fish. The Council's five-year objective is to see that adequate controls continue to be placed on harvest, consistent with the fish and wildlife program. By supporting the following

efforts for the next five years, the Council hopes to increase the level of understanding of stock patterns and significantly improve harvest management decisions.

Bonneville Actions

38.1 Known-Stock Fisheries

- Share funding, with the fishery management agencies, of a five-year demonstration program to determine the effectiveness of using electrophoresis as a fishery management tool. ~~Initiate the demonstration program during the 1985 ocean fishing season or subsequent seasons if and when they occur.~~ [Section 504(c)(1).] [Source: Council staff.]

- Determine which known-stock fishery measures currently funded under section 704(k) should be classified as research (section 504(c)(2)) and which should be classified as demonstration programs (section 504(c)(3)). Evaluate the research projects pursuant to action item 39.

Council Actions

38.2 Consult on harvest management issues prior to establishment of harvest seasons. [Section 504(b)(1).]

38.3 Consult in the development of the management plan required by the Salmon and Steelhead Conservation and Enhancement Act of 1980 (16 U.S.C. 3311). [Section 504(b)(1).]

38.4 Monitor United States/Canada salmon treaty negotiations **implementation** to encourage maximum consistency with the Council's fish and wildlife program. Provide testimony and comment as needed. [Section 504(b)(3).] [Source: Council staff.]

Fishery Management Agencies' and Tribes' Actions

38.5 Report to the Council each April on escapement objectives, harvest levels and regulations for all runs and their potential effect on program objectives. [Section 504(b)(2).]

38.6 Report to the Council on the effectiveness of known-stock fishery demonstration programs funded pursuant to sections 504(c)(1) and 504(c)(3).

39. Evaluation and Research

The action plan calls for at least two types of evaluations to provide checkpoints to determine whether program objectives are being met. The first is an independent evaluation of a series of research projects related to homing behavior, predation, reservoir losses, known-stock fishery, adult losses, and hatchery diseases or practices (action item 39.1). This type of evaluation should determine, for example, how effective the research projects are likely to be in resolving a major problem. It should examine the experimental design and hypothesis, as well as the quality and usefulness of data from related projects. It also should determine the benefits of implementing results in terms of program goals and objectives and indicate what future actions would be appropriate. [Source: Council.]

The Council's research policies outlined in section 205 call for immediate funding by Bonneville and the Corps of research in six areas of emphasis. These areas are considered critical to the success of the program. In addition, the Council plans to develop a monitoring and evaluation program to measure overall program progress as well as to identify new research needs that emerge as a result of program implementation. [Source: Council.]

A second **Another** type of evaluation will take place in the context of Council review of the federal implementing agencies' work plans, program plans and budget proposals (action item 39.2). The Council will examine and compare federal expenditures to the program measures and call for periodic reporting. [Source: Council.]

Bonneville Action

~~39.1 Continue ongoing work funded under the following measures until the Council has established research objectives (action item 39.3). No new research projects under these measures shall be funded in fiscal year 1985 until establishment of those objectives.~~

~~404(b)(18) 604(d)(2) 704(k)(1)~~

~~404(c)(1) 604(d)(3)~~

~~404(c)(2) 704(h)~~

~~504(c)(2) 704(j),1,~~

[Source: Council.]

39.01 Fund establishment of technical work groups to carry out the tasks identified in section 205(c)(1)-(2). [Source: Council.]

39.02 Fund research in the five-year work plans, as approved by the Council. [Sections 205, 304(d), 404, 704(f), 704(h)(2)(D), 704(k).] [Source: Council.. See also action item 32.1

39.03 Fund data collection for a hatchery data base, as approved by the Council in response to proposals developed by the system monitoring and evaluation work group. [Section 205(f).] [Source: 704(l) CRITFC, Council.]

39.04 Fund data collection for a natural production data base, as approved by the Council in response to proposals developed by the system monitoring and evaluation work group. [Section 205(f).] [Source: 704(f)(2) CRITFC, Council.]

39.05 Fund fish marking or tagging experimental design studies and release and recapture studies, as approved by the Council in response to proposals developed by the system monitoring and evaluation work group. [Section 205(e).] [Source: 404/ AEI, Council.]

Corps Action

39.06 The Corps will continue to implement its research planning process through the Fish Passage Development and Evaluation Program, as provided in section 205(d). These plans will be submitted to the Council by August 1987. [Section 205(d).] [Source: Council.]

Bonneville, Corps; FERC, Bureau Actions

39.2 To ensure proper coordination in the implementation of the program, submit to the Council by January 15, 1985, and by September 15 of each year thereafter (starting in 1985), expenditure and obligation plans and program work plans. Include schedules with key milestones for the subsequent fiscal year. Thereafter, on a quarterly basis, update expenditure and obligation information and submit it to the Council. Also submit to the Council a review of each prior year's expenditure and obligation, explicitly comparing projected and actual expenditures and obligations. Report expenditures for each program measure or project related to a program measure. Also, identify the responsible persons within each agency. [Section 1304(a), 1304(e).] [Source: Council staff.]

Council Actions

39.3 Initiate a study in fiscal year 1985 to aid establishment of research objectives for the program. Upon completion of the study, establish research objectives for the program and revise the action plan accordingly. [Section 1104(c)(1).] [Source: Council staff. Completed action.]

39.4 Conduct a workshop in fiscal year 1985 on the application of adaptive management concepts in appropriate parts of the program. [Source: Council staff. Completed action.]

39.07 Establish a system monitoring and evaluation work group to assist the Council staff in accomplishing the tasks listed in section 205(e) by December 1987. [Section 205(e)(2).] [Source: Council.]

39.08 Review the five-year work plans in the Bonneville areas of emphasis, as a package, and approve as appropriate for Bonneville funding. [Source: Council]

39.5 Schedule periodic consultations with affected parties to review budgets proposed by federal implementing agencies. [Section 1304(a), 1304(e).]

40. Wildlife

The wildlife section of the program sets out a means for proceeding from status reports through mitigation for hydroelectric effects on wildlife. During the next five years this process should continue, but will not be expected to be completed for all projects. The Council's wildlife coordinator will continue to monitor progress and schedule implementation. The Council also will continue to support protection of wildlife from new hydroelectric development.

