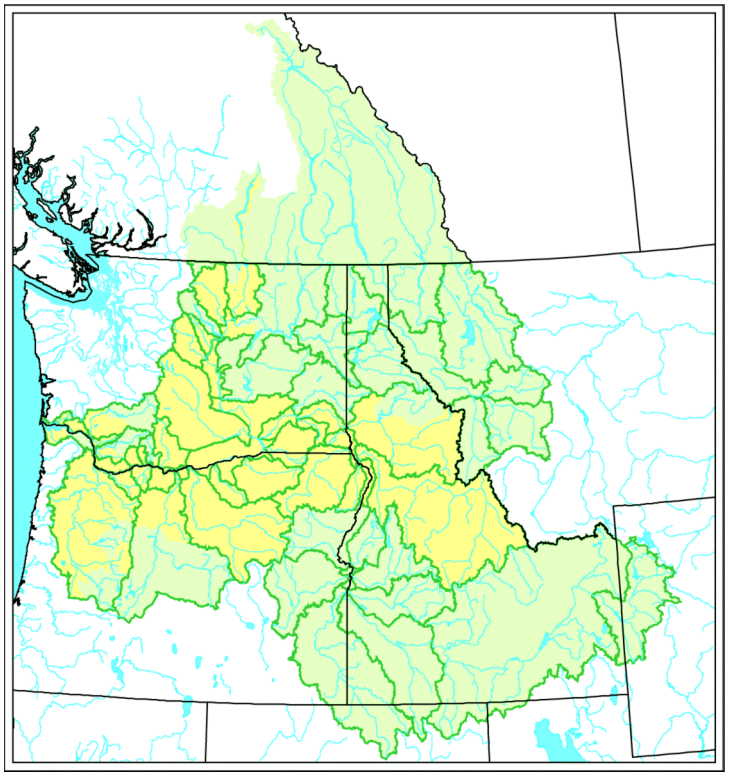
FY 2000 Draft
Annual Implementation Work Plan



Submitted by
Columbia Basin Fish and Wildlife Authority

to the
Northwest Power Planning Council

August 20, 1999

EXECUTIVE SUMMARY

The federal, state and tribal entities comprising the Columbia Basin Fish and Wildlife Authority (CBFWA) have responsibility under treaties and statutes for managing the fish and wildlife resources of the Columbia River Basin. The Northwest Power Act requires the Northwest Power Planning Council (Council) to request recommendations from the fish and wildlife managers when developing or modifying the Columbia River Basin Fish and Wildlife Program (Program). The Draft Annual Implementation Work Plan (DAIWP) is a formal recommendation to the Council for the FY 2000 budget and summary of the Manager's project evaluation process and, as revised, as recommendations to the Program Amendment process.

In carrying-out certain aspects of the Council's Program, the Managers have chosen to work through the processes of the Columbia Basin Fish and Wildlife Authority. In addition to providing administrative and technical support, CBFWA provides a neutral ground for the co-managers to address a variety of issues in an open and productive discussion. Among other things, the co-managers develop the Annual Implementation Workplan for activities in the Council's Program.

The CBFWA submitted the DAIWP to the Council on April 16, 1999. The document was reviewed by the Independent Scientific Review Panel (ISRP) and distributed for public comment. Revisions to the DAIWP are incorporated through a collaborative process with CBFWA, the Council, the Bonneville Power Administration (BPA) and the public. CBFWA will present the revised FY 2000 DAIWP incorporating responses to ISRP and the public to the Council on August 20, 1999. The Council adopts a final AIWP in September and submits its recommendations to BPA in October to begin the execution of contracts for the protection, mitigation and enhancement of the Columbia Basin's fish and wildlife resources.

For FY 2000, the DAIWP has incorporated several changes from past efforts. The format has changed to one with emphasis on the subbasin level and evaluation of fish and wildlife resource needs through an ecosystem approach. Projects and their costs have been organized by subregion and subbasin. In addition, CBFWA, the Council and Bonneville Power Administration (BPA) have agreed to incorporate other improvements listed below:

- revisions to subregion/subbasin summaries that reflect updated lists of goals, objectives and strategies for fish and wildlife management;
- summaries of past accomplishments and explanations of how these accomplishments result in recommendations;
- a reference list and summary of watershed assessments for use in describing current needs in subbasins;
- recommendations for projects for milestone-based evaluations; and
- descriptions of how individual projects in subbasins relate and contribute to strategies used to accomplish goals and objectives.

The FY 2000 recommended budget is preliminary because available funds are difficult to determine based, in part, on the uncertainties of the accounting processes of the BPA Budget

Memorandum of Agreement (MOA). CBFWA cannot be certain as to the exact amount of available funds in any given year but we continue to work with BPA and its contractor, Moss Adams and the Council, to improve the process. This collaborative process is essential to arrive at a final budget and list of project needs prior to the start of FY 2000.

Goal for Columbia Basin Fish and Wildlife Restoration

The tribal, state and federal entities of the Columbia Basin Fish and Wildlife Authority have responsibility under treaties and statutes for managing the fish and wildlife resources of the Columbia Basin and have explicitly set the following goal for fish and wildlife restoration:

Restore sustainable, naturally producing fish and wildlife populations to support tribal and non-tribal harvest and cultural and economic practices. This goal will be achieved by restoring the biological integrity and the genetic diversity of the Columbia River ecosystem and through other measures that are compatible with naturally producing fish and wildlife populations. This goal is intended to fulfill the nation's and the region's obligations under treaties and executive orders with Northwest Indian tribes, treaties with Canada, and applicable resource protection, restoration and enhancement statutes and regulations.

Context for the FY 2000 Draft Annual Implementation Work Plan

This FY 2000 Draft Annual Implementation Work Plan (DAIWP) details the actions (projects) that the managers recommend take place during Fiscal Year 2000 to work toward this goal. The actions recommended for FY 2000 carry out strategies developed for each subbasin. The managers developed the strategies to achieve specific objectives, guided by regional sub-goals and principles. This document summarizes these guiding sub-goals and principles and the subbasin objectives and strategies based on the Draft Multi-Year Implementation Plan (6/4/97) and the Draft Multi-Year Plan (2/7/98), and presents the subbasin strategies and the specific FY 2000 projects recommended to complete them.

To estimate the funds needed for fish and wildlife during the next BPA rate period, the managers developed a Ten-Year Fish and Wildlife Budget. This budget forecast is based on the actions needed to carry out the strategies developed in the plans above. The DAIWP is a detailed expression of the annual budget summarized in the Ten-Year Budget.

The FY 2000 CBFWA DAIWP represents but a portion of the fish and wildlife managers' regionwide activities. This portion of the fish and wildlife managers activities is funded by the BPA to mitigate the impacts of the Federal Columbia River Power System under the Pacific Northwest Electric Power Planning and Conservation Act of 1980 through the BPA direct Fish and Wildlife Program budget. In many cases, the BPA leverages additional funding from other sources for fish and wildlife protection, restoration, and enhancement.

Developing the Draft Annual Implementation Work Plan

The managers developed the FY 2000 DAIWP from several sources. First, BPA solicited proposals for FY 2000 activities from the managers and the public. BPA compiled the resulting 435 proposals in a common database, which was accessible to CBFWA, ISRP, NWPPC and the public. The total amount requested for funding, including all projects, was $229 million.

The managers divided the proposals into subregions and the subbasins within each subregion. The managers established Watershed and Non-Watershed Technical Work Groups to evaluate those groups of proposals using relevant criteria to determine technical feasibility (Appendix A).

The proposals were divided among the three caucuses for additional technical and management review. The management criteria used are an expression of the goals, principles, objectives and strategies summarized in Appendix A. The AFM sent the anadromous fish proposals to subregional teams for management review. The Resident Fish and Wildlife proposals were reviewed in separate caucuses. The managers then placed each proposal in one of three groups: Tier 1 – recommended for funding in FY 2000; Tier 2 – recommended for funding, pending sufficient additional funds; and Tier 3 – not recommended for funding in FY 2000.

As a final step, since the needs exceed the available funding, the managers recommended changes in the proposals to balance the budget, Appendix A. Management Evaluation Comments describe these modifications in the individual project summaries.

The managers are committed to multi-year budgeting for ongoing projects. However, additional work is needed on criteria for choosing appropriate projects and conditions that would trigger their review. The managers will work with the NWPPC, BPA, and others to develop suggestions for how multi-year budgeting might work most effectively.

Fish and Wildlife Balanced Budget

Consistent with the regional goals, objectives and strategies, the managers recommend a budget totaling $141,126, 857 for FY 2000. The MOA direct BPA budget amount of $127 million should be augmented with $2,593,000 from the Contingency/Inflation Reserve, $2,633,857 in un-obligated FY 1998/1999 project funds, and $2,000,000 in estimated interest on FY 1999 funds. The managers also recommend using $4,900,000 in unused Capital Investment funds from previous years. Moreover, the managers recommend that $2,000,000 from BPA's division of Fish and Wildlife be moved from the direct budget because anadromous fish activities are in support of programs from other parts of the MOA budget. The proposed budget allocates $101,425,681 to anadromous fish projects, $17,927,543 to resident fish projects, $14,473,634 to wildlife projects and $5,300,000 to support BPA and ISRP activities.

Although the BPA MOA Direct budget amount is currently set at $127 million, the increased burden to the Fish and Wildlife Program by listed species warrants a discussion between BPA, NWPPC and CBFWA on increasing the direct program allocation. The MOA under Section VIII (m) (Financial impact of new ESA measures and appropriations exceeding available funding) indicates that measures required by the ESA to address newly listed species that impose significant additional costs on Bonneville in any category will be considered an unforeseen event subject to the provisions of Section IX (c) of the agreement. Section IX (c) (Unforeseen events) acknowledges the possibility that the financial consequences of unforeseen events may exceed the capacity of the funds allocated and the contingencies envisioned in the MOA. "In this event the Parties will consult with the Council and the Tribes to determine how to provide for the financial consequences of this unforeseen event while assuring that the purposes of the Agreement continue to be fulfilled. If no agreement is reached among the Parties, the Council,

the Tribes, and Bonneville shall make a written recommendation to the Office of Management and Budget and the Council on Environmental Quality on how to provide for the financial consequences of the unforeseen event...". CBFWA Members may be consulting with the Parties under the MOA and the Council about the significant additional costs imposed by the new ESA listings on FY 2000 and FY 2001 activities and on how to provide for adequate funding. These consultations could lead to a change in the amount of BPA funding available for the remainder of the MOA time period.

In developing their annual fish and wildlife budget, the managers make assumptions regarding potential sources of funds and allocate those funds among the three caucus' budgets. The estimation of future Fish and Wildlife Program budgets is subject to considerable uncertainty, both with regard to the sources of available funds and the timing and need for its being spent. The validity of the managers' assumptions regarding the amounts of funds available for use in FY 2000 are currently under regional discussion. At stake is probably no more than $10 million.

The managers offer the following observations that more than balance the above risk. First, the managers show unallocated balances totaling $2.35 million in addition to $1 million in an ESA Steelhead placeholder. Thus a third of the at-risk balance is in hand now. Second, the managers' recommended budget has large amounts of funds allocated to major construction projects with uncertain schedules. Prudent management requires full construction funds be budgeted, in order that these projects can move forward as soon as construction can proceed to assist the recovery of declining species. Several are in the initial stages of regional review and, based on past experience, may be delayed. Furthermore, several have substantial amounts of Carry Forward that may reduce the need for FY 2000 funds. Although the managers must budget for the most rapid schedule, experience shows that, in aggregate, as much as $15 million may not be needed by these projects in FY 2000, being needed instead in later years.

A preliminary analysis of the distribution of the managers' funding recommendations among the subregions and subbasins, among major areas of program emphasis and project status or phase is also provided.

ISRP Peer Review

The Managers believe that scientific "peer" review is a critical part of the project review process. The FY 2000 ISRP reviews were, for the most part, helpful to the project sponsors and will be used to improve project implementation as well as to better prepare project sponsors for future reviews. However, there were some aspects of the ISRP review that are discussed so that future reviews can be more useful.

Of primary concern is the timing or sequencing of the project reviews. The ISRP provides a technical review of projects three months following CBFWA's technical, management and budgetary reviews. This sequence provides no "fix-it" time for the project sponsors to correct errors in their submissions. If the ISRP technical review occurred before CBFWA's review the ISRP Report could have been used by the Managers in their review process.

The ISRP report was received favorably by the Managers and was considered when reviewing their FY 2000 funding recommendations. Although the Managers did not change their

recommendations for FY 2000 following the release of the ISRP Report, the comments raised by the ISRP were taken seriously and responses are provided in Appendix B of this document. The funding recommendations did not change for three reasons: 1) the ISRP did not consider budgetary and management priority in their evaluation process (many “technically sound” projects were not recommended for priority funding by CBFWA due to budget constraints or a lack of consistency with subbasin or subregional management plans or with the Fish and Wildlife Program), 2) the ISRP’s interpretation of the Council's Program varies significantly from the Managers' interpretation (i.e. the interpretation of the Program regarding native fish restoration and resident fish substitution requirements appears to vary significantly between the ISRP and the Managers; and, the fundamental philosophy of hatchery applications clearly varies significantly between the ISRP and the Managers) and 3) the ISRP in several instances relied on incorrect assumptions during their review apparently because they were not familiar with the specific area being studied.

Specific programmatic issues raised by NWPPC regarding the ISRP report are discussed in detail in the DAIWP (i.e. watershed assessments, resident fish substitution, hatchery applications, etc.).

The remainder of the Draft Annual Implementation Work Plan (DAIWP) is comprised of ecosystem summaries by subbasins and subregions, and includes goals, objectives, and strategies; fish and wildlife status; habitat assessments; limiting factors; watershed assessments; past accomplishments; remaining work; recommended project lists; and budgets. By design, all project recommendations are justified based on goals, objectives, and strategies of each unique subbasin. The appendices, showing greater detail on the evaluation process by caucus, have been placed in a separate volume.

Acknowledgements

This multi-year plan and FY 2000 work plan would not have been possible without the many hours of volunteer effort by staff of the Columbia River Basin fish and wildlife managers. They worked together to compile, review and re-write the summaries of each of the subbasins within which they work. The co-managers also read and discussed each of the more than four hundred proposals evaluated for the FY 2000 work plan. Finally, the co-managers made a series of difficult, and often painful, budget choices affecting people and the fish and wildlife resources for which they are responsible.

Special thanks to: Eric Lowrance and Tom Pansky of the Bonnevile Power Administration GIS Department for creating the maps in this document; and, Christine Clark, Summer Apprentice in the Apprenticeships in Science and Engineering Program, for compiling the Entiat and Chelan Subbasin Summaries and helping to pull the document together.

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REGIONAL GOAL, PRINCIPLES AND OBJECTIVES

The managers' proposed framework for fish and wildlife recovery starts with a basinwide goal and principles, which guide fish and wildlife management. Sub-goals and regional objectives for anadromous and resident fish and wildlife provide more specific guidance. This framework includes information gleaned from the Council's Fish and Wildlife Program, Proposed Recovery Plan and Biological Opinions for Endangered Species, Wy-Kan-Ush-Mi Wa-Kish-Wit, and other tribal, state and federal plans and policies. It also responds to the points raised by the Independent Scientific Group in its report, "Return to the River." This section outlines goals and principles, and general strategies to accomplish the goals. More detailed objectives and strategies for each subregion and/or subbasin are outlined in the following sections.

The Goal for Columbia Basin Fish and Wildlife Restoration

Restore sustainable, naturally producing fish and wildlife populations to support tribal and non-tribal harvest and cultural and economic practices. This goal will be achieved by restoring the biological integrity and the genetic diversity of the Columbia River ecosystem and through other measures that are compatible with naturally producing fish and wildlife populations. This goal is intended to fulfill the nation's and the region's obligations under treaties and executive orders with Northwest Indian tribes, treaties with Canada, and applicable resource protection, restoration and enhancement statutes and regulations.

Regional Principles

General Principle: The scientific foundation of the fish and wildlife managers' Multi-Year Plan views ecosystems as dynamic networks of natural and human factors. While the Columbia River ecosystem can be described and studied, it is a constantly moving target, and opportunities for prediction and manipulation are limited. It is prudent to understand and utilize the natural physical and biological processes that create and maintain productive ecosystems. Species reflect their associated landscapes and ecosystems. Hence, the condition and abundance of desired species reflect the condition of the ecosystem. Technology should be used to foster needed ecosystem attributes rather than replace them.

Specific Principles: This general principle is consistent with three principles identified by the Independent Scientific Group. Fish and wildlife managers have added specific references to anadromous fish, resident fish, and wildlife to the ISG principles.

- Restoration of Columbia River fish and wildlife resources must address the entire natural and cultural ecosystem including upland, riparian, freshwater, estuarine and ocean habitats where appropriate. This consideration includes human developments, as well as natural habitats.
- Sustained natural productivity requires a network of complex and interconnected habitats, which are created, altered and maintained by natural physical processes in uplands, riparian, freshwater, the estuary and the ocean. These diverse and high-quality habitats are crucial for reproduction, rearing, migration, maintenance of food webs and predator avoidance.
- Life history diversity, genetic diversity and meta-population organization are ways fish and wildlife populations adapt to their complex and connected habitats. This bio-diversity and its

organization contribute to the ability of fish and wildlife populations to cope with the environmental variation that is typical of terrestrial, freshwater, and saltwater environments.

The members of the Columbia Basin Fish and Wildlife Authority agree with these basic tenets of the ISG and have incorporated them into their plan. The fish and wildlife managers have identified three additional principles which they believe are important for restoration activities.

- Salmonid species can function as keystone populations throughout their historic range. For example, the decay of large numbers of salmon carcasses effectively cycle nutrients from the ocean to freshwater ecosystems. Salmon probably had a key role in physically structuring the environment and providing an appreciable food base for terrestrial species. It is important to re-establish the nutrient cycle in those areas still accessible to salmon. The loss of that nutrient cycling in those areas now blocked to anadromous fish must be adjusted for when developing restoration plans.
- Restoration of fish and wildlife resources depends upon managing human impacts to achieve ecosystem conditions that allow natural development of suitable ecosystem functions. Suitable ecosystem conditions can be achieved by managing human impacts to allow natural development of needed characteristics. Technology should be used to foster the development of suitable conditions rather than replace natural functions.
- Salmonids, and other species, can function as indicator species to define desired environmental conditions. In those subbasins still accessible to anadromous fish, salmon are a suitable yardstick for defining normative conditions. In this sense the needs of salmon also describe the majority of needs of a particular assemblage of other native species which, historically, occupied the same freshwater habitat. In areas blocked to anadromous fish, other sensitive native fish and wildlife species such as Kootenai River white sturgeon, bull trout, and bald eagles can serve as indicators of ecosystem condition. We should strive to re-establish and maintain the bio-diversity represented by these historically co-evolved native fish and wildlife species assemblages.

Regional Anadromous Fish Objectives

The Anadromous Fish Managers have chosen some regional objectives, including:

- By 2005, implement actions sufficient to halt the declining trend in salmon and steelhead populations above Bonneville Dam.
- Restore healthy, naturally reproducing populations of salmon in each subregion accessible to salmon. Healthy populations are defined as having an 80 percent probability of maintaining themselves for 200 years at a level that can support harvest rates of at least 30 percent.
- By 2001, obtain the information necessary to manage and restore Pacific lamprey.
- By 2025, increase the total adult salmon and steelhead returns above Bonneville Dam to 5 million annually in a manner that supports tribal and non-tribal harvest.
- Fully mitigate for losses of anadromous fish, resident fish, and wildlife within 200 years.

Regional Resident Fish Sub-Goals and Objectives

The Resident Fish Managers have chosen several sub-goals and objectives to guide resident fish management, including:

- Mitigation efforts to address resident fish losses due to human caused impacts, including the construction and operation of the hydrosystem.
- Substitute lost anadromous populations with resident populations to address the loss of salmon and steelhead in those areas permanently blocked to anadromous fish as a result of the construction and operation of hydroelectric dams.
- Mitigate and compensate for resident and anadromous fish losses caused by the construction and operation of federally-operated and federally-regulated hydro-power projects.
- Ensure the continued persistence, health, and diversity of existing resident fish species by reducing or removing impacts caused by habitat degradation (including water quality, water quantity, and hydropower development), competition and/or hybridization with non-native species, and over-harvest (direct and incidental).
- Restore native resident fish species (subspecies, stocks and populations) to near historic abundance throughout their historic ranges where habitats exist and where habitats can be feasibly restored.
- Maintain and restore healthy ecosystems and watersheds which preserve functional links among biota to ensure the continued persistence, health and diversity of all species including game fish species, non-game fish species, and other organisms.
- Administer and increase opportunities for consumptive and non-consumptive resident fisheries for native, introduced, wild, and hatchery-reared stocks that are compatible with the continued persistence of native resident fish species and their restoration to near historic abundance (includes intensive fisheries within closed or isolated systems).

Regional Wildlife Sub-Goal and Objectives

The wildlife sub-goal is to achieve and sustain levels of habitat and species productivity in order to fully mitigate for the wildlife losses that have resulted from the construction and operation of the federal and nonfederal hydroelectric system in the Columbia River Basin.

- Develop mitigation plans that will fully mitigate for wildlife losses.
- Coordinate efforts within the Columbia Basin.
- Ensure that trust/settlement agreements and other mitigation programs demonstrate consistency with mitigation goals, objectives, and methods.
- Track mitigation goals and the gains in habitat units (HU) as a result of implemented mitigation plans.
- Ensure consistent application of Habitat Evaluation Process (HEP) methodology. Ensure baseline HEP estimates are completed as projects come on line.
- Conduct operational loss assessments.
- Develop a monitoring and evaluation plan that measures habitat and species response to management actions.
- Develop policy regarding substitution of habitat types.

PROGRAMMATIC ISSUES

Preface

The federal, state and tribal entities comprising the Columbia Basin Fish and Wildlife Authority (CBFWA) have responsibility under treaties and statutes for managing the fish and wildlife resources of the Columbia River Basin. The Northwest Power Act requires the Council to request recommendations from the fish and wildlife managers when developing or modifying the Columbia River Basin Fish and Wildlife Program (Program). The Draft Annual Implementation Work Plan (DAIWP) is a formal recommendation to the Council for the FY 2000 budget and summary of the Manager's project evaluation process and, as revised, as recommendations to the Program Amendment process.

The basis for the fish and wildlife Managers actions in fulfilling the requirements of the Northwest Power Act derives from a number of statutory and other legal sources, e.g. Fish and Wildlife Coordination Act 16 U.S.C. 661-666c; Fish and Wildlife Act, 16 U.S.C. 742; Endangered Species Act 16 U.S.C. 1531-1543; Federal Power Act §18, 16 U.S.C. 811; Migratory Bird Treaty Act, 16 U.S.C. 703-711; Revised Code of Washington, Titles 75 & 77; and treaties between the US Government and the Federally recognized Indian tribes of the Columbia River Basin. The Northwest Power Act did not amend these authorities, nor did the Act delegate the exercise of these authorities to the Council or other bodies. Instead, the Act supplemented these authorities including a focus on "fish and wildlife management coordination and research and development (including funding) …". 16 U.S.C. 839b (h)(2)(C).

