FY 1997 Draft
Annual Implementation Work Plan

Submitted by
Columbia Basin Fish and Wildlife Authority

to the
Northwest Power Planning Council

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Editor's Note

The FY 1997 project review process yielded several documents over the course of the review, as opposed to a single "workplan" as in other fiscal years. This collection of documents was gathered from archives to represent as closely as possible the final workplan-related documents from each of the anadromous fish, resident fish and wildlife review groups.

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DRAFT ANADROMOUS FISH WORK PLAN FOR FY 1997

INTRODUCTION

The Anadromous Fish Managers reviewed, rated and considered over 350 projects for funding in FY 1997. The objectives of the exercise were to develop a cohesive anadromous fisheries program that is consistent with the Northwest Power Planning Council's Columbia River Fish and Wildlife Program, the 1995 Biological Opinions on listed Snake River salmon and Kootenai River sturgeon, and Wy-Kan-Ush-Mi Wa-Kish-Wit (Tribal Restoration Plan), and that could be expected to be implemented in FY 1997. Ongoing projects and new proposals were reviewed for their scientific soundness, potential contribution to recovery or enhancement, timeliness, and cost effectiveness. In the review process, the Anadromous Fish Managers made every effort to reduce potential overlap and ensure complementarity of effort. The cost of each project was carefully scrutinized for potential savings. The Managers also reviewed outyear costs to ensure the sustainability of the program over time.

This document is composed of two parts. The first part discusses general issues relating to the development of this draft anadromous fish work plan, such as how the criteria were developed, what the budget constraints are, and what the decision-making process is. The second part of the draft plan discusses program subject areas, starting with Columbia Basin-wide projects, such as those dealing with research, law enforcement, or coordination. Next, mainstem efforts are covered. Finally, the plan covers the projects in each watershed, organized by subregion.

Each project listing shows the project number for identification, a descriptive title, the project sponsor, and a recommended funding amount for FY 1997. In some cases this recommended funding amount is less than the amount requested by the project proponent. A zero funding level indicates that the project is being accomplished under another measure or with other funding sources.

I. PROCESS OVERVIEW

Development of the Anadromous Fish Work Plan for FY 1997 began in September 1995 with discussions among the fish and wildlife managers regarding needed improvements. The managers identified six improvements for FY 1997:

- Better information on individual proposals;
- Improved review criteria;
- Earlier start on project review;
- More focus on a watershed approach;
- Better coordination of proposals with other programs; and,
- Opportunity for public comment.

BPA was responsible for collecting information on the projects proposed for FY 1997 funding and providing project descriptions to the anadromous fish managers. The fish and wildlife managers reviewed a draft of the project data form and suggested improvements and BPA sent the forms out in early January, 1996. Project sponsors completed forms on all of their on-going and proposed projects by the deadline on March 4, 1996. Copies of the project summary information used to review each project are on file at CBFWA and BPA and demonstrate the substantial improvement in the coverage and quality of information used.

Starting in November, 1995 the anadromous fish managers developed criteria during more than a dozen meetings. The criteria reflected the managers' emphasis on activities providing direct benefit to salmon receiving priority. Representatives of the anadromous fish managers presented the criteria to the Northwest Power Planning Council at its March work session in Spokane (See Appendix A).

BPA provided the project summaries in mid-March and the managers conducted a technical evaluation of the projects relative to the criteria. The anadromous fish managers met at CBFWA for six days of intensive meetings in early April to further review the projects and technical evaluations, and to put them in related groups. The anadromous fish managers divided the projects and themselves into six groups, covering mainstem, four subregions, and system policy projects. The groups reviewed the individual projects to assure that they were coordinated with other work in each watershed and with work in other programs. Other related fish and wildlife programs are listed in Appendix B.

This document resulted from the more than ten days of meetings held by the managers to coordinate and integrate the proposals into a coherent program. Appendix C lists the Anadromous Fish Managers' staff who participated in the technical ranking, project review and assessment, or product review.

As a result of starting the process earlier than last year, the fish and wildlife managers are about two months ahead of where they were in developing the FY 1996 plan last year. This should allow an adequate opportunity for public review and comment, and for a response to the comments and any needed changes to this draft plan.

A. Project Evaluation Approach

Proposals submitted for 1997 Fish and Wildlife Program funding were evaluated and ordered through a three step process. The initial step involved rating each project against a standard set of criteria, rating them within geographic and system level categories. As a second step, the projects were reviewed to identify interrelationships or common objectives and grouped accordingly. The third step involved a project-by- project review against a set of questions developed to address such aspects as out-year costs, feasibility of completing the proposed work within FY 1997, and the rationale for significant increases in cost over previous levels. Projects with a wide range in relative rating among reviewers were also re-examined during this phase.

1. Rating Groups

The Bonneville Power Administration (BPA) project summaries were compiled into geographic and system categories and distributed along with the evaluation criteria among the Anadromous Fish Managers. The geographic groupings were: Snake River; Priest Rapids Dam to Chief Joseph Dam; Bonneville Dam to Priest Rapids Dam; and Below Bonneville Dam. Projects in these categories were mainly production oriented, including both habitat and hatchery applications. A Mainstem and a System category were also established. The Mainstem category includes monitoring and research projects directed at the dams and reservoirs. The System category includes projects addressing a wide range of objectives including basic coordination activities, system wide monitoring, research and evaluation proposals, coordinated law enforcement efforts and data base proposals. There was some overlap between the geographic and system level categories. In those cases, projects were rated in each category.

Representatives of the Anadromous Fish Managers were assigned to each of these evaluation groups and were provided with the criteria and sorted projects summaries. These representatives each were asked to rate the projects within their assigned area, using the criteria described above. The groups then met to complete and compile the evaluations, In cases where additional information or clarification were needed, the groups contacted the project sponsor. Each geographic committee then developed a summary of their results for integration by the System Group.

2. Factors for Evaluating Projects

Projects were first evaluated for their relationship to identified biologic needs and then on their fiscal accountability. This resulted in a rating and ranking of projects within each of six technical and/or geographic areas. The System/Policy group then reviewed all projects for coordination within and between review groups and for coordination with other programs and funding sources. Finally, the System/Policy group examined practical considerations of out-year costs and realistic implementation schedules. These last two steps make it impossible to provide a consistent ranking scale for projects recommended for funding in 1997.

The initial evaluation criteria are presented in Appendix A. Projects were first rated on their impact on identified biologic needs. Priority was given to projects which:

- benefited declining naturally produced populations;
- increased survival to the spawning grounds;

- were consistent with existing management plans;
- increased system-wide learning, and;
- were technically well designed.

Each project was also reviewed for its degree of fiscal accountability. Preference was given for projects which:

- involved cost sharing
- had incorporated the impacts of out-year costs and long-term operation and maintenance;
- were coordinated with other programs and included local stake-holder involvement, and;
- produced multiple benefits and benefited resident fish and wildlife as well as anadromous fish.

3. System Review

Compiling the results of the evaluations among the groups included a number of steps. First, the geographic and system groupings of projects were assigned a rating based on their relative rank by the reviewers within the groups. This was done primarily to deal with differences among the individuals in applying the actual rating. The relative rank of projects within groups appeared to be relatively consistent among raters within groups.

Projects were sorted into groupings that reflected significant relationships. For example, a production project may have associated with it a separated evaluation effort. The assemblages of projects were reviewed to identify potential duplication or, alternatively, beneficial associations. The relative ratings of the associated projects were adjusted to avoid duplication and to maintain desired linkages. Ongoing projects with proposed significant increases in funding were reviewed to verify that the expanded effort was a high priority. In some cases, projects were ‘split’ into components if the expanded effort was judged to be a lower priority than the base effort.

In some cases where ongoing projects nearing completion were given a relatively low rating with a particular geographic group, the System Group assigned a higher priority given the previous investment in the particular effort.

Projects considered to be non-discretionary relative to Endangered Species Act needs by the National Marine Fisheries Service were identified and assigned a high priority at this stage as well.

Throughout this stage in the process, the funding level requests were evaluated and recommended adjustments were developed to reflect realistic expectations for completion of the tasks identified within FY 1997.

B. Results

As a result of this process, the projects have been assigned to one of three potential funding levels: ***Level 1*** projects represent the highest priority for funding in FY 1997. Collectively, their total funding need falls within the level of BPA direct support expected to be available. ***Level 2*** projects represent the next priority, recommended for consideration for funding if additional funds become available. ***Level 3*** contains projects rated relatively low for 1997 funding. Some projects at this level could be considered for funding in future cycles given significant refinements.

II. 1997 ANADROMOUS FISH BUDGET

A. Estimate of Funds Available

The Anadromous Fish Managers have developed a 1997 program we believe can be accomplished within the funding limit available. The Managers assume that approximately $90 million will be available in FY 1997. This figure was derived in the following way. BPA's direct budget ($127 million), less $8 million in overhead, leaves $119 million. ESA costs are about $25 million for projects related to salmon and about $1 million for projects related to Kootenai River sturgeon, leaving $93 million for distribution among the three program areas -- anadromous fish, resident fish and wildlife. Based on a 70 percent budget share, the anadromous fish portion of the $93 million is approximately $65 million. When the $25 million for ESA projects is added back in, the result is $90 million for all anadromous fish activities, including ESA.

$100	million	Expense
+ 27	million	Capital
$127	million	Total
- 8	million	BPA Overhead
$119	million	
- 25	million	ESA salmon costs
- 1	million	ESA sturgeon costs
$93	million	Available for allocation
x .70		Anadromous fish portion
$65	million	Anadromous fish share
+ 25	million	Anadromous fish ESA
90	million	Total FY 1997 Anadromous Fish Budget

Working with the $90 million budget estimate, the managers selected an integrated group of projects that scored highly based on the selection criteria, and that met scientific and recovery objectives of the Council and the Anadromous Fish Managers. Within the budget a number of projects are included that have resident fish and wildlife benefits.

For example, the law enforcement, watershed restoration, Streamnet, and CBFWA budgets are fully charged to anadromous fish even though each has significant resident fish and wildlife benefits. A number of highly rated, desirable projects were not able to be funded due to the budget limitation. In addition, the integrated projects budget does not

include a number of ongoing projects that were scored low or are superseded by other programs.

To make the best use of available financial resources, the Anadromous Fish Managers included projects in the coordinated program that total approximately $95 million. Past funding patterns indicate that a variety of circumstances tend to result in expenditures lower than the budgeted amounts and the Managers therefore anticipate that all of these projects can be funded from the $90 million available. A number of considerations that will affect the 1997 budget include:

- Adjustments to project budgets as they are negotiated for contractual purposes;
- Unanticipated schedule slippage, for example due to problems in NEPA compliance;
- The high likelihood that fewer test fish will be available to mark for experiments due to low escapements in the parent brood year;
- Possible carryover funds from FY 1996;
- Individual project objectives funded by other budgets, such as those available though the Corps operations and maintenance programs or the Lower Snake River Compensation Plan; and,
- A mutual commitment among the Anadromous Fish Managers to seek reduction in the amount of overhead charged.

The Anadromous Fish Managers are committed to seek reductions in the amount of overhead charged for direct program funding. With major increases in direct program funding in FY 1997, there should be opportunities for increased cost efficiencies in the amount of overhead required to implement projects. Reducing the amount of overhead would free up additional funding for implementation of projects. Options for reducing overhead that will be pursued further include:

- Applying a flat percent reduction or surcharge to overhead charges for all projects;
- Seeking innovative ways wherever possible to package projects and provide overhead services in the most cost effective manner; and,
- Having all parties review their overhead costs for potential changes that improve cost efficiency.

The Anadromous Fish Managers seek comment on whether these assumptions are reasonable.

B. Out-Year Costs

The Anadromous Fish Managers examined the potential out-year costs of the package of projects recommended for funding in FY 1997. Our primary interest was to examine the potential budget impacts in the future, but the exercise also suggests some other considerations for management of the Council's Fish and Wildlife Program. We recognize

that there is significant uncertainty about projecting actual future costs. Nevertheless, the results are instructive when viewed with appropriate qualifications.

Projected costs through 2001 are shown in Table 1. Projected costs increase slightly in 1998 then steadily decline through 2001. This is caused by planned capital expenditures and land purchases in 1997 and 1998, then declining costs as present projects are completed and/or enter an operation and maintenance phase. Given the normal uncertainty in cost estimates, project start dates, and budget carryovers between years, these costs projections are well within the scope of available funding.

The most significant implication of cost projections through 2001, is the expectations we should have for the future direction of the Fish and Wildlife Program. Activities in fiscal 1998 would largely be a continuation of 1997 projects. Improving coordination with related programs and adding the research and monitoring framework to the program might be appropriate goals for 1998. Beginning in 1999, then, we would have increasing opportunities to changing the emphasis or direction of the program, based upon information and experience obtained through 1998.

III. SUBJECT AREA DISCUSSION

A. Basin-Wide Activities

The direction of the FY 1997 Fish and Wildlife Annual Work Plan is to implement Columbia Basin anadromous fish programs on a watershed basis. Most of the plan activities lend themselves to this sort of geographic orientation. However, there are some activities that are either basin-wide in their effect or otherwise not geographically based. The Anadromous Fish Managers divided these basin-wide projects into five groups for review and assessment purposes:

- Research
- Law Enforcement
- Predator and Prey Protection Projects
- Stock Assessment
- Coordination

1. Research

Research projects were classified by subject area and, consequently, were considered by several of the review teams during the first step of the project evaluation cycle. The System/Policy group again considered these projects during steps two and three of the review process.

Three of the seven research projects in funding Level 1 are related to ESA implementation, as identified by NMFS. One project (9007800) addresses issues of mainstem passage and two projects (9102900 and 9305600) address production issues ranging from improving captive broodstock techniques to studies of factors affecting post-release survival of fall chinook. These projects are also consistent with the Council's Strategy for Salmon.

Three of the research projects are related to improving hatchery practices (8816300 and 8903000) or evaluating the effects of hatchery fish on natural production (9005200). These projects are also consistent with the Council's Strategy for Salmon.

One project (9402600) is directed at learning more about the status of, and options for restoring, populations of Pacific lamprey. Pacific lamprey were an important component of the natural ecosystem, but their numbers have declined dramatically in recent years. These projects are also consistent with the Council's Strategy for Salmon. Another project (8506200) provides for evaluation of tributary diversion screen projects.

Several projects listed under other categories also have significant application to research issues. For example, projects 5507700, 9000500, 9000501, and 9105500 in the Bonneville - Priest Rapids Dam category will provide important information on factors affecting performance of naturally produced and supplemented salmon populations. Additional information will be obtained from projects 8909802, 8909803, 9005500, 9107300, and 9202604 in the Snake River category. Mainstem projects 5505900, 9202200, and

9302900 will improve our understanding of factors affecting passage survival through the hydropower system.

Conversely, several projects listed in other categories complement some of these research projects. For instance, several Snake River projects are directed at elements of captive brood stock strategy and complement project 9305600 in this list. Similar complementarity exists in other areas of this project package, although time did not allow a full examination of these inter-relationships.

Only the projects submitted to BPA were evaluated. There was general agreement that a better integrated and comprehensive research package could be developed if project sponsors were given general guidelines for research needs prior to submission of project descriptions. We will attempt to do this later this year, after we have more information from the PATH process and a framework monitoring and evaluation program has been developed. The anadromous fish managers intend to provide this guidance prior to development of the 1998 funding proposals.

There was also general agreement in our discussions that we should develop a phased research program for future years. This would involve working with, for instance, the ISAB and PATH groups to clearly identify critical uncertainties and a strategy and time schedule for resolving them. This could result in 5-year and 10-year adaptive management experiments and research programs, associated with management decisions. Fishery managers and the Council would then have a clearer framework for dealing with uncertainty in their management decisions.

2. Law Enforcement

The goal of this system-wide law enforcement program (9402400) is to reduce illegal takes of Columbia River Basin salmonids and native resident fish, and thereby help to rebuild all native fish populations within the Basin. The majority of the cost associated with the program (approximately $4.5 million) for with implementation of the base Law Enforcement program. This program funds positions with state and tribal enforcement entities and equipment for their use. The Columbia Basin Law Enforcement Council (CBLEC) identified in priority order: 1) the base Law Enforcement program; 2)the monitoring and evaluation of the base program; and 3) the tribal tributary enforcement. The total dollar amount reflects needs for these three components of the FY 1997 program.

3. Predator Control and Prey Protection Projects

Predator control and prey protection has been an integral part of the Columbia river salmon restoration program. The project began in 1982 as a cooperative study between ODFW and USFWS to determine loss of outmigrating salmonids in John Day reservoir. A predator management and evaluation program was initiated in 1990 in order to reach predation control goals, evaluate predator population response, and improve juvenile salmonid survival through the Snake and Columbia rivers hydrosystem. The other component of the program is an evaluation designed to identify and develop measures that provide prey protection for outmigrating juvenile salmonids. Work will continue in FY 1997 to determine the relative vulnerability to predation of juvenile salmonids of varying health and condition and to determine whether predator conditioning improves survival of hatchery fish. The development of biological criteria for the design and operation of juvenile fish surface bypass systems and bypass exit design and location to protect juvenile salmonids from predation by northern squawfish also will continue in FY 1997 (8200300). This work is an important part of the evaluation of surface bypass prototypes to ensure that they do not create bottlenecks that increase the vulnerability of juvenile salmonids to predation. In addition, the overall program has been expanded to evaluate the impact of bird predators and to provide recommendations for reducing avian predation on juvenile salmonids.

The cost of the predator prey projects, identified to be funded in FY 1997, is estimated to be about 4.88 million dollars. The majority of this cost is associated with implementation of the northern squawfish sport reward fishery. The projects identified to be funded include three ongoing projects: Northern Squawfish Management Program (9007700), Evaluation of Predator Control (9007800), and Development of Prey Protection (8200300). There is also a new project on Predation by Birds (5505900).

4. Stock Assessment

The stock assessment category includes activities associated with system-wide stock evaluation activities and system-wide marking programs associated with those evaluations. The Plan for Analyzing and Testing Hypotheses (PATH) is an iterative process of defining and testing hypotheses underlying key salmon management decisions in the Columbia River Basin. The activities associated with PATH are designed to provide a system wide approach to salmon stock assessment and a quantitative and adaptive management framework for development and implementation of a regional salmonid recovery plan. In addition, the PATH products will provide advice on research, monitoring, and adaptive management experiments which would maximize the rate of learning, minimize the risk to salmon conservation, and clarify management decisions.

The cost of the PATH projects, identified to be funded in FY 1997, is estimated to be about $1.49 million. There are five ongoing projects identified to be funded in FY 1997: PATH-State and tribal Participation (9600800); PATH-Facilitation, Technical Assistance, and Peer Review (9600600); Snake River Life-Cycle Modeling (9203200); Modeling Support (8910800); and Life-Cycle Technical Assistance (9303700). Project 9810800 cost

was reduced to $200,000 and project 9303700 cost was reduced to $60,000 to reflect funding need for only the PATH participation portion of the proposed projects.

The stock assessment category also includes a group of regional marking and recovery projects, which provide the structure to estimate Columbia Basin salmonid stock survival at various life stages and harvest rates in a number of fisheries. These mark and recovery projects provide a key component of the basic information needed to assess stock status over time. These mark and recovery projects include PIT (passive integrated tag) and CWT (coded wire tag) technologies.

The cost of CWT projects identified in this category, to be funded in FY 1997, is estimated to be about 2.37 million dollars. The cost of PIT project identified in this category, to be funded in FY 1997, is estimated to be about $1.55 million.

5. Coordination

Coordination among and between program components is vital to timely implementation and program success. Projects recommended for funding include efforts to prepare the annual work plan (8906200) in coordination with ESA implementation (5513200), support for a regional science advisory board (8907201 and 9600500), coordination of watershed restoration activities (5503000), support for Anadromous Fish Managers' participation on the Integrated Hatchery Operations Team (9204300), coordination of fish screening activities (9202800) and development of a regional “Streamnet” database (8810804). Other projects in this category include fish medicine field studies (5504900), an independent assessment of the Corps' evaluation of lower Snake River naturalization (5513800), and a Yakima Basin environmental education program. Two projects were included in this list but recommended at a $0 funding level. These include a CBFWF proposal for a Columbia Basin Tributary Adult Fish Passage coordinator and a PSMFC proposal to provide support to inseason operations. The Anadromous Fish Managers felt that these organizations were capable of providing these services within their proposed overall budgets.

