

**COLUMBIA RIVER BASIN
FISH AND WILDLIFE PROGRAM
ANNUAL IMPLEMENTATION WORK PLAN
FOR FISCAL YEAR 1992**

BY

**DIVISION OF FISH AND WILDLIFE
BONNEVILLE POWER ADMINISTRATION
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EXECUTIVE SUMMARY

The Columbia River Basin Fish and Wildlife Program Annual Implementation Work Plan (AIWP) for Fiscal Year (FY) 1992 presents Bonneville Power Administration's (BPA) plans for implementing the Columbia River Basin Fish and Wildlife Program (Program) in FY 1992. The AIWP focuses on individual Action Items found in the 1987 Program for which BPA has determined that it has authority and responsibility to implement. Each of the entries in the AIWP includes objectives, background, progress to date in achieving the objectives, and a summary of plans for implementation in FY 1992. Most Action Items are implemented through one or more BPA-funded projects. Each Action Item entry is followed by a list of completed, ongoing, and planned projects, along with objectives, results, schedules, and milestones for each project.

In October 1988, BPA and the Columbia Basin Fish and Wildlife Authority (CBFWA) initiated a collaborative and cooperative Implementation Planning Process (IPP). The IPP provided opportunities in FY 1991 for the fish and wildlife agencies, Tribes, and other interested parties to be involved in planning FY 1992 Program implementation. This planning process contributed to the development of this year's AIWP. The joint BPA/CBFWA IPP is expected to continue in FY 1992.

The FY 1992 AIWP emphasizes continuation of 143 ongoing, or projected ongoing, Program projects, tasks, or task orders, most of which involve protection, mitigation, or enhancement of anadromous fishery resources. The FY 1992 AIWP also contains 10 new Program projects or tasks that are planned to start in FY 1992.

The continuing and new activities in FY 1992 are summarized briefly by Program or technical area:

Mainstem Passage: BPA-funded projects will continue to support the smolt marking and monitoring program, the Fish Passage Center, and management of the Water Budget (pp. 39-47). BPA will continue to implement 10 projects in the Reservoir Mortality and Water Budget Effectiveness Research Area of Emphasis (pp. 139-146), as agreed upon through ad hoc negotiation with the fishery agencies and Tribes. A new bypass evaluation project (p. 263) is expected to start in FY 1992.

Artificial Propagation: The aim of this Program area is primarily to investigate ways to increase the quality and quantity of fish produced in hatcheries. In FY 1992, BPA plans to continue implementing 15 ongoing Hatchery Effectiveness and Fish Disease Technical Work Group (TWG) Five-Year Work Plan research projects (pp. 147-158). To implement a Policy Review Group recommendation to reduce hatchery effectiveness and fish disease research, BPA will defer four fish disease research projects in FY 1992 (see Plans for Action Item 6.2 on pp. 137-138).

Natural Propagation: A total of 31 ongoing habitat and tributary passage projects in Section 703(c)(1) of the Program will continue or be completed

in FY 1992 (pp. 55-78). These projects, located throughout Oregon, Idaho, and Washington, emphasize enhancement of anadromous fish spawning and rearing habitat and improvement of passage conditions, with the goal of increasing production of naturally spawning stocks.

Supplementation: Six ongoing supplementation research projects from the Supplementation TWG Five-Year Work Plan will continue in FY 1992 (pp. 159-162). The goal of supplementation research is to improve programs for supplementing natural production areas with stocked fish, whether from hatchery or wild stocks, and to assess the potential of supplementation to increase natural production.

Resident Fish: The resident fish projects begun in FY 1991 or before (pp. 179-215) will continue, as will the sturgeon studies being carried out throughout the Basin (p. 202). A new habitat enhancement project on the Fort Hall Reservation will be added to the resident fish program during FY 1992 (p. 197). The FY 1991 "placeholder" project for Hungry Horse and Libby Dam mitigation (p. 267) is expected to provide funding for one or more new mitigation projects in FY 1992, once the Council has amended the Program.

Wildlife: In FY 1992, the shift in emphasis from planning to actual mitigation projects will continue. BPA will continue to implement the six ongoing wildlife mitigation projects under Action Item 8.12 (pp. 238-240). A "placeholder" project for FY 1992 wildlife mitigation in Oregon, Washington, and Idaho has been included in the AIWP (p. 240). Once individual new FY 1992 projects are developed through the IPP, the AIWP will be amended to include the projects. A new project to develop a wildlife monitoring and evaluation program (p. 242) is planned to start in FY 1992.

Major Projects: This category includes major hatchery construction, passage improvement, and habitat enhancement projects implemented by BPA's Fish and Wildlife Project Management Branch. During FY 1992, the following activities will continue: final design of the Yakima/Klickitat Production Facilities (p. 100), development of the Master Plan for the artificial production facility or facilities to be located in northeastern Oregon (p. 108), preliminary design of the Nez Perce Low-Capital Propagation Facilities (p. 118), and operation and maintenance of the Colville Hatchery (p. 180), Umatilla Hatchery (p. 113), Sherman Creek Hatchery (p. 184), and Spokane Tribal Hatchery (p. 185). New FY 1992 projects include design and construction of Dryden Dam screens (p. 85) and five tasks associated with the Yakima/Klickitat Production Project (pp. 103 -105).

Planning Activities: The IPP will continue to guide BPA's Program implementation in FY 1992 (pp. 23-24), and BPA will continue to participate in the seven IPP Scoping Groups. BPA will also participate in

the Council-managed System and Subbasin Planning and System Monitoring and Evaluation programs (pp. 29-30).

Non-Program Internal Support Projects: BPA's Division of Fish and Wildlife will also conduct a number of activities not included in the Council's Program. Several activities, such as BPA's contract with Resources for the Future, are funded by BPA to analyze and improve our understanding of basic fish and wildlife issues. Some of the other non-Program activities funded by BPA are the coordination of the IPP, technical assistance to the Division of Fish and Wildlife, and Idaho water rental projects. To help the public better understand what BPA is doing, Appendix A (p. A-1) describes the non-Program, internal support projects currently funded by BPA.

Endangered Species Act Implementation: BPA's activities are likely to increase during FY 1992, particularly as a result of petitions to list five species of Columbia and Snake River salmon under the Federal Endangered Species Act (ESA). BPA will use, to the extent practicable, the IPP to plan implementation of ESA and Council Early Implementation Package (EIP) projects. In all cases, BPA will keep the Policy Review Group informed regarding all of the ESA and EIP activities we are pursuing. Appendix B (p. A-13) describes the ESA projects that BPA is currently implementing.

Early Implementation Package: An addendum, outlining BPA's plans for implementing the EIP actions recently amended into the Program, has been included at the end of the AIWP.

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8.6 LIBBY DAM MITIGATION	229
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I. INTRODUCTION

General

The Columbia River Basin Fish and Wildlife Program (Program) was developed by the Northwest Power Planning Council (Council) in accordance with Public Law 96-501, the Pacific Northwest Electric Power Planning and Conservation Act (Act). The purpose of the Program is to guide the Bonneville Power Administration (BPA) and other Federal agencies in carrying out their responsibilities to protect, mitigate, and enhance fish and wildlife of the Columbia River Basin. The Act explicitly gives BPA the authority and responsibility to use the BPA fund for these ends, to the extent that fish and wildlife are affected by the development and operation of hydroelectric generation in the Columbia River Basin. The Columbia River Basin Fish and Wildlife Program Annual Implementation Work Plan (AIWP) presents BPA's plans for implementing the Program during Fiscal Year (FY) 1992.

The AIWP reflects the primary goals of the Council's Action Plan (Section 1400 of the Program): to provide a solid, timely, and focused basis for budgeting and planning. In addition, the AIWP provides a means to judge the progress and the success of Program implementation. The AIWP is based on the outline developed by the Policy Review Group (PRG) during Step 1 of the annual cycle of the Implementation Planning Process (IPP), which is described in Section III.

This AIWP has been organized and written to meet the specific needs of Program Action Items 10.1-10.3. The AIWP includes schedules with key milestones for FY 1992 and beyond, and addresses the Action Items assigned to BPA in Section 1400 of the 1987 Program and in subsequent amendments.

All Program projects discussed in the AIWP are listed in Tables 1 and 2 according to their status as of May 21, 1991. Table 1 (pp. 3-14) lists completed, ongoing, and deferred projects. Table 2 (pp. 15-16) lists FY 1992 new-start projects. "Ongoing" status indicates that the project started in FY 1991 or before and that it is expected to continue through part or all of FY 1992. "Deferred" means that BPA implementation has been postponed to FY 1993 or later. "Completed" indicates completion during FY 1991. "New" denotes projects planned for BPA implementation in FY 1992.

A number of projects are expected to begin in late FY 1991 and have been listed in Table 1 of the AIWP as "Projected FY '91 Starts," based on their projected start dates. Several other projects are expected to end in late FY 1991. These projects have been listed in Table 1 as "Projected FY '91 Completions," based on their projected completion dates.

FY 1992 AIWP

The AIWP continues to focus on individual Program Action Items. Each Action Item entry is accompanied by the relevant Program measure language (or abstract), a statement of BPA's objectives in implementing the Action Item, a discussion of background and progress to date, and a summary of implementation plans for FY 1991 to accomplish the Action Item.

The AIWP also presents plans for individual project implementation. Project level reporting has been condensed to tabular form wherever possible. Tables

are subdivided into:

- I. Completed Projects
- II. FY 1991 Ongoing Projects
- III. Deferred Projects (if applicable)
- IV. New Projects

Within each of these four categories, appropriate information is provided, e.g., Project Number, Project Title, Date Completed, Results/Conclusions, Project Status, Schedule and Milestones, Anticipated Start Date, Reason for Deferral, and Project Officer.

Non-Program Activities

BPA also funds some fish and wildlife activities that are not in the Council's Program. Appendix A describes BPA's non-Program, internal support projects. These projects were not subject to review by the Policy Review Group and have been included in the AIWP to help the public to better understand what BPA is doing. Appendix B describes BPA's ongoing Endangered Species Act projects.

Abbreviations Used

The AIWP uses many abbreviations to identify various agencies, organizations, and technical terms. Table 3 (pp. 19-20) lists the full name of each group, or the technical term, and the corresponding abbreviation used in the AIWP.

TABLE 1. ONGOING, DEFERRED, AND COMPLETED PROGRAM PROJECTS

PROJECT STATUS DEFINITIONS:

ONGOING = BPA is currently implementing project, i.e., there is a signed agreement, and project is expected to continue into FY 92.

FY 91 START = Project was in FY 91 AIWP as a NEW FY 91 Project; there is no signed agreement yet, but BPA expects to start implementing project in FY 91.

DEFERRED = Project was in FY 91 AIWP; BPA implementation has been postponed to a future fiscal year beyond FY 92.

COMPLETED = Project completed in FY 91. (Projects completed before FY 91 are not listed in the FY 92 AIWP.)

FY 91 COMP = Project is expected to be completed in FY 91.

TABLE 1
FY 1992 WORK PLAN PROJECTS

ONGOING, DEFERRED, AND COMPLETED PROJECTS

ACTION ITEM	TECHNICAL SUBJECT	PROJECT NUMBER	STATUS	RPA	TITLE
2.1	WATER BUDGET MANAGEMENT	87-127	ONGOING	F1101	SMOLT MONITORING AND WATER BUDGET PROGRAM
		83-6	ONGOING	F1101	OPERATION/MAINTENANCE OF BPA FISH TAGGING TRAILER
2.2	SMOLT MONITORING	83-323	ONGOING	F1101	SMOLT MONITORING/WATER BUDGET
		84-14	ONGOING	F1101	SMOLT MONITORING/WATER BUDGET
		87-401	ONGOING	F1101	SMOLT SURVIVAL AND TRAVEL TIME
		91-28	ONGOING	F1101	PIT-TAGGING OF WILD CHINOOK IN IDAHO AND OREGON
		91-40	ONGOING	F2701	BONNEVILLE DAM JUVENILE FISH SAMPLING FACILITIES
3.1	CONDUIT DESIGN	NONE			
4.1	ELLENSBURG SCREENS	NONE			
4.2	HABITAT AND PASSAGE IMPROVE- MENT PROJECTS	81-108	ONGOING	F1109	WARM SPRINGS HABITAT IMPROVEMENT
		83-7	ONGOING	F1112	IDAHO HABITAT EVALUATION/IMPROVEMENT PROJECTS
		83-359	ONGOING	F1107	SALMON RIVER HABITAT ENHANCEMENT
		83-415	ONGOING	F1107	ALTURAS LAKE
		83-436	ONGOING	F1501	THREE MILE DAM PASSAGE IMPROVEMENTS - O&M
		84-5	ONGOING	F1107	CLEARWATER RIVER SUBBASIN
		84-6	COMPLETED	F1107	CLEARWATER HABITAT ENHANCEMENT
		84-8	ONGOING	F1111	JOHN DAY RIVER SUBBASIN
		84-9	ONGOING	F1111	GRANDE RONDE RIVER SUBBASIN
		84-11	ONGOING	F1109	WILLAMETTE/CLACKAMAS RIVER SUBBASIN
		84-21	ONGOING	F1111	MAINSTEM, MIDDLE FORK, JOHN DAY RIVER
		84-22	ONGOING	F1111	MIDDLE FORK & TRIBUTARIES, JOHN DAY RIVER
		84-23	ONGOING	F1501	CAMAS CREEK, IDAHO
84-24	ONGOING	F1107	MARSH, ELK, UPPER SALMON RIVER, IDAHO		

TABLE 1 (cont.)
 FY 1992 WORK PLAN PROJECTS

ONGOING, DEFERRED, AND COMPLETED PROJECTS

ACTION ITEM	TECHNICAL SUBJECT	PROJECT NUMBER	STATUS	RPA	TITLE
4. 2	HABITAT AND PASSAGE IMPROVE- MENT (cont.)	84-25	ONGOING	F1111	GRAND RONDE HABITAT IMPROVEMENT PROJECT
		84-62	ONGOING	F1109	TROUT CREEK RIPARIAN ENHANCEMENT
		85-71	ONGOING	F1111	SOUTH FORK JOHN DAY RIVER & IZEE FALLS FEASIBILITY STUDY
		86-75	ONGOING	F1501	LITTLE NACHES RIVER PASSAGE
		86-79	COMPLETED	F1109	FIFTEENMILE CREEK BASIN HABITAT IMPROVEMENT
		86-79-1	ONGOING	F1109	FIFTEENMILE CREEK - PHASE IV AND V
		86-124	ONGOING	F1501	LITTLE FALL CREEK PASSAGE FACILITIES MAINTENANCE
		87-100	ONGOING	F1110	UMATILLA HABITAT IMPROVEMENT - USFS
		87-100-1	ONGOING	F1110	UMATILLA HABITAT IMPROVEMENT - CTUIR
		87-100-2	ONGOING	F1110	UMATILLA HABITAT IMPROVEMENT - ODFW
		87-104	COMPLETED	F2105	PASSAGE IMPROVEMENTS AT WESTLAND DIVERSION - O&M
		87-104-1	ONGOING	F2105	PASSAGE IMPROVEMENTS AT STANFIELD DIVERSION
		87-104-2	ONGOING	F2105	WESTLAND NON-FISH IMPROVEMENTS
		87-416	ONGOING	F1501	MAXWELL DIVERSION IMPROVEMENTS - O&M
		87-416-1	ONGOING	F2105	COLD SPRINGS DIVERSION IMPROVEMENTS - O&M
		88-22	ONGOING	F1110	UMATILLA BASIN TRAP AND HAUL
		88-116	ONGOING	F1501	TROUT CREEK O&M
		89-24-1	ONGOING	F1110	UMATILLA BASIN PASSAGE FACILITY EVALUATION
		91-15	FY 91 START	F11PM	DEVELOPMENT OF STREAM HABITAT IMPROVEMENT STRATEGIES/STANDARDS
		91-30	FY 91 START	F1107	EAST FORK SALMON RIVER COMPLETION
4. 3	ROZA	NONE			
4. 4	PROSSER	NONE			
4. 5	YAKIMA PASSAGE	85-62	ONGOING	F1119	PASSAGE IMPROVEMENT EVALUATION
		89-90	ONGOING	F2113	YAKIMA PASSAGE PHASE 2 SCREENS PREDESIGN
		91-57	FY 91 START	F2113	YAKIMA PHASE 2 SCREENS FABRICATION

TABLE 1 (cont.)
 FY 1992 WORK PLAN PROJECTS

ONGOING, DEFERRED, AND COMPLETED PROJECTS

ACTI ON I TEM	TECHNI CAL SUBJECT	PROJECT NUMBER	STATUS	RPA	TITLE
4. 6	UMATI LLA RIVER WATER EXCHANGE	89- 27	ONGOING	F1110	PROVIDE POWER FOR USBR COLUMBIA RIVER PUMPS
4. 6. 1	UMATI LLA NON- STRUCTURAL WATER MEASURES	NONE			
4. 14. 1	JOHN DAY ACCLI MATION	83- 313	ONGOING	F1113	NET PEN REARING OF FALL CHINOOK SALMON
4. 15. 1	YAKI MA HATCHERY (Tasks)	86- 45	ONGOING	F2108	YAKI MA HATCHERY - CLE ELUM PROJECT
		88- 115	ONGOING	F2108	YAKI MA/KLI CKI TAT HATCHERY DESIGN AND CONSTRUCTI ON
		88- 120	ONGOING	F2108	YAKI MA AND KLI CKI TAT NATURAL/ARTI FI CIAL PRODUCTI ON PROGRAM
		88- 123	ONGOING	F2108	YAKI MA HATCHERY COORDI NATION - ROZA
		89- 82	ONGOING	F2108	YAKI MA HATCHERY EXPERIMENTAL DESI GN- WDF
		89- 89	ONGOING	F2108	YAKI MA/KLI CKI TAT RADI OTELEMETRY STUDY
		89- 100	COMPLETED	F2108	TECHNI CAL WRI TER
		89- 105	ONGOING	F2108	SPECIES INTERACTI ON STUDY
		90- 58	ONGOING	F2108	PROJECT LEADER FUNCTI ON
		90- 65	ONGOING	F2108	JUVENILE MONI TORING TRAP CALI BRATI ON
		90- 69	ONGOING	F2108	YAKI MA HATCHERY FINAL DESI GN
		90-71	ONGOING	F2108	SMOLT LOSS EVALUATI ON
		91- 45	ONGOING	F2108	ADULT TRAP PREDESIGN
		91-48	ONGOING	F2108	EVALUATI ON OF ENVIRONMENTAL IMPACTS OF YKPP
		91- 55	FY 91 START	F2108	SUPPLEMENTATI ON FISH QUALI TY
		91- 59	FY 91 START	F2108	HABI TAT INVENTO RY AND FOOD ABUNDANCE DATA COLLECTI ON

TABLE 1 (cont.)
 FY 1992 WORK PLAN PROJECTS

ONGOING, DEFERRED, AND COMPLETED PROJECTS

ACTION ITEM	TECHNICAL SUBJECT	PROJECT NUMBER	STATUS	RPA	TITLE
4. 16. 1- 4. 16. 2	NORTHEAST OREGON SPRING CHINOOK	88-53 88-53-1 88-53-2 88-53-3 88-53-4	ONGOING ONGOING ONGOING ONGOING	F2612	NORTHEASTERN OREGON ARTIFICIAL PRODUCTION FACILITIES - SITING AND CONCEPTUAL DESIGN NORTHEASTERN OREGON ARTIFICIAL PRODUCTION FACILITIES - MASTER PLANS NORTHEASTERN OREGON ARTIFICIAL PRODUCTION FACILITIES - MASTER PLANS NORTHEASTERN OREGON ARTIFICIAL PRODUCTION FACILITIES - MASTER PLANS NORTHEASTERN OREGON ARTIFICIAL PRODUCTION FACILITIES - MASTER PLANS
4. 17. 1	UMATILLA RELEASE AND COLLECTION	83-435	ONGOING	F1501	MINTHORN AND BONIFER SPRINGS ACCLIMATION FACILITIES
4. 17. 2	UMATILLA HATCHERY	84-33 84-33-3 91-14 90-5	ONGOING ONGOING ONGOING FY 91 START	F2106 F2106 F2106 F1121	UMATILLA HATCHERY CONSTRUCTION AND O&M UMATILLA HATCHERY TRIBAL FISH CULTURE TRAINING UMATILLA SATELLITE FACILITIES UMATILLA HATCHERY MONITORING AND EVALUATION
4. 17. 3	NEZ PERCE HATCHERY	83-350 88-1 26	ONGOING ONGOING	F2107 F2107	NEZ PERCE LOW-CAPITAL PRODUCTION FACILITIES NEZ PERCE TECHNICAL SUPPORT
4. 17. 4	CLEARWATER STUDY	88-1 5	ONGOING	F1107	MAINSTEM CLEARWATER RIVER STUDY
	IMPROVED HATCHERY EFFECTIVENESS (Action Item 34.23 in 1984 Program)	83-3 12 83-363 84-43	COMPLETED FY 91 COMP FY 91 COMP	F1113 F1113 F1113	EPIDEMIOLGY AND CONTROL OF INFECTIOUS DISEASES DEVELOPMENT OF DIETS FOR ENHANCED SURVIVAL OF SALMON EVALUATION OF A SUBUNIT VACCINE AGAINST INFECTIOUS HEMATOPOIETIC NECROSIS
4. 17. 5	WILLAMETTE RIVER SPRING CHINOOK	NONE			
4. 17. 6	PELTON DAM	89-29	ONGOING	F1113	PROPAGATION IN PELTON DAM LADDER
4. 21	UPPER COLUMBIA HATCHERY RELEASE	NONE			

TABLE 1 (cont.)
 FY 1992 WORK PLAN PROJECTS

ONGOING, DEFERRED, AND COMPLETED PROJECTS

ACTION ITEM	TECHNICAL SUBJECT	PROJECT NUMBER	STATUS	RPA	TITLE
5.1	KNOWN STOCK ELECTROPHORESIS	NONE			
6.1	TECHNICAL WORK GROUPS	87-307	COMPLETED	F11PM	TECHNICAL WORK GROUP COORDINATION
6.2	RESEARCH AREAS OF EMPHASIS				
	<u>RES MORT/WB</u>	82-3	ONGOING	F1101	MAGNITUDE/DYNAMICS OF PREDATOR-CAUSED MORTALITY ON JUVENILE SALMONIDS
		82-12	COMPLETED	F1101	PREDATION INDEX AND WAYS OF REDUCING SALMONID LOSSES TO PREDATION
		83-3 19	ONGOING	F1101	PIT TAG RESEARCH
		87-413-1	COMPLETED	F1101	FISH SURVIVAL AND SMOLT PHYSIOLOGY/BEHAVIOR WORKSHOPS
		87-413-2	ONGOING	F1101	ANALYSIS OF HISTORIC DATA FOR ADULT AND JUVENILE SALMONIDS
		86-1 18 (TO 10)	ONGOING	F11PM	FEASIBILITY OF SATISFYING MODEL ASSUMPTIONS OF THE BURNHAM/ANDERSON FISH SURVIVAL ESTIMATION TECHNIQUE
		88-1 34	FY 91 COMP	F1101	MCNARY COLLECTION EFFICIENCY
		88-1 41	ONGOING	F1101	USE OF ADVANCED PHOTOPERIOD TO ACCELERATE SMOLTIFICATION
		89-107	ONGOING	F1101	EPIDEMIOLOGICAL METHODS FOR QUANTIFYING SURVIVAL RELATIONSHIPS FROM PIT TAG RELEASES OF SMOLTS
		90-77	ONGOING	F1122	DEVELOPMENT OF A SYSTEM-WIDE PREDATOR CONTROL PROGRAM
		90-78	ONGOING	F1122	SYSTEM-WIDE SIGNIFICANCE OF PREDATION ON JUVENILE SALMONIDS IN COLUMBIA AND SNAKE RIVER RESERVOIRS
		91-17	ONGOING	F1101	INVESTIGATION OF FACTORS AFFECTING JUVENILE WILD SPRING CHINOOK SALMON ABOVE LOWER GRANITE DAM

TABLE 1 (cont.)
 FY 1992 WORK PLAN PROJECTS

ONGOING, DEFERRED, AND COMPLETED PROJECTS

ACTION ITEM	TECHNICAL SUBJECT	PROJECT NUMBER	STATUS	RPA	TITLE
	<u>RES MORT/WB</u> (cont.)	91-29	FY 91 START	F1101	EARLY LIFE HISTORY REQUIREMENTS OF SUBYEARLING IN COLUMBIA BASIN
	<u>FISH DISEASE</u>	88-152	ONGOING	F1113	INFECTIOUS HEMATOPOIETIC NECROSIS VIRUS RESEARCH
		89-31	ONGOING	F1113	CONTROL OF BACTERIAL KIDNEY DISEASE
		89-32	ONGOING	F1113	REGISTRATION OF ERYTHROMYCIN
		89-40	FY 91 COMP	F1113	ANALYTICAL METHODS FOR MALACHITE GREEN
		89-54	ONGOING	F1113	RESEARCH ON ANTIFUNGAL COMPOUNDS
		89-81-2	ONGOING	F1113	ERYTHROCYTIC INCLUSION BODY SYNDROME ETIOLOGY
		90-61	ONGOING	F1113	FUNGAL INFECTIONS OF SPRING AND SUMMER CHINOOK
		91-22	FY 91 START	F1121	HATCHERY SORTING FOR BKD
		91-23	DEFERRED	F1113	ECTOPARASITE RESEARCH
		91-25	DEFERRED	F1113	<u>CERATOMYXA SHASTA</u> CONTROL
		91-26	DEFERRED	F1113	BACTERIAL COLDWATER DISEASE
		91-31	DEFERRED	F1113	IHN VIRUS VACCINE
	<u>HATCHERY EFF</u>	88-160	ONGOING	F1113	BIO-ENGINEERING EVALUATION OF OXYGEN SUPPLEMENTATION
		88-163	ONGOING	F1113	EFFECTS OF CODED WIRE TAGGING ON SPRING CHINOOK
		89-30	ONGOING	F1113	EVALUATION OF PRE-RELEASE TEMPERATURE ACCLIMATION
		89-46	ONGOING	F1113	SPRING CHINOOK SMOLT QUALITY ASSESSMENT
		89-65	ONGOING	F1113	CWT EVALUATION OF MISSING HATCHERY GROUPS, OR/WA - USFWS
		89-66	ONGOING	F1113	CWT EVALUATION OF MISSING HATCHERY GROUPS, WA-WDF
		89-69	ONGOING	F1113	CWT EVALUATION OF MISSING HATCHERY GROUPS, OR-ODFW
		89-81-3	ONGOING	F1113	MODELING OPTIMIZED HATCHERY PRODUCTION
		89-81-4	COMPLETED	F1113	SURVEY OF RESEARCH AND RESEARCH IMPLEMENTATION

TABLE 1 (cont.)
 FY 1992 WORK PLAN PROJECTS

ONGOING, DEFERRED, AND COMPLETED PROJECTS

ACTION ITEM	TECHNICAL SUBJECT	PROJECT NUMBER	STATUS	RPA	TITLE
	<u>SUPPLEMENTATION</u>	89-96	ONGOING	F1114	GENETIC MONITORING AND EVALUATION PROGRAM FOR SUPPLEMENTED POPULATIONS OF SALMON AND STEELHEAD IN THE COLUMBIA BASIN
		89-97	ONGOING	F1114	EFFECTIVENESS OF SUPPLEMENTING IMNAHA RIVER STEELHEAD WITH HATCHERY SMOLTS AND EFFECTS ON NATURAL PRODUCTION PERFORMANCE, GENETIC CHARACTERISTICS, AND LIFE HISTORY CHANGES
		89-98	ONGOING	F1114	EFFECTIVENESS OF SUPPLEMENTATION STRATEGIES AND ASSESSMENT OF INTERACTIONS BETWEEN HATCHERY FISH AND NATURAL FISH IN SALMON AND CLEARWATER BASINS
		90-52	FY 91 START	F1114	PERFORMANCE/STOCK PRODUCTIVITY IMPACTS OF HATCHERY SUPPLEMENTATION
		90-53	FY 91 START	F1114	SOUTHEAST WASHINGTON SPECIES INTERACTION STUDIES
		90-55	FY 91 START	F1114	IMPACTS OF SUPPLEMENTATION ON STOCK PRODUCTIVITY AND PERFORMANCE IN SALMON RIVER
6.3	HATCHERY DATA BASE	NONE			
6.4	NATURAL PRODUCTION DATA BASE	NONE			
6.5	HIGH PRIORITY PROJECTS	NONE			
6.10	SYSTEM MONITORING AND EVALUATION	88-1 08-1	ONGOING	F11PM	COORDINATED INFORMATION SYSTEM (CIS)
		88-1 08-2	ONGOING	F11PM	EPA/USGS MAPPING SYSTEM FOR CIS
		89-1 04	ONGOING	F11PM	HISTORICAL DATA BASE

TABLE 1 (cont.)
 FY 1992 WORK PLAN PROJECTS

ONGOING, DEFERRED, AND COMPLETED PROJECTS

ACTI ON I TEM	TECHNI CAL SUBJECT	PROJECT NUMBER	STATUS	RPA	TITLE
6. 12	COORDINATI ON AND CONSULTATI ON	NONE			
7. 1	COLVILLE HATCHERY	85- 38	ONGOING	F1501	COLVILLE HATCHERY OPERATI ON AND MAINTENANCE
7. 2	COEUR D' ALENE	90- 44	ONGOING	F1202	STREAM SURVEY, HATCHERY, HABITAT IMPROVEMENTS, AND MONI TORING
7. 3	KOKANEE SALMON HATCHERIE S	88- 62 88- 62- 3 90- 76 90- 86 91- 46 91- 47	ONGOING COMPLETED COMPLETED FY 91 COMP ONGOING FY 91 START	F2203 F2203 F2204 F1501 F1501	SPOKANE TRIBAL HATCHERY - GALBRAITH SPRINGS CONSTRUCT HATCHERY RESIDENCE - GALBRAITH SPRINGS HATCHERY MANAGER TRAINING PROGRAM SHERMAN CREEK HATCHERY SPOKANE TRIBAL HATCHERY O&M SHERMAN CREEK HATCHERY O&M
7. 4	LAKE ROOSEVELT	88- 63 90- 18	ONGOING ONGOING	F1204 F1204	LAKE ROOSEVELT MONI TORING PROGRAM LAKE ROOSEVELT HABITAT IMPROVEMENT PROJECTS
7. 5	KOOTENAI INDIAN RESERVATI ON	88- 64	ONGOING	F1203	DESIGN/CONSTRUCT/OPERATE STURGEON HATCHERY
7. 6	KDOTENAI RIVER	88- 65	ONGOING	F1203	ASSESS IMPACTS OF WATER LEVEL FLUCTUATI ONS
7. 7	KALISPEL RESERVATI ON	88- 66	FY 91 COMP	F1204	ASSESS FISHERY IMPROVEMENT OPTI ONS IN THE PEND OREILLE RIVER
7. 10	FUND PROJECTS	88-1 56 91- 27	ONGOING FY 91 START	F1202 F2601	DUCK VALLEY RESIDENT FISH PROJECT FEASIBILI TY STUDY - HATCHERY PRODUCTI ON ABOVE HELLS CANYON
7. 11	MONTANA PROJECTS	NONE			

TABLE 1 (cont.)
 FY 1992 WORK PLAN PROJECTS

ONGOING, DEFERRED, AND COMPLETED PROJECTS

ACTION ITEM	TECHNICAL SUBJECT	PROJECT NUMBER	STATUS	RPA	TITLE
7. 12	STURGEON	86-50	ONGOING	F1203	STURGEON STATUS AND HABITAT REQUIREMENTS
		89-44	FY 91 COMP	F1203	COLUMBIA RIVER WHITE STURGEON STUDY
	PEND OREILLE HATCHERY	85-339	ONGOING	F1202	KOKANEE STOCK STATUS AND EVALUATION OF CABINET GORGE HATCHERY
7. 13	KOOTENAI RIVER MATERIALS REMOVAL	NONE			
7. 14	DWORSHAK DAM IMPACTS ASSESSMENT	87-99	ONGOING	F1202	DWORSHAK DAM IMPACTS ASSESSMENT/KOKANEE/LIMNOLOGY
		87-407	ONGOING	F1202	DWORSHAK IMPACTS ASSESSMENT/RAINBOW/SMALLMOUTH BASS
7. 15	DRAWDOWN RECOMMENDATIONS	83-465	ONGOING		HUNGRY HORSE RESERVOIR LEVELS
		83-467	ONGOING	F1201	LIBBY RESERVOIR LEVELS
	MITIGATION STATUS REPORTS/ CONSULTATIONS	NONE			CONSULTATIONS AMONG AFFECTED PARTIES SHOULD BEGIN
8. 1	LOSS STATEMENTS	90-51	ONGOING	F1301	CLEARWATER RIVER OTTER STUDY
8. 2	LOSS STATEMENT CONSULTATIONS	NONE			
8. 3	MITIGATION PLANS	88-44	ONGOING	F1301	WILDLIFE MITIGATION PLANNING FOR CHIEF JOSEPH DAM
		90-25	FY 91 COMP	F1301	LOWER COLUMBIA WILDLIFE MITIGATION PLAN
		90-50	FY 91 COMP	F1301	MINIDOKA WILDLIFE MITIGATION PLAN

TABLE 1 (cont.)
 FY 1992 WORK PLAN PROJECTS

ONGOING, DEFERRED, AND COMPLETED PROJECTS

ACTION ITEM	TECHNICAL SUBJECT	PROJECT NUMBER	STATUS	RPA	TITLE
8. 4-	LIBBY DAM	87-55	COMPLETED	F1301	NW MONTANA WILDLIFE HABITAT ENHANCEMENT
8. 7	1987- 1991	88-43	ONGOING	F1301	LIBBY WILDLIFE HABITAT ENHANCEMENT
		90-49	ONGOING	F1301	LIBBY/HUNGRY HORSE WILDLIFE PROJECT
8. 8-	HUNGRY HORSE	88- 113	ONGOING	F1301	HUNGRY HORSE WILDLIFE ENHANCEMENT
8. 10	1987- 1991	89- 23	ONGOING	F1301	MONTANA WILDLIFE HABITAT PROTECTION
8. 11	PUBLIC INVOLVEMENT	NONE			
8. 12	WILDLIFE M I T I G A T I O N	90-91	ONGOING	F1301	DWORSHAK OLD GROWTH
		90-92	ONGOING	F1301	CONFORTH RANCH ADVANCE DESIGN STUDY
		91-60	FY 91 START	F1301	PEND OREILLE WETLANDS
		91-61	FY 91 START	F1301	PYGMY RABBIT/TRACY ROCK SHARP TAIL GROUSE
		91-62	FY 91 START	F1301	BLUE CREEK WINTER RANGE
		91-63	FY 91 START	F1301	SOUTH FORK SNAKE RIVER/PALISADES BALD EAGLE
8. 13	MONI TORING AND EVALUATI ON	NONE			
	TRUST FUND	89- 52	ONGOING	F1301	MONTANA WILDLIFE TRUST AGREEMENT
9. 3	CUMULATI VE EFFECTS	NONE			
9. 4	DEMO - TURBINE INTAKE SCREEN	NONE			

TABLE 1 (cont.)
 FY 1992 WORK PLAN PROJECTS

ONGOING, DEFERRED, AND COMPLETED PROJECTS

<u>ACTION</u> <u>ITEM</u>	<u>TECHNICAL</u> <u>SUBJECT</u>	<u>PROJECT</u> <u>NUMBER</u>	<u>STATUS</u>	<u>RPA</u>	<u>TITLE</u>
	PROGRAM-RELATED,	82-13	ONGOING	F1101	CODED-WIRE TAG RECOVERY
	NON-MEASURE	82-16	FY 91 COMP	-----	YAKIMA RIVER SPRING CHINOOK ENHANCEMENT STUDY
	PROJECTS	86-13	FY 91 COMP	F1113	FISH HEALTH MONITORING IN WASHINGTON - WDW
		86-54	FY 91 COMP	F1113	FISH HEALTH MONITORING IN WASHINGTON - WDF
		87-117	ONGOING	F1113	FISH HEALTH MONITORING IN IDAHO
		87-118	ONGOING	F1113	FISH HEALTH MONITORING IN OREGON
		87-119	ONGOING	F1113	FISH HEALTH MONITORING - USFWS
		89-20	ONGOING	F1101	AIRLIFT FABRICATION
		90-80	ONGOING	F1101	COLUMBIA RIVER BASIN PIT TAG INFORMATION SYSTEM (PTAGIS)

NON-ACTION ITEM PROJECTS:

- -	HUNGRY HORSE MITIGATION	91-19	FY 91 START	F1201	HUNGRY HORSE FISHERIES LOSS MITIGATION
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(VS6-PJSP-1518W)

TABLE 2. NEW FY 1992 PROGRAM PROJECTS

TABLE 2
 FY 1992 WORK PLAN PROJECTS

NEW PROJECTS IN FY 1992

ACTION ITEM	TECHNICAL SUBJECT	PROJECT NUMBER	RPA	TITLE
4.5	YAKIMA PASSAGE	92-15	F2113	DRYDEN SCREENS DESIGN AND CONSTRUCTION
4.15.1	YAKIMA HATCHERY (Tasks)	90-64	F2108	KLICKITAT RIVER MONITORING
		90-72	F2108	COMPUTER INFORMATION SYSTEM QUALITY CONTROL PROGRAM
		90-74	F2108	YAKIMA MONITORING AND EVALUATION PROGRAM
		92-5	F2108	EVALUATION OF THE YAKIMA PRODUCTION PROJECT
		92-14	F2108	HABITAT DEFINITION, ASSESSMENT, AND IMPROVEMENT
7.10	FUND PROJECTS	92-10	F1202	FORT HALL BOTTOMS HABITAT ENHANCEMENT
8.12	WILDLIFE MITIGATION	91-16	F1301	WILDLIFE MITIGATION (OREGON, WASHINGTON, IDAHO) - FY 1992
8.13	WILDLIFE MONITORING AND EVALUATION PROGRAM	92-XXX	F1301	WILDLIFE MONITORING AND EVALUATION PROGRAM
		PROGRAM-RELATED, NON-MEASURE PROJECTS	90-60	F1101

(0395W)

TABLE 3. ABBREVIATIONS USED IN THE WORK PLAN

<u>Abbreviation</u>	<u>Complete Title</u>
Act	Pacific Northwest Electric Power Planning and Conservation Act
AIWP	Annual Implementation Work Plan
BIA	Bureau of Indian Affairs
BCWD	Bacterial Cold Water Disease
BKD	Bacterial Kidney Disease
BLM	Bureau of Land Management
BPA	Bonneville Power Administration
BPNL	Battelle Pacific Northwest Laboratory
CBFWA	Columbia Basin Fish and Wildlife Authority
C-E	Cost-effectiveness
CCT	Confederated Colville Tribes
CIS	Coordinated Information System
Council	Northwest Power Planning Council
CRB	Columbia River Basin
CRITFC	Columbia River Inter-Tribal Fish Commission
CRSP	Columbia River Salmon Passage
CSKT	Confederated Salish-Kootenai Tribes
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
CTWSIR	Confederated Tribes of the Warm Springs Indian Reservation
cwu	Central Washington University
CY	Calendar Year
DOE	Department of Energy
EIBS	Erythrocytic Inclusion Body Syndrome
EIP	Early Implementation Package
EIS	Environmental Impact Statement
ELISA	Enzyme-Linked Immunosorbent Assay
EPA	Environmental Protection Agency
EPRI	Electric Power Research Institute
ESA	Endangered Species Act
FCRPS	Federal Columbia River Power System
FDA	Food and Drug Administration
FDTWG	Fish Disease Technical Work Group
FONSI	Finding of No Significant Impact
FY	Fiscal Year
HEP	Habitat Evaluation Procedure
HETWG	Hatchery Effectiveness Technical Work Group
HU	Habitat Unit
ICFWRU	Idaho Cooperative Fish and Wildlife Research Unit
IDFG	Idaho Department of Fish and Game
IFIM	Instream Flow Incremental Methodology
IHN	Infectious Hematopoietic Necrosis
IPN	Infectious Pancreatic Necrosis
IPP	Implementation Planning Process
IRB	Internal Review Budget
ISP	Integrated System Plan
KCFS	Thousand cubic feet per second
KIT	Kalispel Indian Tribe

TABLE 3. ABBREVIATIONS USED IN THE WORK PLAN
(Continued)

Abbreviation	Complete Title
MAF	Million acre-feet
MDFWP	Montana Department of Fish, Wildlife and Parks
MEG	System Monitoring and Evaluation Work Group
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
M/WBTWG	Reservoir Mortality and Water Budget Effectiveness Technical Work Group
NED	Northwest Environmental Database
NEPA	National Environmental Policy Act
NF	National Forest
NFH	National Fish Hatchery
NMFS	National Marine Fisheries Service
NPT	Nez Perce Tribe
ODFW	Oregon Department of Fish and Wildlife
OHSU	Oregon Health Sciences University
osu	Oregon State University
OWRD	Oregon Water Resources Department
PIT	Passive Integrated Transponder
PSMFC	Pacific States Marine Fisheries Commission
PMIS	Program Management Information System
PNUCC	Pacific Northwest Utilities Conference Committee
PNWFHPC	Pacific Northwest Fish Health Protection Committee
PNWRS	Pacific Northwest Research Station
PRG	Policy Review Group
Program	Columbia River Basin Fish and Wildlife Program
PSMFC	Pacific States Marine Fisheries Commission
RFF	Resources for the Future
RM/WBE	Reservoir Mortality/Water Budget Effectiveness
RPA	Request for Project Authorization
scs	Soil Conservation Service
SMEP	System Monitoring and Evaluation Program
SPG	System and Subbasin Planning Group
SPM	System Planning Model
SPOC	System Planning Oversight Committee
SPT	Shoshone Paiute Tribe
SRG	Scientific Review Group
STWG	Supplementation Technical Work Group
TBA	To Be Announced
TNC	The Nature Conservancy
TO	Task Order
TWG	Technical Work Group
UCUT	Upper Columbia United Tribes
UI	University of Idaho
URB	Umatilla River Basin
URBFC	Upriver Bright Fall Chinook
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
uw	University of Washington

TABLE 3. ABBREVIATIONS USED IN THE WORK PLAN
(Continued)

Abbreviation	Complete Title
WDF	Washington Department of Fisheries
WDW	Washington Department of Wildlife
WEID	West Extension Irrigation District
Work Plan	Annual Implementation Work Plan
wsu	Washington State University
YIN	Yakima Indian Nation

II. FY 1992 BPA BUDGET ALLOCATION

The FY 1992 AIWP reflects a high level of regional coordination and prioritization through the IPP. Anadromous fish will continue to be the area of emphasis of the AIWP, highlighted by the following "expense" activities: prioritized projects will be included in the first full year of implementation of the Integrated Systems Plan; Hydro Operations/Downstream Migration allocation is increased to incorporate the Non-Treaty Storage Agreement (water "rental" in Idaho); research projects in the fish health/artificial propagation and supplementation areas are reduced. Capital program expenditures include construction activities for the Yakima production facilities, Yakima Phase 2 Screens, outplanting facilities for the Northeast Oregon Hatchery facilities, and the Stanfield Water Diversion in the Umatilla Basin.

