The Yakama Nation Comments on

Bonneville Power Administration's Power Function Review

April 28, 2005

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Summary

The Yakama Nation is providing comments to BPA on the Power Function Review (PFR). This process is intended to determine the costs of BPA programs for the BPA rate case that will determine BPA revenues for Fiscal Years 2007 through 2009.

The Yakama Nation has been working with other fish and wildlife managers through a workgroup of the Columbia Basin Fish and Wildlife Authority to develop the costs to fully implement the Council Program and the Federal Columbia River Power System (FCRPS) Biological Opinions.

Working with CBFWA, we have developed the most detailed budgets ever prepared for this kind of effort. Those budgets clearly show that implementing the subbasin plans, wildlife program, and other ongoing activities will require a significant increase in BPA funding. That should not come as any surprise. Restoring the habitat in the Columbia Basin—an area the size of France—will require a major effort.

As these comments are due, the CBFWA report is going through consent review; it has been approved by the state fish and wildlife agencies in Idaho, Montana, Oregon, and Washington and all of the Columbia Basin Indian tribes, except the Coeur d'Alene and Kalispell tribe. It is our understanding that CBFWA is working with these tribes to address suggested changes.

The Yakama Nation endorses the CBFWA workgroup recommendation that BPA ramp up its funding during the next rate case from $186 million in FY 2006 to $240 million in FY 2009:

$186 million in FY 2006,
$200 million in FY 2007,
$225 million in FY 2008,
$240 million in FY 2009.

Benefits from fully implementing the Council Program: These funding levels will put BPA on a path to complete implementation of most of the Council's Program during the next ten years. This is an essential first step in meeting the Council's rebuilding goals for salmon and steelhead.

Implementing the subbasin plans would result in significant accomplishments:

- Protection for more than 48,000 acres of habitat;
- Improvements to more than 1300 miles of streams;
- Construction of almost 1600 miles of fence
- Enhancement activities on more than 75,000 acres of habitat;
- Correcting passage problems at more than 1200 diversions and culverts; and,
- Additions or major enhancements to fish production facilities in 11 subbasins.

An aggressive implementation schedule has the lowest biological risk. There are a number of listed species that are declining and at risk of extinction; improving habitat is critical for their survival. Implementing these actions quickly will save money in the long run. The costs of acquiring land or easements for riparian habitat are going up very fast in Eastern Washington.

The Council Fish and Wildlife Program and the FCRPS Biological Opinions rely heavily on improving habitat as off-site mitigation for the dams. These efforts are especially important to us. For at least the past four decades, the Columbia Basin Treaty tribes have voluntarily imposed severe restrictions on their treaty-reserved fisheries to assist in rebuilding wild populations of salmon and steelhead. This action was taken based on the expectation that other relevant parties would also take actions to share the burden of wild stock conservation. The tribes are still waiting for these actions, particularly in the area of habitat protection and improvement. Improving habitat is the only way to rebuild to sustainable, harvestable levels those wild runs that presently constrain treaty fisheries.

Implementing the subbasin plans will also provide thousand of jobs in rural and tribal communities in eastern Washington and Oregon and in Idaho and Montana. This is an important issue for us. In recent years, unemployment on our reservation was about 70 percent outside of the fishing season. We have worked very hard to bring that down to about 40 percent. Providing jobs to restore habitat and rebuilding our tribal fishery are really important to the Yakama Nation.

We are also ratepayers. The Yakama Nation is in the process of forming Yakama Power—a tribal utility that will buy power from BPA. We calculate that the increased costs of implementing the Program and ESA represents about $1 per month for the average residential consumer served by utilities that buy <u>all</u> of their power from BPA. The costs would be more for large energy users such as Yakama Forest Enterprise, our casino, Yakama Juice and other tribal enterprises. The impacts on customers served by utilities that don't buy all of their power from BPA would be smaller.

BPA's funding alternatives are inadequate: Our comments also address the funding alternatives that BPA has developed. First we would note that these alternatives appear to be ignore the costs developed by the CBFWA workgroup and therefore are not based on the best information available. We are also disappointed that BPA has not provided any comments to date on the CBFWA detailed cost report. We met with BPA and utility staffs over the last four months, shared drafts of the detailed report, and sought comments.

Under BPA's low alternative, it would take 70 years to implement the subbasin plans and other parts of the Council's Program. This is unacceptable to the Yakama Nation—it would mean the extinction of a number of salmon runs.

Under BPA's high case, at $174 million per year, it would take 40 years to implement the subbasin plans and other measures in the Council Program. This is also unacceptable and

does not come close to meeting the goals of the Columbia River Basin Fish and Wildlife Program.

BPA says that it is looking for clear objectives. The Council set a goal in the 2000 Fish and Wildlife Program to rebuild salmon and steelhead to five million fish returning above Bonneville Dam by 2025. The current runs are less than 2.5 million fish—about the same levels as when the Council originally set its goal in 1987.

Under BPA's high case, you won't implement the Council's current subbasin plans until 2045! BPA will not come close to meeting the Council goal.

Summary recommendations: Based on the detailed analysis conducted by the CBFWA workgroup, the Yakama Nation has developed a number of recommendation (see page 25); in summary:

1. BPA should incorporate the cost estimates and recommendations developed by the Columbia Basin Fish and Wildlife Authority into the next rate case. These are the best estimates available. A copy of the report and recommendations are incorporated as Attachment 1.

2. The CBFWA estimates are based on the assumption that BPA will use its borrowing authority for land and water acquisition. BPA should modify its capitalization policy to set up mechanisms to allow borrowing funds or the use of its borrowing authority to purchase land and water.

3. BPA must meet the goals of the Fish and Wildlife Program to rebuild salmon and steelhead returns above Bonneville Dam to five million by 2025. The funding recommended by the fish and wildlife managers through FY 2009 is not likely to exceed the Fish and Wildlife Program goal.

4. The Columbia Basin needs an Implementation Plan for fish and wildlife. We strongly recommend development of an implementation plan detailing the actions, schedule and costs needed to implement the Fish and Wildlife Program, and are committed to that effort.

5. Full implementation of the F&W Program and ESA activities will create economic benefits in tribal and rural areas.

6. BPA should address the fact that there are a number of events that could significantly increase fish and wildlife funding. For example:

    - The current lawsuit against the FCRPS biological opinion could result in higher costs.

    - CBFWA assumed that other Federal agencies will fund habitat restoration on federal land. Given the tight federal budget, these costs could fall on BPA.

- The BPA and Council have assumed that monitoring and evaluation costs will decrease. These assumptions are untested and the ESA may require more monitoring.

- NOAA fisheries Service has said recently that the recovery plans under the ESA may go well beyond the actions called for in the subbasin plans in the Council's Program. This would add to costs.

- When the currently favorable ocean conditions deteriorate, BPA may be called upon to fund additional activities to address weak-stock survival or productivity.

- The costs for hatchery reforms are not addressed in the BPA estimates.

- None of the estimates adequately address the effects of inflation. The fish and wildlife program has been flat funded for the last four year.

- During the last rate case, BPA promised the Yakama Nation that it would increase its rates if necessary to meet fish and wildlife costs. What BPA actually did was reduce fish and wildlife costs over the five year rate period and eliminated spill and flow protections in 2001.

7. BPA needs an effective cost recovery mechanism that will ensure that it makes adequate progress in meeting the Council's goal of five million returning salmon and steelhead by 2025.

The Yakama Nation wants to work with other fish and wildlife managers, the Council, and BPA to resolve these issues in the region. However, if BPA goes forward with its current alternatives, we will have no alternative but to nationalize the issue.

Introduction

In November of 2004, the Columbia Basin Fish and Wildlife Authority (CBFWA) formed a workgroup to develop fish and wildlife costs for the BPA rate case. The focus of this effort has been developing costs for the BPA Integrated Fish and Wildlife Program for the next rate case that incorporate the habitat and production measures in the subbasin plans. Based on the detailed analysis conducted by the CBFWA workgroup of the costs of implementing the Northwest Power and Conservation Council's Columbia Basin Fish and Wildlife Program pursuant to the Northwest Power Act and the Federal Columbia River Power System Biological Opinions pursuant to the Endangered Species Act, the Yakama Nation recommends that BPA increase its fish and wildlife funding for the Integrated Program to:

$186 million in FY 2006,
$200 million in FY 2007,
$225 million in FY 2008,
$240 million in FY 2009.

These budgets assume that BPA will use its borrowing authority to capitalize production facilities and land and water acquisitions for habitat measures. These amounts would put BPA on a path to implement most of the subbasin plans that have been included in the NPCC Fish and Wildlife Program within ten years.

To size the overall level of effort needed to implement the subbasin plans, the CBFWA workgroup developed detailed estimates of the cost to implement the subbasin plans. These costs total $1.8 billion. The CBFWA workgroup also identified additional wildlife mitigation costs totaling $300 million. The current budgets provide sufficient detail to size the effort. The costs will be refined through Council Program amendments and the project selection process.

Implementing most of the work in the subbasin plans and the wildlife actions, and the other parts of the Integrated BPA Fish and Wildlife Program would average $240 million per year. If BPA decides that it will not capitalize the cost of land and water acquisitions, then the average cost would be $310 million per year.

The workgroup also found that the work envisioned by the subbasin plans does not address all of the habitat protection and enhancement activities that are likely to be needed to meet regional fish and wildlife goals. Therefore, we recommend that federal, state, and tribal governments immediately begin to develop a comprehensive plan to protect, mitigate, and enhance fish and wildlife in the Columbia Basin. This process should address funding from BPA and other sources. It should include biological analysis to determine whether the actions are likely to achieve the fish and wildlife goals and obligations under the Endangered Species Act, Northwest Power Act, and treaty and trust responsibilities. This effort should result in a detailed workplan and budget for future fish and wildlife activities in the Columbia Basin.

The Yakama Nation recommends that federal, state, and tribal governments work to develop biological analysis of the expected results from the subbasin plans and to monitor those results. The Council has set a goal for the Fish and Wildlife Program of five million salmon and steelhead returning above Bonneville Dam by 2025. This biological analysis would help determine whether the actions in the current Fish and Wildlife Program would exceed this goal. The Council has also set goals to address the wildlife loses associated with the construction of the dams and inundation of the reservoirs.

Background

The Yakama Nation's interest in the BPA PFR and rate case

The Yakama Nation is the largest Indian tribe in the Northwest. We are also the largest employer in Central Washington, with over 4.600 jobs in our tribal government and tribal enterprises.

The Yakama Nation also has the largest number of tribal fishermen on the Columbia River. The Nation signed a Treaty with the United States in 1855 that guaranteed our rights to fish and hunt to support our culture, religion, and tribal economy. The loss of salmon has had a devastating effect on the Yakama Nation.

Over the last forty years the United States and several of the Northwest states have asked the Yakama Nation and other tribes with similar treaties to reduce our tribal harvest as part of an effort to rebuild salmon runs. These governments promised to restore salmon habitat to rebuild health salmon runs.

We voluntarily stopped our commercial harvest of spring chinook in 1965 and summer chinook in 1975. More recently, our salmon harvest has been further constrained to protect salmon listed under the Endangered Species Act. The Federal government developed a biological opinion that left the dams in place and promised aggressive efforts to restore habitat. We had a couple of good years recently where there was some commercial harvest on spring and summer chinook, but this year is looking very tough.

We have a lot of promises from the Federal government and the states, but very little action that has improve habitat or migration survival.

That is why the Yakama Nation was a party in the last BPA rate case. We spent considerable resources trying to convince BPA to include sufficient funding to fully implement the Council's Fish and Wildlife Program and the Biological Opinion.

We were not very successful in that rate case and we are currently suing BPA in the Ninth Circuit. We believe BPA violated the Northwest Power Act because its rates were not sufficient to meet its costs, including fish and wildlife costs, and assure repayment to the Treasury as required by the Act. That case is pending.

Now BPA is starting a new rate case. We need to ensure that BPA provides adequate funding to implement the Council's Program, the ESA, and fulfill it treaty and trust obligations to our tribe.

BPA's Role in Fish and Wildlife Funding

BPA funds a significant portion of the fish and wildlife restoration work in the Columbia Basin. Since 1981, BPA's total fish and wildlife funding has averaged $132 million per year. During Fiscal Years 2002 through FY 2006, BPA projected that these costs would average $255 million per year.

Under the Northwest Power Act, BPA funds measures to protect, mitigate, and enhance fish and wildlife damaged by the hydroelectric development and operations in the Columbia River Basin[1]. These costs are part of Bonneville's total system costs.

The revenues for fish and wildlife and other BPA functions come from the sale of electricity from the Federal Columbia River Power System (FCRPS). This system includes the federal dams in the Columbia Basin, one nuclear power plant, and other small generating resources that have been acquired by BPA. As part of the process for setting rates, BPA must project its future costs and future sales of electricity. It also must address the uncertainties associated with these projections to ensure that its rates are sufficient to meet its costs and repay the U.S. Treasury for the money BPA borrowed to build the dams, transmission system, and other capital investments.

History of BPA Fish and Wildlife Funding

In 1995, the Departments of the Army, Commerce, Energy and Interior entered into a MOA for fish and wildlife funding for FY 1996 through FY 2001. The MOA was not renewed; however, BPA has continued divide its fish and wildlife funding into categories established by the MOA. This section summaries the capital, reimbursable, and direct budgets and the recent funding history. BPA now refers to the direct budget as the integrated fish and wildlife budget. Table 1 in Appendix 2 shows the total funding for these categories from 1996 to 2003, that information is summarized in Figure 1 below.

[1] 16 U.S.C. 839b(h)(8), 839b(h)(10).

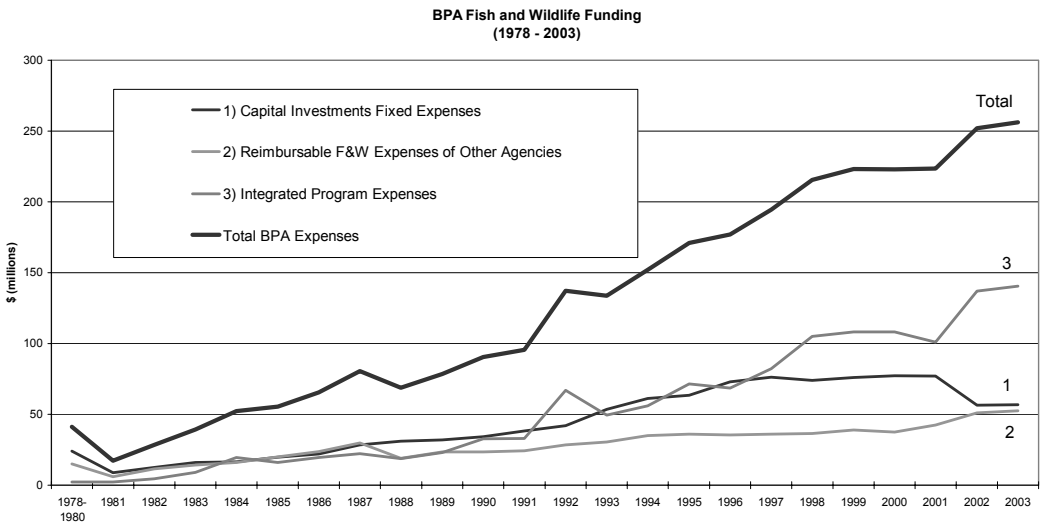


Figure 1: Total BPA Fish and Wildlife Funding

The Capital Budget: BPA repays the U.S. Treasury amortization, depreciation, and interest on capital investments in fish facilities at dams built and operated by the Corps of Engineers and Bureau of Reclamation. BPA's capital budget also repays funds borrowed to construct numerous hatcheries built as partial mitigation for the FCRPS. Other investments include salmon transport barges and improvements at the FCRPS dams for fish collection, passage and, as well as planning, design, monitoring and research studies. The amounts for each of the major funding categories, including the amount that Congress authorized the COE and BOR to borrow each year is shown in Figure 1.

The costs for capital investments have remained fairly steady since the adoption of the 1996-2001 Memorandum of Agreement. The MOA set targets for capital investment of $107 million annual average. BPA's investments in this area under-ran the targets significantly, averaging $76 million annually, for a total under-investment of more than $188 million. For the past eight years, the annual appropriation for fixes at mainstem dams has averaged approximately $83.5 million. Since the adoption of the 2000 Biological Opinions, average annual spending has remained fairly constant with only a slight decrease.

In 1985, BPA began capitalizing projects in the Integrated (Direct) Fish and Wildlife Program. The 1996-2001 MOA set $27 million as the annual target for capitalized projects in the Integrated Program. The line "Integrated Program" under Capital Investments in Table 1 in Appendix 2 shows the trend in this amount. Under the MOA, BPA capitalized an average of $20.2 million annually, under-spending the target by about $40.8 million over the term of the MOA (see Figure 2).

It is important to note that the amount borrowed is different than the annual repayment costs that drive BPA's revenue requirements. The amount borrowed is usually booked in the year construction starts, while repayment does not start until the facility is completed.

As a general "rule of thumb," the annual repayment costs are about one-tenth of the amount capitalized or borrowed.

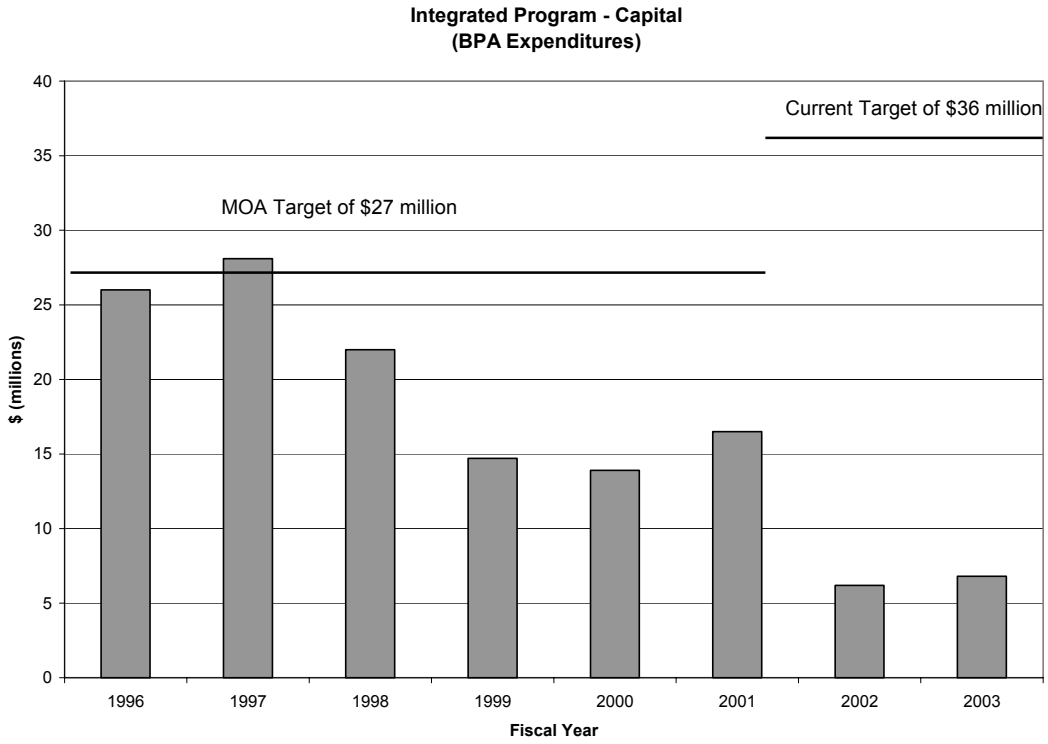


Figure 2. Actual capital investments in the Integrated program from 1996-2003.