In carrying out certain aspects of the Council's Program, the Managers have chosen to work through the processes of the Columbia Basin Fish and Wildlife Authority. In addition to providing administrative and technical support, CBFWA provides a neutral ground for the co-managers to address a variety of issues in an open and productive discussion. Among other things, the co-managers develop the DAIWP for activities in the Council's Program. The DAIWP incorporates project priorities of the co-managers in terms of the available budget under the BPA Fish and Wildlife Memorandum of Agreement. Tasks necessary to carry out this work include:

1. Assessments of current and future years' budget availability considering on going and completed projects. The budget analysis primarily occurs at the "obligations" level of specificity, with monitoring of "accruals" through MOA processes.
2. Budget recommendations for capital and expense portions of the BPA directly funded measures. Development of these recommendations generally requires review of individual project budgets for projects in question and decisions to sequence or delay implementation of measures.
3. Recommendations of measures/program areas where proposals should be solicited for project implementation. These recommendations have been provided in an attempt to better structure the annual BPA funding cycle and streamline processes.
4. Review of proposals submitted to the Bonneville Power Administration. Reviews include management review for consistency with federal, state, and tribal policies affecting the acceptability of proposals, independent peer review, and budget review.
5. Peer review among co-managers of projects for technical merit.

6. Implementation or coordination of major programmatic efforts such as, predator control, smolt passage monitoring, and coded wire tagging programs.

The CBFWA submitted the DAIWP to the Council on April 16, 1999. The document was reviewed by the Independent Scientific Review Panel (ISRP) and distributed for public comment. Revisions to the DAIWP are incorporated through a collaborative process with CBFWA, the Council, the Bonneville Power Administration (BPA) and the public. CBFWA will present the revised FY 2000 DAIWP incorporating responses to ISRP and the public to the Council on August 20, 1999. The Council adopts a final DAIWP in September and submits its recommendations to BPA in October to begin the execution of contracts for the protection, mitigation and enhancement of the Columbia Basin's fish and wildlife resources.

For FY 2000, the DAIWP has incorporated several changes from past efforts. The format has changed to one with emphasis on the subbasin level and evaluation of fish and wildlife resource needs through an ecosystem approach. Projects and their costs have been organized by subregion and subbasin.

The following comments are based on CBFWA's expectations that the Council and ISRP work in a collaborative manner to provide the best possible scientific and cost effective fish and wildlife program within the BPA Direct Program funding source. We expect the ISRP, through Council, to provide a comprehensive, credible technical review of the projects proposed for funding in FY 2000. For the most part, except as noted in the following review, this has been achieved for FY 2000. The expectation for the Council is to ground truth the Managers recommendations, using the ISRP Report to insure that the projects proposed for funding are scientifically adequate to meet their objectives. We also expect the Council to provide written comment to CBFWA where there are significant concerns raised by the ISRP that may jeopardize the recommendations made in the April 16, 1999, FY 2000 DAIWP. There is an inherent need for a commitment from the Council to work with CBFWA to productively resolve differences with the ISRP and BPA in order to maintain the best possible fish and wildlife program for FY 2000.

Review and General Impressions of FY 2000 ISRP Report

The Managers believe that scientific "peer" review is a critical part of the project review process. The ISRP reviews were, for the most part, helpful to the project sponsors and will be used to improve project implementation as well as to better prepare project sponsors for future reviews. In some instances, particularly the Upper Columbia Subregion proposals, the reviewers provided much needed advise on what specific information was missing from this year's proposals and how the proposals could be improved in the future. However, there were some aspects of the ISRP review that need to be discussed so that future reviews can be more useful.

Of primary concern is the timing or sequencing of the project reviews. The ISRP provides a technical review of projects three months following CBFWA's technical, management and budgetary reviews. This sequence provides no "fix-it" time for the project sponsors to correct errors in their submissions. If the ISRP technical review occurred before CBFWA's review the ISRP Report could have been used by the Managers in their review process. This would have

greatly reduced the time that the Managers spent on their technical review and would have allowed them to spend more time evaluating management and budgetary priorities.

The ISRP report was received favorably by the Managers and was considered when reviewing their FY 2000 funding recommendations. Although the Managers did not change their recommendations for FY 2000 following the release of the ISRP Report, the comments raised by the ISRP were taken seriously and responses are provided in Appendix B of this document. The funding recommendations did not change for three reasons: 1) the ISRP did not consider budgetary and management priority in their evaluation process (many “technically sound” projects were not recommended for priority funding by CBFWA due to budget constraints or a lack of consistency with subbasin or subregional management plans or with the Fish and Wildlife Program), 2) the ISRP’s interpretation of the Council's Program varies significantly from the Managers' interpretation i.e. the interpretation of the Program regarding native fish restoration and resident fish substitution requirements appears to vary significantly between the ISRP and the Managers; and, the fundamental philosophy of hatchery applications clearly varies significantly between the ISRP and the Managers and 3) the ISRP in several instances relied on incorrect assumptions during their review apparently because they were not familiar with the specific area being studied.

The Managers performed a comprehensive technical and management review of the project proposals before releasing the April 16, 1999 FY2000 DAIWP. Where technical concerns were raised during that review, the proposal sponsor was called upon to address the concerns. The ISRP identified many of the same concerns raised by the Managers during their review. However, we understand that the ISRP did not provide the sponsors with an opportunity to provide additional input. The Managers do not believe that this practice is the most effective method of determining which proposals should receive funding. We believe that there should be some means of communication, such as workshops, conference calls, written questions, etc., that would allow the project sponsors to respond to reviewers' questions regarding their projects, especially since some reviewers appear to be unfamiliar with local conditions and the background for some of the proposals they reviewed.

An example of where an inaccurate assumption was made by the ISRP reviewer, because of lack of background knowledge, is in the review of Project Number 9501300, Nez Perce Tribe Resident Fish Substitution Program. The ISRP commented: “The approach on its face seems infeasible because trout and bass are not compatible. This leads to a lack of confidence in the proposal and concern that the work is not based on sound science principles.” In fact, both trout and bass live in this subbasin. The reviewers should have known this. In another example, the review of Project Number 9608600, Clearwater Subbasin Focus Watershed Program – ISCC, the ISRP commented: “The project needs a focus on increased flows that more closely approximate natural seasonal hydrographs.” In fact, the flows in this tributary are natural, with no dams or irrigation diversions upstream of the intended sampling area. Therefore, the project is addressing the appropriate needs in this subbasin. These are only two examples where the reviewers relied on fundamentally inaccurate assumptions as a basis for their review of a project. Several other proposal reviews had similar difficulties. These examples are presented to explain why the Managers recommendations have not changed since the original version of this DAIWP. The Managers either had the local knowledge or contacted the proposal sponsor to be sure their

assumptions were correct before making critical comments. This also highlights that the ISRP report is not infallible. All comments provided by the ISRP should not be considered evenly.

The ISRP review would be more useful if the reviewers would confine their comments to the technical aspects of the proposals rather than venturing into policy or programmatic issues. In several instances, the ISRP reviewers appear to make inappropriate comments, crossing the line of providing a technical review into providing personal opinion on aspects of the proposal that are not the responsibility of the ISRP. For example, there was an evident bias against artificial production throughout this peer review. Volume I of the ISRP Report states: "In the case of the Nez Perce Hatchery, the ISRP was concerned that the project is scientifically outdated, and would follow in the pathway of a technology that has largely failed the region.". This statement is not supported by any references. Hatcheries have not been the only means for the recovery of depressed stocks of fish and are confronted with numerous obstacles in order to accomplish their objectives. This hatchery is applying the NATURES methodology, which is the most current science in regards to hatcheries in the subbasin, and ironically, is strongly supported by the ISRP. Another statement in Volume I states: "The many (50 some) Columbia River system hatcheries have failed to offset destruction of the basin's fishery resources." Statements such as these, particularly with the Artificial Production Review ongoing and the other factors impacting fish survival, demonstrate a bias against the use of hatcheries and a general lack of understanding that there have been both successes and failures with hatcheries and that each hatchery should be judged on its on merits. Instead of the hatcheries being reviewed according to their own technical merits, the hatchery projects were criticized for their use of supplementation as a means for fish recovery, even though supplementation is called for in the Program.

The ISRP Report could also be improved if the reviewers would refrain from making unprofessional comments about the proposal sponsors. The assumption of a peer reviewer should be that if information is missing from a project proposal, that the project sponsor must have overlooked its importance. The assumption several of the reviewers made, if they did not understand portions of a project proposal or did not find information that they felt was critical for the proposal, was that the project sponsor was incompetent and the entire proposal was scientifically unsound. We need to emphasize that the project sponsors are scientists and well qualified for the work they are performing. To imply that they are not is unproductive and impedes the constructive nature of a peer review process. Specific examples of unprofessional comments are plentiful in this document. For Project Number 9107300, Idaho Natural Production Monitoring and Evaluation, the ISRP comments that: "This is an ongoing study that is too huge, amorphous and multi-faceted to inspire confidence in the reviewers in the project's future success or the competence of the project personnel.". How does the size of the project reflect the competence of the sponsors to perform the work? What is the sponsor to do to address this concern? In another example, Project Number 20084, Protect and Restore the North Lochsa Face Analysis Area Watersheds, the ISRP comments "Is there sufficient expertise on the project team to assure that the medicine won't be worse than the disease?" If the intent of the reviewers is to imply that the sponsor lacks the expertise to carry out the work it would be more helpful to comment on the qualifications that are listed for the personnel in the proposal summary. If the sponsors were not qualified to perform the work the Managers would not have supported the proposal.

Finally, for Project Number 20086, Rehabilitate Newsome Creek – S.F. Clearwater River, the ISRP had several comments relating to the competency of the staff: "Specifically, there is a real possibility that the road work could make the problem worse rather than better, and it does not appear that the project team has the proper qualifications to undertake this work…1) There seems to be over-reliance on the Rosgen method. Project personnel should get second-opinions on their hydrologic/geomorphic approach from qualified fluvial (and watershed) geomorphologists of the non-Rosgen school….3) The abstract mentions certain biological monitoring ("snorkel counts to document juvenile survival, and redd counts to document adult spawning success"), but such are not covered in the methods section—and the way they are expressed in the abstract leads one to believe the proposers probably don't know what they are talking about." Again the qualifications of the proposers is called into question in a manner that is not constructive. More importantly, the scientific methods are unfairly called into question. The Rosgen method is an approved and supported method throughout the region. Like many scientific methods, there are individuals that believe other methods may be more appropriate. This review does not acknowledge that there is currently a scientific dispute regarding methods for watershed evaluations. Also, because the scientists do not describe basic sampling techniques in the methods section of their proposal the reviewers assume that the proposers "don't know what they are talking about". In a limited proposal format, being reviewed by your peers, it is reasonable for the proposer to assume that the reviewer is familiar with basic, fundamental sampling procedures.

The reviewers have a very high standard for peer reviewed articles, as well they should. But they fail to acknowledge that much of the information in gray literature can be useful and "scientifically sound". In most cases, this is the only information available for decision-making. It should be well known to the reviewers that the peer review process for publications takes a considerable amount of time (from 2 to 5 years to get data from the field into a journal article), and for several projects the information the ISRP is looking for may currently be in the peer review publication process. The gray literature provides an avenue to release the results on an annual basis. It most instances these results are peer-reviewed by other scientists within the program where the work is being done. The time and funding is often not available for every project sponsor to submit results to a peer-reviewed journal each year. It also appears that the ISRP believes that nearly every project should be publishing its results in a peer reviewed journal, yet many of the projects are not creating new or different information that would be considered pertinent to the outside world. Nowhere in the Fish and Wildlife Program is journal publication a requirement for funding. Also, when the ISRP insinuates that there is information available in the peer reviewed literature that the project sponsor missed or does not know about, it would be helpful if the reviewer could provide the reference for articles pertinent to these projects.

Although the ISRP contends that it made a reasonable effort to insure consistency among reviewers, there were numerous occasions where extremely high standards were placed on a group of projects in one area while in another area, those standards are not apparent. In a technical evaluation the standards should be consistent across the board. For instance, there are statements that some proposals should not be funded due to inadequate goals and objectives, while other proposals are recommended for funding when the ISRP specifically states that no concrete goals and objectives have been established. One example of this is the recurring

demand by the ISRP that all watershed restoration projects be tied to a watershed assessment. Yet for Project Number 20013, Restore Unobstructed Fish Passage to Duncan Creek, the ISRP recommended funding yet clearly states that “There is no evidence of a watershed assessment plan.”

The ISRP Report strongly supports funding new projects that are purely research oriented with no ties to management actions or needs. For one ongoing project, the research results are being directly tied into hatchery operations and are identified as necessary by the co-managers in this subbasin, yet the ISRP recommends not funding this component of the project. For Project Number 9703800, the ISRP recommends “Do not fund the portion to cryopreserve female genetic material, as this part of the proposal is too uncertain and experimental. While the objective appears worthwhile, other funding sources such as USDA or NSF may be more appropriate to support basic research and technology development.” This comment does not support the recommendations by the ISRP to provide funding for new and innovative projects. This is also a clear example that innovative work is not confined to new projects.

The ISRP recommended 36 proposals for funding that CBFWA ranked as Tier 3 (do not fund). Table 1 lists the basis for the CBFWA ranking. Refer to Appendix B for a complete response to the ISRP comments.

Table 1. Project review for CBFWA Tier 3 projects rated as “Fund” by the ISRP

Project ID	Title	Sponsor	ISRP Recom.	CBFWA Tier	ISRP-CBFWA comparison	Comments
20006	Yakima Basin Benthic Index Of Biotic Integrity (B-Ibi)	Washington Trout	Fund	3	Disagree-fund	This project has merit, but stands alone in its usefulness for management applications. A project is currently being funded through another source that provides similar information, making this project redundant in the region.
20012	Develop New Technology For Telemetry And Remote Sensing Of Fish Quality	Oregon Cooperative Fish and Wildlife Research Unit	Fund	3	Disagree-fund, but not high priority	The managers agree that this could be an innovative project, but the usefulness of the results to management is unclear. In light of other proposals in the basin, this project is not a management priority at this time.
20013	Restore Unobstructed Fish Passage To Duncan Creek	Skamania Landing Owners Association (SLOA)	Fund	3	Disagree-fund; strongly recommend	When compared to other projects proposed in this subbasin, this project is not a high priority management need. Due to budgetary constraints within the Fish and Wildlife Program, and alternative funding sources available for this project, this project is not a management priority within the basin. See Appendix B.
20014	Evaluate Songbird Use Of Riparian Areas During Fall Migration	Department of Biological Sciences, University of Idaho	Fund	3	Disagree-fund	Based upon review of this project in relationship to Wildlife Caucus research criteria, this project did not identify a specific need under the Council's program nor did it satisfy any identified data gap or need for continued implementation of mitigation projects.
20027	Electronic Columbia Basin Watershed Newsletter	Intermountain Communications	Delay Funding	3	Disagree-if deficiencies corrected	This project is not an essential element of the work plan and therefore is not a management priority in the basin.
20029	Electronic Columbia Basin Fish & Wildlife Research Report	Intermountain Communications	Fund	3	Disagree-fund, but not high priority	This project is not an essential element of the work plan and therefore is not a management priority in the basin. Publication opportunities for fish and wildlife results are abundant (North American Journal of Fisheries Management, Northwest Science, etc.) and are currently being used. More emphasis should be placed on the individual sponsors to publish their results in existing journals. This money is needed for on the ground work.
20033	Rehabilitate instream and riparian habitat on the Similkameen and Okanogan	U.S. Fish and Wildlife Service	Fund	3	Disagree-fund, but not high priority	This project is not a management priority in this subbasin. The proposed work has not been adequately justified and this particular location would more appropriately lend itself to passive restoration.
20034	Impact Of Flow Regulation On Riparian Cottonwood Ecosystems	BioQuest International Consulting Ltd.	Fund	3	Disagree-fund; strongly recommend if project is feasible (IKONOS imagery)	Based upon review of this project in relationship to Wildlife Caucus research criteria, this project did not identify a specific need under the Council's program nor did it satisfy any identified data gap or need for continued implementation of mitigation projects. There is a plethora of existing literature on this subject that has been used by the Basin's managers in the development and implementation of riparian cottonwood projects.
20040	Develop A Fish & Wildlife Management Plan For The	Shoshone-Paiute Tribes of the Duck	Fund for 1 YR	3	Disagree-fund	

Project ID	Title	Sponsor	ISRP Recom.	CBFWA Tier	ISRP-CBFWA comparison	Comments
	Owyhee Basin, D.V.I.R.	Valley Indian Reservation				
20041	Develop A Fish & Wildlife Conservation Law Enforcement Plan, D.V.I.R.	Shoshone-Paiute Tribes of the Duck Valley Indian Reservation	Fund for 1 YR	3	Disagree-fund	
20042	Integrating Okanogan And Methow Watershed Data For Salmonid Restoration	Okanogan Conservation District	Fund	3	Disagree-fund; strongly recommend	The framework for this information is currently being provided under another BPA project through Streamnet. This project has not been adequately coordinated with the local fish and wildlife managers to assure that the proposal is consistent with their management plans and therefore has little potential to assist in management decisions in the area.
20045	Analyzing Genetic And Behavioral Changes During Salmonid Domestication	Washington State University	Fund	3	Disagree-fund; strongly recommend	This project has merit, as a pure research project, but will not contribute to management decisions for fish and wildlife in the basin. This is not a management priority in the basin. These funds should be used for on the ground improvements.
20054	Evaluate Effects Of Hydraulic Turbulence On The Survival Of Migratory Fish	Oak Ridge National Laboratory	Fund in Part	3	Disagree-fund in part	The management application for this project is not clear. Proposal 20060 more clearly describes it's usefulness and is preferred over this project. This project has not been well coordinated with fish and wildlife managers to assure that the proposal is consistent with their management plans for this subbasin.
20056	Elucidate Traffic Patterns Of Ihn Virus In The Columbia River Basin	USGS-BRD, Western Fisheries Research Center	Fund	3	Disagree-fund; strongly recommend	This project has merit as a pure research project but will not contribute to management decisions for fish and wildlife in the basin. This is not a management priority in the basin and has not been tied to a management plan in the basin.
20057	Strategies For Riparian Recovery: Plant Succession & Salmon	Oregon State University	Fund	3	Disagree-fund; strongly recommend	This project has merit as a pure research project but will not contribute to management decisions for fish and wildlife in the basin. This is not a management priority in the basin and has not been tied to a management plan in the basin. Refer to Appendix B comments.
20062	Adaptive Management Of White Sturgeons	U.S. Geological Survey, Biological Resources Division, Columbia River Research Laboratory	Fund	3	Disagree-fund; strongly recommend	This project does not fall within the measures required for the Fish and Wildlife Program.
20063	Evaluate Effects Of Catch And Release Angling On White Sturgeon	U.S. Geological Survey, Columbia River Research Laboratory, Idaho Department of Fish and Game	Fund in Part	3	Disagree-fund in part	This project does not fall within the measures required for the Fish and Wildlife Program.
20067	Effects Of Supersaturated Water	U.S. Geological	Fund	3	Disagree-fund,	This project will not contribute to management actions to meet existing

Project ID	Title	Sponsor	ISRP Recom.	CBFWA Tier	ISRP-CBFWA comparison	Comments
	On Reproductive Success Of Adult Salmonids	Survey, Western Fisheries Research Center, Columbia River Research Laboratory			but not high priority	water quality standards and is not consistent with the fish and wildlife manager's management plan for the basin. This project is not a management priority.
20071	Restore Crab Lake And Adjacent Reaches Of Crab Creek.	Ducks Unlimited, Inc.	Fund for 1 YR	3	Disagree-fund, but not high priority	After lengthy review and subsequent contact with the proponent to get more information, this project was identified as failing at least one of the threshold criteria for funding (in-lieu). The Caucus determined that it was not in the best interest of the region to protect and develop habitat that would be used to generate income for a private group.
20076	Diet, Distribution & Life History of Neomysis Mercedis in John Day Pool	Unviersity of Montana	Fund	3	Disagree-fund	This project has merit as a pure research project but will not contribute to management decisions for fish and wildlife in the basin. This is not a management priority in the basin.
20083	Evaluate, restore and enhance 14 miles of instream and riparian habitat on	U.S. Fish and Wildlife Service	Fund	3	Disagree-fund; strongly recommend	This proposal was technically unsound. This project is not a management priority in this subbasin.
20092	Inventory Wildlife Species & Populations Of The Owyhee Basin, D.V.I.R	Shoshone-Paiute Tribes of the Duck Valley Indian Reservation	Fund for 1 YR	3	Disagree-fund	Based upon NWPPC staff input and review of the Council's program, it was determined that there was no provision within the existing wildlife section of the program to fund this sort of activity. There has been no request of this sort previously within the basin.
20093	Evaluate The Feasibility For Anadromous Fish Reintroduction In The Owyhee	Shoshone-Paiute Tribes of the Duck Valley Indian Reservation	Fund for 1 YR	3	Disagree-fund	This funding should be provided from other sources. This would support policy participation for an individual agency that should be absorbed through other projects.
20103	Indexing Salmon Carrying Capacity to Habitat, Population, & Physical Fitnes	Oregon State University	Fund	3	Disagree-fund; strongly recommend	This project was technically unsound. The proposers did not establish the need for this information or a tie to a direct management action. Portions of this project are being provided through PATH and would therefore be redundant in the basin.
20107	Reconnect The Westport Slough To The Clatskanie River	Lower Columbia River Watershed Council	Fund	3	Disagree-fund; strongly recommend	This proposal does not address a management priority in this subbasin. The problem being addressed is not a limiting factor at this time.
20109	Cedar Creek Natural Production and Watershed Monitoring Project	Washington Department of Fish and Wildlife	Fund	3	Disagree-fund; strongly recommend	This project has merit but should not be funded until the definition of watershed assessment is complete. The Managers are currently working collaboratively within the region to establish a definition and process for watershed assessments.
20113	Securing Wildlife Mitigation Sites - Oregon, South Fork Crooked River	Oregon Department of Fish and Wildlife	Fund	3	Disagree-fund	After review of the project, the Wildlife Caucus determined that the project scope was significantly different than that which was provided in the FY 2000 proposal. The project proponent withdrew the project for consideration in FY 2000.
20117	Yakima River Subbasin Assessment	Yakama Indian Nation	Delay Funding	3	Agree-DNF	This project has merit but should not be funded until the definition of watershed assessment is complete. The Managers are currently working collaboratively within the region to establish a definition and process for

Project ID	Title	Sponsor	ISRP Recom.	CBFWA Tier	ISRP-CBFWA comparison	Comments
						watershed assessments. Most of this information exists in the Yakima River Basin.
20122	Test guidance flows and strobe lights at a SBC to increase smolt FCE & FGE	Washington Department of Fish and Wildlife	Fund in Part	3	Disagree-fund in part	This project has merit but would not contribute to direct a management action. This project should be discussed under a FERC forum and funded in that realm.
20136	Burns Paiute Mitigation Coordinator	Burns Paiute Tribe	Fund	3	Agree-fold into other BPT proposals	Based upon NWPPC staff input and review of the Council's program, it was determined that there was no provision within the existing wildlife section of the program to fund this sort of activity. This project should be absorbed by other contracts within the Fish and Wildlife Program.
20156	Identification Of Redband And Rainbow Trout In The N F Clearwater Basin	Nez Perce Tribe	Fund	3	Disagree-fund, but not high priority	This project does not fall within the measures required for the Fish and Wildlife Program
20536	Develop Management Plan & Assess Fish &Wildlife - Owyhee Basin, D.V.I. R.	Shoshone-Paiute Tribes of the Duck Valley Indian Reservation	Fund for 1 YR	3	Agree fold into other DVIR proposals	
9105100	Monitoring And Evaluation Statistical Support	University of Washington	Fund for 1 YR	3	Disagree-fund; strongly recommend	This project fails to inform critical management decisions. This service should be absorbed within other projects.
9601900	Second Tier Database Support For Ecosystem Focus	Bonneville Power Administration	Fund for 1 YR	3	Disagree-fund	This project duplicates other data information management services.
9700300	Box Canyon Watershed Project	Kalispel Tribe of Indians - Kalispel Natural Resource Department	Fund for 1 YR	3	Disagree-fund, but not high priority	This project has met its objective of funding through another source and the proponent has withdrawn the project from consideration.
9803500	Watershed Scale Response Of Stream Habitat To Abandoned Mine Waste	University of Washington, College of Forest Resources, Center of Streamside Studies	Fund	3	Disagree-fund	This project has merit but does not make a direct link to salmon recovery. This information will not contribute to management decisions.

