TEN YEAR FISH AND WILDLIFE BUDGET

Direct portion of
the BPA Fish and Wildlife Budget

Developed by the
Columbia Basin Fish and Wildlife Authority
Portland, Oregon

May 1, 1998

CBFWA
Ten Year Fish and Wildlife Budget
(FY 1998 through FY 2006)

Introduction

Over the last fifteen years, considerable Pacific Northwest electric rate payer funds have been spent to mitigate hydropower caused fish and wildlife losses and to restore these resources. The regional effort has resulted in some successes but due to a great number of factors some fish and wildlife resources continue to decline. The mitigation needs out-strip the available funds. Endangered Species Act listings continue and an effort is underway to develop a multi-species recovery plan for the Columbia River Basin.

The fish and wildlife managers developed the Ten Year Budget to provide the Bonneville Power Administration (BPA), NPPC, and the public with a planning estimate of the future costs of the recovery effort. While it covers the direct portion of the BPA Fish and Wildlife budget, it is intended to be used in conjunction with estimates of the capital investment and reimbursable portions of the budget developed by the senior staff of the Northwest Indian Tribes, State Governors, and Federal agencies (Three Sovereigns).

It was with this goal in mind that the members of Columbia Basin Fish and Wildlife Authority (CBFWA) committed to developing a Multi-Year Plan which sets goals and principles for the management of Columbia River Basin fish and wildlife. These goals and principles are based on those developed by the Independent Scientific Group in the "Return to the River" and are similar to those being used by the Independent Scientific Review Panel (ISRP) and the Northwest Power Planning Council (NPPC).

Goal

Restore sustainable, naturally-producing fish and wildlife populations to support tribal and non-tribal harvest and cultural and economic practices by restoring the biological integrity and the genetic diversity of the Columbia River ecosystem and through other measures that are compatible with naturally-producing fish and wildlife populations. (Draft FY1998 AIWP, Appendix A, 6/4/97)

Principles

The fish and wildlife managers have adopted a set of principles to guide their efforts toward the goal (paraphrased from Draft Multi-Year Plan, 2/7/98):

- Ecosystems are a complex group of inter-connected habitats supporting diverse assemblages of species;
- Natural processes govern ecosystems; residents of the Columbia Basin will have more success managing human activities than trying to manipulate ecosystem processes;

- Fsh and wildlife exist as complex groups of meta-populations and life history forms, with associated genetic diversity;
- Salmon and other species such as Kootenai sturgeon, bull trout and bald eagles are keystone species with a key role in nutrient cycling and ecosystem structure and can indicate the "health" or "normative" condition of the ecosystem; and,
- The priority is to re-establish "co-evolved native fish and wildlife species assemblages" (bio-diversity).

The resident fish managers adopted additional principles for resident fish (paraphrased from Draft MYIP, Chapter 6, 6/4/97):

- to protect and enhance native populations and habitats and non-native populations consistent with native species needs; and,
- to establish and enhance resident fish populations (native and non-native) to maximize productivity and stability and provide fisheries, including replacement for those lost.

Challenges facing fish and wildlife

Fish and wildlife face numerous threats in the Columbia River Basin:

- The mainstem hydropower system blocked the passage of salmonids to many areas and inundated important wildlife and resident fish habitat;
- The current operations of the hydropower system dramatically reduce survival of remaining salmon populations and impact resident fish and wildlife; and,
- The management of public and private lands for grazing, logging, mining, agriculture, urbanization, and industrial and municipal uses has destroyed and continues to degrade fish and wildlife habitat.

The Multi-Year Plan

The Multi-Year Plan (draft completed 2/7/98; Draft MYIP, 6/4/97) outlines the subbasin conditions and limiting factors, and defines objectives and strategies to achieve these goals and principles, to address the problems faced by fish and wildlife. Specific actions are detailed in each year's Annual Implementation Work Plan (AIWP) and the Northwest Power Planning Council's Fish and Wildlife Program, Columbia River Inter-Tribal Fish Commission's "Spirit of the Salmon" Tribal Recovery Plan (TRP), Draft Recovery Plan for Snake River Salmon, Tribal and State Subbasin Plans, etc.

There are only a limited number of strategies or "tools" available to meet the subbasin objectives of rebuilding fish and wildlife populations:

- Populations need habitat. Tools include 1) protecting existing habitat through improved land and water management, purchase of land and easements, and regulation, and 2) restoring habitat through fencing, vegetation planting, road rehabilitation, instream structures, etc.