Bonneville Actions

40.1 Upon completion of all mitigation status reports, the fish and wildlife agencies and tribes will submit a list of priority projects to Bonneville and the Council. Consultations among affected parties should begin. The consultation should define the need for either loss estimates or actual mitigation projects. Prepare and submit to the Council an annual report on activities each April. [Section 1004(b)(1), (2), (3).]

40.2 Fund loss statements as needs are identified. [Section 1004(b)(2).]

40.3 Initiate consultation on loss statements as the statements are completed. [Section 1004(b)(3).]

40.4 Where appropriate, develop funding plans for these projects. [Section 1004(b)(3) and (5), 1004(d)(1) and (2).]

~~40.5 Upon Council approval, implement mitigation plans and land acquisition proposals. [Section 1004(b)(3) and (5), 1004(d)(1) and (2).]~~ [Source: Council staff.]

40.01 In 1987, fund advance design of white-tailed deer, mule deer, Columbian sharp-tailed grouse, and waterfowl projects, and continue to fund implementation and monitoring of the bighorn sheep project, all designed to mitigate the effects of Libby Dam. [Section 1004(b)(4).] [Source: MDFWP proposal, modified by Council.]

40.02 In 1988, continue to fund advance design of the white-tailed deer project; begin to fund implementation and monitoring of the mule deer and waterfowl projects; continue to fund monitoring of the bighorn sheep project; and begin to fund acquisition of easements for Columbian sharp-tailed grouse--all associated with mitigation of the effects of Libby Dam. [Section 1004(b)(4).] [Source: MDFWP proposal, modified by Council.]

40.03 In 1989, complete funding of advanced design and begin funding of implementation and monitoring of the white-tailed deer project; continue to fund implementation and monitoring of the mule deer, bighorn sheep, and waterfowl projects; and continue to fund acquisition of easements for Columbian sharp-tailed grouse--all as mitigation of

the effects of Libby Dam. [Section 1004(b)(4).] [Source: MDFWP proposal, modified by Council.]

40.04 In 1990 and 1991, continue to fund implementation and monitoring of the white-tailed deer, mule deer, bighorn sheep, and waterfowl projects, and continue funding of acquisition of easements for Columbian sharp-tailed grouse--all as mitigation of the effects of Libby Dam. [Section 1004(b)(4).] [Source: MDFWP proposal, modified by Council staff.]

40.05 In 1987, fund prototype and advanced design of and begin to implement the elk/mule deer project. Begin advanced design, interagency coordination, site prioritization, and appraisals for the black bear/grizzly bear, waterfowl, and terrestrial furbearer projects, as part of Hungry Horse Dam mitigation. [Section 1004(b)(4).] [Source: MDFWP proposal, modified by Council staff.]

40.06 In 1988, initiate development of cooperative agreements to implement the terrestrial furbearer portion of Hungry Horse Dam mitigation. [Section 1004(b)(4).] [Source: MDFWP proposal, modified by Council staff.]

40.07 In 1988-1991, continue implementation of the elk mule deer, black bear/grizzly bear, waterfowl, and terrestrial furbearer projects as Hungry Horse Dam mitigation. [Section 1004(b)(4).] [Source: MDFWP proposal, modified by Council.]

Corps Bureau of Reclamation FERC

40.6 ~~Where indicated, implement mitigation plans following Council approval. [Section 1004(b)(3) and (5), 1004(d)(1) and (2).]~~ [Source: Council staff.]

40.7 When and where feasible, implement on a voluntary basis, management plans designed to protect wildlife species identified in section 1004.

Council Actions

40.8 Review mitigation plans and ~~land acquisition proposals~~ **amend those plans or appropriate portions of such plans into the program.** [Sections 1004(b)(3), 1004(b)(5), 1004(d)(1) and (2).] [Source: Council staff.]

41. Resident Fish

Activities in the resident fish area will be limited over the next five years. Recognizing that this relative order of priority may be changed by the Council on its own motion at any time, the Council still favors initiation and continuation of projects that do not conflict with anadromous fish measures and that directly address losses due to hydroelectric development, **including substitution of resident fish for losses of salmon and steelhead.** The Council also will continue to support protection of resident fish from new hydroelectric development. [Source: Council staff.]

41.1 In consultation with **the** Montana Department of Fish, Wildlife and Parks, **Confederated Salish and Kootenai Tribes** and the U.S. Fish and Wildlife Service, continue ongoing work and submit a ~~coordinated work plan~~ **recommendations for future action** to the Council by ~~May 1, 1985, for measures to be implemented in Montana before November 15, 1986~~ **October 1, 1989**. [Sections 804(a)(2), 804(a)(3), ~~804(a)(6),~~ 804(a)(9), 804(b)(1)(C), 804(b)(1)(D), 804(b)(3-6), **and 804(b)(5)-(6)**.] [Source: 804(a)(2)/ MDFWP, 804(a)(3)/ SK, 804(b)(5)/MDFWP, and 804(b)(6)/ SK.]

41.2 ~~Initiate design~~ **Complete construction** of the Colville hatchery by ~~fiscal year 1986~~ **March 1989. Build the hatchery in fiscal years 1987-1988.** [Section 804(e)~~(15)~~**(g)(1)(A)**.] [Source: Council staff.]

41.3 ~~Evaluate current ongoing activities on sturgeon. Develop a work plan for future action. Submit to the Council by May 1985.~~ [Source: Council staff. Completed action.]

41.4 ~~Complete construction of Pend Oreille hatchery by October 1986. [Section 804(e)(5).]~~ [Source: Council staff. Completed action.]

41.5 ~~Develop a work plan for Clark Fork fishery loss, including augmenting flows in the Bitterroot River through a water purchase in Painted Rocks Reservoir. Submit it to the Council in May 1985. Provide interim funding for flow augmentation until funding is provided by the Montana Power and Washington Water Power companies under action item 41.14. [Section 804(e)(1), 804(e)(2), and 804(e)(11).]~~ [Source: 804(e)(1)/ MDFWP and Council staff. Completed measures. See also action item 41.14.]

41.6 Initiate removal of accumulated materials in the Kootenai River where appropriate. [Section 804(d)(1).]

41.7 Initiate assessment of impacts of the construction and current operation of Dworshak Dam on resident fish. [Section 804(e)(12).]