B. Mainstem

In FY 1997 projects recommended for funding include: (1) all of the essential components of the smolt monitoring program including the migrational characteristics of wild ESA listed salmon; (2) monitoring and research to address concerns about the effects of supersaturated atmospheric gases on juvenile and adult salmon; (3) studies to estimate the survival of juvenile salmon migrating through the Snake River; (4) installation and field testing of upgraded PIT tag detection systems at Federal dams; (5) continuation of a hatchery PIT tag study initiated in 1996 to help resolve uncertainty in transportation research; (6) continuation of the assessment of the success of adult salmon and steelhead passage at the four dams and reservoirs in the lower Columbia River and into the tributaries; (7) ongoing development of biological criteria for the design and operation of bypass facilities to protect juvenile salmonids from predation by northern squawfish; (8) development of a PC based model allowing the user to independently model dam and flow operations; (9) a study evaluating stranding of juvenile fall chinook salmon in the Hanford

Reach resulting from power peaking operations; and (10) estimation of the magnitude of avian predation on juvenile salmonids in the Columbia River.

In 1997 the availability of test fish may be a constraint for a number of projects. However, because it is difficult to predict the availability of test fish accurately at this time, all projects were ranked as if fish were available. Project implementation will be adjusted later as more accurate information on the availability of test fish is acquired.

The Fish Passage Center, which is responsible for the coordination of the region's smolt monitoring program and collection and compilation of data used to make recommendations for in-season management of the Federal Columbia River Power System, and the essential components of the smolt monitoring program (SMP), were all treated as a unit in the ranking and prioritization process.

The elements of the SMP, determined annually through review of the on-going program by the fish and wildlife managers, include project numbers 8332300, 8401400, 8712700, 8740100, 9403300, and 9602100. This work includes operation of the Fish Passage Center, smolt monitoring at Columbia and Snake River dams, collection of information on in-season travel time and survival indices from fish PIT tagged at traps in the Snake and Salmon rivers and at Rock Island Dam, and determination of the smolt condition and health of spring/summer and fall chinook salmon and steelhead released from hatcheries. Work will also continue on monitoring the migration of wild ESA-listed Snake River spring/summer chinook salmon (9102800). This work requires collecting and PIT tagging wild parr in the tributary streams during the summer and monitoring them as they pass the dams. In 1995 wild chinook salmon parr marking was greatly reduced and also may be reduced in 1996 and 1997.

In addition, the SMP collects monitoring information essential for supporting the spill program. This information includes measurements of the prevalence and severity of gas bubble trauma (GBT) in emigrating juvenile salmon and steelhead collected at seven hydropower dams (9602100). Studies also are recommended that measure the frequency and severity of GBT symptoms in in-river juvenile salmonids near SMP monitoring points to help determine the representativeness of GBT symptom data collected in smolt bypass facilities, to measure the frequency and severity of GBT symptoms in adult salmonids at Bonneville and Priest Rapids dams, and hydroacoustic fish stock assessment and reservoir gas monitoring to relate the occurrence of GBT symptoms to total dissolved gas, spill, flow, and juvenile salmonid behavior (9300802). Another study will measure changes in signs of GBT in juvenile salmonids as they migrate through a bypass/collection facility at Little Goose Dam and estimate the relative survival of juvenile salmonids allowed to migrate after exposure to levels of supersaturated atmospheric gas that induced signs of GBT (5503400). Also included is a study to monitor the prevalence and severity of GBT by sampling resident fish downstream from Bonneville and Ice Harbor dams which is a necessary component of the monitoring requirements of the State environmental quality agencies for the total dissolved gas waivers (5501500).

From 1993 through 1995, methodologies were developed and tested to measure survival of juvenile salmonids through Snake River dams and reservoirs. In 1997 juvenile salmon and steelhead will be PIT-tagged and released at the head end of Lower Granite reservoir and into the free-flowing Snake River to estimate the survival of chinook salmon and steelhead migrating through the Snake River (8910700 and 9302900). These studies will use hatchery yearling and subyearling chinook salmon, and hatchery steelhead when sufficient numbers are available. Survival also will be estimated for releases of PIT-tagged smolts from hatcheries, river traps, and other PIT-tag studies in the Snake River basin.

In FY 1997 the PIT-tag detection system at Federal dams, which is essential for collecting smolt monitoring data and developing survival estimates, will be upgraded to a new and more effective low frequency system. The first set of 134.2 kHz monitors will be installed, tested, and evaluated in the winter of 1996-97 at Federal dams (8331900, 8331901, and 9207102).

The refinement of mechanical operation of the 3-way rotational PIT-tag separation gates and development of 3-way separation by code will continue in FY 1997. Work will also continue in the development and evaluation of the flat-plate (pass-over) PIT-tag interrogation system for Bonneville Dam.

In 1996 spring/summer chinook salmon at Snake River and downriver hatcheries were marked with PIT-tags to compare smolt-to-adult survival and help resolve uncertainty associated with relative adult returns to hatcheries from transported and non-transported smolts. This study (960200) will continue in FY 1997 and should help resolve uncertainty concerning marking, handling and bypass effects associated with control fish used in the transportation research and evaluation studies conducted by the National Marine Fisheries Service (NMFS). The 1997 study is consistent with the NMFS decision tree to address uncertainties hindering long term recovery decisions.

Through cost sharing with the Corps of Engineers, adult salmon and steelhead passage at the four dams and reservoirs in the lower Columbia River and into the tributaries will be assessed in FY 1997 through radio tracking (9204101). This work will help evaluate specific flow and spill conditions on adult fish migration and the effectiveness of various measures undertaken to improve adult fish passage in the lower Columbia River.

In FY 1997 we recommend funding the development of a PC based model capable of modeling dam operations in the Columbia and Snake rivers that will allow the operator to perform independent analysis of various flow and storage operations. This work is based in part on a memorandum of agreement between the Columbia River Inter-Tribal Fish Commission and the Bureau of Reclamation. The final release of the Hydro Regulator model will be tested, debugged, documented and distributed in FY 1997 (5506100).

Another new study recommended for funding in FY 1997 includes an evaluation of the impact of power peaking activities in the Hanford Reach of the Columbia River on rearing juvenile fall chinook salmon and resident fish (5503800).

C. Production

Twenty five projects directly represent artificial propagation initiatives which were recommended for FY 1997 funding. The projects cover a wide range of actions, including: 1) evaluation of past, present, and future production facilities attempting to standardize and improve artificial production practices; 2) captive broodstock research, implementation, and evaluation; and 3) supplementation research, implementation, and evaluation. The captive brood activities are directed at Snake River sockeye, spring and summer chinook, and fall chinook. The production facility evaluation and improvement and the supplementation projects encompass stocks throughout the Columbia Basin. The production project approaches are addressed in each of the basin descriptions. These efforts are linked to mainstem management and evaluation, habitat protection and improvement, basin wide research, monitoring, and evaluation, and other activities proposed by the fish managers to restore and recover anadromous species.

D. Watershed Restoration Actions

There is increasing support for using community based groups to accomplish important habitat restoration and protection activities. Many watershed groups have organized throughout the Columbia Basin to conduct the community dialogue and planning they believe is necessary to support sustainable strategies in their communities.
Habitat activities provide the invaluable opportunity to bring people together at the community/watershed level to be involved in accomplishing projects that will protect and restore fish habitat and are good for the community.

The anadromous fish managers have begun to address the need for a more coordinated, comprehensive watershed approach in the 1997 annual work plan process. As a result $16,855,767 is proposed in 1997 to support watershed based activities. At the same time, the anadromous fish managers recognize that this funding does not adequately address all the watershed based funding needs which have been identified in the Basin. For instance, the Columbia River Treaty Tribes through the Tribal Salmon Restoration Plan, *Wy-Kan-Ush-Mi Wa-Kish-Wit--Spirit of the Salmon: The Columbia River Anadromous Fish Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes*, identified the need for approximately $30 million in annual funding needs to support a wide range of habitat activities. Funding sources in addition to the Bonneville Power Administration are important in addressing watershed restoration needs. However, due to a limitation in overall funding, other areas of critical importance to salmon restoration must also be addressed.

Watershed projects for 1997 include a diverse collection of watershed based efforts. Proposed projects have been developed through a community based watershed process and will be accomplished by variety of entities, including Soil and Water Conservation Districts, the U.S. Forest Service, the Public Power Council, and individual landowners. Specific projects include riparian restoration and fencing, the removal of temporary push dams and the installation of permanent irrigation diversion structures, the remediation of abandoned mine tailings, improved fish passage educational projects and support to watershed council coordinators. Individual projects are described in subbasin summaries.

The anadromous fish managers recognize the need to work in community based partnerships. For example, the Umatilla Watershed Council has provided an important forum for landowners, the tribes and state and local government to work together to support difficult watershed management issues. Funding is proposed for a watershed coordinator to support this important group (5500800). The role of a coordinator is critical for coordinating the various entities within a watershed, bringing science to watershed decisions and working to bring together various funding sources to support watershed based actions.

On April 17, the NPPC approved $6 million in funding to initiate watershed based actions and build momentum by encouraging high priority habitat actions to occur in the summer of 1996. The NPPC also approved an additional $1.5 to ongoing model and focus watershed efforts as a one time funding approval with the intention that a framework for supporting a watershed process for prioritizing funding decisions.

Funding is proposed to continue activities begun in the Umatilla and Methow Basins in the 1996. In the Umatilla Basin, funding is proposed to initiate a major land acquisition project in the Squaw Creek Basin (9506000). This project will have major benefits to both anadromous fish, resident fish and wildlife in the Umatilla Basin.

Funding is also proposed for the Methow Valley Irrigation District conversion project (5510000). This project proposed by the Yakama Indian Nation demonstrates a partnership to solve a difficult water conservation issue. Funding will support the development of water supply system which will conserve approximately 90% of the available water for in-stream uses.

The anadromous fish managers will work with watershed/tribal/state/federal counterparts to define an long term strategy for a coordinated and comprehensive watershed approach which will prioritize funding decisions for salmon restoration in the Columbia Basin. This is consistent with the NPPC request as a result of the April 17 decision to support funding for early action projects. This strategy may employ a sub-regional approach to decision-making to support watershed and community based activities. A work group has already been convened to address this issue. Membership on this workgroup includes the tribes, the states, federal agencies, the agricultural community, BPA, and NPPC.

IV. SUBREGIONAL PROJECTS

A. Below Bonneville Dam Subregion

There are four projects which have been recommended for funding in the region below Bonneville Dam. Two of the projects are associated with improving habitat conditions: 1) Hardy Creek Chum (5507300), associated with reducing sediment load and improving habitat in chum salmon spawning and rearing areas; and 2) Little Fall Creek passage (8612400), operation, maintenance, and repair of fish passage facility. A production project, Willamette Hatchery Oxygen Supplementation (8816000), is testing technology for rearing chinook at high densities and the application to production facilities throughout the Columbia basin. A harvest project, Columbia River Terminal Fisheries Research (9306000), is to identify sites in the lower Columbia where viable sport and commercial fisheries can occur without impacting rebuilding efforts for endangered upriver salmon. These projects improve survival conditions for depressed lower river salmon stocks or assist in improving conditions needed to rebuild depressed upriver stocks or contribute to improving Columbia River stock abundance.

1. Deschutes and Hood Rivers

The Hood River Master Plan contains details of the production program, which will supplement naturally produced populations.

The six projects recommended for funding in Hood River are all part of the Hood River Production Program. Projects include Oak Springs hatchery modification for summer and winter steelhead rearing (5519300), M&E for the Tribes and ODWF (8805303 and 8805304), Parkdale design and construction (9301900) and the production and rearing of spring chinook at the Pelton ladder and PGE O&M as displayed in the Deschutes River section (8902900 and 9500700).

The Deschutes River supports runs of wild fall chinook, hatchery supplemented spring chinook, and hatchery supplemented summer steelhead. Wild fall chinook spawn in the mainstem Deschutes. The population below Sherars Falls appears to be maintaining while the numbers above Sherars Falls have decreased dramatically during the past several years. Spring chinook are supplemented from Warm Springs National Fish Hatchery and the state-managed Round Butte facility. Summer steelhead are supplemented from the Round Butte Hatchery. Only wild summer steelhead are allowed above the Warm Springs Dam.

Three ongoing habitat projects are recommended by the Anadromous Fish Managers for funding: two in Buck Hollow Creek (9303000 and 9500700) and one in Trout Creek (9404200). Two projects displayed in the Deschutes River section are a large part of the Hood River Production Program. The production and rearing of spring chinook at the Pelton ladder (8902900) is primarily for the Hood River with some releases into the Deschutes. The PGE O&M proposal (9500700) is to provide the necessary work to ensure Pelton Ladder is maintained in good working order to support the additional water and facilities support that is associated with the extended spring chinook rearing in the ladder.

2. Fifteenmile Creek

Fifteenmile Creek is the eastern-most Columbia River tributary producing a population of wild winter steelhead. The system currently has many habitat problems. The one project recommended for funding (9304000) is an ongoing fisheries habitat restoration project designed to restore spawning and rearing habitat. Funding for this project covers O&M of the improvements constructed to date as well as the continuing implementation. Implementation work is primarily riparian fencing and some stabilization work.

3. John Day River

The John Day system is managed for wild fish, consequently all of the projects recommended for funding are habitat related. The North Fork John Day River dredge tailings restoration project (5502800) would restore floodplain functions to nine miles of the North Fork that was dredge mined in the late 1930's. The North Fork John Day habitat improvement project (8400800) would restore summer steelhead and spring chinook salmon habitat in the North Fork. The Mainstem, Middle Fork, and North Fork project (8402100) would improve fish passage, and the quantity and quality of spawning and rearing habitat available for salmon and steelhead. The North Fork area riparian fencing project (9303800) would reset and construct seasonal electric fences and construct a barbed wire exclosure fence.

4. Klickitat River

The Klickitat River runs from the Goat Rocks and Mt. Adams in the south Washington Cascades for nearly a hundred miles to the Columbia River above Bonneville Dam. The Klickitat River and its tributaries contain depressed populations of spring chinook and coho, summer steelhead of officially-unknown status but most likely depressed, a winter steelhead population of unknown status, and relatively robust populations of bright and tule fall chinook.

Portions of the mainstem and a number of potentially productive tributaries lack sustainable in-channel habitat structure and diversity, and have insufficient riparian cover and bank stability. Certain tributaries also have road crossings which hinder or block fish passage. Habitat restoration projects will focus on lower- and mid-basin tributaries, and on the upper mainstem (5512600, 5512700, 5512800). A passage restoration project will address artificial barriers in mid- and upper-basin tributaries (9506800).

These projects will complement studies of the natural production of chinook, coho, and steelhead which have recently begun in the Klickitat Basin. Adult passage facility improvements at two locations and a spring chinook and steelhead supplementation program, both planned under the Yakima/Klickitat Fisheries Project, will add to the effectiveness of these restoration efforts.

5. Umatilla River

The Umatilla Basin salmon and steelhead restoration program has become a model for cooperation in the region. The projects proposed are a continuation of this ongoing comprehensive effort to restore spring chinook, fall chinook, and coho, and to enhance summer steelhead. Projects are implemented by various "watershed partners" and include O&M of the fish ladder and screen facilities, fish trap and haul operations, power costs (pumping) for instream flow enhancement, Umatilla Hatchery O&M, Umatilla Hatchery Satellite Facilities construction and O&M, fish habitat enhancement, and M&E for Umatilla Hatchery and natural production success of salmon in the Umatilla Basin.

The projects recommended for funding in the Umatilla address the habitat problems created by irrigated agriculture and development and provide for continued operation of the Umatilla hatchery. Various watershed partners will implement the projects, which include O&M of fish ladder and screen facilities (8343600 and 8902401) fish trap and haul operations (8802200), power costs (pumping) for instream flow enhancement (8902700), Umatilla Hatchery O&M (8903500), Umatilla Hatchery satellite facilities construction and O&M (9101400 and 8343500), habitat enhancement (5500800, 8710001, and 9506000) and M&E for Umatilla Hatchery and natural production success for salmon in the Umatilla River Basin (8903500, 99000500 and 9000501).

The Bureau of Reclamation funded flow enhancement project, which is scheduled for completion (Phase II) in 1997, is a major effort which compliments the BPA funded projects. Also, staring in 1997, the Umatilla program will have capabilities to hold and spawn successfully returning adults for re-investment back into this program. Anadromous Fish Managers recommend continued funding for all the above Umatilla Basin projects.

6. Walla Walla River

The Walla Walla River originates in the Blue Mountains of Northeast Oregon. Currently, steelhead are the only anadromous salmonid that spawn in the Walla Walla River system.

Historically, spring chinook, coho, and chum salmon also utilized the river system. A spring chinook production program is being developed for the basin. All projects listed below will help in this effort and will enhance the existing depressed steelhead populations.

The Walla Walla River Basin salmon and steelhead restoration program includes critical projects for fish ladders and screens (960110 and 9601200). Funding will provide a 25 percent cost share for improved fish passage at two irrigation diversion dams, with the Corps funding the balance. Other ladder and fish screening projects which are being designed in 1996 will begin construction in 1997. Two projects of the CTUIR will address stream habitat enhancement in Oregon and Walla Walla County Soil and Water Conservation District in Washington (5504400 and 5506600).

7. Yakima River

The Yakima River Basin lies above four mainstem Columbia River hydroelectric dams. The Basin currently has depressed runs of steelhead and spring chinook and a run of fall chinook about which little is known. Once abundant coho, sockeye and summer chinook

salmon are believed to be extinct. The mainstem dams are a major factor for the poor performance of Yakima Basin anadromous fish stocks, but irrigated agriculture probably has contributed equally to fish decline. A distorted hydrograph, many miles of lost habitat, high summer water temperatures, unscreened diversions, polluted run-off and shoreline development are the legacy of the agricultural development of the Basin. Program elements to rebuild Yakima River Basin stocks include both habitat restoration and production measures.

Projects to improve habitat include creation, enhancement, or reconnection of side channel habitats, which are expected to improve survival during periods when instream flows are either artificially high or artificially low as a result of irrigation releases or storage. These new projects include basin-wide efforts (5510200 and 5511600), as well as efforts in the mainstem Yakima (5511700), Cabin Creek (5510500), the Little Naches River (5511300), and the Satus River (5512100). The Satus River project represents a continuation of the project approved by the Council for early implementation in FY 1996. Other habitat improvements include ongoing projects to screen irrigation diversions (9105700, 9107500, 9200900, and 9503300) and projects to increase instream flows in the Yakima and its tributaries (5510800, 5510900, 551200).

The remaining projects in the Yakima River Basin are related to construction of production facilities and management and evaluation of the supplementation program, which will be used to supplement the naturally produced spring chinook population.

8. Hanford Reach

The Hanford Reach of the Columbia River sustains natural spawning of Fall chinook and is the last remaining free flowing section of the Columbia River above Bonneville Dam in the United States. the Vernita Bar settlement agreement with Grant PUD provides guidelines for flows in the Hanford Reach.

Priest Rapids Hatchery located below Priest Rapids Dam rears Fall chinook for release to the Columbia River. The Hanford K-Basin Fall chinook acclimation project (5509800) will provide additional Fall chinook production capabilities for the area of the Columbia River.

C. Snake River Subregion

1. Snake River

1.a. Sockeye

The sockeye salmon recovery and restoration program in the Snake River subbasin is a cooperative effort among NMFS, BPA, the Forest Service, the Shoshone-Bannock Tribes, the University of Idaho, the Idaho Department of Fish and Game (IDFG) and the Idaho Division of Environmental Quality, operating within the jurisdiction of the Endangered Species Act. The entities operate within a Technical Oversight Committee (TOC) that meets monthly. This process ensures coordination, cooperation and minimal duplication.

The program comprises four projects that include collection and propagation, monitoring and evaluation, lake fertilization and genetic analysis. Two of the projects include the collection of sockeye in Redfish Lake and the propagation of the species using a captive brood stock strategy at the IDFG facility in Eagle, Idaho and NMFS's facility at the Manchester Marine Field Station, Washington.

Another project involves the Shoshone-Bannock Tribe's effort to artificially fertilize Redfish Lake to enhance primary production for the released hatchery fish. Included in this project are limnological sampling, carrying capacity assessment, predator interaction, rainbow/kokanee competition and monitoring kokanee abundance in the Fishhook Creek drainage. Also this project includes work on the other Stanley Basin Lakes that is part of the overall recovery strategy.