Reimbursed Expenses of Other Agencies: BPA repays the U.S. Treasury for the hydroelectric share of operation and maintenance budgets and other authorized non-capital expenditures for fish and wildlife activities by the U.S. Corps of Engineers (COE), U.S. Bureau of Reclamation (BOR) and U.S. Fish and Wildlife Service. These costs include the Lower Snake River Compensation Plan implementation and numerous hatcheries built to mitigate for FCRPS. BPA also funds half of the Northwest Power and Conservation Council's budget (currently $4.5 million annually) under this portion of its budget.

This category of the budget averaged $37.8 million annual under the MOA, close to the MOA annual budget target of $40 million. The operation and maintenance budgets have increased by more than one-third since the end of the MOA. Most of the increase appears to be related to an increase in COE and BOR budgets (Figure 3 and Table 1 Appendix 2).

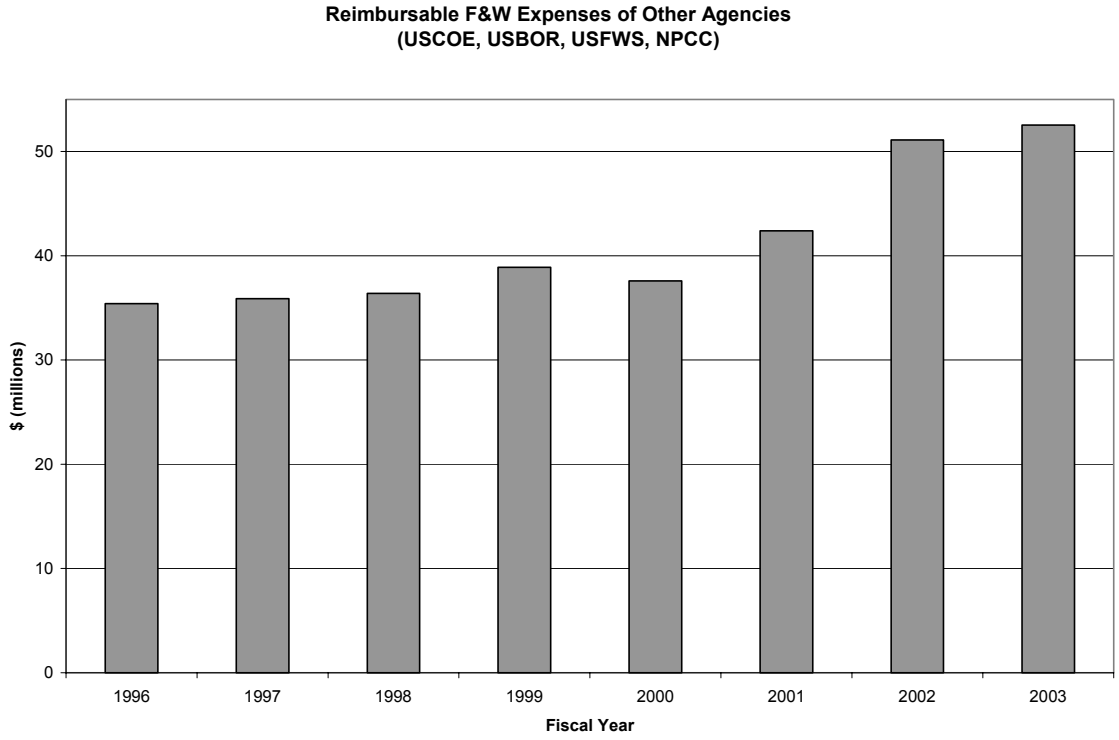


Figure 3. Reimbursable fish and wildlife expenses of other federal agencies.

Integrated (Direct) Program: The Integrated Program budget has two categories: Capital (discussed above) and Expense. The Expense portion of the Integrated Program has increased steadily since 1978. The MOA set an annual budget target of $100 million, with BPA spending averaging $95.5 million annually, a shortfall of $26.9 million over the term of the MOA. During the current rate case (FY 2002 through FY 2006), the target for the Expense portion of the Integrated Program was set at $150 million and reduced to $139 million annually in 2003. Actual spending during the current rate period has averaged $139 million per year.

Although this appears to be an increase in funding of $39 million annually since the MOA, the program funding had not been adjusted for inflation for eight years. Further, BPA has rolled contracted obligations forward each year without shifting the associated funding, creating a "bow-wave" of unfunded obligations. A change in accounting practices in FY 2003 required elimination of $40 million worth of these carry-over obligations. In essence, BPA cut $40 million in obligations from the Integrated Program in FY 2003. BPA is now considering cutting an additional $15 million from the Integrated Program over the period 2005-2006.

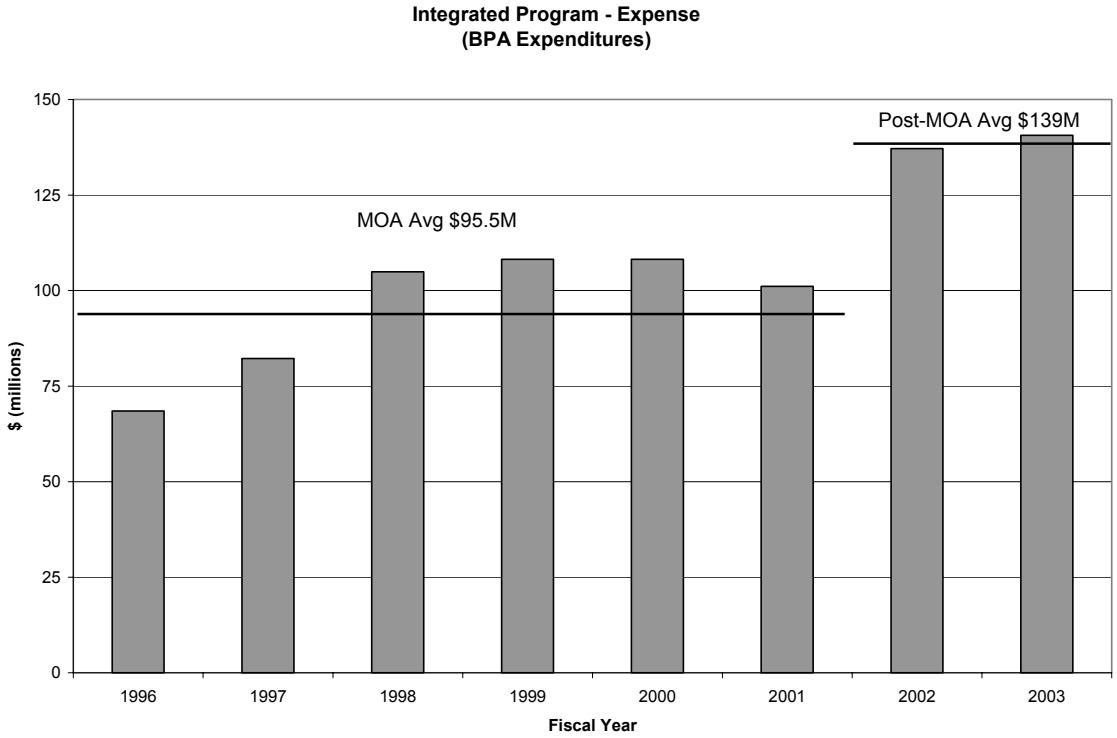


Figure 4. BPA spending in the Integrated Program from 1996-2004.

The 2002 BPA Rate Case

Power and Fish and Wildlife Decisions

BPA began its last rate case process in 1999, before decisions were made on the measures that would be included in the 2000 Biological Opinion for the FCRPS. These rate decisions addressed BPA's revenues for FY 2002 through FY 2006. Fish and wildlife managers raised concerns that BPA's rate case decisions could foreclose fish and wildlife decisions, including the implementation of the Biological Opinion and Council Program by limiting funding. Federal, state, and tribal governments worked to develop 13 alternatives for future fish and wildlife funding through 2011; the costs for these alternatives averaged $438 to $721 million per year. BPA assured the fish and wildlife managers that it would "keep the options open" by including the range of costs in its rates. BPA also committed that it would adjust its rates, if necessary, to accommodate future funding needs.

Problems with 2002 Rate Case Process

BPA states that it gave equal weight to the 13 alternatives in setting its rates and assumed an average for the direct program of $139 million per year. In the initial rate proposal, BPA stated that these assumptions would not limit actual funding.

The Columbia River Inter-Tribal Fish Commission and the Yakama Nation were parties to the rate case. We raised concerns that BPA's methodology had actually assumed a one per cent probability that costs would be at the high end of the range. We also raised concerns that BPA had changed the methodology in calculating direct fish and wildlife costs. Rather than weighting 12 of the alternatives at $179 million per year and one alternative at $100 million, consistent with the alternatives developed by the Federal, state, and tribal process and arriving at an equally weighted estimate of $173 million per year, BPA averaged the high and low alternatives and assumed $139 million per year. This assumption lowered the direct costs by $170 million during the rate period. BPA did not dispute any of the CRITFC and Yakama contentions in the rate case.

BPA finalized its rates in 2001, and then immediately reopened its rate process to address higher costs associated with supplying power to its customers. BPA had committed to serve 3,300 megawatts of power beyond its available resources. When the manipulation of the California electricity markets caused prices to soar, BPA estimated that the cost of serving these additional commitments was $3.9 billion during the current rate period. These added costs were included as part of a Cost Recovery Adjustment Clause known as the load-based and financial-based CRACs.

In 2003, BPA faced additional costs associated with its own operations, the operations of the federal dams and the nuclear plant. As a result, BPA conducted a Safety Net Cost Recovery Adjustment Clause (SN-CRAC) process to address these additional costs. During that process, CBFWA provide analysis that the cost of implementing the Provincial Review would add $100 million per year above BPA's current fish and wildlife funding. The Review was conducted by CBFWA and the NPCC and based on measures that had gone through the project review process and been approved by the Independent Science Review Panel. BPA did not address these additional fish and wildlife costs as part of the SN-CRAC. BPA has subsequently set a cap on the direct fish and wildlife program of $139 million. In 2001, BPA and the Corps of Engineers eliminated fishery spill and flow provisions to ensure BPA's ability to make its payment to the U.S. Treasury.

Developing Fish and Wildlife Costs for the Next BPA Rate Case

Coordinating Power and Fish and Wildlife Decision Processes

Given the problems of the 2002 rate case, fish and wildlife managers began discussions in 2003 on ways to coordinate the next BPA rate case with fish and wildlife decisions. They wanted to ensure that BPA decisions regarding its revenues after 2006 would not foreclose fish and wildlife recovery under the Northwest Power Act or the Endangered Species Act. It appeared that the Subbasin Planning Process being conducted by the NPCC and BPA could provide the information needed for the next rate case.

The NPCC's 2000 Program included a framework for fish and wildlife in the Columbia Basin and called for the development of subbasin plans that would include subbasin assessments, an inventory of existing activities, and a management plan. The

management plan was required to have a vision, biological objectives for fish and wildlife, strategies that will be employed to meet the vision and biological objectives, a projected budget (including both a three-year implementation budget and more general 10-15 year budget), a monitoring and evaluation plan, and additional steps necessary to comply with the Endangered Species Act and the Clean Water Act[2].

NOAA Fisheries had indicated that it could use these subbasin plans as the basis for recovery plans under the Endangered Species Act. Therefore, it appeared that these subbasin plans, scheduled for completion by May 2004, could provide detailed budgets for the BPA rate case that would begin in early 2005.

Unfortunately, most of the subbasin plans did not include budgets. To further complicate things NOAA Fisheries is working to develop recovery plans under the ESA; however, final adoption of all of the subbasin and the NOAA recovery plans will not be completed prior the initiation of the BPA rate case.

The Biological Opinion for the FCRPS also creates uncertainty for future fish and wildlife funding. CBFWA estimates that 75 percent of BPA's fish and wildlife funding goes to implement the Biological Opinion. NOAA Fisheries adopted a new Biological opinion on November 30, 2004. Several parties have filed law suits against the new Biological Opinion; the briefing schedule for this case could result in a decision in the spring of 2005.

BPA and the Council began meeting in the fall of 2004 to review the major budget categories and identify the factors that may increase or decrease costs in the future. In November of 2004, CBFWA formed a workgroup to coordinate the development of fish and wildlife costs for the next BPA rate case. The workgroup reported to the Members Management Group in December and made the following recommendations:

1. The fish and wildlife managers should review the assumptions made by the Council and BPA about future fish and wildlife costs.
2. The fish and wildlife managers should prepare fish and wildlife costs based on the subbasin plans. The primary focus of this work would be in the areas of habitat and production.
3. The fish and wildlife managers should work with BPA to design ways to provide flexibility to adjust fish and wildlife funding as information on the Biological Opinion, subbasin plans and recovery plans becomes available to ensure that BPA can fully implement these important plans.

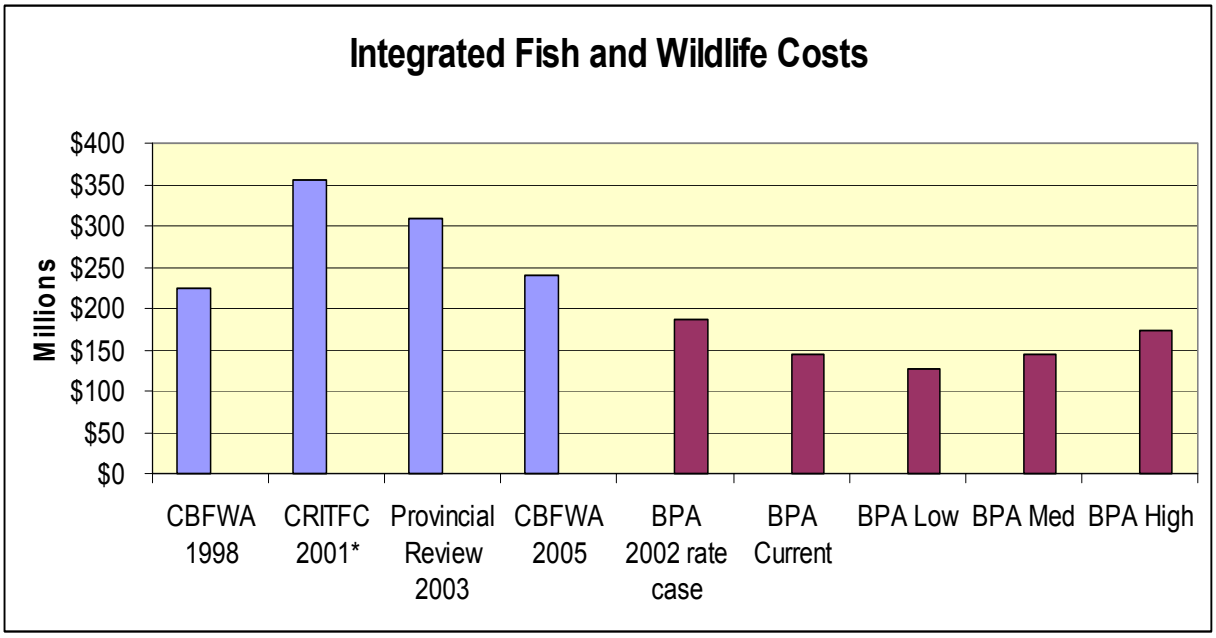
Previous Fish and Wildlife Cost Estimates

CBFWA has developed two previous fish and wildlife cost estimates. The first was in 1998 as part of the Multi-Year Implementation Plan. This effort developed costs for implementing all of the elements of the Council Program and FCRPS Biological Opinion. The annual costs were $200 to $225 million.

[2] See Columbia River Basin Fish and Wildlife Program, document 2000-19, pages 39-41.

In 2003, CBFWA and the Council conducted the Provincial Review to determine the costs of implementing projects that had been approved by the fish and wildlife managers, the Council, and the Independent Science Review Panel. The Provincial Review identified BPA revenue requirements (capital, reimbursable costs, and direct program) of $310 million per year for FY 2003 through FY 2006.

CRITFC, the Oregon NPCC office, and the Yakama Nation also developed estimates of the costs of implementing the 2000 FCRPS Biological Opinion and NPCC Program in January of 2001. This estimate was based on more aggressive habitat restoration activities to implement the "Aggressive Non-Breach Alternative" in the Biological Opinion and had an annual cost of $356 million. This figure assumed that all of the costs would be expensed; if CRITFC had assumed that some of the costs would be capitalized, the estimate would be similar to the recent CBFWA costs. The tribes consulted with other fish and wildlife managers on these estimates and sought comments from BPA, and utilities.



Analysis

The Importance of Habitat Restoration

The Council Fish and Wildlife Program and the FCRPS Biological Opinions rely heavily on improving habitat as off-site mitigation for the dams. These efforts are especially important for the Columbia Basin Treaty tribes. For at least the past four decades, the tribes have voluntarily imposed severe restrictions on their treaty-reserved fisheries to assist in rebuilding wild populations of salmon and steelhead. This action was taken

based on the expectation that other relevant parties would also take actions to share the burden of wild stock conservation. The tribes are still waiting for these actions, particularly in the area of habitat protection and improvement. Improving habitat is the only way to rebuild to sustainable, harvestable levels those wild runs that presently constrain treaty fisheries.