Resident fish activities continue at a reduced level with the completion of the white sturgeon studies and most Council Program measures. The AIWP does include a "placeholder" for possible new measures associated with mitigation for Libby and Hungry Horse reservoirs. No new capital activities are scheduled for FY 1992.

The wildlife program activities are scheduled at an increased funding level commensurate with the FY 1990 Wildlife amendment to the Council's Program. The Trust payment to Montana for mitigation activities is scheduled to continue.

Operation and maintenance activities will continue to increase with new facilities becoming operational. The first full year's operation of the Umatilla Hatchery is the most significant addition to this program area.

FY 1992 FISH AND WILDLIFE PROGRAM

Annual Implementation Work Plan

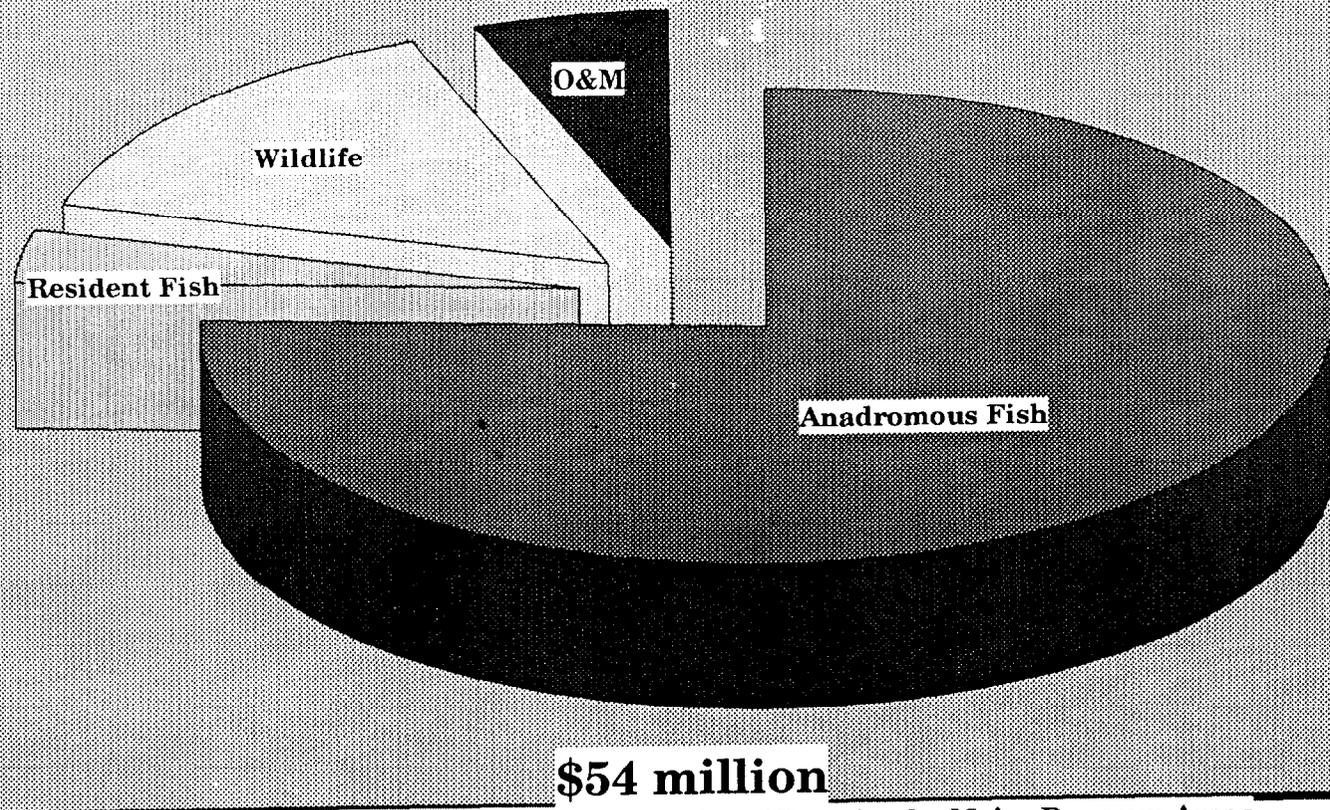


Figure 1. FY 1992 Fish and Wildlife Budget Allocation by Major Program Areas

III. IMPLEMENTATION PLANNING PROCESS

Background: On October 19, 1988, Bonneville Power Administration (BPA) and the Columbia Basin Fish and Wildlife Authority (CBFWA) signed a letter endorsing the Implementation Planning Process (IPP). The IPP is an annual, sequential, nine-step process by which BPA, in collaboration with the CBFWA, plans its implementation of the Columbia River Basin Fish and Wildlife Program (Program). The nine steps of the IPP are:

- Step 1. Program Policy Review
- Step 2. Project Scoping
- Step 3. Draft AIWP Development
- Step 4. Public Review and Comment on Draft AIWP
- Step 5. Publication of AIWP
- Step 6. Project Specifications
- Step 7. Project Selection and Negotiation
- Step 8. Contract Awards
- Step 9. Evaluation of Implementation Progress

The IPP relies on three types of working groups to accomplish the nine steps: 1) the Policy Review Group (PRG); 2) the Scientific Review Group (SRG); and 3) Scoping Groups (SGs), formerly called Technical Working Groups.

Responsibilities: The primary role of the PRG is to provide BPA with the best possible guidance and recommendations, from a policy perspective, on the direction, emphasis, and funding of Program implementation. Most of the PRG's activities occur during Step 1 of the IPP, Program Policy Review. The PRG is comprised of senior-level representatives from the CBFWA, BPA, Northwest Power Planning Council, utilities, U.S. Forest Service, environmental groups, and other interested parties.

The SRG provides the PRG and BPA with objective scientific/technical advice and recommendations related to implementation of the Program. The SRG also prepares an annual evaluation report on implementation progress in Step 9 of the IPP. The SRG is comprised of senior-level scientists from the Northwest and other regions of the country.

The SGs assist BPA with scoping of projects (Step 2), responding to public comments (Step 4), and development of project specifications (Step 6). Currently, there are seven IPP SGs: Wildlife, Resident Fish, Columbia and Snake River Flow and Passage, Artificial Propagation, Habitat, Supplementation and Genetics, and Tributary Passage. These SGs are comprised of the region's technical experts in specific areas of expertise. The IPP provides a process to create additional SGs if they are needed.

BPA is responsible for developing the AIWP (Step 3), implementing the public

review process (Step 4), publishing the AIWP (Step 5), initiating procurement activities (Step 6), selecting contractors (Step 7), and awarding contracts (Step 8). BPA representatives also participate with the SGs in IPP Steps 2, 4, and 6.

Progress: In FY 1991, the PRG continued to meet as needed to accomplish IPP tasks. The PRG provided BPA with funding-level recommendations on BPA's FY 1992-1993 Fish and Wildlife Program Internal Review Budget (IRB). The PRG also developed the Outline of the Draft FY 1992 AIWP (see Section IV. of the AIWP). The Draft FY 1992 AIWP is based on this Outline, which represents the PRG's recommendations to BPA regarding FY 1992 Program implementation. The SGs contributed to the development of the Draft FY 1992 AIWP. The SRG continued to provide BPA and the PRG with objective advice on the scientific aspects of Program implementation. Because the IPP is a unique and relatively new program, BPA has conducted, and continues to conduct, educational efforts to familiarize IPP participants with their roles and responsibilities.

Plans: In FY 1992, the IPP will continue to provide an opportunity for the fish and wildlife agencies, Tribes, and other interested parties to participate with BPA in planning its implementation of the Program. Step 1 of the fourth annual IPP cycle, during which FY 1993 implementation will be planned, is expected to begin in August 1991. The SRG will develop its second annual evaluation report on Program implementation in July 1991; this report is expected to provide valuable technical recommendations for use in planning FY 1993 Program implementation. The SRG and SGs will continue to meet as needed throughout FY 1992.

Copies of the complete IPP document and the Terms of Reference for the PRG, SRG, and SGs are available from:

Publications Clerk
Bonneville Power Administration
Division of Fish and Wildlife - PJ
P. O. Box 3621
Portland, OR 97208

IV. POLICY REVIEW GROUP'S OUTLINE OF THE DRAFT AIWP

The Policy Review Group (PRG) provides critical guidance at the beginning of the annual Implementation Planning Process (IPP) cycle. That guidance must recognize and seek to balance the technical/scientific requirements of Program measures and the political, legal, and institutional realities existing in the Basin.

In Step 1 of the annual IPP cycle, the PRG considers knowledge gained through previous Program implementation, ongoing research, and other related planning activities in order to provide clear and concise recommendations on:

- policy matters as related to Program implementation;
- Program components to be emphasized;
- prioritizing technical subjects; and
- funding levels required for support.

These recommendations are made to BPA and serve as foundations for the technical planners in the Scoping Groups.

As called for in Step 1 of the IPP, the PRG developed recommendations to provide guidance during the development of the Draft FY 1992 AIWP. The PRG's recommendations include general policy guidelines (Policy Guidance for Draft FY 1992 AIWP), as well as specific guidance for each of the seven Scoping Groups (Guidance for Scoping Groups - FY 1992 AIWP):

Policy Guidance for Draft FY 1992 AIWP

Anadromous Fish:

1. Anadromous Program implementation should focus on areas and stocks of emphasis consistent with decisions occurring in Council forums.
2. Projects should maintain or enhance productivity while ensuring genetic integrity of the Basin's resources.
3. Emphasis should be on fish production using adaptive management and evaluation consistent with Council's System Monitoring and Evaluation Program.
4. Sound biological escapement objectives should be identified for each stock proposed for project funding.
5. Project proposers must demonstrate how habitat enhancement projects:
 - a. address limiting factors,
 - b. maintain or increase fish production,
 - c. have the potential to be evaluated.

Project proposers must be able to manage habitat enhancement investments to insure project effectiveness.

6. Determining whether supplementation works in the near and long term is a priority.
7. IPP participants should not develop preliminary project proposals related to the Integrated System Plan or early implementation actions until requested by the PRG or BPA.
8. Emphasis should be placed on collection of better scientific data on the relationship of mainstem flow and passage to fish survival.

Wildlife:

9. Selection and implementation of wildlife projects must be consistent with the standards and priorities set forth by the Council. Projects should be developed to minimize expenditures on planning. For similar projects directed at the same biological objective, strong consideration will be given to projects which exhibit the most favorable (lowest) planning to implementation cost ratios.

Resident Fish:

10. Resolution of funding sources for resident fish substitution measures above Hells Canyon Dam should be pursued as a high priority.

General:

11. Increased emphasis should be placed on cost-effective programs.
12. Competitive procurement, partnerships, and other cost-sharing arrangements to increase the benefits of ratepayer-funded activities should be promoted.

Guidance For Scoping Groups - FY 1992 AIWP

General Guidance:

- Funding for new FY 1992 anadromous fish projects is available only in RPA F11PM under Project 91-10, "Implement Subbasin Plans." Funds were placed in this "placeholder" project in anticipation of Council action on Subbasin Plans. Once the Council has amended the Integrated System Plan or early implementation actions into the Program, and the PRG has recommended its areas of emphasis to BPA, the funds under Project 91-10 will be used to implement multiple projects in various technical areas and will be allocated to the appropriate RPAs.
- BPA will notify SGs (through IPP Coordinator) when it is time to begin scoping new projects.
- Until BPA notifies SGs, IPP participants should not submit preliminary project proposals to BPA, and SGs should not scope projects related to implementing System and Subbasin Plans.

Specific Instructions to Scoping Groups:

1. Wildlife

- Do not scope new FY 1992 projects at this time. A Program Solicitation may be used to solicit new projects, rather than having the SG scope new projects as part of IPP Step 2.
- If and when it is appropriate, BPA will notify SG (through IPP Coordinator) to begin project scoping (IPP Step 2) for new FY 1992 wildlife projects and transmit any additional policy guidance from the PRG.

2. Resident Fish

- Do not scope new projects at this time. A total of \$1 million is available for project(s) to mitigate for Hungry Horse and Libby dams. However, a Program amendment is needed before the SG can scope projects.

3. Columbia and Snake River Flow and Passage

- Do not scope new FY 1992 projects (no funds available for new projects).
- Review the need for Project 91-40, Bonneville Dam Juvenile Fish Sampling Facilities. Is construction of PIT-tag detection facilities feasible, given the large amount of spill at Bonneville Dam?

4. Artificial Propagation

- Do not scope new projects (no funds available for new projects).
- SG should prioritize ongoing projects (and new FY 1991 projects that have not started yet, but would be ongoing in FY 1992) in RPA F1113 in preparation for \$737K reduction by PRG.

5. Habitat

- Do not scope new projects until notified by BPA. See General Guidance above.

6. Supplementation/Genetics

- Do not scope new projects (no funds available for new projects).

7. Tributary Passage

- Do not scope new projects (no funds available for new projects).
- Review deferred Project 87-112, Orofino Creek Passage, for possible re-start in FY 1992. Because FY 1992 funds for Project 87-112 would come from the "Implement Subbasin Plans" placeholder project, the SG should answer the question: Is starting up Project 87-112 in FY 1992

a higher priority than starting potential new projects to implement Subbasin Plans?

V. SYSTEM PLANNING ACTIVITIES

BPA actively participates in two Council-managed system planning programs, System and Subbasin Planning and System Monitoring and Evaluation. These two programs will strongly influence future Program direction and will ultimately affect BPA's implementation of the Program, its evaluation and monitoring efforts, and its future Fish and Wildlife Program budget levels. The current status and plans of these two programs are presented below.

System and Subbasin Planning

Responsibilities: The Council funds the activities of the fish and wildlife agencies and tribes to develop an Integrated System Plan, utilizing 31 separate Subbasin Plans. The fish and wildlife agencies and tribes organized committees at the system and subbasin levels for completing this task. The subbasin level committees were responsible for collecting information and developing drafts of specific Subbasin Plans. The system level committee, the System Planning Group (SPG), was responsible for developing the format for the plans, guiding the subbasin planners, and reviewing draft plans. The SPG has developed the Integrated System Plan (ISP). The Council has organized another committee at the system level, the System Planning Oversight Committee (SPOC), that has identified and is addressing major issues that have been and will be part of the system planning process.

Progress: The Council's contract with the fish and wildlife agencies and tribes through the Pacific States Marine Fisheries Commission calls for nine products over the life of the planning process. Planning began in September 1987, and several products have been completed to date. These products include the preliminary information reports that contain information needed to evaluate the production potential of the subbasins and thereby identify realistic objectives for production, draft Subbasin Plans above Bonneville Dam that include proposed objectives for production, the preliminary system analysis report above Bonneville Dam that analyzes the proposed objectives for consistency, and final Subbasin Plans above Bonneville Dam that include recommended and alternative strategies for meeting the proposed objectives. The same products have been completed for subbasins below Bonneville Dam. The draft ISP has been issued for public review, with a final produced in May 1991. BPA has initiated a process with its contractor, Resources For The Future (RFF), to develop a cost-effectiveness (C-E) analysis process, which will become one of the criteria for selecting and implementing proposed actions from the ISP and the subsequent Program amendment process. C-E analysis programs and processes were developed by RFF, and were tested on the upper Columbia Basin subbasins. The C-E analysis was applied to other selected subbasin plans above Bonneville Dam after consultation with numerous Basin entities.

Plans: The ISP recommends objectives and strategies for salmon and steelhead production in the 31 subbasins of the Columbia River Basin. This plan, will be utilized as part of the Program amendment process that will extend into August 1992. The results of that amendment process will provide guidance for funding activities in BPA's implementation of the Fish and Wildlife Program in the 1990s. An Early Implementation Package, i.e., a list of projects from the ISP and other possible sources, will be implemented to protect or rebuild marginal anadromous fish runs in the Columbia Basin. BPA is participating in

the system planning process to assist in the definition of strategies for meeting salmon and steelhead production objectives and to help make the link between the planning process and implementation scheduling in fiscal years beyond 1992. BPA participation in the SPG and the SPOC will continue on a regular monthly basis through the end of the planning process.

System Monitoring and Evaluation

Responsibilities: The Council's Monitoring and Evaluation Group (MEG) is charged with: formulating a System Monitoring and Evaluation Program (SMEP), maintaining the System Planning Model (SPM), integrating Subbasin Plans, recommending formats for System and Subbasin Plan reports (including habitat capacity, genetic impacts, production, and cost of alternative strategies), developing a Coordinated Information System (CIS), and evaluating and disseminating research results.

Progress: MEG subcommittees have been formed to address: SPM maintenance, genetics, analytical methods, System Plan integration, and the CIS. These efforts are underway.

Plans: The Council will prepare a work plan as the basis for direct BPA funding. After the SMEP is adopted by the Council, BPA funding of MEG activities will be formalized as a Program Action Item. MEG will focus on gaining public support for and eventual adoption of SMEP, CIS implementation, and System Plan integration.

Long-Term Role: MEG functions will continue as a result of its role in measuring systemwide progress, monitoring compliance with Program policies, integrating system plans, maintaining the SPM, guiding development and maintenance of the CIS, and evaluating research results for application to Program actions.

VI. FISH AND WILDLIFE DIVISION ORGANIZATION AND STAFF

The Division of Fish and Wildlife develops, coordinates, and manages BPA's Fish and Wildlife Program pursuant to the requirements of the Pacific Northwest Power Planning and Conservation Act (Act). The Division was reorganized under BPA's Most Efficient Organization concept in late 1987. As a result, the functions of the Division's branches and sections were redefined. Table 4 contains a current staffing list for the Division. Branch and section titles and functions are as follows:

Fisheries Integration Branch

This Branch reviews and analyzes proposed BPA policies, programs, and plans for their consistency with BPA's fish and wildlife obligations under the Act and recommends standards, criteria, policy, or procedures necessary to ensure equitable treatment of fish and wildlife in BPA's decision making process; evaluates hydroelectric operations for fish and wildlife impacts and needs and recommends balanced operations; reviews and analyzes policies, programs, plans, and legislation of external entities to determine their impact on BPA's Fish and Wildlife Program; represents and integrates the biological and Fish and Wildlife Program requirements into the development of agency policy, programs, and plans; and develops and administers research and monitoring contracts directed at resolving fish passage problems at hydroelectric facilities. The Branch represents BPA on the Reservoir Mortality and Water Budget Effectiveness Technical Work Group and manages BPA's implementation of major sections of the Program.

Biological Planning Branch

This Branch provides biological/technical expertise to the Division for planning for and implementing the Program. It prepares and monitors the Fish and Wildlife Program budget; develops and maintains the Division's Program Management Information System (PMIS); develops annual implementation work plans; provides cost-effectiveness analysis and determination for funding actions; develops and maintains the fish and wildlife mitigation accounting records; represents BPA on technical planning work groups established by the Council and the CBFWA; and manages BPA's implementation of major sections of the Program.

Program Planning Section

The Program Planning Section oversees and provides BPA's representative to: Council TWGs addressing supplementation of wild fish with hatchery fish, System and Subbasin Planning, and System Monitoring and Evaluation. It oversees and coordinates the Implementation Planning Process and develops the Annual Implementation Work Plan. It oversees implementation of areas of the Program dealing with natural production of salmon and steelhead. It develops methods for and oversees the application of cost-effectiveness criteria in the selection of activities to be implemented by BPA and develops and maintains BPA's fish and wildlife mitigation accounting records.

Biological Research Section

This Section provides biological technical expertise necessary to assist the Division's development of the Program Annual Implementation Work Plan and annual budget planning documents and to assist in the implementation of complex major projects; serves as BPA's representative to the Council's Hatchery Effectiveness Technical Work Group (HETWG) and Fish Disease Technical Work Group (FDTWG); develops scopes of work and oversees the procurement of projects identified in the annual Work Plan; and serves as COTR for subsequent contracts. It oversees areas of the Program addressing artificial production (including fish health) of salmon and steelhead, resident fish, and wildlife and develops and maintains the Division's official contract and project files.

Project Management Branch

The Project Management Branch manages the implementation of fish and wildlife development projects of the Program; provides comprehensive oversight and management of such projects appropriate to their cost, policy precedents, political sensitivity, biological complexity, and associated controversy; formulates and directs the coordination efforts both within BPA and externally with Federal and State agencies, Tribes, utility groups, and the public to define, develop, and implement proposals; manages the development of the comprehensive long-term operations and maintenance agreements attendant on such projects; and manages and directs the allocation of financial and personnel resources necessary to implement, operate, and maintain capital and expense projects.

This Work Plan refers to four different personnel titles. It is helpful for the reader to understand the responsibilities and authorities of these positions, should questions or comments arise about BPA procurement, projects, or implementation. The positions are:

PROJECT MANAGER

Individual assigned working responsibility for the coordinated and timely implementation of one or more "major" projects within the Program. All Project Managers are assigned to the Project Management Branch.

PROJECT BIOLOGIST

Biologist who serves as the lead for all biological activities related to a major project. During project implementation, the Project Biologist oversees all biological aspects of the project and provides biological information to the Project Manager.

PROJECT OFFICER

Individual responsible for the management of "non-major" projects; often serves as the COTR for any contracts associated with the project.

CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR)

Individual responsible to BPA's Contracting Officer for the development,

negotiation, and management of contracts for specific goods and services associated with fulfillment of Program measures.

TABLE 4. STAFFING LIST
DIVISION OF FISH AND WILDLIFE
9/9/91

OFFICE OF THE DIRECTOR - PJ

Jim Luce - Division Director (Acting)
Greg Drais - Deputy Director
Marilyn McCoy - Division Secretary (ESA Secretary)(Temporary)
Barbara Ballew - Program Analyst
Larry Everson - Fishery Biologist (on detail to CRITFC)
Chuck Roller - Fish and Wildlife Resource Management Advisor
Donna Fuller - Procurement Assistant
(vacant) - Administrative Technician
(vacant) - Contracts Administrator

FISHERIES INTEGRATION BRANCH - PJI

Steve Smith - Branch Chief
Cindy Loehr - Branch Secretary

FISH PASSAGE PLANNING SECTION - PJIA

Jim Geiselman - Section Chief, Interdisciplinary
Dan Daley - Fishery Biologist (SOR)
Timothy Fisher - Fishery Biologist (NEPA)
Robyn MacKay - Hydraulic Engineer
Jeff Osborn - Fishery Biologist
Roger Rice - Computer Specialist
(vacant) - Sun Administrator

RESEARCH AND POLICY SECTION - PJIB

Ron Starkey - Section Chief, Interdisciplinary
Jerry Bouck - Fishery Biologist (ESA)
Dale Johnson - Fishery Biologist
Bill Maslen - Fishery Biologist
Pat Poe - Fishery Biologist
Chris Stoffels - Computer Specialist
Steve Vigg - Fishery Biologist (ESA)
Debbie Watkins - Fishery Biologist (ESA)

BIOLOGICAL PLANNING BRANCH - PJS

Keith Hartner - Branch Chief (Temporary)
(vacant) - Branch Secretary

PROGRAM PLANNING SECTION - PJSP

Mark Schneider - Section Chief
Katherine Beale - Industry Economist
Joe DeHerrera - Wildlife Biologist
Jeff Gislason - Fish and Wildlife Biologist
Martin Larsen - Computer Specialist
Mark Shaw - Fishery Biologist
Tom Vogel - Fishery Biologist
Robert Walker - Wildlife Biologist

TABLE 4. STAFFING LIST
DIVISION OF FISH AND WILDLIFE
9/9/91
(Continued)

BIOLOGICAL RESEARCH SECTION - PJSR

Ron Morinaka - Section Chief (Temporary)
Robert Austin - Fishery Biologist
Jerry Bauer - Fishery Biologist
Fred Holm - Fishery Biologist
Alan Ruger - Fishery Biologist
(vacant) - Fishery Biologist
(vacant) - Fishery Biologist (Genetics)

FISH & WILDLIFE PROJECT MANAGEMENT BRANCH - PJW

Robert Beraud - Chief
(vacant) - Branch Secretary
Steve Levy - Project Manager
Jay Marcotte - Project Manager
Rick Stoots - Project Manager
Judy Woodward - Project Manager
(vacant) - Project Manager

Yakima Project Office - PJW-5

Tom Clune - Project Manager
Sharon Rice - Secretary

VII. PROGRAM PLANS BY ACTION ITEMS

**ANADROMOUS FISH ACTION ITEMS
AND TECHNICAL SUBJECTS**

2.1 WATER BUDGET MEASURES

- 303(a) [Abstract] 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, and used during April 15 through June 15.
- 303(b) [Abstract] BPA shall fund the establishment and operation of a Fish Passage Center, including funds for two Fish Passage Manager positions and for technical and clerical support. This support will assist the Fish Passage Managers in: 1) planning and implementing the annual smolt monitoring program called for in Section 304(d)(2); 2) developing and implementing flow and spill requests; and 3) monitoring and analyzing research results to assist in implementing the Water Budget and spill planning. The Fish Passage Center will function as the primary program center for housing data and information regarding juvenile fish passage.
- 303(c) [Abstract] The Federal project operators, Fish Passage Managers, fish passage advisor, and power system operators will coordinate system operations for the current year and develop experimental use and accounting procedures for both the mid-Columbia and Snake River Water Budgets. Experimental Water Budget procedures shall be implemented for at least water years 1987 and 1988. This committee also shall evaluate alternative Water Budget implementation procedures and report to the Council.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To provide adequate flows for fish migrations, and to insure clear and timely integration of fish requirements and hydrosystem operational decisions.

Background and Proaress to Date:

The Council recognized that the agencies and Tribes lacked the expertise to work with the owners and operators of the hydrosystem. The agencies and Tribes needed such expertise to assure that the Water Budget would be considered in all phases of hydrosystem planning and operation. The Council, therefore, specified that BPA fund two Fish Passage Managers, one for the Tribes and one for the agencies. BPA has funded the operation of the Fish Passage Center and the Fish Passage Data Information System since 1983.

Plans:

BPA plans to continue to fund the operation of the Fish Passage Center, the Fish Passage Managers and support staff, and the Fish Passage Data Information System to benefit the integration of fish and hydrosystem operational requirements, and to provide increased adult returns by using supplemental flows in a timely fashion.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
87-127	<p>Smolt Monitoring and Water Budget Programs - PSMFC and CRITFC</p> <p><u>Project Officer:</u> D. Johnson</p> <p><u>Objectives:</u> Fund the operation of the Fish Passage Center and provide Water Budget flows for shaping between April 15 and June 15 to reduce hydrosystem impacts on juvenile outmigrations. (See also Action Item 2.1)</p>	<p><u>Date initiated:</u> February 1987</p> <p><u>Results/Conclusions:</u> BPA funded the operation of the Fish Passage Center and the Fish Passage Data Information System in FY 1990.</p>	<ol style="list-style-type: none"> Continuing: BPA will continue to fund the operation of the Fish Passage Center and the Fish Passage Data Information System and to provide Water Budget flows for shaping annually. Continuing: Contractors will guide the smolt monitoring program; they will provide an annual report by November 1 of each year and a smolt monitoring program by December 1 of each year.

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Smolt monitoring, as provided under the Fish Spill MOA, is also conducted under Project 87-127:

<p>Smolt Monitoring/Spill</p> <p><u>Project Officer:</u> W. Maslen</p> <p>Objectives: Provide monitoring of juvenile salmonid outmigrations at Lower Monumental and Ice Harbor Dams, as provided in the Fish Spill Memorandum of Agreement (MOA), to determine smolt numbers, migration timing, and species composition. This information will be used by the fishery agencies and Tribes to manage spill for fish passage under the terms of the MOA.</p>	<p><u>Date Initiated:</u> 1989</p> <p><u>Results/Conclusions:</u> Gatewell monitoring was conducted at Lower Monumental Dam for 12 hours/day (a 4 hour/day extension over the ongoing Smolt Monitoring Program). By mutual agreement of the parties, monitoring was not conducted at Ice Harbor Dam in 1991.</p>	<ol style="list-style-type: none"> FY 1992 and beyond: Under the terms of the fish spill MOA, monitoring at Lower Monumental shall be discontinued with installation of bypass. FY 1992: By mutual agreement of the parties, monitoring is not planned for Ice Harbor.
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PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
83-6	<p>Operation and Maintenance of BPA Fish Marking Trailer - USFWS</p> <p><u>Project Officer:</u> W. Maslen</p> <p><u>Objectives:</u> Using mobile fish marking trailers, conduct marking (coded-wire tags, freeze brand, and PIT tags) of juvenile salmonids throughout the region for BPA-funded projects, including the Columbia River Basin Smolt Monitoring Program and Yakima Basin Monitoring and Evaluation.</p>	<p><u>Date initiated:</u> 1983</p> <p><u>Results/Conclusions:</u> A total of approximately 2.2 million fish were marked in 1991.</p>	<p>Continuing: BPA will continue to fund marking of various fish groups for BPA-funded projects.</p>

III. NEW PROJECTS

None.

2.2 SMOLT MONITORING PROGRAM

303(d) [Abstract] BPA shall fund an annual smolt monitoring program to be conducted by the agencies and Tribes. The monitoring program will provide information on the migrating characteristics of the various salmon and steelhead stocks and will include:

1. Field monitoring of smolt movement to determine the best timing of storage releases;
2. Coordination of runoff forecasts with water budget usage and shaping;
3. Continuous monitoring of runoff conditions and fish movement at Lower Granite and Priest Rapids dams to provide information to allow changes in water budget usage if actual runoff conditions are inconsistent with runoff forecasts; and
4. Coordination of hatchery releases with water budget usage.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To determine where all major groups of migrating, juvenile hatchery and wild fish are in the hydrosystem. This information is used to implement the Water Budget and communicate spill requests.

Background and Progress to Date:

Starting in the 1970s, spring flows in the Columbia River changed dramatically with the completion of major headwater storage projects. This change helped flood control and power generation, but slowed the travel time of the outmigration. This resulted in increased exposure to predation and increased mortality of the juvenile salmon and steelhead. The Council sought to reduce the mortality associated with the downstream migrations by increasing the spring flows. A Water Budget volume was derived from agencies' and Tribes' recommendations and was specified for the mid-Columbia and lower Snake rivers. To be able to implement the Water Budget effectively, the smolt monitoring program has evolved to sample the downstream-juvenile migrations at numerous key locations throughout the hydrosystem.

Plans:

BPA plans to continue funding the smolt monitoring program to improve the timely integration of the juvenile salmon and steelhead outmigration with the operation of the hydrosystem.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
84-14	Monitoring of Downstream Salmon and Steelhead at Federal Hydroelectric Facilities - NMFS <u>Project Officer:</u> V. Jagendorf <u>Objectives:</u> To monitor the seaward migration of juvenile salmon and steelhead at John Day, and Bonneville Dams as part of the Columbia River Smolt Monitoring Program; to provide daily fish capture and condition data, as well as dam operations and river flow data, to the Fish Passage Center to assist in Water Budget management.	<u>Date initiated:</u> March 1984 <u>Results/Conclusions:</u> Project provided information that has been used by the Fish Passage Center as a basis for Water Budget requests and for Water Budget management directed toward improving the survival of juvenile salmon and steelhead migrants. Project has provided information on the migrating characteristics of the various stocks of salmon and steelhead produced in the Columbia River system. Project continues to provide information for investigating relationships among flows, spill, travel time, smolt condition, and adult production. The 1984-1990 Annual Reports are available; 1992 Annual Report will be available May 1992.	1. FY 1992: 1991 Annual Report available May 1992. 2. Continuing: Project will continue to be funded as part of the Smolt Monitoring Program. Contractor will provide annual operational reports and recommend changes as needed to the smolt monitoring schedule and facilities.

