Rate Case Cost Report:

An Analysis of Future Fish and Wildlife Budget Needs in Support of the BPA Rate Case for FY2007 – FY2009.

March 31, 2005 REVIEW DRAFT

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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 did not participate in developing these estimates and neither endorses nor disputes 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. 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. 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.

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 140,000 acres of habitat; improvements to more than 1500 miles of streams; enhancement activities on more than 75,000 acres of habitat; and, correcting passage problems at more than 2200 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 $134 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 $325 million, $205 million, or $145 million, respectively. These estimated costs make no provision for inflation. Including inflation, FY2009 costs could be $360 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 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. This is a CBFWA review draft and we are seeking comments on this paper. We are looking for any information that would improve the assumptions used so we can finalize fish and wildlife costs this spring in time to incorporate the costs into the BPA rate case process. Please provide comments to Tom Giese (tom.giese@cbfwa.org).

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: 27 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. (see attached Excel spread sheet, "SBPbyProvince020905").

Staff compiled subbasin plan costs for each province and extrapolated the cost to encompass the entire province on an approximate area basis (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 represent only those that the UCUT members deem 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 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 <u>not</u> 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.

Tables and Figures. The Tables referred to in the text are attached and can also be found in the Excel spread sheet, “Cost Tables020905”. Figures 1 and 2 follow.

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)	$304
Habitat	$35.8	Subbasin plans; BiOp off-site mitigation	Reprogramming based on subbasin plans		
Land Protection					$431
Instream Flow Improvement					$34
Enhancement & Restoration					$644
Additional "Small" Tributary Passage (Expense)					$187
Additional "Major" Tributary Passage (Capital)					$73
Wildlife					$300
Total	$134.1			+$9M (without Habitat)	$1,973

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	
Coeur D'Alene	Others	Included	
Columbia/L. Roosevelt	UCUT	Included	
Columbia/L. Roosevelt	Others	Included	
Pend Oreille	UCUT	Included	
Pend Oreille	Others	Included	
Spokane	UCUT	Included	
Spokane	Others	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	Next Draft	

Number of Subbasins Included 27
Number in Next Draft 32(?)

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	$37.0	$3.4	$15.0	$4.9	$10.0	$18.5	$0.0	$112.1	$112.1
Habitat - Land Protection Cost	$34.7	$52.0	$84.8	$2.7	$32.0	$62.8	$119.2	$3.7	$0.0	$431.1	$431.1
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	$50.2	$37.3	$86.3	$5.8	$0.0	$643.8	$643.8
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	$55.6	$3.8	$0.0	$72.5	$72.5
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	$518.5	$73.7	$169.2	$243.2	$358.9	$52.8	$0.0	$2,007.2	$1,673.4
Total Habitat and Production Costs (from Subbasin Plans)										$2,007.2	
Total 10 year Additional Costs			**$1,673**								

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*)	$112.1
Habitat	
Continuing Cost	**$12.1**
Land Protection Cost (*$M Total*)	$431.1
Instream Flow Improvement Cost (*$M Total)*)	$34.0
Enhancement & Restoration Cost (*$M Total*)	$643.8
Additional "Small" Tributary Passage (Expense) (*$M Total*)	$187.4
Additional "Major" Tributary Passage (Capital) (*$M Total*)	$72.5
Wildlife Mitigation *($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	**$1,673.4**
Total Cost of 10-Year Effort	**$3,182.6**
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

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)	$112.1	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	$112.1
Fish Production Total		$73.0	$73.0	$74.0	$74.0	$75.0	$75.0	$75.0	$75.0	$75.0	$75.0	$744.5
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