- Most naturally-spawning salmon populations, and numerous resident fish populations, are critically low and need assistance to rebuild. Tools include using hatcheries to maintain or increase populations until they can be returned to the habitat for natural spawning (supplementation and captive brood stock).
- Adequate tributary passage facilities (screens and ladders) are needed to ensure the survival of juvenile and adult migrant salmon and resident fish;
- The configuration and operation of the mainstem hydropower system is critical to the survival of anadromous fish and many populations of resident fish and wildlife. Some mainstem monitoring and research, providing information needed for near-term operational decisions and long-term planning, is included in the direct budget.
- Research and monitoring is needed to address management questions and to better direct implementation.
- Finally, administration, coordination and information services for the regional effort are needed.

Ten year budget recommendations

The Ten Year Budget is summarized in Table 2 and presented in detail in Table 3 at the end of this document.

This estimate of the future direct budget is based on the assumption that the 1999 Decision, that is required under the 1995 Federal Columbia River Power System Biological Opinion, will lead to a system configuration that allows Snake River salmon to recover. The Columbia Basin fish and wildlife managers "endorse natural river drawdowns at the Lower Snake River dams and natural river or spillway crest drawdown at John Day Dam as the presumptive path that is consistent with the biological needs of Snake River and Columbia River fish and wildlife and also consistent with the Independent Scientific Group concept of a normative river" (CBFWA Members meeting, April 15, 1997). If the region chooses some other path, this budget would not be applicable.

- The BPA direct Fish and Wildlife budget for FY2002 through FY2006 should range between $198 and $223 million annually.
- Anadromous fish costs should range from $133 to $150 million annually, resident fish costs from $24 to $32 million, and $31 to $35 million for wildlife costs.
- The budget increase is driven by increasing O & M, more rapid habitat restoration, greater numbers of ESA-listed species, hatchery system changes to "conserve" salmon populations and inflation.
- Resident fish and wildlife increases will allow mitigation to proceed in a more timely fashion and will accommodate increased costs associated with the listing of resident fish species under the ESA.
- BPA administrative costs and the costs of the Independent Scientific Review Panel will increase from $9.2 million to $10.7 million because of inflation.
- This estimate is based on numerous assumptions and subject to considerable uncertainty. Future budget needs could increase if assumptions are not met or decisions are delayed.

Assumptions in fish and wildlife cost projections

- Under the BPA Budget Memorandum of Agreement, the funds available are limited to $127 million in the direct budget through FY2001 and inflation is included at 3 percent annually from FY2002 through FY2006.
- The "Evolutionarly Significant Unit" concept will be applied to salmon management and the region will decide to use artificial production techniques to rebuild salmon runs, including captive brood stock, supplementation, and conservation hatchery methods.
- The region will decide to pursue an aggressive effort to protect and restore the habitat necessary to rebuild anadromous and resident fish populations.
- The most accurate estimates available for the anadromous fish costs of these habitat and supplementation programs are those developed for the CRITFC "Spirit of the Salmon" Tribal Recovery Plan.
- The costs of BPA administration ($8 million annually) and Independent Scientific Review Panel activities ($1.2 million annually) will continue.
- New capital investments in the direct Budget will require at least a three year lead time for planning and permitting;
- The estimated outyear budgets from FY1999 to FY2003 are based on the budgets submitted with the FY1999 proposals, with inflation removed; from FY2004 to FY 2006 based on no increase in budgets.
- Some additional funding is included to cover the costs of complying with the ESA requirements for anadromous fish (estimated at $5 million per year) and resident fish ($5 million per year).
- Resident Fish budgets include re-scheduling work in excess of MOA budget levels ($15 million) to FY2002 - FY2006, and include the costs of additional resident fish ESA listings (e.g., bull trout, west slope cutthroat trout, etc.), and $2 million annually to mitigate the additional damage caused by deep drawdowns in the large hydrosystem storage reservoirs.
- Wildlife budget (FY2002- FY2006) includes an additional $15 million per year based a projections showing the remaining Habitat Unit mitigation debt for construction losses, including inflation and O&M, cannot be achieved with $15 million or $25 million per year, but is achieved in 20 years with $30 million per year (see Figure).
- Additional O & M for anadromous fish work is estimated by adding 5 percent of the previous years' implementation cost to the previous years' O & M.
- Coordination/Data Management includes additional fish and wildlife managers' travel/coordination ($1 million above the $500,000 in FY1999) and StreamNet costs ($1 million).
- Habitat Implementation for FY2004 to FY2006 used the Tribal Recovery Plan (TRP) estimate of additional costs of current projects ($2.2 million per year) and included TRP estimated costs (averaging $900,000 per subbasin annually). At $3000 per mile, this would represent

about 300 miles of fence along the almost 8,500 miles of anadromous fish streams in fair or poor condition in the Columbia Basin.