41.8 Prepare and submit to the Council an annual report on resident fish implementation in May

41.01 **In consultation with the Montana Department of Fish, Wildlife and Parks, the Confederated Salish and Kootenai Tribes and the U.S. Fish and Wildlife Service, continue ongoing work and submit recommendations for further action to the Council, based on drawdown and related studies in Montana, by November 15, 1987. [Section 804(b)(3-4).]** [Source: 804(b)(3)/MDFWP, 804(b)(4)/MDFWP.]

41.02 **Fund stream survey; design, construction, operation, and maintenance of a cutthroat and bull trout hatchery on the Coeur d'Alene Reservation; habitat improvement projects, and a three-year monitoring program. [Section 804(g)(1)(B)].** [Source: 804(e)/UCUT-1.]

41.03 **Fund design, construction, operation and maintenance of kokanee salmon hatcheries at Galbraith Springs and at Sherman Creek starting in October 1987. Fund monitoring programs to evaluate the effectiveness of this action. [Section 804(g)(1)(C).]** [Source: 804(e)/UCUT-2.]

41.04 **Fund design, construction, operation and maintenance for habitat and passage improvement projects on Lake Roosevelt tributary streams starting in October 1987. Fund monitoring programs to evaluate the effectiveness of this action. [Section 804(g)(1)(C)].** [Source 804(e)/UCUT-2]

41.05 **Fund design, construction and operation of a sturgeon and kokanee hatchery on the Kootenai Indian Reservation starting in October 1987. Fund an evaluation study for the effectiveness of the hatchery. [Section 804(g)(1)(E).]** [Source 804(e)/UCUT-4]

41.06 **Fund a study to assess the impact of water level fluctuations on sturgeon and kokanee in the Idaho portion of the Kootenai River, starting in October 1988. [Section 804(g)(1)(E).]** [Source 804(e)/UCUT-4]

41.07 **Fund fisheries studies and the design, construction, operation and maintenance of a yellow perch aquaculture facility on the Kalispel Reservation. [Section 804(g)(1)(D).]** [Source 804(e)/UCUT-3]

Corps Action

41 9 Develop and implement operating procedures for resident fish at Libby Reservoir on the schedules provided in sections 804(a)(7, 804(b)(1) 804(b)(2)

41 10 Continue existing resident fish stocking program Coordinate with fish and wildlife agencies and tribes [Section 804(e)(9)]

41.08 **Fund a study of the existing and potential fisheries resources in the Pend Oreille River from Lake Pend Oreille to Albeni Falls Dam. [Section 804(e)(16).]** [Source 804(e)(4)/IDFG]

FERC Actions

41.11 Maintain minimum flows between Big Fork Dam and the powerhouse ~~Initiate studies and research~~—**Examine mitigation alternatives.** [Sections 804(a)(4), ~~(5)~~] [Source 804(a)(4)-(6)/MDFWP]

41.12 Initiate evaluation of operating procedures at Milltown Dam. [Section 804(b)(8).]

41.13 Continue existing operations at Post Falls Dam. [Section 804(b)(9).]

41.14 Provide that Montana Power **Company** ~~and Washington Water Power companies fund~~**s** water purchase at Painted Rocks Reservoir to provide instream flows for resident fish [Section 804(e)(1).] [Source 804(e)(1)/MDFWP This action item amendment reflects the completion of action item 41.5]

41.09 **Provide that Washington Water Power Company, in coordination with the Montana Department of Fish, Wildlife and Parks, conducts research on the lower Clark Fork drainage. [Section 804(e)(11).]** [Source 804(e)(11)/MDFWP]

41.15 Develop and implement operating procedures for resident fish at Hungry Horse Dam on the schedules provided in sections 804(a)(1), 804(a)(8), 804(b)(1), and 804(b)(2).

41.16 Ensure that Anderson Ranch Dam is operated to maintain established minimum flows. [Section 804(a)(10).]

41.17 ~~Install a~~ **Maintain the** barrier net system at Banks Lake. [Section 804(e)**(5)**~~(7)~~.] [Source: Council staff.]

Appropriate Implementing Party Not Determined. (See Introduction to this document.)

41.010 Fund resident fish projects at the Duck Valley Indian Reservation. [Section 804(g)(2)(A).] [Source: 201/SP, modified by Council staff.]

41.011 Implement design, construction, placement and evaluation of shoreline habitat in C.J. Strike Reservoir. [Section 804(g)(2)(B).] [Source: 804(e)/IDFG-4, modified by Council staff.]

41.012 Fund construction of a spawning trap and propagation and release of 400,000 kokanee fry annually into Lucky Peak Reservoir. [Section 804(g)(2)(C).] [Source: 804(e)/IDFG-3, modified by Council staff.]

41.013 **Initiate habitat restoration and enhancement projects at the Fort Hall Indian Reservation. [Section 804(g)(2)(D)-(E).]** [Source 804(e)/SB-2, modified by Council staff.]

41.014 **Fund resident fish habitat improvement projects in the Malheur Basin, starting in fiscal year 1988. Fund evaluation and maintenance starting in fiscal year 1991. [Section 804(g)(2)(F).]** [Source 804(f)(1)/ODFW modified by Council staff.]

41.015 **Fund design, construction, operation and maintenance of a resident trout hatchery on the Fort Hall Reservation. [Section 804(g)(2)(D).]** [Source 804(e)/SB-1, with staff modifications.]

42. Coordination

Consultation and coordination among all interested parties will continue to be crucial to program success. The following measure deserves to be highlighted.

Actions

42.1 All federal project operators and regulators shall continue to coordinate and consult, as indicated in section 1304.

42.2 Prior to revision of its power plan, the Council will request recommendations for amendment of the fish and wildlife program. [Section 1404.]