Subbasin Planning

Watershed assessments

Issue: In 1999, the Independent Science Review Panel recommended that watershed restoration projects should be conducted based upon a watershed assessment which described the overall condition of a watershed and identified the factors most directly affecting anadromous fish, resident fish, and wildlife. They stated that watershed restoration projects not tied to a watershed assessment should not be funded in the future unless this was resolved. They indicated, however, that there should be a 2-3 year grace period for the project sponsors to actively pursue completion of watershed assessments. We have made significant progress toward this goal. Present watershed restoration projects are broadly based upon the subbasin plans jointly developed by fishery managers in 1991. Local watershed groups have used those plans and have considered recent changes in the watershed. Existing subbasin plans, however, often do not explicitly address the needs of resident fish or wildlife.

In FY 2000, the ISRP again criticized projects for not being tied to a watershed assessment, and recommended not funding several projects for this reason.

The Council has not stated that the ISRP's contradiction in FY 1999 vs. FY 2000 is an issue for FY 2000. The issue for FY 2000 is whether the Council should solicit innovative proposals in the area of watershed assessment, with the particular goal of improving methods for watershed inventory and improving methods for evaluating outcomes of management practices at the watershed or subbasin level.

CBFWA Response: Watershed restoration efforts have been criticized for not being clearly linked to a description of expected measurable benefits. This is a valid criticism in two respects. First, tools for describing the response of anadromous fish, resident fish, and wildlife to watershed-scale changes in habitat conditions do not exist. Second, watershed projects to date have often focused on working with willing landowners and may have bypassed significantly damaged conditions in other areas. This is inevitable for a watershed restoration program while it establishes credibility in its early years and is severely limited by available resources. We are making significant strides in improving the watershed restoration program, however.

This workplan moves toward improving watershed restoration efforts in two ways. First, it includes anadromous fish, resident fish, and wildlife status and needs in a single document. Second, it provides a much more detailed description of problems in the context of past studies and restoration efforts conducted under a number of different funding sources. The Council spent several millions of dollars in the late 1980's to develop the first set of coordinated subbasin plans in the history of the Columbia River Basin. These plans were an interagency effort, involved public input in many cases, and identified the most serious habitat problems limiting anadromous fish production in each subbasin. The assessments of habitat conditions in each subbasin have been updated at least twice since 1990, in the draft Multi-Year Plan and this year in Volume 1 of the DAIWP. The managers have been updating assessments where they exist and are in the process of doing assessments where needed.

Fish and wildlife managers recognize that significant work remains before watershed assessments and restoration efforts will be fully integrated in updated subbasin plans for anadromous fish, resident fish, and wildlife. We feel the conceptual framework described in the 1998 Draft Annual Implementation Work Plan is the most effective method for achieving this. These concepts, and tools for their implementation are now being actively developed in the Multi-Species Framework discussions.

In 1999, the managers were told that they had two to three years to complete watershed assessments. This year recommendations have been made that are not consistent with that time frame. The regional understanding is 2-3 years grace period for providing watershed assessments and CBFWA intends to meet that schedule, either through using existing information or collecting new information as needed.

The Fish and Wildlife Managers also have a clear strategy for continuing and accelerating improvements in watershed assessment procedures, which specifically addresses the issue at hand for FY 2000. Proposals that included plans for conducting watershed assessments in FY 2000 were examined as a group and individually. The CRITFC proposal, Implement Wy-Kan-Ush-Mi Wa-Kish-Wit Watershed Assessment and Restoration Plan (Project 9803100), was the most technically advanced and the managers asked the project sponsor to coordinate development of consistent methodologies with the Yakama Indian Nation projects and McKenzie Watershed Council. The CRITFC has begun this process by convening, jointly with WSU, an interagency team to "promote the coordination and application of science-based, cost effective, watershed assessment methodologies to support natural resource management." This Watershed Assessment Workgroup will invite interested regional coordinators to participate in future activities. It would be productive for the ISRP to also attend, if the Council so chooses.

The present approach will produce (by the end of 2000) 1) a watershed assessment handbook describing common methods needed in every subbasin, guidance on how to use other methods to customize the assessment to local conditions, and methods for assessing cultural needs and impacts; 2) a test of the handbook approach in four subbasins; 3) procedures for a basic monitoring program and 4) a coordinating forum to address common issues and share learning.

A parallel process exists in resident fish subbasins in the form of long-term mitigation plans, which identify fisheries losses, limiting factors, and priority areas for fisheries improvements and monitoring strategies. Examples include the Council-approved Hungry Horse Mitigation (1991) and Implementation Plans (1993) and the Libby Mitigation and Implementation Plan (1999). The Council should support and work with the Interagency Watershed Assessment Workgroup to address its concerns rather than creating an entirely new process which will simply add to the administrative costs of salmon restoration.

Subbasin perspectives on specific project recommendations in subbasins of concern

Issue: In certain subbasins, such as the John Day, Clearwater, Umatilla, Walla Walla, and others the ISRP raised serious concerns about Program direction and recommended against funds (or delayed funds) for many or most projects. The issue is whether the Council needs to consider whether some sort of a watershed planning/review effort and/or site review is needed to bring order to the Program in some subbasins. Of greater concern is whether the Council should

require that planning and/or review effort in those areas must be complete before project proposals are re-designed and submitted again for review.

CBFWA Response: Before the Council concludes that projects in certain subbasins must undergo delays for more planning to occur, CBFWA believes they must demonstrate and note specifically how projects lack appropriate coordination and consistent direction towards addressing limiting factors and established restoration goals. In making this determination, CBFWA believes the Council must note how sponsors of specific projects in these subbasins responded to the poor coordination/direction issue expressed by ISRP. Most proposals and responses point out direct ties to subbasin limiting factors, multi-agency coordination, and/or existing fish restoration planning documents. These documents were referenced in the proposals and responses with basic findings summarized, but a full understanding of these planning efforts and their adequacy in addressing the ISRP planning concerns is not clear (due obviously to lack of ISRP time and ability to read all related planning/coordination efforts).

In all cases, there are existing subbasin/programmatic-planning documents that were developed cooperatively by various natural resource management entities. For example, a watershed assessment is currently being conducted in the Umatilla Basin to be completed in 2000. This effort follows five other separate fish restoration planning efforts in the past fifteen years. All these fisheries program reviews share the same recommended solutions to address agreed upon problems. The most recent of these efforts is the updated subbasin summaries found in the FY2000 DAIWP.

The Walla Walla Basin also has a watershed assessment under development (to be completed in late 1999) and numerous existing subbasin planning documents (including the FY 2000 DAIWP). The Council held up Walla Walla projects two years ago for almost the entire fiscal year until it gained better comfort with the overall subbasin direction and coordination towards established fish restoration objectives. After receiving all planning documents and conducting a subbasin meeting with states, tribes, irrigators, watershed council members, and sportsmen, the Council decided to let projects proceed and concluded that program coordination, direction and support was quite thorough.

CBFWA strongly suggests that the Council not initiate a new planning effort but instead utilize the recently drafted subbasin planning summaries in the FY 2000 DAIWP to address the ISRP concern regarding watershed planning/review. These documents define current resource status, restoration goals, fish limiting factors, recommended solutions/projects to address limiting factors and recommended monitoring and evaluation to track success in achieving subbasin fish restoration goals. Until the Council demonstrates that past planning efforts, the FY2000 DAIWP and ongoing watershed assessments do not constitute adequate project coordination and direct connection to documented limiting factors, CBFWA believes there should be no project delays. If the Council feels the DAIWP subbasin summaries are not sufficient, CBFWA will be glad to address and strengthen any specific stated weaknesses as part of a working process while valuable projects are allowed to proceed.

Due to the nature of the project review process, most watershed projects are well coordinated with each other and the local managers take it for granted that “peer” reviewers know this.

Coordination of projects within a watershed is crucial for a regional (subbasin) management framework. In addition to this, peer reviews performed by scientists with local knowledge of issues and needs are also crucial for constructive evaluations of proposals. By eliminating local knowledge, through the use of a review panel that may or may not contact project sponsors with their fundamental questions and concerns, the ISRP may inadvertently remove this site-specific knowledge and revert to a global perspective of management intent and biological methods. Most of the management concerns that the ISRP had with the watershed projects are currently being addressed through the CBFWA review process or local coordinating groups. These could have been corrected through a simple question and answer forum with the project sponsor.

Maintenance funds must be provided for ongoing projects to insure continuity, maintain community ties for these projects, and to retain local expertise. The risk of interrupting project activities such as habitat maintenance or monitoring activities must be considered.

Site reviews

Issue: The ISRP concluded that regular site reviews of related projects would contribute to enhanced program coordination and evaluation of progress toward meeting Program goals. The Panel noted that site reviews have been recommended by a sequence of advisory boards (SRG, ISG, ISAB) for nearly a decade. Thus the ISRP recommended that a plan for regular site reviews of related projects be developed and implemented in FY2000.

CBFWA Response: We fully agree that site reviews should be part of a subbasin collaborative review process involving Council (ISRP), CBFWA and BPA. Project reviewers should not only attend site visits but should also seek clarification for questions raised during proposal review from proposal sponsors. Some of the ISRP comments show a lack of understanding of the issues and/or subject matter. We encourage members of ISRP to participate directly in such site reviews to avoid making comments based on an incomplete understanding of project proposals.

Without exception, every manager is willing to participate in a site reviews, if these site reviews are scheduled far enough in advance for sponsors to be fully prepared and if they are attended by the individuals responsible for reviewing the projects.

The ISRP review process has proven to be imperfect with deficiencies displayed by all parties involved. CBFWA feels it is imperative that important work is not discontinued because of an inadequate review process. Although many of the ISRP's comments are beneficial, some of them miss the mark, reflecting a lack of understanding of basin-specific life history characteristics, decision-making processes in the basin, and others. This is not to discredit the ISRP, but rather to note that the ISRP is no less fallible than the Managers. We believe that it would be imprudent to discontinue a project based solely on the ISRP's judgement of the adequacy of the project proposal. Rather, discontinuation of funding should only occur following a defined process that includes one-on-one discourse with the ISRP, and if necessary the opportunity to address the Council. The ISRP is only one part of the process, the final decision is the responsibility of the Council. Certainly site reviews would help build a better context in which project proposals were reviewed.

Wildlife Specific Issues

Proposals for acquisition and management of land in the wildlife program and elsewhere

Issue: The ISRP recommended that no land be acquired unless a clear description of the land is produced and the priority of the land for the fish and wildlife program is demonstrated. This is needed, in the Panel's view, to justify the value of parcels of land to particular wildlife species and to make clear the cost-effectiveness of acquiring certain parcels.

CBFWA Response: The ISRP wants all proposed acquisitions to be completely defined and prioritized in the Program. First, there are occasionally opportunities that will be lost if complete definition is required. Second, the Wildlife Caucus, at the request of the Council has prioritized these acquisitions and continues to on an annual basis.

It appears from the comments of ISRP that they do not fully understand that the Council's Wildlife Program is a habitat-based approach to mitigate losses associated with the construction of the hydropower system. This program is not a set of loosely associated projects without regional focus, as inferred by ISRP comments. It is, on the contrary, an integrated set of projects aimed at mitigating for these habitat losses using a formally adopted set of common guidelines for mitigation activities set out in the Guidelines for Enhancement, Operation and Maintenance Activities for Wildlife Mitigation Projects (June 98). To implement this habitat-based approach, the Wildlife Managers are attempting to develop core habitat areas that can support locally adapted populations within "in-kind" habitats near where the impacts occurred. In doing so, the managers plan to effectively mitigate the loss of habitat in the areas where the impacts occurred with the expectation that the target species and the guilds they represent will be preserved as an important resource within the Columbia Basin.

It is the opinion of the Wildlife Caucus that, although not spelled out in detail in each proposal, each project proponent is acquiring habitat consistent with the ISRP conclusion that "no land acquisition be funded without a clear description of the land to be acquired and without demonstration of its priority for the Fish and Wildlife Program". Because of the project proposal submission schedule and the actual implementation of each project, it is very unlikely that a parcel of land identified in October of 1998 will still be available for purchase in FY 2000. Essentially the Caucus is scoping projects for implementation at least 18 months in advance of possible funding. The way in which projects are actually incorporated is that areas and habitats are prioritized using criteria judged to meet the intent of the Program. We believe that this approach is the most effective one for meeting the needs of the Council's Program given the constraints of the funding process.

The goals and objectives of each project are to be identified and met once the HEP and management plans are completed. This step is usually an additional year beyond purchase. During the proposal submission stage, the project contractor is still in the initial implementation stage and usually does not have any appreciable results to report. We hope that the ISRP understands that for project specific results they need to focus at least two years prior to the submission year (FY 1998 results were the latest available at the time of FY 2000 submittals).

Non-native plant control

Issue: The ISRP said many habitat and wildlife projects include substantial resources for control of non-native plants. Reviewers were concerned with the long-term commitment of funds for this purpose, and with the lack of consideration of the unwanted effects of herbicides, fire, and engineering methods for non-native plant control. Thus the ISRP recommended that the Council solicit innovative proposals for development, testing, and evaluation of cost-effective passive methods for control of non-native species.

CBFWA Response: The Managers share the concerns expressed by the ISRP over non-native plant control and only use artificial methods when no other practical options are available to bring the land back into productive use by native wildlife. Newly acquired grazing lands are normally allowed to rest for at least two years to determine the natural response of the ecosystem before any weed control measures are implemented. If it is then apparent that the land will not become productive within a reasonable period of time without some form of weed control, only the least invasive and most cost-effective measures are used. Information on the latest weed control techniques is shared at annual conferences regularly attended by those managers involved in weed-control activities. This, in essence, insures that the managers are aware of the most current and innovative methods for weed control. State and federal law also require many of the weed control activities.

Artificial Production

Artificial Production Review

Issue: In its first two years, the ISRP voiced a number of objections to the artificial production programs in the Council's Program. However, the Panel deferred making any specific recommendations on artificial production projects until after the completion of the Council's comprehensive review of artificial production. The Panel did not defer this year. In fact, it significantly criticized and recommended against funds for a number of artificial production projects well before completion of the Artificial Production Review. Should funding for hatcheries be based on the ISRP FY 2000 project review or the existing APR and Council Three Step Process?

CBFWA Response: Starting in 1997 the Council required a comprehensive 3-step review process for artificial production projects. This process includes several checkpoints and an independent review of a master plan to ensure all issues are adequately addressed and the production actions proposed are scientifically sound. Since initiation of this process, several projects have gone through or are currently going through the review requirements. As a response to the ISRP recommendation to delay all artificial projects in 1998, the Council defended its existing review process as adequate to ensure that sound projects are implemented. Since that decision, hatchery project proponents have continued to invest time and money in the current Council production project review process. CBFWA also supports the 3-step process as adequate for project review and strongly recommends the Council continue in the same established direction. The fact that ISRP does not even acknowledge this process and recommends "do not fund" for hatchery projects that have yet to complete the Council review process truly shows an ISRP bias towards production projects. The proponents of the projects in this process feel that they have been

misled by the Council's use of the three-step process. Projects that have proceeded through the three-step process should be funded.

Two of the comments in the review of the Nez Perce Tribal Hatchery (innovative approaches and keeping releases within limits of carrying capacity) CBFWA feels are essentially a criticism of the guidelines recommended by the Science Review Team in their hatchery review. Those are discussed in responses to specific project comments. The other comments can all be described as opposition to hatchery production. They do not appear to be science based criticism of the proposal, or even aimed at NPTH in particular, but at policies related to hatcheries and supplementation programs in general.

If the underlying philosophy of the ISRP comments is an aversion to hatchery produced fish, then it is impossible to provide a satisfactory justification for developing a supplementation program (or continuing to operate an existing hatchery program). This path is especially troublesome because it will essentially prohibit any application of new knowledge developed on supplementation. As we discussed above, the ISRP dismissed guidelines adopted by an independent group charged with addressing hatchery policy. Recommendations and guidelines presented through this and other avenues (e.g. Regional Assessment of Supplementation Programs, NATURES, the Columbia River Fish Management Plan) will be moot, because they all pertain to an incorporation of hatchery fish into the naturally spawning population.

While we share the ISRP's concern over possible detrimental impacts to wild fish from past hatchery management practices, we are even more concerned with the loss of the resource as a whole. We have ample evidence in areas such as the Middle Fork Salmon, Minam and Wenaha, that have not had hatchery intervention yet continue to have a declining population. In contrast, wise use of supplementation in areas such as the Imnaha, South Fork Salmon and natural production areas affected by releases in the South Fork Clearwater and the Lochsa may well be forestalling extinction. Eliminating the use of hatcheries and the ability to improve the technology for those programs, because of a philosophical aversion to them, constitutes policy decisions that must be decided by the region as a whole and goes beyond the limited role that the Gorton Amendment contemplates for the ISRP.

Supplementation projects

Issue: The Panel has been especially concerned about the supplementation projects in the Council's Program. In the Panel's view, supplementation remains an unproven and potentially harmful technology, which should be implemented as a series of careful, small-scale experiments clearly linked to on-going or completed habitat restoration initiatives. The ISRP considers many of the supplementation projects in the Council's Program to be of a scale and magnitude beyond what sound science allows.

CBFWA Response: Supplementation projects are one of the management tools chosen to restore fish populations in the Basin. The use of supplementation, however, is presently controversial and has been the cause of considerable concern among the managers. Supplementation by its very nature requires several generations in order to be tested. The only true measure of supplementation's success is to observe an increased self-sustaining population in the target area. The spread of salmonid populations into areas that were barren through geologic events in the

distant past is known, but the timeframe for this to occur naturally is probably very long. Man is trying to shorten this process and along with mainstem fish passage and ocean problems the difficulty has increased many-fold. We should continue to test this "rebuilding or restoring" approach but along with as many fixes, habitat or passage, that can be performed. Monitoring and evaluation must be for a sufficient duration to detect success or failure at the functional rather than experimental level.

CBFWA managers do not support treating their proposals as small-scale experiments. Current smolt-to-adult survivals in the Columbia Basin frequently result in below replacement parent-to-progeny returns. With this situation being the main factor causing numerous extinctions and ESA listings, and with no immediate significant survival improvements on the immediate horizon, CBFWA managers believe that proper application of the supplementation tool will help counter the currently severe man induced fish mortality rates and resultant deficit returns. At a minimum, additional extinctions may be forestalled until smolt to adult survivals are improved. Instead of being a small experiment, supplementation of depressed natural production should be a major component in a comprehensive fish restoration approach in some subbasins. If and when returns are sufficient to support self-sustaining natural runs with productive Indian and non-Indian fisheries, we would support downsizing or eliminating supplementation components as a result of updated subbasin restoration planning.

In addition to supporting the proposed supplementation in some subbasins, CBFWA supports a diversified hatchery approach, which also includes a more conservative genetic conservation driven approach in some subbasins and also a no hatchery intervention approach in other selected subbasins. All three scenarios should be treated as restoration approaches (not small experiments) which include appropriate habitat enhancement actions and monitoring and evaluation to track strategy and restoration success. With no restoration approaches currently having foolproof certainty, it makes good sense to spread the risk and implement a diversified hatchery approach.

CBFWA managers do not believe their projects are unproven with potentially harmful technology and therefore should be treated as small-scale experimental pilot projects. In the case of the proposed Umatilla Hatchery supplement, additional spring chinook production is called for because: 1) this species has demonstrated the most success (natural production, broodstock collection and fisheries) during the program's first decade of spring chinook production; and 2) the original spring chinook goal was not met by the Umatilla Hatchery and was reduced even more with observed water shortages. With a decade of successful "pilot" efforts and the fact that spring chinook are reintroduced in the Umatilla River, it does not seem justified to halt doing more of a good thing based on concerns that no pilot efforts were attempted or that supplementation technology is harmful and carries too great a risk.

For example, in the case of the proposed Walla Walla Hatchery, the proven success of the "pilot" Umatilla spring chinook reintroduction program is proposed to be expanded in the Walla Walla Basin where spring chinook are also extirpated and where there is even more pristine habitat utilized by salmon. A steelhead supplementation component is also proposed in the Walla Walla as part of a comprehensive approach to restore the currently listed population in Oregon, which has fallen to 200-300 fish annually. The program will mimic the successful Umatilla (pilot)

program but will be smaller (100K smolts) and more conservative (supplementation proposed only in Oregon and only in one of three steelhead production tributaries). Again it doesn't appear that ISRP "unproven" and "high risk" concerns are valid in these type cases, particularly when one acknowledges the existing Council 3-step review process requirements which are designed to ensure best science and low risk.

A supplementation evaluation project currently exists and provides feedback to the managers on the utility of supplementation. The Idaho Supplementation Studies, a cooperative project with the Nez Perce Tribe, Shoshone-Bannock Tribes, Idaho Fish and Game, and the US Fish and Wildlife Service, actively supplements some populations with the focus on the evaluation of supplementation. The purpose of this project is to perform exactly the analysis that the ISRP is requesting; the project gathers information to guide regional fish managers in making decisions regarding supplementation.

Captive broodstock

Issue: Since 1997 the ISRP and the Council have been concerned about the proliferation of captive broodstock proposals in the Program. As the Panel noted this year, these projects hold promise for maintaining populations and genetic diversity *while* other survival constraints are relaxed or removed. However, the technology has many risks and uncertainties and is extremely costly. As with the supplementation projects, the ISRP recommended that all captive brood projects in the basin undergo a coordinated programmatic level review by an independent scientific review panel. This panel should address uncertainties and differences among captive brood projects with respect to monitoring and evaluation protocols, project-specific as well as program goals, and the effectiveness of captive brood technology as a rebuilding tool. The ISRP also recommended that the Council terminate captive brood projects that do not provide convincing evidence that the problems causing depletion have been identified and that reasonable plans and effort are being applied to their resolution.

CBFWA Response: There is substantial scientific literature describing causes of decline in stocks. Captive programs are implemented <u>because</u> no substantive improvements in smolt-to-adult return rates have occurred since completion of the federal hydrosystem. If significant improvements had been made, captive programs would not be needed. Current captive programs are the only means available to maintain genetic resources into the future before stocks are extirpated. Also, current captive propagation activities in Idaho are experimental, not fully implemented captive programs.

Captive programs are not necessarily a rebuilding tool. Rather, captive propagation is a tool for conserving stocks and/or genetic diversity. Captive propagation may promote rebuilding when smolt to adult return rates improve.

Captive brood projects possess risks and uncertainties, but for the populations chosen, captive brood is probably the only means of preserving the basic genetic material for these populations. Captive brood projects are one of the management tools chosen to restore fish populations in the Basin.