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Smolt monitoring, as provided under the Fish Spill MOA, is also conducted under Project 84-14:

<u>Smolt Monitoring/Spill - NMFS</u>	<u>Date Initiated:</u> 1989	1. FY 1992: Continue gatewell sampling program as per terms of the MOA, or as agreed
<u>Project Officer:</u> V. Jagendorf	<u>Results/Conclusions:</u> Gatewell monitoring was conducted at the Dalles Dam for 24 hours/day during the spring and summer outmigrations.	2. Continuing: Continue gatewell sampling program for the purpose of spill management, pending installation of bypass.
<u>Objectives:</u> Provide monitoring of juvenile salmonid out- migrations at John Day and The Dalles Dams, as provided in the Fish Spill Memorandum of Agreement (MOA),		

PROJECT NUMBER	TITLE	P R O J E C T	SCHEDULE AND MILESTONES
84-14 cont.	to determine smolt numbers, migration timing, and species composition. This information will be used by the fishery agencies and Tribes to manage spill for fish passage under the terms of the MOA.	monitoring at John Day Dam was conducted during the summer outmigration (no additional monitoring over the ongoing Smolt Monitoring Program).	
83-323	<p data-bbox="393 561 783 652">Smolt Monitoring at the Head of Lower Granite Reservoir and Lower Granite Dam - IDFG</p> <p data-bbox="393 685 783 718"><u>Project Officer:</u> V. Jagendorf</p> <p data-bbox="393 751 542 784"><u>Objectives:</u></p> <ol data-bbox="393 784 783 1516" style="list-style-type: none"> <li data-bbox="393 784 783 1007">1. Operate the Lewiston and Clearwater traps from March 15 to mid-July as part of the Smolt Monitoring Program for Water Budget, fish collection, and transportation management purposes. <li data-bbox="393 1007 783 1197">2. Monitor arrival time, relative passage index, and condition of juvenile salmon and steelhead into the head of Lower Granite reservoir from Snake River tributaries. <li data-bbox="393 1197 783 1516">3. Determine travel time for hatchery chinook, hatchery steelhead, and wild steelhead migrants from the head of Lower Granite Reservoir to Lower Granite Dam using PIT-tagged smolts marked at the traps as well as freeze-branded and PIT-tagged smolts passing the traps from upriver sites. 	<p data-bbox="812 561 1187 586"><u>Date initiated:</u> January 1983</p> <p data-bbox="812 627 1330 1197"><u>Results/Conclusions:</u> The information collected on the migrational timing and condition of juvenile hatchery-produced and wild salmon and steelhead trout Snake River stocks from 1983 through 1991 has been used for in-season operational decisions relative to Water Budget, facility power operations, and fish collection and transportation programs. The collected information is also being used to investigate the relationships among river flows, travel time, smolt survival and condition, and adult production of salmon and steelhead trout stocks produced in the Snake River system. The 1983-1990 Annual Reports are available; 1991 Annual Report will be available May 1992.</p>	<ol data-bbox="1357 561 2004 784" style="list-style-type: none"> <li data-bbox="1357 561 2004 652">1. FY 1992: BPA will continue to fund Project 83-323 activities as part of the Smolt Monitoring Program. <li data-bbox="1357 685 2004 784">2. Continuing: Contractor will provide annual reports and recommend changes as needed to the smolt monitoring schedule and facilities.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
87-401	<p>Assessment of Smolt Condition for Travel Time Analysis - USFWS</p> <p><u>Project Officer:</u> V. Jagendorf</p> <p><u>Objectives:</u> Collect information on, smoltification, and prevalence of disease for marked groups of juvenile salmon and steelhead used by the Fish Passage Center in their travel time studies as part of the Smolt Monitoring Program. Continue the development of a smolt condition index to monitor fish quality during the seaward migration for use in real-time management and evaluation.</p>	<p><u>Date initiated:</u> May 1987</p> <p><u>Results/Conclusions:</u> Results show that level of stress, smoltification, and fish health can introduce bias/errors into estimates of smolt survival, and travel time. Measurements of parameters used to quantify the extent of smolt development, level of stress, and prevalence of disease are needed to evaluate how these biological factors are influencing experimental design assumptions in Columbia River mainstem passage juvenile fish migration studies. The 1987-1989 Annual Reports are available; 1991 Annual Report will be available September 1991.</p>	<p>FY 1992: BPA will continue to fund Project 87-401 activities as part of the Smolt Monitoring Program.</p> <p>2. Continuing: Contractor will provide annual reports and recommend changes based on evaluation of results.</p>
91-28	<p>PIT-Tagging of Wild Spring Chinook in Idaho and Oregon</p> <p><u>Project Officer:</u> V. Jagendorf</p> <p><u>Objectives:</u> Assess the migrational characteristics of wild/natural parr in selected streams above Lower Granite Dam in Idaho and Oregon during the summer/fall (marking phase). During the recovery phase the following spring, actual characteristics will be established at PIT-tag recovery sites.</p>	<p>- <u>Initiated:</u> May 1991</p> <p><u>Results/Conclusions:</u> Information from wild spring/summer chinook salmon parr PIT-tagged during summer/fall 1991 will be available spring/summer 1992.</p>	<p>1. FY 1992: BPA will continue to fund Project 91-28 activities as part of the Smolt Monitoring Program.</p> <p>2. Continuing: Contractor will provide annual reports and recommend changes as needed.</p>

PROJECT
NUMBER

TITLE

PROJECT STATUS

SCHEDULE AND MILESTONES

91-40

Bonneville Dam Juvenile
Fish Sampling Facilities

Date Initiated: FY 1991

Results/Conclusions: Project 91-13,
"PIT-Tag Facilities," is incorporated
as part of this project.

1. FY 1992: Continue final design drawing for
Bonneville Dam I and II improved fish sampling
facilities.

2. FY 1993: Initiate construction.

Project Officer: TBA

Objectives: To develop multi-
purpose juvenile fish sampling
facilities capable of providing
information on fish condition
and species composition of the
general population bypassing the
powerhouses, and on the timing,
physiology, condition, and
growth of PIT-tagged fish.

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III. NEW PROJECTS

None.

- 3.1 ALTERNATIVE CONDUIT SYSTEM FOR JUVENILE FISH
(Test and Evaluate: November 15, 1987; Report January 1988)

403(d)(2) Test and evaluate an alternative conduit system for efficiently conveying juvenile fish from hydroelectric powerhouse intakes to the tailwater. This study shall test a design with potential for broad application at dams where turbine intake deflectors are in use or under consideration.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To test and evaluate alternative conduit systems for bypassing juvenile salmon and steelhead around dams.

Background and Progress to Date:

As juvenile salmon and steelhead migrate downstream past dams, they may be injured by pressurized conduit bypass systems used at most dams. A past study performed by the U. S. Army Corps of Engineers (USACE) and Idaho Cooperative Fish and Wildlife Research Unit (ICFWRU) demonstrated that an open flume has potential for minimizing injury to fish. BPA contracted with these two agencies to design and test different types of flumes to help pass fish safely around dams. The project was completed in March 1988. Results were used in the design of the new smolt bypass system at Little Goose Dam.

Plans:

Action Item 3.1 has been completed.

Projects:

None.

- 4.1 ELLENSBURG TOWN DIVERSION DAM FISHWAY AND BYPASS
(Design: October 1987)
(Construction Completed: October 1989)

803(b)(6) Bonneville shall fund the design and construction of a low flow vertical slot fishway and replacement of obsolete, inefficient juvenile fish screening/bypass facilities at the Ellensburg Town Diversion Dam.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To fund construction of the Ellensburg Town Diversion Dam fish screens.

Background and Progress to Date:

BPA funded the construction of the Ellensburg Town fish screens to improve the outmigration of juvenile salmon and steelhead from the Yakima River system. BPA did not fund the proposed fishway because no fishway presently exists, and the Ellensburg Water Company had a pre-Northwest Power Act obligation to fund fishway construction. Construction of the fish screens was completed in October 1989.

Plans:

Action Item has been completed.

I. COMPLETED PROJECTS

PROJECT
NUMBER

TITLE

PROJECT STATUS

87-47

Ellensburg Screens
Construction - USBR

Date Completed: October 1989

Results/Conclusions: Construction
of screens has been completed.

Project Manager: T. Clune

Objectives: Improve fish screen
facility on Ellensburg Water
Company Canal.

II. FY 1991 ONGOING PROJECTS

None.

III. NEW PROJECTS

None.

4.2 HABITAT AND PASSAGE IMPROVEMENT PROJECTS
 (Consult with Project Sponsors on Need; Complete by 1991)

703(c)(1) [Abstract] BPA shall fund habitat and tributary passage projects as provided in Action Item 4.2. Upon Council approval of system plans provided for in Section 205, System Planning, BPA shall fund habitat and passage restoration or improvement measures in those plans, including those measures identified in the plans that are listed in Appendix A Table: Planning Inventory of Enhancement Projects.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To consult with project sponsors to determine whether projects listed in Action Item 4.2 are needed in the immediate future; to complete them by 1991 if they are needed.

Background and Progress to Date:

On May 7, 1987, BPA sent a letter to all habitat and tributary passage project sponsors to determine whether the listed projects were needed in the immediate future. All project sponsors, except Washington Department of Fisheries (WDF), stated that their listed projects were needed in the immediate future. WDF (June 2, 1987) recommended the following actions:

<u>Subbasin</u>		<u>Project</u>	<u>Recommendation</u>
Yakima	----	Thorpe Mill Screen (USBR Project)	Hold
	87-57	Old Reservation Canal Screen	Delay
	86-65	Snipes/Allen Screen	Delay

A total of ___ habitat and tributary passage improvement projects are listed in the AIWP, including ___ ongoing projects, ___ completed projects, one deferred project, and one new project. Due to the large number of projects involved in the implementation of Program Measure 703(c)(1), the diversity of activities included, and BPA's continuous implementation support of habitat and passage projects, a table format was developed and used to review BPA implementation in the FY 1987 Work Plan. The same table format (Table 5) has been used in the current AIWP, but only for projects that started before FY 1991. Projects that started in FY 1991 and new FY 1992 projects have been described using the same format as is used in the rest of the AIWP, with completed, ongoing, deferred, and new projects described in separate tables.

Table 5 covers research projects, evaluation projects, and habitat and passage enhancement projects. The last group is listed by subbasin, beginning with the Willamette/Clackamas River subbasin and proceeding upriver to the Salmon River subbasin. Information presented in the Table includes: the project description, current project status, and contract-effective period.

In FY 1987, BPA developed an Implementation Plan outline for habitat and passage enhancement projects and asked Project Leaders to complete Implementation Plans in FY 1988. BPA funding in FY 1988 was contingent upon completion of plans for all ongoing and new projects. Plans were completed for ongoing projects funded in FY 1988.

These habitat and passage enhancement project Implementation Plans will improve planning and scheduling of implementation efforts and will clearly define the projects. The plans will also enable BPA to accurately determine the funding required for completion of a project. Each completed Implementation Plan contains:

- 1) background information, such as specific project location, existing conditions, fishery resources, land use activities, and limiting factors;
- 2) enhancement techniques and an implementation schedule;
- 3) expected increase in fish production due to the project;
- 4) methods for monitoring physical habitat changes resulting from the project; and
- 5) cost of the project, including total cost and cost by fiscal year.

BPA expects projects to be implemented as planned and scheduled in the Implementation Plans.

Plans:

BPA will continue to implement the projects listed in Action Item 4.2 of the 1987 Program (if they are needed in the immediate future). BPA will negotiate statements of work for FY 1992 implementation of habitat improvements by a number of projects that were originally scheduled for only O&M activities in FY 1992 (see Council letter and BPA response in Appendix C of the AIWP). The FY 1992 funds reserved by "placeholder" Project 91-10, ISP Implementation, will be re-allocated to individual ongoing habitat projects as required to fund the additional habitat work.

I. COMPLETED PROJECTS

See Table 5.

II. FY 1991 ONGOING PROJECTS

See below and Table 5.

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
91-15	Development of Stream Habitat Improvement Standards	<p><u>Expected Start Date:</u> May 1991</p> <p><u>Results/Conclusions:</u> Not available at this time.</p> <p><u>Project Officer:</u> R. Austin</p> <p><u>Objectives:</u> Project will develop standards and guidelines for the selection of new habitat enhancement projects for BPA implementation beginning in FY 1992. Methods for determining limiting factors to fish production and for monitoring and evaluating fish and wildlife benefits resulting from stream habitat enhancement or protection projects will also be developed. Other major objectives include:</p> <ol style="list-style-type: none"> 1. Define baseline fish population and riparian habitat data necessary to allow for determination of changes in these parameters over time as a result of enhancement work on habitat protection measures. 	FY 1991: BPA determines methods of procurement for developed SOW and initiates project; estimated completion of project is within 8-10 months from start date.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
91-15 cont.	2. Determine current "state-of-the-art" in habitat protection and enhancement strategies, with a focus on alternatives that are designed to address the problem(s) contributing to habitat degradation. 3. Report critical research needed to improve/evaluate future habitat measures. 4. Determine relative cost-effectiveness of stream protection versus restoration/enhancement measures.		
91-30	East Fork Salmon River Completion - Shoshone-Bannock Tribe <u>Project Officer:</u> S. Levy <u>Objectives:</u> Improve habitat for spring chinook.	<u>Expected Start Date:</u> September 1, 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Start project.
86-79-1	Fifteenmile Creek - Phase IV - V - ODFW <u>Project Officer:</u> R. Stoots <u>Objectives:</u> Overall objective is to increase the production of wild winter steelhead within the basin: 1. Reduce lethal summer water temperatures.	<u>Date Initiated:</u> November 1, 1990 <u>Results/Conclusions:</u> None at this time.	FY 1991: Begin implementation FY 1992: Implement new habitat restoration measures along with maintaining previous projects completed under Contract No. 86-79.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
86-79-1 cont.	2. Increase summer water flow. 3. Restore fish habitat diversity within the stream. 4. Improve stream channel stability. 5. Reduce sediment loading through restored riparian vegetation.		

III. NEW PROJECTS

None.

Table 5: Habitat Improvement and Passage Enhancement
Measure 703(c)(1)
Status Report

PROJECT NUMBER	PO	1/ - PM	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
						START DATE	RENEWAL DATE
I. RESEARCH PROJECTS							
None.							
II. EVALUATION AND MONITORING PROJECTS							
83-7	RJA			Monitoring and Evaluation of Idaho Habitat Improvement Projects - IDFG	Detailed project accomplishments are described in the 1989 annual report. Project benefits to date are modest: barrier removals, followed by in-stream structures, have had the largest effect on increasing anadromous fish production. More intensive evaluations by this project have detected some significant density increases due to structures, but the majority of differences were not significant.	8/15/83	7/1/91
				Objective: Evaluate the juvenile chinook and steelhead production benefits of habitat and passage improvement projects in the Clearwater and Salmon River basins in order to produce the offsite mitigation record for Idaho.	Benefits of habitat improvement projects in terms of adult returns and resulting seeding levels will depend on improved flows and passage conditions. The depressed nature of upriver anadromous stocks has precluded attainment of full benefit of any habitat project in Idaho.		

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	1/ - PM	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
						START DATE	RENEWAL DATE
83-7					Monitoring of control and treatment streams within the Cleat-water and Salmon River drainages will continue in FY 1991. Project is expected to be completed in FY 1992.		
84-11		RDS		Clackamas/Hood River Habitat Enhancement Program - USFS/Mt. Hood NF Fish Creek Evaluation Subproject Objective: To evaluate and quantify drainage-wide changes in habitat and smolt production as a result of habitat improvement.	Monitoring and Evaluation is ongoing in FY 92.	4/1/84	4/1/92

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	-	PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT	TERM
						START DATE	RENEWAL DATE

III. PASSAGE AND HABITAT IMPROVEMENT

Willamette River/Clackamas River Subbasin

84-11	RDS	Clackamas/Hood River Habitat Enhancement - Mt. Hood NF	4/1/84	4/1/92
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Collawash River Falls Passage Subproject

O&M in FY 92.

Objective: Construct a fishway to correct Collawash Falls passage problems. The falls prevent access to potential spawning and rearing habitat.

Improvement: Structure and passage

Habitat: 10 miles

Species: Spring chinook, winter and summer steelhead, and coho

Benefit: Increase of 55,532 smolts and 2,957 adults.

Collawash River Drainage Habitat Improvement; Hot Springs Fork Subdrainages Subproject

O&M in FY 92. Will negotiate potential implementation projects in FY 92.

Objective: Install instream structures to improve spawning habitat and effective cover.

Improvement: Instream structure

Habitat: 10.6 miles

Species: Winter and summer steelhead, spring chinook and coho salmon

Benefit: 7,249 coho smolts; 2,616 chinook smolts; and 4,229 steelhead smolts.

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	1/ - PM	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
						START DATE	RENEWAL DATE

84-11 cont.				<p>Lake Branch/West Fork Hood River Improvement Subproject</p> <p><u>Objective:</u> Improve adult/juvenile fish passage and the quality of spawning and low-flow rearing habitat.</p> <p><u>Improvement:</u> Instream structure and passage</p> <p><u>Habitat:</u> 10.0 miles</p> <p><u>Species:</u> Summer and winter steelhead, chinook</p> <p><u>Benefit:</u> 1,309 chinook smolts; 1,748 steelhead smolts.</p>	FY 92 activities include O&M of previous projects. Will negotiate potential implementation projects in FY 92.		
				<p>Fish/Wash Creek Habitat Improvement Subproject</p> <p><u>Objective:</u> Improve spawning and rearing habitat for salmon and steelhead through habitat improvement measures.</p> <p><u>Improvement:</u> Instream structure</p> <p><u>Habitat:</u> i l e s</p> <p><u>Species:</u> Spring chinook, coho, winter and summer steelhead.</p> <p><u>Benefit:</u> 1,857 steelhead smolts; 1,317 coho smolts.</p>	FY 92 activities include O&M of past projects. Will negotiate potential implementation projects in FY 92.		
				<p>Lower Oak Grove Fork Habitat Improvement Subproject</p> <p><u>Objective:</u> Improve fish rearing and spawning habitat in the lower 3.8 miles of stream.</p> <p><u>Improvement:</u> Instream structure</p> <p><u>Habitat:</u> 3.8 miles</p> <p><u>Species:</u> Winter and summer steelhead, chinook and coho salmon</p> <p><u>Benefit:</u> 680 steelhead smolts; 2,536 coho smolts.</p>	FY 92 activities include O&M of past projects. Will negotiate potential implementation projects in FY 92.		

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	1/ - PM	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
						START DATE	RENEWAL DATE
84-11				Fifteenmile Creek Basin Habitat Improvement Subproject <u>Objective:</u> Improve adult and juvenile fish passage, spawning and rearing habitat, and water quality conditions. <u>Improvement:</u> Passage and instream structure <u>Habitat:</u> 120 miles (30 mi USFS lands) <u>Species:</u> Wild winter steelhead	FY 92 activities include O&M of past projects. Will negotiate potential implementation projects in FY 92.		
86-124	RDS			Little Fall Creek Fish Passage - Facilities Maintenance <u>Objective:</u> Provide O & M funding for Fish Passage facilities. <u>Improvement:</u> Structure and passage <u>Habitat:</u> 14 miles <u>Species:</u> Salmon and steelhead <u>Benefit:</u> Potential of adults: Steelhead adults: 543 Spring chinook adults: 256	A multi-year O&M agreement has been negotiated through 9/15/92, with FY 89 funding.	7/22/86	9/16/92
<u>Fifteenmile Creek Subbasin</u>							
86-79	RDS			Fifteenmile Creek Habitat Improvement - ODFW <u>Objective:</u> Increase wild winter steelhead production to levels which approximate historic maximum run sizes. <u>Improvement:</u> Passage and instream structure <u>Habitat:</u> 120 miles <u>Species:</u> Wild winter steelhead <u>Benefit:</u> 11,715 smolts/year	Project completed. O&M is to be continued under Project No. 86-79-01	9/87	---

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	-	PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
						START DATE	RENEWAL DATE

Deschutes River Subbasin

81-108	RDS	Habitat Quality and Anadromous Fish Production Potential on the Warm Springs Indian Reservation - CTWSIR	Phase I: completed in FY 82. Phase II: completed in FY 87. Phase III: Implementation of habitat enhancement measures was completed in FY 89. Monitoring of project effectiveness will be completed in FY 90 with the final evaluation report completed in FY 91. O&M of past projects in FY 92.	9/30/81	5/1/92
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Objective: The project consists of three phases:
I. Survey existing and potential fishery resources on the Reservation; II. Identify factors limiting anadromous fish production and design appropriate **instream** or riparian enhancement measures to correct limiting factors; and III. Implement measures and evaluate effectiveness.
Species: Summer steelhead and spring chinook.

Beaver Creek Habitat Improvement Subproject

Objective: Construct **instream** structures to provide juvenile salmon and steelhead rearing habitat in channelized sections of Beaver Creek. Fence riparian zone and rip-rap banks with juniper.
Improvement: **Instream** and riparian
Habitat: i l e s
Species: Wild spring chinook.
Benefit: 6,750 spring chinook **smolts**.

Instream structures completed in FY 86. Fencing and juniper rip-rap completed in FY 89. O&M of past projects in FY 92.

Mill Creek Habitat Improvement Subproject

Objective: Construct **instream** structures to provide juvenile salmon and steelhead rearing habitat in the Potter's Pond section of Mill Creek. Fence riparian zone.
Improvement: **Instream** and riparian
Habitat: 1 mile
Species: Wild spring chinook and summer steelhead
Benefit: 1,020 spring chinook and 540 summer steelhead **smolts**.

Instream structures completed in FY 87. Fencing completed in FY 89. O&M of past projects in FY 92.

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	1/ - PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
					START DATE	RENEWAL DATE
81-108 cont.			<p>Shitike Creek Habitat Improvement Subproject</p> <p><u>Objective:</u> Stabilize stream channel, create a low-flow passage channel, develop pool habitat, and provide shading.</p> <p><u>Improvement:</u> Instream and riparian.</p> <p><u>Habitat:</u> i l e s</p> <p><u>Species:</u> Wild spring chinook and summer steelhead.</p> <p><u>Benefit:</u> 3,139 spring chinook smolts and 2,642 summer steelhead smolts.</p>	<p>Instream structures completed in FY 89. O&M of past projects in FY 92.</p>		
84-62	DEJ		<p>Trout Creek Riparian Enhancement - ODFW</p> <p><u>Objective:</u> Construct instream and riparian structures to provide juvenile salmon and steelhead rearing habitat and adult spawning habitat.</p> <p><u>Improvement:</u> Instream and riparian.</p> <p><u>Habitat:</u> 90 miles</p> <p><u>Species:</u> Steelhead and spring chinook.</p> <p><u>Benefit:</u> 0 0 1500 adult steelhead.</p>	<p>Construction is ongoing and expected to be completed in FY 92.</p>	9/1/84	9/30/91
88-116	DEJ		<p>Trout Creek O&M</p> <p><u>Objective:</u> To maintain fences and instream structures constructed under Project 84-62.</p>	<p>BPA will continue funding mainte- nance of Trout Creek habitat improve- ment structures in FY 92.</p>	9/88	9/91

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
 /PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	1/ - PM	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
						START DATE	RENEWAL DATE

John Day River Subbasin

84-8	RDS			N. Fork John Day River Habitat Enhancement - USFS/Umatilla NF		4/1/84	4/1/92
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Desolation Creek Subproject

Objective: Increase the production potential of summer steelhead and spring chinook by improving **pool:riffle** ratio, constructing adult salmon resting pools, increasing quality and quantity of spawning habitat, and controlling bank erosion.

Improvement: **Instream** structure

Habitat: 42 miles

Species: Spring chinook, **summer** steelhead

Benefit: Spring chinook - 4950 **smolts**

Summer steelhead - 2475 smolts

FY 92 activities include **O&M** of previous projects. Will negotiate potential implementation projects in FY 92.

North Fork John Day River Habitat Improvement Subproject

Objective: Increase production of spring chinook through side-channel modification, improve juvenile rearing area, improve bank stabilization, increase adult resting areas, and increase amount of riparian vegetation.

Improvement: **Instream** structure

Species: Spring chinook

Benefit: 5,000 **smolts/yr**

FY 92 activities include **O&M** of previous projects. Will negotiate potential implementation projects in FY 92.

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

84-8
(cont.)

Wall Creek System Subproject

Objective: Improve quality and quantity of juvenile **salmonid** rearing area and adult spawning area; control bank erosion; increase amount of riparian vegetation.

Improvement: **Instream** structures.

Habitat: 7 miles

Species: Summer steel head.

Benefit: 2,274 summer steel head **smolts**.

O&M is included for FY 92. Will negotiate potential implementation projects in FY 92.

Fivemile Creek Subproject

Objective: Increase production of summer steelhead

Improvement: **Instream** structure

Habitat:

Species: Summer Steel head

Benefit: 375 steelhead **smolts**

O&M is included for FY 92. Will negotiate potential implementation projects in FY 92.

Camas Creek System Subproject

Objective: Improve quality of juvenile **salmonid** rearing area and adult spawning area; control bank erosion; increase amount of riparian vegetation.

Improvement: **Instream** structures.

Habitat: 16.5 miles

Species: Summer steel head

Benefit: 5,362 summer steelhead **smolts**.

O&M is included for FY 92. Will negotiate potential implementation projects in FY 92.

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson

2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	1/ PO -	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
					START DATE	RENEWAL DATE
84-8 (cont.)			Clear/Granite Creeks Subproject <u>Objective:</u> Increase the potential of spawning salmon through habitat improvement measures. <u>Improvement:</u> Decrease mine waste water pollution. <u>Habitat:</u> 12 miles <u>Species:</u> Spring chinook	FY 92 activities include O&M of previous projects. Will negotiate potential implementation projects in FY 92.		
84-21	RDS		Mainstem, Middle and North Fork/John Day River - ODFW Mainstem John Day River Subproject <u>Objective:</u> Provide additional rearing habitat for juvenile salmon and steelhead. <u>Improvement:</u> Fencing and instream structure <u>Habitat:</u> 23 miles <u>Species:</u> Spring chinook and Summer steelhead <u>Benefit:</u> Steelhead smolt increase - 344,000; chinook smolt increase - 371,000 to 996,000 Middle Fork John Day River Subproject <u>Objective:</u> Provide additional holding areas for adult chinook and steelhead; improve rearing area for juveniles of both species. <u>Improvement:</u> Fencing and instream structure <u>Habitat:</u> 30 miles <u>Species:</u> Spring chinook, summer steelhead <u>Benefit:</u> Included in benefits for the Mainstem John Day River.	O&M is included for FY 92. Will negotiate potential implementation projects in FY 92. O&M is included for FY 92. Will negotiate potential implementation projects in FY 92.	6/30/85	4/1/92

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	1/ PO -	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
					START DATE	RENEWAL DATE
84-21 (cont.)			<p>North Fork John Day River Subproject, including Fox Creek</p> <p>Objective: Fox Creek - improve steelhead spawning and rearing conditions through increasing riparian vegetation, reducing erosion and sedimentation, and increasing pool areas.</p> <p>Improvement: Fencing and instream structure</p> <p>Habitat: 42 miles</p> <p>Species: Spring chinook and steelhead</p> <p>Benefit: Included in benefits for the Mainstem John Day River.</p>	FY 92 activities include O&M of previous projects. Will negotiate potential implementation projects in FY 92.		
			<p>North Fork John Day River Subproject, including Camas Creek</p> <p>Objectives: Provide additional rearing habitat for juvenile steelhead.</p> <p>Improvement: Fencing and instream structure</p> <p>Habitat: i l e s</p> <p>Species: Summer steelhead</p> <p>Benefit: Included in benefits for the Mainstem John Day River.</p>	Will negotiate potential implementation projects in FY 92.		
84-22	RDS		<p>Middle Fork and Tributaries, John Day River- USFS/Malheur NF</p> <p>Objective: Increase the quantity, quality, and diversity of pool habitat for juvenile steelhead and chinook salmon.</p> <p>Improvement: Instream structure</p> <p>Species: Chinook and Steelhead</p> <p>Habitat: i l e s</p>	FY 92 activities include O&M of previous projects. Will negotiate potential implementation projects	12/1/91	

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson

2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	PROJECT STATUS	CONTRACT TERM	
			START DATE	RENEWAL DATE
85-71	RDS	South Fork John Day River Habitat Enhancement/Izee Falls Fish Passage - BLM	9/1/85	3/31/96
		Izee Falls Subproject		
		<u>Objective:</u> Provide fish access to 81 miles of spawning and rearing habitat by providing passage over 56-foot falls.		
		<u>Improvement:</u> Passage		
		<u>Species:</u> Wild Summer Steelhead		
		<u>Benefit:</u> Benefit:Cost ratio is 5.4:1		
		<u>Habitat:</u> 81 miles		

O&M and monitoring and evaluation of past habitat enhancement projects continue in FY 92.

Umatilla River Subbasin

83-436	JGM	Three Mile Dam Passage Improvements - USBR	5/1/84	O&M is ongoing
		<u>Objective:</u> Design and construct facilities, including ladders and canal screens, to enhance fish passage at Three Mile Dam and WEID canal screens. Design and build trapping and counting facilities.		
		<u>Improvement:</u> Passage		
		<u>Species:</u> Summer steelhead, spring and fall chinook		

Construction of right bank ladder and trap completed winter-fall 1988. Operational shake-out period continues. Construction of left bank facilities completed July 1988. Operational shake-out period for left bank continues. Project-specific monitoring and evaluations began FY 1990.

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
 2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	1/ PO -	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT	TERM
					START DATE	RENEWAL DATE
87-104 & 87-104-1	JGM		Westland (87-104) and Stanfield (87-104-1) Diversion Improvements - ODFW <u>Objective:</u> Improve passage up and downstream at Westland, and Stanfield irrigation diversion dams by ladder and screen improvements. <u>Improvement:</u> Passage <u>Species:</u> Summer steelhead, spring and fall chinook	Pre-design completed. Westland hydraulic review completed. Final Design completed for Westland. Construction, ladder, screen/trap - completed in December 1990. <u>Schedule:</u> Stanfield: Final design started March 1989, complete Oct. 1992. Start construction: ladder - June 1992, screens - Oct. 1991. All construction complete, Stanfield - June 1992.	1/87	Westland 6/91 Stan- field 9/92
87-100	JAB		Umatilla River Basin Fish Habitat Enhancement - USFS/Umatilla NF <u>Objective:</u> Instream and riparian habitat improvement for portions of the Umatilla River and tributaries on the Umatilla National Forest. <u>Improvement:</u> Instream structures <u>Habitat:</u> 18 miles <u>Species:</u> Summer steelhead and spring chinook. <u>Benefit:</u> (Entire basin) 21,700 summer steelhead and 21,100 spring chinook smolts.	FY 1991: Complete North Fork Meacham Creek and Pearson Creek. FY 1992: Finish construction in the South Fork Umatilla River, complete repair in Thomas Creek, and rehabilitate 2.0 miles of Meacham Creek. Will negotiate potential implementation projects in FY 92 in accordance with BPA's 7/23/91 letter to Council.	4/87	3/92

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson

2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	PROJECT OFFICER -	PROJECT MANAGER PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT	TERM
						START DATE	RENEWAL DATE
87-100-1	JAB			Umatilla River Basin Fish Habitat Enhancement - CTUIR <u>Objective:</u> Instream and riparian habitat improvement for portions of the Umatilla River and tributaries on the Umatilla Reservation. <u>Improvement:</u> Fencing, riparian revegetation, instream structures <u>Habitat:</u> 18 miles <u>Species:</u> Summer steelhead and spring chinook. <u>Benefit:</u> See Project 87-100.	FY 1991: Begin construction at Squaw Creek, continue on Meacham Creek and Umatilla River. FY 1992: Complete construction at Squaw Creek, and Meacham Creek.	7/87	4/92
87-100-2	JAB			Umatilla River Basin Fish Habitat Enhancement - ODFW <u>Objectives:</u> Instream and riparian habitat improvement for portions of the Umatilla River and tributaries on privately-owned land. <u>Improvement:</u> Fencing, riparian revegetation, instream structures <u>Habitat:</u> 18 miles <u>Species:</u> Summer steelhead. <u>Benefit:</u> See Project 87-100	FY 1991: Complete work at East Birch Creek, continue at Meacham Creek, and begin work at West Birch Creek. FY 1992: Complete work at Meacham Creek, continue at West Birch Creek, and start at North Fork Meacham Creek.	7/87	3/92
88-22	JGM			Umatilla River Basin Trap and Haul - ODFW <u>Objective:</u> To provide for passage of adults and smolts under low-flow river conditions <u>Improvement:</u> Passage <u>Species:</u> Summer steelhead, spring and fall chinook	Design and acquisition of equipment (trucks, trailers, etc.) completed February 1989. Some equipment modifications to be made FY 91. Trap at Three Mile Dam right bank ladder operational - Nov. 1987. Westland smolt trap operational - June 1990. Trap and haul program operational - May 1989. Continue to conduct program, conduct shake-out at facilities and refine operational criteria. ODFW and CTUIR are funded by BPA to operate trap and haul program.	10/87	9/91

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	1/ - PM	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
						START DATE	RENEWAL DATE
89-24-1	JAB			Passage Facility Evaluation and URB Adult Fish Monitoring <u>Objectives:</u> Evaluate loss of juvenile fish due to passage through or over WEID Canal screens. Monitor passage of adult salmon and steelhead at Three Mile Dam. <u>Species:</u> Summer steelhead, spring and fall chinook	FY 1991: Evaluate WEID Canal screen and adult passage at Three Mile Dam	9/89	9/91
87-416 & 87-416-1	JGM			Cold Springs (87-416-1) and Maxwell (87-416) Diversion Improvement → USBR <u>Objectives:</u> Improve passage up and downstream at Cold Springs and Maxwell diversions. Improvements include fishways and canal screens. <u>Improvement:</u> Passage <u>Species:</u> Summer steelhead, spring and fall chinook.	All construction complete. USBR turned projects over from construction to O&M in April 1990. BPA is funding O&M under an O&M contract with USBR. The contract term is indefinite.	7/87	O&M is ongoing
87-104-2	JGM			Westland Non-Fish Improvements <u>Objectives:</u> To install improvements on Westland irrigation system that will allow fish passage facilities to operate as intended. <u>Improvement:</u> Passage <u>Species:</u> Steelhead and chinook.	Contract in place with Westland Irrigation District. Predesign completed June 1990. Final design completed in September 1990. Construction to be completed by December 1991.	3/90	3/91

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1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
 2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	1/ - PM	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
						START DATE	RENEWAL DATE

Grande Ronde River Subbasin

84-9	RDS			Grande Ronde Habitat Improvement Project - USFS/Wallowa-Whitman NF		7/1/84	4/1/92
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Upper Grande Ronde Basin Subproject

FY 92 activities include O&M of previous projects. Will negotiate potential implementation projects for FY 92.

Objective: Improve spawning and rearing habitat in the Upper Grande Ronde River.

Improvement: **Instream** structures

Habitat: 53 miles

Upper North Fork John Day Basin Subproject

FY 92 activities include O&M of previous projects. Will negotiate potential implementation projects for FY 92.

Objective: Improve spawning and rearing habitat in the North Fork John Day River

Habitat: 49 miles

Species: Wild spring chinook and steelhead

Lower Grande Ronde Basin Subproject

FY 92 activities include O&M of previous projects. Will negotiate potential implementation projects for FY 92.

Objective: Improve spawning and rearing habitat in the Lower Grande Ronde River.

Habitat: 30 miles

Species: Spring chinook and summer steelhead

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson

2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO - PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT	TERM
				START DATE	RENEWAL DATE

84-25	RDS	Grande Ronde Habitat Improvement Project - ODFW		7/1/84	4/1/92
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Upper Grande Ronde **Subbasin** Subproject

Objective: Improve the quality and quantity of spawning and rearing habitat for salmon and steelhead through habitat improvement activities.

FY 92 activities include **O&M** of previous projects. Will negotiate potential implementation projects for FY 92.

Joseph Creek **Subbasin** Subproject

Objective: Improve the quality and quantity of spawning and rearing habitat for steelhead through habitat improvement activities.

FY 92 activities include **O&M** of previous projects. Will negotiate potential implementation projects for FY 92.

Yakima River Subbasin

86-75	SML	Little Naches River Passage - USFS/Wenatchee NF	Construction of fishway and channel rehabilitation completed fall 1987. BPA will continue to fund operation and maintenance activities.	10/30/85	Late Spring 1991
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Objective: Construct fish passage facility to correct passage problems resulting from Salmon Falls. Rehabilitate flood-damaged reach below falls to provide an adequate passage corridor to the fish passage facility.

Improvement: a g e , instream channel modification, and riparian revegetation

Habitat: 18 to 24 miles, depending on species

Species: Spring chinook, **coho**, and steel head

<u>Benefit:</u>	<u>Species</u>	<u># Smolts</u>
	Spring chinook	30,300
	Coho	39,600
	Steel head	6,500

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson

2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	1/ - PM	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
						START DATE	RENEWAL DATE

Clearwater River Subbasin

84-5	SML			South Fork Clearwater River - USFS		1/1/84	1991
				Red River Subproject	Completion scheduled for 1991. O&M agreement will be required beyond 1991 to protect investments. USFS has requested additional funding to add new projects. Final report will summarize project completion.		
				<u>Objective:</u> Increase the quantity and improve the quality of spawning and rearing habitat for anadromous fish.			
				<u>Improvement:</u> Instream structure			
				<u>Habitat:</u> Approximately 20 miles			
				<u>Species:</u> Spring chinook			
				<u>Benefit:</u> Benefit:Cost ratio is 15:1			
				Crooked River Subproject	Completion scheduled for 1991. Project has been funded to completion with FY 1987 funds. Evaluation and O&M scheduled for 1988-1991.		
				<u>Objective:</u> To increase natural smolt production potential of salmon and steelhead.			
				<u>Improvement:</u> Structures			
				<u>Habitat:</u> 17 miles			
				<u>Species:</u> Chinook and steelhead			
				<u>Benefit:</u> Benefit:Cost ratio is 6.22:1			
84-6	SML			Clearwater River Habitat Enhancement Improvements - USFS/Clearwater NF		4/1/84	
				Lo10 Creek Subproject	FY 91: Completed.		
				<u>Objective:</u> Increase the quantity and improve the quality of spawning and rearing habitat for anadromous fish.			
				<u>Improvement:</u> Instream structure			
				<u>Habitat:</u> 12 miles			
				<u>Species:</u> Spring chinook and steelhead			
				<u>Benefit:</u> Benefit:Cost ratio is 40:1			

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	PO	1/ - PM	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
						START DATE	RENEWAL DATE

Eldorado Creek Subproject

Project completed.

Objective: Remove rock barriers to correct passage problems resulting from basalt falls and associated high-velocity chutes which prevent access to spawning and rearing habitat above the site.

Improvement: Instream structure and blasting

Habitat: 10 miles

Species: Steelhead and chinook

Benefit: 24,000 chinook and 12,500 steelhead smolts

Crooked Fork Subproject

Project completed.

Objective: Remove rock barriers to correct passage problems resulting from rock chutes and waterfalls which prevent access to spawning and rearing habitat above the site.