The Yakama Nation has been waiting a long time for the United States to fulfill this commitment in our Treaty. The federal government has repeatedly asked us to reduce our harvest and promised to restore habitat to promote long-term rebuilding of salmon runs. The failure by the United States to exercise all of its authorities and powers to improve wild salmon runs has deprived the Columbia River treaty tribes of vast numbers of harvestable salmon that were guaranteed by the federal government in the treaties of 1855. It is time for the United States to start living up to this commitment.

Implementing the subbasin plans in the Council Program would provide protection for more than 48,000 acres of habitat; improvements to more than 1,300 miles of streams; enhancement activities on more than 75,000 acres of habitat; and, correcting passage problems at more than 1,200 diversions and culverts.

An aggressive implementation schedule has the lowest biological risk. There are a number of listed species that are declining and at risk of extinction; improving habitat is critical for their survival. Implementing these actions quickly will save money in the long run. The costs of acquiring land or easements for riparian habitat are going up very fast in Eastern Washington. These efforts will also provide thousands of jobs in rural and tribal communities.

BPA Alternatives

BPA has developed three alternatives for funding levels for the integrated fish and wildlife budget for FY 2007 through FY 2009. A forth alternative would defer the funding level until there is more regional discussion. BPA's low, medium, and high case are not based on the CBFWA analysis of the cost of implementing the NPCC Program and the Biological Opinions. These three alternatives will not meet the goal of the NPCC Program. The low, medium, and high alternatives increase the risk of extinction for salmon and steelhead listed under the ESA.

Low Case: This option reduces funding levels to support ESA driven priorities while meeting only minimum Power Act requirements except for those ESA mitigation projects that also have benefits to non-ESA listed anadromous, resident fish and wildlife species. This alternative assumes annual costs of $126 million per year—$19 million less than the current level of $145 million. Adjusting for inflation this alternative would be $47 million less than the current level. This alternative assumes very low funding for new habitat and production work. This alternative would take approximately 49 years to implement the subbasin plans in the NPCC program assuming BPA changes its policy and capitalizes land and water acquisition costs, it also assumes no inflation. Under BPA's current capitalization policy, this funding level would not implement the habitat

work in the subbasin plans for 71 years; of course inflation would extent implementation even further.

2. Medium Case: This option is slightly greater than Integrated Program in the current rate case to meet subbasin plan and BiOp requirements through redirecting of some RM&E and IMCA funds to on the ground actions. This alternative assumes annual costs of $144 million per year—about the same as the current level. Adjusting for inflation this alternative would be $29 million less than the current level. This alternative assumes $46 million per year for funding for new habitat and production work. Under BPA's current capitalization policy, this funding level would not implement the subbasin plans for 46 years assuming no inflation. This alternative would take approximately 32 years to implement the subbasin plans in the NPCC program assuming BPA capitalized land and water acquisition costs and no inflation.

3. High Case: Option greater than that for the Program in the current rate case and provides additional funding to cover new BiOp and Subbasin Plan requirements. This alternative assumes annual costs of $174 million per year—$29 million more than the current level. Adjusting for inflation this alternative would be about the same as the current level. This alternative assumes $52 million per year for funding for new habitat and production work. Under BPA's current capitalization policy, this funding level would not implement the subbasin plans for 40 years; again, assuming no inflation. This alternative would take approximately 28 years to implement the subbasin plans in the NPCC program assuming BPA changes its current policy and uses its borrowing authority to capitalize land and water acquisition costs, it also assumes no inflation.

4. **Rationale Only/Costs TBD:** In describing this alternative BPA states: "May be the best incentive for regional parties to take more time to collaborate in discussions leading to a new Program level based upon clear priorities and objectives that the region can support. This may push Program funding level discussions into the same time frame as the formal Rate Case (i.e., fall 2005)."

Comparison to NPCC Program goal: The 2000 Columbia Basin Fish and Wildlife Program sets a goal to increase salmon and steelhead populations above Bonneville Dam to five million returning adults by 2025. BPA's low, medium, and high alternatives would not come close to meeting this goal.

Yakama Nation Recommendation: BPA should adopt the funding level in the CBFWA workgroup cost report of $186 million in FY 2006, $200 million in FY 2007, $225 million in FY 2008, and $240 million in FY 2009. This funding level would put the region on a path to implement the subbasin plans in about ten years. This pace of implementation would have much lower biological risk to listed species and offers some hope of progress on restoring the treaty fisheries of the Columbia Basin Indian tribes.

The region's goal should be to minimize biological risk to species in the Columbia River Basin; therefore, BPA should implement actions to provide the habitat conditions that these species need to survive as soon as possible. The majority of the ESUs listed under

the ESA have lambdas that are less than 1.0; that means these populations are not replacing themselves and will continue to decline toward extinction.

The costs of acquiring or leasing land and water to protect and enhance habitat will continue to increase as human population grows. We project that these costs will increase significantly faster than inflation, especially the acquisition of land in riparian areas to protect habitat.

Therefore, we conclude that a ten-year implementation schedule for the subbasin plans has the lowest biological risk and the lowest long-term costs. We also note that implementation of the subbasin plans represents a small portion of the habitat protection and enhancements needs in the Basin. The CBFWA workgroup did a course grain analysis of the total habitat work needed to protect and enhance habitat and found that this effort would be significantly larger than the work identified in the subbasin plans. Completing the subbasin plans as quickly as possible will provide a good start to the long-term habitat work that is likely to be needed to meet our goals.

BPA's low, medium, and high alternatives are unacceptable. If BPA is not prepared to adopt the CBFWA workgroup analysis, it should take more time on this issue.

BPA Assumptions

BPA's Low alternative assumes a five percent reduction in RM&E, Production, Mainstem, and Habitat through improved efficiencies. This is unlikely to occur because there is no mechanism or criteria to further reduce the existing programs. The years of flat funding have forced significant improvements in efficiencies. In many cases, further reductions in individual programs will reduce on-the-ground work.

The fish and wildlife managers support the concept of putting a higher percentage of the funding on-the-ground. BPA has proposed that 70 percent of the funding go to on-the-ground projects, 25 percent to research, monitoring and evaluation, and five percent to coordination activities. This allocation will be difficult to reach without either: making difficult cuts to specific programs or eliminating them: or, increasing funding for on-the-ground activities. The CBFWA workgroup budget would put 80 percent of the funds on-the-ground.

BPA proposes cutting Information Management, Coordination, and Administration costs from about $10 million/year to about $6 million per year in the Low and Medium scenarios. This assumption appears to be unrealistic when we examine the current funding levels under this category. Currently StreamNet has a budget of $2.4 million. The PIT tag info system has a budget of $2.1 million. CBFWA has a budget of $1.7 million. The Fish Passage Center's budget is $1.3 million. The ISRP budget is $1.1 million. Together, these activities account for $9.7 million. Cutting 60 percent of these activities is not realistic.

The 10-year implementation of the production activities proposed in the subbasin plans will cost at least an additional $290 million. BPA's High scenario would provide about $12 million annually for new initiatives and at that rate (assuming no new O&M or M&E costs) it would take at least 20 years to accomplish.

The analysis of budget "drivers" in is based on several assumptions about the ability to reallocate current program expenditures and reduce the need for future budget requirements. These assumptions are untested. For example, BPA assumes that current project-scale monitoring and evaluation will be reduced to make funds available to conduct increased programmatic monitoring and evaluation. How this will be accomplished is unclear, consequently any savings are uncertain.

NOAA Fisheries staff has indicated on several occasions that implementing the subbasin plans may not address all of the activities in the forthcoming recovery plans. Therefore, the costs could be higher than the CBFWA estimates and much higher than the BPA funding alternatives.

Pending litigation on the current FCRPS Biological Opinions may result in significant changes in required fish and wildlife activities, and may increase costs or affect revenues.

Implementation of the "Mainstem Amendment" to the NPCC Fish and Wildlife Program may increase costs or affect revenues.

When the currently favorable ocean conditions deteriorate, BPA may be called upon to fund additional activities to address weak-stock survival or productivity.

The NPCC Artificial Production Review and Evaluation and the NOAA Fisheries Hatchery Genetic Management Plans call for changes in the operation of many hatcheries built as mitigation for the hydropower system. These costs are not presently reflected in the BPA draft costs for the upcoming rate case and costs for the Reimbursable and the Integrated Program budgets may increase.

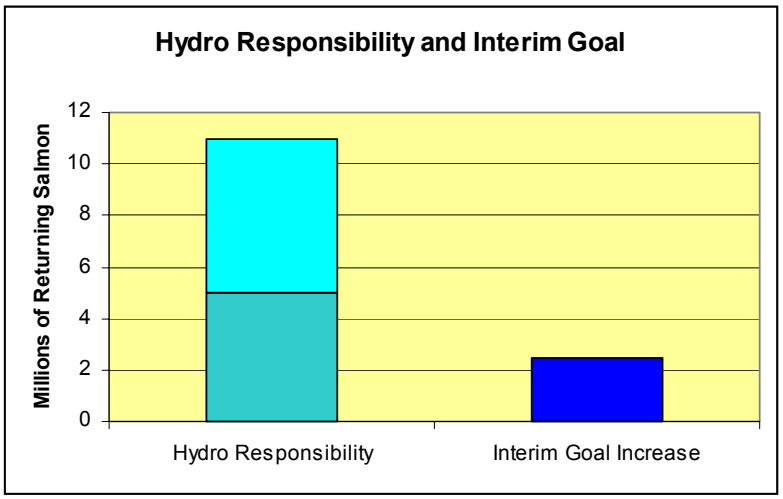
Inflation, especially increased costs for acquiring habitat and water, is not adequately addressed in the BPA alternatives. A three percent inflation rate will result in a $25 million increase in annual budget needs by the end of the rate period in FY 2009.

BPA Responsibility

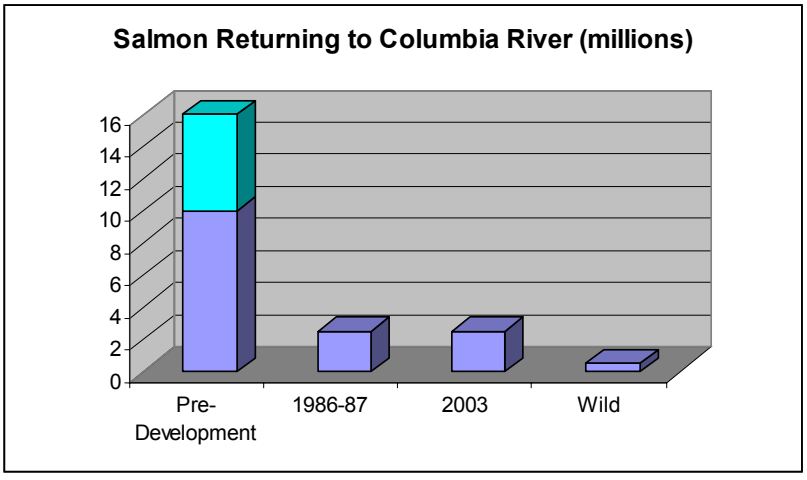
In the mid 1980s, the Northwest Power Planning Council (now called the NPCC) conducted an exhaustive study of the historical size and current status of salmon and steelhead populations. The Council also made policy decisions on what share of the losses were the responsibility of the hydroelectric system. The Council also set a goal for the Fish and Wildlife Program. BPA is the only Federal agency with statutory responsibility under the Northwest Power Act for funding the off-site measures to implement the NPCC Program.

The study examined all of the historical information on salmon runs and concluded that ten to fourteen million salmon and steelhead used to return to the mouth of the Columbia River every year. In 1986, about two and a half million fish were returning to the Columbia, five hundred thousand were naturally spawning fish—eighty percent of the runs came from hatcheries.

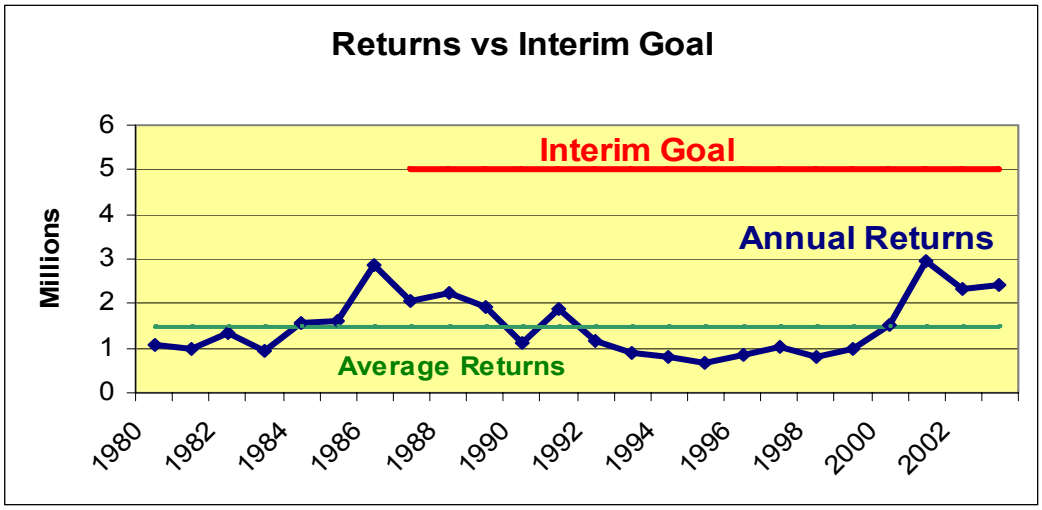
The study concluded that salmon and steelhead populations had declined by seven to fourteen million and that natural salmon runs were less than five percent of historical levels. The Council concluded that the dams were responsible for five to eleven million of the fish losses. As part of the rationale for the conclusion, the study found that about four million fish had used the habitat that had been blocked by the dams and that the operations of the dams accounted for the loss of another four million salmon. The Council set an interim goal of "doubling the runs"—increasing populations from two-and-a-half to five million salmon and steelhead. The Council said it would reevaluate a higher goal once the interim target was achieved.



The total returns in 2003 were about two and a half million salmon and steelhead—the same as 1986. About eighty percent of these fish came from hatcheries.



To put things in further perspective, 1986—the base year for the goal—was a good year for salmon. Many populations actually declined in the 1990—the average during the past twenty years was 1.5 million fish. So with conditions in the Pacific Ocean providing excellent feeding conditions for Columbia Basin salmon, we have seen the total salmon runs return to about where they where twenty years ago and wild stocks continue to decline.



The Yakama Nation viewed the Program's 1987 doubling goal as a compromise that would allow BPA to focus on an achievable interim goal and leave BPA's ultimate responsibility to a future decision process.

In the NPCC 2000 Program the goal was revised. The 2000 goal is to increase returning salmon and steelhead to five million adults returning above Bonneville Dam by 2025[3]. Under the Northwest Power Act, BPA must use its fund consistent with the Council Program. BPA, the Corps of Engineers, the Bureau of Reclamation, and the Federal Energy Regulatory Commission must also take the Program into account at each relevant stage of decision making to the maximum extent practicable.

The NPCC Fish and Wildlife Program relies heavily on off-site habitat and production strategies to partially offset the mortality associated with mainstem passage and the loss of habitat caused by the dams. BPA is the only Federal agency with authority to fund these off-site mitigation activities under the Northwest Power Act.

The CBFWA workgroup could not determine whether full implementation of the subbasin plans would result in an increase in returns to five million salmon and steelhead. Some of the plans do not include biological analysis. Fish and wildlife managers and the Council are currently working to revise some of the subbasin plans and to aggregate the expected biological results from implementation of the plan.

[3] See page 17 of the 2000 Columbia River Basin Fish and Wildlife Program

The Yakama Nation believes that it is unlikely that the funding levels recommended in the CBFWA workgroup report would result in salmon and steelhead returns that exceed the Council's goal by 2009. Therefore, these funding levels will not exceed BPA's responsibilities under the Program.

BPA has argued that it is not responsible for all of the activities in the subbasin plans. We believe that under the Northwest Power Act, BPA is responsible for implementing the off-site actions necessary to achieve the NPCC Program goal. There are no other Federal agencies that have this responsibility.

BPA's position appears to be an attempt to shift its clear legal responsibilities under the Northwest Power Act to state and local governments and private landowners. Does BPA believe that state and local governments should fund habitat programs or impose regulations to address the losses associated with the hydroelectric system? Does BPA advocate that landowners fund the habitat restoration activities needed to offset the damage caused by the dams? These are the logical consequences of BPA position. BPA should clearly state these consequences of its position and be prepared for the negative comments it will receive.

We would note for the record that the CBFWA budget for the subbasin plans do not assume BPA funding for actions on federal lands; Federal land managers, not BPA are assumed to implement these actions.

The Yakama Nation recommends that implementation of the subbasin plans precede with funding from BPA. If subsequent analysis or monitoring indicates that fish and wildlife populations are likely to exceed the goal for the Fish and Wildlife Program established by the Council, then the Council should initiate a rulemaking to address this issue.

Clear Objectives

BPA and regional utilities have repeatedly said that they want clear objectives for BPA's fish and wildlife activities. The NPCC Program provides a very clear goal: five million salmon and steelhead returning above Bonneville Dam by 2025.

The ultimate goal for the Federal government should be to address the requirements of the Endangered Species Act, the Northwest Power Act, and the Treaties, Executive Orders, and other commitments made to Indian tribes in the Columbia Basin. In the case of salmon and steelhead, we seek to implement the dual goals of recovery and delisting of salmonids listed under provisions of the ESA and the restoration of salmon populations, over time, to levels that provide a sustainable harvest sufficient to allow for a meaningful exercise of tribal fishing rights.

The Columbia River Basin Fish and Wildlife Program states:

> The vision for this program is a Columbia River ecosystem that sustains an abundant, productive, and diverse community of fish and

> wildlife, mitigating across the basin for the adverse effects to fish and wildlife caused by the development and operation of the hydrosystem and providing the benefits from fish and wildlife valued by the people of the region. This ecosystem provides abundant opportunities for tribal trust and treaty right harvest and for non-tribal harvest and the conditions that allow for the recovery of the fish and wildlife affected by the operation of the hydrosystem and listed under the Endangered Species Act.
>
> Wherever feasible, this program will be accomplished by protecting and restoring the natural ecological functions, habitats, and biological diversity of the Columbia River Basin. In those places where this is not feasible, other methods that are compatible with naturally reproducing fish and wildlife populations will be used. Where impacts have irrevocably changed the ecosystem, the program will protect and enhance the habitat and species assemblages compatible with the altered ecosystem. Actions taken under this program must be cost-effective and consistent with an adequate, efficient, economical and reliable electrical power supply[4].