TECHNICAL APPENDIX 1:
COMPLETED ACTIONS

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COMPLETED ACTIONS

Former Program Section Number	Action	Implementing Agency
201. Action Item 36.1 (as amended)	Supplemental budget for salmon and steelhead planning	Council
201. Action Item 36.2 (as amended)	Goals work plan Compilation of losses information Salmon and steelhead productivity analysis Blocked area identification Resident fish productivity analysis Related consultations	Council
201. Action Item 39.4 (as amended)	Adaptive management workshop	Council
404(a)(1), 404(a)(10) Action Item 32.13 (1st bullet)	Spill effectiveness report Wells Dam	FERC, Douglas County PUD
404(a)(2), 404(a)(10), Action Item 32.12 (3rd bullet)	Spill effectiveness report Rocky Reach and Rock Island dams	FERC, Chelan County PUD
404(a)(3), 404(a)(10), Action Item 32.11 (2nd bullet)	Spill effectiveness report Priest Rapids Dam	FERC, Grant County PUD
404(a)(3), 404(a)(10), Action Item 32.11 (4th bullet	Spill effectiveness report Wanapum Dam	FERC, Grant County PUD
404(b)(4)(B), Action Item 32.4 (2nd bullet)	Biological and prototype screen reporting. The Dalles Dam	Corps

404(b)(5). Action Item 32.3 (2nd bullet)	Report on evaluation of screens and bypass at both Corps Bonneville Dam powerhouses	Corps
404(b)(14). Action Item 32.18	Installation of juvenile bypass facility at Leaburg Canal	FERC Eugene Water and Electric Board
404(b)(17). Action Item 32.2 (3rd bullet)	Transportation report and proposal	Corps
604(a)(5) Action Item 32.5 (4th bullet)	Report on adult passage delays at John Day Dam	Corps
604(b)(3). Action Item 32.4 (5th and 6th bullets)	Installation of vertical slot counters at The Dalles Dam	Corps
604(c)(3) (1982 program)	Tumwater-Dryden adult passage feasibility study	Bonneville
704(d)(1)	White River Falls passage feasibility study	Bonneville
704(h)(2)(E)	Fish health proposal	Pacific Northwest Health Protection Committee
804(e)(1). Action Items 41.5 and 41.14	Painted Rocks Reservoir water purchase	Bonneville, FERC, Council, Montana Power Company, Montana Department of Fish Wildlife & Parks
804(e)(4) (5) Action Item 41.4	Construction of Cabinet Gorge Hatchery	Bonneville, Washington Water Power, Idaho Department of Fish and Game

804(e)(7). Action Item 41 17	Installation of barrier net at Banks Lake	Bureau of Reclamation
804(e)(8). Action Item 41 3	Develop sturgeon work plan	Bonneville
1104(c)(1). Action Items 34 26 and 39 3	Research study	Council

NOTE Other actions completed by February 1987 also will be added to this list for publication in the revised program

PART 2:
PROPOSED REJECTION LANGUAGE[1]

1./ Citations are to provisions of the Northwest Power Act, unless otherwise indicated.

304(a)-(d)/CBFWC Amendment applications 304(a)-(d) CBFWC and 1504(33)/C BFWC propose to clarify the present program Water Budget accounting procedure by changing to an average daily accounting method. The Council proposes to reject the average daily accounting method because it believes average weekly Water Budget accounting and use, coupled with an 80 percent flow fluctuation limit on weekends and holidays throughout the April 15 to June 15 period, would be as effective in achieving the biological objective of decreasing smolt travel time as the fishery agencies' and tribes' proposal. Since mainstem Columbia and Snake river flows typically fluctuate from high weekday flows to low weekend flows. The weekend flow fluctuation limit should prevent large drops in flows which, as the fishery agencies and tribes have indicated, tend to stall the smolt migration. Therefore, the Council believes its amendment would be as effective as the average daily flow proposal in reducing smolt travel time and increasing survival, but at a lower cost to the power system. Moreover, the Council believes daily flow shaping may be unnecessary because in all or most years non-Water Budget flows during the April 15 through June 15 period should be sufficient, with the weekend flow fluctuation limitation, to provide weekly average minimum fishery flows. (16 U.S.C. 839b(h)(6)(C).)

304(a)-(d)/CBFWC In 304(a)-(d)/ CBFWC, applicants asked Bonneville to provide the Council with an annual report of its power marketing operations during the Water Budget period. The Council proposes rejection of this proposal because its purpose already is addressed in existing program measures, and the proposed amendment would be less effective than existing measures to protect, mitigate, and enhance fish and wildlife. (16 U.S.C. 839b(h)(7)(C).) Section 1304(a)(1) states that federal project operators and regulators shall treat the program as a hard constraint in

system power planning, operation and regulation and in decision making under the Pacific Northwest Coordination Agreement. It also requires Bonneville to use its financial and legal authorities in a manner consistent with the program and to take the program into account at each relevant stage of decision making.

Section 1304(a)(3) states that, with respect to Bonneville, the requirements of 1304(a)(1) shall apply to power supply forecasting and power scheduling, among other actions. Furthermore, 1304(a)(4) states that project operators and regulators are to provide plans in a timely manner, indicating that they will implement the program or explain why they cannot. These materials must be in a written form. Section 1304(c) also states that project operators and regulators are to work with the fish and wildlife agencies and tribes to develop mutually satisfactory arrangements for implementing the program. This measure calls for consultation among all parties in the development of study plans. Section 1503 also calls for annual reports to be submitted by all pertinent implementing agencies, including Bonneville. To be included are reports on mainstem passage and the Water Budget.

The Council believes these measures, and the associated plans and reports which they require, should provide the fish and wildlife agencies and tribes with sufficient avenues to obtain the type of information they are seeking without amending the program. It notes, however, that Bonneville has not provided the annual reports on mainstem passage and the Water Budget as specified by the program. The Council staff has reminded Bonneville repeatedly of this oversight, both in writing and in its quarterly reports. Bonneville has stated that it will supply these reports at some future date. The Council asks that Bonneville indicate, during the comment period on this document, the date by which it will provide these reports, as well as all other relevant power marketing reports, to the fish and wildlife agencies and Indian tribes, as well as to the Council.