Improvement: Instream structure

Habitat: 5.65 miles

Species: Spring chinook and summer steelhead

Benefit: 36,000 chinook and 21,000 steelhead smolts

Salmon River Subbasin

84-23 SML **Camas** Creek, Idaho - USFS/Salmon NF

Monitoring and maintenance will continue in FY 1991 and beyond.

6/29/84

9/01/91

Objective: Improve riparian conditions to increase salmon and steelhead spawning and rearing potential.

Improvement: Fencing and riparian revegetation

Habitat: miles

Species: Spring chinook and steelhead

Benefit:

	<u>Smolt</u>	<u>Adults</u>
Steel head	4,586	76
Chinook	24,570	128

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, **DEJ/D. Johnson**

2/PM = Project Manager: **SML/S. Levy**, JGM/J. Marcotte, **RDS/R. Stoots**

PROJECT NUMBER	PO	1/ - PM	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT TERM	
						START DATE	RENEWAL DATE
83-359	SML			Salmon River Habitat Enhancement - Shoshone/Bannock Tribe Bear Valley Creek Habitat Improvement Subproject Objective: Enhance habitat degraded by historic mining and dredging operations. Improvement: Instream structure and riparian enhancement Species: Wild chinook salmon and summer steelhead Yankee Fork/East Fork Salmon River Subproject Objective: Enhance habitat degraded by historic mining and dredging operations. Improvement: Instream structure Habitat: 152 miles Species: Salmon and steel head	Project construction was completed in FY 1988. Monitoring will continue in FY 1991 and beyond. East Fork construction to begin in FY 91. Funding is insufficient to accomplish all project measures as planned. NEPA compliance is complete. Construction began in 1987 and was completed for Yankee Fork in FY 1988. O&M and monitoring will continue in 1991 and beyond.	10/1/83	1/90
83-415	SML			Alturus Lake Creek and Upper Salmon River Flow Augmentation - USFS/Sawtooth NF Objective: Enhance natural production of chinook salmon and reestablish sockeye salmon production through increased streamflow. Improvement: Instream structure Species: Chinook and sockeye Benefit: Flow augmentation alternative = benefit:cost ratio of 15.5:1 to 23.4:1; Water right acquisition alternative = 18.5:1.	Water rights will be acquired with full flow available for fish passage in Alturas Lake Creek during Spring 1992. Increased flows will open up not only passage to Alturas Lake, but spawning gravels as well.	9/30/89	9/30/90

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1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

PROJECT NUMBER	1/ PO -	2/ PM	TITLE/OBJECTIVE	PROJECT STATUS	CONTRACT	TERM
					START DATE	RENEWAL DATE
84-24	SML		Marsh/Elk/Valley/Upper Salmon River, Idaho - USFS/Region 4	Plan/inventory phase has been completed. Construction began in 1987. Elk and Lower Bear Valley creeks were given high priority for completion. USFS completed an implementation plan early in FY 1988 for completion of all projects. Construction proceeding on Lower Bear Valley Creek, Elk Creek and Upper Salmon River projects.	6/29/84	4/30/92
			<p><u>Objective:</u> Identify specific reaches of the Upper Salmon River, Marsh and Elk creeks where habitat improvements could lead to increased salmon and steelhead habitat; recommend, for future implementation, measures to improve habitat (e.g., fencing, streambank stabilization and instream structures). Develop a cost-sharing agreement (BPA/USFS) for implementation.</p> <p><u>Improvement:</u> Instream structure</p> <p><u>Habitat:</u> 150 miles</p> <p><u>Species:</u> Steelhead, spring and summer chinook</p>			

1/PO = Project Officer: RJA/R. Austin, JAB/J. Bauer, DEJ/D. Johnson
2/PM = Project Manager: SML/S. Levy, JGM/J. Marcotte, RDS/R. Stoots

- 4.3 ROZA DAM FISH PASSAGE FACILITIES
 (Juvenile Facilities Completion: March 1, 1987)
 (Adult Facilities Completion: March 1, 1988)

803(b)(2) [Abstract] BPA shall fund the U.S. Bureau of Reclamation (USBR) to renovate and repair adult and juvenile fish passage facilities at Roza Dam.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To fund the USBR to renovate and repair adult and juvenile fish passage facilities at Roza Dam.

Background and Progress to Date:

The USBR owns Roza Dam; fish passage facilities have been constructed through Congressional appropriations. The project is one of 20 such passage improvement projects in the Yakima River Basin. Fish screen and ladder improvements were required to protect juvenile fish from being lost in irrigation canals and to enable adult salmon and steelhead to migrate upstream to spawn. The project now provides adequate upstream and downstream fish passage, including adequate passage during periods of reservoir drawdown.

USBR began screen construction in December 1985; facilities and ladder modification construction bids were opened in August 1986. Construction of the facilities was completed in FY 1989.

Plans:

Action Item has been completed.

Projects:

No BPA-funded projects.

- 4.4 PROSSER DAM FISH PASSAGE FACILITIES
 (Juvenile Facilities Completion: March 1, 1987)
 (Adult Facilities Completion: December 1, 1987)

803(b)(3) [Abstract] BPA shall provide funds to the USBR for construction of improvements and additions to Prosser Dam necessary to provide safe, efficient, and timely passage of adult and juvenile fish.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

Provide funds to the USBR for construction of Prosser Dam improvements and additions necessary to provide safe, efficient, and timely passage of adult and juvenile fish.

Background and Progress to Date:

The USBR owns Prosser Dam; fish passage facilities have been constructed through Congressional appropriations. The project is one of 20 such passage improvement projects in the Yakima River Basin. Fish screen and ladder improvements were required to protect juvenile fish adequately from being lost in irrigation canals and to enable adult fish to migrate upstream to spawn.

USBR began screen construction in May 1986. Right bank ladder was completed in May 1986. Left and center ladders were completed in September 1989.

Plans:

Action Item has been completed.

Projects:

No BPA-funded projects.

4.5 YAKIMA RIVER FISH PASSAGE IMPROVEMENTS
 (Completion of Elements in Table 3 of 803(b)(5): December 1, 1988)
 (Post-Construction Evaluations)

803(b)(5) Upon approval by the Council, BPA shall fund the design and construction of the improvements listed in Table 2. All fish screening facilities shall meet current screening design standards.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To construct Yakima River fish passage improvements.

Background and Progress to Date:

A network of irrigation canals diverts water from the Yakima and Naches rivers for use by various agricultural interests in the Yakima River Basin of Central Washington. Juvenile salmon and steelhead often stray into these canals during their outmigration to the sea. The BPA, USBR, Bureau of Indian Affairs (BIA), and Washington State are constructing fish screens to direct the young salmon and steelhead back to the Yakima and Naches rivers.

The Yakima Project entities will fund the construction of fish ladders at various projects to facilitate the normal upstream migration of adult salmon and steelhead.

Plans:

BPA plans to fund construction through to completion and to evaluate projects as they are completed.

See project summaries on following table.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
85-62	<p>Passage Improvement Evaluations - BPNL</p> <p><u>Project Manager:</u> T. Clune</p> <p><u>Objectives:</u> Evaluate effectiveness of passage improvement projects.</p>	<p><u>Date initiated:</u> March 1985</p> <p><u>Results/Conclusions:</u> Evaluation is ongoing; results published in BPA annual reports.</p>	<p>Continuing: Evaluation will continue as projects are completed and go on line.</p>
89-90	<p>Phase 2 Screen Design and Construction - USBR</p> <p><u>Project Manager:</u> T. Clune</p> <p><u>Objectives:</u> Predesign/NEPA of 63 fish screen facilities throughout the Yakima Basin. Project 88-111, Stevens/Naches/Selah Screens, and Project 86-65, Snipes/Allen Screens, have been combined with Project 89-90.</p>	<p><u>Date Initiated:</u> July 1989</p> <p><u>Results/Conclusions:</u> Preliminary design of Group 1 complete.</p>	<p>FY 1990: Begin predesign and NEPA.</p> <p>FY 1991: Complete design and begin construction of Group 1 facilities.</p>

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
91-57	Yakima Phase 2 Screen Fabrication - WDF <u>Project Manager:</u> T. Clune <u>Objectives:</u> Fabrication of Phase 2 screen drum assemblies and associated mechanical components.	<u>Expected Start Date:</u> May 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Begin fabrication of Phase 2 screen assemblies. FY 1992: Continue fabrication for Group 2 through 5 projects.

III. NEW PROJECTS

92-15	Dryden Screens Design and Construction <u>Project Managers:</u> T. Clune <u>Objectives:</u> Conduct environmental analysis, design, and construct fish screening facilities at the Dryden Canal. These facilities will protect juvenile spring and summer chinook from being trapped in the canal.	New Project	FY 1992: Initiate and complete NEPA compliance and facility design. FY 1993: Construct facility.
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4.6 WATER EXCHANGE FOR UMATILLA RIVER
 (Support Beginning Spring 1987)
 (Report Evaluations: Annually)

703(a)(17) [Abstract] BPA shall provide power or reimbursement for power costs to USBR pumping plants designed to exchange Columbia River water for Umatilla River water. The USBR must obtain consent from all affected water users and regulators and provide assurance to the Council that water exchanged to augment streamflows will be used to meet annual flow objectives established by the ODFW and the CTUIR. The Oregon Water Resources Department (OWRD) will certify annually to the Council that the exchanged water will improve instream flows and will benefit fish. The USBR shall fund state and tribal fish and wildlife agency monitoring and evaluation studies to determine the biological effectiveness of this measure.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To support instream flow enhancement efforts, which will increase Umatilla anadromous fish production by improving passage and rearing conditions.

Background and Progress to Date:

Federal authorizing legislation prepared by project sponsors was approved in fall 1988. The Council amended the Program to provide for BPA funding of power costs associated with interim pumping. USBR will handle operation and maintenance, capital and evaluation activities.

Because the original Program language did not include interim pumping and because USBR pumping plants are still in the planning/design stage, no water exchanges under this Action Item took place until Spring 1989. Through passage-assistance projects (Projects 87-409 and 88-50) under Action Item 4.2, BPA had provided for pumping power to operate existing West Extension Irrigation District (WEID) pumps to increase flows below Three Mile Dam during spring and fall 1987 and during spring and fall 1988. Under Project 89-27, BPA has reimbursed USBR for power costs for interim pumping conducted each spring and fall, and will continue to do so until Phase I of the USBR's Umatilla Basin Project is in place.

In June 1989, the USBR, with assistance from BPA, OWRD, ODFW, Tribes, and the Basin Steering Committee, finalized a basin work plan that included the schedule for interim pumping and project completion and defined the scope of monitoring and evaluation activities. BPA and USBR entered into an Interim Pumping Agreement in 1990 to provide for the transfer of funds for power costs associated with interim pumping. The first interim pumping under this Program measure took place in spring 1989. In spring 1990, USBR and BPA began planning for power needs for the USBR's Umatilla Basin Project.

Construction of Phase I began in April 1991 and completion is scheduled for March 1992.

During FY 1991, discussions began regarding use of Furnish Canal to augment diversions into Cold Springs Reservoir. Improvements involve installing pipes or otherwise improving waterways and laterals from Furnish to Feed Canals. Cold Springs Reservoir could be filled more quickly, allowing diversions to be delayed in the fall or shut off early in the spring when fish are migrating. Up to 40-50 cfs could be left in the river for about 29 miles. This strategy could supplement about 8000 acre feet total each year. Funding would be a joint effort of USBR and BPA. Costs are under \$200,000 capital and \$40,000 annually in delivery charges (\$5 per acre foot). A possible alternative is early implementation of part of Phase II. This project is considered part of Project 89-27.

Plans:

Continue to fund interim pumping until permanent project is in place. Continue planning for power arrangements for the permanent project.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
89-27	Provide Power for USBR Columbia River Pumps (also Interim Flow Enhancement) <u>Project Officer:</u> J. Marcotte <u>Objectives:</u> Enhance instream flows in the Umatilla River by exchanging Columbia River water for Umatilla River water.	<u>Date Initiated:</u> FY 1989 <u>Results/Conclusions:</u> Private irrigation system facilities have been used to provide up to 50 cfs additional water below Three Mile Dam during spring and fall periods. No analysis of biological benefits has been undertaken.	1. FY 1992: Provide power to Phase I - WEID pumps. 2. FY 1994 or 1995: Provide power to completed Columbia River pumps.

III. NEW PROJECTS

None.

4.6.1 EVALUATE NON-STRUCTURAL WATER MEASURES IN UMATILLA BASIN
(Develop Workplan, Report to Council in April 1989)

703(a)(17) [Abstract] BPA, USBR, Council, Oregon Water Resources Department, and other interested parties shall jointly prepare a workplan for an evaluation of non-structural alternatives that may benefit fish and hydropower generation, and whether the combined benefits of such measures can be quantified.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

Identify and evaluate alternative means of providing enhanced plans, other than pumping/exchange projects.

Background and Progress to Date:

This action item has been subsumed by the USBR "Section 213" study, mandated by Public Law 100-557. Section 213 instructs USBR to review Umatilla Project Operations to identify ways to further mitigate fishery losses. This study encompasses so-called "non-structural" measures in the Program, such as contracts, conservation, reservoir storage allocation, water deliveries, water rights, and water lease and purchase. USBR completed review of the report, finalized it and submitted it to Congress in late 1989.

Plans:

USBR to be prepared to follow up on any recommendations Congress may direct.

Projects

None.

4.14.1 TEMPORARY JOHN DAY ACCLIMATION FACILITY
(Upon Council Approval, Complete Construction>

703(f)(2)(B) Upon the Council's approval of the plan, Bonneville shall fund design, construction, and evaluation of the temporary facilities.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To build and test the effectiveness of acclimation ponds for upriver bright fall chinook salmon from John Day Mitigation Facilities.

Background and Progress to Date:

Acclimation facilities reduce the transportation stress of upriver bright fall chinook transported from John Day Mitigation facilities for release above John Day Dam.

During the first 2 years of the Fish and Wildlife Program, disagreements among affected parties over the location of the acclimation ponds made it difficult for BPA to implement this Measure. When the Council amended the Program in 1984, it provided for: (1) an agency and Tribal plan to be approved before any construction; and (2) an evaluation of temporary acclimation ponds.

In FY 1986, BPA initiated a site survey of 10 candidate acclimation facility sites (Project 86-82) to assist the agencies and Tribes in developing their plan. The joint agency-Tribal work group and the Council have been provided the completion report for the site study completed under Project 86-82. They have selected Ringold Springs as the final site to be used for acclimation.

Plans:

BPA plans to fund the design, construction, and evaluation of the John Day Temporary Acclimation ponds, once the Fish and Wildlife agencies and Tribes have developed the acclimation pond plan and the plan has been approved by the Council. BPA removed Project 89-16, Temporary John Day Acclimation Facility, from the FY 1990 and 1991 AIWP and has not included it in the FY 1992 AIWP.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
83-313	Pen Rearing of Upriver Fall Chinook Salmon - USFWS <u>Project Officer:</u> A. Ruger <u>Objectives:</u> To evaluate the effectiveness of rearing Upriver Bright Fall Chinook (URBFC) salmon in net pens.	<u>Date initiated:</u> FY 1983 <u>Results/Conclusions:</u> URBFC salmon can effectively be reared in Columbia River backwaters with net pens, but the actual evaluation of ocean and freshwater contribution and escapement has yet to be completed.	1. Continuing: Contractor will collect and analyze adult return data: BPA will publish preliminary results in the Annual Report. 2. 1991: Contractor will collect and analyze adult return data, and prepare Final Report. BPA will publish Final Report.

III. NEW PROJECTS

None.

4.15.1 DESIGN AND CONSTRUCTION OF YAKIMA HATCHERY
(Upon Council Approval, Fund Beginning in FY 1988)

803(d) [Abstract] BPA shall fund the design and construction of a hatchery for salmon and steelhead enhancement in the Yakima River Basin and elsewhere as described in Section 503(c)(2), 703(f)(3), and 803(g)(3).

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To construct a hatchery to protect wild stocks and to enhance depressed stocks by using hatchery-reared fish to reseed underutilized habitat.

Background and Progress to Date:

BPA will fund the design, construction, operation, and maintenance of the Yakima outplanting facility. The facility will enhance the fishery for the Yakima Indian Nation and for other harvesters by supplementing natural runs. In November 1987, the Council completed the hatchery master plan, and BPA began predesign in November 1987. Predesign was completed in April 1990. Final design will be completed by October 1992.

BPA will also fund several other related studies, including a study to determine the feasibility of establishing anadromous fish runs above Cle Elum Dam (Project 86-45). The results of this project will directly influence the size and production profile of the Yakima outplanting facility. Another study (Project 87-136) will determine the applicability of acclimating fall chinook salmon in irrigation canals prior to release. Additional studies will be initiated when defined by the Hatchery experimental design task team. The experimental design team, a component of the Yakima Hatchery Technical Work Group (TWG), will develop objectives for the supplementation program and the associated monitoring and evaluation program. Projects will be identified by the TWG and implemented to answer questions resulting from the experimental design. All projects are integral to the overall experimental/supplementation program and should not be regarded as separate or distinct studies.

Plans:

1. National Environmental Policy Act (NEPA) compliance for hatchery construction was completed in April 1990. An EIS will be conducted on operational and siting issues. Completion expected October 1992.

2. BPA will fund design, construction, operation, and maintenance of the hatchery:

Predesign: 11/87 - 3/90

Final design: 8/90 - 10/92

Construction: 11/92 - 12/97

O & M: Begin 12/92 and continue

3. Facility expected to be partially operational in FY 1993.

I. COMPLETED PROJECTS

PROJECT NUMBER	TITLE	PROJECT STATUS
89-100	Technical Writer - BPNL	<u>Date Completed:</u> October 1990
	<u>Project Manager:</u> T. Clune	<u>Results/Conclusions:</u> Predesign report complete; technical writer working with experimental design team.
	<u>Objectives:</u> Technical assistance for experimental design and NEPA compliance for hatchery predesign report.	

II. FY 1991 ONGOING PROJECTS

PROJECT OR TASK NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
86-45	Yakima Hatchery: Cle Elum Study - NMFS	<u>Date initiated:</u> October 1986	1. 1992: Release 1990 brood year with CWT and PIT tags.
	<u>Project Manager:</u> T. Clune	<u>Results/Conclusions:</u> Eggs were collected in July 1987/90. Fingerlings being reared. Tests indicate all fish are IHN-negative. Test groups were released in and below Lake Cle Elum in May 1990. Preliminary data being collected at Prosser and McNary Dams. Sockeye have been found to migrate out of the lake.	2. Continuing: Evaluate survival of tagged fish. Continue through 1994.
	<u>Objectives:</u> Determine the feasibility of establishing sockeye salmon above Cle Elum Dam.		3. Develop juvenile bypass system.
			4. Determine the mechanism to trigger the emigration response.

PROJECT OR TASK NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
88-115	Yakima/Klickitat Production Facilities Design and Construction <u>Project Manager:</u> T. Clune <u>Objectives:</u> Continue design for Yakima/Klickitat Production Facilities.	<u>Date Initiated:</u> FY 1988 <u>Results/Conclusions:</u> Completed predesign report April 1990. Presented report to Council. Initiated EIS December 1990.	FY 1991: Final design began October 1990. FY 1992: Continue final design and conduct EIS.
88-120	Yakima and Klickitat Basin Artificial and Natural Production Enhancement Program - YIN <u>Project Manager:</u> T. Clune <u>Project Biologist:</u> T. Vogel <u>Objectives</u> : Provide for participation of YIN, WDF, and WDW in development of a natural and artificial production program.	<u>Date Initiated:</u> October 1987 <u>Results/Conclusions:</u> Agreement executed; participation in hatchery TWG and public involvement. Project 87-136, Yakima Hatchery; Wapato Canal, has been consolidated with Project 88-120.	1. Continuing: Collect baseline data for chinook salmon and steelhead natural production in Yakima basin. 2. Continue through production facilities construction. 3. Assist in the development of the Yakima monitoring and evaluation program.
88-123	Yakima Hatchery Coordination- Roza Irrigation District. <u>Project Manager:</u> T. Clune <u>Objectives:</u> Provide for technical assistance from Roza Irrigation District on hatchery project.	<u>Date initiated:</u> February 1988 <u>Results/Conclusions:</u> Good participation and input from irrigation entities.	FY 1991: Participate in public involvement, TWG, and water analysis. FY 1992: Continue coordination activities.

PROJECT OR TASK NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
89-82	<p>Experimental Design - WDF</p> <p><u>Project Manaoer</u>: T. Clune</p> <p><u>Obiectives</u>: Develop experi- mental features of Yakima Hatchery Project. Develop genetic guidelines for stocks of salmon and steelhead for Yakima Basin supplementation program. Develop a smolt trap for the lower Yakima River to determine distribu- tion of fall chinook juveniles</p>	<p><u>Date Initiated</u>: June 1989</p> <p><u>Results/Conclusions</u>: Initial experimental design has been completed. Project 90-66 and 90-67 have been consolidated with this project.</p>	<p>FY 1991: Refine experimental design. Develop genetic guidelines. Develop smolt trap and begin monitoring.</p> <p>FY 1992: Refine experimental design and assist in the development of the monitoring and evaluation program. Continue smolt monitoring.</p>
89-89	<p>Radiotelemetry Study - NMFS</p> <p><u>Project Manaoer</u>: T. Clune</p> <p><u>Project Bioloaist</u>: T. Vogel</p> <p><u>Obiectives</u>: Determine the dis- tribution of distinct stocks of Yakima Basin steelhead and spring chinook.</p>	<p><u>Date Initiated</u>: June 1989</p> <p><u>Results/Conclusions</u>: Initial results indicate up to 30% of steelhead entering the river do not survive to spawning.</p>	<p>FY 1991: Continue radio tagging and monitoring.</p> <p>FY 1992: Continue radio-tagging and monitoring.</p>
89-105	<p>Species Interaction Study - WDW</p> <p><u>Project Manaaer</u>: T. Clune</p> <p><u>Project Biolooiist</u>: T. Vogel</p> <p><u>Obiectives</u>: Determine the ef- fect of anadromous fish produc- tion on resident fish. Develop experimental design features of Yakima Hatchery Project.</p>	<p><u>Date Initiated</u>: September 1989</p> <p><u>Results/Conclusions</u>: Data collection ongoing. Initial experimental design has been completed. Project 89-83 has been incorporated into this project.</p>	<p>FY 1991: Continue study.</p> <p>FY 1992: Continue study and assist in the development of the monitoring and evaluation program.</p>

PROJECT OR TASK NUMBER	TITLE	STATUS	SCHEDULE AND MILESTONES
90-58	Project Leader Function - Consultant <u>Project Manager:</u> T. Clune <u>Objectives:</u> Project was requested by Council to coordinate identification and resolution of fishery management issues associated with the Yakima/Klickitat Production Project. The Project Leader was appointed by the YIN, WDF, and WDW.	<u>Date Initiated:</u> FY 1990 <u>Results/Conclusions:</u> Project progressing satisfactorily.	FY 1991: Continue project. FY 1992: Continue project.
90-65	Juvenile Monitoring Trap Calibration - NMFS <u>Project Manager:</u> T. Clune <u>Project Biologist:</u> T. Vogel <u>Objectives:</u> Calibrate Prosser smolt trap for inriver vs. Canal distribution of outmigrating salmon and steelhead.	<u>Date Initiated:</u> FY 1990 <u>Results/Conclusions:</u> None at this time.	FY 1991: Continue calibration studies. FY 1992: Continue survival studies and assist in the development of the Yakima monitoring program.
90-69	Yakima Hatchery Final Design - Consultant <u>Project Manager:</u> T. Clune <u>Objectives:</u> Final design of Yakima Basin Facilities.	<u>Date Initiated:</u> FY 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Begin final design. FY 1992: Continue final design. FY 1993: Begin production facility construction.

PROJECT OR TASK NUMBER	TITLE	STATUS	SCHEDULE AND MILESTONES
90-71	Smolt Loss Evaluation	<u>Date Initiated:</u> FY 1991	FY 1991: Begin smolt loss evaluation.
	<u>Project Manager:</u> T. Clune	<u>Results/Conclusions:</u> None at this time.	FY 1992: Continue smolt loss evaluation.
	<u>Project Biologist:</u> T. Vogel		
	<u>Objectives:</u> To determine smolt losses in the Yakima River due to various factors including predation, temperature, and passage conditions.		
91-45	Adult Trap Predesign - USBR	<u>Date Initiated:</u> FY 1991	FY 1991: Begin preliminary and final design.
	<u>Project Manager:</u> T. Clune	<u>Results/Conclusions:</u> None at this time.	FY 1992: Construct traps and begin monitoring.
	<u>Objectives:</u> Predesign of adult trap facilities for the Yakima Hatchery project.		
91-48	Evaluation of Environmental Impacts of the Yakima Production Program - BPNL	<u>Date Initiated:</u> January 1991	FY 1991: Initiate environmental analysis.
	<u>Project Manager:</u> T. Clune	<u>Results/Conclusions:</u> None at this time.	FY 1992: Complete environmental analysis.
	<u>Objectives:</u> This project will evaluate the environmental impacts of the acclimation pond siting and operations of the Yakima Production Project. The information will be used as the basis for an Environmental Impact Statement.		

PROJECT OR TASK NUMBER	TITLE	STATUS	SCHEDULE AND MILESTONES
91-55	Supplementation Fish Quality	<u>Expected Start Date:</u> July 1991	FY 1992: Define criteria and initiate research to determine if the criteria are significant.
	<u>Project Manager:</u> T. Clune		
	<u>Objectives:</u> Define criteria for setting quality of hatchery fish for supplementation. Conduct studies against established criteria.		
91-59	Habitat Inventory and Food Abundance Data Collection - CWU	<u>Expected Start Date:</u> July 1991	FY 1991: Initiate and complete habitat data collection. Continue food abundance data collection.
	<u>Project Manager:</u> T. Clune		
	<u>Objectives:</u> This project will complete habitat inventories, determine food abundance, and integrate data into the Central Washington University GIS.		

III. NEW PROJECTS

<u>PROJECT OR TASK NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
90-64	Klickitat River Monitoring <u>Project Manager:</u> T. Clune <u>Project Biologist:</u> T. Vogel <u>Objectives:</u> Monitor spring chinook and steelhead smolts in the hatchery supplementation program. Coordinate with MEG, and supplementation TWG's.	New project for FY 1992. Delayed 1990 and 1991.	FY 1992: Develop program and initiate monitoring.
90-72	Computer Information System Quality Control Program Development <u>Project Manager:</u> T. Clune <u>Project Biologist:</u> T. Vogel <u>Objectives:</u> Develop CIS for Yakima/Klickitat supplementation program.	New Project	FY 1992: Refine program, coordinate with Basin CIS program.
90-74	Yakima Monitoring and Evaluation Program <u>Project Manager:</u> T. Clune	New Project	FY 1992: Initiate monitoring and evaluation.

PROJECT OR TASK NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
90-74 (cont.)	<p><u>Objectives:</u> Implement monitoring and evaluation of Yakima salmon and steelhead stocks pursuant to the experimental design. The experimental program will be refined based upon information obtained. Includes determining specific fish marking and detection requirements and the acquisition and installation of necessary equipment to mark and detect salmon and steelhead.</p>		
92-5	<p>Evaluation of the Yakima Production Project.</p> <p><u>Project Manager:</u> T. Clune</p> <p><u>Objectives:</u> The objectives are to evaluate the ongoing steelhead and fall chinook acclimation programs. Determination will be made as to the best methods of acclimation to avoid adult straying.</p>	New Project	FY 1992: Initiate evaluations.

PROJECT
OR TASK
NUMBER

TITLE

PROJECT STATUS

SCHEDULE AND MILESTONES

92-14

Habitat Definition, Assessment
and Improvement

New Project

FY 1992: Define critical uncertainties for
estimating carrying capacity and begin the
determination of critical limiting factors.

Project Manager: T. Clune

FY 1993: Identify, prioritize, and implement
habitat improvements necessary to achieve
natural production goals.

Objectives: Define habitat
criteria important to the
experimental program. Measure
habitat parameters based on
established criteria.
Prioritize and begin improve-
ments of critical habitat.

4.16.1- NORTHEASTERN OREGON SPRING CHINOOK OUTPLANTING FACILITY

4.16.2 (Fund Development of Master Plan in FY 1988 or Earlier; Upon Council Approval, Fund Design and Construction>

703(f)(5) BPA shall fund planning, design, construction, operation and maintenance, and evaluation of artificial production facilities to raise salmon and steelhead for enhancement in the Hood, Umatilla, Walla Walla, Grande Ronde, and Imnaha rivers in Oregon. The artificial production facilities shall be used to supplement natural production in these rivers.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To fund Master Plan, design, and construction of the Northeastern Oregon salmon and steelhead facilities.

Background and Progress to Date:

The measure provides for outplanting of about 2.3 million to 3.0 million juveniles in the five Oregon rivers identified in the measure. ODFW, CTWSIR, CTUIR and NPT are preparing Master Plans for each subbasin under contract to BPA. The Master Plans may identify broader production needs in the basin, not all of which would be addressed by this project. Because of independent utility and differences in timing, implementation of the "project" has been disaggregated into discrete projects by subbasins, or groups of subbasins. Current plans are to finalize the Hood River Master Plan (which could be connected to Measure 4.17.6, Pelton Ladder) first, followed by the Umatilla Master Plan, then by the plans for the remaining three subbasins. Phase II of the plans is to be completed by spring 1992. BPA hired a consulting engineer to conduct site feasibility studies and conceptual design for all subbasins except Hood River, which is being done by ODFW. Work commenced in December 1990 and is to be completed by December 1991.

Plans:

The Master Plans, including siting and conceptual design, are scheduled to be completed 1991-92. The Council approval process and BPA environmental work will be conducted simultaneously for each discrete project portion. Upon completion of environmental work, BPA will proceed with design, construction, operation, and monitoring of the facilities.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
88-53	NEOH Siting/Conceptual Design - Consultant <u>Project Officer:</u> J. Marcotte <u>Objectives:</u> Conduct site feasibility and conceptual design for NEOH facilities. These products will be integrated into the Master Plan submitted to Council. This objective for Umatilla being accomplished under separate contract in conjunction with Umatilla Satellite Facilities.	<u>Date Initiated:</u> December 1990 <u>Results/Conclusions:</u> Contractor oriented and underway as of February 1991.	1. July 1991: Final sites and conceptual design, Umatilla. 2. December 1991: Final sites and conceptual design for Grande Ronde, Imnaha, and Walla Walla.
88-53-1 88-53-2 88-53-3 88-53-4	Northeastern Oregon Artificial Production Facilities - CTUIR/CTWSIR/NPT/ODFW <u>Project Officer:</u> J. Bauer <u>Objectives:</u> Fund Master Plan of artificial production program and facilities for NEOH project.	<u>Date Initiated:</u> Planning began in FY 1988. <u>Results/Conclusions:</u> Contract in place to produce Master Plans. Phase I complete April 1990. Phase II began May 1990.	1. FY 1991-1992 (phased): Complete Phase II, including production objectives, monitoring and evaluation, genetic risk assessment, site, and conceptual design of facilities. 2. FY 1991-92: Complete Master Plans. 3. FY 1991-1992: Obtain Council approval of Master Plans.

III. NEW PROJECTS

None.

4.17.1 JUVENILE RELEASE/ADULT COLLECTION AND HOLDING FACILITIES ON UMATILLA RESERVATION
(Operate, Maintain)

703(f)(1) [Abstract] BPA shall fund the Confederated Tribes of the Umatilla Reservation (CTUIR) to operate and maintain the Bonifer and Minthorn juvenile release and adult collection and holding facilities on the reservation.

ACTION ITEM ACTIVITY SUMMARY

Objectives:

To fund operation, maintenance, and evaluation of the Bonifer and Minthorn facilities.

Background and Progress to Date:

The facilities are to acclimate and imprint juvenile salmon and steelhead before release into the Umatilla River, thereby increasing survival of juveniles and the homing ability of adults. The facilities are also used to hold adults before artificial spawning. When constructed, the Umatilla Hatchery (Project 84-33; Action Item 4.17.2) will rear juveniles for acclimation at the Minthorn and Bonifer facilities. Currently, juveniles from other hatcheries are acclimated at the facilities.

BPA has funded the operation and maintenance of the Bonifer and Minthorn facilities since construction in 1983 and 1985, respectively. During this time, about 1.2 million fall chinook, 800,000 spring chinook, 500,000 coho salmon, and 250,000 steelhead juveniles have been acclimated and released. A study to evaluate the fishery benefits and operation of the acclimation facilities was begun in FY 1987.

Plans:

BPA will continue funding operation, maintenance, and evaluation of the facilities through an Intergovernmental Agreement with the CTUIR as long as there is an Action Item calling for BPA funding. BPA expects that results of the evaluation study will be used by the CTUIR to determine the actual fishery benefits of acclimation, to select effective juvenile release strategies, and to improve operational efficiency.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
83-435	Minthorn and Bonifer Springs Summer Steelhead Juvenile Release and Adult Collection Facilities - CTUIR <u>Project Officer:</u> J. Bauer <u>Objectives:</u> To operate, maintain, and evaluate the Minthorn and Bonifer facilities for the acclimation and imprinting of juvenile anadromous salmonids and the collection and holding of adults.	<u>Date initiated:</u> FY 1983 <u>Results/Conclusions:</u> Approximately 71,800 fall chinook, 194,800 spring chinook, 132,400 coho, and 59,800 steelhead juveniles were acclimated and released during FY 1990. No results of the facility evaluation study are available yet.	1. Continuing: BPA will fund operation, maintenance, and evaluation of the facilities. 2. Continuing: Contractor will provide an annual operational report and preliminary results of the evaluation study in the Project's annual report. 3. FY 1993: BPA will publish the final results of the evaluation study in a final report.

III. NEW PROJECTS

None.

4.17.2 EXPANDED UMATILLA HATCHERY
(Fund, upon Council Approval)

703(f)(1)(A) [Abstract] BPA shall fund the construction of a facility to test the efficacy of oxygen supplementation hatchery techniques to produce up to 290,000 pounds of summer steelhead and chinook salmon smolts. These smolts shall be for release in the Umatilla juvenile release and adult collection holding facilities and for outplanting in the upper Umatilla River to enhance natural and hatchery production. Prior to construction of this facility, the ODFW and the CTUIR will develop a facility master plan for Council approval.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To provide an improved contribution of anadromous fish production from the Umatilla River to the Columbia River Basin.

Background and Progress to Date:

The facilities are to produce 290,000 pounds of salmon and steelhead juveniles for release in the Umatilla Subbasin to enhance natural and hatchery production. Hatchery production may also be used in other subbasins. A secondary purpose of the hatchery is to demonstrate oxygen supplementation technology. BPA began funding hatchery design in FY 1986 and hatchery master planning in FY 1987. The CTUIR and ODFW have been conducting a release program using fish from other hatcheries since 1982, and intend to continue until this hatchery is operational. The final design was completed during 1988, and the Master Plan was approved in October 1989. Agreement was reached in 1988 that the hatchery will be operated by ODFW as a joint facility with Irrigon Hatchery.

The final design estimates revealed that the hatchery will cost more than originally expected. The cost increases were due to design evolution, delays in project implementation, changing site conditions at the well, and water production shortfalls. Costs rose about \$4.0 million to total \$12.0 million. Construction began in March 1990. As of May 1991, construction was almost complete. There is a good chance that costs could come in under budget. Development of the water supply system to start in February 1991. ODFW began portion of O&M contract dealing with construction monitoring and equipment acquisition in FY 1990. Draft Year 1 Annual Operating Plan was submitted May 9, 1991; and BPA approval is due by July 1, 1991. ODFW is scheduled to take "beneficial occupancy" of the hatchery on July 15, 1991, and have the facility operational by August 15, 1991.

Plans:

When the hatchery is completed in 1991, BPA will fund its operation and maintenance. The first fish production is expected to begin in August 1991. After completion, BPA also will evaluate hatchery effectiveness. Planning for satellite facilities began in FY 1990, with the need to have one or two additional chinook adult holding facilities on line before the mid-1990s. BPA contracted for site feasibility and conceptual design of facilities for direct release, satellite rearing/acclimation, and adult holding in December 1990. Final products are due before December 1991.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
84-33	Umatilla Hatchery Construction and O&M - USACE <u>Project Officer:</u> J. Marcotte <u>Objectives:</u> Design and construct the Umatilla Hatchery.	<u>Date Initiated:</u> FY 1986 <u>Results/Conclusions:</u> Council approved hatchery predesign in October 1986. Hatchery site next to existing Irrigon Hatchery was selected in cooperation with Morrow County. Umatilla Hatchery Environmental Assessment was issued February 1987. FONSI issued April 1987. Council amended Program to expand hatchery production to 160,000 pounds and added salmon to production. Council amended program to expand production to 290,000 pounds and test efficiency of 02 supplementation. Final designs completed. Master Plan complete February 1989. Council approved Master Plan in October 1989. O&M contract finalized in spring 1990; ODFW began initial pre-operation during Summer 1990.	1. Winter 1990-1991: Continue construction. 2. Late Summer 1991: Hatchery operational; fund O&M and monitoring and evaluation.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
84-33-3	<p>Umatilla Hatchery Tribal Fish Culture Training Program - CTUIR</p> <p><u>Project Officer:</u> J. Marcotte</p> <p><u>Objectives:</u> Train up to eight tribal personnel to qualify as Hatchery Technicians-1 for employment in Umatilla Hatchery Program facilities.</p>	<p><u>Date Initiated:</u> September 1988</p> <p><u>Results/Conclusions:</u> Original objectives of 18 months tech experience were met in March 1991. 3 OJT were qualified. Funding to continue salaries and tuition (for academic trainees) will continue until hatchery staff selections made.</p>	<p>FY 1991: Training program completed: funding to continue for salaries and tuition only.</p>
91-14	<p>Umatilla Satellites - Planning, Siting, Design, and Construction - Consultant</p> <p><u>Project Officer:</u> J. Marcotte</p> <p><u>Objectives:</u> Provide complementary facilities for adult holding for broodstock purposes or required by the Umatilla artificial production program, and for direct release to river. Secondary objective may be to provide recovery/acclimation benefits to smolts, trucked from Umatilla Hatchery, prior to release.</p>	<p><u>Date Initiated:</u> FY 1991</p> <p><u>Results/Conclusions:</u> A consulting engineer was hired in December 1990 to conduct site feasibility and conceptual design for satellite facilities.</p>	<ol style="list-style-type: none"> 1. FY 1991: Siting and conceptual design; project definition, based on hatchery program projections; siting study in Umatilla basin. 2. FY 1991-92: Complete environmental work. 3. FY 1992-93: Predesign and final design; begin construction. 4. FY 1994: Complete construction.
90-5	<p>Umatilla Hatchery Monitoring and Evaluation - ODFW</p> <p><u>Project Officer:</u> J. Bauer</p>	<p><u>Expected Start Date:</u> August 1991</p> <p><u>Results/Conclusions:</u> None at this time.</p>	<ol style="list-style-type: none"> 1. FY 1991: Initiate operation of Umatilla Hatchery and begin rearing and marking ChF, ChS, and StS smolts. 2. FY 1992: Release first-year production of ChF

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
90-5 (cont.)	<u>Objectives:</u> 1. Comparison of production for fall chinook (ChF) and summer steelhead (StS) in 02 and standard rearing systems. 2. Smolt-adult survival rates for ChF and StS in 02 and standard rearing systems. 3. Comparison of production and survival of summer chinook (ChS) full-term and age-0 smolts. 4. Estimation of natural production success for ChS and ChF. 5. Assess changes in genetic and life history characteristics of wild StS as a result of supplementation.		and age-0 ChS and StS from 1991 and 1992 broods. Initiate sampling of natural production areas. 3. FY 1993: Release first full-term ChS smolts and second-year production of ChF, ChS, and StS smolts. Continue sampling of natural production areas.