The Program also established a number of scientific principles[5], biological objectives[6], and strategies[7] to guide fish and wildlife restoration.

The subbasin plans include biological objectives and identify limiting factors and strategies to achieve the objectives. The Yakama Nation has been working with BPA, the NPCC, and other fish and wildlife managers to integrate the subbasin plans into a coordinated plan for the Columbia Basin. This work needs to coordinate the efforts under the NPCC Program and the NOAA Fisheries Service recovery plans.

The Yakama Nation recommends that federal, state, and tribal governments immediately begin an effort to integrate subbasin and recovery planning. This work should include:

- Coordination of planning and analysis to address the biological objectives in the recovery plans and the Council's Program.
- Biological analysis of the expected results of the actions in achieving goals and biological objectives.
- A roll-up of all the plans to determine the expected contribution toward the NPCC goal and revision of the plans if necessary.
- Development of a detailed three-year workplan and budget for implementing a basin-wide fish and wildlife plan that integrates the NPCC Program and the FCRPS Biological Opinions, and a more general ten year workplan and budget for this integrated basin-wide plan.

[4] Program, page 13.
[5] Program, page 15.
[6] Program, page 16-18
[7] Program, pages 19-33.

- Federal, state, and tribal discussions on the appropriate pace for the basin-wide plan.
- Monitoring of results and revision of the plans as necessary.

Yakama Nation Recommendations

BPA needs to include adequate funds for fish and wildlife in its next rate case.

- Implementation of the NPCC subbasin plans and including wildlife mitigation over a ten-year period will cost between $1.5 and $2 billion.
- The total cost to implement the Fish and Wildlife Program and associated ESA needs is estimated to be about $240 million per year.
- Carrying out the subbasin plans would only accomplish between one-quarter and one-half of the habitat work needed in the tributaries of the Columbia and Snake Rivers.
- At the current BPA Integrated Program funding rate of $139 million per year, it would take about 100 years to implement the NPCC Fish and Wildlife Program.

Therefore, BPA should increase the amount of funds available for fish and wildlife activities to approximately $240 million per year.

The fish and wildlife managers have developed realistic and reasonable cost estimates for the rate case period.

- It takes some time to increase the rate of implementation.
- The 2002 rate case set BPA revenues with the intent of providing a fish and wildlife budget of $186 million per year.

Therefore, BPA should ramp up its Integrated Fish and Wildlife Program budget:

- $186 million in FY 2006;
- $200 million in FY 2007;
- $225 million in FY 2008;
- $240 million in FY 2009.

BPA should develop a more flexible capitalization policy to facilitate land and water acquisitions.

- BPA's current policy on capitalization is unclear regarding the use of its borrowing authority to purchase land and water.
- BPA's interpretation of its policies has inhibited the implementation of the Fish and Wildlife Program.
- If BPA uses its borrowing authority for these kinds of purchases, the rate impacts of our recommendations are significantly reduced.

Therefore, BPA should modify its capitalization policy to set up mechanisms to allow borrowing funds or the use of its borrowing authority to purchase land and water.

BPA should address the uncertainties in fish and wildlife costs in its rate case.

- The fish and wildlife managers note that with the intent of providing these estimates of future budget needs, that these estimates do not incorporate numerous factors that may increase the needs, and that these budget targets are likely to be under-estimates of actual needs.
- In the previous rate case BPA used two means to address uncertainties: Cost Recovery Adjustment Clauses and revenue collection to meet more than the minimum need.

Therefore, BPA should work with others to ensure its rates provide adequate fish and wildlife funding. BPA's rate provisions must ensure that it can adequately fund future additional fish and wildlife costs.

BPA must meet the goals of the Fish and Wildlife Program.

- After considerable analysis, the NPCC adopted in 1987 an interim estimate of the hydropower (BPA) responsibility to fish and wildlife of 5 million returning adult salmon and mitigation for resident fish and wildlife.
- The Program also identifies specific goals for resident fish and wildlife mitigation to address the operation and construction of dams and inundation by reservoirs.
- The NPCC reaffirmed these responsibilities in adopting its amended Fish and Wildlife Program in 2000.
- Current numbers of returning salmon are approximately the same as they were when the NPCC adopted the interim goal 18 years ago.

Therefore, the funding recommended by the fish and wildlife managers through FY 2009 is not likely to exceed costs necessary to achieve the Fish and Wildlife Program goals.

The Columbia Basin needs an Implementation Plan for fish and wildlife.

- The subbasin plans do not, in many cases, identify clear numerical objectives or specific actions, schedules, or costs.
- Such information would provide a statement by those responsible for the fish and wildlife resources of how the resources might be more productively managed and would provide consistent guidance in a variety of decision processes, such as NPCC amendment processes, ESA recovery planning, annual budget development, activities on Federal lands, local land use planning, etc.

Therefore, fish and wildlife managers, BPA, and the NPCC should work together to develop an implementation plan detailing the actions, schedule and costs needed to implement the Fish and Wildlife Program, and are committed to that effort.

Full implementation of the F&W Program and ESA activities will create economic benefits in tribal and rural areas.

- Most of the fish and wildlife activities would be implemented in rural areas east of the Cascade Mountains creating jobs and additional economic activity.
- As fish and wildlife populations increase as a result of these BPA investments, east-side rural areas will experience increased fishing, hunting and related activities, also creating additional jobs and invigorating local economies.
- For those (residential) customers served by utilities purchasing all of their power from BPA the recommended budget levels would result in about a $1 per month increase in their electric bill. The impact to those served by utilities that purchase less than their full requirements from BPA would be less.

Therefore, BPA should recognize the benefits to rural and tribal communities from its investments in fish and wildlife.

APPENDIX 1: CBFWA Workgroup Analysis of Future Fish and Wildlife Budget Needs in Support of the BPA Rate Case for FY2007 – FY2009

April 25, 2005 [Draft]

Summary

The staff of the Columbia Basin Fish and Wildlife Authority (CBFWA) has developed fish and wildlife costs for implementing the subbasin plans that were developed during the recent Northwest Power and Conservation Council (NPCC) effort. This effort is intended to identify future costs that BPA may need to include in its upcoming rate case. It should be noted that NOAA Fisheries and U.S. Fish and Wildlife Service did not participate in developing these estimates and neither endorse nor dispute the cost estimates and related materials.

This staff effort focused on identifying additional habitat and production costs to implement the subbasin plans. Staff has also compiled costs in the other categories of BPA's Integrated Program fish and wildlife efforts. The fish and wildlife managers recognize the considerable uncertainty in these estimates and may not be in consensus regarding the specific actions or locations implied in the subbasin cost estimates. An example of subbasins with detailed information used to develop cost estimates can be found in the Upper Columbia United Tribes (UCUT) proposal. In the Intermountain Province and Okanogan and Kootenai subbasins, UCUT compiled detailed budget estimates for 10 years based on specific management objectives and biological outcomes.

Current spending for fish and wildlife has averaged about $134 million per year over the last four years. Staff estimates that the needs for additional monitoring and evaluation, research, information management coordination and administration, and mainstem work may increase by about $9 million annually over the next several years. In addition, we have identified the ten-year costs of implementing the habitat and production strategies in the subbasin plans and wildlife plans at roughly $1.9 billion. These funds would purchase: 13 additional or major enhancements to fish hatcheries in 11 subbasins; protection for more than 48,000 acres of habitat; improvements to more than 1300 miles of streams; almost 1600 miles of fence; enhancement activities on more than 75,000 acres of habitat; and, correcting passage problems at more than 1200 diversions and culverts.

The cost estimates, including the current program costs, equate to about $240 million annually if the subbasin plans were implemented over a ten year period, $170 million if implemented over 25 years, or about $135 million if the region took 100 years to implement the draft subbasin plans. If BPA were not to use its borrowing authority, it would increase these annual costs to about $310 million, $200 million, or $143 million, respectively. These estimated costs make no provision for inflation. Including inflation, FY2009 costs could be $333 million. The region will need to determine the pace of

implementation to determine the annual costs for these fish and wildlife actions. These are significant amounts of money; however, for perspective it is important to note that the Columbia River Basin encompasses 269,000 square miles—about the size of France. Human activity has degraded most of this habitat over the past 150 years. The fish and wildlife managers share a continuing interest with BPA in seeking efficiencies in mitigation efforts to maximize on-the-ground benefits to fish and wildlife.

This paper describes the assumptions and methodology used to develop the fish and wildlife costs. The costs provided by the Upper Columbia United Tribes and others represent only those that they believe are the responsibility of the Bonneville Power Administration and were developed in a deliberative manner among the UCUT member staff.

Cost Methodology and Assumptions

Estimating Future Costs of the Fish and Wildlife Program. Staff divided the current Fish and Wildlife Program projects among six broad categories of activities or budget "compartments" (see Table 1) and compiled the average spending over the last four Fiscal Years (FY2001 – FY2004). Based on the assumption that current spending is appropriate, these estimates of the current Fish and Wildlife Program spending form the basis of the estimates of future funding needs. Staff reviewed each budget category in Table 1 and identified future changes and work that might drive future budgets up or down. Approximate annual budget increases and decreases that might result from the "drivers" were estimated. The column, "Annual Net Change" in Table 1 summarizes the results. For the "Habitat" budget category staff assumed that future budget needs would be driven by the draft subbasin plans. The draft subbasin plans may identify additional fish production needs, as well. Additional discussion of the development of Table 1 is provided in Appendix A.

Costs to Implement the Draft Subbasin Plans. The work group compiled the estimated ten-year costs to implement the draft subbasin plans based on subbasin cost estimates from two sources: 26 submitted by subbasin planners and one from NPCC staff. The costs cover activities that might reasonably be accomplished over a ten-year period. Most of the cost estimates are based on detailed unit costs to carry out specific strategies on designated amounts of acreage or stream miles. The fish and wildlife managers recognize the considerable uncertainty in these estimates and may not be in consensus regarding the all of the specific actions or locations implied in the subbasin cost estimates. In total, the subbasins for which, staff has received detailed cost estimates cover about one-half of the area of the entire Columbia River Basin. Table 2 summarizes the sources and status of the subbasin plan cost estimates.

For each subbasin, staff assigned the detailed cost estimates received to the categories identified in Table 1. As expected, habitat and fish production are the major costs to implement the draft subbasin plans. Summaries of the detailed costs submitted for each subbasin plan are provided in Appendix B.

Staff compiled subbasin plan costs for each province and extrapolated the cost to encompass the entire province on an approximate area basis when necessary to account for subbasins lacking estimates (Table 3). The extrapolation factors used are shown in Table 3. We assumed that the other (non-habitat and production) costs were included elsewhere in Table 1 and were not included here. Approximately $325 million in costs from the draft subbasin plans (largely for additional assessments, research and coordination) were assumed to be covered by the annual net changes in Table 1 and were not included in this analysis. Because this analysis extrapolated the costs over each entire province, we expect this estimated cost to increase only moderately with the incorporation of additional subbasin plan costs in future drafts of this analysis.

To help provide a context for the estimated costs to implement subbasin plans, staff compiled a rough estimate of the cost to treat habitat problems throughout the entire Columbia River Basin. The methodology and assumptions for this estimate of the larger problem are provided in Appendix C.

Upper Columbia United Tribes' Proposal. Costs submitted by the Upper Columbia United Tribes' members and others represent only those that they believe to be a BPA responsibility (as identified in the NW Power Act) and are part of a complete package of subbasin plan implementation costs (see Appendix D), including:

- Specific biological milestones based on measures in subbasin plans;
- A reasonable pace of implementation considering fiscal and institutional capacity;
- Costs estimated over 10 years with internal prioritization and flexibility; and,
- An understanding that *some* BPA obligations will sunset if requested levels of funding is provided over the ten-year implementation period.

Wildlife Cost Estimates. The CBFWA Wildlife Committee estimated the ten-year cost for mitigation of wildlife losses due to the construction of the Federal Columbia River Power System (FCRPS) and the resulting inundation. Assumptions include:

- Mitigation for 80 percent of the construction and inundation loss at a ratio of 1 acre lost: 1 acre of mitigation;
- $10 million annually for operations and maintenance (and some enhancement) on mitigation lands;
- Focus future mitigation efforts in three areas;
    - $114 million for Albeni Falls and Chief Joseph/Grand Coulee mitigation;
    - $26 million in southwest Idaho; and,
    - $60 million in the Willamette.

The overall wildlife mitigation cost includes wildlife efforts identified in the subbasin plans. Appendix E has a detailed discussion of the wildlife costs. Wildlife cost estimates imbedded in the CBFWA cost estimates do not distinguish:

- Assessments of HUs gained and where they have been credited;
- Unresolved issues of HU accounting methodology in the Willamette Basin; and,
- Hydro-allocation differentials among federal dams.

If these factors are addressed, the $300M wildlife portion of the cost estimates may be reduced or reprioritized.

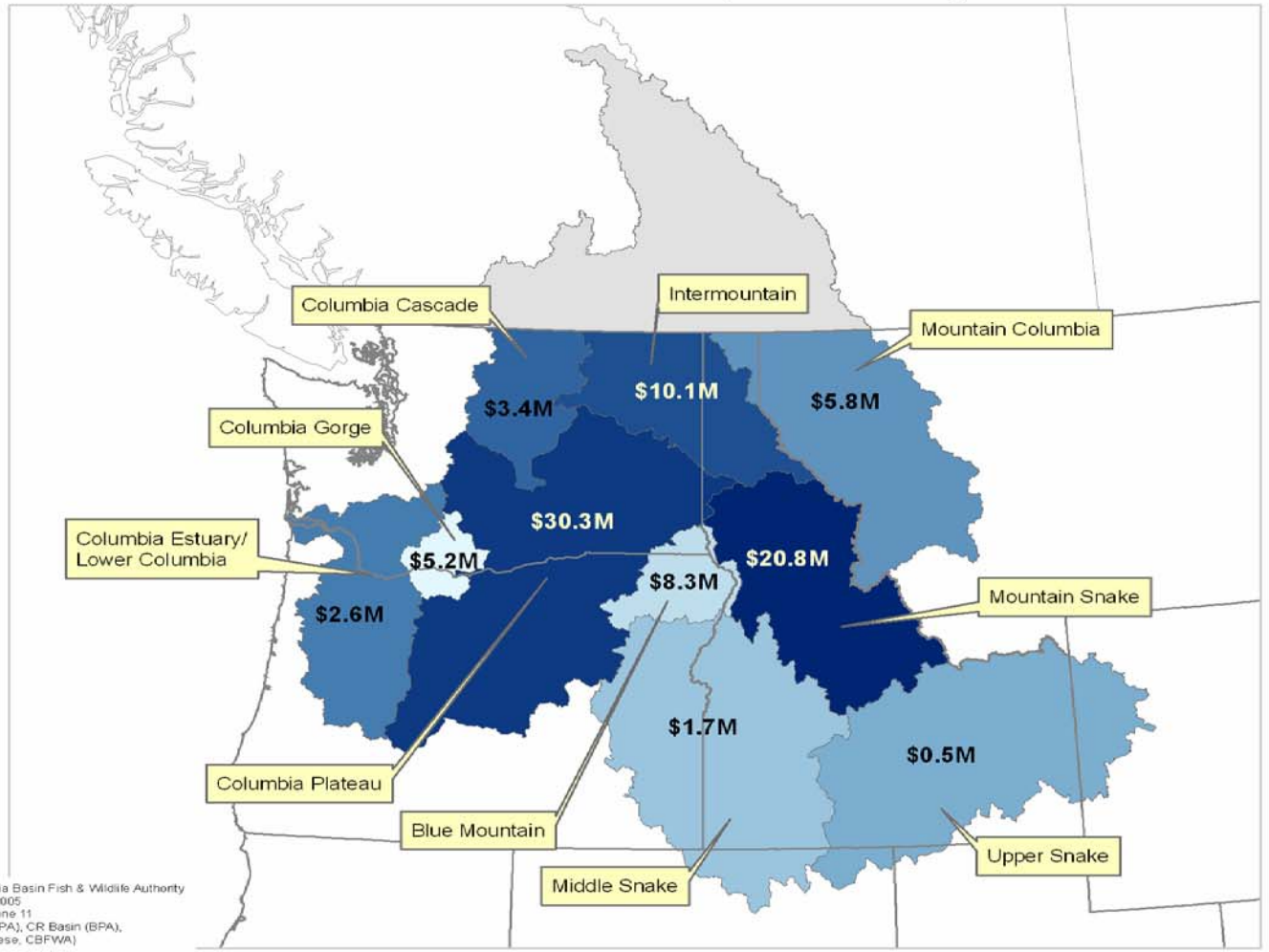
The cost estimates associated with completing mitigation for wildlife losses do not include the Confederated Salish and Kootenai Tribes (CSKT) due to their dispute with BPA over wildlife mitigation for Hungry Horse and Libby Dams. If the CSKT receive wildlife mitigation in the future, these costs will need to be adjusted accordingly.

In Table 8 the analysis attempts to estimate the physical results from implementing the subbasin plans by compiling the extent of various activities proposed by the plans.

Analysis of Total Costs. To examine the effects that the pace of implementation, and other assumptions, has on the annual costs, staff developed a spread sheet for converting estimates of total and annual costs in the Table 1 budget categories into annual costs over differing periods of implementation. This model allows scenarios with different assumptions to be examined and compared in terms of their annual costs. Tables 4 through 7 provide one example of such an analysis. Table 4 shows the input assumptions, in this case, those annual costs summarized in Table 1 and the estimated cost of implementing the draft subbasin plans from Table 1 and 3. The CBFWA Wildlife Committee estimate of the cost to complete mitigation of wildlife losses due to the construction of the FCRPS is in Table 4 also. Tables 5, 6, and 7 show the first ten years of annual costs for implementation over different time periods, in this case, ten years, 25 years, and 100 years, respectively. In these analyses the effect of inflation is also shown, assuming a six percent inflation rate for riparian land and water and a three percent rate for other goods and services.