The budget for this project originally included $300,000 for improvements in passage for Alturas Lake Creek. Since there are no expected adult returns to Alturas Lake in 1997 this portion of the project was deferred to FY 1998.

The University of Idaho (Uof I) is conducting the DNA sampling and analysis to ensure the integrity of the anadromous component of the fish stocks. The U of I has established the baseline for genetic markers using DNA techniques. NMFS supports the effort with corroborative data using electrophoresis. This project is essential to the success of the program.

1.b. Chinook

The chinook captive rearing and captive brood stock program is described in three projects that include IDFG, the Nez Perce Tribe, and NMFS. The NMFS and IDFG captive rearing projects are new starts for FY 1997. They mostly involve setting up facilities for handling the rearing of chinook from parr to adult.

The Nez Perce Tribe's project is ongoing. It consists of several brood years of captive chinook from the Selway River, a tributary of the Clearwater. The fish are presently being held at IDFG's Clearwater Anadromous Hatchery in Orofino.

The budget of $40,000 supports monitoring and evaluation of the captive brood stock and the methodology for releasing the progeny back into the Selway River. This project is funded totally under the Lower Snake River Compensation Plan.

NMFS's project is titled Assessing Captive Brood Technology. This project has been ongoing since 1993 as identified in the Council's Program. It is a multi-agency effort that includes NBS, WDFW, U of W, and NMFS researchers. They are directed to address specific problems incurred by ongoing captive brood stock programs and evaluate captive breeding strategies that will be applicable to the ESA stocks of chinook and sockeye in the Columbia River.

2. Clearwater River

The program includes five projects recommended for funding in the Clearwater. They include hatchery production, research, habitat enhancement and protection, population assessment and captive broodstock supplementation. They blend elements of recovery and restoration for weak and extirpated stocks as well as stocks listed under the ESA. These programs are intended to contribute to recovery of existing stocks and restoration of extirpated summer chinook with a subyearling smolt migrant. Habitat enhancement and protection is proportional to the production element and focuses on streams either being supplemented now or targeted for future outplanting of anadromous species. Eventually this program will pioneer the recovery and restoration of lamprey and coho.

The Nez Perce Tribal Hatchery (8335000) is the cornerstone of the supplementation effort in the Clearwater. NEPA compliance is currently underway with a Draft Environmental Impact Statement (DEIS) moving toward a Record of Decision (ROD) in August, 1996. The preliminary design has been completed and final design is being implemented to coincide with completion of the ROD. Anticipating the ROD could recommend construction of NPTH, construction would begin and continue through the remainder of 1996-1997 with the goal of completing construction of the hatchery at Cherrylane on the Clearwater River in December, 1997. The 1997 budget allocates approximately $5.66 million to construction of the Cherrylane facility and O&M, plus M&E costs of about $1.0 million. The hatchery will sponsor spring, summer and fall chinook production, modifying current hatchery methods to either mimic natural production by timing, size and condition of the fish it produces or by using enhanced production strategies, such as larger fall chinook subyearling smolts that migrate on spring rather than summer flows. The project to assess summer/fall chinook restoration in the Snake River Basin (9403400), with research being conducted in the mainstem Snake River below Hells Canyon Complex, adds to the circle of information being gathered to recover Snake River fall chinook.

3. Grande Ronde and Imnaha Rivers

There are a number of watershed restoration activities that plan, coordinate and implement habitat restoration activities for salmonids in the Grande Ronde basin.

These projects have an overall goal of restoring watershed function in the Grande Ronde Basin with the objective of providing required spawning, rearing and migration habitat for endangered salmonids (5506000, 5507000, 5520900, 8402509, 9202601 and 9403900). The habitat restoration activities are developed through or in conjunction with the Grande Ronde Model Watershed process. This is a community-wide participatory process to coordinate federal, state, tribal, and local programs. The approach is to encourage local landowners to take part in restoration efforts through cooperative, incentive-based opportunities and to seek cost share with federal, state, tribal, and local natural resource management agencies.

There are a number of artificial propagation and natural production evaluation projects proposed for the Grande Ronde Basin. Catherine Creek, upper Grande Ronde, and Lostine rivers were historically three of the most productive tributaries in the Grande Ronde Basin. Escapement levels in Catherine Creek, upper Grande Ronde, and Lostine rivers dropped to alarming low levels in 1994 and 1995. This emergency situation will warrant dramatic efforts to prevent extinction as well as preserve options for use of natural fish for future artificial propagation programs. These circumstances have led to the need to explore propagation measures in order to reduce probability of extinction. These measures include a captive broodstock program from local natural populations for genetic conservation and natural production enhancement. In addition, (5518900) juvenile acclimation facilities on Catherine Creek, upper Grande Ronde, and Lostine rivers (8805301 and 8805302) are needed to initiate captive brood and supplementation programs. Also, it is imperative to maintain base line natural survival evaluations along with expanded evaluation efforts in order to assess the success and impact of the captive brood and natural production enhancement efforts (9202604).

The cost of artificial propagation and natural production evaluation for the Grande Ronde and Imnaha basins, to be funded in FY 1997, is approximately $5.34 million. There are some uncertainties whether these activities can be completed in FY 1997. The majority of the cost is for projects in the Grande Ronde basin.

4. Salmon River

The Salmon River supports some of the most productive anadromous fish stocks in the Snake River Basin Primarily because of an abundance of high quality habitat in an unimpounded drainage. The river flows within the boundaries of several wildernesses and many roadless areas. Some of the major tributaries have had little or no hatchery influence, which has help to maintain the genetic integrity of the indigenous stocks of spring and summer chinook and summer steelhead. Like other Snake River tributaries, the Salmon River has suffered from the loss of productivity due to habitat degradation, water withdrawals, unscreened irrigation diversions and the damming of the mainstem migration corridor by eight dams.

Proposals in this area recommended for funding include habitat improvements such as riparian restoration (5519100, 5520100, 5522200 and 930501), screening and consolidation of irrigation diversions (9401500 and 9600700), conversion from flood to sprinkler irrigation and other instream enhancement measures (9306200). Much of this

effort is funded under the Model Watershed Program (9202603, 9401700, 9402700) working mostly with private landowners.

Proposals also include captive brood programs for the nearly extinct sockeye salmon and chinook populations that have been reduced to low levels in the drainage. The sockeye salmon recovery and restoration program in the Snake River subbasin is a cooperative effort among NMFS, BPA, the Forest Service, the Shoshone-Bannock Tribes, the University of Idaho, IDFG and the Idaho Division of Environmental Quality. The entities operate within a technical oversight committee that meets monthly. This process ensures coordination, cooperation and minimal duplication.

There are five ongoing projects associated directly with the sockeye captive broodstock program. Two of the projects involve collection and propagation (9107200 and 9204000) using the IDFG facility in Eagle, Idaho and NMFS's facility at the Manchester Marine Field Station, Washington. Another project involves the Shoshone-Bannock Tribe's effort to artificially fertilize Redfish Lake to enhance primary production for the released hatchery fish (9107100). Included in this project is limnological sampling, carrying capacity assessment, predator interaction, rainbow/kokanee competition and monitoring kokanee abundance in the Fishhook Creek drainage. Also this project includes work on the other Stanley Basin Lakes that are part of the overall recovery strategy. The University of Idaho is conducting DNA sampling and analysis (9009300) to ensure the integrity of the anadromous component of the fish stocks. The University has established the baseline for genetic markers using DNA techniques.

The Salmon River program also includes a new initiative for a captive broodstock effort for listed spring/summer chinook, which have had dramatically decreased returns in the last two years. The three projects in this program include a collection and captive rearing effort by IDFG (5503300) and the Shoshone-Bannock Tribes (5514000). An additional project sponsored by NMFS assesses captive broodstock technologies (9305600), which is displayed in the research section. This is a multi-agency effort that includes NMFS, WDFW, University of Washington, and NMFS researchers. They address specific problems incurred by ongoing captive broodstock programs and evaluate captive breeding strategies that will be applicable to the ESA stocks of chinook and sockeye in the Columbia River.

D. Priest Rapids Dam to Chief Joseph Dam Subregion

1. Methow River

The Methow River Basin is situated above nine mainstem Columbia River hydroelectric dams. The basin currently contains depressed populations of spring and summer chinook and steelhead and once supported a robust coho population. The dams are the major factor limiting anadromous fish runs in the Methow, but the Anadromous Fish Managers believe that it is possible to improve habitat within the basin enough to partially offset the impact of the dams.

The Methow River and virtually all of its major tributaries are heavily diverted for irrigation, severely exacerbating what were historically probably already low instream flows in the late summer and fall. Today, many Methow tributaries are completely dried by withdrawals, while the mainstem and larger tributaries are commonly diverted down to a quarter of their natural flow.

The citizens of the Methow Valley have agreed that water conservation should occur and that 90 percent of the water conserved should be dedicated to instream flows for fish. Because existing irrigation practices are so inefficient improving them yields relatively large savings compared to areas where existing irrigation practices are already efficient. The Methow Valley Irrigation District conversion (5510000) represents the single greatest opportunity to swiftly improve habitat for Methow stocks. The other habitat restoration measure (5509900) included in the recommended package is designed to create side channel habitats by reconnecting oxbows and side channels to the river and, in some cases, creating new side channel analogs. Such habitats will provide refuge from the extreme low flows of summer and fall and from the anchor ice of winter.

Future water conservation projects will likely be funded as part of the mid-Columbia Habitat Conservation Plan (HCP). The three local public utility districts (PUDs) of Douglas, Grant and Chelan Counties are in the process of negotiating an HCP with the state and federal fish management agencies and the Yakama, Colville, and Umatilla Indian Tribes. The HCP will feature a significant tributary habitat improvement effort, including water conservation, to help offset the unavoidable impacts of operating the PUDs five mainstem hydroelectric dams.

The third project in the Basin is construction of an acclimation facility for coho restoration (5510100). The coho are reprogrammed Mitchell Act production from below Bonneville, consistent with congressional direction to direct more production above Bonneville.

APPENDIX A

Factors for Evaluating Anadromous Fish Restoration Projects in the Columbia River Basin

Introduction

Biological Need

A. Priority Stock: Does the project contribute or help evaluate the survival changes necessary to rebuild naturally reproducing populations? Maximum 20 points: 10 for status, 6 for number of stocks, 4 for genetic conservation.

1) Stock status:

Guidance: If project affects multiple stocks, choose the highest applicable category. Refer to the attached ISP stock list for guidance.

a. Stocks which are declining and will continue to decline under present conditions (e.g., badly damaged and declining stocks, and stocks listed under the ESA)
10 pts

b. Stocks which are marginally maintaining themselves under present conditions,
8 pts

c. Stocks which have been extirpated but whose habitat can support a naturally reproducing stock.
6 pts

d. Stocks which are presently healthy but are in danger of declining without additional protection.
6 pts

e. Enhance healthy stocks.
2 pts

2) The number of stocks affected. Projects would be prioritized according to the number stocks benefiting from the project.

1 stock	2 pts
2-5 stocks	4 pts
5+ stocks	6 pts

3) Genetic conservation.
Project has positive or neutral effects 4 pts

Project has negative genetic conservation effect 0 pts

B. Natural Production Need: Does the project directly increase survival to adult returns? When and by how much? Maximum 20 points: 10 for timing and 10 for magnitude of the increase.

Guidance: This category of criteria asks alternative questions based on whether the project addresses a documented or undocumented source of mortality. Project reviewers should assign points to either criteria 1a or criteria 2a, and to either 1 b or 2b.

1) Does the projects increase DOCUMENTED sources of survival and significantly increase return of naturally reproducing adults:
   a. When will the benefits be realized?
      1 generation 10 pts
      2 generations 6 pts
      more than 2 generations 4 pts

   b. How significant is the proportional increase from the existing population level?
      100% or greater 10 pts
      50% - 99% 6 pts
      less than 50% 4 pts

2) Does the projects increase UNDOCUMENTED sources of survival and significantly increase return of naturally reproducing adults:
   a. When will the benefits be realized?
      1 generation 5 pts
      2 generations 3 pts
      more than 2 generations 2 pts

   b. How significant is the proportional increase from the existing population level?
      100% or greater 5 pts
      50% - 99% 3 pts
      less than 50% 2 pts

C. Utilization Need: Does the project enable or contribute to meeting fish utilization goals? 20 points maximum: 10 for magnitude of effect and 10 for effect on stocks needing protection.

Guidance: A utilization goal may be either consumptive (e.g., catch to a fishery) or non-consumptive (e.g., brood stock, education/viewing). A utilization goal should be from a specific written plan. The following questions should be scored based upon the magnitude of a project's impact, usually measured in numbers of fish. Points should be given only to projects whose benefits occur within two cycles.

1) Does the projects enable achievement of utilization goals (e.g., as described in the CRFMP and/or a subbasin plan)? 0-10 pts

AND

2) Does the project decrease the impacts on a priority stock (see below)? 0-10 pts

D. Increased Learning: Does the project contribute to increased learning in the context of an overall adaptive management salmon restoration program? 20 points maximum.

Guidance: First determine the appropriate category for each project then assign points within the indicated range according to the significance of the information produced.

1) Project provides essential information within a critical path decision making about a conservation measure. 0-20 pts

Guidance: Projects that fall within this category are those that develop and maintain long-term data bases and/or resolve controversy or uncertainty over critical issues having basin-wide management implications (e.g., survival under different migration scenarios or hatchery/natural fish interactions).

2) Project provides essential information within a critical path decision making about a utilization measure. 0 - 15 pts

APPENDIX B

OTHER RELATED PROGRAMS

Several other programs also provide funding for anadromous fish restoration actions in the Columbia Basin. The most significant programs are described below. Information regarding these programs was taken into account by the anadromous fish managers in developing a proposed anadromous fish budget for FY 1997 BPA funds. In future years, the anadromous fish managers intend to develop a more integrated budget review to assure increased effectiveness for all anadromous fish investment priorities. The following information is provided for the reviewers' benefit and does not reflect a joint endorsement of the anadromous fish managers to the budget priorities for each of these programs.

Mitchell Act (Columbia River Basin Fisheries Development Program)

The Mitchell Act was passed in 1938 and amended in 1946. Central to the Act was the construction of fish hatcheries and the screening of diversions. The first hatchery to be constructed under the Mitchell Act was the Klickitat Hatchery in 1949. Since that time numerous other hatcheries and rearing ponds were constructed or funded under the Act. In addition to the hatcheries, over 800 fish screens and habitat improvement projects such as removal of passage barriers and fish ladder construction have been implemented under the program. Funding for the program is provided by Congressional appropriations to the National Marine Fisheries Service. The budget for FY 1996 will provide approximately $9,200,000 for the operation of hatcheries and $4,000,000 for fish screens. Projects related to Mitchell Act programs include:

9105700 Yakima Phase 2 Screen Fabrication
9105700 Yakima Phase II Screens - Construction
9200900 Yakima Screens - Phase II - O&M
9401500 Idaho Fish Screening Improvement (See New NPPC)
9202800 Fish Screen Oversight Committee (FSOC), Tributary Passage and Habitat Coordinator (TPHC)
9306600 Oregon Fish Screens Project
5511500 Naches River Irrigation Diversion Upgrade
5507600 Columbia River Basin Tributary Adult Fish Passage

Lower Snake River Compensation Plan

The Lower Snake River Compensation Plan (LSRCP) was authorized under the Water Resources Act of 1976. The LSRCP provides mitigation for the construction and operation of the four lower Snake River dams. Facilities constructed include nine hatcheries and eleven satellite facilities. Facilities were constructed by the Corps of Engineers and once completed transferred to the U.S. Fish and Wildlife Service for operation and maintenance. Funding is provided through appropriations to the U.S. Fish and Wildlife Service. The federal government is reimbursed by the Bonneville Power Administration for the funds expended. The fiscal year 1996 Lower Snake River Compensation Plan budget was $11,503,000.

The following projects are related to and coordinated with activities funded under the LSRCP and partially or wholly funded under the LSRCP.

5504200 1996 Pittsburg Landing O&M and M&E Funding
5520700 Captive Broodstock Artificial Propagation
5521200 Monitoring and Evaluation of Lyons Ferry hatchery Fall Chinook Above Lower Granite Dam
5521300 Big Canyon Creek Portable Acclimation/Release Facility
5521400 Pittsburg Landing Portable Acclimation/Release Facility
5521500 Rogersburg (Above Mouth of Grande Ronde) Portable Acclimation/Release Facility
5518900 Grande Ronde Basin Spring Chinook Captive Broodstock Program
5514000 Salmon River Production Program
5503300 Captive Rearing Initiative for Salmon River Chinook Salmon

Pacific Salmon Treaty Programs

The U.S. - Canada Pacific Salmon Treaty, which established the Pacific Salmon Commission, was adopted in 1985.(1) It provides for the conservation and equitable allocation of north Pacific salmon stocks originating from Canada and the United States. The treaty was preceded by fourteen years of negotiations; its signing was finally caused by the drastic decline of chinook stocks in Southeast Alaska, Canada and the Pacific Northwest in the early 1980s. The treaty's chinook rebuilding program, with a goal of rebuilding naturally spawning chinook stocks coastwide by 1998, is a cornerstone of the treaty and serves as a base for management actions in other salmon fisheries.

Coastwide, funding for Pacific Salmon Treaty programs for FY 1996 was approximately $10.5 million. Much of this funding is directed to programs in coastal areas of Washington and Oregon, Puget Sound, and Alaska. Within the Columbia Basin, Pacific Salmon Treaty funds are utilized to support, among other things, coded wire tagging of juvenile salmon, mark recovery efforts, escapement estimation, stock identification, and analysis of stock abundance. Such programs are coordinated with coded wire tag projects supported with BPA funds (e.g. projects 8201300, 8906500, 8906600, and 8906900 identified under stock assessment). In addition, PATH activities (e.g. 9303701 and 9600800) are dependent on these coordinated marking and stock assessment efforts.

(1) Treaty Between the Government of the United States of America and the Government of Canada Concerning Pacific Salmon, Treaty Doc. No. 99-2, (*entered into force,* March 18, 1985)

Mitigation Programs Funded by Mid-Columbia Public Utility Districts

Five privately owned hydroelectric projects are located in the Mid-Columbia section of the Columbia River between McNary and Chief Joseph dams. The projects are licensed by the Federal Energy Regulatory Commission to Douglas County, Chelan County, and Grant County public utility districts. On March 7, 1979, FERC consolidated the proceedings and ordered hearings to determine what long-term studies and interim measures were necessary for protection of migrating salmon.(2) The Wells Dam and Rock Island Dam settlement agreements are among the outcomes of those proceedings.(3) These agreements reflect commitments to salmon restoration actions by the project operators and their power purchasers. Such actions are being carried out in the Wenatchee, Entiat, Methow, and Okanogan subbasins.

By way of example, actions being implemented consistent with the Wells Dam Agreement include adult and juvenile fish passage measure including flows, spills, bypass, and operational requirements. Pursuant to the Agreement a hatchery-based compensation program composed of adult collection sites; a central hatchery facility for incubation, early rearing, and adult holding; and acclimation facilities is being implemented in the Okanogan and Methow river basins. This production program includes funding for studies relating to the potential for establishing new sockeye populations in the Okanogan and Similkameen river systems in a manner consistent with the Council's Fish and Wildlife Program.

Northwest Power Planning Council

The Northwest Power Planning Council expends approximately $4.1 million annually on activities related to the fish and wildlife purposes of the Northwest Power Act.(4) Activities carried out with these funds include amendment and oversight of Columbia Basin Fish and Wildlife Program measures. The Council also facilitates the actions of groups such as the Independent Scientific Advisory Board and the Fish Operations Executive Committee called for by the program. The anadromous fish managers are working with the Council to seek coordinated approaches in anadromous fish restoration actions. Projects specifically related to Council activities include: 8906200, Preparation of Draft Annual Implementation Work Plan; 9600600, 9600800, 9203200, 8910800 (PATH projects); 5513200, ESA Recovery Implementation Coordination; and 9600500 Operation of the Independent Scientific Advisory Board.