Native and non-native stocks

Issue: The introduction of non-native fish, especially in the resident fish mitigation programs, is one of the ISRP's consistent concerns. The interpretation by the Panel and Council is that the Program has an emphasis and priority on rebuilding native stocks in native habitats. Thus the ISRP recommended that resident fish mitigation actions focus on native resident fish stocks, rather than substituting non-native stocks, wherever practicable. According to the ISRP, priority as indicated by the Program, should be given to projects that use or explore use of native stocks. The project-specific recommendations of the Panel reflect this programmatic recommendation.

CBFWA Response: The existing Council's Resident Fish Substitution Policy constitutes a consensus policy that has been developed through fish agency and Tribal cooperation/consultation and has been subject to extensive public review since 1980. The existing policy recognizes that blocked areas have habitats that have been irrevocably altered from their native species making "full in-kind mitigation" using native species impossible. Current substitution policy includes provisions for native species preservation/enhancement while utilizing non-native species/stock management in non-native habitats. The managers strive to minimize or avoid impacts to native fishes in carrying out this policy.

The Power Council has recognized the dilemma that faced the fish and wildlife managers in the "blocked area" and identified resident fish substitution (including utilization of non-native species) as a viable means of mitigating for lost anadromous fish resources (1995 Fish and Wildlife Program, section 10.1A, 10.1B, 10.8, 10.8A and section 16, page 73). Substitution projects were categorized as one of the two highest priorities in the Council's Resident Fish Program, slightly behind recovery of native populations injured by the hydropower system. The Council further delineates that the distinction between these two highest priorities was a narrow one, applicable only to marginal choices among such projects (1995 fish and wildlife Program, section 10.1B). The Council continued to elaborate in the 1995 Fish and Wildlife Program Findings regarding their position involving the two highest priorities in the Council's Resident Fish Program with the following. "The Council does not expect that the slightly hierarchical statement of highest priorities will lead to the funding of native fish rebuilding measures and not resident fish substitution measures, at least as related to the blockages above federally operated hydropower projects." (1995 Council Fish and Wildlife Program, Section 16, page 72). "The Council's clear intent is that resident fish substitution activities also be funded. If the Council's priority language is the funding of rebuilding efforts for weak but recoverable native fish populations and not of substitution measures (or vice versa), the Council will take action to address this situation." (1995 Council Fish and Wildlife Program, Section 16, page 72).

While the Council language in the 1995 Program clearly articulates the intent to fund substitution measures, including those utilizing non-native species, the Council also addressed the potential conflict with native species rebuilding efforts. The Council stresses that serious evaluation of resident fish substitution efforts using introduced fish to ensure activities do not undermine native population conservation. However they also stated that "resident fish substitution proposals using introduced fish have not and should not be terminated or de-ranked in prioritization on this basis alone, without further information demonstrating the conflicts." (Section 16, page 73).

The Managers main goal is to have native fish stocks used in all appropriate bodies of water. There are and can be sustainable populations of harvestable resident fish in the Columbia River Basin. However, there are also long established populations of non-native stocks that can provide harvest opportunities. These stocks reside in what could be determined “non-native” environments. Until the ecosystem is restored to natural conditions, it does not make sense to put native fish species into habitats where they cannot be productive.

The use of native species is highly desirable where the environment is suitable for their survival. In many cases environmental degradation has been so severe that the survival of native species will be at a minimal level at best. The use of non-native stocks is considered in conjunction with the habitat and ultimate use of the stocked animals; this apparently was not the case with the ISRP reviewers. The inability of native fish stocks to survive in an altered environment is the primary reason these projects have selected non-native species. For most of the projects criticized by the ISRP for using non-native species, the environment is not in its “native” condition and would not support native species.

Some parts of the Columbia River Basin contain naturalized stocks of nonnative fish species that in many cases are too well established to restore to a native species assemblage. In these areas, native species are encouraged and attempts are made to reduce negative interactions with nonnative species. Offsite, closed basin lakes can be restored as genetic reserves, or where natural reproduction is not possible, tribal and popular sports fisheries can be established. In the latter, harvest regulations, including liberal limits on non-native rainbow trout, have been used to support fishing opportunities to replace lost native fish production and to direct angler harvest away from native fish in critical recovery areas and reduce demands on our limited source of naturally reproduced native species.

Unfortunately, nonnative species will likely continue to be a component of mitigation due to the inability of native species to provide high-yield consumptive fisheries for anglers in the blocked areas. Native species in much of the Columbia River drainage are regulated by a mandatory catch and release regulation due to their reduced numbers. For example, bull trout fishing has been banned throughout Montana except in Swan Lake, where the limit has been set at one fish per day. The consumptive fishery argument can be made for off-site mitigation as well, because the critical habitat needed for native species has been degraded. Furthermore, habitat types required by native species can not support high use/ high yield fish populations that anglers are demanding.

The rationale for the ISRP comments regarding this issue appears to be the reviewers’ perception that these projects are in conflict with regional goals, have not addressed and monitored potential impacts to native biota and do not utilize local stocks of redband and cutthroat trout. In response to comments regarding conflict with regional goals, the resident fish managers believe that the Council's Fish and Wildlife Program is more than a native species recovery/enhancement program. The Northwest Power Act authorizes the Council to develop a program to protect, mitigate and enhance fish and wildlife populations affected by hydropower development. Many of the projects criticized by the ISRP provide fish stocking activities that support and enhance tribal subsistence and non-tribal recreational sport fisheries. These activities partially mitigate for the lost anadromous fish resources related to the construction of the federal hydropower system,

including the complete extirpation of anadromous fish above Chief Joseph and Grand Coulee dams.

Although enhancement of weak but recoverable native stocks receives top priority in the Fish and Wildlife Program, substitution measures closely follow. This priority/policy is appropriate considering the magnitude of the anadromous fish losses in the blocked areas, the lack of native habitat/species assemblages available to mitigate for anadromous fish losses, the potential negative impacts to some blocked areas due to current anadromous fish enhancement measures (particularly flow augmentation), and no positive benefits realized to resident fish species in some blocked areas a result of anadromous fish measures. Any change in substitution policy that substantially limits production of non-native habitats will fall considerably short of any meaningful mitigation for anadromous fish losses in blocked areas (UCUT Technical Report Number 2, Appendix G, 1987 NWPPC Fish and Wildlife Program).

The Council has adopted resident fish substitution as a part of its program, and ranked it as the second highest priority. Grand Coulee/Chief Joseph, Dworshak, and Hells Canyon dams permanently and irrevocably blocked anadromous fish passage. In addition, these hydroprojects permanently and irrevocably altered the riverine habitat by creating slack water reservoirs with varying water retention times. These reservoirs are neither rivers nor lakes and constitute non-native habitat. The fish managers have a statutory responsibility to manage the fisheries in these areas and BPA has an obligation to mitigate for the loss of anadromous fish. Given that providing anadromous fish passage is very unlikely and that native fish are unable to survive in non-native habitat, the managers are left with only one alternative – manage non-native fish in non-native habitat.

Mainstem Issues

Smolt monitoring: programmatic review

Issue: The ISRP repeated its FY 1999 recommendation that all of the projects monitoring, evaluating, storing, using, etc. information on smolts be combined and subjected to a comprehensive programmatic review that gives special consideration to the complex interactions between the projects. The present umbrella proposals did not adequately connect the various smolt-monitoring projects.

CBFWA Response: It appears that some of the comments were precipitated by the format for the proposals, which did not allow adequate description of background and history. A programmatic review is suggested but the purpose of the Smolt Monitoring Program (SMP) does not appear to be clearly understood, leaving the purpose of a programmatic review unclear. In addition, the ISRP did not recognize or identify any problems or deficiencies in recent programmatic reviews of the SMP. In any case, since the SMP is reviewed annually, the difference between the annual review and the programmatic review is unclear.

The SMP has received programmatic review by the NWPPC Scientific Advisory Board. The SMP is designed to meet specific management needs identified in the NWPPC Program and the NMFS Biological Opinion. Although the SMP has been and will continue to be reviewed, it should be reviewed in the context of meeting the fish passage management needs of the region

including the BIOP and the NWPPC Program as well as other management entity needs such as the state water quality agencies.

The "Comparative Survival Rate Study of Hatchery PIT Tagged Chinook" (CSS) study design, including all aspects of the design were reviewed and approved by the ISAB in 1997 and 1998. Extensive review and revision of the study design occurred. The Study was designed and discussed for an extended time frame with the ISAB. Although additional review is always possible, it should be considered in context of the comprehensive review by the ISAB in 1997 and 1998.

Data management

Issue: Concerned about duplication of effort, the ISRP specifically recommended an independent review of the data management efforts that are supported by the direct program before funds are continued beyond FY2000. This applies to PITAGIS, UW Data Center, Fish Passage Center and Streamnet.

CBFWA Response: The Managers do not feel that there is significant duplication of effort but will work to eliminate any duplication. The Managers will work with Council staff to determine an appropriate review procedure. The UW Data Center is a BPA non-discretionary project that is not used by the managers in their decision making process and in some cases provides redundant information to the other data management projects.

The CBFWA has identified a basic list of information needs in its 1998 work plan. We will work with Council staff, PATH participants, and the Multi-Species Framework to review, refine, and add to this list.

The Fish Passage Advisory Committee, composed of the anadromous and resident fish managers of the basin's fisheries agencies and tribes, holds a weekly conference call and a monthly meeting during the fish migration season. Management demand for data can be assessed at these weekly meetings. If management demand for data changes during fish migration season, it can be assessed at these weekly meetings, and data published or collected by the Fish Passage Data System (FPDS) can be changed as rapidly as possible to meet management demand. The salmon managers of the fisheries agencies and tribes in the basin therefore frequently assess the demand for data collected and published by the FPDS. Data needs that are critical to actual management questions are identified and met, as quickly as possible, in this existing forum.

The FPDS is the only data system in the basin that has been audited by independent accountants. The firm of Symonds, Evans, and Larson, P.C., Certified Public Accountants, performed the audit in late 1997. An example of the methodology used and the findings stated in the audit follows.

"On a judgmental basis, we selected 15 transactions during the year ended December 31, 1996 and 10 transactions during the seven month period ended July 31, 1997 to verify that errors in data that were detected by FPC were appropriately corrected." In their final submitted report, the auditors stated: "For the judgmentally selected transactions… we verified that all such errors in data that were detected by FPC were appropriately corrected."

The region, in addressing the issue of regional databases, recognized that the highest data accuracy is accomplished when data is maintained close to its origin and by those who are responsible for it's acquisition and use. No data is scientifically useful unless all the qualifications, annotations, and limitations of that data are published along with the data itself. All of the raw and historical data on fish passage and management is maintained at FPC and is available to all entities. The FPC is responsible for the actual acquisition of the data, the design of the data acquisition methodology, and uses the data in analyses. The consolidation of these three data functions in one entity make the FPC the most knowledgeable about the data it collects, publishes, and uses. This is of benefit to the region and all users.

The present state of technology and the advent of the World Wide Web as a cost effective means to publish and distribute data worldwide raises questions about the need for central data repositories. Since these data are more accurate, more useable and better understood near its origin and where the staff clearly understands it, the use of hyperlinks on the World Wide Web enables individual databases to remain near their origin and at the same time be available through a single portal or portals on the web. This type of data collecting and publishing framework results in higher quality data for users, and at lower cost. The hyperlinks that presently exist between the FPC, StreamNet, and PITAGIS enable each one of these web sites to be a single portal through which these other data are available. The issue of duplication between StreamNet, FPC and PITAGIS has been addressed in the past. Each of these projects serve a different purpose. Neither data nor effort is duplicated yet the information contained in each database is easily available through hyperlinks. The present system of hyperlinks is designed to avoid duplication, assure data accuracy by keeping databases near their origins, and to assure worldwide availability.

The FPDS Smolt Monitoring Project data collection and publishing system is designed for constant change in order to meet changing management needs during fish migration season. Inherently, large central data repositories are very difficult and expensive to change and modify. Each potential modification to the repository must be analyzed to determine its impact across a wide range of applications before any modification is actually done. As the size of the central repository grows, this task becomes increasingly complex, time consuming, and expensive. Small databases or "data marts" designed to meet specific needs and solve specific problems are much simpler and more cost effective to change and modify. Consequently, a single portal or data warehouse that is made up of linked smaller "data marts" or databases is more cost effective to maintain than a large central data repository which involves a large complex global data structure or model. Additionally, a data warehouse made up of smaller individual data marts can also respond to changing management needs much faster than a large central data repository. The present system of hyperlinks between the web sites of PITAGIS, Streamnet, and FPC has been developed and modified to meet regional needs in an efficient cost-effective manner.

PATH (Plan to Analyze and Test Hypotheses)

Issue: The ISRP concluded that PATH should be congratulated for a job well done and recommends that it be honorably retired. They feel that a simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydrosystem Biological Opinion.

CBFWA Response: In our opinion, PATH has not completed its mission and will provide information needed for regional management decisions concerning salmon populations of the Columbia basin. The 25 PATH scientists cooperatively produced a high quality decision analysis that helps the region navigate through very complex questions. We agree with the ISRP recommendation to focus on the data required to resolve remaining uncertainties – in fact PATH proposed to do just that in the FY2000 work plans, through the design of research, monitoring and adaptive management experiments to resolve remaining uncertainties.

We believe the ISRP's main criticisms of the FY 2000 PATH proposals are due to misunderstanding of the objectives and process. The process the ISRP recommends to replace PATH is nearly identical to that in the FY 2000 proposals. PATH has three objectives in our FY2000 proposal page:

1. Determine the overall level of support for key alternative hypotheses, and propose other hypotheses and/or model improvements that are more consistent with existing data.
2. Advise regulatory agencies on management actions to restore endangered salmon stocks to self-sustaining levels of abundance.
3. Assess the ability to distinguish among competing hypotheses from future information, and advise agencies on research, monitoring and adaptive management experiments that would maximize learning.

The "key alternative hypotheses" examined by PATH under objectives 1 and 2 included more than just the competing passage models. PATH examined alternative hypotheses regarding climate influences, upstream-downstream stock differences in recruitment, the influence of hatcheries, habitat effects, harvest, estuarine bird predation, etc. (see PATH Weight of evidence report on Snake River spring and summer chinook; PATH final report for Fiscal Year 1998; and FY 1999 STUFA and ESSA proposals). Each of the key hypotheses was considered within a risk averse decision analysis framework that allowed comparison of the response of salmon populations to six different hydrosystem management scenarios.

The FY 2000 PATH proposals have the general support of the Implementation Team (IT). The IT is a group of state, tribal, and federal managers who advise the federal hydropower operators on issues related to implementing the federal hydropower system biological opinion. The proposals are consistent with the more specific priorities established this spring by the IT.

The ISRP statements indicate that the reviewers did not understand the primary function of the PATH process. The main purpose of PATH was not to "reconcile or decide between competing models". The 1995 NMFS Biological Opinion on operation of the federal Columbia River Power System (pg. 124, Rec.17) stated that "The BPA shall participate with NMFS in activities to coordinate the regional passage and life cycle models to test the hypotheses underlying those models." NMFS noted that the emphasis should shift to analyses that test the different assumptions underlying the models, rather than refining our understanding of how the models are different -- the genesis of PATH (objective 1). Rather than accept or reject key alternative hypotheses (passage models referenced by the ISRP represent one of the many hypotheses) PATH adopted a decision analysis approach. A decision analysis incorporates these uncertainties

and the effect of management actions on salmon recovery is represented as a range of results. The range of results can be narrowed based on the level of support for each of the alternative hypotheses (objective 2). PATH completed a detailed sensitivity analysis to narrow down which hypotheses had the greatest effect on decisions, and a Weight of Evidence process for spring/summer chinook to examine the relative credibility of alternative hypotheses, given the data. The PATH decision analysis did not only give "*equal weight to the competing models and competing hypotheses"*, it also explored the sensitivity of the decision to unequal weights, particularly those assigned by the Scientific Review Panel (SRP). The decision analysis showed that the ranking of actions was not sensitive to alternative hypotheses, a key finding. The primary focus of PATH was to provide the region with decision analysis tools. These tools were to be applied to populations outside of the Snake River in FY 2000 (under objectives 1 and 2 page 18 of 9600800). In addition, the majority of tasks in FY 2000 are directed at the design of research, monitoring and adaptive management experiments to resolve remaining uncertainties for Snake salmon populations (under objective 3 pages 18-20 of 9600800). It is therefore difficult to understand how the ISRP concluded that PATH was primarily concerned with deciding between competing models.

The purpose of adopting a biological decision analysis approach is to determine which management action is most likely (over the range of uncertainties) to ensure persistence and recovery of listed salmon populations. In other words, which are the most robust (least risky) management actions relative to salmon recovery. The ISRP suggest that PATH's main conclusion was *"that available data are insufficient and inadequate to resolve critical management questions about the effects of various hydrosystem operation alternatives on survival rates of listed Snake River stocks"*. This was not a conclusion of PATH. However, one of the goals of PATH was to identify the most robust management alternatives for salmon recovery. These alternatives were identified for Snake River chinook in the PATH Final Report for Fiscal Year 1998.

PATH agrees with the ISRP that there is a need *"to examine the relevant ongoing data collection activities and re-design them so that they can, in the foreseeable future, deliver the types, quantity and quality of data that are required for decision making"*. In fact, evaluations and recommendations of experimental management approaches are the third objective described in the PATH FY 2000 proposal (under objective 3 pages 18-20 of 9600800). The ISRP review appears to have completely ignored PATH's work on its third objective. This is puzzling, as research, monitoring and experimental management were prominent features of the PATH FY2000 proposals. Also, the PATH SRP has repeatedly stressed the importance of designing management experiments and associated monitoring to resolve key uncertainties. In 1997 and 1998 we focused mainly on objectives 1 and 2 in support of the 1999 FCRPS decision, we began to plan work on experimental management in 1998 (Chapter 6 of the FY98 report), and described this work in the FY2000 proposals. Experimental management was endorsed as a major priority by the IT in the spring of 1999, and we have lately been making good progress at describing candidate experimental management actions, for review by the IT and other regional groups. Quantitative evaluation of such actions was proposed for late in FY99 and throughout FY2000, once the candidate actions have been narrowed down, and with full consideration of the 1999 decision.

A major objective for PATH in FY 2000, assigned by the IT, is to apply the biological decision analyses techniques to Upper and Lower Columbia River salmon and steelhead populations. Many of these newly listed populations will need to be evaluated relative to proposed alternative management actions. This will be accomplished through objectives 1 and 2 of the FY 2000 proposal (under objectives 1 and 2 page 18 of 9600800). We agree with the ISRP, that by the end of FY99 the work will have been finished on objectives 1 and 2 for Snake River chinook and modeling efforts for these populations should be wound down. However, we will be in the midst of these objectives for Upper Columbia populations and beginning work on Lower Columbia River populations in FY2000. Given this and the need for further development of objective 3 (experimental management) for Snake River populations, it seems premature for PATH to "be honorably retired".

In retrospect, many of the PATH analyses and their use of data seem intuitive, but a majority of the approaches were not seriously considered before the development of the PATH framework and SRP reviews of the approach. PATH provides a standard framework to discuss and evaluate key uncertainties for evaluating alternative management options. Key analytical advances include the development of a single Bayesian life cycle model (to replace three competing models), the use of spawner-recruit information and passage survival estimates to quantitatively define delayed mortality (and how it has varied over time), the use of transport:control studies and in-river survivals to estimate differential survival ('D' values), many approaches to incorporating climate/ocean effects, and the rigorous application of decision analysis (including the Weight of Evidence process). All these advances have provided the region with a currency and language to intelligently discuss key uncertainties concerning Snake River salmon recovery. Subsequent analyses (such as the A-Fish appendix) and research recommendations (A-Fish and Corps SCT process) are built upon the technical foundation laid out by the PATH process.

Currently, PATH is developing a rigorous method for assessing what future data can potentially contribute to resolving key uncertainties, and the possible tradeoffs between learning and conservation objectives (see Chapter 6 of FY98 report). This work builds on the results we have achieved to date, using simpler quantitative tools that capture the essential behavior of more complicated models. There seems to be a consensus in the region on the importance of PATH's third objective. PATH scientists are exploring what can be learned to resolve key uncertainties about extra mortality; and the tradeoffs involved in making a decision now versus estimating 'D' over the next five years, as highlighted by NMFS in the AFISH Appendix.

The PATH process identified the need for a simpler and more comprehensive approach to salmon recovery assessments (identified in the FY 2000 proposals), and is poised to accomplish this task. However, the number of ESA listed populations (over a wider geographic area) needing assessment is growing and it can be anticipated that so will the technical and coordination efforts. In light of what decisions lie ahead for the NWPPC and the region as a whole, PATH provides the analytical support necessary to ensure those decisions are based on the best science available. Without continued financial support for most or all of the PATH scientists, the region will lose their collective talents and experience. While there is vitality created when new people enter a problem, there is also a tremendous cost in money and time when a whole new cohort of scientists has to climb the Columbia River's steep learning curve. PATH is a facilitated, decision analysis process that incorporates internal and external review, and whose members are

comprised of scientists from several management agencies experienced in Columbia River Basin salmon recovery efforts. The NWPPC needs to ensure that the processes providing analytical support to regional decisions are sufficient to meet the region's needs, without wasteful duplication of effort.

We believe that the NWPPC will find the ISRP conclusion, to not fund further PATH activities, to be inconsistent with the need to expand collaborative biological decision analysis to populations outside of the Snake River. Also, anadromous fish managers have requested that PATH assess management actions in addition to those for the Federal Columbia River Power System. Many of the regional fish management entities are relying on results from FY 2000 PATH activities. Continued PATH funding is essential given the strong need for the objectives identified in this proposal by the fish and wildlife management agencies.

Mainstem habitat

Issue: The ISRP continues to recommend that the Council place more emphasis on protection and enhancement of habitat of naturally reproducing salmon populations in the mainstem Columbia River.

CBFWA Response: The ISRP recommends two Tier 3 projects for funding (Project Numbers 20103 and 20057) in this category. Neither of these projects has been coordinated with Managers and would not contribute to a management action to benefit fish and wildlife. Within the group of six projects in this category, the Managers did recommend a Tier 2 for one project, however, due to funding limitations, this project was not deemed a high priority in the Basin at this time.

Conservation Enforcement

Issue: In 1997 the Council recommended ending Bonneville funding support for law enforcement, as then structured. Since then, CBFWA and the Council have had several discussions in an effort to reach agreement on criteria by which enforcement proposals could be judged to protect program investments. CBFWA members continued discussions until just recently and were not able to reach consensus on criteria and the priority for conservation enforcement funding. The Columbia River Inter-Tribal Fish Commission and the Nez Perce Tribe submitted conservation enforcement proposals for FY 2000. However, no funds were recommended by the SRTs or caucuses.

CBFWA Response: Support for these projects is evident, however, until the ongoing discussion is concluded the managers do not want to delay funding other critical projects without assurance that any funds assigned to the enforcement projects will be spent on enforcement.

Lower Columbia Tributary Projects -- Power Act Responsibility

Issue: The ISRP recommended funding for at least three projects that appear to concern habitat improvements in lower Columbia tributaries (Restore Unobstructed Fish Passage to Duncan Creek, No. 20013; Reconnect the Westport Slough to the Clatskanie River, No. 20107; and Cedar Creek Natural Production and Watershed Monitoring Project, 20109). The issue is Power Act/Bonneville responsibility for these lower Columbia projects. If the Council decides these are not appropriate for Bonneville funds, future project solicitations should be clear on the policy.