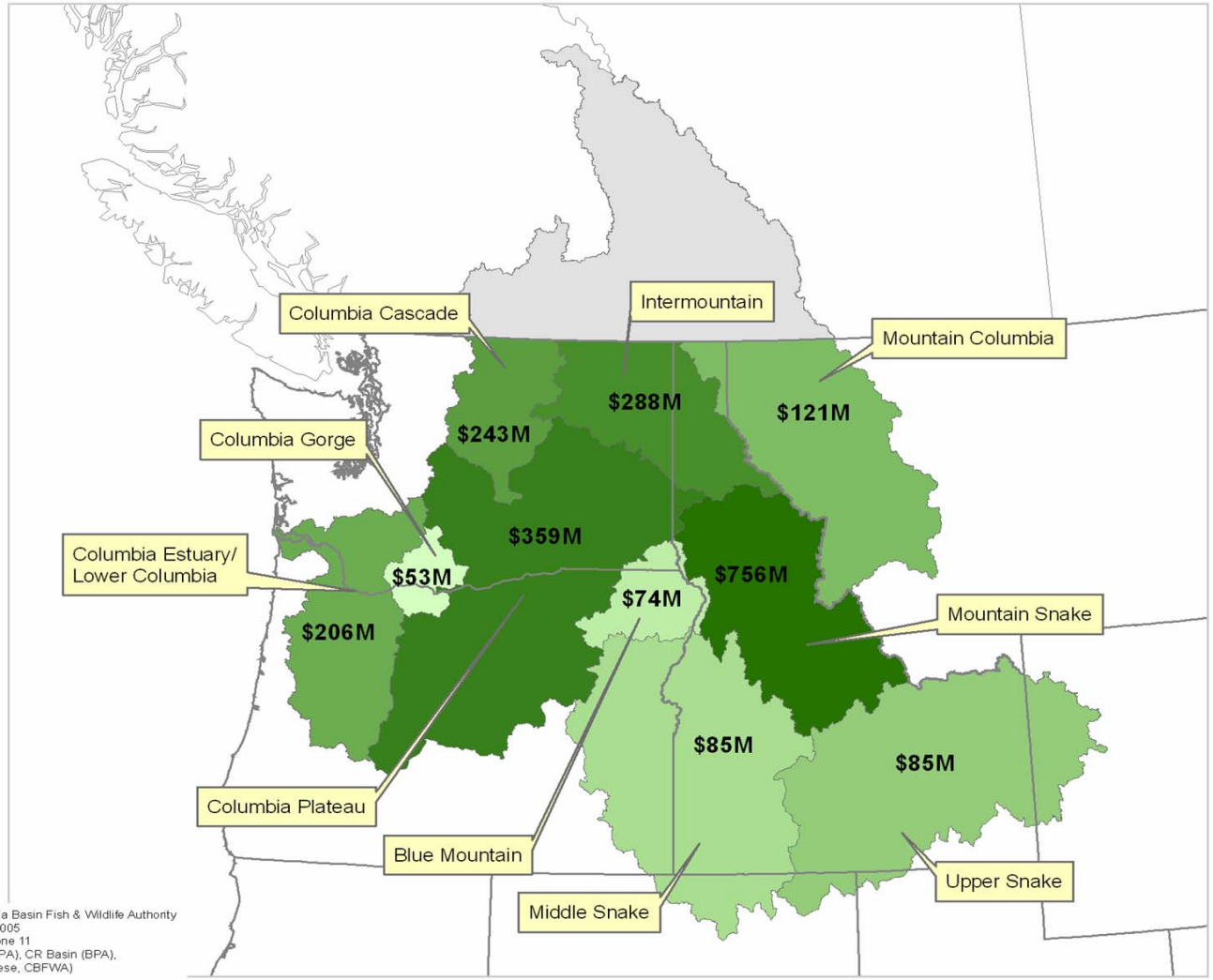
Columbia Basin Fish and Wildlife Authority

Figure 1. BPA Fish and Wildlife Average Investment (FY2001-04)



Columbia Basin Fish and Wildlife Authority

Figure 2. Estimated Future Fish and Wildlife Investment to Implement Subbasin Plans



Map Created by: Columbia Basin Fish & Wildlife Authority
Create Date: March 15, 2005
Projection: NAD 1983, Zone 11
Data Layers: Province (BPA), CR Basin (BPA),
Financial Data (Tom Giese, CBFWA)

Results and Discussion: Future Fish and Wildlife Costs

Formulating and evaluating all of the factors necessary to estimate fish and wildlife costs is a difficult task. We approached this analysis by examining various categories of costs for the BPA Integrated Fish and Wildlife Program, with particular attention to the costs of implementing programs and projects proposed by one or more parties during their subbasin planning process and implementing certain wildlife provisions. The resulting cost estimates are based on a variety of assumptions. These assumptions and any specific projects or actions that are included in the estimates still must be reviewed by the NPCC and undergo a project selection process. The list of projects also has not been thoroughly reviewed by the fish and wildlife managers. As such, specific projects may or may not be supported by individual managers.

Despite the caveats listed above, we think that the overall cost estimates that we have produced are a valuable indicator of the level of funding that is needed. The cost categories included:

- Subbasin plans - the development of subbasin plans did not include detailed project proposals and budgets. To overcome this problem, various subbasin planners were contacted to provide additional information about the resources needed to implement their plan. The estimates were expanded to cover subbasins were these estimates were not available.
- We undertook a similar process for wildlife mitigation costs. Some specific high interest areas were identified as priorities for the rate case. Estimates from the managers in the area were developed and included in the estimates.
- Our analysis does not include a comprehensive assessment of costs for mainstem measures beyond those contemplated in the Updated Proposed Action or the NPCC Program. However it is clear that additional mainstem measures are necessary to protect, recover, and restore anadromous fish impacted by the federal hydrosystem and need to be funded.

As we noted above these cost estimates and the specific projects that would be implemented need further review. We anticipate that they will become better defined as they pass through the regional decision-making processes. Nonetheless, we continue to believe that the overall estimates are an accurate reflection of the resources that are necessary to make progress for fish and wildlife in the basin.

The analysis summarized in Table 3 indicates that draft subbasin plans will cost about $1.5 billion to implement. This is probably a minimum estimate and their implementation cost will likely increase as more subbasin estimates are incorporated. In addition, the full costs to improve tributary passage facilities in the Salmon and John Day subbasins have not been included and their addition will increase subbasin plan costs. The costs of implementing the subbasin plans below Bonneville dam have been estimated by extrapolation and have probably been underestimated.

Figures 1 and 2 show the geographic distribution of current (FY 2003 and 2004) BPA spending for fish and wildlife and estimated future investments needed to implement the subbasin plans, respectively. Past investments have been largest in the Plateau and Mountain Snake Provinces with a smaller emphasis on the Upper Columbia and Blue Mountain Provinces. Generally, the subbasin plans continue that emphasis. The fish and wildlife managers are mindful of the economic benefits that accrue to rural communities both as a result of the direct investment of BPA funds in these communities and as a result of increased fishing and hunting opportunities as fish and wildlife populations increase.

This preliminary analysis of the costs of the draft subbasin plans indicate that the subbasin planners anticipate considerably more fish production facilities are needed than assumed in the BPA/NPCC staff analysis in Table 1. That initial analysis assumed no additional production facilities, while this analysis estimates more $304 million in additional production costs. In addition, the costs of changes to existing fish production facilities that may be anticipated from the NPCC Artificial Production Review and Evaluation process and the Biological Opinions are not included in these costs, but will fall largely in the Reimbursed Expenses portion of the BPA budget.

Table 4 summarizes the overall costs of continuing to carry out the NPCC Fish and Wildlife Program (and associated Biological Opinion actions) and to implement the subbasin plans. At the bottom of Table 4, is a summary of these annual costs (continuing and additional) and the ten-year costs of wildlife mitigation and the subbasin plan implementation. These add to about $3.1 billion over ten years or a little more than $300 million per year. If BPA uses its borrowing authority, these annual costs could be reduced to about $240 million per year (see Table 5), the annual amount for which CBFWA recommends that BPA budget.

The analyses shown in Tables 5 through 7 demonstrate the major effects in reducing annual costs by spreading the implementation costs over longer periods. The current examples assume about $24 million per year (or a ten-year total of $240 million) in current habitat spending being re-programmed to cover implementation of the subbasin plans. These analyses indicated that spending at current levels will take about 100 years to implement the draft subbasin plans.

Table 8 summarizes the physical accomplishments that form the basis of the subbasin cost estimates. Implementing the subbasin plans would accomplish: 13 additional or major enhancements to fish hatcheries in 11 subbasins; protection for more than 48,000 acres of habitat; improvements to more than 1300 miles of streams; enhancement activities on more than 75,000 acres of habitat; and, correcting passage problems at more than 1200 diversions and culverts. These estimated achievements are an underestimate because not all achievements are included, only those that fit within the categories used to aggregate them. Further, the material submitted for many of the subbasins was not sufficiently detailed to estimate the physical accomplishments expected. It must be noted

that the achievements reported here do not directly represent increases in fish and wildlife populations (the ultimate objective of implementing the subbasin plans).

While these are large costs, they are consistent with earlier estimates of BPA costs to meet its obligations to fish and wildlife. For example, CBFWA has developed two previous fish and wildlife cost estimates. The first was in 1998 as part of the Multi-Year Implementation Plan. This effort developed costs for implementing all of the elements of the Council Program and FCRPS Biological Opinion. The annual costs were estimated to be $200 to $225 million in 1998 dollars, or about $240 to $265 million per year in current dollars.

In 2000, CBFWA and the Council conducted the Provincial Review to determine the costs of implementing projects that had been approved by the fish and wildlife managers, the Council, and the Independent Scientific Review Panel. The Provincial Review identified BPA revenue requirements for the Direct Program budget of $310 million per year for FY 2003 through FY 2006, or about $350 million per year in current dollars. The history of BPA's F&W spending is included Appendix F.

Uncertainty and Risk Management

Although this analysis provides the most accurate estimate available of the costs to implement the NPCC Fish and Wildlife Program and associated ESA activities, there are other factors that create uncertainty about the ultimate cost of the BPA Integrated Program. This uncertainty derives from numerous sources.

1. Our analysis assumed that other branches of the federal government would provide contributions. For example, the costs for implementing plans in several subbasins (notably those in the Intermountain Province) assume funding from the federal land management agencies that may or may not be forthcoming. If additional Federal appropriations are not available, the region will need to address how to accomplish this work.
2. The analysis of budget "drivers" in Table 1 is based on several assumptions about the ability to reallocate current program expenditures and reduce the need for future budget requirements. These assumptions are untested. For example, Table 1 assumes that BPA and NPCC will reduce current project-scale monitoring and evaluation to make funds available to conduct increased programmatic M&E. How this will be accomplished is unclear, consequently any savings are uncertain.
3. NOAA Fisheries staff has indicated on several occasions that implementing the subbasin plans may not address all of the activities in the forthcoming recovery plans.
4. Pending litigation on the current Biological Opinions may result in significant changes in required fish and wildlife activities, and may increase costs or affect revenues.
5. Implementation of the "Mainstem Amendment" to the NPCC Fish and Wildlife Program may increase costs or affect revenues also.

6. When the currently favorable ocean conditions deteriorate, BPA may be called upon to fund additional activities to address weak-stock survival or productivity.
7. The NPCC Artificial Production Review and Evaluation and the Hatchery Genetic Management Plans call for changes in the operation of many hatcheries built as mitigation for the hydropower system. These costs are not presently reflected in the BPA draft costs for the upcoming rate case and costs for the Reimbursable and the Integrated Program budgets may increase.
8. The prospect of shifting the cost of the Mitchell Act hatcheries to BPA is a substantial uncertainty, considering Congress's previous interest in this issue and increasing pressures on the federal budget.
9. Inflation is not considered in our recommendation, and funding to provide for inflationary costs is often necessary to achieve individual project milestones as scheduled. A three percent inflation rate could result in a $25 million increase in annual budget needs by the end of the rate period in FY 2009.

All of these uncertainties increase the probability that BPA's Integrated Program budget needs will be higher than the budget levels we recommend. BPA should accommodate these uncertainties explicitly when it sets its rates and when it designs rate adjustment mechanisms. BPA's rate provisions must ensure that it can adequately fund future additional fish and wildlife costs.

Economic Impacts

The budget levels recommended here would result in customers served by utilities purchasing all of their power from BPA paying about $1.00 per month more. The impact to those served by utilities that purchase less than their full requirements from BPA would be less.

As a rule of thumb, BPA assumes that every $85 million represents 1 mill or $0.001 per kilowatt hour on BPA's wholesale power rates for full requirements customers. The CBFWA recommendations for FY 2007 through FY 2008 average $80 million more than current spending or approximately $0.001 per kilowatt-hour. The average residential consumer uses about 1,100 kilowatt-hours per month; therefore the fish and wildlife cost increase represents about $1 per month for the average residential customer served by a utility that purchases all of its power form BPA. BPA provides approximately 40 percent of the electricity used in the Pacific Northwest; the impacts for 60 percent of the region's residential consumers would be less than $1 per month.

Most of the fish and wildlife activities would be implemented in rural areas east of the Cascade Mountains (Figures 1 and 2). Figure 1 shows the geographic distribution of BPA average annual fish and wildlife spending from its Integrated Program budget for the Fiscal Years 2001 through FY 2004. These investments pay salaries and purchase materials creating additional jobs and economic activity. Figure 2 shows the geographic distribution of estimated ten-year investments in implementing the NPCC subbasin plans. The effects of these investments can be expected to ripple through the tribal and rural economies, creating additional jobs and economic activity.

As fish and wildlife populations increase as a result of these BPA investments, east-side tribal and rural areas will experience increased spending by fishers, hunters, and recreationalists creating additional jobs and economic benefits. For example, in 2001, as a result of previous investments in salmon mitigation and improvements in ocean conditions, salmon runs increased sufficiently for Idaho to open a recreational fishing season on salmon. The Idaho Department of Fish and Game examined the economic benefits of the 2001 salmon season and found that the increased fish opportunity was responsible for almost $90 million in expenditures. These expenditures were split evenly between the local river communities and the rest of the state. However, impacts were more significant in the smaller local economies. Angler expenditures in Riggins, Idaho (on the Salmon River) during the salmon fishing season stimulated 23 percent of the town's annual sales.

Therefore, the fish and wildlife managers recommend that BPA also consider the important benefits to rural economies of its investments in fish and wildlife while considering the costs of the actions.

Conclusions and Recommendations

Based on the analysis in this report, the fish and wildlife managers make the following conclusions and recommendations.

BPA needs to include adequate funds for fish and wildlife in its next rate case.

- Implementation of the NPCC subbasin plans and including wildlife mitigation over a ten-year period will cost between $1.5 and $2 billion.
- The total cost to implement the Fish and Wildlife Program and associated ESA needs is estimated to be about $240 million per year.
- Carrying out the subbasin plans would only accomplish between one-quarter and one-half of the habitat work needed in the tributaries of the Columbia and Snake Rivers.
- At the current BPA Integrated Program funding rate of $139 million per year, it would take about 100 years to implement the NPCC Fish and Wildlife Program.

➢ ***Therefore,*** *the fish and wildlife managers recommend that BPA increase the amount of funds available for fish and wildlife activities to approximately $240 million per year.*

The fish and wildlife managers have developed realistic and reasonable cost estimates for the rate case period.

- It takes some time to increase the rate of implementation.
- The 2002 rate case set BPA revenues with the intent of providing a fish and wildlife budget of $186 million per year.

➢ ***Therefore,*** *the fish and wildlife managers recommend that BPA ramp up its Integrated Fish and Wildlife Program budget to meet the these targets:*

- *$186 million in FY 2006;*
- *$200 million in FY 2007;*

- *$225 million in FY 2008; and,*
- *$240 million in FY 2009.*

BPA should develop a more flexible capitalization policy to facilitate land and water acquisitions.

- BPA's current policy on capitalization is unclear regarding the use of its borrowing authority to purchase land and water.
- BPA's interpretation of its policies has inhibited the implementation of the Fish and Wildlife Program.
- If BPA uses its borrowing authority for these kinds of purchases, the rate impacts of our recommendations are significantly reduced.

➢ ***Therefore,*** *BPA should modify its capitalization policy to set up mechanisms to allow borrowing funds or the use of its borrowing authority to purchase land and water.*

BPA should address the uncertainties in fish and wildlife costs in its rate case.

- The fish and wildlife managers note that with the intent of providing these estimates of future budget needs, that these estimates do not incorporate numerous factors that may increase the needs, and that these budget targets are likely to be under-estimates of actual needs.
- In the previous rate case BPA used two means to address uncertainties: Cost Recovery Adjustment Clauses and revenue collection to meet more than the minimum need.

➢ ***Therefore,*** *the fish and wildlife managers urge BPA to work with others to ensure its rates provide adequate fish and wildlife funding. BPA's rate provisions must ensure that it can adequately fund future additional fish and wildlife costs.*

BPA must meet the goals of the Fish and Wildlife Program.

- After considerable analysis, the NPCC adopted in 1987 an interim estimate of the hydropower (BPA) responsibility to fish and wildlife of 5 million returning adult salmon and mitigation for resident fish and wildlife.
- The Program also identifies specific goals for resident fish and wildlife mitigation to address the operation and construction of dams and inundation by reservoirs.
- The NPCC reaffirmed these responsibilities in adopting its amended Fish and Wildlife Program in 2000.
- Current numbers of returning salmon are approximately the same as they were when the NPCC adopted the interim goal 18 years ago.

➢ ***Therefore,*** *the funding recommended by the fish and wildlife managers through FY 2009 is not likely to exceed costs necessary to achieve the Fish and Wildlife Program goals.*

The Columbia Basin needs an Implementation Plan for fish and wildlife.

- The subbasin plans do not, in many cases, identify clear numerical objectives or specific actions, schedules, or costs.
- Such information would provide a statement by those responsible for the fish and wildlife resources of how the resources might be more productively managed and

would provide consistent guidance in a variety of decision processes, such as NPCC amendment processes, ESA recovery planning, annual budget development, activities on Federal lands, local land use planning, etc.

- ***Therefore,*** *the fish and wildlife managers strongly recommend development of an implementation plan detailing the actions, schedule and costs needed to implement the Fish and Wildlife Program, and are committed to that effort.*

Full implementation of the F&W Program and ESA activities will create economic benefits in tribal and rural areas.

- Most of the fish and wildlife activities would be implemented in rural areas east of the Cascade Mountains creating jobs and additional economic activity.
- As fish and wildlife populations increase as a result of these BPA investments, east-side rural areas will experience increased fishing, hunting and related activities, also creating additional jobs and invigorating local economies.
- For those (residential) customers served by utilities purchasing all of their power from BPA the recommended budget levels would result in about a $1 per month increase in their electric bill. The impact to those served by utilities that purchase less than their full requirements from BPA would be less.