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
Land Protection Cost	$431.1	43.1	43.1	43.1	43.1	43.1	43.1	43.1	43.1	43.1	43.1	$431.1
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	$643.8	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	$643.8
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)	$72.5	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	$72.5
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	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		$179.0	$179.0	$179.0	$179.0	$179.0	$179.0	$179.0	$179.0	$179.0	$179.0	$1,789.9
Land & Water Cost Inflation Rate	6%											
Other Items Inflation Rate	3%											
compound L&W %		1.0000	1.0600	1.1236	1.1910	1.2625	1.3382	1.4185	1.5036	1.5938	1.6895	
compound other %		1.0000	1.0300	1.0609	1.0927	1.1255	1.1593	1.1941	1.2299	1.2668	1.3048	
total L&W		76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5	765.2
total other		242.7	242.7	243.7	243.7	244.7	244.7	244.7	244.7	244.7	244.7	2441.5
inflated L&W		76.5	81.1	86.0	91.1	96.6	102.4	108.5	115.1	122.0	129.3	
inflated other		242.7	250.0	258.6	266.4	275.5	283.7	292.2	301.0	310.0	319.3	
TOTAL Cost without Borrowing *($M/yr)*	$3,206.6	$319.3	$319.3	$320.3	$320.3	$321.3	$321.3	$321.3	$321.3	$321.3	$321.3	$3,206.6
Capital Cost w/o borrowing		$77.7	$77.7	$77.7	$77.7	$77.7	$77.7	$77.7	$77.7	$77.7	$77.7	$776.7
Percent capitalized	100%	$77.7	$77.7	$77.7	$77.7	$77.7	$77.7	$77.7	$77.7	$77.7	$77.7	
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		$7.8	$7.8	$7.8	$7.8	$7.8	$7.8	$7.8	$7.8	$7.8	$7.8	
Capital Cost with borrowing		$7.8	$7.8	$7.8	$7.8	$7.8	$7.8	$7.8	$7.8	$7.8	$7.8	$77.7
Annual cost less capital		$241.6	$241.6	$242.6	$242.6	$243.6	$243.6	$243.6	$243.6	$243.6	$243.6	
TOTAL Cost with Borrowing *($M/yr)*	$2,507.6	$249.4	$249.4	$250.4	$250.4	$251.4	$251.4	$251.4	$251.4	$251.4	$251.4	$2,507.6

Table 6. Estimated Fish and Wildlife

PRELIMINARY

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

PRELIMINARY

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)	$112.1	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	$44.8
Fish Production Total		$54.8	$54.8	$55.8	$55.8	$56.8	$56.8	$56.8	$56.8	$56.8	$56.8	$561.8
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	$431.1	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	$172.5
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	$643.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	$257.5
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)	$72.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	$29.0
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		$78.9	$78.9	$78.9	$78.9	$78.9	$78.9	$78.9	$78.9	$78.9	$78.9	$788.6
TOTAL Cost without Borrowing *($M/yr)*	$2,022.6	$200.9	$200.9	$201.9	$201.9	$202.9	$202.9	$202.9	$202.9	$202.9	$202.9	$2,022.6
TOTAL Cost with Borrowing *($M/yr)*	$1,743.0	$172.9	$172.9	$173.9	$173.9	$174.9	$174.9	$174.9	$174.9	$174.9	$174.9	$1,743.0

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
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

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)	$112.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	$11.2
Fish Production Total		$45.6	$45.6	$46.6	$46.6	$47.6	$47.6	$47.6	$47.6	$47.6	$47.6	$470.4
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	$431.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	$43.1
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	$643.8	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	$64.4
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)	$72.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	$7.3
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		$28.8	$28.8	$28.8	$28.8	$28.8	$28.8	$28.8	$28.8	$28.8	$28.8	$287.9
TOTAL Cost without Borrowing *($M/yr)*	$1,430.5	$141.7	$141.7	$142.7	$142.7	$143.7	$143.7	$143.7	$143.7	$143.7	$143.7	$1,430.5
TOTAL Cost with Borrowing *($M/yr)*	$1,360.6	$134.7	$134.7	$135.7	$135.7	$136.7	$136.7	$136.7	$136.7	$136.7	$136.7	$1,360.6

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	5,000	40,000	0	765	0	59,805
Acres leased	0	0	1,300	500	0	45,000	0	1,040	0	47,840
Miles of fence	80	0	660	100	280	350	0	73	0	1,543
Acre-Feet of Water Purchased	0	0	0	0	0	180	0	0	0	180
Acres planted	40	0	3,010	500	30,000	900	0	357	0	34,807
Miles of Road Obliterated	60	0	2,820	400	0	200	0	93	0	3,573
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	390	300	0	21	0	1,509
Number of Barriers Removed	10	0	780	85	40	1,300	0	10	0	2,225
Number of Diversions Screened	15	0	0	4	70	70	0	0	0	159
Number of Sites Monitored	117	50	0	0	20	50	0	0	0	237