Northwest Forest Plan

In 1994, the Clinton Administration adopted a Northwest Forest Plan (NFP) that addresses terrestrial and aquatic resource protection needs in the context of land management actions of the U.S. Forest Service and Bureau of Land Management. Although the plan's geographic boundaries extend eastward generally to the crest of the Cascades, portions of the Deschutes, Methow, Okanogan, and Yakima basins are addressed by the plan. For FY 1996, the Rescissions Bill, sometimes referred to as the "Salvage Rider" has mooted substantial provisions of the NFP. Notably, the baseline conditions of forests, watersheds, streams, and fish populations upon which the NFP was premised have been altered by actions directed in the Salvage Rider. Nonetheless,

(2) 6 FERC ¶ 61,210 at 61,537 (1979).

(3) Settlement Agreement, *Public Utility District No. 1 of Douglas County, Washington,* Docket No. E-9569 (FERC October 1, 1990).

(4) This is the amount of money identified by relevant federal agencies in the Administration's budget agreement regarding the Bonneville Power Administration's investments in fish and wildlife mitigation under the Northwest Power Act.

some aspects of the NFP, such as watershed analysis, are proceeding. Unfortunately, the commitment to aquatic monitoring associated with the NFP is negligible and virtually no data on instream conditions are being collected as a result. The "Jobs in the Woods" program is funded and going forward and is providing for watershed restorations actions, primarily in coastal drainages.

Eastside Columbia Basin EIS Assessments

The USFS and BLM are analyzing options for land management in the portions of the Columbia Basin east of the crest of the Cascades. Significant efforts have been invested in these processes and significant data have been assembled. A draft EIS is expected to be out in mid-August. The anadromous fish managers will attempt to assure that relevant data assembled for the eastside EIS will be preserved and entered into the Streamnet data base, project number 8810804. Like the geographic areas covered by the NFP, funding for grazing management and aquatic monitoring in areas east of the Cascades is very limited.

Corps of Engineers System Configuration Improvements and Operations and Maintenance Activities

For FY 1997, the Corps of Engineers has proposed approximately $107 million in system configuration improvements for its dams on the Snake and Columbia rivers. Such improvements include installation of dissolved gas abatement structures, development of prototype surface bypass systems for juvenile salmon, design and engineering of adult passage facility improvements, modifications to juvenile salmon collection and handling facilities, and juvenile bypass outfall changes. Priorities for the FY 1997 budget related to system configuration improvements are being coordinated with anadromous fish managers through the Systems Configuration Team.
The Corps of Engineers also funds a number of operations, research and development activities through it’s operations and maintenance budgets. For FY 1997, budget information is not yet available for projects of this nature. Examples of these projects include studies of fish guidance efficiencies for juvenile fish bypass facilities, evaluation of adult salmon passage at dams, maintenance of fish ladders and juvenile bypass facilities and hatchery mitigation, operation, and maintenance.

In future years, the anadromous fish managers hope to increase coordination between Corps and BPA funded efforts. Almost all of the mainstem projects identified in the FY 1997 budget priorities for BPA funds relate to these Corps of Engineers' projects in a broad sense. The Anadromous Fish Managers were careful to assure that projects were not duplicated for Corps and BPA funding.

July 23, 1999

Mr. Ken Casavant, Chair
Fish and Wildlife Committee
Northwest Power Planning Council
851 SW 6th Ave., Suite 1100
Portland, OR 97204-1348

Dear Mr. Casavant:

The Anadromous Fish Managers of the Columbia Basin Fish and Wildlife Authority are pleased to provide the Northwest Power Planning Council with recommendations for FY 1997 spending for anadromous fish projects. These recommendations are consistent with the budget target of $90 million for anadromous fish.

The task of balancing the anadromous fish budget was made more difficult due to an increase in the costs of the FY 1997 project work by more than 12 percent since August 1996.

While our recommendations call for the spending of $3.4 million of the reserve funds held by BPA, our review of out-year costs indicates that sufficient reserves will remain to cover many unforeseen contingencies.

We look forward to the Council's review of our recommendations.

Sincerely,

Fred Olney, Chair
Anadromous Fish Managers
Columbia Basin Fish and Wildlife Authority

cc: B. Allee, T. Giese, CBFWA
B. Towey, Chair, RFM
C. Merker, Chair, WM
T. Clune, BPA
D. Marker, NPPC
Anadromous Fish Managers

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Table 1. Proposal to balance anadromous fish budget

Description	Amount	Notes
Current Total Budget	101.976	(Less Yakima Hatchery Increase)
Proposed Reductions	-12.385	
Proposed Total Budget	89.591	
Budgeted Amt.	90.000	
Balance	0.409	
BPA support cost adjustment	-0.900	BPA letter, 12/9/96
ISRP expenses	-0.200	Wong, pers. comm. 2/7/97,$300 from ESA research
FY96 Interest	1.120	Quart.Rev. 2/12/97 ($1.6M x 70%)
FY1996 Carry Forward	1.104	Quart. Rev. 2/12/97 (less $62k anticipated)
Balance	**1.533**	
Yakima Hatchery Increase	-4.929	($12.137M, 1/97 - $8.3M, 9/96, +$1.093M, Hatcher, 2/14/97)
Spending Needed from Reserve	**-3.396**	

All figures in millions

Table 2. Anadromous fish project budget adjustments

Proj ID	Title	Sponsor	FY97 Need	Changes	FY97 Adj	Notes
8506200	PASSAGE IMPROVEMENT EVALUATION	Battelle Pacific Northwest National Laboratories	300	-180	120	NPPC reduced 1/97
9207102	TECHNICAL ASSISTANCE FOR JUVENILE AND ADULT MIGRANT MONITORING FACILITIES	Battelle Pacific Northwest National Laboratories	100		100	
	Fall Chinook Spawning in Hanford Reach (?) Study	Battelle Pacific Northwest National Laboratories	165		165	
5518700	Terminal Fisheries	? BPA?	0		0	
8805300	NE Ore Spring Chinook Outplanting/Facility	?BPA?	0		0	
8811500	YAKIMA HATCHERY - CONSTRUCTION	BPA	8,300		8,300	
9506300	YAKIMA/KLICKITAT MONITORING AND EVALUATION PROGRAM	BPA	1,550		1,550	
9601500	FISH.NET Policy Access Network & Newsletter	C. Noe	63		63	
5507600	COLUMBIA RIVER BASIN TRIBUTARY ADULT FISH PASSAGE	CBFWF	0		0	
5513200	ESA RECOVERY IMPLEMENTATION COORDINATION	CBFWF	200	-7	193	Covers tribal travel
8906200	PREPARE DRAFT ANNUAL IMPLEMENTATION WORK PLAN	CBFWF	800	-51	749	Glasser letter, 1/15/97
9202800	FISH SCREEN OVERSIGHT COMMITTEE (FSOC), TRIBUTARY PASSAGE AND HABITAT COORDINATOR (TPHC)	CBFWF	34		34	Glasser letter, 1/15/97
9600500	OPERATION OF THE INDEPENDENT SCIENTIFIC ADVISORY BOARD	CBFWF	620		620	$500 ISRP expenses added in Balance.
9502100	OKANOGAN WATERSHED PLANNING	CCT	125	-20	105	Peone, pers. comm., 2/4/97
9006900	YAKIMA HATCHERY - FINAL DESIGN	CH2M Hill	900		900	
9303701	TECHNICAL ASSISTANCE WITH THE LIFE CYCLE MODEL	Charlie Paulsen	60		60	Paulson letter, 1/16/97
9204101	EVALUATION OF ADULT SALMON AND STEELHEAD MIGRATION PAST DAMS AND THROUGH RESERVOIRS IN THE LOWER COLUMBIA RIVER AND INTO TRIBUTARIES	COE	350	-150	200	R.Turner, pers.comm.,2/14/97
9401800	WASHINGTON MODEL WATERSHED HABITAT PROJECTS	Conservation Districts	600	-21	579	possible
5505900	PREDATION BY FISH-EATING BIRDS ON JUVENILE SALMONIDS IN THE COLUMBIA RIVER BASIN	CRITFC/OSU	125		125	

Proj ID	Title	Sponsor	FY97 Need	Changes	FY97 Adj	Notes
5503000	COLUMBIA RIVER BASIN WATERSHED RESTORATION ACTIVITIES: 1996 AND 1997 FUNDING	CRITFC	270	-270	0	Soscia, 1/30/97
5506000	MONITORING FINE SEDIMENT LEVELS IN SUBSTRATE AND OVERWINTER SEDIMENTATION IN CLEANED GRAVELS IN PORTIONS OF THE GRANDE RONDE AND JOHN DAY RIVERS	CRITFC	30		30	
5506100	HYDRO REGULATOR MODEL DEVELOPMENT	CRITFC	92		92	
5506300	EVALUATION OF WATERSHED AND HABITAT RESPONSE TO RECENT STORMS: EFFECTS ON SALMON LISTED UNDER THE ESA	CRITFC	115		115	
9300802	SYMPTOMS OF GAS BUBBLE TRAUMA INDUCED IN SALMON BY TOTAL DISSOLVED GAS PRESSURE SUPERSATURATION IN THE SNAKE AND COLUMBIA RIVERS	CRITFC	900	-225	675	P. Roger, pers.comm,2/13/97
5505500	CTUIR TRIBUTARY ENFORCEMENT	CTUIR	0		0	
5507000	GRANDE RONDE SUBBASIN WATERSHED RESTORATION	CTUIR	150		150	James Letter, 1/23/97
8343500	UMATILLA HATCHERY SATELLITE FACILITIES OPERATION AND MAINTENANCE	CTUIR	425	-60	365	James Letter 1/23/97 =$60
8710001	UMATILLA RIVER BASIN ANADROMOUS FISH HABITAT ENHANCEMENT	CTUIR	275	-1	274	actual
8802200	UMATILLA RIVER BASIN TRAP AND HAUL PROGRAM	CTUIR	430	-134	296	actual
8805302	NE OREGON HATCHERY - GRAND RONDE SATELLITE FACILITIES	CTUIR	1,400		1,400	James Letter, 1/23/97
9000501	UMATILLA BASIN NATURAL PRODUCTION MONITORING AND EVALUATION (UBNMPE)	CTUIR	700	-175	525	actual
9101400	UMATILLA HATCHERY SATELLITE FACILITIES - PLANNING, SITING, DESIGN, AND CONSTRUCTION	CTUIR	4,640		4,640	BPA Letter, 12/9/96
9402600	PACIFIC LAMPREY RESEARCH AND RESTORATION PROJECT	CTUIR	352	-52	300	James Letter, 1/23/97
9506000	UMATILLA RIVER RIPARIAN CORRIDORS: SQUAW CREEK WATERSHED PROJECT (ANADROMOUS PORTION)	CTUIR	1,900	-400	1,500	James Letter, 1/23/97
9601100	JUVENILE FISH SCREENS AND SMOLT TRAPS AT IRRIGATION DIVERSION DAMS ON THE WALLA WALLA AND TOUCHET RIVERS IN OREGON AND WASHINGTON	CTUIR	600	-100	500	James Letter, 1/23/97
9601200	ADULT ANADROMOUS FISH PASSAGE IMPROVEMENT AT IRRIGATION DIVERSION DAMS ON THE WALLA WALLA RIVER	CTUIR	350		350	James Letter, 1/23/97
9604600	RIPARIAN AND FISH HABITAT ANALYSIS, PROTECTION AND ENHANCEMENT TO INCREASE NATURAL PRODUCTION OF STEELHEAD AND SPRING CHINOOK IN THE WALLA WALLA RIVER BASIN	CTUIR	200		200	James Letter, 1/23/97
8805303	HOOD RIVER PRODUCTION PROGRAM - CTWS - M&E	CTWSIR	515	-18	497	Griggs, pers.comm. 1/97

Proj ID	Title	Sponsor	FY97 Need	Changes	FY97 Adj	Notes
9600600	PATH - FACILITATION, TECH ASSISTANCE & PEER REVIEW	Essa Technologies Ltd.	450		450	Marmorek letter, 1/16/97
9601700	Al Giorgi's Study	Giorgi	60		60	
9402700	GRANDE RONDE MODEL WATERSHED HABITAT PROJECTS	Grande Ronde Model Watershed Program (Blue Mtns.)	1,409	-282	1,127	Perry letter, 1/24/97
9202603	IDAHO MODEL WATERSHEDS ADMIN/IMPL. SUPPORT	ID Soil Conservation Commission	172	-33	139	actual
8332300	SMOLT CONDITION & ARRIVAL TIMING AT LWR GRANITE	IDFG	342	-1	341	
8909800	IDAHO SUPPLEMENTATION STUDIES (ISS)	IDFG	875		875	
9005500	STEELHEAD SUPPLEMENTATION STUDIES IN IDAHO RIVERS	IDFG	220		220	
9107200	REDFISH LAKE SOCKEYE SALMON CAPTIVE	IDFG	663		663	
9107300	IDAHO NATURAL PROD. MONITORING/EVAL 83-7(ESA)	IDFG	550		550	
9401500	IDAHO FISH SCREENING IMPROVEMENT (SEE NEW NPPC)	IDFG	1,000	-700	300	
9602000	1997 HATCHERY PIT TAG STUDY	IDFG	741	122	863	Giese Memo, 1/31/97
9700100	CAPTIVE REARING INITIATIVE FOR SALMON RIVER CHINOOK SALMON	IDFG	732	-431	301	
9306200	SALMON RIVER ANADROMOUS FISH PASSAGE ENHANCEMENT, IDAHO	Lemhi and Custer Soil and Water Conservation Districts	90		90	
9401700	IDAHO MODEL WATERSHED HABITAT PROJECTS	Lemhi and Custer Soil and Water Conservation Districts	175		175	
8200300	SELECTIVE PREDATION/DEVELOPMENT OF PREY PROTECTION	NBS	471	-8	463	Seelye letter, 1/15/97
8740100	TRAVEL TIME AND SURVIVAL SMOLT PHYSIOLOGY	NBS	469	-237	232	Seelye letter, 1/15/97
9005200	PERF/STOCK PROD IMPACTS OF HATCHERY SUPPL	NBS	444		444	Seelye letter, 1/15/97
9007800	SYSTEM-WIDE SIGNIFICANCE OF PREDATION ON JUVENILE SALMONIDS IN COLUMBIA AND SNAKE RIVER RESERVOIRS AND EVALUATION OF PREDATION CONTROL MEASURES	NBS	285		285	Seelye letter, 1/15/97
9102900	LIFE HISTORY OF FALL CHIN IN COL RIVER BASIN	NBS	1,000		1,000	Seelye letter, 1/15/97
9602100	GAS BUBBLE DISEASE MONITORING AND RESEARCH OF JUVENILE SALMONIDS	NBS	750	101	851	Seelye letter, 1/15/97

Proj ID	Title	Sponsor	FY97 Need	Changes	FY97 Adj	Notes
5520600	LISTED STOCK GAMETE PRESERVATION	Nez Perce Tribe	110		110	
5520700	CAPTIVE BROODSTOCK ARTIFICIAL PROPAGATION	Nez Perce Tribe	0		0	
5520800	LISTED STOCK ADULT ESCAPEMENT MONITORING	Nez Perce Tribe	140		140	
5520900	WALLOWA COUNTY/NEZ PERCE TRIBE SALMON HABITAT RECOVERY PLAN IMPLEMENTATION	Nez Perce Tribe	50		50	
5521200	MONITORING AND EVALUATION OF LYONS FERRY HATCHERY FALL CHINOOK ABOVE LOWER GRANITE DAM	Nez Perce Tribe	0		0	
5521300	BIG CANYON CREEK PORTABLE ACCLIMATION/RELEASE FACILITY	Nez Perce Tribe	0		0	
5521400	PITTSBURG LANDING PORTABLE ACCLIMATION/RELEASE FACILITY	Nez Perce Tribe	0		0	
5521500	ROGERSBURG (ABOVE MOUTH OF GRANDE RONDE RIVER) PORTABLE ACCLIMATION/RELEASE FACILITY	Nez Perce Tribe	0		0	
5522700	ENHANCED TRIBAL TRIBUTARY FISH AND WILDLIFE LAW ENFORCEMENT-- PART 1. NEZ PERCE TRIBES	Nez Perce Tribe	0		0	
8335000	NEZ PERCE TRIBAL HATCHERY	Nez Perce Tribe	6,260	-4,400	1,860	FY96 carryover=$2.5M
8805300	Nez Perce NEO Hatchery	Nez Perce	0	0		
8909802	SALMON SUPPLEMENTATION STUDIES IN ID RV - NEZ PERCE TRIBE	Nez Perce Tribe	270		270	
9303600	HAYSFORK GLORY HOLE, NEWSOME CREEK PLACER MINE SILT TRAP - NEZ PERCE TRIBE	Nez Perce Tribe	30		30	
9403400	ASSESSING SUMMER/FALL CHINOOK RESTORATION IN THE SNAKE RIVER BASIN	Nez Perce Tribe	286		286	
9403900	WALLOWA BASIN PROJECT PLANNING - G. R. MODEL WATERSHED	Nez Perce Tribe	50		50	
9604300	JOHNSON CREEK ARTIFICIAL PROPAGATION ENHANCEMENT	Nez Perce Tribe	793		793	
8331900	NEW FISH TAG SYSTEM	NMFS	800		800	NMFS Letter, 1/30/97
8331901	ESSENTIAL M&E INFRASTRUCTURE - PIT TAG MONITOR PROCUREMENT AND INSTALLATION	BPA	750		750	BPA Letter, 12/9/96
8909600	GENETIC MONITORING AND EVALUATION OF SNAKE RIVER SALMON AND STEELHEAD	NMFS	250		250	NMFS Letter, 1/30/97
9102800	MONITORING THE SMOLT MIGRATIONS OF WILD SNAKE RIVER SPRING/SUMMER CHINOOK SALMON	NMFS	304		304	NMFS Letter, 1/30/97
9105500	SUPPLEMENTATION FISH QUALITY (YAKIMA)	NMFS	400		400	NMFS Letter, 1/30/97
9202200	WILD SMOLT BEHAVIOR/PHYSIOLOGY (ESA)	NMFS	350		350	NMFS Letter, 1/30/97
9204000	REDFISH LAKE SOCKEYE SALMON CAPTIVE BROODSTOCK REARING AND RESEARCH	NMFS	500		500	NMFS Letter, 1/30/97
9302900	SURVIVAL ESTIMATION FOR DAM/RESERVOIR PASSAGE	NMFS	1,200	-300	900	NMFS Letter, 1/30/97
9305600	ASSESSMENT OF CAPTIVE BROODSTOCK TECH	NMFS	1,250	-250	1,000	NMFS Letter, 1/30/97
9602200	EVALUATING EFFECTS OF DISSOLVED GASES ON	NMFS	180		180	NMFS Letter, 1/30/97