Therefore*, the fish and wildlife managers recommend that BPA examine the benefits to rural economies from its investments in fish and wildlife*.

Table 1. Future Fish and Wildlife Program Cost Assumptions

F&W Program Categories	Recent Spending (FY01-04 Ave.)	Budget Drivers (UP)	Budget Drivers (DOWN)	Annual Net Change	Estimated Ten-Year Cost ($M)
Info. Mgmt., Coordination & Administration (IMCA)	$11.7	Watershed coordination support (~$2M); Regional data mgmt. (~$2M); Harv/Hab/Prod integration (~$0.5)	Little opportunity	Increase (+$4.5M)	
Monitoring & Evaluation	$30.0	Bi-Op driven large-scale monitoring; Mainstem evaluations; Future subbasin planning; Fall chinook monitoring (?)	Efficiencies in project scale monitoring from regional M&E plan; Reprogramming short-term assessments	No net change	
Research	$11.0	Bi-Op life-stage research; NPCC Research Plan; Innovative category	Better focus, less opportunistic research; Emerging issues (e.g.,	Minor Reduction	
Mainstem Programs	$6.0	BiOp increases in predator control (~$1M); Lamprey work (~$1M)	Little opportunity	Increase (+$2M)	
Fish Production	$39.6	O&M for new facilities (Chief Joe, NEOH, Klickitat, Mid-C coho, Walla Walla, Klickitat), not including capital, (~$3M); Bi-Op hatchery improvements (~$2M)	Efficiencies in project-scale operations; Completion of some construction	Increase (+$3M)	$291
Habitat	$35.8	Subbasin plans; BiOp off-site mitigation	Reprogramming based on subbasin plans		
Land Protection					$404
Instream Flow Improvement					$34
Enhancement & Restoration					$626
Additional "Small" Tributary Passage (Expense)					$187
Additional "Major" Tributary Passage (Capital)					$21
Wildlife					$300
Total	$134.1			+$9M (without Habitat)	$1,864

Table 2. Status of Subbasin Plan Cost Estimates

Subbasin	Source	Status	SB-Province Factor
Mtn Columbia Province			**X1**
Kootenai - Idaho	UCUT	Included	
Kootenai - Montana	SKT/MDFWP	Included	
Flathead	SKT/MDFWP	Included	
Intermountain Province			**X1**
Coeur D'Alene	UCUT	Included	
Columbia/L. Roosevelt	UCUT	Included	
Pend Oreille	UCUT	Included	
Spokane	UCUT	Included	
Mountain Snake Province			**X1.5****
Clearwater	NPT	Included	
Lo/Little Salmon	NPT	Included	
Blue Mountain Province			**X1**
Grande Ronde	NPT	Included	
Asotin	NPT	Included*	
Imnaha	NPT	Included	
Snake-HellsCanyon	NPT	Included	
Upper & Middle Snake Province			**X2****
Malheur	BPT	Included	
Owyhee	SBT	Included	
Columbia Cascade Province			**X1**
Wenatchee	YN	Included	
Entiat	YN	Included	
Methow	YN	Included	
Okanogan	UCUT	Included	
Plateau Province			**X2****
Umatilla	NPCC staff	Included	
Tucannon	NPT	Included*	
Yakima	YN	Included	
Rock Creek	YN	Included	
Walla Walla	CTUIR	Included	
Columbia Gorge Province			**X1.5****
Hood	NPCC staff	Included	
White Salmon	YN	Included	
Klickitat	YN	Included	
Lower Columbia & Estuary Province			**X0**
WA Subbasins	LCFRB		

Others - Non-Tribal subbasin planners
* Less land acquisition costs
** Facility capital costs not extrapolated.

Table 3. Estimated Additional Costs to Implement Subbasin Plans

PRELIMINARY

SUBBASIN PLAN COST	Mtn Columbia	Inter Mtn	Mtn Snake	Blue Mtn	U&M Snake	Columbia Cascade	Plateau	Columbia Gorge	Lo. Col. & Estuary	Total Habitat /Prod Costs (X1.1)	Total Additional Costs (X1.1)
IMCA - Regional Data Management	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	
IMCA - Watershed Coordination	$2.0	$2.0	$5.0	$0.4	$0.0	$0.0	$0.2	$0.0	$0.0	$10.5	
M&E - Programmatic M&E	$0.0	$0.0	$0.0	$0.0	$11.0	$9.8	$0.0	$0.0	$0.0	$22.9	
M&E - Mainstem Evaluations	$0.0	$1.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$1.1	
M&E - Subbasin Planning	$0.0	$0.0	$0.0	$0.0	$0.0	$0.3	$0.0	$0.3	$0.0	$0.6	
Research	$0.0	$2.7	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$2.9	
Production - New Facilities (Capital)	$22.8	$37.8	$0.0	$10.8	$5.6	$68.8	$21.6	$7.6	$0.0	$192.4	$192.4
Production - FWP facilities O/M	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	
Production - BiOp Improvements	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	
Production - Other Costs (Expenses)	$1.3	$11.9	$24.6	$3.4	$15.0	$4.9	$10.0	$18.5	$0.0	$98.5	$98.5
Habitat - Land Protection Cost	$34.7	$52.0	$84.8	$2.7	$24.0	$62.8	$102.7	$3.7	$0.0	$404.2	$404.2
Habitat - Instream Flow Cost	$0.0	$0.0	$0.0	$0.0	$6.2	$6.5	$10.0	$8.2	$0.0	$34.0	$34.0
Habitat - Enhancement & Restoration Cost	$52.2	$76.3	$240.3	$37.0	$46.8	$37.3	$73.3	$5.8	$0.0	$625.8	$625.8
Habitat - Wildlife Mitigation Cost	$0.0	$70.9	$0.0	$0.0	$21.9	$27.6	$0.0	$0.0	$0.0	$132.5	
Habitat - Additional Assessment	$6.8	$33.1	$34.3	$10.2	$10.2	$11.5	$37.8	$4.5	$0.0	$163.2	
Habitat - Additional "Small" Tributary Passage (Expense)	$1.1	$0.0	$117.2	$9.3	$17.0	$7.2	$18.1	$0.5	$0.0	$187.4	$187.4
Habitat - Additional "Major" Tributary Passage (Capital)	$0.0	$0.0	$0.0	$0.0	$0.0	$6.5	$9.0	$3.8	$0.0	$21.2	$21.2
Habitat - Other Costs	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	
Total Province Additional	$120.8	$287.7	$506.1	$73.7	$157.8	$243.2	$282.8	$52.8	$0.0	$1,897.4	$1,563.6
Total Habitat and Production Costs (from Subbasin Plans)										$1,897.4	
Total 10 year Additional Costs			**$1,564**								

Assumptions

Information Management, Coordination & Administration (IMCA)	
Continuing Cost	**$11.7**
Regional Data Management (*additional $M/yr*)	$2.0
Production/Habitat Integration (*additional $M/yr*)	$0.5
Watershed Coordination Support (*additional $M/yr*)	$2.0

Research	
Continuing Cost	**$7.4**
BiOp life-stage research *(additional $M/yr)*	$1.0
NPCC Research Plan work *(additional $M/yr)*	$4.0
Innovative category *(additional $M/yr)*	$0.0

Fish Production (Anadromous & Resident)	
Continuing Cost	**$39.6**
BiOp hatchery improvements *($M/yr)*	$2.0
Total New Facilities Cost (Capital) *($M Total)*	$192.4
Total Additional Costs & O/M (Expense) (*$M Total*)	$98.5

Habitat	
Continuing Cost	**$12.1**
Land Protection Cost (*$M Total*)	$404.2
Instream Flow Improvement Cost (*$M Total)*)	$34.0
Enhancement & Restoration Cost (*$M Total*)	$625.8
Additional "Small" Tributary Passage (Expense) (*$M Total*)	$187.4
Additional "Major" Tributary Passage (Capital) (*$M Total*)	$21.2
Wildlife Mitigation *($M Total)*	$300.0

Other Assumptions	
Total Annual Continuing Cost	**$94.4**
Total Annual Additions	**$26.5**
Total 10-Year Wildlife Mitigation Cost	**$300.0**
Total 10-Year Additional Costs from Subbasin Plans	**$1,563.6**
Total Cost of 10-Year Effort	**$3,072.8**
Land Cost Inflation Rate	6%
Other Items Inflation Rate	3%

Other Items Inflation Rate Input	Inflation Rate	Weight
Labor	0.0%	0.5
Materials	0.0%	0.5

Monitoring & Evaluation	
Continuing Cost	**$17.6**
Programmatic M&E (*additional $M/yr*)	$10.0
Additional mainstem evaluations *(additional $M/yr)*	$1.0
Future subbasin planning *(additional $M/yr)*	$2.0

Mainstem Program Expenses	
Continuing Cost	**$6.0**
Additional Predator Control *(additional $M/yr)*	$1.0
Additional Lamprey work *(additional $M/yr)*	$1.0

Table 5. Estimated Fish and Wildlife

PRELIMINARY

Duration of Implementation (Years)	10

Cost Item (*$Millions/year*)	Assume	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Ten Year Cost
Information Management, Coordination & Administration												
Continuing Cost	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	$117.0
Regional Data Management	2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0
Production/Habitat Integration	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	$5.0
Watershed Coordination Support	2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0
IMCA Total		$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$162.0
Monitoring & Evaluation												
Continuing Cost	17.58	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	$175.8
Programmatic M&E	10	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	$100.0
Additional mainstem evaluations	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
Future subbasin planning	$2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0
M&E Total		$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$305.8
Research												
Continuing Cost	7.44	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	$74.4
BiOp life-stage research	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
NPCC Research Plan	4.00	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	$40.0
Innovative category	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Research Total		$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$124.4
Mainstem Program Expense												
Continuing Cost	6.00	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	$60.0
Additional Predator Control	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
Additional Lamprey work	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
Mainstem Total		$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$80.0
Fish Production												
Continuing Cost	$39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	$396.0
Additional O&M on completed FWP facilities	$3.0	1.0	1.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	$24.0
BiOp hatchery improvements	$2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0
Total New Facilities Cost (Capital)	$192.4	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	
Total Additional Costs & O/M (Expense)	$98.5	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	$98.5
Fish Production Total		$71.7	$71.7	$72.7	$72.7	$73.7	$73.7	$73.7	$73.7	$73.7	$73.7	$730.9
Habitat												
Continuing Cost	$12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	$121.0
Land Protection Cost	$404.2	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4	$404.2

Table 5. Estimated Fish and Wildlife

Duration of Implementation (Years)	10

Cost Item (*$Millions/year*)	Assume	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Ten Year Cost
Instream Flow Improvement Cost	$34.0	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	$34.0
Enhancement & Restoration Cost	$625.8	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	$625.8
Annual Habitat O&M	0.00%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Assessments	$0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Additional "Small" Tributary Passage (Expense)	$187.4	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	$187.4
Additional "Major" Tributary Passage (Capital)	$21.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	$21.2
Additional Tributary Passage O&M	0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Additional Wildlife Mitigation	$300.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	$300.0
Additional Wildlife O&M	0.00%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Habitat Total		$169.4	$169.4	$169.4	$169.4	$169.4	$169.4	$169.4	$169.4	$169.4	$169.4	$1,693.7
Land & Water Cost Inflation Rate	6%											
Other Items Inflation Rate	3%											
compound L&W %		1.0000	1.0600	1.1236	1.1910	1.2625	1.3382	1.4185	1.5036	1.5938	1.6895	
compound other %		1.0000	1.0300	1.0609	1.0927	1.1255	1.1593	1.1941	1.2299	1.2668	1.3048	
total L&W		73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	738.2
total other		234.5	234.5	235.5	235.5	236.5	236.5	236.5	236.5	236.5	236.5	2358.7
inflated L&W		73.8	78.2	82.9	87.9	93.2	98.8	104.7	111.0	117.7	124.7	
inflated other		234.5	241.5	249.8	257.3	266.1	274.1	282.4	290.8	299.5	308.5	
TOTAL Cost without Borrowing *($M/yr)*	$3,096.8	$308.3	$308.3	$309.3	$309.3	$310.3	$310.3	$310.3	$310.3	$310.3	$310.3	$3,096.8
Capital Cost w/o borrowing		$70.7	$70.7	$70.7	$70.7	$70.7	$70.7	$70.7	$70.7	$70.7	$70.7	$706.6
Percent capitalized	100%	$70.7	$70.7	$70.7	$70.7	$70.7	$70.7	$70.7	$70.7	$70.7	$70.7	
expensed		$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	
Revenue Required for borrowed		$7.1	$7.1	$7.1	$7.1	$7.1	$7.1	$7.1	$7.1	$7.1	$7.1	
Capital Cost with borrowing		$7.1	$7.1	$7.1	$7.1	$7.1	$7.1	$7.1	$7.1	$7.1	$7.1	$70.7
Annual cost less capital		$237.6	$237.6	$238.6	$238.6	$239.6	$239.6	$239.6	$239.6	$239.6	$239.6	
TOTAL Cost with Borrowing *($M/yr)*	$2,460.9	$244.7	$244.7	$245.7	$245.7	$246.7	$246.7	$246.7	$246.7	$246.7	$246.7	$2,460.9
TOTAL Costs with inflation												
with BPA Borrowing												
without BPA Borrowing		$308.3	$319.7	$332.7	$345.2	$359.3	$372.9	$387.1	$401.8	$417.2	$433.2	$0.0

Table 6. Estimated Fish and Wildlife

Duration of Implementation (Years)	25

Cost Item (*$Millions/year*)	Assume	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Ten Year Cost
Information Management, Coordination & Administration												
Continuing Cost	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	$117.0
Regional Data Management	2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0
Production/Habitat Integration	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	$5.0
Watershed Coordination Support	2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0
IMCA Total		$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$162.0
Monitoring & Evaluation												
Continuing Cost	17.58	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	$175.8
Programmatic M&E	10	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	$100.0
Additional mainstem evaluations	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
Future subbasin planning	$2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0
M&E Total		$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$305.8
Research												
Continuing Cost	7.44	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	$74.4
BiOp life-stage research	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
NPCC Research Plan	4.00	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	$40.0
Innovative category	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Research Total		$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$124.4
Mainstem Program Expense												
Continuing Cost	6.00	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	$60.0
Additional Predator Control	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
Additional Lamprey work	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
Mainstem Total		$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$80.0
Fish Production												
Continuing Cost	$39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	$396.0
Additional O&M on completed FWP facilities	$3.0	1.0	1.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	$24.0
BiOp hatchery improvements	$2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0

Table 6. Estimated Fish and Wildlife

Duration of Implementation (Years)	25

Cost Item (*$Millions/year*)	Assume	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Ten Year Cost
Total New Facilities Cost (Capital)	$192.4	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	
Total Additional Costs & O/M (Expense)	$98.5	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	$39.4
Fish Production Total		$54.2	$54.2	$55.2	$55.2	$56.2	$56.2	$56.2	$56.2	$56.2	$56.2	$556.4
Habitat												
Continuing Cost	$12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	$121.0
Land Protection Cost	$404.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	$161.7
Instream Flow Improvement Cost	$34.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	$13.6
Enhancement & Restoration Cost	$625.8	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	$250.3
Annual Habitat O&M	0.00%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Assessments	$0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Additional "Small" Tributary Passage (Expense)	$187.4	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	$75.0
Additional "Major" Tributary Passage (Capital)	$21.2	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	$8.5
Additional Tributary Passage O&M	0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Additional Wildlife Mitigation	$300.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	$120.0
Additional Wildlife O&M	0.00%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Habitat Total		$75.0	$75.0	$75.0	$75.0	$75.0	$75.0	$75.0	$75.0	$75.0	$75.0	$750.1
TOTAL Cost without Borrowing *($M/yr)*	$1,978.6	$196.5	$196.5	$197.5	$197.5	$198.5	$198.5	$198.5	$198.5	$198.5	$198.5	$1,978.6
TOTAL Cost with Borrowing *($M/yr)*	$1,724.3	$171.0	$171.0	$172.0	$172.0	$173.0	$173.0	$173.0	$173.0	$173.0	$173.0	$1,724.3
TOTAL with inflation		$196.5	$203.2	$211.3	$218.7	$227.4	$235.4	$243.6	$252.2	$261.1	$270.3	$2,319.7

Table 7. Estimated Fish and Wildlife

Duration of Implementation (Years)	**100**

Cost Item (*$Millions/year*)	Assume	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Ten Year Cost
Information Management, Coordination & Administration												
Continuing Cost	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	$117.0
Regional Data Management	2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0
Production/Habitat Integration	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	$5.0
Watershed Coordination Support	2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0
IMCA Total		$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$16.2	$162.0
Monitoring & Evaluation												
Continuing Cost	17.58	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	$175.8
Programmatic M&E	10	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	$100.0
Additional mainstem evaluations	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
Future subbasin planning	$2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0
M&E Total		$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$30.6	$305.8
Research												
Continuing Cost	7.44	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	$74.4
BiOp life-stage research	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
NPCC Research Plan	4.00	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	$40.0
Innovative category	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Research Total		$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$12.4	$124.4
Mainstem Program Expense												
Continuing Cost	6.00	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	$60.0
Additional Predator Control	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
Additional Lamprey work	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$10.0
Mainstem Total		$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$8.0	$80.0
Fish Production												
Continuing Cost	$39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	$396.0
Additional O&M on completed FWP facilities	$3.0	1.0	1.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	$24.0
BiOp hatchery improvements	$2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	$20.0

Table 7. Estimated Fish and Wildlife

PRELIMINARY

Duration of Implementation (Years)	**100**

Cost Item (*$Millions/year*)	Assume	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Ten Year Cost
Total New Facilities Cost (Capital)	$192.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
Total Additional Costs & O/M (Expense)	$98.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	$9.9
Fish Production Total		$45.5	$45.5	$46.5	$46.5	$47.5	$47.5	$47.5	$47.5	$47.5	$47.5	$469.1
Habitat												
Continuing Cost	$12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	$121.0
Land Protection Cost	$404.2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	$40.4
Instream Flow Improvement Cost	$34.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	$3.4
Enhancement & Restoration Cost	$625.8	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	$62.6
Annual Habitat O&M	0.00%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Assessments	$0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Additional "Small" Tributary Passage (Expense)	$187.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	$18.7
Additional "Major" Tributary Passage (Capital)	$21.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	$2.1
Additional Tributary Passage O&M	0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Additional Wildlife Mitigation	$300.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	$30.0
Additional Wildlife O&M	0.00%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$0.0
Habitat Total		$27.8	$27.8	$27.8	$27.8	$27.8	$27.8	$27.8	$27.8	$27.8	$27.8	$278.3
TOTAL Cost without Borrowing *($M/yr)*	$1,419.6	$140.6	$140.6	$141.6	$141.6	$142.6	$142.6	$142.6	$142.6	$142.6	$142.6	$1,419.6
TOTAL Cost with Borrowing *($M/yr)*	$1,356.0	$134.2	$134.2	$135.2	$135.2	$136.2	$136.2	$136.2	$136.2	$136.2	$136.2	$1,356.0
TOTAL with inflation		$140.6	$145.0	$150.6	$155.4	$161.5	$166.6	$171.9	$177.3	$183.0	$188.8	$1,640.7

ACHIEVEMENT TARGETS (10 Year)	Mtn Columbia	Inter Mtn	Mtn Snake	Blue Mtn	U&M Snake	Columbia Cascade	Plateau	Columbia Gorge	Lo. Col. & Estuary	Basin Totals
New Production Facilities										
Number per Province	1	3		1	1	4	2	1		13
Habitat										
Acres purchased	4,000	40	10,000	0	7,000	4,000	3,000	45	0	28,085
Acres leased	0	0	1,300	500	2,000	4,500	11,140	1,040	0	20,480
Miles of fence	80	0	660	100	580	35	68	73	0	1,596
Acre-Feet of Water Purchased	0	0	0	0	0	18	50	0	0	68
Acres planted	40	0	3,010	500	30,400	90	177	357	0	34,574
Miles of Road Obliterated	60	0	2,820	400	20	20	30	93	0	3,443
Acres Treated for Weeds	0	0	31,370	10,500	0	0	0	0	0	41,870
Miles of Instream Improvements	30	38	630	100	410	30	57	21	0	1,316
Number of Barriers Removed	10	0	780	85	140	7	61	10	0	1,093
Number of Diversions Screened	15	0	0	4	70	23	10	0	0	122
Number of Sites Monitored	117	50	0	0	20	5	50	0	0	242

APPENDIX 2: BPA Fish and Wildlife Program: Twenty-six Years of Funding (1978-2003)

[CBFWA Draft April 27, 2004]

Introduction

The purpose of this paper is to describe the Bonneville Power Administration's (BPA) historic funding for fish and wildlife. The Fiscal Year (FY) 2003 budget is the twenty-sixth since BPA started to include fish and wildlife costs in their operations budget. This paper is intended to provide a comprehensive, consistent view of past spending and serve as a basis for discussing future fish and wildlife budget needs. Generally, the paper relies on information provided by BPA with references presented to specific sources.