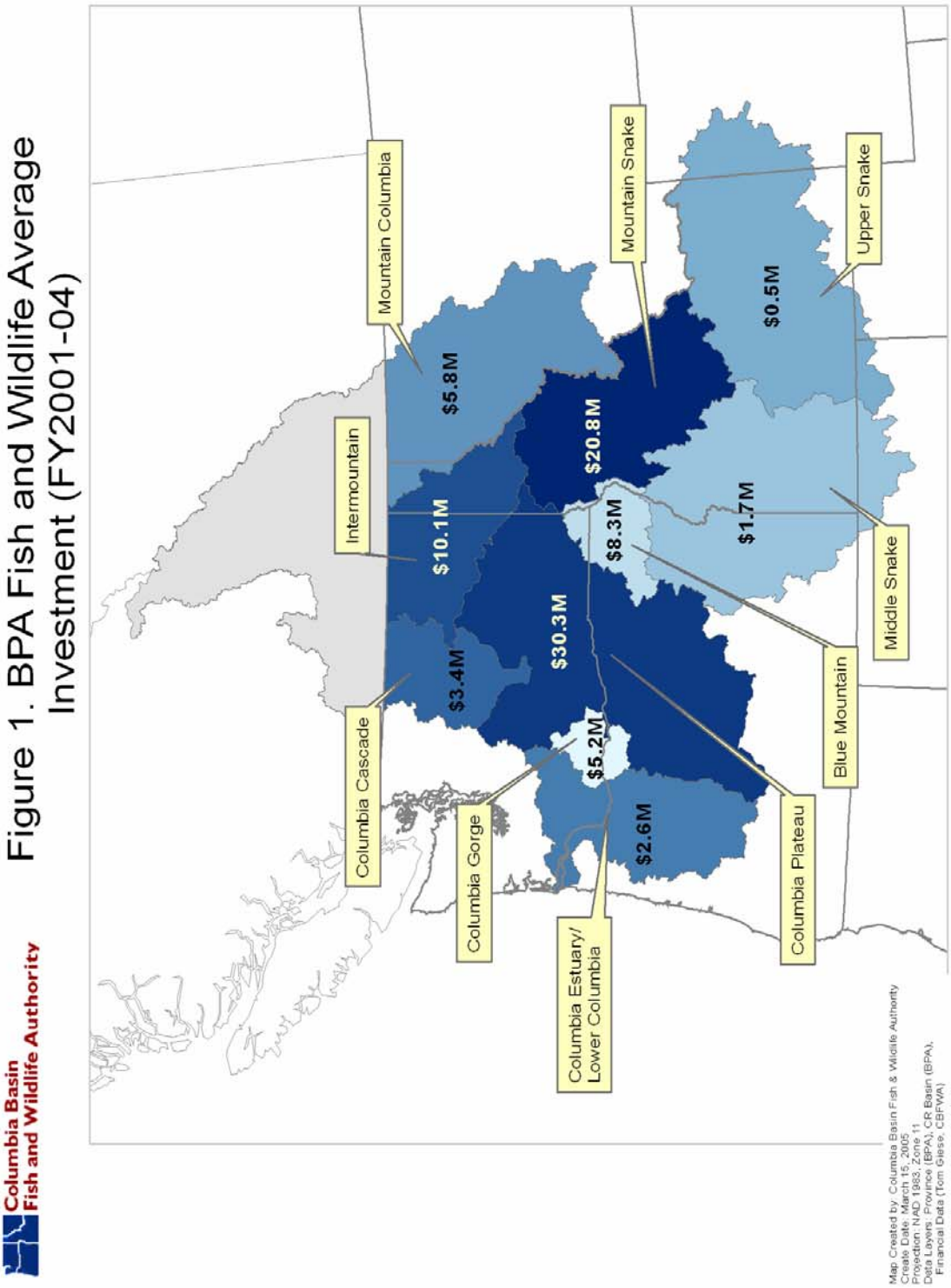
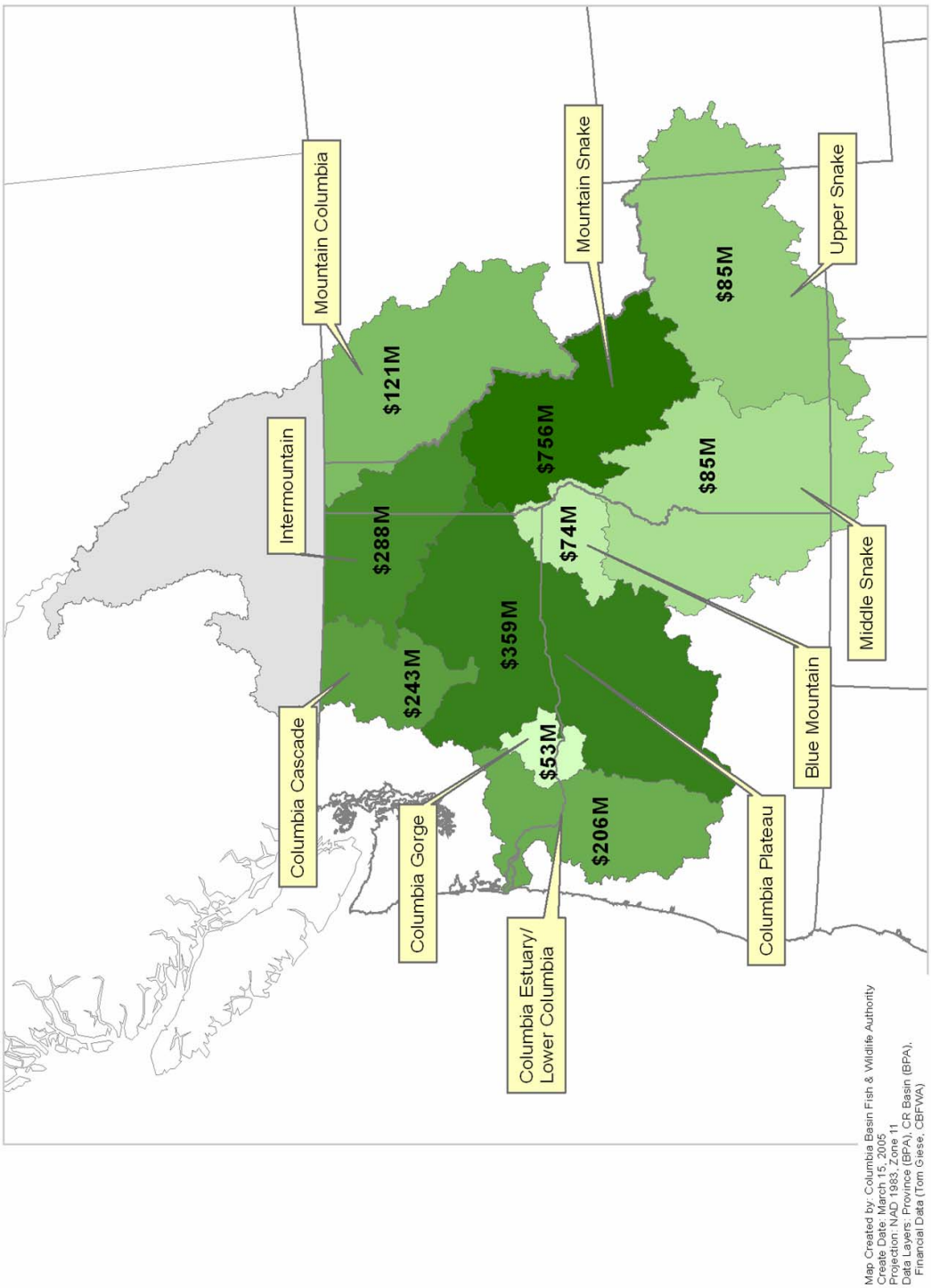