Proj ID	Title	Sponsor	FY97 Need	Changes	FY97 Adj	Notes
	RESIDENT FISH					
9602400	CHANGES IN GAS BUBBLE DISEASE SIGNS AND SURVIVAL OF MIGRATING JUVENILE SALMONIDS EXPERIMENTALLY EXPOSED TO SUPERSATURATED GASES	NMFS	228		228	NMFS Letter, 1/30/97
9606700	Manchester Captive Broodstock O & M	NMFS	400	-9	391	NMFS Letter, 1/30/97
8402100	MAINSTEM, MIDDLE FORK, AND N. FORK JOHN DAY RIVER	ODFW	350	-35	315	ODFW Letter, 1/24/97
8402500	GRANDE RONDE HABITAT ENHANCEMENT	ODFW	250	-25	225	ODFW Letter, 1/24/97
8612400	INSP SERV FOR LITTLE FALL CREEK PASS RE:86-090	ODFW	2	-2	0	ODFW Letter, 1/24/97
8710002	UMATILLA HABITAT IMPROVEMENT / ODFW	ODFW	235	-23	212	ODFW Letter, 1/24/97
8805301	NORTHEAST OREGON OUTPLANTING FACILITIES MASTER PLAN - NEZ PERCE TRIBE	ODFW	200	-100	100	ODFW Letter, 1/24/97
8805304	HOOD RIVER PRODUCTION PROGRAM - ODFW - M&E	ODFW	425	-36	389	ODFW Letter, 1/24/97
8805305	Hood River Production (Oak Springs Modification)	ODFW	200		200	ODFW Letter, 1/24/97
8816000	WILLAMETTE HATCHERY OXYGEN SUPPLEMENTATION	ODFW	99	-5	94	ODFW Letter, 1/24/97
8902401	EVAL UMATILLA BASIN PRJ - 3-MILE/WEID CANAL SCR	ODFW	300	-8	292	ODFW Letter, 1/24/97
8902900	HOOD RIVER PRODUCTION PROGRAM - PELTON LADDER - HATCHERY	ODFW	142		142	ODFW Letter, 1/24/97
8903500	UMATILLA HATCHERY OPERATIONS AND MAINTENANCE	ODFW	1,250	-453	797	ODFW Letter, 1/24/97
8906900	ANN CD WIRE TAG PROG-MISSING PROD OR HTC (ODFW)	ODFW	175		175	ODFW Letter, 1/24/97
9000500	UMATILLA HATCHERY - MONITORING/EVAL PROJECTS	ODFW	545	88	633	ODFW Letter, 1/24/97
9202604	SPRING CHINOOK SALMON EARLY LIFE HISTORY	ODFW	526	-32	494	ODFW Letter, 1/24/97
9301900	HOOD RIVER PRODUCTION PROGRAM (PARKDALE DESIGN & CONSTRUCTION)	ODFW	2,571	-1,026	1,545	ODFW Letter, 1/24/97
9304000	FIFTEENMILE CREEK HABITAT IMPROVEMENT	ODFW	325	-10	315	ODFW Letter, 1/24/97
9304500	BUCK HOLLOW WATERSHED ENHANCEMENT (ODFW)	ODFW	75	-20	55	ODFW Letter, 1/24/97
9306000	COLUMBIA RIVER TERMINAL FISHERIES RESEARCH PROJECT	ODFW	900	-315	585	ODFW Letter, 1/24/97
9306600	OREGON FISH SCREENS PROJECT	ODFW	420	-51	369	ODFW Letter, 1/24/97
9404200	TROUT CREEK OPERATION & MAINTENANCE	ODFW	250		250	ODFW Letter, 1/24/97
9600800	PATH - PARTICIPATION BY STATE AND TRIBAL AGENCIES	ODFW	716		716	ODFW Letter, 1/24/97 (Actual=$606)
9604400	GRANDE RONDE BASIN SPRING CHINOOK CAPTIVE BROODSTOCK PROGRAM	ODFW	2,212		2,212	ODFW Letter, 1/24/97 (needs review)
9500700	HOOD RIVER PRODUCTION PROGRAM - PGE O&M	PGE	56		56	PGE letter, 1/14/97
9303501	LOWER RED RIVER MEADOW RESTORATION PROJECT	Pocket Water Inc/River Master Engineering	729	-26	703	Bauer letter, 1/14/97

Proj ID	Title	Sponsor	FY97 Need	Changes	FY97 Adj	Notes
8902700	POWER/REPAY O&M FOR USBR CPR PUMPING PROJ	PPL/UECA	750	-250	500	James Letter, 1/30/97
8401400	SMOLT MONITORING AT FEDERAL DAMS	PSMFC	800	-300	500	Lohn Draft Letter, 2/12/97
8810804	STREAMNET (formerly CIS and NED)	PSMFC	2,000	-75	1,925	PSMFC, 1/23/97, actual
9008000	COLUMBIA BASIN PIT-TAG INFORMATION SYSTEM	PSMFC	1,550	-385	1,165	PSMFC, 1/23/97, actual
9204300	INTEGRATED HATCHERY OPERATIONS TEAM	PSMFC	465		465	PSMFC, 1/23/97, actual
9403300	FISH PASSAGE CENTER	PSMFC	1,083	-80	1,003	PSMFC, 1/23/97, actual
9601600	IN-SEASON OPERATIONS TECHNICAL MANAGEMENT TEAM (TMT) SUPPORT	PSMFC	0		0	
5502700	ENHANCED TRIBAL TRIBUTARY FISH AND WILDLIFE LAW ENFORCEMENT-- PART 5. SHOSHONE-BANNOCK TRIBES	SBT	0		0	
5513800	LOWER SNAKE RIVER NATURALIZATION	SBT	0		0	
5514000	SALMON RIVER PRODUCTION PROGRAM	SBT	50	-50	0	
8909803	SALMON SUPPLEMENTATION STUDIES IN ID RIVERS - SHOSHONE-BANNOCK TRIBES	SBT	172		172	
9107100	SNAKE RIVER SOCKEYE SALMON HABITAT	SBT	600		600	
9405000	SALMON RIVER HABITAT O&M/MONITORING & EVALUATION	SBT	268		268	
9600700	UPPER SALMON RIVER DIVERSION CONSOLIDATION PROGRAM	SBT	645		645	
8907201	INDEPENDENT SCIENTIFIC GROUP SUPPORT	U.S.DOE	100		100	
9608500	COORDINATION OF WATERSHED PROJECTS IN UMATILLA RIVER BASIN	Umatilla Basin Watershed Council	0		0	
9009300	GENETIC ANALYSES OF ONCORHYNCHUS NERKA (ESA)	Univ/ID, subcontractor WSU	140	-6	134	Jacobsen letter, 1/17/97
8910700	EPIDEMIOLOGICAL SURVIVAL METHOD	Univ/WA	150	0	150	Skalski letter, 1/15/97
8910800	MONITORING AND EVALUATION MODELING SUPPORT	Univ/WA	200	0	200	Anderson Letter, 1/15/97
8343600	UMATILLA PASSAGE O&M	US BOR	421	232	653	
9107500	YAKIMA PHASE II SCREENS - CONSTRUCTION	US BOR	1,500		1,500	
9503300	O&M OF YAKIMA FISH PROTECTION, MITIGATION & ENHANCEMENT FACILITIES	US BOR	200	-10	190	

Proj ID	Title	Sponsor	FY97 Need	Changes	FY97 Adj	Notes
5519100	MEADOW CREEK INSTREAM STRUCTURE AND RIPARIAN EVALUATION	USFS	54	0	54	Haugen Letter, 1/24/97
5520100	O'HARA WATERSHED RESTORATION	USFS	35	-10	25	Haugen Letter, 1/24/97
8400800	NORTH FORK JOHN DAY HABITAT IMPROVEMENT	USFS	30		30	Haugen Letter, 1/24/97
9202601	GRANDE RONDE MODEL WATERSHED - ADMIN/IMPL./RESEARCH	USFS	305		305	Haugen Letter, 1/24/97
9203200	LIFE-CYCLE MODEL DEVELOPMENT AND APPLICATION TO SYSTEM AND SUBBASIN PLANNING IN SNAKE RIVER	USFS	65		65	Haugen Letter, 1/24/97
9303800	NORTH FORK JOHN DAY AREA RIPARIAN FENCING	USFS	80		80	Haugen Letter, 1/24/97
9605300	NORTH FORK JOHN DAY RIVER DREDGE TAILINGS RESTORATION PROJECT	USFS	100		100	Haugen Letter, 1/24/97
9607700	MEADOW CREEK RESTORATION	USFS	69	-14	55	Haugen Letter, 1/24/97
5504200	1996 PITTSBURG LANDING O&M AND M&E FUNDING	USFWS	0		0	
5507300	HARDY CREEK CHUM SALMON SPAWNING HABITAT IMPROVEMENT PROJECT	USFWS	0		0	USFWS Letter, 1/30/97
8906500	ANNUAL FISH MARKING PROGRAM-MISSING HATCHERY PRODUCTION GROUPS OR/WA/ID (USFWS)	USFWS	353	10	363	USFWS Letter, 1/30/97
8909801	SALM SUPPLEMENTATION STUDIES IN IDAHO RIVERS - USFWS	USFWS	125	-1	124	USFWS Letter, 1/30/97
9606400	WALLA WALLA COUNTY COOPERATIVE WATERSHED PLAN (DEVELOPMENT AND IMPLEMENTATION)	Walla Walla County Conservation District	100	-12	88	Taylor letter, 1/31/97
9303000	BUCK HOLLOW WATERSHED ENHANCEMENT (SWCD)	Wasco Co SWCD	110	-5	105	Graves letter, 1/15/97
9202602	EASTERN WA MODEL WATERSHED COORDINATORS	Washington State Conservation Commission	159	-6	153	Bottman letter, 1/15/97
5503800	1996-97 EVALUATION OF JUVENILE FALL CHINOOK STRANDING ON THE HANFORD REACH	WDFW	200	-25	175	WDFW Letter, 1/31/97
5507700	MONITORING OF SUPPLEMENTATION RESPONSE VARIABLES FOR YKFP	WDFW	200	-64	136	WDFW Letter, 1/31/97
8816300	EFFECTS OF CODED WIRE TAGGING ON THE SURVIVAL OF SPRING CHINOOK	WDFW	160	-24	136	WDFW Letter, 1/31/97
8903000	EFFECTS OF ACCLIMATION ON THE SURVIVAL OF SPRING CHINOOK SALMON AKA: EVAL OF PRE-REL TEMP ACCLIMATION AT KLICKITAT HTCH	WDFW	36		36	WDFW Letter, 1/31/97
8906600	ANN CD WIRE TAG PROG-MISSING PROD WA HTCH (WDF)	WDFW	310	-7	303	WDFW Letter, 1/31/97
9105700	YAKIMA PHASE 2 SCREEN FABRICATION	WDFW	300	-86	214	WDFW Letter, 1/31/97
9200900	YAKIMA SCREENS - PHASE II - O & M	WDFW	85		85	WDFW Letter, 1/31/97

Proj ID	Title	Sponsor	FY97 Need	Changes	FY97 Adj	Notes
9207300	AN AUTOMATED FISH MARKING AND TAGGING SYSTEM	WDFW	200		200	WDFW Letter, 1/31/97
930600	Columbia River Terminal Fisheries Research	WDFW	235	-35	200	WDFW Letter, 1/31/97
9506401	REFINEMENT OF MARKING METHODS FOR YKFP	WDFW	25		25	WDFW Letter, 1/31/97
9506402	UPPER YAKIMA SPECIES INTERACTION STUDIES	WDFW	400	23	423	WDFW Letter, 1/31/97
9506404	POLICY/TECHNICAL INVOLVEMENT AND PLANNING FOR YKFP	WDFW	275	15	290	WDFW Letter, 1/31/97
5504900	FISH MEDICINE FIELD STUDIES	Western Regional INAD Project	12		12	
5509700	REMOVAL OF LOST FISHING NETS	Yakama Indian Nation	0		0	Hatcher letter, 1/23/97
5509900	METHOW BASIN SIDE CHANNEL HABITAT CONSTRUCTION	Yakama Indian Nation	0		0	Hatcher letter, 1/23/97
5510200	YAKIMA RIVER BASIN SIDE CHANNEL SURVEY AND REHABILITATION	Yakama Indian Nation	475	-183	292	Hatcher letter, 1/23/97
5510500	CABIN CREEK HABITAT ENHANCEMENT PROJECT	Yakama Indian Nation	162	-162	0	Hatcher letter, 1/23/97
5510800	UPPER YAKIMA TRIBUTARY IRRIGATION IMPROVEMENT	Yakama Indian Nation	0		0	Hatcher letter, 1/23/97
5510900	TEANAWAY RIVER INSTREAM FLOW RESTORATION	Yakama Indian Nation	1,450	250	1,700	Hatcher letter, 1/23/97
5511300	LITTLE NACHES RIVER RIPARIAN AND IN-CHANNEL HABITAT ENHANCEMENT PROJECT	Yakama Indian Nation	90		90	Hatcher letter, 1/23/97
5511600	YAKIMA BASIN SIDE CHANNELS	Yakama Indian Nation	1,006	-300	706	Hatcher letter, 1/23/97
5511700	YAKIMA RIVER REARING HABITAT ENHANCEMENT, BETWEEN SELAH AND UNION GAPS	Yakama Indian Nation	246		246	Hatcher letter, 1/23/97
5512000	TOPPENISH/SIMCOE INSTREAM FLOW RESTORATION	Yakama Indian Nation	308		308	Hatcher letter, 1/23/97
5512600	UPPER KLICKITAT MEADOWS RIPARIAN RESTORATION	Yakama Indian Nation	32	-32	0	Hatcher letter, 1/23/97
5512700	KLICKITAT BASIN CULVERT REHABILITATION	Yakama Indian Nation	35	-35	0	Hatcher letter, 1/23/97
5512800	LOWER KLICKITAT RIVER RIPARIAN AND IN-CHANNEL HABITAT ENHANCEMENT PROJECT	Yakama Indian Nation	665	-450	215	Hatcher letter, 1/23/97
5522100	DEVELOPMENT AND REFINEMENT OF NATURAL PRODUCTION OBJECTIVES AND ENHANCEMENT STRATEGIES FOR YAKIMA BASIN ANADROMOUS SALMONIDS	Yakama Indian Nation	67		67	Hatcher letter, 1/23/97
8812001	YAKIMA/KLICKITAT FISHERIES PROJECT MANAGEMENT	Yakama Indian Nation	763		763	Hatcher letter, 1/23/97
8812004	HATCHERY TRAINING AND EDUCATION	Yakama Indian Nation	231		231	Hatcher letter, 1/23/97
8812005	FISH PASSAGE VIDEO MONITORING	Yakama Indian Nation	215		215	Hatcher letter, 1/23/97
8812008	FISHERIES TECHNICIAN FIELD ACTIVITIES	Yakama Indian Nation	823		823	Hatcher letter, 1/23/97
9506800	KLICKITAT PASSAGE/HABITAT PRELIMINARY DESIGN	Yakama Indian Nation	777		777	Hatcher letter, 1/23/97
9603201	HANFORD K-BASIN FALL CHINOOK ACCLIMATION AND MASTER PLAN DEVELOPMENT	Yakama Indian Nation	358		358	Hatcher letter, 1/23/97
9603301	YAKIMA RIVER FALL CHINOOK SUPPLEMENTATION	Yakama Indian Nation	661		661	Hatcher letter, 1/23/97

Proj ID	Title	Sponsor	FY97 Need	Changes	FY97 Adj	Notes
9603302	YAKIMA RIVER COHO RESTORATION	Yakama Indian Nation	143		143	Hatcher letter, 1/23/97
9603401	METHOW VALLEY IRRIGATION DISTRICT CONVERSION	WA. DOE	861		861	
9603501	SATUS WATERSHED RESTORATION	Yakama Indian Nation	200		200	Hatcher letter, 1/23/97
9604000	WENATCHEE AND METHOW RIVER COHO RESTORATION	Yakama Indian Nation	325		325	Hatcher letter, 1/23/97
9405900	YAKIMA BASIN ENVIRONMENTAL EDUCATION	Yakima Education Service District	100		100	
	Cooperative Projects					
9202400	COLUMBIA BASIN LAW ENFORCEMENT PROGRAM	zCoop-CBLEC	4,457		4,457	
8201300	CODED-WIRE TAG RECOVERY	zCoop-PSMFC	1,408	-7	1,401	PSMFC,1/23/97 actual
8712700	SMOLT MONITORING BY NON-FEDERAL ENTITIES	zCoop-PSMFC	1,213	87	1,300	PSMFC,1/23/97 actual
9007700	NORTHERN SQUAWFISH MANAGEMENT PROGRAM	zCoop-PSMFC	3,700	-250	3,450	Young, pers. comm., 1/97
	Place Holder for Additional PIT Tags		0	233	233	Giese memo, 1/31/97
		Total	**101,976**	**-12,385**	**89,591**	

All figures in thousands

Group Totals for Proposed FY 97 Anadromous Fish Projects

This report gives subtotals by location for each Subregion

Basin Wide	
Research, Monitoring & Evaluation	3,292,121
Law Enforcement	4,457,000
Predator Control	4,880,798
Stock Assessments	5,412,494
Coordination	5,193,000
General	420,000
	$ 23,655,413
Mainstem	
Mainstem	12,593,604
	$ 12,593,604
Below Bonneville Dam Subregion	
Lower Columbia	1,084,490
	$ 1,084,490
Bonneville Dam - Priest Rapids Dam Subregion	
Deschutes	633,000
Fifteenmile	325,000
Hanford Reach	358,400
Hood	3,510,000
John Day	560,000
Klickitat	1,509,083
Umatilla	9,296,502
Walla Walla	1,250,000
Yakima	13,850,866
	$ 31,292,851
Snake River Subregion	
Clearwater	7,685,793
Grande Ronde/Imnaha	7,672,894
Salmon River	6,649,432
Snake	2,867,116
	$ 24,875,235
Priest Rapids Dam - Chief Joseph Dam Subregion	
Okanogan	125,000
Wenatchee/Methow	1,713,650
	$ 1,838,650
Anadromous total	**$ 95,340,243**

Anadromous fish projects by group and location

Project #	Title	Contractor	97 $	97 $ (cum.)
	1. Fund in FY 97			
	Basin Wide Projects			
	Research, Monitoring & Evaluation			
8506200	Passage Improvement Evaluation	U.S. Department of Energy	300,000	300,000
8816300	Effects of Coded Wire Tagging on the Survival of Spring Chinook	WDFW	160,000	460,000
8903000	Effects of Acclimation on the Survival of Spring Chinook Salmon aka: Eval of Pre-Rel Temp Acclimation at Klickitat Htch	WDFW	36,121	496,121
9005200	Perf/Stock Prod Impacts of Hatchery Suppl	National Biological Service	444,000	940,121
9102900	Life History of Fall Chin in Col River Basin	National Biological Service	1,000,000	1,940,121
9305600	Assessment of Captive Broodstock Tech	NMFS	1,000,000	2,940,121
9402600	Pacific Lamprey Research and Restoration Project	CTUIR	352,000	3,292,121
		Research, Monitoring & Evaluation Total:	**3,292,121**	
	Law Enforcement			
5502700	Enhanced Tribal Tributary Fish and Wildlife Law Enforcement-- Part 5. Shoshone-Bannock Tribes	Shoshone-Bannock Tribes	0	0
5505500	CTUIR Tributary Enforcement	CTUIR	0	0
5522700	Enhanced Tribal Tributary Fish and Wildlife Law Enforcement-- Part 1. Nez Perce Tribes	Nez Perce Tribe	0	0
9202400	Columbia Basin Law Enforcement Program	USFWS	4,457,000	4,457,000
		Law Enforcement Total:	**4,457,000**	
	Predator Control			
5505900	Predation by Fish-Eating Birds on Juvenile Salmonids in the Columbia River Basin	Oregon State University/CRITFC	125,000	125,000
8200300	Selective Predation/Development of Prey Protection	National Biological Service	470,798	595,798
9007700	Northern Squawfish Management Program	PSMFC	4,000,000	4,595,798
9007800	System-Wide Significance of Predation on Juvenile Salmonids in Columbia and Snake River Reservoirs and Evaluation of Predation Control Measures	National Biological Service	285,000	4,880,798
		Predator Control Total:	**4,880,798**	

Anadromous fish projects by group and location

Project #	Title	Contractor	97 $	97 $ (cum.)
	Stock Assessments			
8201300	Coded-Wire Tag Recovery	PSMFC	1,408,294	1,408,294
8906500	Annual Fish Marking Program-Missing Hatchery Production Groups OR/WA/ID (USFWS)	USFWS	278,000	1,686,294
8906600	Ann Cd Wire Tag Prog-Missing Prod WA Htch (WDF)	WDFW	310,000	1,996,294
8906900	Ann Cd Wire Tag Prog-Missing Prod OR Htch (ODFW)	ODFW	175,000	2,171,294
8910800	Monitoring and Evaluation Modeling Support	Univ/WA	200,000	2,371,294
9008000	Columbia Basin Pit-Tag Information System	PSMFC	1,550,000	3,921,294
9203200	Life-Cycle Model Development and Application to System and Subbasin Planning in Snake River	USFS	65,000	3,986,294
9207300	An Automated Fish Marking and Tagging System	WDFW	200,000	4,186,294
9303701	Technical Assistance With the Life Cycle Model	Charlie Paulsen	60,000	4,246,294
9600600	PATH - Facilitation, Tech Assistance & Peer Review	Essa Technologies Ltd.	450,000	4,696,294
9600800	PATH - Participation by State and Tribal Agencies	ODFW	716,200	5,412,494
		Stock Assessments Total:	**5,412,494**	
	Coordination			
5503000	Columbia River Basin Watershed Restoration Activities: 1996 and 1997 Funding	Columbia River Inter-Tribal Fish Commission	500,000	500,000
5504900	Fish Medicine Field Studies	Western Regional INAD Project	60,000	560,000
5507600	Columbia River Basin Tributary Adult Fish Passage	CBFWF	0	560,000
5513200	ESA Recovery Implementation Coordination	CBFWF	200,000	760,000
5513800	Lower Snake River Naturalization	Shoshone-Bannock Tribes	125,000	885,000
8810804	Streamnet (formerly CIS and NED)	PSMFC	2,000,000	2,885,000
8906200	Prepare Draft Annual Implementation Work Plan	CBFWF	800,000	3,685,000
8907201	Independent Scientific Group Support	U.S. Department of Energy	100,000	3,785,000
9202800	Fish Screen Oversight Committee (FSOC), Tributary Passage and Habitat Coordinator (TPHC)	CBFWF	94,000	3,879,000
9204300	Integrated Hatchery Operations Team	PSMFC	594,000	4,473,000
9405900	Yakima Basin Environmental Education	Yakima Education Service District	100,000	4,573,000
9600500	Operation of the Independent Scientific Advisory Board	CBFWF	620,000	5,193,000
9601600	In-Season Operations Technical Management Team (TMT) Support	PSMFC	0	5,193,000
		Coordination Total:	**5,193,000**	