403,404(b)/CBFWC and 1504/CBFWC Amendment applications 403 404(b) CBFWC and 1504/CBFWC propose to increase the levels of interim spill to 31 41 and 41 percent respectively of the average daily flow at Lower Monumental Ice Harbor and The Dalles dams, respectively to provide increased smolt survival over the present program spill requirements and to protect 80 percent of the spring and summer migrations

The Council proposes to reject the fish and wildlife agencies' and tribes' applications This is the second time the Council has considered the spill issue in 1986 On February 13, 1986, the Council rejected this same spill application while extending the duration of the program's spill requirements to provide at least 90 percent smolt survival for 80 percent of the spring and summer migrations. Since that time, the region s fish and wildlife agencies and tribes have resubmitted the interim spill amendment application to the Council. The Council has circulated applications 403,404(b)/ CBFWC and 1504/ CBFWC for public comment and has heard comment from the proponents and others. The Council believes that no additional scientific knowledge has been offered to support the application since February 1986

After carefully considering this matter again, the Council believes the best available scientific knowledge shows that an increase in spill levels from the present program requirements would not effectively increase upriver runs in the interim period until bypass systems are installed. Cumulative effects of reservoir mortalities would tend to negate any biological benefits of additional interim spill Differences in systemwide smolt survival between the proposed amendment and the existing measure are about one to two percent (depending on water condition) based on model studies conducted in 1985 and 1986 in cooperation with the Council's Mainstem Passage Advisory Committee (MPAC) This represents only about a one percent improvement in average survival at each mainstem dam The Corps has assured the Council that in above average water years, spill

will occur in addition to that called for by the program's 90 percent survival standard. Such spill increases would narrow further the survival differences between the two alternatives.

In view of these factors, the Council believes the two alternatives are virtually indistinguishable. In the longer term, this issue underscores Congress' charge that alternatives to spill be explored. The Council calls for such alternatives in measures for bypass, transportation, the Water Budget and various production measures. In the interim period, the Council believes there is a role for spill in protecting against catastrophic losses of anadromous fish stocks in very low water years. Avoiding such losses merits exceptional measures, and the current spill program should help accomplish this important objective. In this connection, the Council notes that the program provides 30 days more spill at Ice Harbor and Lower Monumental dams than the proposed amendment would. The Council believes the present program spill requirements, in combination with measures included or proposed for inclusion in the program on bypass, transportation and various production measures, are more effective and less costly alternatives for increasing upriver runs in a biologically sound manner. (16 U.S.C. 839b(h)(6)(C).)

404(b)(17)/COE. The Corps' proposed amendments regarding transportation called for: 1) full transportation of all species in all flow years, 2) deletion of language calling for preparation of a comprehensive report on transportation activity, and 3) crediting of transportation benefits to non-collector projects (Lower Monumental, Ice Harbor, John Day, The Dalles and Bonneville dams). The Council proposes to reject the first and third portions of the application and to accept the second part. In addition, the Council is including language in the program recognizing the fishery agencies' and tribes' responsibility to set transportation policy.

The effect of the "full transportation" portion of the Corps' proposed amendment would be to take the fishery agencies and tribes out of the decision-making process on transportation, and, therefore, would be inconsistent with sections 4(h)(6)(A) and 4(h)(11)(B) of the Northwest Power Act, and section 1304(c) of the fish and wildlife program. As a result, it would be less effective than the existing program and the Council's new language. (16 U.S.C. 839b(h)(7)(C).) Moreover, under the Columbia River Fish Compact, Washington and Oregon have concurrent jurisdiction over anadromous fish in the Columbia River where the river borders both states. Congress authorized the two states to enter into the compact for the "regulation, preservation, and protection of fish in the waters of the Columbia River." 40 Stat. 515 (1918). The Council is aware of no Congressional action that has authorized the Corps of Engineers to act inconsistently with the state authority under that compact. For all of these reasons, the Council proposes to reject the Corps' application.

Because the portion of the Corps' proposed amendment dealing with crediting of transportation to individual project survival goals would likely result in lower juvenile survival for some important stocks, the Council proposes to reject that proposal because it: 1) would not serve to "protect, mitigate, and enhance" the fishery resource as affected by hydroelectric development (16 U.S.C. 839b(h)(5)), and 2) by reducing smolt survival at non-collector projects, it does not provide "improved survival of [salmon and steelhead] at hydroelectric facilities" (4(h)(6)(E)(iii)), and therefore it would be less effective than adopted recommendations (16 U.S.C. 839b(h)(7)(C).)

The Council believes this proposed course of action would acknowledge the fishery agencies and tribes as the agencies with biological expertise and legal authority to set fish transport policy. Further research on the benefits of transportation clearly is needed to manage and assess the

benefits and roles of transportation properly. Transportation crediting should be considered in developing ways to measure systemwide successes and failures under draft sections 205 and 206 of the program.

704 CBFWC CBFWC proposed that Bonneville wheel power from federal hydropower projects to existing fish facilities constructed to mitigate the effects of development of the Federal Columbia River Power System. The Council staff proposes to reject this proposal, because it appears that it would serve only to shift the sources of funding for hatchery power, rather than to protect, mitigate or enhance hatchery fish (See 16 U S C 839b(h)(5).) In addition, the applicant has not explained why Bonneville funding of power expenses at existing hatcheries would not be in lieu of other expenditures authorized or required from other entities under other agreements or provisions of law (16 U.S C 839b(h)(10)(A).) Measures for new hatcheries funded under this program already call for Bonneville funding of operation and maintenance expenses, so a new measure is not needed to cover that aspect of the CBFWC proposal. See sections 704(i)(1) (Umatilla facilities); 704(i)(2)(C) (John Day acclimation ponds); 704(i)(3) (Yakima outplanting facility), draft 704(i)(5) (proposed northeast Oregon hatchery); 804(e)(15) (Colville hatchery); and draft 804(g) (various proposed resident fish facilities)

704(d)(1)/USFS-4. The Council staff proposes rejection of the McComas Meadows land purchase portion of this application because any land acquisition for the purpose of wildlife mitigation should be submitted through mitigation plans as specified in section 1004. The Council staff believes the section 1004 process is more effective than this application in linking wildlife mitigation to hydropower impacts as required by the Northwest Power Act (See 16 U.S.C. 839b(h)(5), (7)(C).)