Columbia Basin
Fish and Wildlife Authority
Figure 1. BPA Fish and Wildlife Average
Investment (FY2001-04)
Mountain Columbia
$5.8M
Intermountain
$10.1M
Columbia Cascade
$3.4M
Columbia Gorge
Columbia Estuary/
Lower Columbia
$30.3M
$5.2M
$2.6M
Mountain Snake
$20.8M
$8.3M
Columbia Plateau
Blue Mountain
Upper Snake
$0.5M
$1.7M
Middle Snake
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)

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



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 the subbasin plans and wildlife provisions. The resulting cost values are estimates, 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 and a thorough review by the managers. Nevertheless, we think that the overall cost values 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 where 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 such as NPCC Program amendments, ISAB review, and the regional project selection process. 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 $1.9 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. Staff intends to include a more complete analysis of capital costs of currently planned fish production facilities, as well.

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 are not included in these costs, but will fall largely in the Reimbursed Expenses portion of the 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 90,000 acres of habitat; improvements to more than 1500 miles of streams; enhancement activities on more than 75,000 acres of habitat; and, correcting passage problems at more than 2200 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 will 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 & 2.] creating jobs and additional economic activity. [Discuss any appropriate multiplier effects or studies.]

As fish and wildlife populations increase as a result of these BPA investments, east-side rural areas will experience increased spending by fishers, hunters, and recreationalists creating additional jobs and economic benefits. [Use IDFG study as an example.]

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 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 set its rates high enough to provide adequate fish and wildlife funding and to develop rate adjustment mechanisms as a contingency to address F&W uncertainties. 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 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 fish and wildlife managers believe that their recommended budget level is needed to improve progress towards meeting 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.*