III. NEW PROJECTS

None.

4.17.3 LOW-CAPITAL PROPAGATION FACILITY ON NEZ PERCE RESERVATION
(Design/Begin Construction by May 1989)

703(g)(2) Upon approval by the Council of design and construction plans for low-capital propagation facilities on the Nez Perce Reservation, Bonneville shall fund the construction, operation, and maintenance of those facilities. The Nez Perce Tribe will develop the facility plan and will incorporate the information provided under Section 703(g)(1).

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To design and construct a low-capital production facility to enhance fisheries on Nez Perce Reservation.

Background and Progress to Date:

Through construction of facilities for spawning, incubation, and rearing of chinook salmon and steelhead trout, the Nez Perce Tribe (NPT) seeks to re-establish its salmon and steelhead fishery. This fishery has nearly been destroyed through construction and operation of dams and poor land use practices, including agriculture, logging, road construction, and mining.

Work began on this measure in September 1983. The initial phase of the project, which developed an artificial propagation facility feasibility study, was completed in January 1985. Site investigations were conducted in FY 1988, FY 1989, and FY 1990.

Plans:

Preliminary design scheduled to begin in FY 1990, followed by environmental evaluation and final design in FY 1993. Project completion scheduled for FY 1994.

I. COMPLETED PROJECTS

None

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
83-350	Nez Perce Low-Capital Production Facility - NPT <u>Project Officer:</u> S. Levy <u>Objectives:</u> Design and construct a low-cost salmon propagation facility on the Nez Perce Reservation.	<u>Date Initiated:</u> FY 1983 <u>Results/Conclusions:</u> None at this time.	1. FY 1991: Amend measure to expand scope of facility, and allow construction off reservation. Continue preliminary design. 2. FY 1993: Complete NEPA assessment. Initiate final design. 3. FY 1993: Complete final design. 4. FY 1993: Begin construction, complete project, and begin operation and maintenance.
88-126	Nez Perce Technical Support - IDFG <u>Project Officer:</u> S. Levy <u>Objectives:</u> To provide technical support on planning for Nez Perce Hatchery project.	<u>Date Initiated:</u> January 1988 <u>Results/Conclusions:</u> None.	On-going technical support will continue through FY 1992.

III. NEW PROJECTS

None.

4.17.4 HABITAT SURVEY ASSOCIATED WITH ACTION ITEM 4.17.3
(Fund)

703(c)(3) [Abstract] Bonneville shall fund an evaluation of the lower mainstem Clearwater River to study existing habitat and temperature regimes for spawning, incubation, and rearing for salmon and steelhead. Proposals for outplanting from the Nez Perce low-capital propagation facilities [703(g)(2)] will be based on the evaluation.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To evaluate the habitat and temperature regimes in the lower mainstem Clearwater River; the evaluation will determine the feasibility of establishing a run of anadromous fish.

Background and Progress to Date:

When constructed, a low-capital salmon and steelhead propagation facility (Action Item 4.17.3) on the Nez Perce Reservation will produce fish for outplanting in reservation streams. The mainstem Clearwater River habitat study will try to determine what species can successfully be outplanted in the mainstem Clearwater River and to identify opportunities to enhance existing steelhead rearing. BPA expects that the NPT will use study information to plan production and outplanting strategies for the low-capital facility.

BPA began funding a mainstem Clearwater River habitat study (Project 88-15) in October 1987. The study is progressing satisfactorily.

Plans:

Upon completion Project 88-15 in October 1991, Action Item 4.17.4 and measure 703(c)(3) will be completed. No additional projects are planned.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>OBJECTIVES</u>	<u>SCHEDULE AND MILESTONES</u>
88-15	<p>Mainstem Clearwater River Study: Assessment for Salmonid Spawning, Incubation, and Rearing - NPT</p> <p><u>Project Officer:</u> J. Gislason</p> <p>Objectives: Evaluate the existing anadromous fish habitat and the temperature regime in the lower Clearwater River to determine 1) the feasibility of establishing a run of anadromous species in the lower river, and 2) opportunities for enhancing steelhead rearing.</p>	<p><u>Date Initiated:</u> October 1987</p> <p><u>Results/Conclusions:</u> NPT completed Phase I of the project, a literature review and temperature/flow data analysis, and began implementing Phase II field studies in FY 1989. The Phase I analysis of historical temperature data indicated that Lower Clearwater River temperatures are generally suitable for fall and summer chinook salmon reproduction. Instream flow field measurements and preliminary velocity, depth, substrate, and cover preference histograms for anadromous fish were completed in FY 1990. Results are available in annual reports (DOE/BP-37474-1 and DOE/BP-37474-2).</p>	<ol style="list-style-type: none">1. FY 1991: Complete chinook salmon incubation, rearing, and outmigration timing studies; complete all data collection, data analysis, habitat time series modeling, and final report.2. FY 1992: Project scheduled for completion in October 1991.

III. NEW PROJECTS

None.

IMPROVED HATCHERY EFFECT.

----- IMPROVED HATCHERY EFFECTIVENESS

(Former Action Item 34.23)

- 703(e) [Abstract] Measure 703(e) concerns "Improved Propagation at Existing Facilities" and gives priority to improving and reprogramming propagation at existing facilities, over construction of new facilities. The measure includes: (1) research, development, and demonstration of improved husbandry practices; (2) strategies for and rearing operations aimed at improved operating efficiencies of hatcheries and increased adult returns; (3) genetic stock assessment; (4) improved fish health protection; and (5) developing sensitive and reliable indices of smolt quality and readiness to migrate.

TECHNICAL SUBJECT ACTIVITY SUMMARY:

Objectives:

To identify and fund research, demonstration, or other projects necessary to accomplish improvements in the effectiveness of existing hatcheries.

Background and Progress to Date:

This section of the AIWP contains three improved hatchery effectiveness and fish health projects begun under former Program Action Item 34.23. In 1987, the Council amended the Program to delete Action Item 34.23 and form a Hatchery Effectiveness Technical Work Group (HETWG) and a Fish Disease Technical Work Group (FDTWG). These groups, composed of experts in hatchery effectiveness and fish health, developed Five-Year Research Work Plans to address the technical needs of the Hatchery Effectiveness and Fish Disease Research Areas of Emphasis, Section 206(b)(1)(c), and Program Measure 703(e). These plans are discussed under Action Item 6.1 in the AIWP.

BPA continues to fund to completion those projects begun under former Action Item 34.23. One of the currently funded projects is conducting research on infectious hematopoietic necrosis (IHN) virus. This disease was rated as one of the most important disease problems by the FDTWG in its Work Plan. Other projects are pursuing fish nutrition research and identification of the Ceratomyxa shasta life cycle. All three are scheduled for completion in FY 1991.

Plans:

No new projects will be initiated under Action Item 34.23, as it was deleted from the 1987 Program. (New and ongoing projects from the HETWG and FDTWG Five-Year Work Plans can be found under Action Item 6.2 in the AIWP.)

I. COMPLETED PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>
83-312	<p>Epidemiology and Control of Infectious Diseases of Salmonids in the Columbia River Basin - OSU</p> <p><u>Project Officer:</u> A. Ruger</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none">1. Confirm role of clam as a concentrator of <u>C. shasta</u>2. Determine if <u>C. shasta</u> spores undergo any developmental changes when <u>injected</u> by clams.3. Develop a diagnostic test kit for <u>R. salmoninarum</u>, causative agent of BKD.	<p><u>Date Completed:</u> March 31, 1991</p> <p><u>Results/Conclusions:</u></p> <ol style="list-style-type: none">1. Geographic range of <u>C. shasta</u> expanded.2. Indication that a fresh water clam is involved in life cycle of <u>C. shasta</u>.3. Immunological methods developed to detect life stages.
84-43	<p>Evaluation of a Subunit Vaccine Against IHN Virus - OSU</p> <p><u>Project Officer:</u> R. Morinaka</p> <p><u>Objectives:</u> Develop and test a subunit vaccine against IHN virus.</p>	<p><u>Expected Completion Date:</u> July 1991</p> <p><u>Results/Conclusions:</u> A recombinant DNA vaccine for IHN virus has been prepared and laboratory tested and found to be effective. Large quantities of vaccine have been prepared. IDFG is continuing to field test the vaccine in 1990-91.</p>

PROJECT
NUMBER

TITLE

PROJECT STATUS

83-363

Development of Diets for
Enhanced Survival of Salmon -
ODFW

Project Officer: R. Austin

Objectives: Develop a high-
quality, cold-processed
animal protein fish diet and
evaluate the effect of the diet
on survival and return of **coho**
and chinook salmon.

Expected Completion Date: June 1991

Results/Conclusions: Preliminary adult
recovery data suggest an improved
survival for **coho** salmon fed the test
diets. However, recovery data for
adult fall chinook salmon showed in-
consistent survival, both by brood year
and stock (tule and upriver bright).
Final analysis of data from returning
adults will be completed in 1991.

II. FY 1991 ONGOING PROJECTS

None.

III. NEW PROJECTS

Hatchery Effectiveness research projects in the Five-Year Work Plan of the HETWG are listed under Action Item 6.2.

4.17.5 WILLAMETTE BASIN STUDY PLAN
(Fund; Coordinate with Supplementation Work Plan)

703(h)(2) [Abstract] BPA shall provide funds to study the best method of supplementing natural stocks of spring chinook with hatchery stocks in the Willamette River.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To fund a study to supplement the Willamette spring chinook runs without adversely affecting natural runs of resident fishery or the genetic integrity of the Columbia Basin fish populations.

Backaround and Progress to Date:

Supplementation, or outplanting, has been identified by the agencies, Tribes, and the Council as one of the main ways to increase Columbia River salmon and steelhead runs. This project aims to develop the best methods for supplementing spring chinook in the Willamette Basin, in order to develop and maintain maximum sustained yield and to maintain genetic diversity.

Phase I, completed during September 1985, surveyed the literature of outplanting efforts and developed a detailed study design for evaluating possible Willamette Basin strategies. Phase II proposed planting fry, presmolts, and adults in areas with different production potential. The 9-year evaluation would determine which life stage of spring chinook to outplant for maximum survival.

A major review included the study design and the relationship to Section 703(h)(1), the overall work plan for supplementation. Section 703(h)(2) concerns only Willamette Basin spring chinook. The review, completed in FY 1986, concluded that the initial study design viewed outplanting as a potential continuing effort to supplement hatchery production by using hatchery surpluses. However, both Measures 703(h)(1) and 703(h)(2) view outplanting as a temporary means of enhancing natural production or re-establishing natural runs. Rebuilding natural runs was not addressed in the study plan, though it is one of the highest priorities of the Program.

The impacts of outplanting on resident fish will not be answered by this study design. BPA believes, however, that these impacts should be addressed in supplementation research.

Plans:

BPA submitted the study plan to the STWG for review, realizing the relationship with 703(h)(1) that this study should address. Measure 703(h)(2) was not a high priority in the STWG Five-Year Work Plan. However, BPA will develop a work plan and initiate research when and if the STWG determines it is a high priority for achieving the objectives of the Supplementation Research Work Plan.

Projects:

No BPA-funded projects are planned for FY 1992.

4.17.6 PROPAGATION OF SALMON/STEELHEAD IN PELTON DAM FISH LADDER
(Fund, upon Council approval of Master Plan)

703(g)(3) BPA 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 the mitigation responsibilities of that company. The Oregon Department of Fish and Wildlife and the Confederated Tribes of Warm Springs will develop a master plan for Council approval prior to BPA funding of design and construction. The master plan should contain the same type of information as in other hatchery master plans for Yakima, Umatilla, and northeastern Oregon facilities.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

Fund the design and construction of propagation facilities at the Pelton Dam ladder; fund the propagation of salmon and/or steelhead.

Backaround and Progress to Date:

BPA is awaiting development of the master plan by the fisheries agencies and Tribes. The Master Plan will be complete June 1991.

Plans:

When the Council approves the agency and Tribal joint master plan for the Pelton Dam ladder rearing, BPA will form a work group to assist in the completion of this Action Item. The design and construction will follow the recommendation of this work group. When the facility is constructed, an operation and maintenance agreement with the operator will be established.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
89-29	Propagation in Pelton Dam Ladder - ODFW <u>Project Officer:</u> J. Bauer <u>Objectives:</u> 1. To experimentally rear spring chinook smolts in Pelton Ladder. 2. To determine the capacity for additional rearing of smolts. 3. To produce spring chinook smolts for Deschutes River and other acceptable basins to meet Program production goals.	<u>Date Initiated:</u> September 1989 <u>Results/Conclusions:</u> None at this time.	1. FY 1991: After Council approval of the ODFW-CTWSIR master plan, BPA will fund rearing of fish in the Pelton Dam fish ladder. 2. FY 1992: Begin rearing spring chinook smolts. 3. FY 1994: First smolt releases. 4. FY 1998: Final report on experiment to determine ladder rearing capacity.

III. NEW PROJECTS

None.

4.21 HATCHERY RELEASES IN UPPER COLUMBIA
(Upon Council Review of Reprogramming Plan, Fund Releases)

703(d)(2) After Council review of the reprogramming plan developed by the fish and wildlife agencies and Indian Tribes, BPA 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, as provided in that plan.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To implement the reprogramming plan (approved by the Council) to assist in the rebuilding of upriver fish runs.

Background and Progress to Date:

BPA understands that the fishery agencies and Tribes have not submitted the plan to the Council. When the Council has reviewed the plan, BPA will proceed with funding of hatchery releases in the upper Columbia River. BPA still awaits Council review and approval of the plan.

Plans:

Future projects and required funding will be identified after the Council approves the reprogramming plan.

Projects:

No defined projects for FY 1992.

- 5.1 KNOWN STOCK FISHERIES FIVE-YEAR DEMONSTRATION PROGRAM
(Co-Fund to Test Electrophoresis: Begin 1985 Ocean Fishing Season or Subsequent Seasons)

503(b)(1) The Council supports in-season management of mixed-stock fisheries using electrophoresis to profile the contribution of the different upriver stocks. BPA shall share funding with the fishery management agencies of a five-year program that demonstrates the effectiveness of this technique in profiling the ocean fisheries more accurately and in refining harvest regulations to protect Columbia River stocks. At the conclusion of the five-year program, the fishery management agencies will propose a plan for further action.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To demonstrate the effectiveness of the electrophoresis technique for profiling the contribution of individual Columbia River stocks in mixed populations.

Background and Progress to Date:

BPA contributed funds to a study to perfect the electrophoresis technique to differentiate fish stocks and to demonstrate its applicability in the Columbia River Basin (Project 79-1). BPA funded further application of this technique (Project 83-451) to determine separate stocks of Columbia Basin anadromous fish. These efforts and those of the fishery management entities have produced a proven electrophoresis technique. This technique is now widely applied in fisheries management and could be applied to profile mixed stock ocean fisheries. The technique may also soon be used to determine whether sturgeon populations in the United States stretches of the Kootenai River are different from those in Canadian waters. BPA therefore believes that further research to improve stock identification methods as part of a hydroelectric mitigation program is unnecessary. Stock identification is now a matter of prescriptive application.

Plans:

BPA has no further plans for this Action Item.

Projects:

None.

6.1 TECHNICAL WORK GROUPS
(Begin to Fund in FY 1987)

- 206(b)(1) [Abstract] BPA shall focus its funding of salmon and steelhead research in the next five years in the following areas of emphasis:
1. Studying water budget effectiveness and reservoir mortality;
 2. Controlling disease problems affecting spring and summer chinook;
 3. Exploring methods for substantially increasing and improving hatchery production at existing hatcheries within the next 10 years; and
 4. Improving supplementation techniques.

BPA shall fund technical work groups composed of representatives of the Fish and Wildlife agencies, tribes, hydropower project operators, and BPA, with technical input from other experts, to develop Five-Year Work Plans for each of the areas listed above.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To fund the establishment of a TWG in each of the four areas of research emphasis and to fund the development of Five-Year Work Plans.

Background and Progress to Date:

In 1987, BPA initiated Project 87-307 to fund development of Five-Year Work Plans by the four **TWGs** and to fund TWG assistance to BPA in the development, evaluation, and review of requests for proposals, project work statements, and other related documents.

The Fish Disease TWG, Hatchery Effectiveness TWG, and Supplementation TWG developed Five-Year Work Plans that were approved by the Council in 1988. The Reservoir Mortality and Water Budget Effectiveness TWG agreed on four areas of emphasis: survival and flow relationships, predation, smoltification, and dam operations. As opinion was distinctly divided on the focus of survival and flow relationships, two Work Plans were submitted to the Council in September 1987. The fishery agencies/Tribes plan emphasized long-term monitoring to determine the effectiveness of the Water Budget and examination of the mechanisms of reservoir mortality. The BPA/USACE/PNUCC plan emphasized shorter-term survival research and simultaneous research on both the extent and mechanisms involved in reservoir mortality. This latter plan also maintains a basal monitoring program.

In 1990, seven Scoping Groups (SG) were established under the Implementation Planning Process (IPP). The function of the SG's was to assist BPA in the scoping and prioritization of new projects,

including research projects in the Five Year Work Plans, and in the development of requests for proposals. Therefore, BPA no longer needed any assistance from the TWGs, and Project 87-307 was terminated in March 1991.

Plans:

BPA currently has no plans to fund any TWG activities in FY 1992.

I. COMPLETED PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>
87-307	Technical Work Group (TWG) Coordination - PSMFC <u>Project Officer:</u> J. Gislason <u>Objectives:</u> 1. Coordinate Council Area of Research Emphasis TWG activities within the TWG's and among the TWG's, as required by the Implementation Planning Process (IPP). 2. Coordinate TWG planning activities with other activities such and MEG and System and Subbasin Planning, as required by the IPP.	<u>Date Completed:</u> March 1991 <u>Results/Conclusions:</u> The four TWGs developed Five-Year Work Plans that were submitted to the Council in 1987 or 1988.

II. FY 1991 ONGOING PROJECTS

None.

III. NEW PROJECTS

None.

6.2 RESEARCH IN THE FIVE-YEAR WORK PLANS
(Begin to Fund in FY 1988)

404 [Abstract] These measures address BPA funding of research,
703(e) development, and testing of improved fish husbandry practices,
703(h) rearing operations, release strategies, stock assessment, fish
206(b) health protection, indices of smolt quality, and hatchery
supplementation. Measure 206(b) in the Program directs BPA to
focus its funding of salmon and steelhead research in the next
five years in the four areas of emphasis described under Action
Item 6.1 in BPA's Work Plan. Technical Work Groups in each of
the areas of emphasis will develop a Five-Year Research Work
Plan for Council approval and BPA funding beginning in FY 1988.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To fund research identified by the **TWGs** in the Five-Year Research Work Plans.

Background and Progress to Date:

The Council Technical Work Group (**TWG**) process was instituted to focus research planning in four areas of technical emphasis considered fundamental to the success of the Fish and Wildlife Program. The four **TWGs** (Reservoir Mortality and Water Budget Effectiveness, Fish Disease, Hatchery Effectiveness, and Supplementation) submitted Five-Year Research Work Plans in 1987 or early 1988 for Council review and approval. BPA began funding projects from the Work Plans in late FY 1988.

Plans:

During an Implementation Planning Process review of BPA's FY 1992 budget, the Policy Review Group recommended that hatchery effectiveness and fish disease research be de-emphasized and funding levels be reduced in FY 1992. In response to this recommendation, BPA reduced the amount of funds for hatchery effectiveness and fish disease research in its FY 1992 IRB submittal to Congress. The reduced funding was insufficient to fund all proposed and ongoing projects in FY 1992, requiring prioritization of projects and subsequent termination, curtailment, or deferral of low priority projects in FY 1992.

The PRG requested the Artificial Propagation Scoping Group (**APSG**) to provide a recommended ranking of projects in RPA F1113 (RPA F1113 is the segment of BPA's Fish and Wildlife Program budget containing all hatchery effectiveness and fish disease research projects). The recommendations of several individual APSG members were presented to the PRG on May 16, 1991. Since there was no consensus among the APSG members, BPA modified slightly the ranked list of projects that it already had provided to the PRG at the April 18, 1991, PRG meeting:

<u>PRIORITY</u>	<u>PROJECT NUMBER</u>	<u>TITLE</u>
1	89-31	Control of BKD via Segregation
2	91-22	Hatchery Sorting for BKD
3	89-32	Erythromycin Registration
4	88-152	Life Cycle of IHN
5	89-65	CWT--Missing Production
6	89-66	CWT--Missing Production
7	89-69	CWT--Missing Production
8	88-163	Effects of CWT on Spring chinook
9	88-160	Evaluation of Oxygen Supplementation
10	89-29	Propagation in Pelton Ladder
11	89-30	Pre-Release Temperature Acclimation
12	89-46	Smolt Quality Assessment
13	89-54	Research on Anti-Fungal Compounds
14	89-81-02	EIBS Etiology

Projects below were proposed for deferral in FY 1992:

15	91-26	Bacterial Coldwater Disease
16	91-31	IHN Vaccine
17	91-25	<u>Ceratomyxa shasta</u> Control
18	91-23	Ectoparasite Research

BPA used the following criteria to develop its ranked list:

- Key projects concerning the two main disease pathogens, BKD and IHN.
- Key knowledge needed: Evaluation of hatcheries.
- Key technology needed:
 1. The effect of oxygen on survival
 2. The effects of acclimation ponds.
 3. Antifungal replacement.

To carry out the PRG's recommendation to reduce fish health/hatchery effectiveness research, BPA will defer the four lowest-priority projects (Project 91-26, 91-31, 91-25, and 91-23) in FY 1992.

1. RESERVOIR MORTALITY AND WATER BUDGET EFFECTIVENESS

I. COMPLETED PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>
87-413-1 (Task Order 97678)	Fish Survival and Smolt Physiology/Behavior Workshops - UW/BPNL <u>Project Officer:</u> P. Poe <u>Objectives:</u> Through the workshop process: 1. Better define measurements of salmon and steelhead smolt survival and smolt condition. 2. Outline research needs. 3. Present recommendations on how to proceed with future survival and smolt condition research. 4. Provide workshop results as one source of information to assist the Reservoir Mortality and Water Budget Effectiveness Technical Work Group in their development of a 5-year Work Plan for mainstem passage research.	<u>Date Completed:</u> FY 1991 <u>Results/Conclusions:</u> Proceedings from Smolt Survival Workshop conducted February 1989 are available (DOE/BP-35885-2, January 1990). Avenues of research were identified to clarify and reduce uncertainty in survival estimates and their application in program evaluation. Work on juvenile salmonid survival estimation and analysis techniques is continuing under Project 86-118 (Task Order No. 10) where a team of technical experts has been assembled to develop survival experimental designs and research methods. Related work on the smolt physiology of hatchery-reared spring chinook is ongoing under Project 89-46. Related work on the physiology of wild and natural smolts in the Snake River Basin is proposed to occur under ESA Habitat/Production Measure 5.3.

PROJECT NUMBER	TITLE	PROJECT STATUS
88-134	<p>Evaluation of Factors Affecting Collection Efficiency Estimates at McNary Dam - NMFS</p> <p><u>Project Officer:</u> P. Poe</p> <p><u>Objectives:</u> Assess potential sources of error associated with estimates of juvenile fish collection efficiency and improve techniques for estimating collection efficiency at McNary Dam. Study will use PIT tags to evaluate effects of fish origin, time of day of release, and the use of guided fish for test fish on collection efficiency results.</p>	<p><u>Expected Completion Date:</u> FY 1991</p> <p><u>Results/Conclusions:</u> Field data from two years of research have been collected and analyzed. Recommendations to improve the accuracy of estimates of collection efficiency have been made, and when implemented, will improve the precision of daily fish passage estimates at Columbia River dams.</p>
82-12	<p>Developing a Predation Index and Evaluating Ways to Reduce Salmonid Losses to Predation in the Columbia River Basin - ODFW</p> <p><u>Project Officer:</u> W. Maslen</p> <p><u>Objectives:</u> Develop and evaluate squawfish harvest techniques.</p>	<p><u>Date Completed:</u> December 1990</p> <p><u>Results/Conclusions:</u> An index for estimating abundance of squawfish was refined, for use in combination with the consumption index (Project 82-3) to determine the significance of predation.</p> <p>A plan was developed for step-wise implementation of commercial and sport reward fisheries on squawfish on a system-wide basis (Project 90-77).</p> <p>Project terminated December 1990. Additional development of squawfish harvest techniques has been integrated into Project 90-77.</p>

II. FY 1991 ONGOING PROJECTS

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
82-3	<p>Significance of Predation and Development of Prey Protection Measures for Juvenile Salmonids in the Columbia and Snake River Reservoirs.</p> <p><u>Project Officer:</u> W. Maslen</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none"> Determine if substandard juvenile salmonids (dead, injured, stressed, diseased, naive) are more vulnerable than standard or normal juvenile salmonids. Develop and test smolt protection measures to control predation on juvenile salmonids by reducing predator-smolt encounters or predator capture efficiency. 	<p><u>Date initiated:</u> 1983</p> <p><u>Results/Conclusions:</u> <u>In situ</u> field tests of prey selection were shown to be feasible in 1990. Project will now focus on studies in the field that depict real-world conditions.</p>	<p>FY 1991: Continue prey selection experimentation in the laboratory and the field to determine relationship between predation and prey condition and develop and evaluate prey protective measures (e.g., reducing predator-prey encounters, reducing predator feeding efficiency, etc.).</p>
83-319	<p>Passive Integrated Transponder (PIT) Tag Research - NMFS</p> <p><u>Project Officer:</u> V. Jagendorf</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none"> Determine the biological feasibility of injecting salmon and steelhead with PIT tags for passage and monitoring research activities. 	<p><u>Date Initiated:</u> 1983</p> <p><u>Results/Conclusions:</u> All data to date show that there are no biological problems with the PIT tag. The detection systems and monitors continue to be improved and are working extremely well. Adult chinook salmon with PIT tags have been detected at Lower Granite Dam.</p>	<ol style="list-style-type: none"> FY 1992: BPA will fund the project through to completion. Biological studies on adult salmon will continue until completed, and monitoring hardware will continue to be developed. Continuing: Contractor will finalize biological studies and equipment development and provide evaluation reports annually.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
83-319 cont.	2. Determine biological and engineering feasibility of adult and smolt salmon and steelhead detection facilities for passage monitoring and research activities.		
87-413-2 (Task Order 01772)	<p data-bbox="396 532 764 586">Analysis of Historic Data for Juvenile and Adult Salmonids</p> <p data-bbox="396 597 449 618">- uw</p> <p data-bbox="396 662 774 683"><u>Project Officer:</u> V. Jagendorf</p> <p data-bbox="396 727 800 1291"><u>Objectives:</u> Phase I of this work will assemble a data base of statistically bounded estimates of survival from smolt to adult and contribution rates to ocean fisheries for Columbia River salmon and steelhead hatchery stocks based on the last 15 years of Coded-Wire Tag (CWT) data. Phase II of this research will consist of the analysis of the adult production and survival data base created in Phase I in relation to riverine factors that affect production and survival. Phase II will be funded upon outcome of Phase I.</p>	<p data-bbox="816 532 1209 553"><u>Date Initiated:</u> September 1989</p> <p data-bbox="816 597 1339 906"><u>Results/Conclusions:</u> A data base of survivals and variances and/or contribution rates of Columbia River hatchery stocks was produced from the assembly and analysis of CWT data under Phase I. Phase II will assemble riverine factors, apply the methods developed under Phase I, and explore multivariate relationships to survival. A report of Phase I activities will be available in FY 1991.</p>	FY 1992: Continue Phase II through to completion.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
88-141	<p>Biological Manipulation of Migration Rate and Recovery Rate - The Use of Advanced Photoperiod to Accelerate Smoltification in Yearling Chinook Salmon - NMFS</p> <p><u>Project Officer:</u> W. Maslen</p> <p><u>Objectives:</u> Assess the effect of advanced photoperiod and release timing on smolt development and migration timing.</p>	<p><u>Date Initiated:</u> May 1988</p> <p><u>Results/Conclusions:</u> Results from the testing in 1988, 1989, and 1990 show travel time and recovery rates of juvenile yearling chinook can be enhanced through biological manipulation of physiological development.</p>	<p>FY 1992: Evaluate effect of photoperiod treatment and timing of release on migration rate and recovery rate of juvenile spring chinook at Kooskia Hatchery.</p>
89-107	<p>Development of Epidemiological Methods for Use in Quantifying Survival Relationships from PIT Tag Releases of Salmon and Steelhead Smolts - UW</p> <p><u>Project Officer:</u> P. Poe</p> <p><u>Objectives:</u></p> <p>1. Phase I: Develop epidemiological models and regression estimators, tests of survival relationships, and tests of assumptions and goodness-of-fit statistics. Phase II: Determine location and number of required PIT-tag facilities, develop sample size calculations for PIT tag release studies, conduct computer studies of robustness of models, develop alternative scenarios for PIT tag studies, and develop computer package for statistical design and analysis.</p>	<p><u>Date Initiated</u> October 1989</p> <p><u>Results/Conclusions:</u> Under Phase I, the statistical capabilities to analyze complex statistical models for PIT tag release studies that incorporate pre-release covariates were developed. A report of Phase I activities will be available in FY 1991.</p>	<p>1. FY 1992: Continue Phase II tasks.</p> <p>2. FY 1993: Continue Phase II through to completion.</p>

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
90-77	<p>Development of a System-Wide Predator Control Program - ODFW</p> <p><u>Project Officer:</u> W. Maslen</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none"> Determine the significance of predation in Columbia River reservoirs through implementation of indexing of predator abundance and integration with consumption indices. Implement squawfish management throughout the Lower Columbia and Snake Rivers. Implement an evaluation of the Squawfish Management Program. 	<p><u>Date Initiated:</u> April 1990</p> <p><u>Results/Conclusions:</u> Indexing of the significance of predation was conducted in the Lower Columbia River (Bonneville to Ice Harbor Dam.) A pilot test fish- was initiated in the John Day Reservoir to evaluate the feasibility of commer- and sport reward fisheries. Baseline data were collected for evaluation of squawfish management.</p> <p>Squawfish abundance was indexed in the Lower Columbia River (Bonneville to Ice Harbor) in 1990 and Lower Snake River (Ice Harbor to Hells Canyon) in 1991. Abundance indices in the Lower Columbia were higher downstream of John Day, relative to the John Day reservoir. Tailrace generally had the highest catch per unit effort, but Bonneville forebay was also relatively high. Catch per unit effort was over twice that of upstream locations.</p>	<p>FY 1992 and beyond: Continue implementation and evaluation of squawfish management throughout the Lower Columbia and Snake Rivers.</p>
90-78	<p>System-Wide Significance of Predation on Juvenile Salmonids in Columbia and Snake River Reservoir - USFWS</p> <p><u>Project Officer:</u> W. Maslen</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none"> Index predator consumption rates of juvenile salmonids in reservoirs of the Lower Columbia and Snake River Basin. Assist ODFW (Project 90-77) to index predator abundance, 	<p><u>Date Initiated:</u> March 1990</p> <p><u>Results/Conclusions:</u> Squawfish consumption was indexed in the Lower Columbia River (Bonneville to Ice Harbor) in 1990 and Lower Snake River (Ice Harbor to Hells Canyon) in 1991. Consumption indices were highest during the summer in tailraces of McNary, John Day, and Bonneville Dams. Consumption indices were intermediate in forebays and lowest in mid-reservoir locations. The boat- restricted zones of tailraces and fore- bays had the the highest consumption</p>	<p>FY 1992: Continue integration of consumption indices with abundance indices to determine the significance of predation in the Lower Columbia and Snake Rivers relative to John Day reservoir.</p> <p>Continue to assist ODFW in the implementation and evaluation of the squawfish management program.</p>

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
90-78 cont.	integrate predator abundance and consumption indices to estimate system-wide losses of juvenile salmonids to predators. Continue to provide support to implement, manage, and evaluate squawfish management program.	indices.	
86-118 (Task Order 10)	Feasibility of Satisfying Model Assumptions of the Burnham and Anderson Fish Survival Estimation Techniques <u>Project Officer:</u> P. Poe <u>Objectives:</u> 1. Evaluate the practicability of applying the Burnham and Anderson model to improve estimates of smolt survival in the Columbia River system. 2. Evaluate how the practical problems related to conducting the survival experiments may limit the ability to satisfy the model assumptions.	<u>Date Initiated:</u> September 1990 <u>Results/Conclusions:</u> Scoping session reviewed survival estimation techniques in January 1991. Technical team is developing " strawman " experiment(s).	FY 1991: Continue model evaluation; develop experimental designs for implementation. FY 1992: Project is scheduled for completion; final report in FY 1992.
91-17	Investigation of Factors Affecting Migrations of Juvenile Spring Chinook above and through Lower Granite Reservoir <u>Project Officer:</u> P. Poe <u>Objectives:</u> Investigate factors affecting the migration and survival of juvenile wild/natural and hatchery produced spring chinook above and through	<u>Date Initiated:</u> February 1991 <u>Results/Conclusions:</u> This project is planned to be conducted in two phases. Phase I will perform literature review identify data needs, and assemble technical work group to define project scope, long-term objectives, and feasibility, and develop study plan and experimental design. Phase II will implement field studies and report results. Phase I literature review and study design in-	FY 1992 and beyond: Conduct Phase II. Perform field studies and report results.

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
91-17 cont.	Lower Granite Reservoir.	incorporated as part of Project 90-51 (See Appendix B).	
91-29	Early Life History Requirements of Subyearling Chinook Salmon in Columbia River Basin Reservoirs - USFWS <u>Project Officer:</u> D. Watkins <u>Objectives:</u> 1. Identify and describe the characteristics of fall chinook salmon spawning habitat in the Snake River, and estimate the extent of utilization and production of emergent fry. 2. Identify and describe the characteristics of rearing habitats used by subyearling chinook salmon in mainstem reservoirs. 3. Describe the factors influencing the migratory behavior of subyearling chinook salmon in mainstem reservoirs. 4. Determine the relationship between survival of migrating fall chinook juveniles and various flow regimes. 5. Synthesize data and prepare final report.	<u>Expected Start Date:</u> September 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Start project. FY 1992-94: Document spawning, describe spawning habitat and determine the rearing habitats of fall chinook salmon. FY 1992-96: Determine subyearling chinook migratory requirements and the flow/survival relationship for various flow regimes.

III. NEW PROJECTS

None.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
89-30	<p>Evaluation of Pre-Release Temperature Acclimation at "Ground Water" Hatcheries - WDF</p> <p><u>Project Officer:</u> A. Ruger</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none"> To provide Klickitat River acclimation water to the Klickitat Hatchery site. Compare the performance (survival of adults to hatchery rack) of spring chinook smolts raised in and released directly from a groundwater supplied hatchery to smolts released from the same hatchery following acclimation with the ambient tributary receiving water for a period of time before release. 	<p><u>Date Initiated:</u> July 1989</p> <p><u>Results/Conclusions:</u> Construction for delivery of water to rearing area complete.</p>	<ol style="list-style-type: none"> July 1, 1989 - Dec. 30, 1990: Feasibility and engineering studies and construction to provide river water to the hatchery site. September 1990: Start coded-wire tag fish for 4 years. August 1992: Start sampling coded-wire tags for 5 years. June 30, 1998: Final report and project completion.
89-46	<p>Spring Chinook Smolt Quality Assessment - NMFS</p> <p><u>Project Officer:</u> R. Austin</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none"> Select and monitor fish quality at four hatcheries. Correlate these data with overall survival of the released groups (total contribution). Determine suitability of smolt quality indices and other physiological parameters for assessing fish quality and improving hatchery effectiveness. 	<p><u>Date Initiated:</u> February 1989</p> <p><u>Results/Conclusions:</u></p> <ol style="list-style-type: none"> Sampling during the first two years at four hatcheries indicated that most fish were released prior to the initiation of the smoltification process. Significant differences were noted in upriver vs. downstream hatchery releases in degree of smoltification. Sampling is continuing. Developed plan for monitoring physiological parameters of wild smolts. Results to date are summarized in the 	<ol style="list-style-type: none"> FY 1991: Continue to characterize physiological parameters for hatchery spring chinook in at least three subbasins; upon approval, initiate monitoring of hatchery smolts. Continue to relate physiological parameters measured with hatchery rearing practices. FY 1992: Complete monitoring of smolt quality parameters. FY 1993-1996: Recovery of adult returns. FY 1996: Recovery of adult fish complete; final report written.