CBFWA Response: In its effort to fully mitigate for Columbia River hydropower losses associated with development and operation of the Federal facilities, BPA has funded "offsite mitigation." This policy is consistent with the Power Act that allows for offsite mitigation and recognizes that it is highly unlikely that full mitigation can be achieved only in the mainstem of the Columbia. Accordingly there are numerous examples where the Fish and Wildlife Program has called for, and BPA has funded, projects aimed at repairing habitat degraded by causes other than can be directly related to hydropower. Examples include measures aimed at restoring habitat in tributaries, opening up new habitat above natural blockages, providing additional instream flows to ameliorate the impacts of irrigation diversion, screening irrigation diversions, the Young's Bay artificial production project, etc. The examples are numerous.

While the projects in question are located below Bonneville Dam, they should be considered appropriate under the Act and eligible for BPA funds as long as they can be reasonably related to development and operation of the hydropower system. Development of Federal storage reservoirs altered the Columbia River hydrograph – storing part of the spring freshet for later releases for power production. Although there is not yet substantial information on the effects this significant change has had on the estuary and Columbia River plume, and therefore on juvenile salmon and steelhead survival, most scientists agree it has had an impact. That impact is likely an adverse one. Clearly more information is needed and some projects aimed at studying both the estuary and near-ocean plume have been initiated under the Fish and Wildlife Program. The estuary and near-ocean environment is known to be an important element in the survival of juvenile salmonids – likely effecting the survival of those stocks that originate below Bonneville dam.

In view of the fact that the change in hydrograph has likely adversely effected Lower Columbia River salmonids, and given the authority in the Act to provide for offsite mitigation (even if these stocks were not directly effected by the hydrosystem), we believe lower river projects are appropriate under the Act and appropriate for consideration by BPA for funding. We urge the Council to formally acknowledge these relationships and to endorse the consideration of lower Columbia River projects under the Act.

In addition, we respectfully ask the Council to view these projects in context of the entire Basin and respect the funding priorities applied to individual projects by CBFWA.

Experimental Methods/Implementation

Issue: The ISRP believes that many on-going management activities under the Program should be better understood as experimental and uncertain in effect, especially the supplementation and captive broodstock production programs. And on that basis, the Panel recommended that these experimental methods be identified and then implemented or tested first as pilot-scale projects designed to ascertain and evaluate feasibility, cost-effectiveness, and potential harm. This could mean significantly scaling back some of these projects and programs.

CBFWA Response: The managers believe that captive broodstock and supplementation strategies need to be tested at the scale of production trial levels with clearly articulated RM&E studies, but not to continue to be studied (refer to the Artificial Production sections in this document).

CBFWA believes the ISRP and Council should be reminded of adaptive management principles. In order to evaluate the effects of a management strategy, that strategy should be implemented on a scale that will cause a perturbation in the system of sufficient scale to produce a measurable and significant effect. Otherwise the management strategy cannot fully be evaluated. There is a basic disagreement as to the level of effort or trials required testing hypotheses. The Council has long criticized the Managers for doing too much research and not getting enough on the ground, yet in this case, the ISRP is calling for reduced on the ground efforts to provide specific research projects. There is no reason to stop useful projects when the research can be performed concurrently with existing projects through a strong RM&E program.

M&E Components of Projects

Issue: The Panel recommended that projects not be funded when their proposals fail to adequately include monitoring of results to measure success and evaluation to rate the success or lack thereof against the stated objectives. These elements may be included in a single proposal or identified in other proposals that may be devoted to monitoring and evaluation.

CBFWA Response: The Fish and Wildlife Managers do not agree with ISRP recommendations against funding projects because monitoring components are incompletely described. It is obvious in many instances that the problem was one of how a proposal was written rather than that it had a significant design flaw which made it technically unsound (e.g. the Umatilla River pumping project). Monitoring is an issue analogous to watershed assessments, in that everyone believes it should be done, but the methods are unclear. For these reasons the Fish and Wildlife Managers urge the Council to adopt an approach similar to their policy on watershed assessments. That is, allow a period of 2-3 years to develop a coordinated basin-wide monitoring program, before projects are judged against strict monitoring design requirements.

The Fish and Wildlife Managers note that they have been working with Council staff and others in a collaborative process to develop a coordinated research, monitoring, and evaluation program. Much progress has been made on developing a general framework for such a program within the multi-species framework approach. At this point there is broad agreement on the outlines of this plan, but it lacks the specific details necessary to connect individual project monitoring into a regional strategy.

We hope to have the first draft of a more detailed plan for regional review by February 2000. The CBFWA members plan to work with others to develop a generalized regional research, monitoring, and evaluation template by this fall. The template will be reviewed by Subregional Teams to inventory existing efforts and to identify additional subbasin/subregional research, monitoring, and evaluation needs. Subregional comments and inventory information will then be used to develop a more detailed draft basin-wide plan. The draft basin plan will provide a basis for another round of collaborative regional discussion of the issues. ISAB review of the R/M/E Plan would be appropriate after this round of regional review.

Research, monitoring, and evaluation needs have proven difficult to describe and address in the past. We expect that a final regional plan could take several iterations of review and modification to develop. Nevertheless, we anticipate that the plan can clearly identify R/M/E needs at a) the project level which should be incorporated into most projects, b) the subbasin level which may

be appropriate for inclusion in umbrella proposals, and c) at the subregional and regional level which may be appropriate for umbrella proposals and/or directly funded R/M/E projects. The Fish and Wildlife Managers anticipate we will also be able to describe at least the major connections (in terms of information flow) between these different scales of the R/M/E plan.

It should be recognized that there are several tasks that must be accomplished prior to the development of an M&E plan. For example, in the case of wildlife habitat purchases, some proposed properties of interest have not yet been acquired. Landowner negotiations are occurring and whether or not the lands will be purchased is often unknown. Once lands are secured, existing habitat conditions will be assessed and a restoration plan will be developed and implemented. M&E plans cannot be developed until the restoration plan is known. Thus, for some wildlife projects it is premature to know exactly what will be monitored. Despite these unknowns, the Wildlife Caucus is currently in the process of developing a coordinated M&E program with standardized M&E protocols. This program, (see *Current Status of Monitoring and Evaluation in the Wildlife Program – Report to the ISRP, July 1999, CBFWA Wildlife Caucus*) will be applied to wildlife projects.

Publication of Results

Issue: The ISRP is concerned about the lack of publication of results from the projects in the Fish and Wildlife Program. In the ISRP's view, encouraging publication in peer reviewed journals promotes scientific quality and scientific progress and promotes adaptive management. Several research projects funded through the Program have had good, even outstanding publication records in peer reviewed journals (such as the predator reduction program). However, plans for peer-reviewed publication of project results are missing from most proposals. Thus the ISRP recommended efforts to encourage publication of results, especially the initiation of a Columbia River Basin Journal.

CBFWA Response: We concur with the ISRP in their view that more emphasis should be placed on publication of study results. The best method to evaluate results is to implement a comprehensive monitoring and evaluation plan. CBFWA's proposal to develop such a plan in FY 2000 was not recommended for funding by the Council. We are hopeful that the Council will fund our proposal to develop an M & E plan during FY 2001. Publication of results has not been a requirement of funding in the past and should be clarified if necessary for future funding. Not all projects produce publishable results.

We believe that the initiation of a new journal for publishing Columbia River research results is unnecessary and would divert already insufficient funds from the fish and wildlife program. There are several existing journals that can serve this purpose. Currently results are published in the Canadian Journal of Fisheries and Aquatic Sciences, North American Journal of Fisheries Management, NW Science and numerous other peer-reviewed scientific publications that serve to disperse the information to other researchers and managers.

Multi-year Review Approval

Issue: Last year, the Council, the ISRP and CBFWA all agreed on the need to shift to a multi-year review procedure in which on-going projects that are deemed to be of high quality and high

priority would not require annual review. The Panel recommended that projects with multi-year approval have proposal reviews, site visits, and effectiveness evaluations at intervals of three to five years. More important, the ISRP also identified approximately 50 projects that it deems adequate for a multi-year review cycle, which means it does not intend to review these projects in FY2001 unless the project is significantly modified.

CBFWA Response: Although the Managers agree that qualifying projects should be placed on a multi-year review path as quickly as possible, a coordinated effort that is fair for all projects has not been enacted. We have established preliminary criteria for such a review and forwarded them to Council without response. We would like to receive a copy of the criteria that ISRP used to determine their list of 50 projects for multi-year review and are curious if those criteria were evenly applied to all projects. In absence of a response from Council, CBFWA is making an aggressive effort to pursue multi-year review approval for the FY 2001 CBFWA portion of the funding process.

Innovative Proposals

Issue: Last year, the ISRP recommended that the Council explicitly encourage "innovative" projects by earmarking a small percentage of the program budget each year as seed money. In response, the Council recommended that in FY2000, CBFWA and Bonneville reserve a small amount of the direct program budget, not more than $2 million, as seed money for "scoping grants" to investigate promising new ideas, under certain specified terms. In the draft workplan for this year, CBFWA did not recommend reserving a budget amount to be assigned to new innovative projects; instead CBFWA identified a number of on going and a couple of new projects as innovative. The ISRP did not approve of the way CBFWA handled this matter. Instead, the Panel identified 16 new project proposals as "innovative," meaning that in the Panel's view they "offer promising new concepts, address unexplored areas, and would likely benefit fish and wildlife." The Panel then recommended funding for 13 of the 16 proposals. (CBFWA recommended funding for two.)

CBFWA Response: The CBFWA managers have and will continue to support funding for innovative projects that advance the state of the art in technology for addressing the fish and wildlife needs of the basin. Because the term innovative can be ambiguous, the managers have identified specific projects they consider innovative within the project recommendations for each subbasin.

CBFWA disagrees with reserving a certain amount of funding for new and innovative projects. While "new and innovative" proposals are welcomed within the process, CBFWA believes they must go through the same priority-setting process as all other projects and be rated sufficiently high within the entire program to warrant funding. This is particularly true given current budget constraints. Reserving funding for innovative projects would mean that the projects only need compete against other "innovative" projects and not with the program as a whole. Such a process would inject a number of new projects into the Fish and Wildlife Program each year that would be likely to require additional funds in future years. This process would effectively reduce the funds available for higher priority management needs in the basin.

CBFWA believes that it already has a number of innovative projects underway – as identified in the Draft Annual Implementation Work Plan. In addition, we have recommended implementation of two new innovative projects for FY2000. The role of the ISRP as set out in the amendment to the Power Act is to provide the Council with input and recommendations regarding the technical sufficiency of projects and proposals submitted for funding by BPA under the Act. The ISRP is well suited to do that. However, the assembly of a suite of recommendations that constitute a coordinated Fish and Wildlife Program consistent with the plans and programs of the agencies and tribes is still the responsibility of those management entities. Adoption of the projects recommended by the ISRP and rejected by CBFWA would constitute a usurpation of a Program responsibility by the ISRP and Council that is clearly reserved for the co-managers.

In one example, the ISRP recommended "Fund in part" for a project in FY 2000, with the following comments: "Do not fund the portion to cryopreserve female genetic material, as this part of the proposal is too uncertain and experimental. While the objective appears worthwhile, other funding sources such as USDA or NSF may be more appropriate to support basic research and technology development" (Project 9703800, Preserve Listed Salmonid Stocks Gametes). The results from this research are being directly tied into hatchery operations and are identified as necessary by the co-managers in this subbasin. However, the ISRP insists that other projects which represent more base "research and technology development", that are clearly not tied into any management action or decision, be funded strictly because they are new. This represents an inconsistency in how projects have been evaluated in terms of "innovative" and suggests that this funding placeholder should not be reserved for new projects only. This would also support the co-managers contention that innovative work is being performed where needed to supplement data and management needs within the subbasins. A specific placeholder will only reduce the amount of much needed funds that are available for on the ground projects in the Columbia and Snake River basins.

Additional Umbrella Proposals

Columbia River White Sturgeon Umbrella

Issue: The ISRP recommends that umbrella proposals be developed in FY2001 for all white sturgeon projects in the basin. Umbrella proposal content should provide the information needed to conduct peer review, facilitate regional coordination, and allow assessment of these closely-linked projects' progress toward fish and wildlife program goals.

CBFWA Response: The request for umbrella proposals for individual species such as white sturgeon is not consistent with how we manage this species. The management units are defined on a geographical basis (subbasin/watershed). Umbrella proposals for this species should be constructed on those terms.

Although there is no umbrella proposal covering all the white sturgeon projects in the Columbia River basin, work is well coordinated among these projects. Project 8605000, *White Sturgeon Mitigation and Restoration in the Columbia and Snake Rivers*, is the only one conducting field activities to restore populations in the Columbia River downstream from Lake Roosevelt, and in the Snake River downstream from Lower Granite Dam. Project 8806400, *Kootenai River White*

Sturgeon Studies and Conservation Aquaculture; Project 8806500, *Kootenai River Fisheries Investigations*; Project 9700900, *Evaluate Means of Rebuilding White Sturgeon Populations in the Lower Snake River*; and Project 20135, *Consumptive Sturgeon Fishery – Hells Canyon and Oxbow Reservoirs*; are all designed to study and restore sturgeon populations in distinct geographic areas; therefore, these projects are all complementary. Work on all these projects is complementary with that of Project 9902200, *Assessing Genetic Variation Among Columbia Basin White Sturgeon Populations*. Results from Project 9902200 will provide guidelines for the supplementation of white sturgeon populations.

Staffs from these projects communicate to compare techniques and prevent duplication of effort. For example, staff from Project 8605000 communicated with staff from Project 8806400 to ensure that propagation effort was not duplicated. Staffs from these projects have also participated in the technical work group for project 9603201, *Begin Implementation of Year 1 of the K-Pool Master Plan Program*.

Columbia Basin Pacific Lamprey Umbrella

Issue: The ISRP recommends that umbrella proposals be developed in FY2001 for Pacific lamprey projects in the basin. Umbrella proposal content should provide the information needed to conduct peer review, facilitate regional coordination, and allow assessment of these closely-linked projects' progress toward fish and wildlife program goals.

CBFWA Response: A status report for all existing Pacific lamprey projects has been developed and is provided in Appendix F. This report can serve as a precursor to a lamprey umbrella.

Severely declining Pacific lamprey populations throughout the Columbia River Basin has recently elevated the interest and concern of various entities. The tribes have expressed the most concern due to the cultural significance and lost traditional fishing opportunities.

In 1994, the Northwest Power Planning Council approved the first lamprey project in the Fish and Wildlife Program. The project proposed by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), called for research and restoration of Pacific lamprey throughout tribal ceded lands. In 1995, an initial product (Status Report of the Pacific Lamprey in the Columbia River Basin) was completed. Since that time, the CTUIR has continued the lamprey project with efforts directed at mainstem abundance monitoring, NE Oregon tributary population abundance documentation (past and present), development of genetic baseline information, basic migratory behavior, and artificial propagation techniques (capture, transport, holding, spawning). This information has been essential for development of a pilot pacific lamprey restoration plan in the Umatilla Basin. CTUIR hopes the plan, to be completed in 1999, will lead to lamprey restoration in the Umatilla and ultimately other subbasins.

Additional lamprey studies have been proposed for which has created uncertainties regarding what are priority lamprey needs and projects. The NWPPC approved FY 99 funding for the ongoing CTUIR project but not others that were proposed, due to these uncertainties and also due to potential project duplication.

Since the initiation of the CTUIR lamprey research and restoration project, a Columbia Basin Pacific lamprey technical work group has been formed to discuss current issues and findings, coordinate ongoing project efforts, and define future project needs. Numerous state, federal, university, and tribal entities have met approximately twice a year for the last three years. The most recent meeting (entitled “Columbia Basin Pacific Lamprey Workshop”) took place in Mission, Oregon on October 22 & 23, 1998. A Status Report on Columbia Basin Pacific Lamprey Projects and Needs is provided in Appendix F. This status report utilizes information presented at this meeting and information from FY 2000 proposals to discuss all ongoing and proposed Pacific lamprey research and restoration efforts and identifies what are believed to be priority needs.

RECOMMENDED FY 2000 FISH & WILDLIFE BUDGET

Fish and Wildlife Balanced Budget

Consistent with the regional goals, objectives and strategies, the managers recommend a budget totaling $141,126, 857 for FY 2000. The MOA direct BPA budget amount of $127 million should be augmented with $2,593,000 from the Contingency/Inflation Reserve, $2,633,857 in un-obligated FY 1998/1999 project funds, and $2,000,000 in estimated interest on FY 1999 funds. The managers also recommend using $4,900,000 in unused Capital Investment funds from previous years. Moreover, the managers recommend that $2,000,000 from BPA's division of Fish and Wildlife be moved from the direct budget because anadromous fish activities are in support of programs from other parts of the MOA budget. The proposed budget allocates $101,425,681 to anadromous fish projects, $17,927,543 to resident fish projects, $14,473,634 to wildlife projects and $5,300,000 to support BPA and ISRP activities.

Although the BPA MOA Direct budget amount is currently set at $127 million, the increased burden to the Fish and Wildlife Program by listed species warrants a discussion between BPA, NWPPC and CBFWA on increasing the direct program allocation. The MOA under Section VIII (m) (Financial impact of new ESA measures and appropriations exceeding available funding) indicates that measures required by the ESA to address newly listed species that impose significant additional costs on Bonneville in any category will be considered an unforeseen event subject to the provisions of Section IX (c) of the agreement. Section IX (c) (Unforeseen events) acknowledges the possibility that the financial consequences of unforeseen events may exceed the capacity of the funds allocated and the contingencies envisioned in the MOA. "In this event the Parties will consult with the Council and the Tribes to determine how to provide for the financial consequences of this unforeseen event while assuring that the purposes of the Agreement continue to be fulfilled. If no agreement is reached among the Parties, the Council, the Tribes, and Bonneville shall make a written recommendation to the Office of Management and Budget and the Council on Environmental Quality on how to provide for the financial consequences of the unforeseen event...". CBFWA Members may be consulting with the Parties under the MOA and the Council about the significant additional costs imposed by the new ESA listings on FY 2000 and FY 2001 activities and on how to provide for adequate funding. These consultations could lead to a change in the amount of BPA funding available for the remainder of the MOA time period.

Available Funds

In developing their annual fish and wildlife budget, the managers make assumptions regarding potential sources of funds and allocate those funds among the three caucus' budgets. The managers' recommended FY 2000 fish and wildlife budget is $141,126,857, based on eight assumptions. The main source of funds for FY 2000 is the $127 million that BPA budgets for Fish and Wildlife Direct Expenses under the Budget MOA.

Assumption 1. The managers estimate that about $2 million in interest on un-accrued FY 1999 funds will be available and recommend that it be used in FY 2000.

Assumption 2. The managers allocated $286,084 in FY 1998 interest in their recommended FY 2000 budget. The recommended allocation for the FY 1988 interest is summarized below (Table 1). These decisions leave $397,682 remaining available.

Table 1. Accounting for FY 1998 interest

Caucus Budget	Total Amount	Used in FY 1999	Remaining at Mar 99 QR	FY 2000 Recommended Allocation	Currently Unallocated
Anadromous (70%)	$1,436,084	($1,400,000)	$36,084	$0	$36,084
Resident (15%)	$307,732		$307,732	($153,866)	$153,866
Wildlife (15%)	$307,732		$307,732	($100,000)	$207,732
Total	$2,051,548	($1,400,000)	$651,548	($253,866)	$397,682

Assumption 3. The managers recommend using $1,255,766 in FY 1999 Carry Forward from projects that do not involve major construction. The source and current status of FY 1999 Carry Forward is summarized below (Table 2). These decisions will leave about $2 million un-allocated Carry Forward from non-construction projects.

Table 2. Accounting for FY 1999 carry forward

Caucus Budget	July Quarterly Review Balance	Other Un-obligated Project Balances Assumed*	FY 1999 Project Budget Adjust.**	Assumed in FY 2000 Recom-mendation	Currently Unallocated Total
Anadromous	$2,470,705	$0	($402,943)	($200,000)	$1,867,762
Resident	$402,447	$656,304	$0	($1,055,766)	$2,985
Wildlife	$86,378	$0	$0	$0	$86,378
Total	$2,959,530	$656,304	($402,943)	($1,255,766)	$1,957,125

* Associated with resident fish projects: #8605000; #9101904; #9700400; and, #9700900.

** CBFWA Members' Steering Group approved (8/4/99) changes to the FY 1999 budgets of the following anadromous fish projects:

- $132,250 to NMFS Manchester Marine Lab;
- $231,000 to Yakama Indian Nation Hatchery Training;
- $24,693 to ODFW Oxygen Supplementation Study; and,
- $15,000 to WDFW Tucannon Peer Review.

Assumption 4. The managers recommend using the entire remaining balance in the Contingency/Inflation Reserve of $2,593,000. Their assumption is that contingencies can be met during the last year of the MOA from carry-forward that becomes available, and if needed, by

ending contracts for selected large projects on September 30, 2001 and by starting contracts for additional work on the projects on October 1, 2001 using FY 2002 funds.

Assumption 5. Recent accounts of the Direct portion of the Capital Investment budget under the MOA identified $4,900,000 that appeared not to be used in FY 1997. The managers recommend that these funds be used in FY 2000. BPA has indicated that this may be a misinterpretation of the figures. BPA and NWPPC staff indicate that if any funds are available, they will be funds obligated to projects in the past for which the contractors have not submitted billings ("un-accrued"). BPA is reviewing its records, and very early results indicate that at least $2 million is in this category and might be made available.

Assumption 6. BPA has identified approximately $1,124,225 carried forward from the $8 million allocated to BPA to cover its FY 1998 program and project support costs. Because of staff reductions and other efficiencies, BPA only needed about $6.9 million in FY 1998. The managers recommend that the BPA carry-forward be used in FY 2000. Further, the managers believe that this reduction represents a trend and have allocated in FY 2000 the same amount as BPA needed in FY 1998. The July Quarterly Review indicated that, with anticipated reimbursement for some outlays, this account will have $448,520.

Assumption 7. The managers estimate that about 30 percent of the BPA support costs are related to anadromous fish activities funded from other (than Direct) parts of the MOA budget. The managers recommend that about $2 million of BPA support costs be moved from the Direct budget.

Assumption 8. The Anadromous Fish Managers assumed that half of the work done by the Independent Scientific Advisory Board (ISAB) relates to areas other than the Direct portion of the MOA, and should be funded from those budget portions. This reduced the ISAB budget proposed for funding from the MOA Direct budget by $391,790. The managers anticipate that the other half of the ISAB budget will be paid from the other portions of the MOA budget. CBFWA has reviewed the ISAB billings for FY 1998 and FY 1999 (to-date) to estimate the proportion of their budget spent on activities under the Direct budget. The results indicate that the ISAB has spent about 20 percent of its time on Direct budget funded activities. This demonstrates that this assumption is conservative.

Caucus Allocation

The managers recommend that $101,425,681 be spent on Anadromous Fish projects, $17,927,543 be spent on Resident Fish projects, $14,473,634 be spent on Wildlife projects, and $5,300,000 be spent to support BPA and ISRP activities.

The estimation of future Fish and Wildlife Program budgets is subject to considerable uncertainty, both with regard to the sources of available funds and the timing and need for its being spent. The validity of the managers' assumptions regarding the amounts of funds available for use in FY 2000 are currently under regional discussion. At stake is probably no more than $10 million.

The managers offer the following observations that more than balance the above risk. First, the managers show unallocated balances in Tables 1 and 2 totaling $2.35 million in addition to $1 million in an ESA Steelhead placeholder. Thus a third of the at-risk balance is in hand now.