- Habitat Law Enforcement for FY2002 to FY2006 includes an additional $500,000 per year above FY2000 level of $1.5 million.
- Habitat Assessment and Monitoring for FY2002 to FY2006 includes $9 million annually estimated in TRP (including aerial photo interpretation). This would be an average of $450,000 per subbasin annually.
- Habitat Coordination includes an additional $3 million for Watershed Councils in 20 subbasins (averaging $150,000 per subbasin per year).
- Mainstem Direct budget does not include any additional funds above current estimated needs for Predator Control, PIT Tags, or Smolt Monitoring. Additional funds beyond those included are assumed to come from cost-sharing or the re-programming of other funds.
- Budgets for FY2002 and beyond include an additional $3 million annually for Ocean Plume and Estuary Research and $2 million for other Mainstem Research. These are the initial portions of research efforts which are anticipated to grow in the future. Additional funds beyond those included are assumed to come from Appropriations, cost-sharing or the re-programming of other research funds.
- Anadromous Fish Production Construction for FY2004 to FY2006 includes the TRP estimate of construction needs for current projects and $5 million annually to retro-fit existing facilities to operate as "Conservation" hatcheries, either for captive brood stock management or supplementation of ESUs. The budget also includes the TRP estimates of additional acclimation facilities and tank trucks, etc. (averaging $250,000 per subbasin per year) required for supplementation.
- Production Research & Monitoring does not include additional funds above estimated current needs for hatchery tagging, hatchery research and monitoring, supplementation research or natural production research, monitoring and evaluation. Additional funds beyond those included are assumed to come from cost-sharing or the re-programming of other funds.
- Tributary Passage Construction for FY2003 and beyond includes current project costs from the TRP. For FY2002 and beyond the budget includes the TRP estimates for additional screens and ladders needed in subbasins (averaging $500,000 per subbasin per year).

Benefits from the fish and wildlife spending

How have the direct budget funds been spent?

Since FY 1979 through FY 1997, BPA has obligated approximately $900 million in direct expenditures. The following table outlines the distribution of these funds among the following general budget categories:

Table 1. Distribution of BPA fish and wildlife obligations by budget category
(FY 1979 through FY 1997)

Habitat	5 %
Production	8
Tributary Passage	6
Operations & Maintenance	14
Research & Monitoring	34
Resident Fish	10
Wildlife	11
Coordination	5
BPA Administration	8

What has been accomplished?

Habitat and tributary passage improvements

- Protected riparian and upland habitat through purchase and easements, benefiting wildlife, resident fish and salmon in riparian areas.
- Improved several hundred miles of instream habitat by increasing cover, pools, stabilizing banks, and other in-stream structures.
- Improved more than one hundred miles of stream habitat by fencing to manage livestock grazing.
- Major capital programs in the Umatilla and Yakima subbasins improved passage at all major irrigation diversions with state-of-the-art screens and ladders.
- Developed screen fabrication shops in Idaho, Washington and Oregon and provided cost-sharing funds to screen numerous smaller diversions.
- Funded three wildlife mitigation agreements (with Montana, Nez Perce Tribe and Washington) which are protecting and/or enhancing wildlife habitat.
- Purchased and/or enhanced numerous tracts benefiting wildlife (and in many cases resident and anadromous fish).

Production construction

- Planned, designed and constructed four large artificial production facilities (Umatilla, Yakima, Nez Perce Tribal, and Walla Walla Hatcheries) and associated adult collection and juvenile release facilities to supplement salmon populations in the Umatilla, Yakima, and Clearwater subbasins.
- Developed supplementation program for the Hood subbasin, including improvements at the existing Oak Springs and Pelton/Round Butte facilities and new collection/release facilities in the subbasin.
- Planned for hatchery and acclimation facilities to augment production in the Grande Ronde and Imnaha subbasins (Northeast Oregon Hatchery).
- Retro-fitted the Bonneville Hatchery to serve as a captive brood stock facility for Grande Ronde salmon populations.
- Developed low-tech facilities for the Salmon River production program;

- Constructed resident fish mitigation hatcheries on the Colville Reservation (Colville Tribal Hatchery), Clark Fork (Cabinet Gorge Hatchery), Spokane Reservation (Galbraith Springs and Sherman Creek facilities), Northeastern Washington (Kalispel Tribal Bass Hatchery), Flathead area (Creston).
- Continued development of artificial production facilities to propagate the endangered Kootenai River white sturgeon.
- Developed resident fish hatchery capability (Shoshone-Bannock and Shoshone-Paiute Culture Facility) and the Duck Valley fish stocking program including Billy Shaw reservoir.