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
89-65	Coded-Wire Tag Evaluation of Missing Hatchery Groups - USFWS <u>Project Officer:</u> J. Bauer <u>Objectives:</u> 1. Identify missing production groups of salmon for Columbia River hatcheries. 2. Recover, decode and record survivability data. 3. Evaluate hatchery production programs.	<u>Date Initiated:</u> November 1989 <u>Results/Conclusions:</u> All groups for FY 1990 have been tagged.	FY 1991: Missing production groups to be tagged. FY 1992: Missing production groups to be tagged. FY 1993: Missing production groups to be tagged and evaluation to begin. FY 1994: Final tagging of missing production groups while evaluation continues. FY 1995-1996: Evaluation continues.
89-66	Coded-Wire Tag Evaluation of Missing Hatchery Groups - WDF <u>Project Officer:</u> J. Bauer <u>Objectives:</u> 1. Identify missing production groups of salmon for Columbia River hatcheries. 2. Recover, decode and record survivability data. 3. Evaluate hatchery production programs.	<u>Date Initiated:</u> September 1989 <u>Results/Conclusions:</u> All fish groups scheduled for tagging in 1989-91 were completed. Groups for 1992 will be tagged with FY 1991 dollars on hand.	FY 1991: Missing production groups to be tagged. FY 1992: Missing production groups to be tagged. FY 1993: Missing production groups to be tagged and evaluation to begin. FY 1994: Final tagging of missing production groups while evaluation continues. FY 1995-1996: Evaluation continues.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
89-30	<p>Evaluation of Pre-Release Temperature Acclimation at "Ground Water" Hatcheries - WDF</p> <p><u>Project Officer:</u> A. Ruger</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none"> To provide Klickitat River acclimation water to the Klickitat Hatchery site. Compare the performance (survival of adults to hatchery rack) of spring chinook smolts raised in and released directly from a groundwater supplied hatchery to smolts released from the same hatchery following acclimation with the ambient tributary receiving water for a period of time before release. 	<p><u>Date Initiated:</u> July 1989</p> <p><u>Results/Conclusions:</u> Construction for delivery of water to rearing area complete.</p>	<ol style="list-style-type: none"> July 1, 1989 - Dec. 30, 1990: Feasibility and engineering studies and construction to provide river water to the hatchery site. September 1990: Start coded-wire tag fish for 4 years. August 1992: Start sampling coded-wire tags for 5 years. June 30, 1998: Final report and project completion.
89-46	<p>Spring Chinook Smolt Quality Assessment - NMFS</p> <p><u>Project Officer:</u> R. Austin</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none"> Select and monitor fish quality at four hatcheries. Correlate these data with overall survival of the released groups (total contribution). Determine suitability of smolt quality indices and other physiological parameters for assessing fish quality and improving hatchery effectiveness. 	<p><u>Date Initiated:</u> February 1989</p> <p><u>Results/Conclusions:</u></p> <ol style="list-style-type: none"> Sampling during the first two years at four hatcheries indicated that most fish were released prior to the initiation of the smoltification process. Significant differences were noted in upriver vs. downstream hatchery releases in degree of smoltification. Sampling is continuing. Developed plan for monitoring physiological parameters of wild smolts. Results to date are summarized in the 1989 Annual Report 	<ol style="list-style-type: none"> FY 1991: Continue to characterize physiological parameters for hatchery spring chinook in at least three subbasins; upon approval, initiate monitoring of hatchery smolts. Continue to relate physiological parameters measured with hatchery rearing practices. FY 1992: Complete monitoring of smolt quality parameters. FY 1993-1996: Recovery of adult returns. FY 1996: Recovery of adult fish complete; final report written.

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
89-65	Coded-Wire Tag Evaluation of Missing Hatchery Groups - USFWS <u>Project Officer:</u> J. Bauer <u>Objectives:</u> 1. Identify missing production groups of salmon for Columbia River hatcheries. 2. Recover, decode and record survivability data. 3. Evaluate hatchery production programs.	<u>Date Initiated:</u> November 1989 <u>Results/Conclusions:</u> All groups for FY 1990 have been tagged.	FY 1991: Missing production groups to be tagged. FY 1992: Missing production groups to be tagged. FY 1993: Missing production groups to be tagged and evaluation to begin. FY 1994: Final tagging of missing production groups while evaluation continues. FY 1995-1996: Evaluation continues.
89-66	Coded-Wire Tag Evaluation of Missing Hatchery Groups - WDF <u>Project Officer:</u> J. Bauer <u>Objectives:</u> 1. Identify missing production groups of salmon for Columbia River hatcheries. 2. Recover, decode and record survivability data. 3. Evaluate hatchery production programs.	<u>Date Initiated:</u> September 1989 <u>Results/Conclusions:</u> All fish groups scheduled for tagging in 1989-91 were completed. Groups for 1992 will be tagged with FY 1991 dollars on hand.	FY 1991: Missing production groups to be tagged. FY 1992: Missing production groups to be tagged. FY 1993: Missing production groups to be tagged and evaluation to begin. FY 1994: Final tagging of missing production groups while evaluation continues. FY 1995-1996: Evaluation continues.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
89-97 cont.	<p data-bbox="406 282 736 305"><u>Project Officer:</u> T. Vogel</p> <p data-bbox="406 347 544 370"><u>Objectives:</u></p> <ol data-bbox="406 380 825 815" style="list-style-type: none"> <li data-bbox="406 380 825 565">1. Determine the effects on naturally produced fish due to predation by hatchery fish and competition for food and space between naturally produced fish and hatchery fish. <li data-bbox="406 574 825 717">2. Determine the effects on indigenous stock productivity that result from hatchery adults interbreeding with indigenous wild fish. <li data-bbox="406 727 825 815">3. Determine the effects of supplementation with hatchery fish of indigenous stock. 		
89-98	<p data-bbox="406 854 825 1101">Determination of Effectiveness of Supplementation Strategies and Assessment of Interaction between Supplemental Hatchery Chinook Salmon on Natural Populations in the Salmon, Snake, and Clearwater Rivers in Idaho - IDFG</p> <p data-bbox="406 1143 736 1166"><u>Project Officer:</u> T. Vogel</p> <p data-bbox="406 1208 544 1230"><u>Objectives:</u></p> <ol data-bbox="406 1240 825 1352" style="list-style-type: none"> <li data-bbox="406 1240 825 1352">1. Determine the effects of outplanting different life stages of spring and summer chinook on natural fish production. 	<p data-bbox="836 854 1193 876"><u>Date Initiated:</u> September 1989</p> <p data-bbox="836 919 1193 941"><u>Results/Conclusions:</u> None at this time.</p>	<ol data-bbox="1381 854 1759 974" style="list-style-type: none"> <li data-bbox="1381 854 1759 909">1. June 1990: Review experimental design and management agreements. <li data-bbox="1381 951 1759 974">2. October 1991: Start Phase II, Experimentation.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
89-98 cont.	2. Determine effectiveness of supplementation in building self-sustaining natural runs of the species. 3. Develop guidelines for future supplementation in terms of size and time of release.		
90-52	Performance/Stock Productivity Impacts of Hatchery Supplementation - USFWS <u>Project Officer:</u> T. Vogel <u>Objectives:</u> Develop generically applicable model using appropriate fish stock.	<u>Exoected Start Date:</u> FY 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Start project.
90-53	Southeast Washington Species Interaction Study - WDW <u>Project Officer:</u> T. Vogel <u>Objectives:</u> 1. Determine inter-specific and intra-specific competition and predation among spring chinook, summer steelhead, and resident trout. 2. Determine magnitude and impact of residualization on wild stocks and supplementation programs.	<u>Exoected Start Date:</u> FY 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Start project.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
89-97 cont.	<u>Project Officer:</u> T. Vogel		
	<u>Objectives:</u> 1. Determine the effects on naturally produced fish due to predation by hatchery fish and competition for food and space between naturally produced fish and hatchery fish. 2. Determine the effects on indigenous stock productivity that result from hatchery adults interbreeding with indigenous wild fish. 3. Determine the effects of supplementation with hatchery fish of indigenous stock.		
89-98	Determination of Effectiveness of Supplementation Strategies and Assessment of Interaction between Supplemental Hatchery Chinook Salmon on Natural Populations in the Salmon, Snake, and Clearwater Rivers in Idaho - IDFG	<u>Date Initiated:</u> September 1989 <u>Results/Conclusions:</u> None at this time.	1. June 1990: Review experimental design and management agreements. 2. October 1991: Start Phase II, Experimentation.
	<u>Project Officer:</u> T. Vogel		
	<u>Objectives:</u> 1. Determine the effects of outplanting different life stages of spring and summer chinook on natural fish production.		

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
89-98 cont.	2. Determine effectiveness of supplementation in building self-sustaining natural runs of the species. 3. Develop guidelines for future supplementation in terms of size and time of release.		
90-52	Performance/Stock Productivity Impacts of Hatchery Supplementation - USFWS <u>Project Officer:</u> T. Vogel <u>Objectives:</u> Develop generically applicable model using appropriate fish stock.	<u>Expected Start Date:</u> FY 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Start project.
90-53	Southeast Washington Species Interaction Study - WDW <u>Project Officer:</u> T. Vogel <u>Objectives:</u> 1. Determine inter-specific and intra-specific competition and predation among spring chinook, summer steelhead, and resident trout. 2. Determine magnitude and impact of residualization on wild stocks and supplementation programs.	<u>Expected Start Date:</u> FY 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Start project.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
88-160 (cont.)	<u>Project Officer:</u> A. Ruger		
	<u>Objectives:</u> 1. Rear spring chinook under experimental conditions; tag fish; monitor fish health/quality. 2. Recover and decode tags for returning adults. 3. Analyze and summarize all data. 4. Transfer technology to user groups. 5. Write final report.		
88-163	Effects of Coded-Wire Tagging on the Survival of Spring Chinook Salmon - WDF	<u>Date Initiated:</u> January 1, 1989	1. October 1991: Begin otolith marking of third brood year fish.
	<u>Project Officer:</u> A. Ruger	<u>Results/Conclusions:</u> Second brood year fish were otolith marked in winter 1990-91. Coded-wire tagging of first year fish completed.	2. September 1993: Begin sampling otoliths from adults. 3. June 30, 1997: End of project; final report completed.
	<u>Objectives:</u> 1. Mark entire production of each of three hatcheries with otolith marks and mark a portion of the production with coded-wire tags. 2. Repeat procedure for three brood-years at each facility. 3. Determine difference in survival rates between coded- wire tagged and untagged groups.		

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
89-69	Coded-Wire Tag Evaluation of Missing Hatchery Groups - ODFW <u>Project Officer:</u> J. Bauer <u>Objectives:</u> 1. Identify missing production groups of salmon for Columbia River hatcheries. 2. Recover, decode, and record survivability data. 3. Evaluate hatchery production programs.	<u>Date Initiated:</u> September 1989 <u>Results/Conclusions:</u> All fish groups scheduled for tagging in 1989-91 were completed. Groups for 1992 will be tagged with FY 1991 dollars on hand.	FY 1991: Missing production groups to be tagged. FY 1992: Missing production groups to be tagged. FY 1993: Missing production groups to be tagged and evaluation to begin. FY 1994: Final tagging of missing production groups while evaluation continues. FY 1995-1996: Evaluation continues.
89-81-3	Modeling Optimized Hatchery Production - OSU <u>Project Officer:</u> R. Austin <u>Objectives:</u> 1. Develop a computerized model for defining and solving the problems of optimizing hatchery production of anadromous salmonids. 2. Test the model by applying to actual hatchery situations. 3. Calibrate and apply the model to specific hatcheries. 4. Use model as a tool towards optimizing the hatchery production system and to identify areas where further research is necessary.	<u>Date Initiated:</u> September 1989 <u>Results/Conclusions:</u> 1. Contacts established with fisheries agencies and Tribes to form a project task force of hatchery biologists to assist in the development and testing of the hatchery model. 2. Prototype model developed and testing of model initiated at selected hatcheries.	1. 1991: Continue model development; prototype model available for testing and refinement. 2. 1992: Model fully developed, tested and refined; final product will include full documentation of software. Workshop training session for potential users of hatchery model will be scheduled by contractor.

III. NEW PROJECTS

None.

4. SUPPLEMENTATION

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
89-96	A Genetic Monitoring and Evaluation Program for Supplemental Populations of Salmon and Steelhead in the Upper Columbia River Basin - NMFS	<p><u>Date Initiated:</u> September 1989</p> <p><u>Results/Conclusions:</u> None at this time.</p> <p><u>Project Officer:</u> T. Vogel</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none"> 1. Evaluate the nature and extent of genetic changes in hatchery stocks to be used for supplementation. 2. Quantify the genetic impact of supplementation on targeted natural stocks and non-targeted wild stocks. 	September 1992: Evaluate Project and determine desirability to continue.
89-97	Evaluation of the Success of Supplementing Imnaha River Summer Steelhead with Hatchery-Reared Smolts and Assessment of the Effect on Natural Production Performance, Life History Characteristics, and Genetic Characteristics - ODFW	<p><u>Date Initiated:</u> September 1989</p> <p><u>Results/Conclusions:</u> None at this time.</p>	<ol style="list-style-type: none"> 1. June 1991: Review experimental design and management agreements. 2. October 1991: Start Phase II, Experimentation.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
90-55	Effectiveness of Supplementa- tion Strategies and Assessment of Interactions Between Wild/Natural and Hatchery Stocks of Summer Steelhead in Idaho - IDFG	<u>Expected Start Date:</u> FY 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Start project.
	<u>Project Officer:</u> T. Vogel		
	<u>Objectives:</u> Evaluate existing Supplementation programs for stock performance character- istics.		

III. NEW PROJECTS

None.

6.3 DATA COLLECTION FOR HATCHERY DATA BASE
(Fund in Response to System Monitoring and Evaluation Work Group Proposals)

206(e)(1) Hatchery Data Base. BPA shall fund collection of Columbia River Basin hatchery data for anadromous fish. Data to be collected, format, and schedules shall be determined by the work group on improving hatchery production (described above), working in conjunction with the work group on system monitoring and evaluation (described above). These data shall include, at a minimum: numbers 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 collected shall be stored in the Council's anadromous fish data base.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To develop and implement the Hatchery Data Base.

Background and Progress to Date:

The scoping of the CIS in FY 1990 and 91 (Project 88-108-1) will provide overall guidance for development of the Hatchery Data Base, as well as the Natural Production Data Base.

Plans:

The Hatchery Data Base was designed as part of the CIS project in 1990 (Project 88-108-1).

Projects:

None at this time.

6.4 DATA COLLECTION FOR NATURAL PRODUCTION DATA BASE
(Fund in Response to System Monitoring and Evaluation Work Group
Proposals)

206(e)(2) Natural Production Data Base. BPA 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, redd counts, and juvenile migration for key index streams in the Columbia River Basin. The key index streams shall be consistent with any key index streams identified through the U.S./Canada Pacific Salmon Treaty and other planning processes. Data collected shall be stored in the Council's anadromous fish data base.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To develop and implement the Natural Production Data Base.

Background and Progress to Date:

The scoping of the CIS in FY 1989 (Project 88-108-1) provided overall guidance for development of the Natural Production Data Base, as well as the Hatchery Production Data Base. IDFG has the lead in coordination and development of the Natural Production Data Base Technical Work Statement by the Council's MEG. No work on development planned during FY 1990-91. CIS will be designing the data base during FYs 1991 and 1992.

Plans:

Following approval of the Work Statement by the MEG and CBFWA, BPA may be asked to fund a Natural Production Data Base project in FY 1992.

Projects:

None at this time.

6.5 HIGH PRIORITY PROJECTS IN AREAS OF EMPHASIS
(Fund Only These in FY 1987)

206(b) [Abstract] This measure directs BPA to focus its funding of salmon and steelhead research in the next five years in the four areas of emphasis.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To fund only high priority projects in the areas of emphasis during FY 1987.

Background and Progress to Date:

One project, a demonstration of a system for removing malachite green from hatchery effluent (Project 87-421), was identified by the agencies and Tribes as sufficiently important to merit priority funding in FY 1987. The FDTWG strongly supported this project and requested that it be funded immediately. BPA initiated Project 87-421 in FY 1987; the project was completed in FY 1989.

Plans:

Action Item 6.5 has been completed.

Projects:

None.

6.10 SYSTEM MONITORING AND EVALUATION
(Coordinated Information System>

206(d)(2)(c) [Abstract] The Council's system monitoring and evaluation program will include development of a coordinated information system designed to facilitate effective exchange and dissemination of fisheries data.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To fund development and operation of SMEP.

Background and Progress to Date:

In FY 1988, BPA began funding Project 88-108-1 to develop the CIS to contribute to the SMEP. Projects 88-108-2 and 89-104 began in FY 1989.

Plans:

BPA will continue to fund the three ongoing projects through completion.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
88-108-1	Coordinated Information System (CIS) - PSMFC <u>Project Officer:</u> M. Schneider <u>Objectives:</u> 1. Select project team 2. Conduct project orientation 3. Complete watershed classification final report (Phase II). 4. Complete CIS data catalogs. Includes those prepared under Natural Production Data Base, Hatchery Production Data Base, and Habitat/Land Use Data Base objectives as well as other data bases (Phase II). 5. Complete CIS Technical Report, Project Work Plan for Phase III, and Stock Assessment Report (Volumes I and II) (Phase I and II). 6. Complete prototype design and testing (Phase III).	<u>Date Initiated:</u> January 1989 <u>Results/Conclusions:</u> Objectives 1 and 2 are completed. CIS Team has provided guidance for development of description of work for stock assessment updates, the Hatchery and Natural Production Data Bases, and a land use/habitat data base.	FY 1990: Complete Phase I. FY 1992: (Spring 1992) Complete Phase II. FY 1993-94: Complete Phase III.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
88-108-2	EPA/USGS Mapping System for Northwest Environmental Data-base (NED) and Coordinated Information System (CIS) - USGS <u>Project Officer:</u> T. Pansky <u>Objectives:</u> 1. Complete regional digital hydrographic data base at 1:100,000 scale for use in NED and CIS. 2. Enhance current EPA/USGS mapping system.	<u>Date Initiated:</u> October 1989 <u>Results/Conclusions:</u> Basic system is complete for states of Washington, Oregon, Idaho, and western Montana.	FY 1991: Complete portions of Nevada, Utah, and Wyoming within Columbia River Basin and select Missouri River Basin subbasins in Montana. Arrange for regional maintenance and distribution.
89-104	Historical Data Base - USFS/PNWRS <u>Project Officer:</u> M. Schneider <u>Objectives:</u> Archive summaries and raw data from original Bureau of Fisheries habitat surveys of the Columbia River and tributaries. Publish summaries in book form by sub-basin	<u>Date Initiated:</u> FY 1989 <u>Results/Conclusions:</u> None at this time.	FY 1990: Microfiche original field notes and prepare notes for data base management system. FY 1990 to FY 1993: Produce a data base management system for historical stream inventories which is integrated with CIS protocols for sub-basin stream inventory data. Edit and produce Columbia Basin stream inventory for areas above and below Bonneville Dam. FY 1993: Project scheduled for completion.

III. NEW PROJECTS

None.

COORDINATION ACTION ITEMS

6.12 CONTINUING COORDINATION AND CONSULTATION
(By All Federal Project Operators/Regulators)

1203(c) [Abstract] The Federal project operators and regulators shall work with the agencies and Tribes to comply with the consultation/coordination requirements of the Act. The Council expects research planning consultation to occur among agencies, Tribes, and project operators and regulators. The Council will encourage improved coordination of fish and wildlife efforts by consulting with the fish and wildlife agencies, Tribes, project operators and regulators, BPA customers, Federal and state water and land management agencies, irrigation districts, academic experts, and interested citizens groups.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To provide for the involvement of the region's fish and wildlife agencies and Tribes at relevant decision-making points while BPA plans its implementation of the Program and to improve coordination and consistency between BPA's implementation actions and the agencies' and Tribes' existing and future management activities.

Background and Progress to Date:

In early April 1987, BPA staff began meeting with Council staff and an ad-hoc committee of CBFWA. The meetings focused on explaining BPA's process for implementing the Program, from project inception through completion. Participants agreed to continue discussion, with a goal of developing a collaborative and cooperative process through which BPA would plan and implement the Program. As a result of these discussions, an Implementation Planning Process (IPP) was developed jointly by CBFWA and BPA (see Section III of the AIWP).

The IPP was endorsed by the BPA Administrator and the CBFWA Chair on October 19, 1988. The IPP's Policy Review Group (PRG) was formed in late 1988. In January 1989, the PRG began providing BPA with policy and funding recommendations related to Program implementation. The PRG continues to serve as a forum for policy coordination and consultation among BPA, fish and wildlife agencies, Tribes, utility interests, Council, and other interested parties. The AIWP is based on the outline developed by the PRG during Step 1 of the annual IPP cycle.

Plans:

BPA plans to continue to use the IPP as a coordination and consultation mechanism and to develop the AIWP.

RESIDENT FISH ACTION ITEMS AND TECHNICAL SUBJECTS

- 7.1 COLVILLE HATCHERY
 (Complete Construction: March 1989)
 (Fund Operation and Maintenance)

903(g)(1)(A) [Abstract] Design, construction, operation and maintenance of a resident trout hatchery on the Colville Indian Reservation. The Council expects that state-of-the-art technologies will be used in the design of the hatchery.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To design and construct a resident trout hatchery on the Colville Indian Reservation to mitigate partially for anadromous fish losses from hydroelectric development and operation.

Background and Progress to Date:

The primary purpose of the hatchery is to produce trout to stock lakes and streams on the Reservation. The Colville Confederated Tribes (CCT) constructed the hatchery through subcontracts. The final design for the hatchery was completed in October 1987. Construction began in July 1988 and was completed in fall 1989. Operations began in October 1989. The hatchery met its production and release goals for year one (FY 90) operations.

Plans:

BPA will continue to fund the operation and maintenance of the facility by the CCT. Year two (FY 91) operations are funded and underway.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
85-38	Colville Hatchery - CCT	<u>Date initiated:</u> 1985	Continuing: Started operation and maintenance in October 1989. O&M to continue.
	<u>Project Officer:</u> J. Marcotte	<u>Results/Conclusions:</u> Design completed in FY 1987. Construction contract initiated July 1988. Completed construction of 50,000 pound trout hatchery in September 1989.	
	<u>Objectives:</u> Design and construct a resident trout hatchery on the Colville Indian Reservation.		

III. NEW PROJECTS

None.

7.2

COEUR D'ALENE RESERVATION ACTIONS

(Fund Stream Survey; Design, Construction, Operation, and Maintenance of Cutthroat/Bull Trout Hatchery; Habitat Improvement Projects; 3-Year Monitoring Program)

903(g)(1)(B) [Abstract] BPA shall fund a baseline stream survey of tributaries located on the Coeur d'Alene Indian Reservation to compile information on improving spawning habitat, rearing habitat, and access to spawning tributaries for cutthroat and bull trout, and to evaluate 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. If the baseline survey indicates a better alternative than construction of a fish hatchery, the Coeur d'Alene Tribe will submit an alternative plan for consideration in program amendment proceedings.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

Survey the streams on the Coeur d'Alene Indian Reservation for status of stocks and the possibility of improving habitat. If feasible, construct habitat improvement projects. Determine need for stock supplementation and, if needed, fund design, construction, and operation of a cutthroat and bull trout hatchery.

Background and Progress to Date:

Not applicable.

Plans:

BPA plans to fund this Action Item, beginning in FY 1990 with a project to conduct the stream surveys.

I. COMPLETED PROJECTS

None

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
90-44	Stream Survey, Hatchery, Improvements, and Monitoring on the Coeur D'Alene Reservation <u>Project Officer:</u> R. Austin <u>Objectives:</u> 1. Survey streams and determine stock status. 2. Assess possibilities for habitat improvement. 3. Construct hatchery, if needed. 4. Monitor results of habitat improvement projects and hatchery supplementation.	<u>Date Initiated:</u> September 1990 <u>Results/Conclusions:</u> 1. Initial stream survey by aircraft completed in December 1990 using BPA helicopter and pilot. 2. Criteria for ranking tributaries for more intensive on-the-ground stream surveys were selected.	1. FY 1991: Begin sampling selected tributaries for fish population and habitat baseline data. 2. FY 1992: Continue sampling of tributaries for biological and physical data. Analyze all data and assess potential carrying capacities of streams for bull and cutthroat trout. Recommend alternative strategies for enhancing fisheries in final project report due in September 1992.

III. NEW PROJECTS

None.

7.3 KOKANEE SALMON HATCHERIES

(Fund Design, Construction, Operation, Maintenance of Hatcheries at Galbraith Springs and Sherman Creek: Begin FY 1988.)
(Fund Monitoring Programs)

903(g)(1)(C) [Abstract] BPA shall fund design, construction, operation, and maintenance of two kokanee salmon hatcheries, one at Galbraith Springs and one 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) transferring 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 the Washington Department of Wildlife.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To fund the design, construction, operation, and maintenance of two kokanee salmon hatcheries.

Background and Progress to Date:

Preliminary design began in FY 1988.

Plans:

Construction will be completed and O&M will begin in FY 1991.

I. COMPLETED PROJECTS

PROJECT
NUMBER

TITLE

PROJECT STATUS

90-76

Hatchery Manager Training
Program - Spokane Tribe

Date Completed: December 1990

Results/Conclusions: Training program
was completed satisfactorily.

Project Officer: S. Levy

Objectives:

1. Provide advanced training
for kokanee hatchery manager.
2. Write a hatchery management
plan.
3. Provide on-site inspection
during hatchery construction.

88-62-3

Construct Hatchery Residence -
Galbraith Springs

Date Completed: April 1991

Results/Conclusions: Construction
completed in April 1991.

Project Officer: S. Levy

Objectives: Provide housing
for hatchery manager.

90-86

Sherman Creek Hatchery

Expected Completion Date: June 1991

Results/Conclusions: Construction to be
completed in June 1991.

Project Officer: S. Levy

Objectives: Construct kokanee
hatchery.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
88-62	Spokane Tribal Fish Hatchery - Galbraith Springs <u>Project Officer:</u> S. Levy <u>Objectives:</u> Design, construct, and operate kokanee hatcheries.	<u>Date Initiated:</u> FY 1988 <u>Results/Conclusions:</u> None.	FY 1991: Complete final design and Galbraith Springs Hatchery construction. FY 1991: Complete construction of Sherman Creek facility. FY 1991: Begin O&M.
91-46	Spokane Tribal Hatchery O&M - Spokane Tribe <u>Project Officer:</u> S. Levy <u>Objectives:</u> Operate and maintain kokanee hatchery to provide a recreational fishery in Lake Roosevelt and Banks Lake. In conjunction with the Sherman Creek Hatchery.	<u>Date Initiated:</u> January 1991 <u>Results/Conclusions:</u> Start-up of hatchery operations has been successfully begun.	FY 1991: Begin O&M.
91-47	Sherman Creek Hatchery O&M - WDW <u>Project Officer:</u> S. Levy <u>Objectives:</u> Operate and maintain facility to provide kokanee for Lake Roosevelt and Banks Lake.	<u>Expected Start Date:</u> June 1991 <u>Results/Conclusions:</u> None at this time.	FY 1992 and beyond: Continue funding O&M

III. NEW PROJECTS

None.

- 7.4 HABITAT AND PASSAGE IMPROVEMENTS ON LAKE ROOSEVELT TRIBUTARY STREAMS
 (Fund Design, Construction, Operation, Maintenance of Projects: Begin FY 1989)
 (Fund Monitoring Programs).

903(g)(1)(D) [Abstract] BPA shall fund capital, operation, and maintenance 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.

903(g)(1)(E) [Abstract] Monitoring to evaluate the effectiveness of the above measures.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To improve stream habitat and passage into and out of Lake Roosevelt tributary streams for rainbow trout. Determine status of fish stocks in Lake Roosevelt before habitat improvements and hatchery construction. Evaluate the contribution of the hatcheries and habitat improvement projects of stocks in Lake Roosevelt.

Background and Progress to Date:

BPA funded a stock assessment study in FY 1988. Monitoring program started in summer of 1988.

Plans:

BPA will continue to fund habitat improvement projects in FY 1992. Annual reports on monitoring are available.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
88-63	Lake Roosevelt Monitoring Program - Spokane Tribe <u>Project Officer:</u> F. Holm <u>Objectives:</u> 1. Determine status of fish stocks in Lake Roosevelt before construction of habitat improvement projects and hatcheries. 2. Evaluate contribution of these projects and hatcheries to Lake Roosevelt.	<u>Date Initiated:</u> July 1988 <u>Results/Conclusions:</u> Available in annual reports.	1. Continuing: Assess status of stocks in Lake Roosevelt and measure the success of habitat improvement projects and hatcheries. 2. FY 1995: Project scheduled for completion.
90-18	Lake Roosevelt Habitat Improvement Projects - CCT <u>Project Officer:</u> S. Levy <u>Objectives:</u> Facilitate passage of resident fish in Lake Roosevelt tributaries and improve rearing habitat.	<u>Date Initiated:</u> April 1990 <u>Results/Conclusions:</u> None at this time.	FY 1991: Continue habitat assessment and develop work plan. FY 1992 and 1993: Implement improvements from work plan developed in FY 1991.

III. NEW PROJECTS

None.

- 7.5 KOOTENAI INDIAN RESERVATION STURGEON HATCHERY
 (Fund Design, Construction, Operation, Maintenance of Hatchery: Begin
 FY 1988)
 (Fund Evaluation Study>

903(g)(1)(H) [Abstract] BPA shall fund design, construction, operation and maintenance of a low-capital sturgeon hatchery on the Kootenai Indian Reservation. BPA and the Kootenai Tribe also shall explore alternative ways to make effective use of the hatchery facility year-round.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To design, construct, and operate a low-cost experimental sturgeon hatchery on the Kootenai Reservation in Idaho.

Background and Progress to Date:

Project was funded to develop a water supply, design a hatchery, and train personnel in sturgeon culture in FY 1990. Ground water was found to be unsuited for fish production - City of Bonners Ferry water mixed with Kootenai River water will be used. Hatchery completed in spring of 1991.

Plans:

BPA has funded project as stated above. Hatchery was constructed and operational in spring of 1991.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
88-64	Design, Construct, and Operate a Sturgeon Hatchery on the Kootenai Reservation, Idaho - Kootenai Tribe <u>Project Officer:</u> F. Holm <u>Objectives:</u> Same as title.	<u>Date Initiated:</u> September 1988 <u>Results/Conclusions:</u> Hatchery constructed FY 1991.	FY 1991: Construction has started and will be completed in FY 1991. Hatchery is scheduled to be in operation in spring of 1991. FY 1992: Continue hatchery operations.

III. NEW PROJECTS

None.

- 7.6 STURGEON AND WATER LEVEL FLUCTUATIONS: IDAHO PORTION OF KOOTENAI RIVER
(Fund Study to Assess Impacts: Begin FY 1989)

903(g)(1)(I) [Abstract] BPA shall fund 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 in the Idaho portion of the Kootenai River.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To assess the status of sturgeon stocks in the Kootenai River; obtain brood fish for hatchery; assess the impact of water level fluctuations caused by Libby Dam.

Background and Progress to Date:

BPA has funded a project with IDFG to begin looking for broodstock and train hatchery personnel. Project began in late FY 1988. Sturgeon have been caught and tagged and are being monitored. Broodstock were spawned in spring of 1991.

Plans:

BPA will continue to fund this study in FY 1992, with emphasis directed toward obtaining brood fish for the hatchery and rearing sturgeon for stocking in Kootenai River. Stocked sturgeon will be tagged and their movements monitored.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

PROJECT

NUMBER

TITLE

PROJECT STATUS

SCHEDULE AND MILESTONES

88-65

Assess Impacts of Water Level
Fluctuations on Sturgeon in
the Kootenai River - IDFG

Project Officer: F. Holm

Objectives: Assess status of
sturgeon stocks in the Kootenai
River and effects of water
fluctuations on these stocks.
Obtain brood fish for hatchery.

Date Initiated: September 1988

Results/Conclusions: BPA contracted
with IDFG to conduct this study
beginning in 1988, Sturgeon are being
caught, tagged and monitored. Broodstock
for experimental rearing were obtained
for 1991 and 1992.

Continuing: Status of sturgeon populations
and availability of brood stock will be determined.
Eggs will be taken for experimental rearing under
Project 88-64. Sturgeon stocked from 1991 brood
will be tagged and their movement monitored.

III. NEW PROJECTS

None.

7.7 PEND OREILLE RIVER FISHERY IMPROVEMENTS ON KALISPEL RESERVATION
 (After Council Consultation, Fund Assessment of Improvement
 Opportunities: Begin FY 1988)

903(g)(1)(G) [Abstract] BPA shall fund an assessment of fishery improvement opportunities in the Pend Oreille River within the boundaries of the Kalispel Indian Reservation. This survey will provide:
 i) baseline information about existing fish populations and habitat and ii) information on possible means of improving fisheries. Upon completion of the assessments, recommendations for fisheries projects will be submitted to the Council.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To survey the fish populations in the Pend Oreille River within the boundaries of the Kalispel Reservation. Develop recommendations to improve the fisheries.

Background and Progress to Date:

Project began in February 1988. Baseline data of fish stocks and angler use are in annual reports printed in 1989 and 1990. Project was completed in June 1991.

Plans:

Recommendations for fisheries improvement alternatives will be submitted to the Council.

I. COMPLETED PROJECTS

PROJECT
NUMBER

TITLE

PROJECT STATUS

88-66

Assess Fishery Improvement
Options in the Pend Oreille
River - KIT

Project Officer: F. Holm

Objectives: Survey fisheries
in the Pend Oreille River.
Develop recommendations to
improve the fisheries.

Date Completed: June 1991

Results/Conclusions: Recommendations to
improve the fisheries are contained in
Final Report. They will be referred to
the Council for further action.

II. FY 1991 ONGOING PROJECTS

None.

III. NEW PROJECTS

None.

7.10 FUND PROJECTS AS PROVIDED IN SECTION 903(g)(2) AND ACTION ITEM 7.8.

903(g)(2) [Abstract] The appropriate party or parties shall fund resident fish substitution actions in the blocked area above Hells Canyon Dam to partially mitigate for salmon and steelhead losses incurred as a result of the construction and operation of Federal and non-Federal hydropower projects in the blocked area.

ACTION ITEM ACTIVITY SUMMARY:Objectives:

Develop funding mechanisms and scheduling for resident fish substitution projects above Hells Canyon Dam.

Background and Progress to Date:

BPA has agreed to fund a portion of the Duck Valley measure. Trout were purchased from private growers and stocked in FY 1988 through FY 1991. BPA funded a study to develop alternative means to annual fish stocking to enhance the fisheries of the Reservation and the development of a fisheries management plan.

Plans:

Trout will be purchased and stocked on the Duck Valley Reservation in FY 1992.

BPA assisted in a feasibility study for resident fish artificial production above Hells Canyon Dam in FY 1991. Funding of this feasibility study does not represent agreement by BPA to fund additional resident fish substitution projects above Hells Canyon Dam prior to the determination of the appropriate funding entity, or entities, by the Council.

I. COMPLETED PROJECTS

None

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
88-156	Duck Valley Resident Fish Project - SPT <u>Project Officer:</u> F. Holm <u>Objective:</u> Purchase rainbow trout to stock waters on Duck Valley Reservation and implement a management plan for reservation waters.	<u>Date Initiated:</u> FY 1988 <u>Results/Conclusions:</u> The project funded the purchase of fingerling and catchable rainbow trout for stocking in waters on the Duck Valley Reservation and the development of a fisheries management plan.	FY 1992: The fisheries management plan will be implemented and trout will be purchased.
91-27	Feasibility Study - Hatchery Production Above Hells Canyon <u>Project Officer:</u> F. Holm <u>Objectives:</u> Determine the costs, feasibility, and advantages of expanding capacity (construction of new raceways, collection of additional water from wells or springs, installation of oxygen injection, or additional staffing) at Ashton, Cabinet Gorge, Hayspur, Mackay, or Nampa hatcheries to meet fish	<u>Expected Start Date:</u> FY 1991 <u>Results/Conclusions:</u> None at this time	FY 1991: Start study and complete within 12 months.

91-27 culture needs identified in Program
 cont. Section 903(g)(2) versus con-
 struction of an appropriate incu-
 bation and early rearing facility
 combined with lesser expansion at
 one of the above hatcheries or a
 USFWS hatchery.

III. NEW PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
92-10	Fort Hall Bottoms Habitat Enhancement - Shoshone-Bannock Tribes	New Project	FY 1992: Begin improvement work in FY 92 as the soon as a feasibility report by the Shoshone-Bannock Tribes is completed and approved.
	<u>Project Officer:</u> F. Holm		
	<u>Objectives:</u> Improve habitat for cutthroat and rainbow trout in Clear Creek and Spring Creek along the Fort Hall Bottoms on the Fort Hall Reservation.		

7.11 ONGOING STUDIES IN MONTANA

(Continue Cooperative Studies; Present Results to Council.
Submit Recommendations by October 1, 1990.)

903

[Abstract] The measures referenced in the Action Item are concerned with the operations of Hungry Horse and Kerr dams and how their operations affect the game fish populations in the Flathead Basin. They also concern the reservoir levels of Hungry Horse and Libby and how these levels affect the game fish population in the reservoirs themselves. Operation procedures are to be recommended and mitigation levels for fish losses determined for effects of the hydroelectric system.

ACTION ITEM ACTIVITY SUMMARY:Objectives:

To determine the effects of reservoir drawdown and flows on resident fish in the Flathead River Basin in order to determine how various reservoir levels affect the fish in Libby and Hungry Horse Reservoirs.