A Brief History

In 1978, the BPA hired its first fish and wildlife staff and started funding fish and wildlife activities. Prior to then, BPA paid for fish facilities at Federal Columbia River Hydropower System (FCRPS) dams, such as fish ladders, screens and bypass facilities, and mitigation facilities, such as fish hatcheries. These payments were to the U.S. Treasury for fish facility expenditures by the Army Corps of Engineers (COE), the Bureau of Reclamation (BOR), and the Fish and Wildlife Service (USFWS)

In December of 1980, Congress passed the Northwest Power Planning and Electric Conservation Act (NW Power Act) that established an additional obligation on BPA to pay for more extensive mitigation for the FCRPS. The NW Power Act established the Northwest Power Planning Council (later called the Northwest Power and Conservation Council or NPCC). The NW Power Act directed the NPCC to adopt a fish and wildlife program to guide BPA fish and wildlife mitigation funding. As the budgets became more complex, BPA began dividing their Fish and Wildlife Program costs into four categories:

1) Capital Investments;
2) Reimbursed Expenses of Other Agencies;
3) Integrated (Direct) Program Expenses; and,
4) River Operations.

On March 2, 1995, the National Oceanic and Atmospheric Administration (NOAA) Fisheries issued the 1995 FCRPS Biological Opinion. In that opinion, NOAA Fisheries determined that the proposed operation of the FCRPS would jeopardize the continued existence of threatened and endangered Snake River spring/summer chinook, fall chinook, and sockeye salmon and would adversely affect their critical habitat. The 1995 FCRPS Biological Opinion, therefore, established a set of Reasonable and Prudent Alternatives (RPA) for the operation and configuration of the hydrosystem to satisfy ESA

Section 7(a)(2) requirements. The RPA prescribes measures to increase the survival of listed salmonids and initiated the development of long-term system configuration plan.

Faced with increasing fish and wildlife costs and the prospect of further increases resulting from the implementation of the 1995 Biological Opinion, BPA and its federal partners entered into a Memorandum of Agreement (MOA) governing BPA's fish and wildlife budgets. The MOA set targets for the four BPA budget categories, for Fiscal Years 1996 through 2001. The MOA also set procedures for managing the budget in a more publicly accessible process.

On May 14, 1998, NOAA Fisheries issued the 1998 Supplemental FCRPS Biological Opinion. That ESA Section 7 consultation evaluated the effects of configuration and operations of the FCRPS on newly listed threatened and endangered steelhead in the Upper Columbia River, Snake River, and Lower Columbia River Ecologically Significant Units.

In the 1998 Supplemental FCRPS Biological Opinion, NOAA Fisheries determined that operating the FCRPS in accordance with the Action Agencies' proposed plan, including the measures specified in the RPA of the 1995 FCRPS Biological Opinion (the 1995 RPA), would not jeopardize the continued existence of the newly listed steelhead. The 1998 Supplemental FCRPS Biological Opinion established spring flow objectives at Priest Rapids Dam to protect juvenile fish and expanded the spill program at many mainstem hydro projects, but otherwise left the decision-making process and timing for the long term as described in the 1995 FCRPS Biological Opinion.

The NOAA Fisheries issued a last supplemental biological opinion on February 4, 2000. That opinion considered the effects of the FCRPS operations on the six species that NOAA Fisheries listed as threatened or endangered in March 1999. The NOAA Fisheries determined that implementation of the 1995 RPA, as modified by the 1998 proposed action and combined with a few additional interim measures, would not jeopardize the continued existence of any of the newly listed species for the rest of the interim period. The decision-making process and timing for the long-term, again, remained consistent with the 1995 FCRPS Biological Opinion.

The NOAA Fisheries based its 2000 FCRPS Biological Opinion on the premise that the operation of the hydroelectric dams jeopardized the listed anadromous salmonids and recommended a strategy of "aggressive offsite mitigation" to avoid a jeopardy finding and to put off a decision on breeching the lower four Snake River dams pending further study. Under this biological opinion, BPA could avoid provision of additional spill and flow for fish, as identified in previous biological opinions, by funding offsite habitat improvement projects.

In 2001, BPA set new rates for power sales in FY 2002-2006 that increased funding available for fish and wildlife from $252 million under the MOA to $352 million annually. This included $186 Million for the Integrated Program (combining $150 million in Expense and $36 million for Capital or borrowing authority), $62 million for

Reimbursed Expenses, and $104 for mainstem capital repayment. However, drought and the West Coast energy markets impacted BPA's budget and, with NPCC's concurrence, BPA reduced its Integrated Program budget target from $150 million for Expense to $139 million annually, where it remains today.

Figure 1 and Table 1 summarize the amounts that BPA has spent on its fish and wildlife program expenses from FY 1978 through FY 2003. (Table 1 is located at the end of this document.)

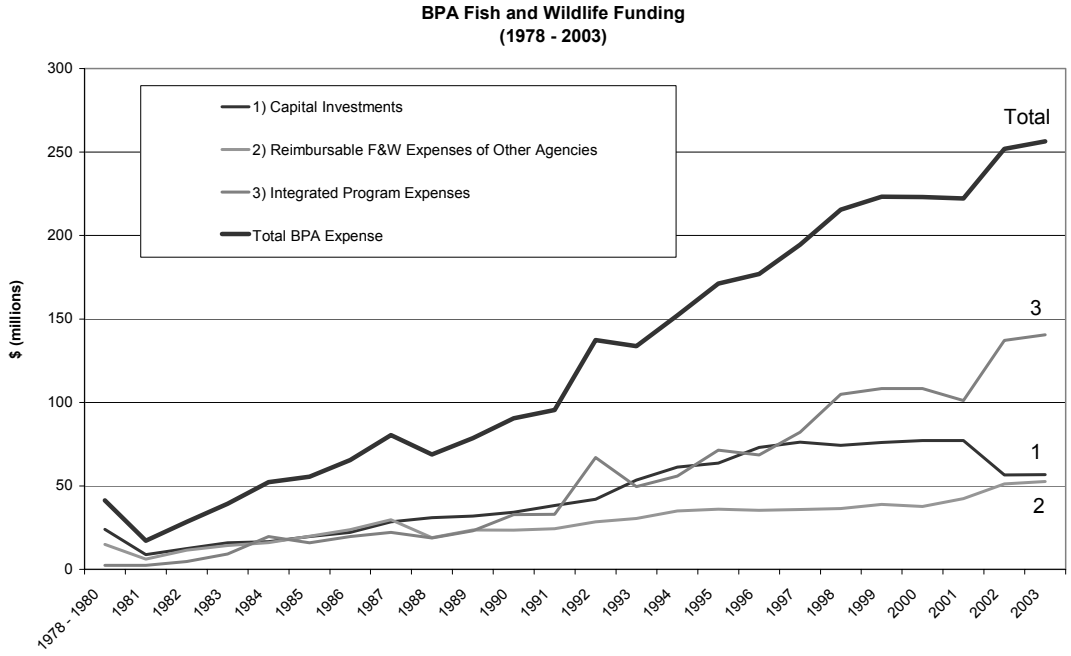


Figure 1. BPA fish and wildlife spending from 1978-2003 (in nominal dollars).

BPA Annual Expenditures

1) Capital Investments

BPA is obligated to repay the U.S. Treasury amortization, depreciation, and interest on funds borrowed by the COE and BOR for capital investments in fish facilities at dams built and operated by them. BPA's capital budget also repays funds borrowed to construct numerous hatcheries built as partial mitigation for the FCRPS. Other investments include salmon transport barges and improvements at the FCRPS dams for fish collection and passage, as well as planning, design, monitoring and research studies. The amount that Congress authorized the COE and BOR to spend each year is shown in Table 1 as is BPA's actual repayment amount.

Note that there is a distinction, often obscured, between the amount authorized and borrowed from the U.S. Treasury (analogous to the "mortgage") and the actual repayment cost (analogous to an annual "mortgage" payment). The amount borrowed is usually booked in the year construction starts, while repayment does not start until the facility is completed. As a general rule-of-thumb, the fixed costs of repayment are about one-tenth of the amount capitalized. The operation and maintenance costs of these facilities are generally included in category 2) Reimbursed Expenses of Other Agencies.

The costs for capital investments have remained steady since the adoption of the 1996-2001 Memorandum of Agreement. The MOA set targets for capital investment of $107 million annual average. The BPA's investments in this area under-spent the targets significantly, averaging $76 million annually, for a total under-investment of more than $188 million. For the past eight years, the annual appropriation for fixes at mainstem dams has averaged approximately $83.5 million. Since the adoption of the 2000 biological opinions, average annual spending has remained fairly constant with only a slight decrease.

Since 1985, BPA has identified the amounts to be capitalized in implementing its Integrated (Direct) Fish and Wildlife Program. Apparently in the early years of the program, BPA chose to pay this cost from revenues, rather than borrowing. The 1996-2001 MOA set $27 million as the annual target for capitalized projects in the Integrated Program. The line "Integrated Program" under Capital Investments in Table 1 shows the trend in this amount. Under the MOA, BPA capitalized an average of $20.2 million annually, under spending the target by about $40.8 million over the life of the MOA (Figure 2).

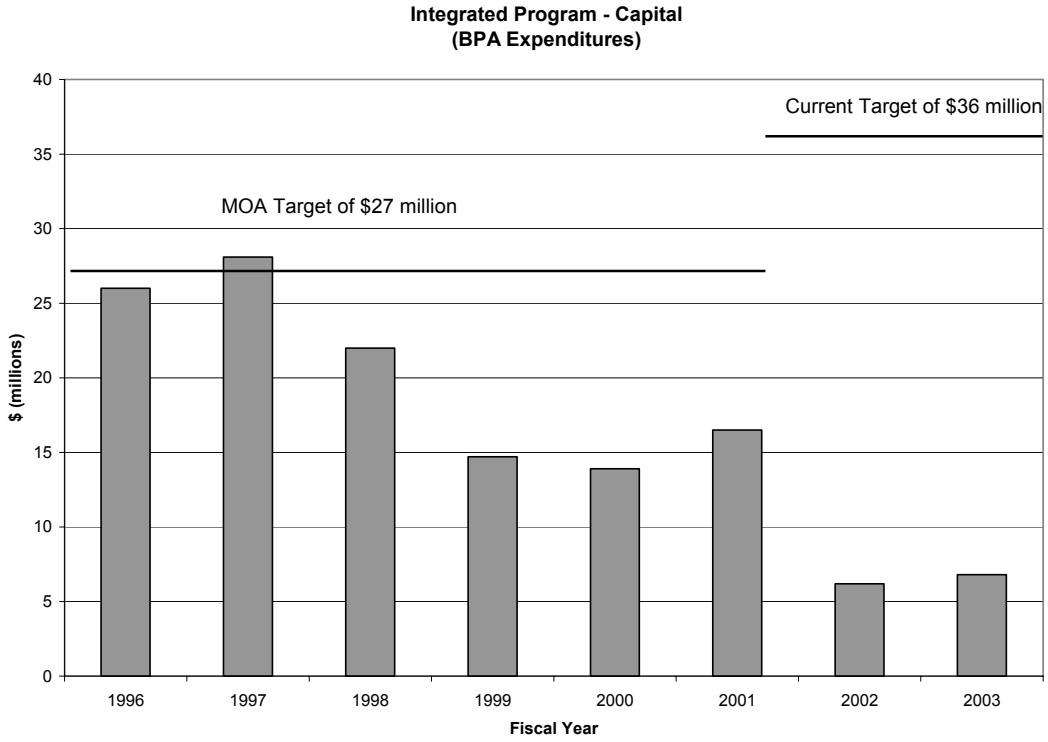


Figure 2. Actual capital borrowing in the Integrated Program from 1996-2003.

Capitalized amounts for the Integrated Program generally increased through 1997 when they reached $28.1 million. Since Congress granted BPA an additional $770 million in borrowing authority in 2001, BPA has capitalized an average of $6.5 million (Figure 2), even though its annual budget target has apparently increased to $36 million. This represents a $59 million shortfall in the two years since the expiration of the MOA.

Since adoption of the 2000 biological opinions, there has been an average decrease in capital borrowing for the Integrated Program of almost $15 million per year (Figure 2). Also, BPA's actual repayment costs dropped significantly since the end of the MOA (Table 1).

2) Reimbursed Expenses of Other Agencies

BPA repays the U.S. Treasury for the hydroelectric share of operation and maintenance budgets and other authorized non-capital expenditures for fish and wildlife activities by the COE, BOR and USFWS. These costs include those of the Lower Snake River Compensation Plan implementation and numerous hatcheries built to mitigate for the FCRPS. These facilities are often operated by the state fisheries management agencies. BPA also funds half of the NPCC's budget (currently $4.5 million annually) under this portion of its budget. BPA has relatively little control over these expenses, reimbursing the U.S. Treasury directly.

The Reimbursable category of the budget averaged $37.8 million annually under the MOA, close to the MOA annual budget target of $40 million. The operation and maintenance budgets have increased by more than one-third since the end of the MOA. Most of the increase appears to be related to a greater than 50 percent increase in COE and BOR operating budgets (Figure 3, Table 1).

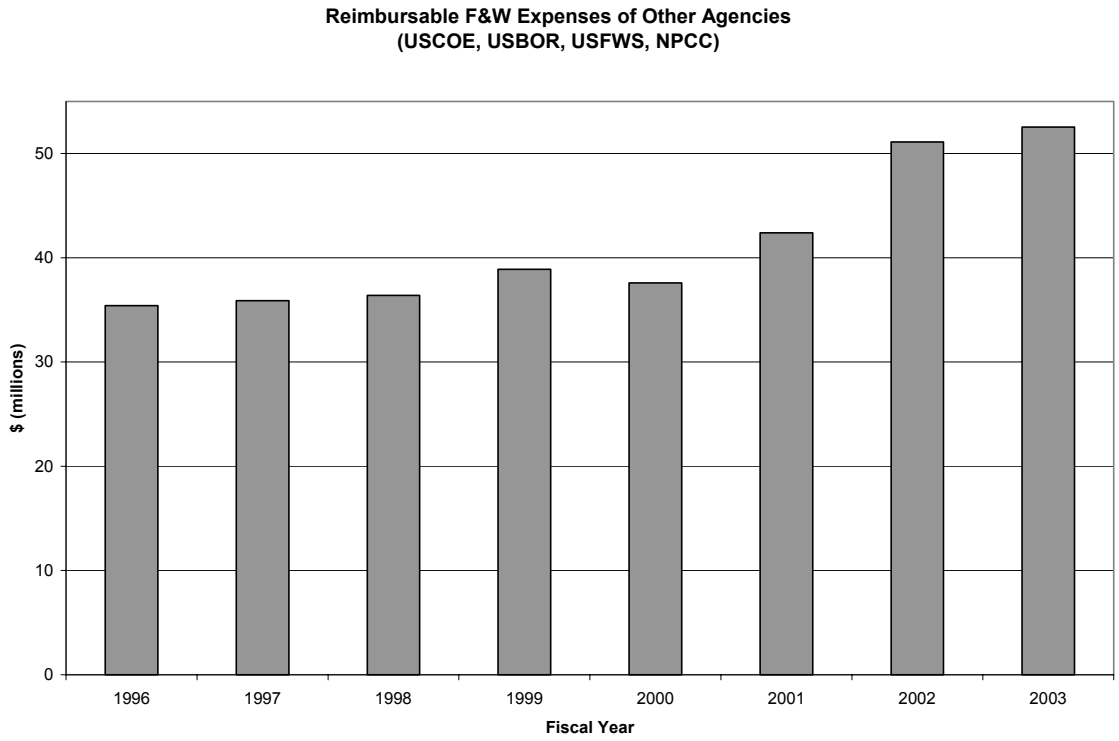


Figure 3. Reimbursable fish and wildlife expenses of other federal agencies.