Research and monitoring

- Funded major research efforts on:
  - salmon diseases (including construction of OSU fish disease lab);
  - improved hatchery diets and culture; supplementation methods (e.g., NATURES) and effects on wild salmon;
  - development of the Passive Integrated Transponder (PIT) fish tag;
  - conducting flow volume-survival correlations;
  - testing oxygen-supplemented hatchery rearing;
  - conducting production/captive brood stock research for ESA-listed species;
  - developing technical criteria for tributary screens;
  - developing electrophoresis technology;
  - examining wild salmon smolt physiology;
  - studying dissolved-gas effects and trauma, known-stock terminal fisheries, and other questions.

- Important on-going monitoring efforts include:
  - the Smolt Monitoring Program;
  - monitoring BPA-funded hatchery production through coded-wire tags;
  - Lake Roosevelt resident fish monitoring program; and,
  - monitoring the effectiveness of tributary passage facilities.

- Funded several modeling and methods development programs including:
  - System Planning Model;
  - Wildlife Losses Assessments;
  - CRISP, FLUSH, PATH and other modeling efforts;
  - Regional Assessment of Supplementation Projects;
  - Integrated Hatchery Operations Team;
  - Integrated Rule Curves for reservoir level management; and,
  - PNW Fish Health Protection Policy development.

Operation and maintenance

- Provided funds to operate and maintain habitat improvements, tributary passage facilities and hatchery/adult collection/acclimation facilities.

- On-going efforts to improve out-migrating salmon survival by reducing numbers of predators in the Columbia mainstem.
- Efforts to improve adult salmon survival through increased law enforcement.

Coordination/administration

- Funded BPA Division of Fish and Wildlife and the CBFWA. (NPPC is funded from the Reimbursable Budget.)
- Funded independent scientific review of the fish and wildlife program since 1988 through the Scientific Review Group, Independent Scientific Group, Independent Scientific Advisory Board, and Independent Scientific Review Panel.

Conclusion

These past efforts have been helpful to fish and wildlife in the Columbia Basin. Over the last fifteen years, we have improved salmon survival in the Columbia Basin and improved conditions for resident fish and wildlife. However, salmon runs continue to decline and additional ESA listings appear to be coming. Does this mean that the BPA Fish and Wildlife Program is a failure?

No, because. . .

- Recovery takes a long time. The erosion of fish and wildlife populations has been occurring for 150 years and cannot be expected to turn around in fifteen years. Only three or four generations of chinook have returned since the NW Power Planning Act was passed. Habitat recovery may take 25 years or more after the land use is changed.
- The effort has been limited relative to the need. For example, we have only fenced or done instream work on a small percentage of the more than 8,000 miles of streams in fair or poor condition.
- Some things have not changed. The dams are still “harvesting” out-migrants. Weather and ocean conditions still reduce survival.
- The chances of success are modest. The best available estimates (from PATH modeling) show low probabilities of meeting salmon survival standards even with aggressive improvements in the hydropower system. Delay in mainstem improvements further reduces the chances of success.
- The status of many fish and wildlife populations is precarious. This will require heroic efforts, equivalent to putting the patient in the I.C.U., and life support is expensive.

Therefore the region should push forward with salmon recovery and resident fish and wildlife mitigation and increase the effort. The CBFWA Ten Year Fish and Wildlife Budget provides a reasonable estimate of what the recovery and mitigation effort might cost.

Table 2. Ten year budget summary

Budget Category	1998	1999	2000	2001	2002	2003	2004	2005	2006
Anadromous fish	97.3	90.7	97.1	90.7	133	141	142	147	150
Resident fish	15.9	16.2	15.0	15.0	24.3	31.7	30.6	28.2	27.3
Wildlife	15.0	15.0	15.0	15.0	30.9	31.8	32.8	33.8	34.8
BPA/ISRP	9.0	9.2	9.2	9.2	9.5	9.8	10.1	10.4	10.7
Total F & W	$ 137.2	$ 131.1	$ 136.3	$ 129.9	$ 197.7	$ 214.3	$ 215.5	$ 219.4	$ 222.8