Background and Progress to Date:

These projects have been implemented because the resident fish resources of the Flathead Basin have been severely affected by the construction and operation of Hungry Horse and Kerr dams. In the Kootenai Basin, the resident fish resources have been similarly affected by the construction and operation of Libby Dam. The effects of reservoir drawdown and flows on the kokanee and other game fish are being determined. When projects have been completed, recommendations will be made for hydro operations and seasonal drawdown levels compatible with the needs of the fish. Mitigation plans will be developed for losses that have occurred.

Plans:

The final reports for the projects were completed in 1989 and 1990; BPA will submit the project results to the Council. Recommendations for future action were submitted to the Council in May 1991.

Projects:

No BPA-funded projects.

7.12 STURGEON STUDIES
 (Fund Ongoing Studies)

- 903(e)(1) BPA shall fund research to determine the impacts of development and operation of the hydroelectric power system on sturgeon in the Columbia River Basin. These studies may include: 1) habitat requirements; 2) maintenance of genetic integrity; 3) stock assessment; 4) potential for artificial propagation; and 5) migrating potential. Specific recommendations for the protection, mitigation, and enhancement of sturgeon may be submitted to the Council upon completion of these studies.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To determine the impacts on white sturgeon from the development and operation of the hydropower system. Develop recommendations for the protection, mitigation, and enhancement of white sturgeon.

Background and Progress to Date:

Impacts on white sturgeon from the development and operation of hydropower have not been determined, but there is evidence that the impacts have been substantial. From a series of workshops funded by BPA, a work plan for sturgeon research was developed, followed by a sturgeon research program implementation plan. These were submitted to the Council, as called for by Action Item 7.12. Two projects are currently being funded by BPA. The University of Idaho (UI) study transferred from the University of Washington will determine early life history requirements and the genetic makeup of the stocks throughout the Basin. The other study, a four-agency project to determine the habitat requirements and status of stocks downstream from McNary Dam, is in its fifth field season.

Plans:

The genetic identification study was expanded into the Upper Columbia Basin and the Kootenai River areas and completed in FY 1991. A sturgeon hatchery was constructed on the Kootenai Indian Reservation. The habitat requirements and stock assessment study has been designed as a 6-year project because of the large study area and the multiple objectives involved.

I. COMPLETED PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>
89-44	White Sturgeon Early Life History Requirements and Genetics Study - UI	<p><u>Expected Completion Date:</u> July 1991</p> <p><u>Results/Conclusions:</u> Allelic differences were identified in fish from Lake Roosevelt and the Kootenai River. Stocks from the lower Columbia appear to be genetically similar. Behavioral patterns and food requirements for young sturgeon have been documented. Annual reports are available.</p> <p><u>Project Officer:</u> F. Holm</p> <p><u>Objectives:</u> 1. Determine whether white sturgeon are represented by genetically distinct stocks. 2. Determine the early life requirements for white sturgeon and habitat preferences.</p>

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
86-50	Determine the Status and Habitat Requirements of White Sturgeon Populations in the Columbia River Downstream from McNary Dam - ODFW (WDF, USFWS, and NMFS are subcontractors)	<p><u>Date initiated:</u> 1986</p> <p><u>Results/Conclusions:</u> Collection of all age groups of sturgeon has been successful, with larval sturgeon and eggs being collected in The Dalles and Bonneville Dam pools. Coordination with the work ongoing below Bonneville Dam is excellent.</p> <p>Annual reports for 1988-DOE/BP-63584-2 and 1989-DOE/BP-63584-3 are available.</p>	<ol style="list-style-type: none"> 1. 1992: Model development will continue to identify effects of hydropower on population status and habitat. 2. 1992: Project is scheduled for completion. 3. 1992: Final Report will be written.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
86-50 cont.	Objectives: Determine the status and habitat requirements of white sturgeon in the Columbia River downstream from McNary Dam. Detailed objectives and results are described in the Project's annual reports.		

III. NEW PROJECTS

None.

PEND OREILLE HATCH

----- PEND OREILLE HATCHERY (FORMER ACTION ITEM 41.4)

MEASURE LANGUAGE:

Not applicable. Council deleted measure in amended Program.

TECHNICAL SUBJECT ACTIVITY SUMMARY:

Objectives:

To design, construct, and evaluate the Pend Oreille (Cabinet Gorge) Hatchery. Evaluate 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.

Background and Progress to Date:

The Pend Oreille (Cabinet Gorge) Hatchery was completed in 1985. The hatchery is designed to produce 20 million kokanee fry annually to enhance the fishing of Lake Pend Oreille, which has been adversely affected by Cabinet Gorge and Albeni Falls dams and the introduction of mysis shrimp. BPA and the Washington Water Power Company shared the costs of constructing the facility. The IDFG funds the operation and maintenance of the hatchery. Evaluation activities are continuing.

Plans:

Fund evaluation activities through completion.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
85-339	<p>Kokanee Stock Status and Contribution of Cabinet Gorge Hatchery, Lake Pend Oreille, Idaho - IDFG</p> <p><u>Project Officer:</u> F. Holm</p> <p><u>Objectives:</u> Determine the contribution of the Cabinet Gorge Hatchery to the kokanee fishery in Lake Pend Oreille. Detailed objectives are described in the Project's annual reports.</p>	<p><u>Date initiated:</u> 1985</p> <p><u>Results/Conclusions:</u> Kokanee egg takes for the hatchery have fluctuated each year. 12 million eggs were taken in 1990. Only 5 million in 1991. Hatchery water problems are being solved: flushing flows from Cabinet Gorge Dam are required to get fingerlings down the Clark Fork River into Lake Pend Oreille. IDFG continues to work with Washington Water Power on this.</p> <p>The kokanee population in Pend Oreille was estimated to be 10.2 million in 1990 and 7.7 million in 1991. Population continues to fluctuate, but is higher than before the hatchery began to contribute fish to the lake.</p>	<p>1. 1992: Water will be requested for flushing flows in July and August 1992. Zooplankton data will be analyzed and results compared to previous years' data and related changes in kokanee densities and growth rates in order to define carrying capacity better. Some plants will be made, using a U.S. Navy barge. Creel census will be used to estimate contribution of Cabinet Gorge Hatchery.</p> <p>2. Project scheduled for completion in Spring of 1993.</p>

III. NEW PROJECTS

None.

7.13 ACCUMULATED MATERIALS IN KOOTENAI RIVER
(Initiate Removal >

903(d)(1) BPA shall fund the removal of materials which have accumulated in Kootenai River tributary deltas below Libby Dam as a result of the dam's construction and operation and which interfere with the migration of spawning fish.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

When necessary, remove materials which have accumulated in Kootenai River tributary deltas and which interfere with fish migration.

Background and Progress to Date:

Not applicable.

Plans:

None at this time.

7.14 IMPACTS OF DWORSHAK DAM
(Begin Assessment of Construction and Current Operation Impacts)

903(e)(4) BPA shall fund a study to assess the impacts of the original construction and current operation of Dworshak Dam on the resident fishery. This study will include the following research concerns of the Nez Perce Tribe: 1) population dynamics of kokanee; 2) reservoir productivity; 3) food habits of rainbow trout; 4) population dynamics and habitat preferences of small mouth bass; and, 5) the status of forage species. This study effort will be coordinated with the Corps. Recommendations detailing specific protection, mitigation and enhancement opportunities, consistent with the requirements of 804(e)(16), may be submitted to the Council.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To assess the status of resident fish stocks, particularly kokanee; to compare data to that obtained when reservoir was first filled; to determine whether changes are caused by operation of Dworshak Dam.

Background and Progress to Date:

Two projects have been funded to cover the five concerns listed in the Program Measure. IDFG and the NPT are the contractors for the projects. The projects started July 1, 1987.

Plans:

The projects will run until December 31 1991, at which time IDFG and the NPT may submit recommendations detailing specific protection, mitigation, and enhancement plans to the Council.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
87-99	<p>Dworshak Dam Impacts Assessment and Fisheries Investigation - IDFG</p> <p><u>Project Officer:</u> R. Austin</p> <p><u>Objectives:</u> 1. Assess the status of kokanee stocks in the reservoir.</p> <p>2. Document losses of kokanee fish in Dworshak Reservoir through turbines at Dworshak Dam.</p> <p>3. Assess limnological parameters and evaluate impacts of reservoir management on the zooplankton community and kokanee production.</p>	<p><u>Date initiated:</u> July 1987</p> <p><u>Results/Conclusions:</u> Kokanee abundance estimated from late June trawl data, was 540,000 fish in 1989. Anglers harvested 171,331 kokanee at 1.3 fish per hour. <u>Creeled</u> fish averaged 246 mm and 121 g; Yield was 3.1 kg/hr. Spawning escapement was similar to 1988 with 37,000 kokanee observed in five tributaries of the reservoir in mid-to-late September. Two-year old spawners (277 mm total length) comprised the bulk of the run.</p>	<p>1. FY 1991: Continue baseline data collection.</p> <p>2. FY 1992: Prepare final report coordinated with Project 87-407. Recommendations will be made to the Council for measures to protect, mitigate, and enhance resident fish in Dworshak Reservoir.</p>
87-407	<p>Dworshak Reservoir Investigation: Trout, Bass and Forage Species - NPT</p> <p><u>Project Officer:</u> R. Austin</p> <p><u>Objectives:</u> 1. Assess the status of rainbow trout, small mouth bass, and forage species in the reservoir.</p> <p>2. Assess changes in these populations in relation to reservoir management.</p>	<p><u>Date initiated:</u> July 1987</p> <p><u>Results/Conclusions:</u> An estimated 152,700 angler hours were expended from March 1989 through February 1990 to catch a total of 20,426 rainbow trout, 13,064 smallmouth bass, and 180 bull trout. Approximately 98% of the rainbow trout caught were of hatchery origin. Overall growth of smallmouth bass is better than that reported for other smallmouth bass populations at similar latitudes. Fish production has apparently stabilized</p>	<p>1. FY 1991: Continue baseline data collection.</p> <p>2. FY 1992: Prepare final report coordinated with Project 87-99. Recommendations will be made to the Council for measures to protect, mitigate, and enhance resident fish in Dworshak Reservoir.</p>

PROJECT
NUMBER

TITLE

PROJECT STATUS

SCHEDULE AND MILESTONES

87-407
cont.

since the extreme population fluctuations
noted during the 1970' s.

III. NEW PROJECTS

None.

7.15 ONGOING DRAWDOWN STUDIES

(Continue Cooperative Studies; Present Results to Council. Submit Recommendations by March 1, 1988.)

- 903(b)(3-4) [Abstract] BPA shall fund research to develop operating procedures for Libby and Hungry Horse, including establishment of reservoir levels to protect resident fish and development of alternative means to resolve conflicts between drawdown limits and requirements for fish flows by means of the water budget. BPA shall submit results to the Council by March 1, 1988. Mitigation projects shall be identified in the Flathead Basin in relation to construction and operation of Hungry Horse. Results will be submitted to the Council by November 15, 1987.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To determine the effects of reservoir operations on fish in Libby and Hungry Horse Reservoirs. Identify mitigation projects in the Flathead Basin in relation to construction and operation of the Hungry Horse hydroproject.

Background and Progress to Date:

Projects at Libby and Hungry Horse Reservoirs have been funded since 1983. Both projects were designed to document the effects of water level fluctuations on resident fish. The fluctuations reduce primary and secondary production in the reservoirs, hence they have a direct impact on fish production. Annual reports from 1983 through 1988 document these effects. Mitigation alternatives for losses from the construction and operation of Hungry Horse Dam are described in the final report for BPA-funded Project 85-23. The models developed during the project have been critically reviewed by researchers at the University of Washington.

Plans:

Recommendations for further action will be submitted to the Council after completion of the studies. Biological models will be run concurrently with the System Analysis Model to help guide recommendations.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

PROJECT
NUMBER

TITLE

PROJECT STATUS

SCHEDULE AND MILESTONES

83-465

Quantification of Hungry Horse Reservoir Levels Needed to Maintain or Enhance Reservoir Fisheries - MDFWP

Project Officer: D. Johnson

Objectives: 1. To study the effects of reservoir drawdown.
2. To develop a predictive model of hydro operations on resident fisheries, and recommend seasonal **drawdown** levels compatible with the needs of the fish.

Date initiated: April 1, 1983

Results/Conclusions: Reservoir **drawdown** has adverse effects on benthic **macro-**invertebrates and zooplankton, can increase competition between fish, and makes juveniles more accessible to predators. Fall **drawdown** is particularly damaging to cutthroat growth rates.

1. June 30, 1991: Biological model for the reservoir will be completed and runs will be made concurrently with the Systems Analysis Model. The biological model has been critically reviewed and will be improved by researchers at the University of Washington.

83-467

Quantification of Libby Reservoir Levels Needed to Maintain or Enhance Reservoir Fisheries - MDFWP

Project Officer: D. Johnson

Objectives: 1. To study the effects of reservoir drawdown.
2. To develop a predictive model of hydro operations on resident fisheries, and recommend seasonal **drawdown** levels

Date Initiated: April 1, 1983

Results/Conclusions: Gill net sampling indicates fluctuations in kokanee numbers. The reservoir model now includes a hydrologic component downstream to Duncan and Corra Linn dams.

1. June 30, 1991: Biological model for the reservoir will be completed and runs will be made concurrently with the Systems Analysis Model. The biological model has been critically reviewed and will be improved by researchers at the University of Washington.

2. Work on fish entrainment through the Libby Dam penstocks and effects of operations on the river fishery will continue in FY 1992 to increase utility of the reservoir model.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
83-467 (cont.)	compatible with the needs of the fish. 3. To perform an <i>instream</i> flow study below Libby Dam.		

III. NEW PROJECTS

None.

WILDLIFE ACTION ITEMS AND TECHNICAL SUBJECTS

8.1 LOSS STATEMENTS
(Fund as Needs are Identified.)

1003(b)(3) [Abstract] Bonneville shall fund studies to develop statements of wildlife and habitat losses at the projects listed in Table 3 of the Fish and Wildlife Program, including power-related storage and regulatory dams. These statements shall take into account all existing information pertinent to the project area and shall address both realized and potential positive and negative effects.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To obtain an estimate of the net impacts on wildlife and habitat from development and operation of Columbia River Basin Federal hydroelectric facilities. This information will be used in developing objectives to protect, mitigate, and enhance wildlife affected by hydro development and operation.

Background and Progress to Date:

The development of the hydroelectric system has caused both adverse and beneficial effects on wildlife and habitat. Action Item 8.1 calls for the funding of studies to identify net impacts on wildlife and wildlife habitat from hydroelectric development and operation. Study information will be used to develop Action Item 8.3: wildlife protection, mitigation, and enhancement plans.

Loss assessments have been completed for 22 of the 29 FCRPS facilities. Two facilities (Roza, and Chandler) do not require loss assessments. The U. S. Army Corps of Engineers has funded loss assessments for the Lower Snake facilities. The loss assessment for Chief Joseph Dam and Reservoir is currently ongoing (see Project 88-44 under Action Item 8.3).

Plans:

The Clearwater River Otter Study (Project 90-51) will continue and be completed in FY 1992.

I. COMPLETED PROJECTS

None

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
90-51	Clearwater River Otter Study - NPT <u>Project Officer:</u> S. Levy <u>Objectives:</u> Provide baseline data on population status, habitat use patterns, seasonal distribution, and food habitats of otters along the Clearwater River and its tributaries. This information will help identify site-specific limiting factors affecting otter populations in the Clearwater River drainage and help direct mitigation efforts towards the selection of effective mitigation techniques and locations of mitigation efforts.	<u>Date Initiated:</u> September 1990 <u>Results/Conclusions:</u> Final report due July 1992.	FY 1991: Continue monitoring of river otter per study. FY 1992: Draft report due September 31, 1992. Final report due August 31, 1992.

III. NEW PROJECTS

None.

8.2 LOSS STATEMENT CONSULTATIONS
(Begin Consultation)

1003(b)(4)(A) [Abstract] Upon completion of the 1003(b)(3) studies, the appropriate fish and wildlife agencies, Tribes, BPA, and project operators for each project shall review the results and discuss the options available to provide wildlife protection, mitigation, and enhancement in accordance with the Northwest Power Act.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To provide a review of Action Item 8.1, loss assessments, and to assist in the development of Action Item 8.3, wildlife protection, mitigation, and enhancement plans. No projects/contracts will be funded by BPA in implementing this Action Item.

Background and Progress to Date:

Consultations have been held on 19 of the 29 FCRPS facilities. Consultations are not anticipated for six facilities. Table 8 outlines the status of these consultations.

Plans:

No loss statement consultations are expected in FY 1992.

Projects:

None.

TABLE 6
STATUS OF ACTION ITEM 8.2 WILDLIFE CONSULTATIONS
AT FCRPS FACILITIES

<u>Hydro Facility</u>	<u>Status</u>	<u>Outcome</u>
<u>Montana</u>		
Hungry Horse	Held	Mitigation plan was funded.
Libby	Held	
<u>Idaho</u>		
Palisades	Held	Mitigation plan was funded.
Anderson Ranch	Held	
Black Canyon	Held	
Boise Diversion	Held	Determined it was not effective to fund development of a mitigation plan.
Dworshak	Held	Mitigation plan was funded.
Albeni Falls	Held	Combined loss assessment and mitigation plan funded.
Minidoka	Held	Mitigation plan was funded.
<u>Washington</u>		
Grand Coulee	Held	Mitigation plan was funded.
Chief Joseph	Held	Combined loss assessment and mitigation plan funded. FY 1991.
Lower Snake (Ice Harbor, Lower Monumental, Little Goose, Lower Granite)	None Proposed	Mitigation planning being conducted by USACE.
Chandler	None Proposed	Status Review findings indicated no need for mitigation planning.
Roza	None Proposed	Status Review findings indicated no need for mitigation planning.

<u>Hydro Facility</u>	<u>Status</u>	<u>Outcome</u>
<u>Oregon</u>		
Willamette		Mitigation plan was funded.
Cougar	Held	
Lookout Point	Held	
Dexter	Held	
Hills Creek	Held	
Green Peter	Held	
Foster	Held	
Detroit	Held	
Big Cliff	Held	
<u>Oregon/Washington</u>		
Bonneville	Held	Mitigation plan funded in FY 1991.
The Dalles	Held	Mitigation plan funded in FY 1991.
John Day	Held	Mitigation plan funded in FY 1991.
McNary	Held	Mitigation plan funded in FY 1991.

8.3 MITIGATION PLANS
(Fund Development)

1003(b)(4) [Abstract] Bonneville shall fund the development of mitigation plans for each of the projects listed in Table 3 of the Fish and Wildlife Program, including power-related storage and regulatory Dams.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To identify target wildlife species for protection, mitigation, and enhancement; to develop protection, mitigation, and enhancement goals/objectives; and to coordinate mitigation goals/objectives with interested and involved parties for Federal hydroelectric facilities.

Background and Progress to Date:

Action Item 8.3 pertains to the development of wildlife protection, mitigation, and enhancement plans. These plans are to take into account the wildlife impacts identified under Action Item 8.1, are to complement existing wildlife management plans and goals, and are to take into account the standards outlined in Measure 1003(b)(4)(C). Wildlife protection, mitigation, and enhancement goals/objectives developed in these plans are submitted to the Council for their approval and prioritization.

Table 9 outlines the status of mitigation plans at FCRPS facilities. Mitigation plans have been completed for 16 of the 29 FCRPS facilities. Mitigation plans are not anticipated for seven FCRPS facilities (Roza, Chandler, Boise Diversion, and Lower Snake Facilities).

Plans:

Mitigation plans for Minidoka, Bonneville, The Dalles, John Day, and McNary Dams will continue and be completed in FY 1991. Mitigation plan for Chief Joseph will be completed in FY 1992.

TABLE 7
STATUS OF ACTION ITEM 8.3 WILDLIFE MITIGATION PLANS
AT FCRPS FACILITIES

<u>Hydro Facility</u>	<u>Status</u>
<u>Montana</u>	
Hungry Horse	Completed
Libby	Completed
<u>Idaho</u>	
Palisades	Completed
Anderson Ranch	Completed
Black Canyon	Completed
Boise Diversion	None proposed
Dworshak	Completed
Minidoka	Completed
Albeni Falls	Completed
<u>Washington</u>	
Grand Coulee	Completed
Chief Joseph	Ongoing
Ice Harbor	None Proposed - Conducted by USACE
Lower Monumental	None Proposed - Conducted by USACE
Little Goose	None Proposed - Conducted by USACE
Lower Granite	None Proposed - Conducted by USACE
Chandler	None proposed
Roza	None proposed
<u>Oregon</u>	
Cougar	
Lookout Point	
Dexter	
Hills Creek	All completed
Green Peter	
Foster	
Detroit	
Big Cliff	
<u>Oregon/Washington</u>	
Bonneville	To be completed in FY 1991.
The Dalles	To be completed in FY 1991.
John Day	To be completed in FY 1991.
McNary	To be completed in FY 1991.

I. COMPLETED PROJECTS

PROJECT
NUMBER

TITLE

PROJECT STATUS

90-25

Lower Columbia Wildlife
Mitigation Plan - USFWS

Expected Completion Date: May 1991

Results/Conclusions: Not available at
this time.

Project Officer: J. DeHerrera

Objectives:

1. Identify target wildlife species for protection, mitigation, and enhancement.
2. Develop protection, mitigation, and enhancement goals/objectives.
3. Coordinate project activities with involved and interested parties (public involvement).

90-50

Minidoka Dam Wildlife
Mitigation Plan - IDFG

Expected Completion Date: May 1991

Results/Conclusions: A "draft" mitigation plan has been prepared by Idaho Department of Fish and Game, which coordinated project activities with an interagency work group. The work group developed the following prioritized mitigation goals: 1531 river otter habitat units (HU's) in riparian river habitat, 1,922 grouse HU's in shrub-steppe habitat, 1,746 mule deer HU's in shrub steppe habitat, and 175 yellow warbler HU's in deciduous scrub-shrub wetland habitat.

Project Officer: R. Austin

Objectives:

1. Develop and prioritize protection, mitigation, and enhancement goals for wildlife affected by hydroelectric development and operation (e.g., Wildlife Mitigation Plan).
2. Recommend protection, mitigation, and enhancement actions.
3. Coordinate project activities with interested/involved parties (public involvement).

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
88-44	Chief Joseph Wildlife Mitigation Plan - WDW	<u>Date Initiated:</u> February 1991	November 1, 1991: Draft mitigation plan.
	<u>Project Officer:</u> J. DeHerrera	<u>Results/Conclusions:</u> None at this time.	August 1991: Public review.
	<u>Objectives:</u>		January 15, 1992: Final mitigation plan.
	1. Develop and prioritize protection, mitigation, and enhancement goals for wildlife affected by hydroelectric development and operation (e.g., Wildlife Mitigation Plan).		
	2. Recommend protection, mitigation, and enhancement actions.		
	3. Coordinate project activities with interested/involved parties (public involvement).		

III. NEW PROJECTS

None

- 8.4 LIBBY DAM MITIGATION
(Initiate Advance Design for White-Tailed Deer, Mule Deer, Columbia Sharp-Tailed Grouse, and Waterfowl Projects; Continue Implementation and Monitoring of Bighorn Sheep Project: 1987)
- 8.5 LIBBY DAM MITIGATION
(Continue Advance Design for Deer, Waterfowl, Grouse Projects; Begin Implementation and Monitoring for Mule Deer Project; Continue Implementation and Monitoring of Bighorn Sheep Project: 1988)
- 8.6 LIBBY DAM MITIGATION
(Begin Implementation and Monitoring for White-Tailed Deer, Grouse, and Waterfowl Projects; Continue Implementation and Monitoring of Mule Deer and Bighorn Sheep Projects: 1989)
- 8.7 LIBBY DAM MITIGATION
(Continue Implementation and Monitoring for White-Tailed Deer, Mule Deer, Bighorn Sheep, Grouse, and Waterfowl Projects: 1990. 1991)
- 1003(b)(7) [Abstract] Bonneville shall implement Council approved mitigation priorities and plans at Federal projects through the Implementation Planning Process. Council-approved mitigation plans and priorities for Libby Dam are listed in Table 4 of the 1987 Fish and Wildlife Program.

Table 4 calls for BPA to undertake projects to enhance winter range in Northwest Montana to support a target carrying capacity of an additional 1,340 white-tailed deer, 485 mule deer, and 66 bighorn sheep. Table 4 also calls for the protection of 2,462 acres of prairie habitat for Columbia sharp-tailed grouse, and 3,418 acres of wetland habitat in the Flathead Valley.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To undertake advance design and then begin implementation of the wildlife mitigation projects for Libby Dam.

Background and Progress to Date:

Action Items 8.4 through 8.7 pertain to the advance design and implementation of wildlife mitigation projects for Libby Dam.

In FY 1987, BPA began advance design for the wildlife habitat improvement and protection projects. In FY 1988, BPA continued advance design and began big game habitat improvement projects. Big Game habitat improvement projects were continued in FY 1989 and FY 1990. Sharp-tailed grouse work was initiated in FY 1989 and continued in FY 1990.

Plans:

BPA plans to continue and complete projects for bighorn sheep, mule deer, and sharp-tailed grouse in FY 1991. Future wildlife projects for Libby Dam will be funded through the Montana Wildlife Mitigation Trust Agreement.

I. COMPLETED PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>
87-55	Northwest Montana Wildlife Habitat Enhancement - MDFWP <u>Project Officer:</u> R. Walker <u>Objectives:</u> This project undertakes advance design of the habitat enhancement actions for Libby and Hungry Horse Dams. 1. Develop a habitat enhancement plan for elk/mule deer on Flathead National Forest lands. 2. Develop a habitat enhancement plan for mule deer/bighorn sheep on Kootenai National Forest lands.	<u>Date Completed:</u> January 1991 <u>Results/Conclusions:</u> Not available at this time.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
88-43	Libby Wildlife Habitat Enhancement - USFS <u>Project Officer:</u> R. Walker <u>Objectives:</u> Initiate habitat improvement activities on Kootenai National Forest lands for mule deer and bighorn sheep. Treat approximately 1000 acres of key winter range by slashing and prescribed burning.	<u>Date Initiated:</u> September 1988. <u>Results/Conclusions:</u> Not available at this time.	1. Spring 1991: Continue habitat treatments. 2. December 1991: Project Completion.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
90-49	Libby/Hungry Horse Wildlife Project - MDFWP	<u>Date Initiated:</u> May 1990 <u>Results/Conclusions:</u> Not available at this time.	1. March 1991: Status report on Libby/Hungry Horse Habitat Protection Program. 2. April 1992: Draft report on grouse mitigation program. 3. June 1992: Final report on grouse mitigation program and project completion
	<u>Project Officer:</u> R. Walker <u>Objectives:</u> 1. Determine critical habitats necessary for the protection, enhancement, and maintenance of grouse on the Tobacco Plains. 2. Develop a mitigation strategy for grouse. 3. Refine the habitat protection programs for Libby and Hungry Horse. 4. Coordinate project activities with interested/involved parties.		

III. NEW PROJECTS

None

- 8.8 HUNGRY HORSE DAM MITIGATION
(Initiate Advance Design/Begin to Implement Elk/Mule Deer Project; Begin Advanced Design, Interagency Coordination, Site Prioritization, and Appraisals for Black Bear/Grizzly Bear, Waterfowl, Terrestrial Furbearer Projects: 1987.)
- 8.9 HUNGRY HORSE DAM MITIGATION
(Continue Advance Design Waterfowl, Terrestrial Furbearer, Black Bear/Grizzly Bear Projects; Continue Implementation/Monitoring of Elk/Mule Deer Project: 1988.)
- 8.10 HUNGRY HORSE DAM MITIGATION
(Begin/Continue Implementation of Waterfowl, Elk/Mule Deer, Black Bear/Grizzly Bear Projects: 1989-1991.)

1003(b)(7) [Abstract] Bonneville shall implement Council approved mitigation priorities and plans at Federal projects through the Implementation Planning Process. Council-approved mitigation plans and priorities for Hungry Horse Dam are listed in Table 4 of the 1987 Fish and Wildlife Program.

Table 4 calls for BPA to undertake projects to enhance winter range in Northwest Montana to support a target carrying capacity of additional 133 elk. Table 4 also calls for the protection of 8,590 acres of riparian habitat for grizzly bears and 1,146 acres of wetland habitat, along with determining the feasibility of protecting 11,050 acres of old-growth timber for terrestrial furbearers.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To undertake advance design and then begin implementation of the wildlife mitigation projects at Hungry Horse Dam.

Background and Progress to Date:

Action Items 8.8 through 8.10 pertain to the advance design and implementation of wildlife mitigation for Hungry Horse Dam.

In FY 1987, BPA initiated advance design for the wildlife habitat improvement and protection projects. In FY 1988, BPA continued advance design and began habitat improvement and protection projects. In FY 1989 and FY 1990, habitat improvement and protection projects were continued.

Plans:

BPA plans to continue and complete activities for the elk/mule deer habitat enhancement projects and the easement/acquisitions (habitat protection) projects in FY 1991. Future wildlife projects for Hungry Horse Dam will be funded through the Montana Wildlife Mitigation Trust Agreement.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
88-113	Hungry Horse Wildlife Habitat Enhancement - USFS <u>Project Officer:</u> R. Walker <u>Objectives:</u> Begin habitat improvement activities on Flathead National Forest lands for elk and mule deer. Treat approximately 500 acres of key winter range by slashing and prescribed burning.	<u>Date Initiated:</u> September 1988 <u>Results/Conclusions:</u> Not available at this time.	1. Fall 1990: Continue habitat treatments. 2. Spring 1991: Continue habitat treatments. 3. December 1991: Project completion.
89-23	Montana Wildlife Habitat Protection - MDFWP <u>Project Officer:</u> R. Walker <u>Objectives:</u> 1. Obtain information to evaluate specific habitats for protection. 2. Provide coordination for project actions. 3. Protect specific habitats.	<u>Date Initiated:</u> September 1989 <u>Results/Conclusions:</u> None at this time.	1. May - June 1990: Evaluate feasibility of modifying project to protect specific habitats. 2. September 1990: Report summarizing project activities. 3. September 1990: Project modification to provide for protection of specific habitats through Grant. 4. October 1991: Draft completion report due. 5. December 1991: Final completion report due.

III. NEW PROJECTS

None.

8.11 PUBLIC INVOLVEMENT ON MITIGATION PLANS
(Fund Public Involvement Concerning Mitigation Plans)

1003(b)(4)(B) [Abstract] Bonneville shall fund the entity or entities preparing mitigation plans to conduct appropriate public involvement activities to ensure that interested and affected parties are informed concerning the mitigation plans and have been afforded the opportunity to comment on them.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To conduct appropriate public involvement for the mitigation plans being developed pursuant to Measure 1003(b)(4). No projects/contracts will be funded by BPA under this Action Item. Public involvement will be funded as part of the mitigation planning effort under Action Items 8.1 and 8.3.

Background and Progress to Date:

Public involvement on mitigation plans for Grand Coulee Dam in Washington; Palisades, Black Canyon, Anderson Ranch, Albeni Falls, and Dworshak and Minidoka Dams in Idaho; Bonneville, the Dalles, John Day and McNary Dams on the Lower Columbia; and for the Willamette facilities in Oregon have been completed by the entities that prepared these plans.

Plans:

Public involvement for mitigation plan for Chief Joseph will be completed in FY 1992.

Projects:

None.

8.12 FUND IMPLEMENTATION OF MITIGATION PRIORITIES
(Fund Mitigation Priorities approved by the Council)

1003(b)(7) Bonneville shall implement Council approved mitigation priorities and plans at Federal projects through the implementation planning process. Projects to be implemented shall take into consideration the standards listed under Measure 1003(b)(7). [Abstract]

ACTION ITEM ACTIVITY SUMMARY

Objectives:

To identify, develop, and implement projects for priority wildlife mitigation objectives for Federal hydroelectric facilities.

Background and Progress to Date:

Wildlife mitigation has been implemented in the states of Oregon, Washington, or Idaho. Efforts to date have been directed towards Phase I implementation and acquisition.

The Council adopted wildlife mitigation priorities for Grand Coulee Dam in Washington; for Palisades, Black Canyon, Minidoka, Dworshak, Anderson Ranch, and Albeni Falls Dams in Idaho; and for the Willamette facilities in Oregon. BPA initiated funding for six projects in FY 1991 utilizing FY 1991 placeholder funds.

Plans:

BPA will continue to implement activities begun under FY 1991 projects and plans to initiate additional wildlife mitigation projects for Federal hydroelectric facilities in Oregon, Washington, and Idaho in FY 1992 per placeholder project, Project 91-16.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
90-91	Dworshak Old Growth - IDFG <u>Project Officer:</u> J. DeHerrera <u>Objectives:</u> Protect, through acquisition, 108 acres of "old growth" timber and adjacent mature forest. Develop management plan and Terms of Title for Idaho	<u>Date Initiated:</u> September 1990 <u>Results/Conclusions:</u> None at this time.	FY 1991: Fund acquisition. FY 1992: Develop and implement management plan and operations and maintenance program.
90-92	Conforth Ranch Advance Design Study - USFWS <u>Project Officer:</u> R. Walker <u>Objectives:</u> Conduct advance design study to facilitate decision on implementation of acquisition. With Council consent, implement decision on acquisition and conduct management planning and NEPA process.	<u>Date Initiated:</u> September 1990 <u>Results/Conclusions:</u> None at this time.	FY 1991: Complete feasibility study, conduct Habitat Evaluation Procedure (HEP), and fund acquisition, dependent on analysis and appraisal results and NPPC recommendation. Develop management plan. FY 1992: Implement management plan and operations and maintenance program.
91-61	Pygmy Rabbit/Tracy Rock Sharp Tail Grouse - WDW <u>Project Officer:</u> R. Walker	<u>Expected Start Date:</u> April 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Complete Phase I. FY 1992: Initiate Phase II.

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
91-63 cont.	<p><u>Objectives:</u> Phase I: Develop programmatic management plan, NEPA, memorandum of agreement with WDW, Habitat Evaluation Procedure (HEP) and easement terms and conditions for management area. Inventory and prioritize acquisition/protection areas. Phase II: Implement easement/fee acquisition as per plan. Initiate necessary operations and maintenance programs.</p>		
91-60	<p>Pend Oreille Wetlands - UCUT</p> <p><u>Project Officer:</u> J. DeHerrera</p> <p><u>Objectives:</u> Protect through fee acquisition, 440 acres of wetlands and riparian habitat. Develop management plan/NEPA and MOA with Kalispel Tribe. Implement management plan for enhancement and protection activities.</p>	<p><u>Expected Start Date:</u> April 1991</p> <p><u>Results/Conclusions:</u> Not available</p>	<p>FY 1991: Fund acquisition; develop MOA and HEP analysis. Fund management plan, with public involvement.</p> <p>FY 1992: Implement management plan and O&M program.</p>
91-62	<p>Blue Creek Winter Range - Spokane Tribe (UCUT)</p> <p><u>Project Officer:</u> R. Walker</p> <p><u>Objectives:</u> Protect through easement acquisition 4,400 acres of Tribal lands. Fund management plan to address protection/enhancement of target species: white-tail deer, sharptail grouse, ruffed grouse.</p>	<p><u>Expected Start Date:</u> April 1991</p> <p><u>Results/Conclusions:</u> None at this time.</p>	<p>FY 1991: Complete programmatic management plan, NEPA, MOA, and negotiate easement terms and conditions.</p> <p>FY 1992: Negotiate conservation easement or agreement with Spokane Tribe on all or portion of 4,400 acres.</p>

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
91-63	South Fork Snake River - IDFG and TNC <u>Project Officer:</u> R. Walker <u>Objectives:</u> Phase I: Complete programmatic management plan, NEPA, MOA and HEP; develop easement terms and conditions. Inventory and prioritize acquisition/protection areas. Phase II: Implement easement/fee acquisition as per plan. Initiate necessary operations and maintenance programs.	<u>Expected Start Date:</u> April 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Complete Phase I. FY 1992: Initiate Phase II.

III. NEW PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
91-16	Wildlife Mitigation - FY 1992 (Oregon, Washington, Idaho) <u>Project Officer:</u> R. Walker <u>Objectives:</u> Begin development and implementation of wildlife mitigation projects for Federal facilities in Oregon, Washington, and Idaho. Multiple mitigation actions (projects) will be developed and implemented.	New Project	1. Initiation of new projects contingent upon funding availability and implementation status of FY 1991 projects. 2. Initiation is also dependent upon scopes of work being developed and coordinated for priority mitigation objectives.

8.13 DEVELOP MONITORING AND EVALUATION PROGRAM
(In Consultation with Involved Parties, Develop a
Monitoring and Evaluation Program>

1003(c) Bonneville shall develop in consultation with the Council, the fish and wildlife agencies and tribes, utilities, and other interested parties a comprehensive program to monitor and evaluate the effectiveness of the wildlife program.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To develop and implement a program to monitor and evaluate wildlife projects funded by BPA.

Background and Progress to Date:

Wildlife mitigation to date has been limited to efforts for Libby and Hungry Horse Dams in the State of Montana. Monitoring and evaluation of these activities are being undertaken through the Montana Wildlife Mitigation Trust Agreement. Mitigation has not yet been initiated for facilities in Oregon, Idaho, and Washington. Monitoring and evaluation will be undertaken as part of the mitigation efforts in these states.

Plans:

In FY 1991, BPA will initiate development with the Council, the fish and wildlife agencies and tribes, utilities, and other interested parties a wildlife monitoring and evaluation program. Actions to be undertaken and/or funded will be determined through this planning effort. In FY 1992, BPA will contract with outside source for program development after parameters are established by consultations.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

None.

III. NEW PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>P R O J E C T</u>	<u>SCHEDULE AND MILESTONES</u>
92-xxx	Monitoring and Evaluation Program <u>Project Officer:</u> R. Walker <u>Objectives:</u> To develop, per the Council's Wildlife Rule, a monitoring and evaluation program that establishes parameters, methodology and guidelines for monitoring and evaluating ongoing wildlife mitigation, protection, and enhancement projects, basin-wide.	New Project	FY 1991: Initiate consultations to formulate scope. FY 1992: Complete development of monitoring and evaluation program. Initiate implementation of the program.