704(d)(1)(A)-(D) PNUCC In this application, PNUCC proposes that feasibility studies be conducted on tributary passage and habitat improvement projects prior to Bonneville funding, until strategic planning objectives are adopted by the Council. PNUCC explained that it is concerned that projects in the 704(d)(1) table were adopted with "minimal supporting information" and the existing measure assumes "automatic" funding by Bonneville. The Council staff has proposed changes in section 704(d)(1) and related action item 34.5 in section 1504, which it believes would be more effective than the PNUCC proposal. (16 U.S.C. 839b(h)(7)(C).) The staff proposes that a) the projects in the 704(d)(1) be considered as part of an inventory of alternative opportunities in draft section 204 subbasin planning, b) Bonneville fund new projects from 704(d)(1) only upon a showing to the Council of a need for additional habitat and that that need can be met best by the project proposed for funding, and c) once draft section 203 system policies and draft section 204 subbasin plans are adopted by the Council, 704(d)(1) project funding would be consistent with those policies and plans. The staff believes those changes should better ensure that ratepayer funds are spent on well-considered projects. If PNUCC believes any specific projects currently in, or proposed for addition to, the 704(d)(1) table are not supported adequately, it may propose their deletion in amendment proceedings.

704(b)/ WDG-1 The application calls for Bonneville funding of the development of habitat preference curves for trout, steelhead and coho. The majority of the effort is focused on resident fish in this study. The Council staff proposes rejection of this application. The Council has adopted measure 1204(a)(1) which requires hydroelectric developers in the basin to mitigate harm to fish, including identifying and maintaining adequate instream flows for all life stages of fish. This measure should be more effective and less costly than the proposed measure. (16 U.S.C. 839b(h)(7)(C).) With respect to resident fish, measure 804(e)(16) specifies criteria for

consideration of resident fish amendments. Proposed projects must be supported by documentation of or agreement on losses attributable to the hydroelectric facility at issue, evidence that significant biological gains will occur from the project and evidence that the project will not result in significant conflict with anadromous fish restoration efforts. The application is deficient on all three points.

704 YIN This application would add a measure to program section 704 to have Bonneville fund design and construction of adult passage facilities at Castille Falls on the Klickitat River. This project provides an opportunity to answer questions on adult passage, habitat use, colonization, and hatchery supplementation, as well as to provide additional harvest benefits. The Council staff proposes to reject this application because the proposed project already is in the program in 704(d)(1), Table 2. (See 16 U.S.C. 839b(h)(7)(C).)

800 ODFW The Council staff proposes to reject this amendment application which requests Bonneville funding for a study to determine how best to mitigate adverse impacts of hydropower development on trout production and fisheries caused by impoundment of the Middle Fork Willamette River by Lookout Point Dam. This application fails to document an agreement on resident fish losses attributable to the hydroelectric facility at issue, as required by program section 804(e)(16). Consultations with the project operator (Corps) and the applicant (ODFW) have shown that there is disagreement whether mitigation for losses has occurred. For this reason the staff cannot determine whether or not the proposed amendment addresses effects of the development, operation and management of Lookout Point Dam. (See 16 U.S.C. 839b(h)(5)(B).) In addition, the applicant has not provided evidence that the proposal would not conflict with restoration of salmon and steelhead, as required by program section 804(e)(16).

804(a)(1)/ MDFWP The proposed amendment would modify the language of program section 804(a)(1) to extend the time period for the required minimum flow below Hungry Horse Dam for emergence of kokanee. The Council staff proposes rejection of this amendment application because the information in the application is insufficient to support the Council reaching a determination that the language change would protect, mitigate and enhance fish and wildlife while assuring the Pacific Northwest an adequate, efficient, economical, and reliable power supply. (See 16 U.S.C. 839b(h)(5), (6)(B).) The amendment application does not demonstrate that it is based on the best available scientific knowledge because the application provides no information on the biological need for the proposed amendment. (16 U.S.C. 839b(h)(5).) It also is unclear whether the extended period for kokanee emergence flows would impact the power supply and/or the Water Budget flows for salmon and steelhead.

804(b)/ SB This application proposes that the Bureau of Reclamation fund an evaluation of the current operating procedures at American Falls Dam to determine the impact of those operations on native fish populations. The Council staff proposes rejecting this amendment application because the Bureau of Reclamation does not own and is not responsible for the current operations of the powerhouse at American Falls Dam. As a result, this application does not constitute a "recommendation" for purposes of the Council's program because it is not a proposal for a measure "which can be expected to be implemented" by the Bureau of Reclamation. (16 U.S.C. 839b(h)(2)(A).) Any fish losses caused by Bureau operations at this dam in the past were not attributable to hydropower and therefore fall outside the scope of this program. (See 16 U.S.C. 839a(h)(5).)

804(b)(1)(A)/ MDFWP. The application would modify program section 804(b)(1)(A) to limit drawdown to flood control purposes only at Hungry Horse and Libby reservoirs, and even then only in years of high runoff (about 20 percent of all years). Bonneville has expressed concerns about impacts of this proposed amendment on secondary power generation. The Corps is concerned that it could not meet the proposed operating constraints. It interprets the existing program language to allow exceeding the drawdown limit in 20 percent of all years for power purposes and exceeding the drawdown limit in the remaining 80 percent of all years for flood control purposes. The Corps' current operational plan drafts Libby reservoir at least 110 feet (the drawdown limit) in two out of three years for flood control purposes in normal to high runoff years. The Corps also believes the proposal is in direct conflict with hydropower system firm power capability guaranteed by the option to draft all authorized usable reservoir storage in normal runoff years. The Corps estimates this proposal would make the lower 62 feet of Libby reservoir drawdown, comprising 1,200,000 acre-feet of usable storage, unavailable for power purposes. The Council staff proposes rejection of this amendment application because the information in the application is insufficient to support a Council determination that the proposal would protect, mitigate and enhance fish and wildlife while assuring the Pacific Northwest an adequate, efficient, economical and reliable power supply. (See 16 U.S.C. 839b(h)(5).)

804(e)/IDFG-1 This application calls for the construction of an upstream resident fish ladder on an existing irrigation diversion to open six to seven miles of habitat in Pritchard Creek (South Fork Snake River) for migratory cutthroat trout. The Council staff proposes to reject this amendment because the project seeks to correct damage to resident fish caused by an irrigation facility. As a result, the amendment does not address effects of the development, operation and management of the hydroelectric system on resident fish. (See 16 U.S.C. 839b(h)(5).)