Anadromous fish projects by group and location

Project #	Title	Contractor	97 $	97 $ (cum.)
	General			
9306600	Oregon Fish Screens Project	ODFW	420,000	420,000
		General Total:	**420,000**	
Mainstem Projects				
	Mainstem			
5503800	1996-97 Evaluation of Juvenile Fall Chinook Stranding on the Hanford Reach	WDFW	200,000	200,000
5506100	Hydro Regulator Model Development	Columbia River Inter-Tribal Fish Commission	92,000	292,000
5509700	Removal of Lost Fishing Nets	Yakama Indian Nation	33,600	325,600
8331900	New Fish Tag System	NMFS	800,000	1,125,600
8332300	Smolt Condition & Arrival Timing at Lwr Granite	IDFG	342,000	1,467,600
8401400	Smolt Monitoring at Federal Dams	PSMFC	800,000	2,267,600
8712700	Smolt Monitoring by Non-Federal Entities	PSMFC	1,212,704	3,480,304
8740100	Travel Time and Survival Smolt Physiology	National Biological Service	469,000	3,949,304
8910700	Epidemiological Survival Method	Univ/WA	150,000	4,099,304
9102800	Monitoring the Smolt Migrations of Wild Snake River Spring/Summer Chinook Salmon	NMFS	303,800	4,403,104
9202200	Wild Smolt Behavior/Physiology (ESA)	NMFS	350,000	4,753,104
9204101	Evaluation of Adult Salmon and Steelhead Migration Past Dams and Through Reservoirs in the Lower Columbia River and Into Tributaries	COE	350,000	5,103,104
9207102	Technical Assistance for Juvenile and Adult Migrant Monitoring Facilities	Battelle Pacific Northwest National Laboratories	100,000	5,203,104
9300802	Symptoms of Gas Bubble Trauma Induced in Salmon by Total Dissolved Gas Pressure Supersaturation in the Snake and Columbia Rivers	Columbia River Inter-Tribal Fish Commission	900,000	6,103,104
9302900	Survival Estimation for Dam/Reservoir Passage	NMFS	1,200,000	7,303,104
9403300	Fish Passage Center	PSMFC	1,082,500	8,385,604
9602000	1997 Hatchery Pit Tag Study	IDFG	550,000	8,935,604
9602100	Gas Bubble Disease Monitoring and Research of Juvenile Salmonids	National Biological Service	750,000	9,685,604
9602200	Evaluating Effects of Dissolved Gases on Resident Fish	NMFS	180,000	9,865,604
9602400	Changes in Gas Bubble Disease Signs and Survival of Migrating Juvenile Salmonids Experimentally Exposed to Supersaturated Gases	NMFS	228,000	10,093,604
9701000	Essential M&E Infrastructure - Pit Tag Monitor Procurement and Installation	NMFS	2,500,000	12,593,604
		Mainstem Total:	**12,593,604**	

Below Bonneville Dam Subregion

Anadromous fish projects by group and location

Project #	Title	Contractor	97 $	97 $ (cum.)
Lower Columbia				
5507300	Hardy Creek Chum Salmon Spawning Habitat Improvement Project	USFWS	83,790	12,677,394
8612400	Insp Serv for Little Fall Creek Pass Re:86-090	ODFW	2,000	12,679,394
8816000	Willamette Hatchery Oxygen Supplementation	ODFW	98,700	12,778,094
9306000	Columbia River Terminal Fisheries Research Project	ODFW	900,000	13,678,094
		Lower Columbia Total:	**1,084,490**	
Bonneville Dam - Priest Rapids Dam Subregion				
Deschutes				
8902900	Hood River Production Program - Pelton Ladder - Hatchery	ODFW	142,000	13,820,094
9303000	Buck Hollow Watershed Enhancement (SWCD)	Wasco Co SWCD	110,000	13,930,094
9304500	Buck Hollow Watershed Enhancement (ODFW)	ODFW	75,000	14,005,094
9404200	Trout Creek Operation & Maintenance	ODFW	250,000	14,255,094
9500700	Hood River Production Program - PGE O&M	PGE	56,000	14,311,094
		Deschutes Total:	**633,000**	
Fifteenmile				
9304000	Fifteenmile Creek Habitat Improvement	ODFW	325,000	14,636,094
		Fifteenmile Total:	**325,000**	
Hanford Reach				
9603201	Hanford K-Basin Fall Chinook Acclimation and Master Plan Development	Yakama Indian Nation	358,400	14,994,494
		Hanford Reach Total:	**358,400**	
Hood				
8805303	Hood River Production Program - CTWS - M&E	Warm Springs Tribe	515,000	15,509,494
8805304	Hood River Production Program - ODFW - M&E	ODFW	425,000	15,934,494
9301900	Hood River Production Program (Parkdale Design & Construction)	ODFW	2,570,000	18,504,494
		Hood Total:	**3,510,000**	
John Day				
8400800	North Fork John Day Habitat Improvement	USFS	30,000	18,534,494
8402100	Mainstem, Middle Fork, and N. Fork John Day River	ODFW	350,000	18,884,494
9303800	North Fork John Day Area Riparian Fencing	USFS	80,000	18,964,494
9605300	North Fork John Day River Dredge Tailings Restoration Project	USFS	100,000	19,064,494
		John Day Total:	**560,000**	

Anadromous fish projects by group and location

Project #	Title	Contractor	97 $	97 $ (cum.)
Klickitat				
5512600	Upper Klickitat Meadows Riparian Restoration	Yakama Indian Nation	32,292	19,096,786
5512700	Klickitat Basin Culvert Rehabilitation	Yakama Indian Nation	35,000	19,131,786
5512800	Lower Klickitat River Riparian and In-Channel Habitat Enhancement Project	Yakama Indian Nation	665,280	19,797,066
9506800	Klickitat Passage/Habitat Preliminary Design	Yakama Indian Nation	776,511	20,573,577
		Klickitat Total:	**1,509,083**	
Umatilla				
8343500	Umatilla Hatchery Satellite Facilities Operation and Maintenance	CTUIR	425,000	20,998,577
8343600	Umatilla Passage O&M	US BOR	421,200	21,419,777
8710001	Umatilla River Basin Anadromous Fish Habitat Enhancement	CTUIR	275,000	21,694,777
8710002	Umatilla Habitat Improvement / ODFW	ODFW	235,000	21,929,777
8802200	Umatilla River Basin Trap and Haul Program	CTUIR	430,000	22,359,777
8902401	Eval Umatilla Basin Prj - 3-Mile/Weid Canal Scr	ODFW	300,302	22,660,079
8902700	Power/Repay O&M for USBR CPR Pumping Proj	PPL/UECA	750,000	23,410,079
8903500	Umatilla Hatchery Operations and Maintenance	ODFW	1,250,000	24,660,079
9000500	Umatilla Hatchery - Monitoring/Eval Projects	ODFW	545,000	25,205,079
9000501	Umatilla Basin Natural Production Monitoring and Evaluation (UBNMPE)	CTUIR	700,000	25,905,079
9101400	Umatilla Hatchery Satellite Facilities - Planning, Siting, Design, and Construction	CTUIR	2,000,000	27,905,079
9506000	Umatilla River Riparian Corridors: Squaw Creek Watershed Project (Anadromous Portion)	CTUIR	1,900,000	29,805,079
9608500	Coordination of Watershed Projects in Umatilla River Basin	Umatilla Basin Watershed Council	65,000	29,870,079
		Umatilla Total:	**9,296,502**	
Walla Walla				
9601100	Juvenile Fish Screens and Smolt Traps at Irrigation Diversion Dams on the Walla Walla and Touchet Rivers in Oregon and Washington	CTUIR	600,000	30,470,079
9601200	Adult Anadromous Fish Passage Improvement at Irrigation Diversion Dams on the Walla Walla River	CTUIR	350,000	30,820,079
9604600	Riparian and Fish Habitat Analysis, Protection and Enhancement to Increase Natural Production of Steelhead and Spring Chinook in the Walla Walla River Basin	CTUIR	200,000	31,020,079
9606400	Walla Walla County Cooperative Watershed Plan (Development and Implementation)	Walla Walla County Conservation District	100,000	31,120,079
		Walla Walla Total:	**1,250,000**	
Yakima				
5507700	Monitoring of Supplementation Response Variables for YKFP	WDFW	200,000	31,320,079

Anadromous fish projects by group and location

Project #	Title	Contractor	97 $	97 $ (cum.)
5510200	Yakima River Basin Side Channel Survey and Rehabilitation	Yakama Indian Nation	474,880	31,794,959
5510500	Cabin Creek Habitat Enhancement Project	Yakama Indian Nation	162,400	31,957,359
5510800	Upper Yakima Tributary Irrigation Improvement	Yakama Indian Nation	246,400	32,203,759
5510900	Teanaway River Instream Flow Restoration	Yakama Indian Nation	1,680,000	33,883,759
5511300	Little Naches River Riparian and In-Channel Habitat Enhancement Project	Yakama Indian Nation	89,600	33,973,359
5511600	Yakima Basin Side Channels	Yakama Indian Nation	1,005,760	34,979,119
5511700	Yakima River Rearing Habitat Enhancement, Between Selah and Union Gaps	Yakama Indian Nation	246,400	35,225,519
5512000	Toppenish/Simcoe Instream Flow Restoration	Yakama Indian Nation	308,000	35,533,519
5522100	Development and Refinement of Natural Production Objectives and Enhancement Strategies for Yakima Basin Anadromous Salmonids	Yakama Indian Nation	66,500	35,600,019
8811500	Yakima Hatchery - Construction	BPA	700,000	36,300,019
8812001	Yakima/Klickitat Fisheries Project Management	Yakama Indian Nation	763,000	37,063,019
8812004	Hatchery Training and Education	Yakama Indian Nation	231,202	37,294,221
8812005	Fish Passage Video Monitoring	Yakama Indian Nation	215,000	37,509,221
8812008	Fisheries Technician Field Activities	Yakama Indian Nation	822,564	38,331,785
9006900	Yakima Hatchery - Final Design	CH2M Hill	900,000	39,231,785
9105500	Supplementation Fish Quality (Yakima)	NMFS	400,000	39,631,785
9105700	Yakima Phase 2 Screen Fabrication	WDFW	300,000	39,931,785
9107500	Yakima Phase II Screens - Construction	US BOR	1,500,000	41,431,785
9200900	Yakima Screens - Phase II - O & M	WDFW	85,000	41,516,785
9503300	O&M of Yakima Fish Protection, Mitigation & Enhancement Facilities	US BOR	200,000	41,716,785
9506300	Yakima/Klickitat Monitoring and Evaluation Program	BPA	1,550,000	43,266,785
9506401	Refinement of Marking Methods for YKFP	WDFW	25,000	43,291,785
9506402	Upper Yakima Species Interaction Studies	WDFW	400,000	43,691,785
9506404	Policy/Technical Involvement and Planning for YKFP	WDFW	275,000	43,966,785
9603301	Yakima River Fall Chinook Supplementation	Yakama Indian Nation	660,800	44,627,585
9603302	Yakima River Coho Restoration	Yakama Indian Nation	143,360	44,770,945
9603501	Satus Watershed Restoration	Yakama Indian Nation	200,000	44,970,945
		Yakima Total:	**13,850,866**	

Snake River Subregion

Clearwater

8335000	Nez Perce Tribal Hatchery	Nez Perce Tribe	6,660,000	51,630,945
9303600	Haysfork Glory Hole, Newsome Creek Placer Mine Silt Trap - Nez Perce Tribe	Nez Perce Tribe	30,000	51,660,945
9403400	Assessing Summer/Fall Chinook Restoration in the Snake River Basin	Nez Perce Tribe	203,000	51,863,945

Anadromous fish projects by group and location

Project #	Title	Contractor	97 $	97 $ (cum.)
9604300	Johnson Creek Artificial Propagation Enhancement	Nez Perce Tribe	792,793	52,656,738
		Clearwater Total:	**7,685,793**	
Grande Ronde/Imnaha				
5506000	Monitoring Fine Sediment Levels in Substrate and Overwinter Sedimentation in Cleaned Gravels in Portions of the Grande Ronde and John Day Rivers	Columbia River Inter-Tribal Fish Commission	30,000	52,686,738
5507000	Grande Ronde Subbasin Watershed Restoration	CTUIR	150,000	52,836,738
5519100	Meadow Creek Instream Structure and Riparian Evaluation	USFS	60,000	52,896,738
5520900	Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan Implementation	Nez Perce Tribe	50,000	52,946,738
8402500	Grande Ronde Habitat Enhancement	ODFW	250,000	53,196,738
8805301	Northeast Oregon Outplanting Facilities Master Plan - Nez Perce Tribe	Nez Perce Tribe	1,200,000	54,396,738
8805302	Ne Oregon Hatchery - Grand Ronde Satellite Facilities	CTUIR	1,400,000	55,796,738
9202601	Grande Ronde Model Watershed - Admin/Impl./Research	USFS	305,000	56,101,738
9202604	Spring Chinook Salmon Early Life History	ODFW	526,000	56,627,738
9402700	Grande Ronde Model Watershed Habitat Projects	Grande Ronde Model Watershed Program (Blue Mtns.)	1,439,000	58,066,738
9403900	Wallowa Basin Project Planning - G. R. Model Watershed	Nez Perce Tribe	50,494	58,117,232
9604400	Grande Ronde Basin Spring Chinook Captive Broodstock Program	ODFW	2,212,400	60,329,632
		Grande Ronde/Imnaha Total:	**7,672,894**	
Salmon				
5514000	Salmon River Production Program	Shoshone-Bannock Tribes	50,000	60,379,632
5520100	O'Hara Watershed Restoration	USFS	35,000	60,414,632
8909803	Salmon Supplementation Studies in Idaho Rivers - Shoshone-Bannock Tribes	Shoshone-Bannock Tribes	172,000	60,586,632
9009300	Genetic Analyses of Oncorhynchus Nerka (ESA)	Univ/ID, subcontractor WSU	140,000	60,726,632
9107100	Snake River Sockeye Salmon Habitat	Shoshone-Bannock Tribes	600,000	61,326,632
9107200	Redfish Lake Sockeye Salmon Captive	IDFG	663,000	61,989,632
9107300	Idaho Natural Prod. Monitoring/Eval 83-7 (ESA)	IDFG	550,000	62,539,632
9202603	Idaho Model Watersheds Admin/Impl. Support	ID Soil Conservation Commission	196,900	62,736,532
9204000	Redfish Lake Sockeye Salmon Captive Broodstock Rearing and Research	NMFS	500,000	63,236,532
9303501	Lower Red River Meadow Restoration Project	Pocket Water Inc/River Master Engineering	729,000	63,965,532
9306200	Salmon River Anadromous Fish Passage Enhancement, Idaho	Lemhi and Custer Soil and Water Conservation Districts	100,000	64,065,532

Anadromous fish projects by group and location

Project #	Title	Contractor	97 $	97 $ (cum.)
9401500	Idaho Fish Screening Improvement (see new NPPC)	IDFG	1,000,000	65,065,532
9401700	Idaho Model Watershed Habitat Projects	Lemhi and Custer Soil and Water Conservation Districts	200,000	65,265,532
9405000	Salmon River Habitat O&M/Monitoring & Evaluation	Shoshone-Bannock Tribes	268,000	65,533,532
9600700	Upper Salmon River Diversion Consolidation Program	Shoshone-Bannock Tribes	645,000	66,178,532
9607700	Meadow Creek Restoration	USFS	69,000	66,247,532
9700100	Captive Rearing Initiative for Salmon River Chinook Salmon	IDFG	731,532	66,979,064
		Salmon Total:	**6,649,432**	
Snake				
5504200	1996 Pittsburg Landing O&M and M&E Funding	USFWS	0	66,979,064
5506300	Evaluation of Watershed and Habitat Response to Recent Storms: Effects on Salmon Listed Under the Esa	Columbia River Inter-Tribal Fish Commission	115,000	67,094,064
5520600	Listed Stock Gamete Preservation	Nez Perce Tribe	110,447	67,204,511
5520800	Listed Stock Adult Escapement Monitoring	Nez Perce Tribe	139,669	67,344,180
5521300	Big Canyon Creek Portable Acclimation/Release Facility	Nez Perce Tribe	0	67,344,180
5521400	Pittsburg Landing Portable Acclimation/Release Facility	Nez Perce Tribe	0	67,344,180
5521500	Rogersburg (Above Mouth of Grande Ronde River) Portable Acclimation/Release Facility	Nez Perce Tribe	0	67,344,180
8909600	Genetic Monitoring and Evaluation of Snake River Salmon and Steelhead	NMFS	250,000	67,594,180
8909800	Idaho Supplementation Studies (ISS)	IDFG	875,000	68,469,180
8909801	Salmon Supplementation Studies in Idaho Rivers - USFWS	USFWS	125,000	68,594,180
8909802	Salmon Supplementation Studies in Idaho Rivers - Nez Perce Tribe	Nez Perce Tribe	270,000	68,864,180
9005500	Steelhead Supplementation Studies in Idaho Rivers	IDFG	220,000	69,084,180
9202602	Eastern WA Model Watershed Coordinators	Washington State Conservation Commission	162,000	69,246,180
9401004	Monitoring and Evaluation of Lyons Ferry Hatchery Fall Chinook Above Lower Granite Dam	Nez Perce Tribe	0	69,246,180
9401800	Washington Model Watershed Habitat Projects	Conservation Districts	600,000	69,846,180
9801006	Captive Broodstock Artificial Propagation	Nez Perce Tribe	0	69,846,180
		Snake Total:	**2,867,116**	

Priest Rapids Dam - Chief Joseph Dam Subregion

Methow				
5509900	Methow Basin Side Channel Habitat Construction	Yakama Indian Nation	527,850	70,374,030
9603401	Methow Valley Irrigation District Conversion	Yakama Indian Nation	861,000	71,235,030
9604000	Wenatchee and Methow River Coho Restoration	Yakama Indian Nation	324,800	71,559,830

Anadromous fish projects by group and location

Project #	Title	Contractor	97 $	97 $ (cum.)
		Methow Total:	**1,713,650**	
Okanogan				
9502100	Okanogan Watershed Planning	Colville Confederated Tribes	125,000	71,684,830
		Okanogan Total:	**125,000**	