Second, the managers' recommended budget has large amounts of funds allocated to major construction projects with uncertain schedules. Prudent management requires full construction funds be budgeted, in order that these projects can move forward as soon as construction can proceed to assist the recovery of declining species. Table 3 identifies the major construction projects anticipated in the FY 2000 budget. Several are in the initial stages of regional review and, based on past experience, may be delayed. Furthermore, several have substantial amounts of Carry Forward that may reduce the need for FY 2000 funds. Finally, the largest of the scheduled construction projects, the Nez Perce Tribal Hatchery, is undergoing additional discussion of the phasing and size of its component facilities, which may reduce its FY 2000 funding needs. Although the managers must budget for the most rapid schedule, experience shows that, in aggregate, as much as $15 million may not be needed by these projects in FY 2000, being needed instead in later years.

Anadromous Fish Recommendations

For planning purposes, the AFM assumed an FY 2000 "target operating" budget of $98.1 million. This budget included the AFM share of the direct "base budget" (including ESA and contingency/reserve funds), capital surplus from previous years, carry forward from previous years, and interest on the carry forward from previous years. The sum total of Tier 1 projects recommended by the sub-regional teams (SRT) exceeded the anadromous FY 2000 target budget by $ 3.3 million. This circumstance is the result of several factors. One factor is simply inflation. Salaries and the cost of materials and supplies have gone up. Another, more significant factor is the increase in operation and maintenance costs associated with completion of projects required to maintain and protect prior investments. This component of the anadromous fish budget increased by about $5 million for FY 2000. Finally, some projects became priorities because of new ESA listings of salmon and steelhead by the National Marine Fisheries Service.

About $145 million in anadromous fish projects were forwarded to the Authority for review and evaluation. The AFM referred the projects to SRT for management review. Each SRT was given a "target" budget, based on the allocation of funds among the sub-regions in FY 1999, and was instructed to develop its project recommendations with that target in mind. Projects were evaluated and assigned a "tier" designation. For those projects assigned to Tier 1, each SRT reviewed the scope of work and budget and recommended adjustments they believed were warranted given available funds in FY 2000. These adjustments included deferring or eliminating specific tasks or objectives that did not warrant a high management priority. Some important projects were assigned to Tier 2, and were thus deferred until additional funding became available. The results of each SRT's work were forwarded to the AFM with one of three recommendations: fund (Tier 1); fund if sufficient money is available (Tier 2); or do not fund (Tier 3).

High priority (Tier 1) anadromous fish projects recommended by the SRTs and their associated budgets were scrutinized by AFM and appropriate adjustments were made during a three-day management review. During the management review, it became apparent that additional

reductions in the scope of Tier 1 projects were not feasible given the critical and urgent nature of the projects. To "balance" the budget recommended by the SRTs with the "target operating" budget for AFM, some ongoing, high priority activities would need to be curtailed or important new projects deferred.

The AFM concluded that all projects designated as Tier 1 by the SRTs were core activities critical to sub-region management goals and objectives necessary to meet ESA requirements contained in the 1995 Biological Opinion and the 1998 Steelhead supplement. These projects also contemplated actions that are consistent with the recent salmon and steelhead listings and are likely to be embodied in forthcoming biological opinions in FY 2000.

Two actions were taken to increase the amount of FY 2000 funds available to AFM by $3,296,500. The first action involves "borrowing" the full contingency/inflation reserve set aside for FY 2001, with the condition that the Resident Fish Managers and Wildlife Managers retain their claims to those funds for FY 2001 and that the AFM commits to providing funds to cover those claims from its FY 2001 budget. This action increases the FY 2000 AFM budget by $1,296,500. The second action reduces the proportion of BPA's administrative budget funded under the Direct Program from 100% to 70%, with the assumption that 30% of BPA's administrative costs are directly related to anadromous fish capital project planning and management and should be funded from the Capital budget category of the MOA. This action increases the FY 2000 AFM budget by $2,000,000.

As reflected in the FY 2000 budget allocation table in the final version of the DAIWP, the FY 2000 budget under this proposal increases from $98,129,181 to $101,425,681 and is balanced.

Resident Fish Managers' Recommendations

For Fiscal Year 2000, the Resident Fish Managers (RFM) used a multi-phased process to evaluate proposals. The RFM applied a total of 3 screening criteria, 9 technical criteria, 8 programmatic criteria, and 5 milestone-based criteria (Appendix A). The Screening Criteria were intended to ensure that the proposed projects addressed the measures and priorities in the Council's Program and were consistent with the management objectives of the Agencies and Tribes. The Technical Criteria assessed the proposed project's technical merit, objectives, monitoring, and benefits. The Programmatic Criteria dealt with the broader scientific, regional and strategic aspects of the proposed projects. The Milestone-Based Evaluation Criteria addressed completion of milestone-based work plans, importance to regional plans, contractual performance record, and milestone-based goals, objectives and tasks.

The RFM evaluated 75 proposed resident fish projects (including 24 watershed projects). The step-wise process that the RFM used for this evaluation included:

- Reading all 75 individual proposals and scoring them "yes" or "no" for all pertinent criteria;
- Holding ten-minute question and answer sessions with the project sponsors and refining specific criteria evaluations based on the question and answer sessions;
- Condensing the refined criteria evaluations into the four criteria categories (screening, technical, management, and milestone-based);

- Achieving consensus on the "yes" and "no" ratings for the four criteria categories for each proposal without input from the project sponsors;
- Assigning each proposal to one of the four status categories: Status 1 - pass screening, technical and programmatic criteria (successful milestone-based proposals were noted); Status 2 – pass screening criteria and technical or programmatic criteria; Status 3 – fail screening criteria, not eligible for funding; Status 4 – withdrawn proposals and proposals referred to other caucus for evaluation; and
- Identifying projects that were ESA-related (Kootenai River white sturgeon, bull trout, NMFS BIOP for hydrosystem).

Subsequent to the primary evaluation session, the RFM met twice again to refine budgets and identify ESA-designated projects. ESA funding designations for bull trout were withdrawn due to absence of a Biological Opinion for this threatened species. The RFM recommends a balanced budget of $17,927,534 to fund all Status 1 proposals and the highest ranked ongoing Status 2 proposals. The final RFM recommendation constitutes a prioritized list of projects as follows: Tier 1: Recommended for FY 2000 funding. Tier 2: Merits funding when money becomes available in the future. Tier 3: Not recommended for funding.

The RFM have procedures and policies in place to process within-year budget actions and changes in scopes of work.

Wildlife Managers' Recommendations

The goal of the CBFWA Wildlife Caucus is to achieve and sustain levels of habitat and species productivity in order to mitigate fully for the wildlife losses that have resulted from the construction and operation of the federal and nonfederal hydroelectric system in the Columbia River Basin. The hydropower-induced wildlife losses due to inundation have been quantified and are included in the NWPPC Fish and Wildlife Program. Specific objectives and strategies of the Wildlife Caucus include protecting and enhancing the habitat types indicated in the NWPPC Fish and Wildlife Program.

The Wildlife Caucus (WC) reviewed and scored each FY 2000 wildlife proposal using the Council-approved Wildlife Mitigation Criteria, which address both technical and management issues. Proposal sponsors were invited to attend one of two project evaluation sessions (January 27-28 in Portland, February 24-26 in Boise). Sponsors were provided with questions relating to how their proposal met the criteria and asked to respond to them in writing. Project sponsors were present during the evaluation to provide an overview of their project and answer questions from the caucus. Some wildlife proposals were also reviewed by the Watershed Technical Work Group (WTWG). Information generated in the WTWG review was considered on an advisory basis by the Wildlife Caucus.

Overall, the Wildlife Caucus evaluated 42 wildlife project proposals. The $14,473,634 FY 2000 Wildlife recommendation includes 21 projects that acquire, maintain, or coordinate the acquisition and maintenance of wildlife habitat units, as outlined in the goals and objectives of the Wildlife Plan. Operation and maintenance efforts continue where acquisitions or easements have been completed. Ongoing efforts directed at securing new easements and acquisitions continue to be funded on a year to year basis. Beginning in FY 1998, and continuing in FY 2000,

the caucus will develop a monitoring and evaluation (M&E) plan. The M&E plan will incorporate community-based, species richness and diversity models and direct population monitoring into the program. The caucus will also continue efforts at identifying, quantifying, and addressing operational and secondary hydropower impacts to wildlife in FY 2000.

The result of this review is a prioritized list of projects in which:

All Tier 1 projects are recommended for funding because they meet the Caucus' and Council's goals of acquiring, protecting and enhancing wildlife habitat to mitigate hydropower-induced wildlife losses in the most biologically- and cost-effective manner.

- Tier 1a is for nondiscretionary projects where there is a long term memorandum of agreement with BPA for funding.

- Tier 1b is for ongoing operation, maintenance, and enhancement projects based on existing Habitat Evaluation Process (HEP), and management plans.

- Tier 1c is for first year operation and maintenance projects with contingencies for land acquisition and/or HEP or management plan completion.

- Tier 1d is for all new and ongoing acquisition projects which are funded according to the ranking process. The difference between the Amount Requested column and the FY00 Approved column is the amount donated by high priority projects for reallocation by the WC in an attempt to provide some level of funding for as many Tier 1 projects as possible. The Caucus will also reallocate funds that become available through the BPA Quarterly Review Process to try to make available to tier 1d projects.

Tier 2 projects are to receive funding only after fully funding all tier 1 projects.

Tier 3 projects are not recommended for funding because they are either inconsistent with the wildlife program and/or have technical deficiencies.

Through the approach taken by each caucus, we believe we can best accommodate the mutual desire of the Authority and the Council to provide the region the best program possible – one that recognizes the ISRP's recommendations and maximizes the efficient use of available funds. The Authority is committed to making these difficult choices in consultation with the Council and BPA.

The remainder of the Draft Annual Implementation Work Plan (DAIWP) is comprised of ecosystem summaries by subbasins and subregions, and includes goals, objectives, and strategies; fish and wildlife status; habitat assessments; limiting factors; watershed assessments; past accomplishments; remaining work; recommended project lists; and budgets. By design, all project recommendations are justified based on goals, objectives, and strategies of each unique subbasin. The appendices, showing greater detail on the evaluation process by caucus, have been placed in a separate volume.

Budget Distributions

CBFWA has made a preliminary analysis of the distribution of the managers' funding recommendations among the subregions and subbasins (Table 4), among major areas of program emphasis and project status or phase (Table 5).

Table 4 indicates that the Lower Snake Subregion is recommended to receive the largest proportion (30 percent) of the FY 2000 budget, with the Clearwater and Salmon Subbasins receiving 15 and 9 percent, respectively. This is followed by the Lower Mid-Columbia Subregion and the Mainstem Subbasin, each with about 17 percent. The area below Bonneville Dam (Lower Columbia Subregion) is recommended to receive the smallest percentage (2 percent) of the budget.

Table 5 displays the distribution of the recommended funding among areas of program emphasis. This preliminary analysis shows that about 50 percent of the budget goes to support a variety activities related to artificial production of fish (including supplementation), while another quarter of the budget will be spent on watershed or habitat related activities (including the purchase of lands to benefit wildlife). The lower part of Table 5 shows the approximate distribution of recommended funding among generalized project phases, from initial research and planning, through implementation or construction, to operations and monitoring. While a large proportion (37 percent) of the budget goes to activities that are arguably of less immediate benefit to fish and wildlife, such as research, monitoring and planning, 63 percent goes to more "on-the-ground" activities such as implementation and operations.

While these analyses are preliminary, they point the way. The managers have committed to re-examine the distribution of budget recommendations (e.g., priorities) among caucus budgets and among geographic areas.

Table 3. Major construction projects

Proj ID	Title	Sponsor	Subbasin	FY99 Recom.	FY00 Recom.	FY99 C/F	NWPPC Review
8811525	Yakima/Klickitat Fisheries Project Design and Construction	YIN	Yakima	4,516	1,565	671	Step 3 Complete
9107500	Yakima Phase II Screens – Construction	USBOR	Yakima	1,500	1,000	766	NA
9701000	PIT Tag System Transition	PSMFC	Mainstem	800	853		NA
8805305	Northeast Oregon Hatcheries Planning and Implementation – ODFW	ODFW	Grande Ronde	215	226		Step 1
20138	Design and Construct NEOH Walla Walla Hatchery	CTUIR	Walla Walla		250		Step 1
8335000	Nez Perce Tribal Hatchery	NPT	Clearwater	7,918	14,590	5,532	Step 3 (partial)
9604300	Johnson Creek Artificial Propagation Enhancement Project	NPT	Salmon	1,300	2,800	172	Step 2 (partial)
9601100	Walla Walla River Juvenile and Adult Passage Improvements	CTUIR	Walla Walla	2,600	2,840	1,119	NA
8805301	Northeast Oregon Hatchery Master Plan	NPT	Grande Ronde	2,300	1,217	1,998	Step 1
9705700	Salmon River Production Program	SBT	Salmon	220	931	220	Step 1
8805302	Plan, Site, Design and Construct NEOH Hatchery - Umatilla/Walla Walla Comp.	CTUIR	Umatilla	400	2,010		Step 1
	Total			21,769	28,282		

All figures displayed in thousands of dollars.

Table 4. Subbasin distribution

Subbasin/Subregion	FY2000 Recom.	FY2001	FY2002	FY2003	FY2004
Systemwide Program	**7,995**	**9,016**	**8,780**	**8,263**	**7,981**
Mainstem	**22,837**	**26,863**	**25,404**	**22,976**	**23,025**
Lower Columbia Subregion	**2,931**	**3,837**	**6,517**	**3,037**	**2,206**
Lower Columbia Mainstem	1,874	1,961	1,849	1,784	1,609
Willamette	1,057	1,877	4,668	1,253	597
Lower Mid-Columbia Subregion	**23,399**	**20,430**	**22,084**	**25,825**	**25,915**
Deschutes	5,035	7,520	9,086	12,985	13,075
Fifteenmile	274	283	292	301	309
Hood	1,754	1,375	1,412	1,456	1,494
John Day	3,624	2,200	2,151	1,897	1,958
Klickitat	411	300	260	230	200
Umatilla	8,031	6,754	6,997	7,076	7,081
Walla Walla	3,717	1,048	895	881	946
Wind	554	950	990	1,000	850
Upper Mid-Columbia Subregion	**18,711**	**23,165**	**24,617**	**20,829**	**18,243**
Crab	235	213	218	223	228
Okanogan	1,099	2,279	691	56	56
Wenatchee	260	1,650	2,550	2,850	1,850
Yakima	17,117	19,023	21,158	17,700	16,109
Upper Columbia Subregion	**14,986**	**17,017**	**15,511**	**15,115**	**15,213**
Coeur d'Alene	2,326	1,471	1,307	1,398	1,478
Flathead	1,492	891	888	538	544
Kootenai	3,171	3,894	2,945	2,859	2,924
Lower Pend Oreille	451	556	572	588	517
Upper Pend Oreille	2,574	4,898	4,620	4,620	4,620
Upper Columbia Mainstem	4,972	5,307	5,180	5,113	5,131
Lower Snake Subregion	**39,852**	**33,373**	**30,894**	**29,388**	**27,499**
Asotin	235	235	230	225	220
Clearwater	19,956	12,129	7,849	7,869	6,345
Grande Ronde	5,590	8,710	10,647	8,620	8,764
Lower Snake Mainstem	654	720	790	830	890
Salmon	12,735	10,723	10,513	10,964	10,405
Tucannon	682	855	865	881	875
Upper Snake Subregion	**3,115**	**5,742**	**5,590**	**5,049**	**4,432**
Malheur	315	517	348	228	232
Owyhee	636	670	682	694	673
Upper Snake	2,164	4,555	4,560	4,127	3,527
Grand Total	**133,827**	**139,443**	**139,397**	**130,481**	**124,514**

All figures displayed in thousands of dollars.

Table 5. Emphasis/phase

Emphasis/Phase	FY2000 Recom.	FY2001	FY2002	FY2003	FY2004
Program Emphasis					
Watershed & Habitat	32,576	44,652	46,295	44,349	40,959
Tributary Passage	9,099	6,846	6,303	4,959	4,828
Natural Production	4,396	4,581	3,979	3,441	3,066
Artificial Production	66,175	60,224	59,629	54,353	51,835
Mainstem Activities	8,006	9,012	8,882	8,909	9,142
Coordination & Planning	13,576	14,128	14,310	14,471	14,684
Total	133,827	139,443	139,397	130,481	124,514
Project Phase/Status					
Research & Studies	18,917	22,126	19,428	16,218	15,325
Planning & Design	7,892	11,089	13,890	11,819	10,395
Implementation & Construction	73,582	70,477	69,588	65,370	61,148
Operations & Maintenance	11,266	12,969	13,569	14,067	14,631
Monitoring & Evaluation	22,170	22,781	22,922	23,006	23,015
Total	133,827	139,443	139,397	130,481	124,514

All figures displayed in thousands of dollars.

SUMMARY OF SUBBASIN RECOMMENDATIONS

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
Systemwide								
20014	Evaluate Songbird Use of Riparian Areas During Fall Migration	U of I	Systemwide	W	3		33	
20025	Deschutes River Stray Summer Steelhead Assessment	ODFW	Systemwide	A	1		65	65
20027	Electronic Columbia Basin Watershed Newsletter	Intermountain Communications	Systemwide	A	3		57	
20029	Electronic Columbia Basin Fish & Wildlife Research Report	Intermountain Communications	Systemwide	A	3		57	
20030	Impact of Nutrients on Salmon Production in the Columbia River Basin	U of BC	Systemwide	A	2		186	
20043	Intracytoplasmic Sperm Injection: Genetic Retrieval From Single Sperm	U of I	Systemwide	A	3		224	
20044	Endocrine Control of Ovarian Development in Salmonids	U of I	Systemwide	A	3		222	
20045	Analyzing Genetic and Behavioral Changes During Salmonid Domestication	WSU	Systemwide	A	3		210	
20046	Induction of Precocious Sexual Maturity and Enhanced Egg Production in Fish	U of I	Systemwide	A	3		197	
20047	Enhancement of salmonid gamete quality by manipulation of intracellular ATP	U of I	Systemwide	A	3		183	
20048	Viral Vaccines and Effects on Reproductive Status	WSU	Systemwide	A	3		205	
20050	Remove Excess Heat from Streams and Store it for Future Application	Parker's Inc (a close held general corp) dba BETTERFISH	Systemwide	A	3		29	
20056	Elucidate Traffic Patterns of Ihn Virus in the Columbia River Basin	USGS-WFRC	Systemwide	A	3		75	
20057	Strategies for Riparian Recovery: Plant Succession & Salmon	OSU	Systemwide	A	3		429	
20059	Infrastructure to Complete FDA Registration of Erythromycin	U of I-FWR	Systemwide	A	1		71	71
20061	Influence of Marine-Derived Nutrients on Juvenile Salmonid Production	USGS-BRD	Systemwide	A	2		310	
20065	Identification of larval Pacific lampreys (Lampetra tridentata), river lamp	USGS-BRD, CRRL	Systemwide	A	1		79	79
20069	Innovation Proposal Fund: Construct fuzzy logic decision support system…	E&S Environmental Chemistry, Inc.	Systemwide	A	3		100	
20075	Engineered Anadromous Salmonid Habitat	U of I	Systemwide	A	2		61	
20099	System for Salmon Migrating Through Dams	Krick Salmon Survival Systems	Systemwide	A	3		145	
20103	Indexing Salmon Carrying Capacity to Habitat, Population & Physical Fitness	OSU	Systemwide	A	3		363	
20104	Sources of Myxobacterial Pathogens in Propagated Salmonids	USFWS/SCTC	Systemwide	A	2		90	
20105	Develop New Feeds for Fish Used in Recovery and Restoration Efforts	USFWS/SCTC	Systemwide	A	3		100	

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
20106	Heritability of Disease Resistance and Immune Function in Chinook Salmon	USFWS	Systemwide	A	2		399	
20111	Preserve Cryogenically the Gametes of Selected Mid-Columbia Salmonid Stocks	CRITFC	Systemwide	A	2		90	
20537	Bonneville Power Administration Non-Discretionary Projects Umbrella	BPA	Systemwide	A			0	
8740100	Assessment of Smolt Condition: Biological and Environmental Interactions	USGS-BRD, CRRL	Systemwide	A	1	199	199	199
8810804	Streamnet: the Northwest Aquatic Information System	PSMFC	Systemwide	A	1	1800	1936	1936
8906200	Fish and Wildlife Program Implementation	CBFWA	Systemwide	A	1	1769	2181	2042
8907201	Independent Scientific Advisory Board Support	DOE/ORNL	Systemwide	A	1		100	50
9005200	Performance/Stock Productivity Impacts of Hatchery Supplementation	BRD	Systemwide	A	1	460	495	460
9009300	Genetic Analysis of Oncorhynchus Nerka (Modified to Include Chinook Salmon)	U of I	Systemwide	A	1	139	145	139
9105500	N a T U R E S [Formerly Supplemental Fish Quality (Yakima)]	NMFS	Systemwide	A	1	500	500	500
9305600	Assessment of Captive Broodstock Technology	NMFS	Systemwide	A	1	1200	1310	1237
9402600	Pacific Lamprey Research and Restoration	CTUIR	Systemwide	A	1	320	381	381
9600500	Independent Scientific Advisory Board	CBFWF	Systemwide	A	1	664	684	342
9800401	Electronic Fish and Wildlife Newsletter	Intermountain Communications	Systemwide	A	1		150	150
9800800	Regional Forum Facilitation Services	DS Consulting	Systemwide	A	1		184	75
9803100	Implement Wy-Kan-Ush-Mi Wa-Kish-Wit Watershed Assessment & Restoration Plan	CRITFC	Systemwide	A	1	121	355	267
Mainstem								
20011	Evaluate Whole System Effects on Migration and Survival of Juvenile Salmon	OCFWRU	Mainstem	A	2		401	
20012	Develop New Technology for Telemetry and Remote Sensing of Fish Quality	OCFWRU	Mainstem	A	3		324	
20023	Hanford Reach Steelhead Stock Investigation	WDFW	Mainstem	A	1		99	92
20052	Strategies to Limit Disease Effects on Estuarine Survival	OSU, NMFS	Mainstem	A	2		334	
20053	Anadromous Salmonid Transit System	Morrison-Knudsen Corp	Mainstem	A	3		699	
20054	Evaluate Effects of Hydraulic Turbulence on the Survival of Migratory Fish	ORNL	Mainstem	A	3		341	
20060	Juvenile Anadromous Fish Prototype-Scale Evaluation Facility	Northwest Hydraulic Consultants, Inc.	Mainstem	A	3		128	
20062	Adaptive Management of White Sturgeons	USGS-BRD, CRRL	Mainstem	R	3		185	
20063	Evaluate Effects of Catch and Release Angling on White Sturgeon	USGS, IDFG	Mainstem	R	3		271	
20066	Inventory Resident Fish Populations in the Bonneville, the Dalles, and John	USGS-BRD	Mainstem	R	3		267	
20067	Effects of Supersaturated Water on Reproductive Success of Adult Salmonids	USGS	Mainstem	A	3		840	