3) Integrated (Direct) Program

The Integrated Program budget has two categories: Capital (discussed above) and Expense. The Expense portion of the Integrated Program has increased steadily since 1978. The MOA set an annual budget target of $100 million, with BPA spending averaging $95.5 million annually, a shortfall of $26.9 million. During the current rate period, the target for the Expense portion of the Integrated Program was set at $150 million and reduced to $139 million annually in 2003. Actual spending during the current rate period has averaged $139 million per year.

Although this appears to be an increase in funding of $39 million annually since the conclusion of the MOA, the program funding has not been adjusted for inflation for eight years exaggerating the true benefit of the additional funding. Further, BPA has rolled contracted obligations forward each year without shifting the associated funding, creating a "bow-wave" of unfunded obligations. A change in accounting practices in FY 2003 required elimination of $40 million worth of these carry-over obligations. In essence, BPA cut $40 million in obligations from the Integrated Program in FY 2003. BPA is

now considering cutting an additional $15 million from the Integrated Program over the period FY 2005-2006.

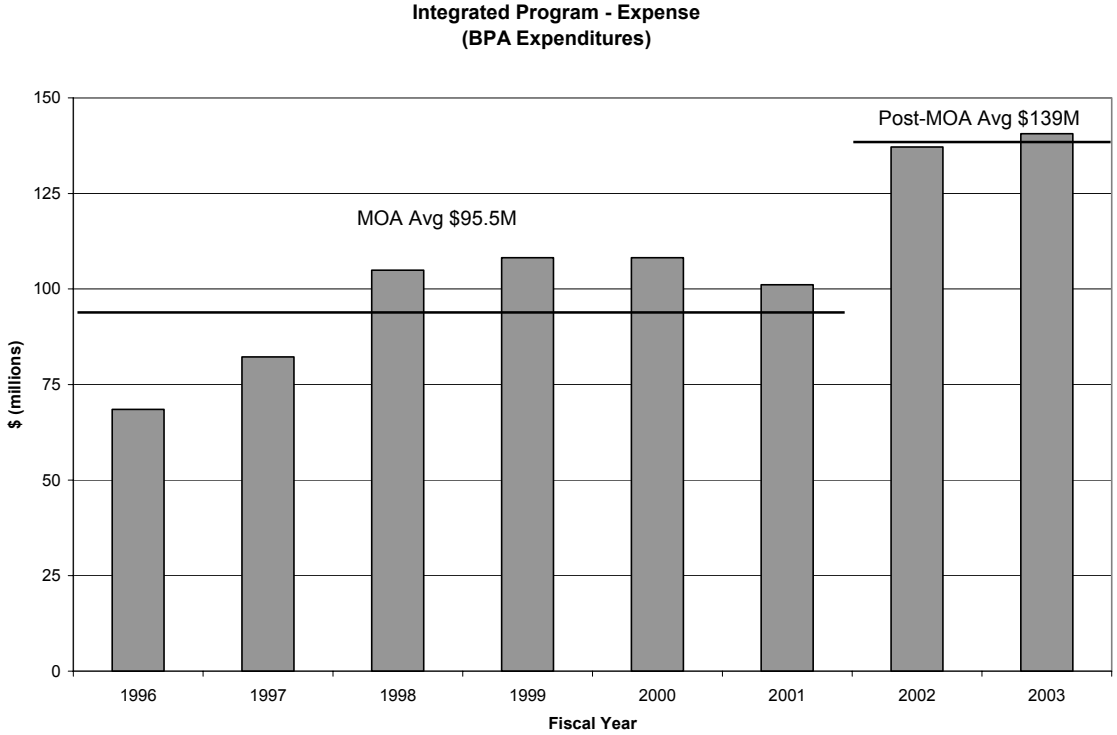


Figure 4. BPA spending in the Integrated Program from 1996-2004.

4) High Priority/Action Plan Funding

In addition to the regular funding of the Integrated Fish and Wildlife Program, BPA announced that it would augment its budget in 2001 by $10-20 million to partially offset the impacts from BPA's elimination of summer spill during the drought and to provide a boost in funding for projects that met immediate needs identified in the 2000 biological opinions. BPA held two separate solicitations, titled "High Priority" and "Action Plan" and received about 108 project proposals. The fish and wildlife managers (CBFWA), independent scientists (ISRP), NOAA, and the public reviewed the proposals and the NPCC recommended funding approximately 30 proposals for a total of approximately $38 million. BPA spent $15.1 million, over three years, to fund 25 projects in this category of funding (Table 1).

River Operations

The fish and wildlife costs associated with operating the hydropower system are of a fundamentally different nature than those discussed above. Operational costs represent the value of electricity that might have been generated by water provided as spill or power purchased to replace or provide flows for fish. This is very different from actual

cash outlays to pay for fish and wildlife investments or expenses. The operational "costs" are derived in two ways, depending on the circumstances: revenue foregone and power purchases. BPA calculates revenue foregone by estimating the difference between a base-case value of power that might have been generated absent operational changes to benefit fish and that which was actually generated.

BPA estimates power purchases as the cost of power purchased to meet BPA contracts when hydro-operations are reduced by fish requirements and the system is not able to meet contract needs. Power purchases result from BPA contracting to sell more power than the hydro-system can reliably provide. BPA does not de-rate the hydro power system to fully account for required fish constraints, as they do for other operational constraints such as irrigation, navigation, municipal water supplies and recreation. When river flows are not adequate to meet all of the demands of the river, BPA in essence "charges" the salmon for power purchases necessary to meet its hydro-electricity contracts.

Table 2 and Figure 5 detail BPA's estimates of these "lost opportunity" costs and shows that over the last 26 years they total more than $3.7 billion with almost 40 percent of the total occurring in 2001.

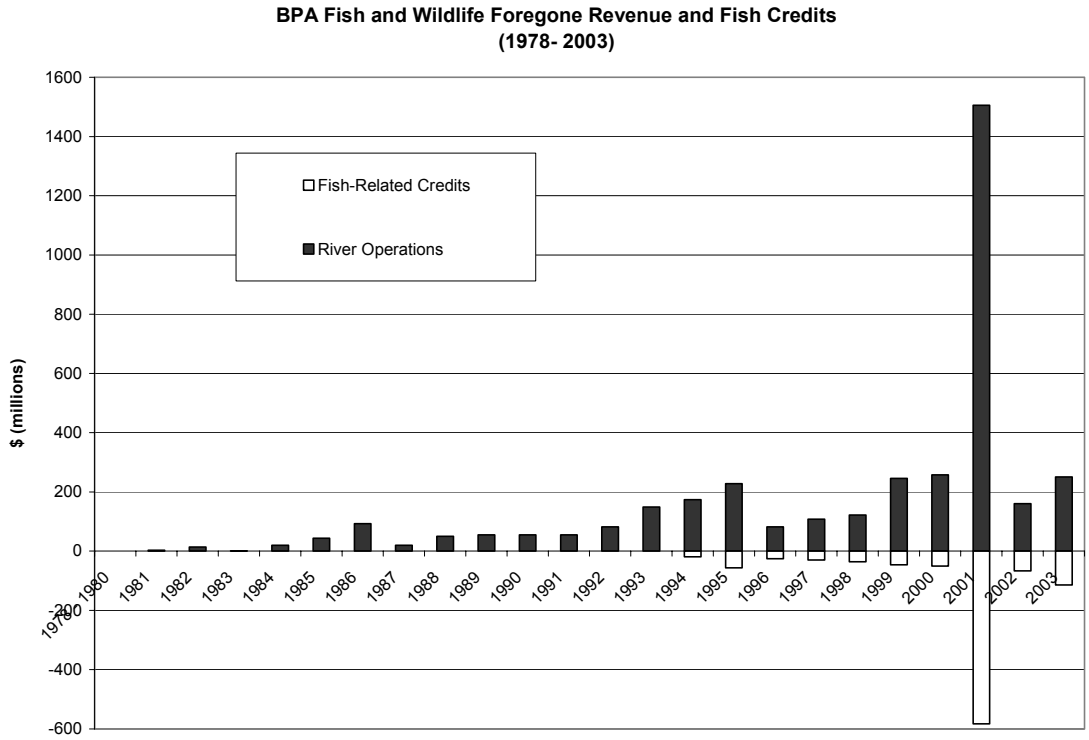


Figure 5. BPA estimated cost of river operations and benefits of fish credits from 1978 – 2003.

In Figure 5 and Table 2, fiscal year 2001 appears to be an anomaly. The operational costs were based on reduced reservoir levels at the start of the 2001 water year combined with wildly inflated electricity prices in the second quarter of the 2001 during the West Coast energy crisis. Essentially no river operations for fish occurred during 2001. BPA declared a financial emergency and shut off summer spill, opting to generate power valued at approximately $500 million, to help pay for its financial crisis. Yet in BPA's accounting for the costs of meeting its fish and wildlife obligations, it does not credit the revenue benefits back to the fish and wildlife program.

Two aspects of these lost (power) opportunity costs should be kept in mind. First, other mandated uses of the river also limit hydropower generation. For example, BPA recently estimated in their sounding board discussions that irrigation use costs BPA about $180 million annually in revenue foregone and power purchase costs. Similar estimates could be made for the costs of lost opportunities to generate power as a result of flood control, navigation, or operations to benefit the annual Richland Washington hydroplane races. The spill and flow requirements for salmon were set by the 1995 and 2000 biological opinions and the 1994 Fish and Wildlife Program, and are not discretionary except in emergencies. BPA does not consider implementation of flow and spill for fish as a cost of doing business and has not de-rated the generating capability of the FCRPS accordingly, as they have done to account for other constraints to generation.

Second, it is argued that these other uses of the river provide real (monetary) benefits that outweigh the costs of lost generation. Fish and wildlife provide real (and monetary) benefits, as well. One calculation (CBFWA, 2003), based on the 1987 NPCC Fish and Wildlife Program assumptions, estimates that the presence and operation of hydropower system results in about 8 million salmon that do not return, in essence, salmon "foregone." At a value to local economies of about $400 per fish caught, this would result in about $1 billion in revenue foregone each year from the salmon based industry of the Pacific Northwest.

Fish Credits

BPA estimates the costs of salmon operations in detail because the NW Power Act allows BPA to take credits towards their annual U.S. Treasury repayment (currently equal to 27 percent of the calculated power generation impacts). When it passed the NW Power Act, Congress realized that "equitable treatment" of fish and wildlife with power generation would reduce generation and established two crediting mechanisms to reduce the rate impacts. Table 2 and Figure 5 provide the fish credits that BPA has used to partially off set its operational costs each year. Since BPA started taking these credits in 1994, it has reduced its U.S. Treasury repayments by more than $1 billion, more than half of it in 2001 to offset the impacts of the chaotic Western energy market and the drought.

Conclusions

- Over the last 26 years, BPA has spent about $2 billion ($79 million per year or 2.4% of BPA's annual budget) to meet fish and wildlife obligations (Table 1). This includes:
    - $1,071 million in repayment to the U.S. Treasury for funds borrowed to build fish passage facilities at the FCRPS and tributary dams and numerous salmon hatcheries to partially mitigate for the dams;
    - $687 million to reimburse the U.S. Treasury for the operation of these facilities;
    - $1,313 million expenses of the Integrated (Direct) F&W Program; and
    - $1,025 million in Treasury payment credits.

- Since adopting the 2000 FCRPS biological opinions, BPA's spending for fish and wildlife has increased from an annual average of $207 million during the preceding five years to an annual average of $244 million.
    - This apparent 18 percent increase is tempered by unaccounted-for inflation, a $12 million per year increase in COE and BOR operations costs at existing facilities, and an accounting write-off of about $40 million in Integrated Program obligations.
    - While BPA's spending for Integrated Program expenses has increased almost 34 percent since the adoption of the 2000 Biological Opinion, this is partially offset by a 53 percent decline in capital investments.

- BPA has estimated the opportunity costs of system operations to meet fish and wildlife mitigation obligations at about $3.77 billion over the last 26 years. Forty percent of this lost opportunity occurred as a result of the extraordinary conditions in 2001.
    - These opportunity costs have been offset by $1.03 billion in credits against its Treasury repayments effectively shifting 27 percent of this "cost" to the U.S. taxpayers. Further, during 2001, BPA generated about $500 million in power instead of providing spill required by the 2000 Biological Opinion. This should be credited as a foregone spill offset to its opportunity costs. Thus, using the above assumptions, BPA's net opportunity costs from fish and wildlife obligations is about $2.25 billion over the last 26 years, or less than $90 million annually.

- The MOA specified rules that provided for any unspent funds within the MOA to be carried forward each year and made available for fish and wildlife projects, even after the MOA expired, stating: "*Any funds remaining in these accounts after the close of Fiscal Year 2001 will not be re-programmed for any non-fish and wildlife use, but will remain available for expenditure for the benefit of fish and wildlife"* (MOA Section VIII(h)).
    - However, when the MOA expired, BPA failed to carry forward or continue to make available $226 million of unspent funds, including

$188.4 million in the Capital category and $37.6 million from the Integrated (Direct) Program Expenses.

Table 1. Bonneville Power Adminstration (BPA) Fish and Wildlife Expenditures from 1978-2003[1] ($ in millions).

Fiscal Year	Actual 1978-1980	Actual 1981	Actual 1982	Actual 1983	Actual 1984	Actual 1985	Actual 1986	Actual 1987	Actual 1988	Actual 1989	Actual 1990	Actual 1991	Actual 1992	Actual 1993	Actual 1994	Actual 1995	Actual 1996	Actual 1997	Actual 1998	Actual 1999	Actual 2000	Actual 2001	Actual 2002	Actual 2003	Total 1978-2003
1) Capital Investments Fixed Expenses																									
Federal appropriated dollars	*30.0*	*17.9*	*61.7*	*55.1*	*9.0*	*46.4*	*9.1*	*78.6*	*7.6*	*5.3*	*4.5*	*12.0*	*4.7*	*162.0*	*63.0*	*48.0*	*86.9*	*82.4*	*102.2*	*72.3*	*74.9*	*94.1*	*73.2*	*82.3*	*1,283.2*
Integrated Program	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*10.2*	*8.0*	*4.7*	*7.7*	*8.3*	*16.2*	*17.7*	*11.2*	*17.3*	*20.5*	*32.5*	*26.0*	*28.1*	*22.0*	*14.7*	*13.9*	*16.5*	*6.2*	*6.8*	*288.5*
Actual	**24.0**	**8.8**	**12.4**	**15.9**	**16.6**	**19.7**	**22.1**	**28.5**	**31.0**	**31.9**	**34.3**	**38.2**	**41.9**	**53.6**	**61.3**	**63.6**	**73.0**	**76.3**	**74.2**	**76.1**	**77.2**	**77.1**	**56.6**	**56.7**	**1,071.0**
2) Reimbursable F&W Expenses of Other Agencies																									
Actual	**15.0**	**6.1**	**11.5**	**14.2**	**16.0**	**19.9**	**23.7**	**29.7**	**19.0**	**23.6**	**23.4**	**24.3**	**28.4**	**30.5**	**34.9**	**36.1**	**35.4**	**35.9**	**36.4**	**38.9**	**37.6**	**42.4**	**51.1**	**52.5**	**686.5**
3) Integrated Program Expenses																									
Actual	**2.3**	**2.3**	**4.6**	**9.1**	**19.6**	**15.9**	**19.6**	**22.2**	**18.8**	**23.0**	**32.8**	**33.0**	**67.0**	**49.6**	**55.9**	**71.4**	**68.5**	**82.2**	**104.9**	**108.2**	**108.2**	**101.1**	**137.1**	**140.6**	**1,297.9**
4) High Priority/Action Plan Expenses																									
Actual																						**1.5**	**7.1**	**6.5**	**15.1**
Total BPA Expenses	**41.3**	**17.2**	**28.5**	**39.2**	**52.2**	**55.5**	**65.4**	**80.4**	**68.8**	**78.5**	**90.5**	**95.5**	**137.3**	**133.7**	**152.1**	**171.1**	**176.9**	**194.4**	**215.5**	**223.2**	**223.0**	**222.1**	**251.9**	**256.3**	**3,070.5**

Table 2. Bonneville Power Adminstration (BPA) River Operations and Fish Credits from 1978-2003[1] ($ in millions).

Fiscal Year	Actual 1978-1980	Actual 1981	Actual 1982	Actual 1983	Actual 1984	Actual 1985	Actual 1986	Actual 1987	Actual 1988	Actual 1989	Actual 1990	Actual 1991	Actual 1992	Actual 1993	Actual 1994	Actual 1995	Actual 1996	Actual 1997	Actual 1998	Actual 1999	Actual 2000	Actual 2001	Actual 2002	Actual 2003	Total 1978-2003
River Operations																									
Power Purchases	0.0	0.0	0.0	0.0	12.0	17.0	74.0	11.0	40.0	40.0	40.0	40.0	59.0	104.0	111.7	114.0	0.0	0.0	5.4	47.6	64.8	1,389.6	147.8	171.1	2,489.0
Foregone Revenues	0.0	3.0	14.0	1.0	8.0	27.0	19.0	9.0	10.0	15.0	15.0	15.0	23.0	45.0	62.0	114.0	81.7	107.8	116.5	197.8	193.1	115.9	12.6	79.2	1,284.6
Actual	**0.0**	**3.0**	**14.0**	**1.0**	**20.0**	**44.0**	**93.0**	**20.0**	**50.0**	**55.0**	**55.0**	**55.0**	**82.0**	**149.0**	**173.7**	**228.0**	**81.7**	**107.8**	**121.9**	**245.4**	**257.9**	**1,505.5**	**160.4**	**250.3**	**3,773.6**
Fish-Related Credits																									
NPA 4(h)(10)(C)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-18.7	-56.3	-25.5	-29.7	-35.7	-46.0	-50.4	-336.6	-66.4	-35.4	-700.7
Fish Cost Contingency Fund	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-246.5	0.0	-78.7	-325.2
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**-18.7**	**-56.3**	**-25.5**	**-29.7**	**-35.7**	**-46.0**	**-50.4**	**-583.1**	**-66.4**	**-114.1**	**-1,025.9**

1 - Data for thess tables was obtained from the following web links and from Val Leffler, BPA, and John Kranda, USCOE, personal communications (http://www.efw.bpa.gov/EW/FISCAL/congressional.budgets.1978-95.pdf and http://www.efw.bpa.gov/EW/FISCAL/MOAFinal2001.pdf).