Anadromous fish projects in funding groups 2 and 3

2. Fund if money available

Project #	Title	Contractor	97 $
5500700	Nutritional Status of Emigrating Salmon and Steelhead in the Columbia R. Basin Mainstem	U. S. Department of Energy	$200,000
5502400	Bioenergetics Model for Improving Survival of Adult Fall Chinook Salmon in the Columbia River Basin	Battelle Pacific Northwest National Laboratories	$135,000
5502500	Feasibility of Live Capture and Selective Harvest of Anadromous Salmonids in the Columbia Basin	S.P. Cramer & Associates	$500,000
5502900	Nutrition and Feeding Methods for Captive Reared Pacific Salmon	USFWS	$210,800
5503200	Biodiversity Inventory and Analysis of the Hanford Site/Reach	The Nature Conservancy	$200,000
5503900	Computational Fluid Dynamics Application in Fish Screen Modeling	Clouston Energy Research	$150,000
5504000	East Fork of the Hood River Habitat Project	USFS	$200,000
5504300	Monitoring and Classification of Wild Steelhead Production on Mid-Columbia Basin Rivers	Clark-Skamania Flyfishers	$11,500
5504800	Pine Hollow Watershed Enhancement Project	Sherman County Soil and Water Conservation District	$70,758
5505300	Asotin County Conservation District/Public Power Council Asotin Creek Pool Enhancement Project	Asotin County Conservation Dist. & Public Power Council	$15,000
5505400	Klaskanine Watershed Restoration Project	Clatsop Soil & Water Conservation District	$270,000
5505700	Clark County Fish Passage Enhancement Program	Clark County Department of Public Works	$75,000
5506200	Effects of Ocean Conditions on the Growth of Salmonids As Estimated by Scales of Adult Salmonids Sampled at Bonneville Dam	Columbia River Inter-Tribal Fish Commission	$47,220
5506400	Development and Installation of a Video Fish Counting Station in the Klickitat River Basin	CRITFC, Yakama Indian Nation	$250,000
5506700	John Day Slope Stabilization Project	BPA	$56,000
5506900	Wind River Steelhead Project	USFWS	$359,891
5507500	Federal Energy Regulatory Commission (FERC)/Federal Tributary Project Coordination	CBFWF	$100,000
5508100	Grande Ronde Basin, Joseph Creek Subbasin, Wallowa Valley Ranger District Project Implementation	USFS	$96,336
5508200	BPA Structure Maintenance	USFS	$17,491
5508300	Sandy Watershed Restoration and Effectiveness Monitoring Program	Wolftree, Inc.	$100,000
5508700	Marshall Ranch	Burns Paiute Tribe	
5509000	Ecology of the American Shad in the Impounded Lower Columbia River	National Biological Service	$450,000
5509300	Developing Techniques to Improve the Quality and Survival of Hatchery Reared Salmonids	National Biological Service	$125,200
5509400	An Ecosystem-Based Strategy to Identify Critical Links Affecting Juvenile Salmon Growth and Survival in Columbia River Reservoirs	National Biological Service	$575,000
5509600	Shad Removal in Zone 6	Yakama Indian Nation	$246,400
5510300	Large Woody Debris Collection and Placement	Yakama Indian Nation	$50,400
5510600	Cle Elum Dam Fish Passage Facility	Yakama Indian Nation	$336,000

Anadromous fish projects in funding groups 2 and 3

Project #	Title	Contractor	97 $
5510700	Yakima River Side-Channel Project	Yakama Indian Nation	$0
5511000	Lower Dry Creek Riparian Restoration	Yakama Indian Nation	$65,520
5511200	Wenas Creek Flow Augmentation and Riparian Restoration	Yakama Indian Nation	$168,000
5511400	Middle Naches River Side Channel Enhancement Project	Yakama Indian Nation	$0
5511500	Naches River Irrigation Diversion Upgrade	Yakama Indian Nation	$33,600
5511800	Wide Hollow Creek Rearing Enhancement Project	Yakama Indian Nation	$952,000
5511900	Spring Creek Restoration	Yakama Indian Nation	$896,000
5512200	Conservation Easement Purchase, Lower Yakima River	Yakama Indian Nation	$9,671,031
5512400	Lower Yakima River Riparian Restoration	Yakama Indian Nation	$50,400
5512500	Rock Creek Riparian and In-Channel Habitat Enhancement Project	Yakama Indian Nation	$324,800
5512900	Big White Salmon River Riparian and In-Channel Habitat Enhancement Project	Yakama Indian Nation	$265,440
5513000	Wind River Riparian and In-Channel Habitat Enhancement Project	Yakama Indian Nation	$174,720
5513100	Kalama Wetland Preserve - Deep Water	Kalama Wetland Preserve	$10,000
5513700	Indian Creek Monitoring Project	Northwest Service Academy/AmeriCorps	$63,000
5514100	Essential M&E Infrastructure - Adult Sampling and Tag Interogation Facilities (CWT)	TBD	$500,000
5514200	Marking All Hatchery Fish	TBD	$300,000
5514300	Egg to Smolt Survival Relationships	TBD	$1,000,000
5514400	Egg to Smolt Survial in Relationship to Habiatat Husbandry	TBD	$2,000,000
5514500	Egg to Smolt Survival in Relationship to Cattle Grazing	TBD	$800,000
5514600	Changes in Stream Productivity for Salmon Due to Inorganic Fertilization	TBD	$300,000
5514700	Relationship of Riparian Buffer Zones to Salmon Egg/Smolt Survival	TBD	$1,000,000
5514800	Effects of Replacement Rates on Smolt-To-Adult Returns	TBD	$1,000,000
5514900	Relationship of Irrigation Ditch Segment to Juvenile Salmon Survival	TBD	$400,000
5515000	Expanded Evaluation of In-River vs. Transported Smolt Survival	TBD	$500,000
5515100	Delayed Mortality in Transported Smolts	TBD	$200,000
5515200	Effectiveness of Alternate Estuary Release Sites for Transported Smolts	TBD	$1,000,000
5515300	Effects of Transportation on the Homing Ability of Adult Salmonids	TBD	$500,000
5515400	Effects of Fish Marking Protocols on Comparative Survivals of Transport and Control Groups of Migrating Juvenile Salmonids	TBD	$1,000,000
5515500	Evaluation of Juvenile Salmonid Distribution in Relation to Dissolved Gas Supersaturation	TBD	$1,000,000
5515700	Evaluation of Adult Salmonid Distribution in Relation to Dissolved Gas Supersaturation	TBD	$300,000
5515800	Optimize Spill Patterns for Adult Salmon Passage	TBD	$100,000
5515900	Evaluation of Spill Efficiency	TBD	$500,000
5516000	Smolt Survival and Migration Rate	TBD	$900,000
5516100	Pulsed River Flows	TBD	$500,000

Anadromous fish projects in funding groups 2 and 3

Project #	Title	Contractor	97 $
5516200	Lower Snake Spillway Crest Drawdown	TBD	$0
5516300	Effects of 427 kaf Flow Augmentation on Survival	TBD	$200,000
5516400	Surface Collection and Bypass	TBD	
5516500	Bonneville Dam Ph1 Fge	TBD	
5516600	Effectiveness of Squawfish Management	TBD	$200,000
5516700	Significance of Avian Predation on Juvenile Fish Survival and Alternatives to Control Avian Predation	TBD	$125,000
5516800	Estuary, Physical and Biological Condition	TBD	$1,000,000
5516900	Estuary, Predator/Prey	TBD	$200,000
5517000	Effects of Avian Predation in the Estuary	TBD	$500,000
5517100	Marine Mammals in Lower Columbia River, Estuary and Nearshore Ocean	TBD	$500,000
5517200	Estuary Physical and Biological Conditions	TBD	$1,000,000
5517300	Estuary Smolt Condition	TBD	$1,000,000
5517400	Relation of Plume/Nearshore Conditions to Smolt Distribution and Growth	TBD	$1,000,000
5517500	Early Ocean Survival and Predator Abundance	TBD	$500,000
5517600	Early Ocean Survival and Alternative Prey	TBD	$500,000
5517700	Interannual Effects of Marine Conditions on Salmon Distribution, Growth and Abundance	TBD	$1,000,000
5517800	Food Limitation and Density Dependent Growth of Salmon in the Open Ocean	TBD	$1,000,000
5517900	Effects of Abundance of Hatchery Smolts on Growth, Distribution and Abundance	TBD	
5518000	Examine Feasibility of Smolt Supplementation Programs	TBD	$300,000
5518100	Examine Feasibility of Seeding Streams With Eggs, Fry, or Pre-Smolts	TBD	$500,000
5518200	Evaluation of Improvements in Hatchery Practices	TBD	$500,000
5518300	Evaluate the Merits of Captive Rearing	TBD	$200,000
5518400	Effects of Non-Salmonid Species Management	TBD	$500,000
5518500	Live-Catch Salmon Fisheries	TBD	$500,000
5518600	Canadian and Alaskan Troll Fishery	TBD	$500,000
5518700	Terminal Fisheries	TBD	$500,000
5518800	Lower Snake Natural River Drawdown	TBD	$500,000
5519000	Cowlitz Falls Screen Design	WDFW	$20,000
5519700	John Day Slope Stabilization Project	USFS	$56,000
5519800	Skipanon Tide Gate Retrofit	Skipanon Water Control District	$95,000
5519900	Repair of Dam and Construction of Fish Passage Facilities on Bates Pond	Joann Vidondo	$100,000
5520000	Sandy River Watershed and Fish Habitat Restoration	USFS	$40,000
5520400	Upper Clackamas River Side Channel Project	USFS	$15,000
5521000	Feasibility of Sockeye Salmon Reintroduction to Wallowa and Warm Lakes	Nez Perce Tribe	$225,000

Anadromous fish projects in funding groups 2 and 3

Project #	Title	Contractor	97 $
5521100	Selway River Captive Brood Supplementation Monitoring and Evaluation	Nez Perce Tribe	$0
5521600	Mann Lake Headgate, Adult Ladder, Juvenile Screen, Lapwai/Sweetwater Creek, Clearwater River Subbasin, Nez Perce Tribe	Nez Perce Tribe	$30,000
5521900	Frenchman Creek Bridge	USFS	$45,000
5522000	Development and Implementation of Remote Sensing Technologies for Stream Monitoring and Evaluation	USFS	$67,500
8402400	Middle Fork & Upper Salmon River	USFS	$25,000
8607500	Little Naches Passage	USFS	$2,000
9004401	Lake Creek Land Acquisition	Coeur d'Alene Tribe	$1,850,000
9105100	Run Timing Predictions for the Columbia River Basin Including Individual ESA Demes	Univ/WA	$146,000
9204800	Hellsgate Big Game Winter Range	Colville Confederated Tribes	$0
9206800	Willamette Basin Mitigation - Phase II	ODFW	$0
9207101	Applications of Sound to Modify the Behavior of Fish	Battelle Pacific Northwest National Laboratories	$225,000
9207103	Technical Assistance to Establish Baseline Environmental Monitoring Capability in the Snake River Basin	Battelle Pacific Northwest National Laboratories	$125,000
9303100	Sandy River Subbasin BPA Powerline Right of Way Rehabilitation	USFS-Mt. Hood	$60,000
9307000	Grande Ronde, Imnaha, John Day Rivers Radio Telemetry	USFS	$170,000
9404600	Integrated Watershed Management	Mobrand Biometrics	$850,000
9406900	A Conceptual Spawning Habitat Model to Aid in ESA Recovery Plans for Snake River Fall Chinook Salmon	Battelle Pacific Northwest National Laboratories	$165,000
9506200	Yakima/Klickitat Fisheries Proj Adaptive Mgmt	BPA	$750,000
9506500	Assessing Oregon Trust Agreement Planning Project Priorities Using Gap Analysis	ODFW	
9507000	An Evaluation of the Effectiveness in Delivering Upper Snake River Water for Salmon	Don Chapman Consultants, Inc.	$180,000
9603100	Distribution of Juvenile Salmonid Populations and Total Dissolved Gas Supersaturation in Reservoirs	National Biological Service	$552,000
9603502	Lower Wilson Creek Riparian Restoration	Yakama Indian Nation	$200,928
9608600	Clearwater Subbasin Focus Watershed	ID Soil Conservation Commission	$133,650
		TOTAL:	**$50,175,585**

3. Possibly fund in the future

5500100	Analysis of Smolt Migration Rate & Survival Based on Pit-Tag Recoveries	S.P. Cramer & Associates	$200,000
5500200	Effects of Flow Pulses on the Migrations of Juvenile and Adult Salmonids	S.P. Cramer & Associates	$87,000
5500400	Optical Detection of Gas Bubbles in Fish	U. S. Department of Energy	$150,000

Anadromous fish projects in funding groups 2 and 3

Project #	Title	Contractor	97 $
5500500	Individual - Based Approach to Analyzing Pit-Tag Data	U. S. Department of Energy	$150,000
5500600	Hydraulics in Snake River Reservoirs	U.S. Department of Energy	$150,000
5500900	Salmon Smolt Survival During Linear Kinetic Power Generation	Schneider Engine Company	$3,389,000
5501000	Diversion Screen Improvement to Effect a Reduced Visual Impact in Scenic Areas	Clouston Energy Research	$15,000
5501200	Improving the Effectiveness of the Gas Bubble Disease Monitoring Program on the Columbia and Snake Rivers	Montgomery Watson	$500,000
5501300	Cost-Effectiveness of Salmon Recovery Measures	Environmental Defense Fund	$185,000
5501600	Effects of Climate Change on Columbia Basin Fish and Wildlife Program Activities	ICF Kaiser International, Inc.	$150,000
5502100	Floating Fingerling Surface Collector	Clouston Energy Research	$150,000
5502300	Economic Incentives for Stream-Side Habitat Improvements on Agricultural Lands Test Program	Northwest Economic Associates	$125,000
5502600	Monitoring and Evaluation of the Columbia Basin Law Enforcement Program	S.P. Cramer & Associates	$250,000
5503100	Project Management Training and Support	ICF Kaiser International, Inc.	$200,000
5504500	Integrated Program Decision Model	ICF Kaiser International, Inc.	$350,000
5504600	Communication and Program Information Sharing Tool	ICF Kaiser International, Inc.	$125,000
5504700	Youth Labor Pool Development and Augmentation	Clouston Energy Research	$100,000
5506500	Crooked Creek Channel Restoration	TBD	$30,000
5507400	Mobile Environmental Education Telecommunication Strategy "Meets"	C&C Sciences, P.C.	$115,000
5507900	Natural Population Conservation Coordination Program	Bill M. Bakke	$140,500
5508000	Coordinated Policy for Conservation of Wild and Naturally Spawning Populations	Bill M. Bakke	$150,000
5508800	Impact of Exotic Fishes and Macrophytes on Juvenile Salmonids Rearing in Littoral Areas of the John Day Reservoir	National Biological Service	$250,000
5509200	Vertical and Horizontal Distribution of Individual Juvenile Steelhead Based on Radiotelemetry for Gas Monitoring	National Biological Service	$537,000
5513900	Shoshone-Bannock Tribes' Program Support	Shoshone-Bannock Tribes - Fort Hall	$100,000
5520200	A History of Management Decisions and Court Actions Affecting Populations of Mainstem Spawning Snake River Fall Chinook	S.P. Cramer & Associates	$70,000
5522500	Relationship of Gas Supersaturation in Infectious Diseases of Fish	Oregon State University	$262,416
5522600	Yakima River Basin Pilot Water Acquisition Project		$400,000
5522800	John Day Basin Data Repository Project	Monument Soil and Water Conservation District	$81,720
9104000	Bonneville Dam Juvenile Fish Sampling Facility	COE	$1,597,200
9207100	Assess Tech to Improve Measurement Capabilities & Passage Survival	U.S. Department of Energy	
9207104	Network-Based World-Wide Web Information Infrastructure	Battelle Pacific Northwest National Laboratories	$200,000
9300800	Allowable Gas Supersaturation at Dams	Montgomery Watson	$500,000
9300801	Nondestructive Assessment of Gas Bubble Disease	Battelle Pacific Northwest	$89,000

Anadromous fish projects in funding groups 2 and 3

Project #	Title	Contractor	97 $
		National Laboratories	
9301100	Regional Habitat Education Support	Multnomah Education Service District	$20,000
9301200	Evaluation of Carrying Capacity	Battelle Pacific Northwest National Laboratories	$1,500,000
9301300	ESA Tech Assistance/Review	S.P. Cramer & Associates	$150,000
9304400	Changing River Operations, Hydropower Production, & Air Pollution	Environmental Defense Fund	$125,000
9506400	Yakima Fisheries Project Scientific and Management Services	WDFW	$900,000
9601500	Fish.net Policy Access Network With NW Fishletter	Energy Newsdata	$93,262
9601900	Second-Tier Database Support for Technical Management Team (TMT)	University of Washington	$216,000
9605800	Asotin Creek Model Watershed - CRP	Asotin County Conservation District	$109,000
		TOTAL:	**$13,912,098**

DRAFT RESIDENT FISH RANKING CRITERIA

Project must meet the following three qualifications to be considered for ranking:

a. Y / N Project addresses specific Council Program measures.

b. Y / N Project developed to meet particular program measures must be consistent with management objectives of the agencies and tribes.

c. Y / N Project conforms to Council's prioritization process according to program measure 10.1B.

Project Criteria	Points
1. Project type:	
a. Contributes to rebuilding weak but recoverable native populations	15
b. Addresses substitution for areas that previously had salmon and steelhead but where anadromous fish are now irrevocably blocked by federally *operated* hydropower developments	14
c. Addresses substitution for areas that previously had salmon and steelhead but where anadromous fish are now irrevocably blocked by federally *licensed or regulated* hydropower developments	5
d. Other	0
2. Anadromous fish and wildlife benefits:	
a. Project provides direct benefits to either anadromous fish and/or wildlife	5
b. Project provides indirect benefits to anadromous fish and/or wildlife.	3
c. Project provides no benefits to anadromous fish and wildlife	0
3. Biological objectives:	
a. adopted	5
b. being developed	3
c. none	0
4. Biological/integrated rule curves:	

a. Project develops biological/integrated rule curves in storage reservoirs.	5
b. Project contributing to the implementation or monitoring the effectiveness of biological/integrated rule curves adopted by the NPPC	3
c. Project collecting data which will be used in the development of biological/integrated rule curves in storage reservoirs.	2
d. Project not applicable to a, b, or c.	0
5. Project protects, mitigates, or enhances fish populations that support important fisheries. Provides for an important fishery that does not target or adversely affect a weak but recoverable native stock (e.g., consumption, subsistence, cultural, recreation).	
a. Target fish population provides important fishery (e.g., consumption, subsistence, cultural, recreation)	5
b. Some of the targeted fish populations provide important fishery	3
c. Target fish population does not provide important fishery	0
6. Protects or enhances other non-target resident fish populations	
a. Project provides direct benefits to non-target resident fish.	5
b. Project provides indirect benefits to non-target resident fish.	3
c. Project does not provide benefits to non-target resident fish.	0
7. Demonstrates that all "reasonable" precautions have been taken, based on best available science, to not adversely affect habitat/populations of native resident and anadromous fish.	
a. Yes	5
b. No	0

DRAFT RESIDENT FISH CRITERIA RATIONALE 3/4/96

The following areas of agreement served as guiding principles as the committee developed its ranking criteria:

- The criteria will be developed using the Northwest Power Planning Council's Program.
- Discussion will be limited to the written comments currently on the table.
- Projects that do not satisfy the highest priority of the Council's program *may* rank higher than those that do, but there should be no more than 25% overlap.
- High priority items should score no more than 5 points.
- Additional criteria elements shall be assigned no more than 3 points.

1. Project type.

   a. Contributes to rebuilding weak but recoverable native population(s).

      Council Program assigns highest priority to projects that satisfy this criterion (10.1B).

      The following elements will be considered in identifying "weak": isolated populations, declining abundance/distribution, harvest, habitat declining, designated as a weak stock by a fish management group, genetic introgression.

      The proponent of a project is to explain why the stock is considered weak while allowing a harvest. These might include: declining abundance/distribution, habitat declining, designated as a weak stock by a fish management group, genetic introgression, etc.

   b. Council Program assigns highest priority to projects that satisfy this criterion (10.1B).

   c. Council Program assigns high priority to projects that satisfy this criterion (10.1B).

   d. Other projects

2. Provides benefits for wildlife and/or anadromous fish.

   Examples of benefits - improved habitat, improved water quantity and quality, enhanced food web, etc.

   Direct benefits to anadromous fish and/or wildlife refers to projects that provide tangible improvements to the ecosystem such as improving quality or quantity of the habitat, and/or improve the food web such as increasing the abundance of fish used by eagles.

Indirect benefits - displaces fishing pressure.

3. Biological objectives

   Biological objectives are quantitative (e.g., environmental or population attributes) expressions of an outcome necessary to realize management goals; benchmarks based on the best available science, established by fish managers.

   Biological objectives must be adopted into the Council's Program or specifically identified in the scope of work for that project in order to receive any points for this criteria.

4. See sections 10.2B, 7.6B.3

   a. Reservoir - Project must be in a storage reservoir of the Columbia Basin.

      Definition of Integrated Rule Curve (IRC) - operational rule curves to balance fishery with other system uses (e.g., flood control, power, irrigation, flows, etc.).

      Definition of Biological Rule Curve (BRC) - operational rule curves to optimize biological production in the reservoir (e.g., increase growth, survival of target species).

      See BRC/IRC language in Council Program sections 10.1B, 10.3, 10.4, 5.5A, 10.8B.