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
20068	Numerical Study of Flow-Field Structure on Salmonid Migration	UMICH	Mainstem	A	3		95	
20074	Eagle Lakes Ranch Acquisition and Restoration	USFWS	Mainstem	W	1		854	287
20076	Diet, Distribution & Life History of Neomysis Mercedis in John Day Pool	UMT	Mainstem	A	3		176	
20082	Rainwater Wildlife Area Operations & Maintenance	CTUIR	Mainstem	W	1		275	275
20095	Evaluate Interactions of American Shad With Salmon in the Columbia River	USGS-BRD	Mainstem	A	2		152	
20100	Characterize Historic Channel Morphology of the Columbia River: Mcnary Pool	PNNL	Mainstem	A	2		120	
20101	Connectivity and Productivity of Mainstem Alluvial Reaches	PNNL	Mainstem	A	3		167	
20110	Develop Wheels, Pools and Falls Approach for Fish Passage at Dams	Sun Mountain Reflections	Mainstem	A	3		199	
20115	Securing Wildlife Mitigation Sites - Oregon, Irrigon WMA Additions	ODFW	Mainstem	W	1		25	25
20116	Securing Wildlife Mitigation Sites - Oregon, Horn Butte	ODFW	Mainstem	W	1		442	42
20122	Test Guidance Flows and Strobe Lights at a SBC to Increase Smolt FCE & FGE	WDFW	Mainstem	A	3		295	
20142	Snake River Temperature Control Project, Phase III	CRITFC, UI, OGI	Mainstem	A	3		564	
20143	Monitor Symptoms of Gas Bubble Trauma in Adult Salmonids	CRITFC	Mainstem	A	1		113	113
20149	Develop Research Priorities for Fall Chinook in the Columbia River Basin	PNNL	Mainstem	A	3		70	
20157	Gas Bubble Trauma Monitoring in the Clearwater River	IDFG	Mainstem	A	1		0	59
20515	Mainstem Columbia River Umbrella Proposal	ODFW	Mainstem	A			0	
20541	Snake River Fall Chinook Salmon Studies (Umbrella Proposal)	NPT, USFWS, USGS	Mainstem	A			0	
20542	Biological Monitoring of Columbia River Basin Salmonids	Multi-agency: recommendation for continued biological smolt monitoring	Mainstem	A			0	
20543	Coded Wire Tag Program	WDFW, ODFS, USFWS, PSMFC	Mainstem	A			0	
20552	Smolt Monitoring Program Umbrella	PSMFC, IDFG, NP, USGS	Mainstem	A			0	
8201300	Coded-Wire Tag Recovery	PSMFC	Mainstem	A	1	1731	1923	1923
8331900	New Fish Tagging System	NMFS	Mainstem	A	1	1202	1389	1389
8332300	Smolt Monitoring at the Head of Lwr. Granite Reservoir & Lwr. Granite Dam	IDFG	Mainstem	A	1	382	397	397
8401400	Smolt Monitoring Program Marking	USFWS	Mainstem	A	1	668	121	121
8605000	White Sturgeon Mitigation and Restoration in the Columbia and Snake Rivers	ODFW	Mainstem	R	1	1960	1919	1919
8712700	Smolt Monitoring by Federal and Non-Federal Agencies	PSMFC	Mainstem	A	1	1262	1870	1870
8712702	Comparative Survival Rate Study (CSS) of Hatchery Pit Tagged Chinook	PSMFC	Mainstem	A	1	1216	936	936
8712703	Imnaha River Smolt Monitoring Program Project	NPT	Mainstem	A	1	175	189	189
8906500	Annual Stock Assessment - CWT (USFWS)	USFWS	Mainstem	A	1	399	111	111

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
8906600	Annual Stock Assessment- Coded Wire Tag Program (WDFW)	WDFW	Mainstem	A	1	335	374	374
8906900	Annual Stock Assessment - CWT (ODFW)	ODFW	Mainstem	A	1	190	216	216
8910700	Statistical Support for Salmonid Survival Studies	UW	Mainstem	A	3	180	185	
8910800	Monitor and Evaluate Modeling Support	UW	Mainstem	A	3		411	
9007700	Northern Pikeminnow Management Program	PSMFC	Mainstem	A	1	3306	3306	2506
9007800	Evaluate Predator Removal: Large-Scale Patterns	USGS	Mainstem	A	1	40	118	118
9008000	Columbia River Basin Pit Tag Information System	PSMFC	Mainstem	A	1	1041	1365	1365
9009200	Wanaket Wildlife Mitigation Project Operations & Maintenance	CTUIR	Mainstem	W	1	150	200	200
9102900	Life History and Survival of Fall Chinook Salmon in Columbia River Basin	USGS	Mainstem	A	1	900	800	744
9105100	Monitoring and Evaluation Statistical Support	UW	Mainstem	A	3		340	
9202200	Physiological Assessment of Wild and Hatchery Juvenile Salmonids	NMFS	Mainstem	A	1	349	358	350
9202400	Protect Anadromous Salmonids in the Mainstem Corridor	CRITFE	Mainstem	A			388	
9204101	Lower Columbia River Adult Study	COE	Mainstem	A	1	200	200	0
9302900	Survival Estimates for the Passage of Juvenile Salmonids Through Dams and R	NMFS/NWFSC	Mainstem	A	1	1081	1199	1199
9303701	Stochastic Life Cycle Model Technical Assistance	PER Ltd.	Mainstem	A	1	70	180	70
9403300	The Fish Passage Center (FPC)	PSMFC	Mainstem	A	1	1060	1079	1079
9406900	A Spawning Habitat Model to Aid Recovery Plans for Snake River Fall Chinook	PNNL	Mainstem	A	1	165	333	150
9600600	Facilitation, Technical Assistance and Peer Review of Path	ESSA	Mainstem	A	1	450	450	450
9600800	Stufa Participation in a Plan for Analyzing and Testing Hypotheses (PATH	ODFW	Mainstem	A	1	698	745	745
9600801	Technical Support for PATH	NMFS	Mainstem	A	1	75	75	75
9601700	Provide Technical Support for PATH	BioAnalysts, Inc.	Mainstem	A	1	27	109	27
9601900	Second Tier Database Support for Ecosystem Focus	BPA	Mainstem	A	3		180	
9602100	Gas Bubble Disease Research and Monitoring of Juvenile Salmonids	USGS-BRD, CRRL	Mainstem	A	1	652	44	44
9603201	Begin Implementation of Year 1 of the K Pool Master Plan Program	YIN	Mainstem	A	2	283	428	
9700200	Path - UW Technical Support	UW	Mainstem	A	1	182	301	182
9700900	Evaluate Rebuilding the White Sturgeon Population in the Lower Snake Basin	NPT	Mainstem	R	1	400	419	409
9701000	PIT Tag System Transition	COE; PSMFC; NMFS-CZES	Mainstem	A	1	800	853	853
9701400	Evaluation of Juvenile Fall Chinook Stranding on the Hanford Reach	WDFW	Mainstem	A	1	384	217	217
9702400	Avian Predation on Juvenile Salmonids in the Lower Columbia River	OSU/CRITFC	Mainstem	A	1	280	643	643
9702600	Ecology of Marine Predatory Fishes: Influence on Salmonid Ocean Survival	NMFS/NWFSC	Mainstem	A	1	0	200	0
9800100	Analytical Support-PATH and ESA Biological Assessments	Hinrichsen Environmental	Mainstem	A	1	120	125	120

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
		Services						
9800600	PATH Technical Support - James J. Anderson	Anderson Consulting	Mainstem	A	3		50	
9801003	Spawning Distribution of Snake River Fall Chinook Salmon	USFWS	Mainstem	A	1	126	183	178
9801004	M&E of Yearling Snake R. Fall Chinook Released Upstream of Lower Granite	NPT	Mainstem	A	1	301	273	273
9801400	Ocean Survival of Juvenile Salmonids in the Columbia River Plume	NMFS/NWFSC	Mainstem	A	1	0	826	0
9808001	PIT Tag Purchase and Distribution	PSMFC	Mainstem	A			0	
9900300	Evaluate Spawning of Salmon Below the Four Lowermost Columbia River Dams	WDFW, ODFW, USFWS, PNNL	Mainstem	A	1		386	356
9902200	Assessing Genetic Variation Among Columbia Basin White Sturgeon Populations	U of I	Mainstem	R	1		147	147
Lower Columbia								
20013	Restore Unobstructed Fish Passage to Duncan Creek	SLOA	Lower Columbia Mainstem	A	3		190	
20098	Develop and Evaluate Selective Commercial Fishing Gear: Tangle Nets	WDFW	Lower Columbia Mainstem	A	2		185	
20107	Reconnect the Westport Slough to the Clatskanie River	LCRWC	Lower Columbia Mainstem	A	3		30	
20108	Recruit, Train, Organize & Support River Stewards	Oregon Trout	Lower Columbia Mainstem	A	3		76	
20109	Cedar Creek Natural Production and Watershed Monitoring Project	WDFW	Lower Columbia Mainstem	A	3		226	
20120	Evaluate Factors Limiting Columbia River Gorge Chum Salmon Populations	USFWS	Lower Columbia Mainstem	A	1		190	190
20121	Evaluate Habitat Use and Population Dynamics of Lampreys in Cedar Creek	USFWS	Lower Columbia Mainstem	A	1	151	139	135
20125	Restore Riparian and Anadromous Fish Habitat in the Upper Sandy Basin	Mt. Hood NF	Lower Columbia Mainstem	A	3		98	
9306000	Select Area Fishery Evaluation Project	ODFW, WDFW, CEDC	Lower Columbia Mainstem	A	1	1400	1500	1400
9902500	Lower Columbia River Wetlands Restoration and Evaluation Program	USFS-CRGNSA	Lower Columbia Mainstem	W	1	125	125	125
9902600	Sandy River Delta Riparian Reforestation	USFS-CRGNSA	Lower Columbia Mainstem	W	1	22	24	24
20088	Assess Mckenzie Watershed Habitat and Prioritize Projects	McKenzie Watershed Council	Willamette	A	1		183	183
20089	Increase Instream Water Rights for Crabtree Creek	SSWC	Willamette	A	3		1403	
20128	Riparian Restoration and Enhancement Planning for Multnomah Channel	Metro	Willamette	W	1		30	30
20140	Tualatin River National Wildlife Refuge Additions	USFWS	Willamette	W	1		1250	250
20550	Willamette Basin Mitigation Program Umbrella	ODFW	Willamette	A			0	
8816000	Willamette Hatchery Oxygen Supplementation	ODFW	Willamette	A	1	43	33	33

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
9107800	Burlington Bottoms Wildlife Mitigation	ODFW	Willamette	W	1	58	117	117
9205900	Amazon Basin/Eugene Wetlands Phase Two	TNC	Willamette	W	1	50	2376	50
9206800	Implement Willamette Basin Mitigation Program	ODFW	Willamette	W	1	400	230	230
9405300	Bull Trout Assessment - Willamette/Mckenzie	ODFW	Willamette	R	1	46	59	59
9607000	Mckenzie River Focus Watershed Coordination	McKenzie Watershed Council	Willamette	A	1	105	105	105
Lower Mid-Columbia								
20026	Evaluate Status of Coastal Cutthroat Trout Above Bonneville Dam	ODFW	Hood	A	2		255	
20513	Hood River / Fifteenmile Creek Umbrella	ODFW and CTWSRO	Hood	A			0	
20519	Multi-Year Hood River Anadromous Fish Plan	CBFWA	Hood	A			0	
8805303	Hood River Production Program - M&E	CTWSRO	Hood	A	1	500	500	500
8805304	Hood River Production Program - ODFW M&E	ODFW	Hood	A	1	412	424	424
8902900	Hood River Production Program-Pelton Ladder-Hatchery	ODFW	Hood	A	1	132	115	115
9301900	Powerdale, Parkdale, and Oak Springs O&M	ODFW and CTWSRO	Hood	A	1	468	487	487
9802100	Hood River Fish Habitat Project	CTWSRO	Hood	A	1	117	228	228
9801900	Wind River Watershed Restoration	UCD, USFS, USGS, WDFW	Wind	A	1	350	1146	554
9802600	Document Native Trout Populations	Washington Trout	Wind	R	2	52	61	
9902400	Bull Trout Population Assessment in the Columbia River Gorge, WA	WDFW	Wind	R	2	150	200	
20520	Multi-Year Fifteen Mile Anadromous Fish Plan	CBFWA	Fifteenmile	A			0	
9304000	Fifteenmile Creek Habitat Restoration Project (Request Multi-Year Funding)	ODFW	Fifteenmile	A	1	220	247	247
9304001	Fifteenmile Creek Wild Steelhead Smolt Production	ODFW	Fifteenmile	A	1		27	27
20118	Klickitat River Subbasin Assessment	YIN	Klickitat	A	1		235	141
20525	Multi-Year Klickitat Anadromous Fish Plan	CBFWA	Klickitat	A			0	
9705600	Lower Klickitat River Riparian & In-Channel Habitat Enhancement Project	YIN	Klickitat	A	1	296	300	270
20070	Water Conservation and Stream Enhancement Project	Tumalo Irrigation District	Deschutes	R	3		18382	
20113	Securing Wildlife Mitigation Sites - Oregon, South Fork Crooked River	ODFW	Deschutes	W	3		14	
20126	Habitat Enhancement Within Transmission Corridors	USFS	Deschutes	W	3		309	
20511	Deschutes River Umbrella Proposal	ODFW and CTWSRO	Deschutes	A			0	
20521	Multi-Year Deschutes Anadromous Fish Plan	CBFWA	Deschutes	A			0	
9404200	Trout Creek Habitat Restoration Project Multi Year Funding Proposal	ODFW	Deschutes	A	1	298	381	359
9405400	Bull Trout Genetics, Habitat Needs, L.H., etc. in Central and N.E. Oregon	ODFW	Deschutes	R	1	340	425	380
9500700	Hood River Production Program - Pge: O&M	PGE	Deschutes	A	1	95	50	50
9705900	Securing Wildlife Mitigation Sites - Oregon	ODFW, CTWS, CTUIR, BPT…	Deschutes	W	1	4000	5000	3900
9802400	Monitor Watershed Conditions on the Warm Springs Reservation	CTWSRO	Deschutes	A	1		161	35
9802800	Trout Creek Watershed Improvement Project Multi Year	JCSWCD	Deschutes	A	1		484	231

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
	Funding Proposal							
9900600	Restoration of Riparian Habitat in Bakeoven / Deep Creeks	WCSWCD	Deschutes	A	1	35	80	80
20015	Characterize and Assess the John Day Watershed Using Landsat Tm Imagery	Northwest Habitat Institute	John Day	W	3		215	
20035	Water Right Acquisition Program (Multi-Year Fy 2000-2002)	Oregon Water Trust	John Day	A	1		130	130
20064	Upstream Migration of Pacific Lampreys in the John Day R: Behavior, Timing	USGS-BRD, CRRL	John Day	A	2		299	
20077	Inventory & Assessment of Irrigation Diversion Alternatives to Push-up Dams	USBOR	John Day	A	3		188	
20131	Enhance North Fork John Day River Subbasin Anadromous Fish Habitat	CTUIR	John Day	A	1		206	206
20134	Acquire Oxbow Ranch -- Middle Fork John Day River	CTWSRO	John Day	A	1		2628	1300
20514	John Day River Umbrella	ODFW	John Day	A			0	
20522	Multi-Year John Day Anadromous Fish Plan	CBFWA	John Day	A			0	
8402100	Protect and Enhance Anadromous Fish Habitat in the John Day Subbasin	ODFW	John Day	A	1	380	426	426
9303800	North Fork John Day Area Riparian Fencing	USFS	John Day	A	2	58	68	
9306600	Oregon Fish Screening Project - FY'00 Proposal	ODFW	John Day	A	1	523	642	642
9605300	Upper Clear Creek Dredge Tailings Restoration	USFS/CTUIR	John Day	A	1	75	85	85
9703400	Monitor Fine Sediment and Sedimentation in John Day and Grande Ronde Rivers	CRITFC	John Day	A	1	30	32	32
9801600	Monitor Natural Escapement & Productivity of John Day Basin Spring Chinook	ODFW	John Day	A	1	125	180	160
9801700	Eliminate Gravel Push-Up Dams on Lower North Fork John Day	NFJDWC	John Day	A	1	67	90	90
9801800	John Day Watershed Restoration	CTWSRO	John Day	A	1	215	460	425
9802200	Pine Creek Ranch Acquisition	CTWSRO	John Day	W	1		98	95
9901000	Mitigate Effects of Runoff & Erosion on Salmonid Habitat in Pine Hollow	Sherman SWCD	John Day	A	1	27	34	34
20516	Umatilla Subbasin Umbrella	ODFW	Umatilla	A			0	
20523	Multi-Year Umatilla Subbasin Anadromous Fish Plan	CBFWA	Umatilla	A			0	
8343500	Operate and Maintain Umatilla Hatchery Satellite Facilities	CTUIR	Umatilla	A	1	735	822	775
8343600	Umatilla Passage Facilities O & M	Westland Irrigation District	Umatilla	A	1	400	703	502
8710001	Enhance Umatilla River Basin Anadromous Fish Habitat	CTUIR	Umatilla	A	1	270	305	260
8710002	Protect and Enhance Anadromous Fish Habitat in the Umatilla River Subbasin	ODFW	Umatilla	A	1	481	465	353
8802200	Umatilla River Fish Passage Operations	CTUIR	Umatilla	A	1	420	379	360
8805302	Plan, Site, Design and Construct Neoh Hatchery - Umatilla/Walla Walla Comp.	CTUIR	Umatilla	A	1	400	6400	2800
8902401	Evaluate Juvenile Salmonid Outmigration and Survival in the Lower Umatilla	ODFW	Umatilla	A	1	240	300	251
8902700	Power Repay Umatilla Basin Project	BPA	Umatilla	A	1	500	650	550
8903500	Umatilla Hatchery Operation and Maintenance	ODFW	Umatilla	A	1	797	895	850

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
9000500	Umatilla Hatchery Monitoring and Evaluation	ODFW	Umatilla	A	1	616	722	650
9000501	Umatilla River Basin Natural Production Monitoring and Evaluation	CTUIR	Umatilla	A	1	611	609	480
9506001	Protect & Enhance Wildlife Habitats in the Squaw Creek Watershed	CTUIR	Umatilla	W	1	200	201	201
20021	Estimate natural steelhead production in two tributaries of the Walla Walla	WDFW	Walla Walla	A	2		333	
20022	NE Oregon Hatchery Planning & Coordination - WDFW	WDFW	Walla Walla	A	1		13	10
20127	Walla Walla River Basin Monitoring and Evaluation Project	CTUIR	Walla Walla	A	1		157	134
20138	Design and Construct Neoh Walla Walla Hatchery	CTUIR	Walla Walla	A	1		1380	250
20139	Walla Walla River Fish Passage Operations	CTUIR	Walla Walla	A	1		83	73
20145	Evaluate Little Walla Walla Screening Facility	ODFW	Walla Walla	A	2		243	
20524	Multi-Year Walla Walla Anadromous Fish Plan	CBFWA	Walla Walla	A			0	
9601100	Walla Walla River Juvenile and Adult Passage Improvements	CTUIR	Walla Walla	A	1	2600	2840	2840
9604601	Walla Walla Basin Fish Habitat Enhancement	CTUIR	Walla Walla	A	1	230	275	240
9901100	Assess Fish Habitat & Salmonids in the Walla Walla Watershed in Washington	WDFW	Walla Walla	A	1	184	185	170
20004	White Salmon River Watershed Enhancement Project	White Salmon River Watershed Management Committee c/o Underwood Conservation District	Little White Salmon	A	3		206	

Upper Mid-Columbia

20003	Enhance Fish Habitat by Improving Water Quality	SYCD	Yakima	A	3		200	
20006	Yakima Basin Benthic Index of Biotic Integrity (B-Ibi)	Washington Trout	Yakima	A	3		48	
20010	Improve Fish Habitat by Reducing Farm Sediment Runoff	Benton Conservation District	Yakima	A	3		1500	
20039	Comparative Population Study: Naneum, Coleman, Cooke Creeks	Washington Trout	Yakima	R	3		52	
20072	Restoring Perennial Instream Flows at Ahtanum Creek	Dames and Moore	Yakima	A	3		185	
20117	Yakima River Subbasin Assessment	YIN	Yakima	A	3		235	
20119	Rock Creek Watershed Assessment and Restoration Project	YIN	Yakima	A	1		240	156
20132	Yakima River Basin Water Temperature Monitoring and Modeling Project	Yakima Basin Joint Board	Yakima	A	2		85	
20141	Recondition Wild Steelhead Kelts	CRITFC	Yakima	A	1		90	73
20150	Evaluate Return Flow Recovery	RSBOJC	Yakima	A	3		35	
20151	Landowner Communication Program	RSBOJC	Yakima	A	3		12	
20152	Improve Yakima River Water Quality by Incorporating Buffer Strips	RSBOJC	Yakima	A	3		161	
20153	Construct Sediment Settling Basins	RSBOJC	Yakima	A	3		265	
20154	Improve Water Quality Monitoring Program	RSBOJC	Yakima	A	3		161	
20155	Inventory On-Farm Irrigation Practices	RSBOJC	Yakima	A	3		10	
20510	Yakima/Klickitat Fisheries Project -- Umbrella	YIN	Yakima	A			0	
20526	Multi-Year Yakima Anadromous Fish Plan	CBFWA	Yakima	A			0	

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
20547	Yakima Subbasin Habitat/Watershed Project Umbrella	YIN	Yakima	A			0	
8506200	Passage Improvement Evaluation	PNNL	Yakima	A	1	100	100	100
8811525	Yakima/Klickitat Fisheries Project Design and Construction	YIN	Yakima	A	1		1565	1565
8812025	Ykfp Management, Data and Habitat	YIN	Yakima	A	1		750	750
9105700	Yakima Phase 2 [Fish] Screen Fabrication	WDFW, YSS	Yakima	A	1	186	293	293
9107500	Yakima Phase II Screens - Construction	USBOR	Yakima	A	1	1500	1000	1000
9200900	Yakima [Fish] Screens - Phase 2 - O&M	WDFW, YSS	Yakima	A	1	156	134	134
9206200	Yakama Nation - Riparian/Wetlands Restoration	YIN	Yakima	W	1	1600	1750	1550
9405900	Yakima Basin Environmental Education	ESD 105	Yakima	A	1	119	125	125
9503300	O&M of Yakima Phase II Fish Facilities	USBOR	Yakima	A	1	220	100	100
9506325	Yakima/Klickitat Fisheries Project Monitoring and Evaluation	YIN	Yakima	A	1		4640	4310
9506425	YKFP - WDFW Policy and Technical Involvement in the YKFP	WDFW	Yakima	A	1		275	275
9603501	Satus Watershed Restoration	YIN	Yakima	A	1	500	502	472
9609400	WDFW Habitat Unit Acquisition	WDFW	Yakima	W	1	3130	1912	1912
9701325	Yakima/Klickitat Fisheries Project Operations and Maintenance	YIN	Yakima	A	1		2260	2260
9705000	Little Naches River Riparian & In-channel Enhancement Project	YIN	Yakima	A	2		96	
9705100	Yakima Basin Side Channels	YIN	Yakima	A	1	1000	802	602
9705300	Toppenish-Simcoe Instream Flow Restoration and Assessment	YIN	Yakima	A	1		232	164
9803300	Restore Upper Toppenish Creek Watershed	YIN	Yakima	A	1	100	207	195
9803400	Reestablish Safe Access into Tributaries of the Yakima Subbasin	YIN	Yakima	A	1		772	772
9901200	Coordinate/Facilitate Watershed Project Planning/Implementation	Ki-Yak	Yakima	A	1	75	70	70
9901300	Ahtanum Creek Watershed Assessment	YIN	Yakima	A	1	150	240	240
20002	Hydrologic Study of Stangland, Tyler and Clear Lake Area	Stangland-Tyler Aquifer Study	Crab	R	3		171	
20071	Restore Crab Lake and Adjacent Reaches of Crab Creek	Ducks Unlimited, Inc.	Crab	R	3		365	
20083	Evaluate, Restore & Enhance 14 Miles of Instream and Riparian Habitat on…	USFWS	Crab	A	3		103	
9502800	Restore Moses Lake Recreational Fishery	WDFW	Crab	R	1	269	235	235
20001	Remove 23 Migrational Barriers and Restore Instream and Riparian Habitat on	USFWS	Wenatchee	A	1		305	160
20058	Leavenworth Hatchery Complex	BOR	Wenatchee	A	3		630	
20527	Multi-Year Wenatchee River Anadromous Fish Plan	CBFWA	Wenatchee	A			0	
9604000	Evaluate the Feasibility and Risks of Coho Reintroduction in Mid-Columbia	YIN	Wenatchee	A	1	700	1418	100
20033	Rehabilitate Instream and Riparian Habitat on the Similkameen and Okanogan	USFWS	Okanogan	A	3		485	
20037	Improvement of Anadromous Fish Habitat and Passage in Omak Creek	CCT	Okanogan	A	1		350	350
20042	Integrating Okanogan and Methow Watershed Data for Salmonid Restoration	Okanogan Conservation District	Okanogan	A	3		269	