804(e) IDFG-2 This application calls for the construction of an upstream resident fish passage facility and downstream fish screen and bypass facility at the Palisades Creek irrigation diversion on the Snake River. The Council staff proposes to reject this amendment because the project seeks to correct resident fish damage caused by an irrigation facility. As a result, the amendment does not address effects of the development, operation and management of the hydroelectric system. (See 16 U.S.C. 839b(h)(5), program section 804(e)(16).)

804(e) OT The Council staff proposes to reject this amendment which requests Bonneville funding to provide riparian habitat improvement and pool construction on the upper Metolius River. The Council rejected a similar amendment application in 1984 because there was insufficient documentation of the biological benefits of the proposed project and of the nature and extent of unmitigated losses attributable to hydropower development and operation to be addressed by the project. The same deficiencies apply to the current application. In addition, the requirements of program measure 804(e)(16) pertaining to resident fish projects are not met. Specifically, the applicants fail to: a) document agreement on resident fish losses attributable to the hydroelectric facilities at issue (hydroelectric projects on the Deschutes River), b) provide evidence that significant biological gains will be achieved by the proposed expenditure, or c) provide evidence that the project will result in no significant conflict with efforts to restore anadromous fish. As a result, the staff is unable to conclude that the best available scientific knowledge shows that the amendment would protect, mitigate and enhance fish and wildlife affected by hydropower operations and development. (16 U.S.C. 839b(h)(5)(6).)

804(e)(6)/IDFG This application proposes to modify section 804(e)(6) to require Bonneville to fund the propagation and release of one million coho fingerlings into Cascade Reservoir as well as construction of increased hatchery capacity to allow for propagation of those coho. The Idaho Department of Fish and Game states this amendment would mitigate the effects on resident fish caused by the construction and operation of Cascade Reservoir. Because Cascade Dam is a nonhydroelectric facility, the Council staff proposes to reject this amendment and delete the measure in the current program since there is no evidence the proposal is directed at the effects of the hydropower operation and development of resident fish. (See 16 U.S.C. 839b(h)(5).) Proposals for the addition of hydropower facilities at this dam would be considered under the terms of section 1204 of the Council's program.

804(e)/WDG This application requests Bonneville funding for design, construction, operation and maintenance of nursery ponds for smallmouth bass in the vicinity of the Hanford Reach of the Columbia River. The Council staff proposes to reject this amendment because it is uncertain whether smallmouth bass prey on salmon and steelhead. Accordingly, the Council staff cannot determine that the proposal would protect, mitigate and enhance fish (16 U.S.C. 839b(h)(5)), that the proposal is based on and supported by the best available scientific knowledge (16 U.S.C. 839b(h)(6)(B)); or that it would complement the activities of the tribes' and agencies' existing and future activities. (16 U.S.C. 839b(h)(6)(A).)

900 YIN-1 This application requests Bonneville funding for a study of hatchery supplementation methods for steelhead in the Yakima River Basin. Such needs already are covered more comprehensively under existing program measures, such as 704(k)(1) and 704(l)(3). The Council

staff proposes rejection on the basis that it is less effective than existing program measures. (See 16 U.S.C. 839b(h)(7)(C).)

900 YIN-2 This application requests continued Bonneville funding of a spring chinook study in the Yakima Basin. Such a project is appropriate under existing program measures 704(k)(1) or 704(i)(3) and should be considered in those broader contexts. The Council staff proposes rejection of this recommendation on the basis that measures already in the program address needs for this study and others in a broader way. (See 16 U.S.C. 839b(h)(7)(C).)

900/YIN-3 This application requests Bonneville funding for monitoring of adult and juvenile fish migration at two major points in the Yakima drainage, Roza and Prosser dams. The Yakima outplanting facility under section 704(i)(3) already calls for this and other monitoring to determine success of supplementation. Staff recommends rejection on the basis that it is less effective than measures already implemented under the program. (16 U.S.C. 839b(h)(7)(C).)

903-904/COY This application calls for the Council to evaluate the results of a site feasibility study on Rattlesnake Creek proposed to be developed as a municipal and industrial water supply for the City of Yakima. The Bureau of Reclamation has been investigating new storage sites in the Yakima Basin since 1979, and this site is not on their list of preferred alternatives because of its small size. State fish and wildlife agencies oppose the site because the area is known to be of high value for wintering wildlife and to be inhabited by anadromous fish. The Council staff proposes rejection of this application because it would not protect, mitigate or enhance fish and wildlife. (16

U.S.C. 839(h)(5)), or complement the agencies' and tribes' existing and future activities. (16 U.S.C. 839(h)(6)(A).)

904(a)(4)(B)/FOE This application calls for adding a completion date for water management plans in the Yakima River Basin. The Council supports development of water conservation plans as complementary to the efforts of the hydropower ratepayers in undertaking major offsite enhancement projects in the Yakima River Basin. (See 16 U.S.C. 839b(h)(8).) However, Congress assigned responsibility for development of conservation plans, including setting deadlines for such plans, to the Secretary of the Interior, under Public Law 96-962 and Public Law 97-293. The Council recognizes that responsibility in section 900 of its current program. The applicant has not shown that a Council deadline would protect, mitigate or enhance fish and wildlife affected by hydropower development and operations. The Council staff believes it would be less effective than adopted recommendations. (See 16 U.S.C. 839b(h)(5), (7)(C).)

904(d)/WG This application proposes the installation of diversion control structures in the Yakima River. Staff recommends rejection because the recommendation would not protect, mitigate or enhance fish and wildlife, and could impair passage and spawning. (16 U.S.C. 839b(h)(5).)