      See Habitat language in program sections 7.6B.3, 7.7, 10.2B.

5. Provides for an important fishery that does not target or adversely affect a weak but recoverable stock (e.g., consumption, subsistence, cultural, recreation).

   Qualitative or quantitative justification of the significance of the fishery.

   See program sections 10.1B, 3.1D.1.

6. Protects or enhances other non-target resident fish populations

   Project doesn't adversely affect non-target resident fish. Project demonstrates multi-species approach.

   See program section 10.1B.

   Direct benefits to non-target resident fish refers to projects that provide tangible improvements to the ecosystem such as improving the quality or quantity of the habitat.

   Indirect benefits to non-target resident fish refers to projects that provide improvement to the food web or other secondary improvements to the ecosystem such as increasing the

abundance of food fish for predator fish.

7. Demonstrates that all "reasonable" precautions have been taken, based on best available science, to not adversely affect habitat/populations of native resident and anadromous fish.

   Definition of best available science - generally accepted fishery management principles, research, etc.

   See program section 10.1B.

July 16, 1996

John Etchart, Chairman
Northwest Power Planning Council
851 SW 6th, Suite 1100
Portland, OR 97204-1348

Dear Mr. Etchart:

I am sending this letter to convey the resident fish managers' recommendations for FY 1997 projects. These recommendations are a result of the public comments received through June 17, 1996. I have also included the resident fish managers' responses to the public comments.

Attachment A to this letter represents a package of resident fish projects that CBFWA recommends for FY 1997 funding. Projects 1-28 are in priority order. Projects with a #6 footnote are management priority projects that are of equal priority. Remaining projects are in prioritized order.

The resident fish managers recommend that identified budget adjustments (FY 1997) must be referred back to the resident fish managers for their recommendation. This includes any project that exceeds the approved budget by 10% must have the resident fish managers review before any contracts are signed. During the quarterly review process, the chair of resident fish managers will report any projects exceeding the 10% rule to the managers and the Resident Fish Committee. Any change in the scope of work that increases the budget will also require review by the resident fish managers.

Attachment B provides the resident fish managers' response to public comments for FY 1997 budget recommendations.

I hope these recommendations are helpful and meet with your concurrence.

Sincerely,

Bill Towey, Kalispel Tribe of Indians
Chairman, Resident Fish Managers

cc: NPPC Members
CBFWA Members
J. Eckman, CBFWA
T. Clune, BPA

Prioritized projects for funding in FY 1997 at anticipated funding level

	Project #	Title	97 $	4.4% disc.	Cumulative
	9101903	HUNGRY HORSE MITIGATION/HABITAT IMPROVEMENTS	400,000	382,400	382,400
	9404300	LAKE ROOSEVELT MONITORING / DATA COLLECTION PROGRAM	1,300,000	1,242,800	1,625,200
5	9501200	MONITORING OF INTEGRATED RULE CURVE IMPLEMENTATION HUNGRY HORSE/LIBBY (FORMERLY BIOLOGICAL RULE CURVES)	0	0	1,625,200
	8346500	LIBBY AND HUNGRY HORSE MODELING TECHNICAL ANALYSIS	35,000	33,460	1,658,660
	9101901	HUNGRY HORSE FISHERIES MITIGATION - CONFEDERATED SALISH AND KOOTENAI TRIBES	70,000	66,920	1,725,580
	8346700	LIBBY RESERVOIR LEVELS/KOOTENAI IFIM	325,000	310,700	2,036,280
*	9404900	KOOTENAI RIVER ECOSYSTEM IMPROVEMENTS STUDY	237,000	226,572	2,262,852
	8740700	DWORSHAK IMPACTS/M&E & BIO-INT RULE CURVES	150,000	143,400	2,406,252
	9001800	HABITAT IMPROVEMENT - LAKE ROOSEVELT	208,000	198,848	2,605,100
	8709900	DWORSHAK DAM IMPACTS ASSESSMENT	175,000	167,300	2,772,400
*	8806500	KOOTENAI RIVER FISHERIES INVESTIGATIONS	508,200	485,839	3,258,239
	9201000	HABITAT RESTORATION/ENHANCEMENT FORT HALL BOTTOMS	125,000	119,500	3,377,739
	9501100	CHIEF JOSEPH KOKANEE ENHANCEMENT PROJECT	600,000	573,600	3,951,339
	9502500	FLATHEAD RIVER INSTREAM FLOW STUDY	100,000	95,600	4,046,939
	9106700	IDAHO WATER RENTAL - RESIDENT F&W IMPACTS - PHASE III	120,000	114,720	4,161,659
*	9401200	KOOTENAI RIVER WHITE STURGEON - M&E	100,000	95,600	4,257,259
	9500400	LIBBY RESERVOIR MITIGATION PLAN	40,000	38,240	4,295,499
*	9104600	SPOKANE TRIBAL (GALBR SPRGS) HATCHERY - O&M	420,000	420,000	4,715,499
*	9104700	SHERMAN CREEK HATCHERY - O&M	178,000	178,000	4,893,499
*	8806400	KOOTENAI RIVER WHITE STURGEON STUDY AND EXPERIMENTAL AQUACULTURE	460,000	460,000	5,353,499
	9500100	KALISPEL TRIBE RESIDENT FISH	675,000	645,300	5,998,799
*	8503800	COLVILLE TRIBAL FISH HATCHERY	350,000	350,000	6,348,799
	9500900	LAKE ROOSEVELT RAINBOW TROUT NET PENS	100,000	95,600	6,444,399
	9501500	BILLY SHAW RES DEVELOPMENT	3,515,000	3,360,340	9,804,739
	9004400	STRM SURVEY,HTCHRY,HAB IMPROV, MNTR COEUR D	800,000	764,800	10,569,539
	5522300	BOX CANYON WATERSHED PROJECT	64,000	61,184	10,630,723
	5503500	RESIDENT FISH STOCK STATUS ABOVE CHIEF JOSEPH AND GRAND COULEE DAMS	56,250	56,250	10,686,973
	9500600	SBT/SPT JOINT CULTURE FACILITY	315,000	315,000	11,001,973
6	9405400	BULL TROUT STUDIES IN CENTRAL AND NE OREGON	250,000	239,000	11,240,973

* *Projects with long-term legal agreements or Endangered Species Act (ESA) mandated projects*
1 *Project does not address specific Council program measure*
2 *Refers only to project's resident fish component*
3 *Project funded only if it places high on the basin fish screening priority list*
4 *Project appeared not to be a hydropower responsibility*
5 *Prioritized but no funds required in FY97*
6 *Management discretion projects are equal in priority*

Resident Fish Recommendations for FY 1997 Funding

Attachment A

	Project #	Title	97 $	4.4% disc.	Cumulative
6	5508600	STINKINGWATER SALMONID PROJECT	200,000	191,200	11,432,173
6	5505600	HABITAT ENHANCEMENT & PROTECTION - SHOSHONE-PAIUTE RESERVATION	675,000	645,300	12,077,473
6	9501300	NEZ PERCE TROUT PONDS	300,000	286,800	12,364,273
6	9405300	BULL TROUT ASSESSMENT - WILLAMETTE/MCKENZIE	50,000	47,800	12,412,073
6	9404700	LAKE PEND OREILLE FISHERY RECOVERY	330,000	315,480	12,727,553
6	9101904	HUNGRY HORSE MITIGATION - CRESTON FISH RECOVERY	465,000	465,000	13,192,553
6	9501600	GENETIC INVENTORY WESTSLOPE CUTTHROAT TROUT	175,000	167,300	13,359,853
6	8605000	WHITE STURGEON PRODUCTIVITY STATUS AND HABITAT REQUIREMENTS	2,400,000	2,294,400	15,654,253
6	8815600	DUCK VALLEY FISH STOCKING PROGRAM	110,000	105,160	15,759,413

Proposed projects for funding as additional dollars become available (prioritized)

	9502600	MONTANA MODEL WATERSHED PROGRAM	120,000	114,720	15,874,133
	5521800	LAKE ROOSEVELT KOKANEE NET PENS	175,000	167,300	16,041,433
	5502000	SNAKE RIVER NATIVE SALMONID ASSESSMENT	200,000	191,200	16,232,633
	9502800	ASSESSMENT OF FISHERY IMPR. MOSES LAKE	286,500	273,894	16,506,527
	5508400	HUNTER CREEK	200,000	191,200	16,697,727
	5501100	LAKE PEND OREILLE BULL TROUT RECOVERY	150,000	143,400	16,841,127
	5513400	VEGETATION PLANTING FEASIBILITY STUDY - LAKE ROOSEVELT	100,000	95,600	16,936,727
	5513600	STUDY AND EVALUATE BULL TROUT POPULATIONS IN NORTH SHORE TRIBUTARIES OF THE COLUMBIA RIVER IN THE BONNEVILLE POOL.	150,000	143,400	17,080,127
	9501400	IDAHO LOSS ASSESSMENT	257,000	245,692	17,325,819
3	5501800	PAHSIMEROI RIVER FISH LOSS AND IRRIGATION INTAKE ASSESSMENT	190,000	181,640	17,507,459
	5513300	PHALON LAKE WILD RAINBOW TROUT TRAPPING AND SPAWNING FACILITY	75,000	71,700	17,579,159
4	5520300	HOOD RIVER BULL TROUT RESTORATION	8,000	7,648	17,586,807
	5501900	GENETIC ANALYSIS OF SNAKE RIVER SALMONIDS	50,000	47,800	17,634,607
	5513500	IMPROVE WATER SUPPLY IN ORDER TO INCREASE TROUT PRODUCTION AT FORD HATCHERY BY 35,000 POUNDS	75,000	71,700	17,706,307
1	5505200	SAWMILL CREEK INLAND FISH HABITAT RESTORATION	40,000	38,240	17,744,547
	5504100	CONSUMPTIVE STURGEON FISHERY-HELLS CANYON/OXBOW	250,000	239,000	17,983,547
	5508900	TIMING OF THE DEVELOPMENT OF WHITE STURGEON EMBRYOS	50,000	47,800	18,031,347
1	5506800	RESIDENT FISH HABITAT ENHANCEMENT ABOVE MCKAY RESERVOIR IN THE UMATILLA BASIN	150,000	143,400	18,174,747

* *Projects with long-term legal agreements or Endangered Species Act (ESA) mandated projects*
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Resident Fish Recommendations for FY 1997 Funding

Attachment A

	Project #	Title	97 $	4.4% disc.	Cumulative
	9502700	LAKE ROOSEVELT STURGEON	264,000	252,384	18,427,131
1	5507200	CONSERVATION GENETICS OF COLUMBIA BASIN BULL TROUT	68,750	65,725	18,492,856
	5522400	BOX CANYON WATERSHED LAW ENFORCEMENT OF RESIDENT FISH	51,200	48,947	18,541,803
	9400400	CABINET GORGE HATCHERY IMPROVEMENTS	15,000	14,340	18,556,143
	9403500	KOKANEE IMPACTS ASSESSMENT & MONITORING ON LK PEND OREILLE	53,000	50,668	18,606,811
	5503600	YELLOW PERCH AQUACULTURE FACILITY	2,000,000	1,912,000	20,518,811
2	9506002	UMATILLA RIVER RIPARIAN CORRIDORS: SQUAW CREEK WATERSHED PROJECT	1,900,000	1,816,400	22,335,211
4	5505100	TETRA ALPHA MINE RESTORATION	6,400	6,118	22,341,330
4	5505000	PEAVY CABIN ROAD	12,000	11,472	22,352,802

** Projects with long-term legal agreements or Endangered Species Act (ESA) mandated projects*
1 Project does not address specific Council program measure
2 Refers only to project's resident fish component
3 Project funded only if it places high on the basin fish screening priority list
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Resident Fish Committee Response to Public Comments
Recommendations for FY 1997 Resident Fish Funding

I. General Concerns

Resident Fish projects are not in prioritized order.

Concern: The list submitted for public comment was sorted by project number, not prioritized order.

Response: Attachment A represents a package of resident fish projects that CBFWA recommends for FY 1997 funding. Projects 1- 28 are in priority order. Projects with a #6 footnote are management priority projects that are of equal priority. Remaining projects are in prioritized order. Identified (FY 1997) budget adjustments must be referred back to the resident fish managers for recommendation.

A. Conflict of Interest

Concern: Closed process with only stakeholder participation.

Response: For resident fish projects, all non-CBFWA project sponsors were contacted regarding the need for addendum sheets and steps required in prioritization process.

All Resident Fish Committee meetings were open to the public and were attended by the public.

Concern: Only fish and wildlife managers had decision-making input into the resident fish prioritization process.

Response: The Council's Program directs CBFWA managers to annually develop a list of projects and estimated budgets that represents the fish and wildlife managers' view of what it will take to fully implement the Program (Section 3.1B.3). Council will determine the final fish and wildlife work plan based upon both CBFWA recommendations and public input.

B. Administrative Overhead

Concern: Excessively large administrative overhead.

Response: In some instances administrative overhead has been misrepresented by public commentors. We agree that the administrative overhead should

be minimized to the extent possible to provide maximum on-the-ground project benefits.

C. Management Discretion

Concern: What is the management discretion applied to the FY 1997 ranking process?

Response: Policy decisions were made regarding ongoing activities and/or managers' priorities.

Concern: Criteria used in the FY 1997 prioritization process did not take into account "grandfather criteria" to address ongoing projects.

Response: Criteria were developed using the Council's newly adopted program priorities, which didn't take into account ongoing projects and the past program priorities. Management discretion was applied by the managers to resolve these discrepancies.

II. Specific Project Concerns

A. Hungry Horse Mitigation - Creston Fish Recovery

Concern: Program consistency

Response: The project is one of 38 recommended by CBFWA for funding. Final funding allocation for this project will be determined by the Council.

B. Lake Roosevelt Monitoring Program

Concern: How does the allocation of an additional $400K in FY 1996 relate to FY 1997 funding, and what is the scope of work for FY 1997?

Response: Funds allocated in FY 1996 will be used to refine the FY 1997 experimental design and to implement tasks identified in Section 10.8B.5 of the Councils' program.

C. Lake Billy Shaw

Concern: Council approval of feasibility study

Response: The project is one of 38 projects recommended by CBFWA for funding. Final funding for this project will be determined by the Council.

Concern: Biological concerns.

Response: It is assumed that these concerns will be addressed by the Council and through the NEPA compliance process.

D. Idaho Loss/Gain Assessment

Concern: FY 97 does not include funding for loss/gain assessment projects

Response: Did not rank high enough for FY 1997 funding.

E. Lake Pend Oreille Recovery Program

Concern: None

Response: Supported the FY 97 resident fish ranking process.

Wildlife Working Group

Definitions and Weighting Factors Assigned to Wildlife Mitigation Criteria developed by the Northwest Power Planning Council

Ranking Criteria

1. Be the least costly way to achieve the bioloigica1 objective.

Where equally effective alternative project proposals for achieving the same sound biological objective exist, the proposal with minimum cost will be given priority consideration. Proposal should demonstrate cost effectiveness where alternative(s) exist.

Points: 1 = less cost effective
2 = comparable costs
3 = more cost effective

2. Encourage the formation of partnerships with other persons or entities, which would reduce project costs, increase benefits, or eliminate duplicative activities:

Partnerships reduce cost, increase benefits, or eliminate duplicative activities.

Points: 0 = no projected partnership
1 = anticipated or possible partnerships
2 = high probability of a partnership
3 = demonstrated commitment of partnership

3. Have measurable objectives, such as the restoration of a given number of habitat units:

Does the end project of the proposal have measurable objectives, such as Habitat Units and/or species response to actions planned.

Points: 0 = not measurable
1 = measurable

4. **Address special wildlife losses in areas that formerly had salmon and steelhead runs that were eliminated by hydroelectric projects (for example. societal and Tribal wildlife losses):**

Criteria contains two factors and therefore two receives two point rating factors:

a. Dam causing impact:

0 = no blockage of existing anadromous fish
1 = blocks anadromous fish, but Tribe in area still has access to anadromous fishery
2 = blocks anadromous fish. Tribe in region does not have access to anadromous fishery

b. Mitigation project proposed:

0 = does not mitigate for tribal losses
1 = addresses tribal losses

5. Protect high quality, native, or other habitat or wildlife species of special concern, whether at the Project site or not, including endangered. threatened, or sensitive species.

Preceding definition must be the main objective of the project.

Points: 0 = does not address terms outlined in following point schedule
1 = habitat exhibits historical potential and is restorable
2 = high quality native habitat without threatened, endangered or sensitive species present
3 = high quality native habitat that currently supports threatened, endangered or sensitive wildlife species, or wildlife species of special concern.

6. Provide riparian or other habitat that may benefit both fish and wildlife:

For resident and anadromous fish.

Points: 0 = no benefits to fish
1 = incidental benefits to fish
2 = substantive benefits to fish

7. Address concerns over additions to public land ownership and impacts on local communities. such as reduction or less of local government tax base, special district tax base, or the local economic base: or consistency with local governments' comprehensive plans:

Points: 0 = does not demonstrate tangible effort to address concerns
1 = does demonstrate tangible effort to address concerns

8. Use publicly owned land for mitigation. or management agreements on private land, in preference to acquisition of Private land, while providing permanent protection or enhancement of wildlife habitat in the most cost-effective manner

Points: 0 = does not utilize easements or publicly owned land
1 = utilizes a mixture of fee title acquisition and easements or public lands

2 = project can be completed using easements and or public lands.

9. <u>Mitigate losses in-place: in-kind, where practical. When a wildlife measure is not directly related to a hydroelectric-caused loss, the habitat units protected, mitigated or enhanced by the measure will be credited against mitigation due for one or more hydroelectric Projects. including power-related storage or regulatorv dams</u>:

"In-place" is mitigation in the vicinity of the reservoir. "Out-of-place" mitigation is physically or politically not practical to mitigate in the vicinity of the reservoir. "Out-of-kind" mitigation is the utilization of a habitat type or target species that was not impacted by the reservoir.

Points: 0 = out-of-kind or out-of-place
1 = in-kind and out-of-place
2 = out-of-kind but in-place
3 = in-kind and in place

10. <u>Help protect or enhance natural ecosystems and species diversity over the long term</u>:

Points: 1 = proposal addresses either naturally self-sustaining ecosystem or wildlife species diversity
2 = proposal addresses previously natural or self-sustaining ecosystem that needs management actions to restore it to a natural self-sustaining ecosystem that will provide wildlife species diversity
3 = proposal addresses a natural self-sustaining ecosystem that provides maximum species diversity.

11. <u>Are based on and supported by the best available scientific knowledge and are biologically possible</u>.

Points: 0 = low confidence
1 = high confidence

12. <u>Address achieving the Council's mitigation priorities (see attachment)</u>.

Power Council's subbasin priorities (upper Columbia. lower Columbia and Snake River) including habitat types, target species and habitat units.

Points: 1 = low priority
2 = medium priority
3 = high priority

Table 1. FY 97 Project Ranking Form

	1. Least cost biological obj	2. Encourages partnerships	3. Measureable objs	4. Addresses losses in blocked areas	5. Protects high quality habitat, etc.	6. Benefits both fish & wildlife	7. Addresses local gov't concerns, etc.	8. Uses publically owned land	9. In-kind/ in-place	10. Protects ecosystems & species diversity	11. Based on best avail. science	12. Addresses mitigation priorities	TOTAL
Kalispel Pend Oreille Wetlands II - Kalispel	NA	1	1	3	3	2	0	0	3	2	1	3	19
Minidoka Wildlife Mitigation IDFG	NA	1	1	1	1	2	1	1	3	2	1	3	17
Black Canyon Bruneau IDFG	NA	1	1	2	1	2	0	0	3	2	1	3	16
Lake Creek - Coeur d'Alene	NA	3	1	3	2	2	0	0	1	2	1	3	18
Squaw Creek - CTUIR	NA	3	1	0	1.5	2	1	1	3	2.5	1	2.5	18.5
Crates Point - CTWR	NA	2	1	0	2.5	1	0	2	3	2	1	3	17.5
Island Ranch Burns Paiute	NA	3	1	0	1.5	2	0	0	1	2.5	1	2.5	14.5
Kalama Wetland Project	NA	1	1	0	1	0	0	0	1	1	0	3	8
Hanford Reach - TNC	"In lieu" problem												
Palisades Mitigation - ShoBan													
Columbia Basin Mitigation - ODFW													
Willamette Mapping ODFW													
Wildlife Plan													