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
20073	Evaluate Relationship Between Land Use, Water Quality, and Fish Health	USGS	Okanogan	R	3		261	
20123	Restoration of Sockeye Salmon Into Palmer Lake	Salmonsoft	Okanogan	A	2		101	
20124	Evaluate An Experimental Re-Introduction of Sockeye Salmon Into Skaha Lake	CCT	Okanogan	A	1		219	171
20529	Multi-Year Okanogan Anadromous Fish Plan	CBFWA	Okanogan	A			0	
9604200	Restore and Enhance Anadromous Fish Populations & Habitat in Salmon Creek	CCT	Okanogan	A	1	175	2428	578
20031	Community Ecology and Food Web Studies in the Columbia River Basin	USFS	Chelan	A	3		66	
20528	Multi-Year Methow Anadromous Fish Plan	CBFWA	Methow	A			0	
9803500	Watershed Scale Response of Stream Habitat to Abandoned Mine Waste	UW	Methow	A	3		54	

Upper Columbia

20038	Assess Habitat and Passage for Anadromous Fish Upriver of Chief Joseph Dam	CCT	Upper Columbia Mainstem	A	2		274	
20081	STOI Wildlife Land Acquisition and Enhancements	STOI	Upper Columbia Mainstem	W	2		2033	
20091	Construct Warm Springs Wetland	SWID RC&D	Upper Columbia Mainstem	R	3		47	
20096	Ford Hatchery Improvement, Operation and Maintenance	WDFW	Upper Columbia Mainstem	R	2		333	
20097	Phalon Lake Wild Rainbow Trap Improvements and O&M	WDFW	Upper Columbia Mainstem	R	2		25	25
20146	Lake Roosevelt Kokanee Net Pens	WDFW	Upper Columbia Mainstem	R	1		186	186
20509	Hellsgate Big Game Winter Range Umbrella Project	CCT	Upper Columbia Mainstem	W			0	
8503800	Colville Tribal Fish Hatchery	CCT	Upper Columbia Mainstem	R	1	360	361	361
9001800	Evaluate Rainbow Trout/Habitat Improvements of Tribs. to Lake Roosevelt	CCT	Upper Columbia Mainstem	R	1	168	190	190
9104600	Spokane Tribal (Galbraith Springs) Hatchery Operation & Maintenance	STOI	Upper Columbia Mainstem	R	1	453	522	522
9104700	Sherman Creek Hatchery O&M	WDFW	Upper Columbia Mainstem	R	1	319	201	201
9106100	Swanson Lakes Wildlife Area	WDFW	Upper Columbia Mainstem	W	1	233	248	248
9204800	Hellsgate Big Game Winter Range Operation and Maintenance Project	CCT	Upper Columbia Mainstem	W	1	250	383	350
9404300	Monitor, Evaluate, and Research the Lake Roosevelt Fishery	STOI	Upper Columbia Mainstem	R	1	1400	1500	1500

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
9500900	Rainbow Trout Net Pen Rearing Project	LRDA	Upper Columbia Mainstem	R	1	100	100	100
9501100	Chief Joseph Kokanee Enhancement Project	CCT	Upper Columbia Mainstem	R	1	600	597	397
9502700	Collect Data on White Sturgeon Above Grand Coulee Dam	STOI	Upper Columbia Mainstem	R	2		342	75
9506700	Colville Tribes Performance Contract for Continuing Acquisition	CCT	Upper Columbia Mainstem	W	1	100	1500	400
9700400	Resident Fish Stock Status Above Chief Joseph and Grand Coulee Dams	KNRD	Upper Columbia Mainstem	R	1	405	421	421
9800300	O&M Funding of Wildlife Habitat on STOI Reservation for Grand Coulee Dam	STOI	Upper Columbia Mainstem	W	1	97	97	97
9004400	Implement Fisheries Enhancement Opportunities: Coeur D'alene Reservation	CDA Tribe	Coeur d'Alene	R	1	859	685	685
9004401	Lake Creek Land Acquisition and Enhancement	CDA Tribe	Coeur d'Alene	W	1	186	140	140
9004402	Coeur d' Alene Tribe Trout Production Facility	CDA Tribe	Coeur d'Alene	R	1		1553	1500
9106000	Pend Oreille Wetlands Wildlife Mitigation Project - Kalispel	KNRD	Lower Pend Oreille	W	1	116	154	154
9500100	Kalispel Tribe Resident Fish	KNRD	Lower Pend Oreille	R	1	286	297	297
9700300	Box Canyon Watershed Project	KNRD	Lower Pend Oreille	R	3	71	70	
20007	Acquire and Conserve Priority Bull Trout Habitat in Trestle Creek Watershed	River Network	Upper Pend Oreille	R	2		276	50
9206100	Albeni Falls Wildlife Mitigation	Albeni Falls Interagency Work Group	Upper Pend Oreille	W	1	700	4418	2195
9404700	Lake Pend Oreille Fishery Recovery Project	IDFG	Upper Pend Oreille	R	1	361	379	379
20005	West Fisher Watershed Restoration	USFS	Kootenai	R	3		288	
20008	Monitor and Protect Wigwam River Bull Trout for Koocanusa Reservoir	British Columbia Ministry of Environment, Lands and Parks	Kootenai	R	1		60	60
20009	Fertilization of Kootenay Lake and Arrow Reservoir	B.C. Ministry of Environment, Lands and Parks	Kootenai	R	2		175	
20028	Purchase Conservation Easement from Plum Creek Timber Company along Fisher	MFWP	Kootenai	R	2		500	250
20049	Evaluate Sediment Transport in Spawning Habitat, Kootenai R., Idaho	USGS	Kootenai	R	1		97	97
20517	Libby Fisheries Mitigation	MFWP	Kootenai	R	3		0	
8346700	Mitigation for the Construction and Operation of Libby Dam	MFWP	Kootenai	R	1	500	500	500
8806400	Kootenai River White Sturgeon Studies and Conservation Aquaculture	KTOI	Kootenai	R	1	1281	2750	1150
8806500	Kootenai River Fisheries Recovery Investigations	IDFG	Kootenai	R	1	604	617	617
9401001	Mitigation for Excessive Drawdowns at Libby Reservoir	MFWP and CSKT	Kootenai	R	1	374	378	378
9404900	Improve the Kootenai River Ecosystem	KTOI	Kootenai	R	1	246	300	270
9608720	Focus Watershed Coordination-Kootenai River Watershed	MFWP and CSKT	Kootenai	R	1	100	100	100
20034	Impact of Flow Regulation on Riparian Cottonwood Ecosystems	BioQuest International Consulting Ltd.	Flathead	W	3		148	

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
20144	Create Stream Reference Condition Data Set for the Upper Flathead R Basin	Flathead National Forest	Flathead	R	2		26	
20554	Hungry Horse Fisheries Mitigation Umbrella	MFWP	Flathead	R	3		0	
9101901	Flathead Lake Monitoring and Habitat Enhancement	CSKT	Flathead	R	1	65	95	95
9101903	Hungry Horse Mitigation - Watershed Restoration & Monitoring (MFWP Umbrell	MFWP	Flathead	R	1	474	498	498
9101904	Hungry Horse Mitigation - Nonnative Fish Removal / Hatchery Production	USFWS	Flathead	R	1	389	429	429
9401002	Flathead River Native Species Project (MFWP Sub-proposal)	MFWP	Flathead	R	1	248	267	267
9502500	Flathead River Instream Flow Project (Mfwp Umbrella Subproposal)	MFWP	Flathead	R	1	100	100	100
9608701	Focus Watershed Coordination-Flathead River Watershed	CSKT	Flathead	R	1	100	103	103
Lower Snake								
20016	Snake River Steelhead Hooking Mortality Study	WDFW	Lower Snake Mainstem	A	2		117	
20533	Multi-Year Lower Snake River Mainstem Anadromous Fish Plan	CBFWA	Lower Snake Mainstem	A			0	
9801005	Pittsburg Landing,Capt. John Rapids, Big Canyon Acclimation Facilities	NPT	Lower Snake Mainstem	A	1	624	686	654
20018	Tucannon River and Asotin Creek Riparian Enhancement	WDFW	Tucannon	A	2		134	
20020	Tucannon River Spring Chinook Captive Broodstock Program	WDFW	Tucannon	A	1		284	134
20024	Evaluate Fall Chinook Natural Production and Spawning Habitat Conditions in	WDFW	Tucannon	A	2		121	
20036	Evaluate Bull Trout Movements in the Tucannon and Lower Snake Rivers	USFWS-IFRO	Tucannon	R	2		111	107
20530	Multi-Year Tucannon Anadromous Fish Plan	CBFWA	Tucannon	A			0	
8909600	Monitor and Evaluate Genetic Characteristics of Supplemented Salmon & Stlhd	NMFS	Tucannon	A	1	225	249	175
9401806	Implement Tucannon River Watershed Plan to Restore Salmonid Habitat	Columbia Conservation District	Tucannon	A	1	253	330	253
9401807	Continue with Implementation of Pataha Creek Model Watershed Projects	PCD	Tucannon	A	1	180	213	120
20019	Evaluate Status of Pacific Lamprey in Clearwater River Drainage, Idaho	IDFG	Clearwater	A	1	72	119	73
20080	Evaluate a Modified Feeding Strategy to Reduce Residualism and Promote Smol	IFRO-USFWS	Clearwater	A	1		168	147
20084	Protect and Restore the North Lochsa Face Analysis Area Watersheds	NPT	Clearwater	A	1		205	155
20085	Analyze and Improve Fish Screens	NPT	Clearwater	A	3		129	
20086	Rehabilitate Newsome Creek - S.F. Clearwater River	NPT	Clearwater	A	1		365	302
20087	Protect and Restore Mill Creek Watershed	NPT	Clearwater	A	1		63	63
20147	Evaluate Bull Trout Population Status/N.F. Clearwater R - NPT	NPT	Clearwater	R	2		188	
20148	Evaluate Bull Trout Population Status/N.F. Clearwater R -	IDFG, NPT	Clearwater	R	2		155	

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
	IDFG							
20156	Identification Of Redband And Rainbow Trout In The N F Clearwater Basin	NPT	Clearwater	R	3		111	
20534	Multi-Year Clearwater Anadromous Fish Plan	CBFWA	Clearwater	A			0	
20557	Evaluate Bull Trout Population Status/N.F. Clearwater R. - NPT & IDFG	NPT	Clearwater	R	3		0	
8335000	Nez Perce Tribal Hatchery	NPT	Clearwater	A	1	7918	20189	14590
8335003	Nez Perce Tribal Hatchery Monitoring and Evaluation	NPT	Clearwater	A	1		993	993
8709900	Dworshak Dam Impacts Assessment and Fisheries Investigation	IDFG	Clearwater	R	1	120	285	285
8740700	Dworshak Impacts/M&E and Biological/Integrated Rule Curves	NPT	Clearwater	R	1	200	199	199
9202409	Enhance Conser. Enforcement for Fish & Wildlife,Watersheds of the Nez Perce	NPT	Clearwater	A	1	425	425	
9303501	Enhance Fish, Riparian, and Wildlife Habitat Within the Red River Watershed	ISWCD	Clearwater	A	1	500	550	450
9403400	Assessing Summer and Fall Chinook Restoration in the Snake River Basin	NPT	Clearwater	A	1	305	317	317
9501300	Nez Perce Tribe Resident Fish Substitution Program	NPT	Clearwater	R	1	749	850	750
9501600	Genetic Inventory of Westslope Cutthroat Trout in the N F Clearwater Basin	NPT	Clearwater	R	1	190	200	180
9607708	Protect and Restore the Lolo Creek Watershed	NPT	Clearwater	A	1	361	204	204
9607709	Protect and Restore the Squaw to Papoose Creeks Watersheds	NPT	Clearwater	A	1	242	354	304
9607711	Restore Mccomas Meadow/ Meadow Creek Watershed	NPT	Clearwater	A	1		167	167
9608600	Clearwater Subbasin Focus Watershed Program - ISCC	ISCC	Clearwater	A	1	85	89	89
9706000	Clearwater Subbasin Focus Watershed Program - NPT	NPT	Clearwater	A	1	93	99	99
9901400	Restore Anadromous Fish Habitat in the Little Canyon Creek Subwatershed	ISCC	Clearwater	A	1	197	218	197
9901500	Restore Anadromous Fish Habitat in the Nichols Canyon Subwatershed	ISCC	Clearwater	A	1	182	211	186
9901600	Protect & Restore Big Canyon Creek Watershed	NPT	Clearwater	A	1	162	61	61
9901700	Protect & Restore Lapwai Creek	NPT	Clearwater	A	1	150	61	61
9901800	Characterize and quantify residual steelhead in the Clearwater River, Idaho	USFWS-IFRO	Clearwater	A	1	133	84	84
20532	Multi-Year Imnaha Anadromous Fish Plan	CBFWA	Imnaha	A			0	
9401805	Continued Implementation of Asotin Creek Watershed Projects	Asotin County Conservation District	Asotin	A	1	239	239	235
20017	Restore Habitat Within Dredge Tailings on the Yankee Fork Salmon River	SBT, IDFG, USFS	Salmon	A	1		207	65
20032	Protect Bear Valley Wild Salmon, Steelhead, Bull Trout Spawning Habitat	SBT & IDFG	Salmon	A	1		310	310
20055	Evaluate a Mark-Resight Survey for Estimating Numbers of Redds	RMRS	Salmon	A	3		43	

ProjectID	Title	Sponsor	Subbasin	Caucus*	Tier	FY99	FY00 req	FY00 rec
20079	Assessing Adult Steelhead Escapement & Genetics in the South Fork Salmon	NPT	Salmon	A	1		278	175
20535	Multi-Year Salmon Anadromous Fish Plan	CBFWA	Salmon	A			0	
20545	Idaho Supplementation Studies - Umbrella Proposal	IDFG	Salmon	A			0	
8909800	Idaho Supplementation Studies	IDFG	Salmon	A	1	906	974	974
8909801	Evaluate Salmon Supplementation in Idaho Rivers (ISS)	USFWS-IFRO	Salmon	A	1	147	130	130
8909802	Evaluate Salmon Supplementation Studies in Idaho Rivers	NPT	Salmon	A	1	339	377	377
8909803	Evaluate Salmon Supplementation Studies in Idaho Rivers	SBT	Salmon	A	1	226	228	228
9005500	Steelhead Supplementation Studies in Idaho Rivers	IDFG	Salmon	A	1	258	561	408
9102800	Monitoring Smolt Migrations of Wild Snake River Sp/Sum Chinook	NMFS	Salmon	A	1	275	385	325
9107100	Snake River Sockeye Salmon Habitat and Limnological Research	SBT	Salmon	A	1	405	438	427
9107200	Redfish Lake Sockeye Salmon Captive Broodstock Program	IDFG	Salmon	A	1	680	680	680
9107300	Idaho Natural Production Monitoring and Evaluation	IDFG	Salmon	A	1	732	768	768
9202603	Idaho Model Watershed Administration/Implementation Support	SCC	Salmon	A	1	175	185	185
9204000	Redfish Lake Sockeye Salmon Captive Broodstock Rearing and Research	NMFS	Salmon	A	1	500	500	475
9306200	Salmon River Anadromous Fish Passage Enhancement	LSWCD, CSWCD	Salmon	A	1	100	100	100
9401500	Idaho Fish Screen Improvement - O&M	IDFG	Salmon	A	1	1000	1000	1000
9401700	Idaho Model Watershed Habitat Projects	LSWCD, CSWCD	Salmon	A	1	400	400	400
9405000	Salmon River Habitat Enhancement M&E	SBT	Salmon	A	1	257	245	245
9600700	Irrigation Diversion Consolidations & Water Conservation; Upper Salmon R	LSWCD	Salmon	A	1	446	754	293
9604300	Johnson Creek Artificial Propagation Enhancement Project	NPT	Salmon	A	1	1300	2800	2800
9606700	Manchester Spring Chinook Broodstock Project	NMFS	Salmon	A	1	450	500	450
9700100	Captive Rearing Initiative for Salmon River Chinook Salmon	IDFG	Salmon	A	1	145	546	546
9703000	Monitor Listed Stock Adult Chinook Salmon Escapement	NPT	Salmon	A	1	160	163	156
9703800	Preserve Listed Salmonid Stocks Gametes	NPT	Salmon	A	1	161	185	185
9705700	Salmon River Production Program	SBT	Salmon	A	1	220	931	931
9901900	Restore the Salmon River, in the Challis, ID area, to a Healthy Condition	Custer Co	Salmon	A	1	100	50	50
9902000	Analyze the Persistence and Spatial Dynamics of Snake River Chinook Salmon	RMRS	Salmon	A	1	50	104	50
20051	Decrease Sedimentation and Temp. in Streams, Educate Resource Managers	OSU EXT	Grande Ronde	A	3		883	
20102	Research/Evaluate Restoration of NE Ore Streams and Develop Mgmt Guidelines	OSU/UO	Grande Ronde	A	2		310	
20112	Securing Wildlife Mitigation Sites - Oregon, Wenaha WMA Additions	ODFW	Grande Ronde	W	1		142	42
20114	Securing Wildlife Mitigation Sites - Oregon, Ladd Marsh WMA Additions	ODFW	Grande Ronde	W	1		361	145

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20129	Dworshak Mitigation Cultural Resource Survey Project	NPT	Grande Ronde	W	3		45	
20130	Northeast Oregon Mitigation Trust Fund	NPT	Grande Ronde	W	3		4500	
20133	Irrigation as a Management Tool for Stream Temperature	OSU	Grande Ronde	A	3		81	
20512	Grand Ronde River Basin Umbrella	ODFW	Grande Ronde	A			0	
20531	Multi-Year Grande Ronde Anadromous Fish Plan	CBFWA	Grande Ronde	A			0	
20556	Grande Ronde Endemic Spring Chinook Supplementation Program Umbrella		Grande Ronde	A			0	
8402500	Protect and Enhance Anadromous Fish Habitat in Grande Ronde Basin Streams	ODFW	Grande Ronde	A	1	260	367	273
8805301	Northeast Oregon Hatchery Master Plan	NPT	Grande Ronde	A	1	2300	1217	1217
8805305	Northeast Oregon Hatcheries Planning and Implementation - ODFW	ODFW	Grande Ronde	A	1	215	660	226
9202601	Grande Ronde Model Watershed Program	GRMWP	Grande Ronde	A	1	266	930	930
9202604	Life History of Spring Chinook Salmon and Summer Steelhead	ODFW	Grande Ronde	A	1	650	798	700
9403900	Wallowa Basin Project Planner	NPT	Grande Ronde	A	1	55	58	55
9608000	Northeast Oregon Wildlife Mitigation Project	NPT	Grande Ronde	W	1	228	235	235
9608300	CTUIR Grande Ronde Basin Watershed Restoration	CTUIR	Grande Ronde	A	1	180	250	125
9702500	Implement the Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan	NPT	Grande Ronde	A	1	40	50	20
9800702	Grande Ronde Supplementation - O&M/M&E - Nez Perce Tribe Lostine	NPT	Grande Ronde	A	1	327	431	385
9800703	Facility O&M and Program M&E for Grande Ronde Spring Chinook Salmon	CTUIR	Grande Ronde	A	1	323	598	489
9801001	Grande Ronde Basin Spring Chinook Captive Broodstock Program	ODFW	Grande Ronde	A	1	493	646	616
9801006	Captive Broodstock Artificial Propagation	NPT	Grande Ronde	A	1	67	146	131
Upper Snake								
20090	Logan Valley Wildlife Mitigation Project	BPT	Malheur	W	1		2002	
20136	Burns Paiute Mitigation Coordinator	BPT	Malheur	W	3		50	
20137	Acquisition of Malheur Wildlife Mitigation Site	BPT	Malheur	W	1		2030	
9701900	Evaluate the Life History of Native Salmonids in the Malheur Basin	BPT	Malheur	R	1	200	201	201
9701901	North Fork Malheur River Bull Trout and Redband Life History Study	BPT	Malheur	R	1	142	114	114
20040	Develop a Fish & Wildlife Management Plan for the Owyhee Basin, D.V.I.R.	SPT - DVIR	Owyhee	R	3		22	
20041	Develop a Fish & Wildlife Conservation Law Enforcement Plan, D.V.I.R.	SPT - DVIR	Owyhee	R	3		41	
20092	Inventory Wildlife Species & Populations of the Owyhee Basin, D.V.I.R	SPT - DVIR	Owyhee	W	3		186	
20093	Evaluate the Feasibility for Anadromous Fish Reintroduction in the Owyhee	SPT - DVIR	Owyhee	A	3		57	

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20094	Assess Resident Fish Stocks of the Owyhee Basin, D.V.I.R.	SPT - DVIR	Owyhee	R	2		221	200
20536	Develop Management Plan & Assess Fish &Wildlife - Owyhee Basin, D.V.I.R.	SPT - DVIR	Owyhee	R	3		134	
8815600	Implement Fishery Stocking Program Consistent With Native Fish Conservation	SPT - DVIR	Owyhee	R	1	110	130	120
9501500	Lake Billy Shaw Operations and Maintenance and Evaluation (O&M, M&E)	SPT - DVIR	Owyhee	R	1	215	222	222
9701100	Enhance and Protect Habitat and Riparian Areas on the DVIR	SPT - DVIR	Owyhee	R	1	293	295	295
20135	Consumptive Sturgeon Fishery-Hells Canyon and Oxbow Reservoirs	NPT	Upper Snake	R	1		250	250
9106700	Idaho Water Rental: Resident Fish and Wildlife Impacts - Phase III	IDFG	Upper Snake	R	1	110	119	119
9201000	Habitat Restoration/Enhancement Fort Hall Reservation	SBT	Upper Snake	R	1	163	133	133
9500600	Shoshone-Bannock/Shoshone Paiute Joint Culture Facility	SBT	Upper Snake	R	1	249	283	283
9505700	Southern Idaho Wildlife Mitigation	IDFG, SBT	Upper Snake	W	1	3111	4335	1154
9800200	Snake River Native Salmonid Assessment	IDFG	Upper Snake	R	1	225	225	225

All figures in thousands of dollars.