1004(e)/PF This application requests that Bonneville cooperate in the regional recovery of the peregrine falcon. The Council staff proposes rejecting this amendment because the current fish and wildlife program (section 1004(b)(3)) already has mechanisms for incorporating peregrine falcon (or other species) programs into mitigation plans being developed by the wildlife agencies.

and tribes (16 U S C. 839b(h)(7)(C)) The Council encourages the wildlife agencies and tribes to consult with The Peregrine Fund Inc . during the development of specific wildlife mitigation plans and agreements to incorporate if appropriate recovery plans for the peregrine falcon

1004(b)-(d) PNUCC This application was submitted by PNUCC to revise the current section 1004 planning process for developing programs for the protection, mitigation and enhancement of wildlife resources The application calls for wildlife mitigation plans to be coordinated with and complement other existing wildlife management plans, deletion of loss statements, and requirements for consensus and negotiation by parties at each stage of the planning process. The Council staff proposes rejecting this application The current section 1004(b) was amended in 1984 in response to recommendations submitted by PNUCC and the wildlife agencies and tribes. Those recommendations were adopted to restructure and clarify the planning provisions in section 1004(b). Under the current program Bonneville has spent nearly $3 million and funded loss statements and mitigation plans from over half of the federal projects in the basin. Further, the Council proposes to amend wildlife mitigation plans into the program, to allow for substantial public review of each wildlife plan The existing program already recognizes the need for coordination and negotiated agreements See sections 1004(b)(5), 1304(c). Requiring 'consensus' could, in effect, give ratepayers veto power over wildlife programs beyond the terms of the Northwest Power Act For these reasons the Council staff believes the proposed amendment would be less effective than the adopted recommendations in protecting mitigating and enhancing wildlife and their habitat to the extent harmed by hydropower operations and development (16 U S C 839b(h)(7)(C).)

1304(f) CRITFC This application proposes that the Council develop procedures to resolve disputes in program implementation, using a process whereby any tribe or agency could file a petition which the Council would investigate and report on within 60 days. Council staff proposes rejection of this application on the ground that it would be less effective than existing measures (16 U.S.C. 839b(h)(7).) Section 1304(a) of the program requires Bonneville and other agencies to provide the Council and other interested parties with written explanations when implementation of any measure is believed to be impracticable. Section 1304(c) of the program and 4(h)(11) of the Act call for Bonneville and others to establish consultation and coordination procedures. In addition, Council staff has a quarterly reporting system designed to identify problems in program implementation. The staff frequently is involved in resolving problems in program implementation as well.

1504(32.6-.10) CBFWC This application would call for studies to help maximize the efficiency of existing adult migrant protection facilities and operations at mainstem hydropower projects. Because of sections 604(a)(1)-(3) and 1504 (action item 32.2) in the program, the proposed change would be less effective than existing program measures. Therefore, the staff recommends rejection of this proposal. (See 16 U.S.C. 839b(h)(7)(C).)

1504(32.3)COE Application 1504(32.3) COE would continue feasibility studies to improve fish guidance efficiency at Bonneville Dam's second powerhouse and change (to January of each year beginning in 1987) the date for submitting to the Council a work plan and schedule for modifications. Staff proposes to accept the portion of the application that concerns continued feasibility studies, but proposes to reject the proposed change in reporting dates and the proposed

new mortality study. Regarding the proposed change in reporting dates, the staff believes that a more effective alternative would be to change the final reporting date to encompass the results of ongoing studies. (16 U.S.C. 839b(h)(7)(C).) This would allow the Council, along with the fishery agencies, tribes, the Corps and Bonneville, to examine the available alternatives and decide on a course of action for modifications to improve fish guidance efficiency at the second powerhouse. The staff recommends rejection of the portion of the amendment calling for a new study of the survival of juvenile fish at both powerhouses and the spillway because Council staff cannot determine that this study would serve to "protect, mitigate, and enhance" the fishery resource. (16 U.S.C. 839b(h)(5).)

1504(32.7)/COE and 1504(32.8)/COE. These amendments would change deadlines for screening and bypass system studies and development at Ice Harbor and Lower Monumental dams to account for the Corps' process of evaluations and budgeting. They also would call for complete installation of turbine screening bypass systems by 1991 at Lower Monumental Dam and by 1992 at Ice Harbor Dam. The staff recommends rejection of these proposed action plan amendments under section 4(h)(7)(C) of the Northwest Power Act, because they would delay complete installation of screening and bypass systems. This would mean a delay in permanent protection of downstream migrating salmon and steelhead at these projects for up to three years past the program's current schedule. The Council, Bonneville, PNUCC, the region's federal and state fish and wildlife agencies and the Columbia River Inter-Tribal Fish Commission have each stressed the importance of permanent bypass system installation at both of these projects at the earliest possible date. Each intends to work with the Corps to achieve that result. To that end, representatives from all parties met on June 24, 1986, to discuss possible means to expedite the Corps' proposed bypass schedules. After a review of bypass system installation schedules at

mainstem Corps projects, both the Columbia Basin Fish and Wildlife Council and the Corps sent letters to the Council suggesting revisions to the schedules the Council had proposed in its amendment applications. Based on the information contained in these letters, the Council staff has made a preliminary decision to accept the Corps' modified proposal for bypass system schedules. However, the Council and its staff will continue to explore ways to accelerate permanent juvenile fish bypass system installation at these two projects.

1504(39.6)/NRIC This application proposes that the Council conduct a Bonneville-funded study of power revenues foregone due to flood control, recreation, irrigation and other uses of the federal hydropower system. Staff proposes rejection of this application because staff cannot determine that the proposed study would protect, mitigate and enhance fish and wildlife. (16 U.S.C. 839b(h)(5).) Moreover, the amendment application would call for hydropower ratepayer funding of a study that goes beyond the effects of hydropower development and operation, which would conflict with congressional direction that "Consumers of electric power shall bear the cost of measures designed to deal with adverse impacts caused by the development and operation of electric power facilities and programs only." (16 U.S.C. 839b(h)(8)(B).)

1504(42.3)/CBFWC This application would call on Bonneville to incorporate into its Long-Term Intertie Access Policy "enforceable conditions" requiring operators of generating resources that wish to transmit power over the intertie to be consistent with the Northwest Power Act, the power plan, and the program. The Council proposes to reject this recommendation because it would be less effective than adopted recommendations for the protection, mitigation and enhancement of fish and wildlife. (16 U.S.C. 839b(h)(7)(C).) Section 1304 of the program already calls on

Bonneville to be consistent with the fish and wildlife program in making intertie arrangements. Implicit in that section is the understanding that Bonneville should develop methods to ensure that this policy is implemented. In addition, the Council believes that the two problems which concern the proponents of this recommendation most--accelerated installation of bypass systems at mainstem federal projects and FERC licensing of new small hydro projects--can be approached more effectively directly. See program sections 404 and 1504 (development of bypass systems), and 1204 (FERC conditioning of new hydroelectric development).