FUND. OF HUNGRY HORSE/LIBBY MITIGATION

----- INNOVATIVE FUNDING OF HUNGRY HORSE/LIBBY MITIGATION
(Fund the Montana Wildlife Trust)

1003(b)(7) [Abstract] Bonneville shall implement Council approved mitigation priorities and plans at Federal Projects. Council approved mitigation plans and priorities for Libby and Hungry Horse Dams are listed in Table 4 of the 1987 Fish and Wildlife Program.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

Implement the Wildlife Mitigation Agreement (Montana Trust Fund) negotiated between BPA and the State of Montana for funding wildlife mitigation for Libby and Hungry Horse dams.

Background and Progress to Date:

BPA and the State of Montana signed a mitigation agreement in December 1988. The agreement establishes a \$12.5 million Trust Fund to finance wildlife mitigation for Libby and Hungry Horse Dams. BPA made its first payment of \$2 million to the Trust Account in December 1989 and a subsequent payment of \$2 million in December 1990..

Plans:

BPA plans to make its scheduled payment to the Trust account in December 1991.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
89-52	Montana Wildlife Trust <u>Project Officer:</u> R. Walker <u>Objectives:</u> 1. Establishes a \$12.5 million Trust Account. 2. Sixty year agreement. 3. Addresses impacts to wild-life from the development of Libby and Hungry Horse Dams. 4. Montana, through the use of Trust Account, responsible for Wildlife Mitigation.	<u>Date Initiated:</u> December 1988 <u>Results/Conclusions:</u> Initial payment of \$2 million was made to the Trust Account in December 1989. Subsequent payment of \$2 million made in December 1990.	1. December 1991: Make scheduled payment to the Trust Account. 2. Subsequent payments to be made on an annual basis.

III. NEW PROJECTS

None.

**FUTURE HYDROELECTRIC DEVELOPMENT
ACTION ITEMS AND TECHNICAL SUBJECTS**

9.1 APPLICATION OF PROGRAM SECTIONS 1204(a), (b), (c), AND (e) TO NEW PROJECTS

1103 (a-c, e) [Abstract] These measures direct BPA and the hydroelectric project operators and regulators not to license, exempt from license, relicense, propose, recommend, agree to acquire power from, grant billing credits for, or otherwise support any hydroelectric development in the Columbia River Basin without providing for numerous development conditions related to protection of fish and wildlife resources.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To apply Program Section 1103(a-c, e) to all new hydro projects.

Background and Progress to Date:

BPA is applying these Program sections to the BPA Hydro Options Program.

Plans:

BPA will continue to apply these program sections to the BPA Hydro Options Program and any future hydro development.

Projects:

No BPA-funded projects.

9.3 ASSESSMENT OF CUMULATIVE EFFECTS
(Complete Study; Develop Methods: June 1987)

1103(b)(2) Develop methods for assessing the cumulative effects of hydroelectric development upon fish and wildlife in the Columbia River Basin.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To review all pertinent literature on potential cumulative hydroelectric effects, for specific key fish and wildlife species; to analyze existing techniques for assessment of identified cumulative effects; to develop an array of recommended pertinent assessment techniques for a cumulative effects method; and to develop a hypothetical example of a cumulative assessment using the method.

Background and Progress to Date:

Development of a cumulative effects method supported the Council's desire to have all applications or proposals for hydroelectric development reviewed in a consolidated manner. Project 84-41 (completed in 1987) developed a methodology to assess potential cumulative effects.

Plans:

BPA has no plans for further funding.

Projects:

No BPA-funded projects.

9.4 TURBINE INTAKE SCREENS
(Develop New Designs, Complete Tests, Report to Council: January 1989)

1103(d) Bonneville shall fund studies to determine the effectiveness of new designs for turbine intake screens and their suitability for application at small hydroelectric projects.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

To develop a new standard fish screen that is biologically efficient and cost-effective for hydro developers.

Background and Progress to Date:

Installation and maintenance of currently available screening systems are expensive and must be tailored to the site. Most present screen systems have not been tested sufficiently to be characterized as proven. Existing designs and new designs must be evaluated to determine which designs are biologically and economically efficient. The suitability of screen designs for application at small hydroelectric facilities must also be determined. The intent is to provide acceptable fish screen designs with general applicability for regional hydropower developers.

Plans:

Presently deferred, since BPA's adoption of Protected Areas in its Long-Term Intertie Access Policy provides protection for fish investments through denying access to the Pacific Northwest-Pacific Southwest Intertie to any new hydroelectric projects located in designated Protected Areas of the Columbia River Basin.

Projects

No BPA-funded projects.

WORK AND EXPENDITURE PLAN
ACTION ITEMS

10.1- EXPENDITURE AND OBLIGATION PLANS

10.3 (Submit to Council by September 15 of Each Year. Update and Submit Information Quarterly. Submit Review of Previous Year. Report Expenditures by Measure.)

1203(a,c,d) [Abstract] These measures describe Program implementation by Federal project operators and regulators and BPA, consultation and coordination, and BPA funding of the Program.

ACTION ITEM ACTIVITY SUMMARY:

Objectives:

The Annual Implementation Work Plan (AIWP) describes BPA plans for implementation of the Council's Program and, in particular, the Action Plan. The AIWP is intended to contain:

1. A report on progress to date on each Action Item.
2. A description of the activities to be undertaken under each Action Item, including;
 - a. the objective of each activity, and
 - b. the schedule for each activity, including key decision points and major milestones.

Background and Progress to Date:

Annually since FY 1986, BPA has completed a Program Work Plan and submitted this plan to the Council.

In 1987, BPA began developing a Program Implementation Planning Process (IPP) that would provide an opportunity for the agencies, Tribes, and other interested parties to become more involved in planning the implementation of the Program. Development of this process was completed in 1988, and the IPP (see Section III) was endorsed by the BPA Administrator and the Chairman of the CBFWA on October 19, 1988. The IPP's Policy Review Group (PRG) was formed in late 1988. In January 1989, the PRG began providing BPA with policy and funding recommendations related to Program implementation. The AIWP is based on the outline developed by the PRG during Step 1 of the annual IPP annual cycle.

Plans:

The AIWP will continue to be developed through the IPP.

PROGRAM-RELATED, NON-MEASURE PROJECTS

PROGRAM-RELATED PROJECTS

----- PROGRAM-RELATED PROJECTS

MEASURE LANGUAGE:

Not applicable. These are non-measure projects.

TECHNICAL SUBJECT ACTIVITY SUMMARY:

See individual projects in the following table.

I. COMPLETED PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>
87-130	An Assessment of the Freeze Brand Recovery Data for Yearling Chinook Salmon at McNary Dam - NMFS <u>Project Officer:</u> D. Johnson <u>Objectives:</u> Determine whether PIT-tagged and freeze-branded yearling chinook and steelhead are recovered at different rates and identify the sources of sampling error.	<u>Date Completed:</u> 1990 <u>Results/Conclusions:</u> Information pending for first draft. Final report is in print.
82-16	Yakima River Spring Chinook Enhancement Study - YIN <u>Project Officer:</u> T. Vogel <u>Objectives:</u> Establish methods to rebuild spring chinook salmon runs in the Yakima River while maintaining the genetic components of the naturally reproducing stocks.	<u>Expected Completion Date:</u> April 1991 <u>Results/Conclusions:</u> Information has been collected on survival and emergence from redds, survival from fry to smolt, and downstream movement of fry. Project annual reports are available; final report will be available in April 1991.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
82-13	Coded Wire Tag/Sampling Program Recovery - PSMFC <u>Project Officer:</u> P. Poe <u>Objectives:</u> Support WDF, WDW,	<u>Date initiated:</u> 1982 <u>Results/Conclusions:</u> Commercial and sport fishery recoveries of coded-wire tagged salmon and steelhead were de-coded, compiled, and reported.	Continuing: BPA will continue to fund coded-wire tag recoveries.

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
82-13 (cont.)	and ODFW fishery recoveries of coded-wire tagged salmon and steel head.		
86-13	Augmented Fish Health Monitoring in Washington - WDW	<u>Date initiated/completed:</u> 87-13: Completion expected August 1991 87-54: Completion expected July 1991	1. Continuing: Fund a comprehensive fish health management system through standardized monitoring.
86-54	Augmented Fish Health Monitoring in Washington - WDF	87-117: Initiated June 1987 87-118: Initiated June 1987 87-119: Initiated July 1987	2. Continuing: Ensure compatibility of the data generated by these projects with that of the Artificial and Natural Production Data Bases (Program Measure 204).
87-117	Augmented Fish Health Monitoring in Idaho - IDFG	<u>Results/Conclusions:</u> Projects have assured consistent fish health data monitoring and reporting in the Columbia Basin anadromous fish hatcheries.	
87-118	Augmented Fish Health Monitoring in Oregon - ODFW	Project summaries have been written to verify what parameters should be either dropped or continued in a monitoring program.	
87-119	Augmented Fish Health Monitoring - USFWS		
	<u>Project Officer:</u> R. Morinaka		
	<u>Objectives:</u> Collect data in a systematic, standardized manner and provide a system of rapid storage and retrieval of fish health/production information in the anadromous fish hatcheries of the Columbia River Basin. Begin to develop a documentation and data retrieval system that can be used by persons who are not fish diagnosticians.		

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
89-20	<p>Airlift Fabrication</p> <p><u>Project Officer:</u> W. Maslen</p> <p><u>Objectives:</u> Provide funding for fabrication of airlift fish sampling devices and miscellaneous supporting hardware for Ice Harbor, John Day, and The Dalles Dams, as specified in the Fish Spill Memorandum of Agreement. This equipment supports monitoring programs specified under projects 84-14 and 87-127.</p>	<p><u>Date Initiated:</u> 1989</p> <p><u>Results/Conclusions:</u> r l i f t sampling device was fabricated for use at The Dalles Dam.</p>	<p>Additional airlift fish sampling devices may be fabricated, as agreed by the parties.</p>
90-80	<p>Columbia River Basin PIT-Tag Information System (PTAGIS) - PSMFC</p> <p><u>Project Officer:</u> P. Poe</p> <p><u>Objectives:</u></p> <p>1. To develop, operate, maintain, and enhance a long-term Columbia River Basin-wide database of information on PIT-tagged fish to ensure that all PIT-tag information is available in a timely and useful manner to all state, Federal, Tribal and other interested entities.</p>	<p><u>Date Initiated:</u> May 1990</p> <p><u>Results/Conclusions:</u> PTAGIS office established at the Pacific States Marine Fisheries Commission (PSMFC) in Portland in 1990. Completed transfer of data and maintenance of PIT tage systems from NMFS, Seattle to PTAGIS, Portland, 1991.</p>	<p>1. 1992: Operate, maintain, and enhance Columbia River PIT-tag systems and database.</p> <p>2. Continuing: BPA will continue to fund PTAGIS.</p>

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
90-80 cont.	2. To perform all other activities related to Columbia River PIT-tag systems including: maintenance and documentation of fish tagging and interrogation systems; operation and maintenance of equipment at the remote sites. Provision of technical support for software and hardware; provision of training to users; and purchase of PIT-tags and associated equipment.		

III. NEW PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
90-60	<p>Bypass Evaluations</p> <p><u>Project Officer:</u> W. Maslen</p> <p><u>Objectives:</u> As provided under the terms of the Fish Spill MOA.</p> <ol style="list-style-type: none"> 1. Determine fish guiding efficiency of prototype bypass screens. 2. Determine fish guiding efficiency of installed bypass screens. 3. Evaluate various means to improve fish guiding efficiency of substandard bypass facilities. 	<p>New Project</p> <p>Bypass evaluations have not been conducted under the terms of the Fish Spill Memorandum of Agreement.</p>	<p>FY 1992 and beyond: Provide funding as necessary to conduct prototype and post-installation testing of bypass screens (and sluiceway where appropriate), as provided in the Fish Spill Memorandum of Agreement.</p> <p>FY 1992 - 1993: Prototype testing of standard-length submersible traveling screens at Lower Monumental Dam, as per terms of the fish spill MOA.</p> <p>FY 1993 - 1994: Prototype testing of standard length submersible traveling screens at Ice Harbor Dam, as per terms of Fish Spill MOA.</p>

VIII. NON-ACTION ITEM PROJECTS

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
91-19	Hungry Horse Fisheries Mitigation - MDFWP <u>Project Officer:</u> FWH <u>Objectives:</u> Replace hydro-related losses of resident fish in three major areas of the system: Hungry Horse Reservoir, downstream river habitats in the Flathead System, and Flathead Lake. The project should accomplish reasonable mitigation for the impacts of Hungry Horse Dam on resident fish in the Flathead drainage.	<u>Expected Start Date:</u> FY 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Start project once Council has amended mitigation actions into the Program.

III. NEW PROJECTS

None.

IX. APPENDICES

APPENDIX A

NON-PROGRAM, INTERNAL SUPPORT PROJECTS

This section of the AIWP lists and describes BPA Division of Fish and Wildlife internal support projects. These projects do not implement measures in the Program and were not subject to PRG review as part of the IPP. The projects are included in the AIWP to help the PRG and the public to better understand what BPA is doing.

I. COMPLETED PROJECTS

None.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
86-118	<p>Fish and Wildlife Task Order Agreement - BPNL</p> <p><u>Project Officer:</u> R. Austin</p> <p><u>Objectives:</u> To supplement the limited staff and time resources of BPA's Division of Fish and Wildlife with the services of a professional contractor (BPNL), who can provide technical assistance on a wide variety of tasks.</p>	<p><u>Date initiated:</u> June 1986</p> <p><u>Results/Conclusions:</u> Nine task orders have been completed under this master task order agreement: (1) Spring Chinook Outplanting, (2) Production/Cost Records, (3) Yakima Hatchery Master Plan, (4) Yakima Flow Enhancement, (5) Yakima Hatchery Master Plan II, (6) Smolt Survival Workshop, (7) Predator/Prey Workshop, (8) Hatchery Effectiveness TWG Workshop, (9) Anadromous Fish Release Workshop, (10) Evaluation of potential application of Burnham et al. (1987) statistical methods for estimating smolt survival in the Columbia River. If the task order implements a Program project, the task order is listed in the AIWP under the appropriate Action Item.</p>	<p>FY 1992: Continue funding master task order agreement. Initiate individual technical assistance tasks orders as required by BPA staff.</p>
87-413	<p>Fish and Wildlife Task Order Agreement, Fisheries Technical Assistance - UW</p> <p><u>Project Officer:</u> V. Jagendorf</p> <p><u>Objectives:</u> To assist the limited staff and time resources of BPA's Division of Fish and Wildlife through the</p>	<p><u>Date Initiated:</u> September 1987</p> <p><u>Results/Conclusions:</u> Numerous task orders have been completed under this master task order agreement, including 1) review of Project 84-46, Development of a Vaccine for Bacterial Kidney Disease in Salmon; 2) review of BPA's anadromous fish passage assessment methods; 3) review of relevant</p>	<p>FY 1992: Continue funding master task order agreement. Initiate individual technical assistance task orders as required by BPA staff.</p>

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
87-413 cont.	services of a uniquely qualified professional staff able to provide technical assistance on diverse fish and wildlife issues.	statistics and reports on population dynamics of Hanford Reach fall chinook salmon; and 4) conduct of a smolt survival workshop. If the task order implements a Program project, the project is listed in the AIWP under the appropriate Action Item.	
88-125	<p>Anadromous Fish Planning and Implementation Decision Support System - RFF</p> <p><u>Project Officer:</u> M. Schneider</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none"> 1. Complete cost-effectiveness (C-E) analysis of alternatives in selected Subbasin Plans, utilizing assistance from all possible regional entities. 2. Compare existing and proposed fish passage alternatives with propagation alternatives of Subbasin plans. 3. Provide technical participation on Council's Analytical Methods Work Group (AMWG) to integrate System Planning Model (SPM) and Stochastic Life-Cycle Model (SLCM). 4. Long Term: Complete model components needed for C-E analysis of mitigation issues, including training and assistance needed for use of models by analysts in the region. 	<p><u>Date Initiated:</u> FY 1991</p> <p><u>Results/Conclusions:</u> A Stochastic Life-Cycle Model (SLCM) was developed to analyze effects of proposed actions. SLCM was applied to Wenatchee, Entiat, Methow, and Okanogan subbasins. C-E analysis was expanded to include other selected subbasins. SLCM was also applied to the BPA Accord-ESA actions.</p>	<p>FY 1992: Complete C-E analysis of selected Subbasin Plans. Prepare C-E comparison of all passage and production alternatives consistent with BPA passage alternatives. Assist in application of C-E analysis to Council's Program amendment process.</p> <p>FY 1993: In coordination with the Monitoring and Evaluation Work Group and UW's Center for Quantitative Science, complete mitigation decision support system models and user guides, and provide user support. Review methods used to evaluate fish production potential and cost of plan options.</p>

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
89-47	Technical Assistance - Consultant	<u>Date Initiated:</u> 1989	Continuing: Schedule and milestones vary with timing of issues and receipt of proposals.
	<u>Project Officer:</u> D. Johnson	<u>Results/Conclusions:</u> Various technical recommendations on Water Budget Effectiveness and Reservoir Mortality have been made to BPA.	
	<u>Objectives:</u> 1. Provide recommendations on fish passage related research and monitoring; 2. Assist in development of research designs.		
89-62	Implementation Planning Process (IPP) Coordination - PSMFC	<u>Date Initiated:</u> May 1989	FY 1992: BPA plans to continue funding the IPP Coordination contract.
	<u>Project Officer:</u> J. Gislason	<u>Results/Conclusions:</u> BPA has funded an IPP Coordinator position with the CBFWA through a contract with the PSMFC. Through this contract, BPA also reimburses most of the SRG members or their employers for the time that the members spend on SRG activities. BPA also funds seven SG Chairs, who are designated by the CBFWA, through the contract with PSMFC.	
	<u>Objectives:</u> 1. Facilitate communication among BPA, CBFWA, Policy Review Group (PRG), Scientific Review Group (SRG), and IPP Scoping Groups (SG's). 2. Ensure the timely delivery of all PRG, SRG, and SG work products required by the IPP. 3. Administer financial support (time and travel expense reimbursement) of non-Federal SRG scientists.		

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
89-72-1	<p>Scientific Review Group (SRG) Support - DOE</p> <p><u>Project Officer:</u> J. Gislason</p> <p><u>Objectives:</u> To provide financial support (time and travel expense reimbursement) for SRG scientist employed by DOE.</p>	<p><u>Date Initiated:</u> September 1989</p> <p><u>Results/Conclusions:</u> BPA provides financial support for one SRG member through this contract.</p>	<p>FY 1992: BPA plans to continue funding this contract.</p>
89-108	<p>Columbia River Salmon Passage Model - UW</p> <p><u>Project Officer:</u> V. Jagendorf</p> <p><u>Objectives:</u></p> <ol style="list-style-type: none"> 1. Replace FISHPASS model. 2. Develop graphical input and output features. 3. Develop Monte Carlo and multi-year analytical capabilities 4. Integrate database system. 5. Develop and calibrate mechanistic submodels. 6. Develop model documentation. 7. Perform model analysis 8. Test statistical models 9. Develop life stage components. 10. Interface cost-effectiveness algorithms. 11. Coordinate with other entities. 	<p><u>Date Initiated:</u> 1988</p> <p><u>Results/Conclusions:</u> Work completed to date: Beta versions of the model for objectives 1, 2, and 3.</p>	<ol style="list-style-type: none"> 1. Continuing: The contractor will provide reports regarding all objectives. 2. Early 1990: Complete objectives 1, 2, and 3. 3. Late 1990: Complete objectives 4, 5, and 6. 4. 1991: Complete objectives 7 through 10. 5. Objective 11 is ongoing objective.

PROJECT
NUMBER

TITLE

PROJECT STATUS

SCHEDULE AND MILESTONES

91-41

Non-Treaty Storage Compensation
- Idaho Power Company

Date Initiated: May 1991

Results/Conclusions: None at this time.

FY 1991: Idaho Power Company will rent up to 100,000 acre-feet of water from Water District #1 and/or from the USBR from Cascade and Deadwood reservoirs at a reasonable price subject to BPA concurrence and in a manner minimizing cost to BPA. This is a three-year pilot project.

Project Officer: P. Poe

Objectives: To rent surplus irrigation water from Idaho water banks and other sources and release it from storage during spring, summer, and/or fall months to improve anadromous fish passage conditions in the lower Snake River.

91-44

System Operation Review -
Various Contractors

Date Initiated: FY 1991

Results/Conclusions: None at this time.

FY 1991-92: Initiate individual contracts as required by BPA staff.

Project Officer: D. Johnson

Objectives: To provide technical assistance to BPA for review and analysis related to System Operation Review.

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
91-67	Idaho Water Rental Pilot Project - Feasibility/Coordination Study - Resident Fish and Wildlife - IDFG	<u>Expected Start Date:</u> September 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991: Review resident fish and wildlife management plans and develop water release scenarios. FY 1992: Determine changes in habitat conditions for resident fish and wildlife due to water releases for anadromous fish and recommend the best strategy for benefit to both anadromous fish and resident fish and wildlife. Prepare final report.
	<u>Project Officer:</u> D. Watkins		
	<u>Objectives:</u> 1. Identify existing resident fish and wildlife resources and programs in the Snake, Payette and Clearwater rivers. Conduct literature review to determine the habitat conditions for resident fish and wildlife in these rivers (e.g. goose nesting below reservoirs, reservoir fisheries, Snake River sturgeon populations, river channel capacity, etc.). 2. Identify expected changes in habitat conditions in each river system resulting from various water release strategies to assist anadromous fish migration. 3. Relate expected changes in habitat conditions to potential impacts/benefits to resident fish and wildlife resources and programs. 4. Develop water release strategies that will protect or provide enhancement for resident fish and wildlife resources and programs. 5. Prepare final report.		

III. NEW PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
92-xxx	Fish Habitat Technology Transfer Session	New Project	FY 1992: Conduct technology transfer session.
		<u>Results/Conclusions:</u> None at this time.	
	<u>Project Officer:</u> R. Stoots		
	<u>Objectives:</u> Fund and conduct a technology transfer session specifically related to Columbia Basin fish and habitat types for field people responsible for planning and building BPA projects. This would include reporting on research and findings funded by BPA.		
92-XXX	Geographical Information System (GIS) Development	New Project	FY 1992: Perform needs assessment and implement pilot projects.
		<u>Results/Conclusions:</u> None at this time.	
	<u>Project Officer:</u> R. Stoots		
	<u>Objectives:</u> 1. Promote and use GIS within BPA's Fish and Wildlife Division. 2. Develop a GIS database that contains both fish and wildlife projects. 3. Establish and maintain ties with other GIS users as resources for data pertinent to BPA projects.		

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
92-XXX	Technical Assistance - Consultants	New Project	FY 1992: Initiate individual technical assistance contracts as required by BPA staff.
	<u>Project Officer:</u> R. Stoots		
	<u>Objectives:</u> To supplement the limited staff and time resources of BPA's Division of Fish and Wildlife with the services of expert consultants, who can provide technical assistance and training on a wide variety of issues related to fish and wildlife habitat.		
92-XXX	Public Education - Fish and Wildlife Habitat	New Project	FY 1992: Education programs initiated. Modification and expansion to be considered.
	<u>Project Officer:</u> S. Levy		
	<u>Objectives:</u> Project will initiate new and/or enhance and expand existing programs and materials useful in creating public awareness and involvement in fish and wildlife habitat protection and restoration. The function, operation, and effectiveness of programs developed by various Federal, state, and local agencies will be monitored, assessed, and evaluated. Education programs which are effective in fish and wildlife education within the Columbia Basin will be targeted to increase public participation		

PROJECT
NUMBER

TITLE

PROJECT STATUS

SCHEDULE AND MILESTONES

92-XXX
cont.

in these programs and thereby
increase public involvement in
fish and wildlife **enhancement**
efforts. Where these edu-
cational programs involve youth,
this will also increase the
potential pool of those who may
seek advanced training for
careers in resource management.

APPENDIX B

ENDANGERED SPECIES ACT PROJECTS

I. COMPLETED PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>
90-93	Genetic Analysis of <u>Oncorhynchus nerka</u> (for Endangered Species Act) - UI <u>Project Officer:</u> G. Bouck <u>Objectives:</u> Phase I: 1. Collect <u>O. nerka</u> for analysis. 2. Refine DNA analysis. 3. Develop a plan for Phase II. Phase II: 1. Determine best methods of analyzing DNA for b probes. 2. Analyze DNA from <u>O. nerka</u> from 12 sources including Snake River, Upper Columbia River, and Frazer River. 3. Compare results for differences between kokanee and sockeye. 4. Report final results.	<u>Expected Completion Date:</u> September 1991 <u>Results/Conclusions:</u> All necessary samples were collected.

II. FY 1991 ONGOING PROJECTS

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
91-43	Endangered Species Review - various Contractors <u>Project Officer:</u> D. Johnson <u>Objectives:</u> To provide technical assistance to BPA for Endangered Species Act (ESA) review and analysis.	<u>Date Initiated:</u> FY 1991 <u>Results/Conclusions:</u> None at this time.	FY 1991-92: Initiate individual contracts as required by BPA staff.
91-51	Analysis of Relationship of Riverflow to the Migratory Travel Time and Survival of Juvenile Salmonids (for Endangered Species Act) - UW/Don Chapman Consultants <u>Project Officer:</u> P. Poe <u>Objectives:</u> Phase I: 1. Assess PIT tag data. 2. Assess freeze brand data. 3. Assess coded-wire tag data. 4. Participate in development analytical procedures for estimating smolt survival. 5. Perform Phase I of Project 91-17. Phase II: Objectives to be defined.	<u>Date Initiated:</u> February 1991 <u>Results/Conclusions:</u> None at this time.	FY 1992: Complete objectives of Phase I and report results. Proceed with Phase II if applicable.

<u>PROJECT NUMBER</u>	<u>TITLE</u>	<u>PROJECT STATUS</u>	<u>SCHEDULE AND MILESTONES</u>
91-52	Genetic Consultation - Consultant	<u>Date Initiated:</u> February 1991 <u>Results/Conclusions:</u> None at this time. <u>Project Officer:</u> G. Bouck	FY 1992: Completion in June 1992.
	<u>Objectives:</u> Task order agreement to provide genetic consultation to BPA.		
91-64	Little Goose PIT-Tag Facility - USACE	<u>Date Initiated:</u> March 1991 <u>Results/Conclusions:</u> None at this time. <u>Project Officer:</u> V. Jagendorf	FY 1992: Facility is scheduled to be operational by March 21, 1992.
	<u>Objectives:</u> This contract funds the Architect-Engineer to provide the plans, specifications, design analysis, construction and installation of a Passive Integrated Transponder (PIT) Tag Detector System at the Little Goose Juvenile Fish Facility. Facilities at Little Goose Dam would enable conduct of special juvenile fish monitoring and research activities associated with ESA and increase the capability to measure the effectiveness of any Program action.		

PROJECT NUMBER	TITLE	PROJECT STATUS	SCHEDULE AND MILESTONES
91-65	Umatilla Fall Chinook Marking Program - ODFW <u>Project Officer:</u> J. Bauer	<u>Date Initiated:</u> April 1991 <u>Results/Conclusions:</u> Fin-clipped and tagged 3.4 M fall chinook (ChF).	1. FY 1991: Fin clip and tag, 3.4 M ChF. 2. FY 1992: Fin clip and tag, 6.0 M ChF. Fin clip and tag, 1.4 M summer chinook (ChS). 3. FY 1993: Fin clip and tag, 7.0 M ChF. Fin clip and tag, 1.4 M ChS.
	<u>Objectives:</u> 1. Mark Umatilla salmon for identification so the strays can be removed at Ice Harbor Dam. 2. Evaluate right ventral fin clip (RV) mortality rate. 3. Evaluate difference between RV and body tag mortalities. 4. Evaluate differences between RV and adipose-CWT-RV mortality rates.		
91-66	Ice Harbor/Lower Granite Fish Trapping Improvements <u>Project Officer:</u> J. Marcotte	<u>Expected Start Date:</u> June 1991 <u>Results/Conclusions:</u> None at this time.	1. FY 1991: Planning and coordination. 2. FY 1992: Preliminary and final design. 3. FY 1993: Construction.
	<u>Objectives:</u> Evaluate current trapping operations and physical facilities for trapping. Determine operational adjustments and/or physical improvements that would allow for capture and identification of all salmon. Non-Snake River fish would be prevented from passing these facilities. Operational adjustments would be implemented as soon as feasible.		

APPENDIX C

LETTERS OF COMMENT ON THE
DRAFT FY 1992 AIWP
AND BPA RESPONSES TO ISSUES RAISED

JAMES A. GOLLER
CHAIRMAN
Idaho

Robert (Bob) Saxvik
Idaho

John C. Brenden
Montana

Stan Grace
Montana

NORTH.. EST POWER PLANNING COUNCIL

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R. TED BOTTIGER
VICE CHAIRMAN
Washington

Tom Trulove
Washington

Angus Duncan
Oregon

Ted Hallock
Oregon

July 5, 1991

John Palensky
Bonneville Power Administration - PJ
P.O. Box 3621
Portland, Oregon 97208

Dear John:

I appreciate your staff taking time to meet with Council staff to discuss the continuation of habitat work under the Council's existing fish and wildlife program. This letter will clarify and confirm our understanding on the continued implementation of habitat improvement, passage restoration and related projects provided for in Section 703(c)(1) and Five-Year Action Item 4.2. It is expected that an integrated system plan will be approved in late 1992 and will be used as guidance for implementing future habitat and tributary passage projects.

Recently, some of the agency and tribal entities have been asking for guidance on how to proceed in FY 1992 with what they consider to be high priority projects. In addition, some agencies and tribes anticipating a termination of habitat work in the interim (FY 1992) have submitted projects as Priority Salmon Habitat and Production Proposals for early implementation.

We believe that it is important to provide some continuity and stability in the existing habitat work until the fish and wildlife program is amended and the need for and scope of future habitat projects are defined.

At our meeting, we agreed that neither Bonneville nor the Council wanted to see important habitat and passage work stop until an integrated system plan was adopted. Such an action could be very disruptive and cause the agencies and tribes to stop work and terminate or reassign elements of a trained work force. In addition, relationships with private land owners could be damaged if planned and agreed to work was not done on schedule. Termination of some ongoing work could also be inconsistent with the recent request by the Council for proposals for new high priority habitat and production projects.

It was not the Council's intent to terminate habitat work in the absence of an approved integrated system plan. We believe that action item 4.2 and the draft integrated system plan should provide guidance to Bonneville and the agencies and tribes in continuing habitat and tributary passage projects until the program is amended. Also, we do not believe that there is any

8 JUL 91 2:35

problem with Bonneville's continued funding of needed monitoring and evaluation projects, operating and maintenance of completed projects, or the continued funding of projects such as the Umatilla River Basin trap and haul project (88-22).

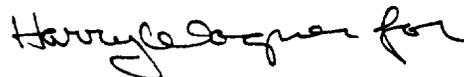
A review of the draft FY 1992 Annual Implementation Work Plan and contact with some agency and tribal entities revealed that there is habitat work, other than operation and maintenance, that is not scheduled to be funded in FY 1992 that should be included. The problems seem to be primarily confined to the John Day Subbasin (Project 84-4 and 84-21), Deschutes Subbasin (Project 81-108) and Project 84-11.

On June 21, at a meeting attended by representatives of Bonneville, the Authority, U.S. Forest Service and the Council, a list of project contracts with a potential for ongoing work was developed. This list was subsequently further refined and confirmed by Wally Steucke with additional contacts with the relevant tribes and agencies (see attachment 1).

We recommend that Bonneville request work statements for those projects listed in the attachment and fund those that meet the standards and criteria for implementation that Bonneville has been applying in recent years. At the meeting, it was also discussed that a source of funding for additional projects could come from Project 91-10 (\$1.5 million) in FY 1992. We also believe that this is an appropriate source of funds.

We appreciate your cooperation and assistance in resolving this problem. Please call if we can be of assistance.

Sincerely,



Rick Applegate
Director
Fish & Wildlife Division

cc: Jeff Gislason ✓
Gordon Haugen ✓
Wally Steucke ✓
Harry Wagner ✓

l:hw/har.bc2.palensky/habitat

Projects identified as needing additional work¹

<u>PROJECT #</u>	<u>PROPONENT</u>	<u>TITLE</u>	<u>COSTS²</u>		
			<u>92</u>	<u>93</u>	<u>94</u>
84-011	USFS	Clackamas River Mt. Hood River Oak Grove Creek		\$167 \$110	
86-079	USFS	Fifteenmile Crk		\$90	
81-108	CTWSR	Beaver Creek Mia Creek Shitike Creek	\$350		
84-008	USFS	John Day Wall Creek Camas Creek	\$304		
84-021	ODFW	John Day Middle Fork	\$367	\$385	\$405
84-022	USFS	Malheur	---		
87-100	USFS	Umatilla	\$134		
87-009	USFS	John Day	\$43		
84-025	ODFW	Grande Ronde	\$329	\$385	\$350

l:hw/hor.BD4.Heb

1. Source: Wally Stuecke, June 27, 1991

2. Thousands of dollars

PJ

JUL 23 1991

Mr. Rick Applegate, Director
Northwest Power Planning Council
Fish and Wildlife Division
851 SW. Sixth Avenue, Suite 1100
Portland, OR 97204-1348

Dear Mr. Applegate:

In response to your letter dated July 5, 1991, you requested the Bonneville Power Administration (BPA) continue funding specific "ongoing" Fish Habitat Restoration/Passage Projects into FY 92, until the Northwest Power Planning Council (Council) amends their Columbia Basin Fish and Wildlife Program (Program) to guide such projects in FY 93. As a "stop-gap" measure in FY 92, we agree to fund continued implementation for those projects outlined in the enclosed list.

You will note a few differences between the enclosed list and the list provided with your letter of July 5. The major difference is the deletion of project number 81-108, Confederated Tribes of the Warm Springs Reservation. BPA implementation of this project was completed in FY 89. Maintenance, and monitoring and evaluation continue to be funded by BPA. Given that the project has not had implementation activities since 1989, we believe additional project implementation should not occur until the Council's adoption of an Integrated System Plan (TSP).

BPA's FY 92 Annual Implementation Work Plan (AIWP) will be updated to include these projects, with supporting information being requested from project sponsors. The source of funding will be project number 91-10, ISP Implementation, as suggested in your letter. Work statements to be used in final negotiation of specific projects and budgets will not be requested until adoption of the AIWP.

We plan on discussing this at the next Policy Review Group meeting, and look forward to your participation in that discussion. Should you have questions or concerns, please contact myself or Rick Stoots at 230-5732.

Sincerely,

(Sgd) GREG E. DRAIS

Greg Drais
Deputy Director, Division of
Fish and Wildlife

Enclosure

cc:

Mr. Wally Steucke, Columbia Basin Fish and Wildlife Authority
Mr. Harry Wagner, Northwest Power Planning Council
Mr. Gordon Haugen, U.S. Forest Service

<u>Project Number</u>	<u>Contractor</u>	<u>Title</u>
84-11	USFS Mt. Hood NF	Clackamas River Hood River Fifteenmile Creek
84-8	USFS Umatilla NF	John Day Wall Creek Camas Creek
84-21	ODFW	John Day Middle Fork
84-22	USFS Malheur NF	Middle Fork John Day
87-100	USFS Umatilla NF	Umatilla
87-100-2	ODFW	Umatilla
84-9	USFS Wallowa-Whitman NF	John Day and Grande Ronde
84-25	ODFW	Grande Ronde

(9538W)

ADDENDUM

EARLY IMPLEMENTATION PACKAGE

On August 14, 1991, the Council amended a number of high priority salmon recovery actions into the Program as part of an Early Implementation Package (EIP). BPA plans to implement, as soon as possible, those EIP projects for which it is responsible and to use, to the extent practicable, the IPP to plan implementation. To define the projects to a degree that will allow BPA procurement, BPA may need to consult with the Council and project sponsors and request assistance from the appropriate IPP Scoping Groups. The projects for which the Council designated BPA as a responsible agency are listed in the following table:

PRIORITY SALMON HABITAT PRODUCTION PROPOSALS

<u>Project Description with Council's Time Frame</u>	<u>Responsible Agency</u>
Diversion Screening and Passage (Committees by 10/1/91, Agency Priority List by 12/15/91, Final Plan by 2/1/92, with implementation beginning in 1992, and finishing in 1995)	BPA, NMFS, Others
Passage at Starbuck Dam (Planning and implementation to begin as soon as possible)	BPA, ODFW
Snake River Sockeye (Continued implementation of ongoing Sockeye Program with IDFG, ShoBan Tribe, and UI)	BPA, IDFG, ShoBan Tribe, UI
Grande Ronde Spring Chinook (Trapping) (Planning and implementation to begin as soon as possible)	BPA, ODFW
Portable Trapping Facilities (Planning and implementation to begin as soon as possible)	BPA, Various Agencies
Hatchery Guidelines/Wild Stock Protection (Report to Council by 12/31/91)	BPA, Various Agencies
Marking Hatchery Salmon (Agencies and Tribes identify priority hatcheries by 12/31/91, Feasibility report to Council by 2/1/92)	BPA, Various Agencies

Project Description with Council's Time Frame

Responsible c y

Ringold Hatchery Water Acquisition
(Planning and implementation to begin
as soon as possible)

BPA, WDF 1/

Snake River Fall Chinook Genetics/Status
(Planning and implementation to begin
as soon as possible, Agencies and Tribes
Rehabilitation Actions Report to Council
by 10/10/91)

BPA and Others

Model Watershed Studies
(Report to Council by 2/1/92, with
implementation to begin in 1992)

BPA and State Agencies

Fall Chinook Life History
(Planning and implementation to begin
as soon as possible)

BPA, USFWS

PIT Tag Detectors
(Planning and implementation to begin
as soon as possible)

BPA, COE

1/ BPA may not be an appropriate funding agency for the Ringold Hatchery
Water Acquisition project.

9989W:8/27/91