All figures in millions of dollars

Table 3. Ten year budget detail

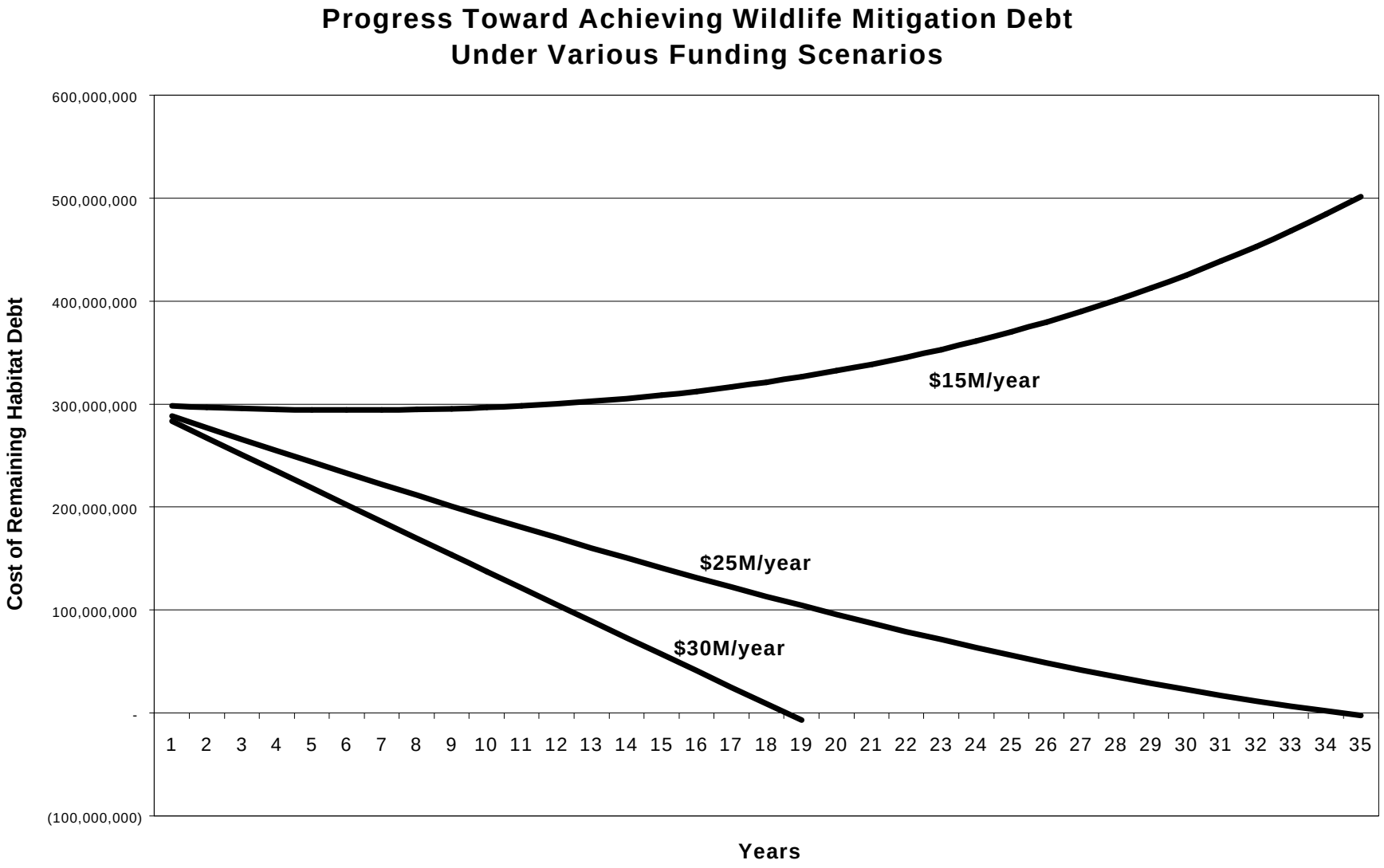
Budget Category	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
ANADROMOUS FISH										
Coord/Data Mgmt -Current	4,197	4,711	4,760	4,760	4,760	4,760	4,760	4,760	4,760	42,229
Coord/Data Mgmt - Additional					2,000	2,000	2,000	2,000	2,000	10,000
Coord/Data Mgmt Total	4,197	4,711	4,760	4,760	6,760	6,760	6,760	6,760	6,760	52,229
Model/PATH	2,103	1,693	1,983	1,815	1,703	1,408	1,408	1,408	1,408	14,930
Basinwide Total	6,300	6,404	6,743	6,575	8,463	8,168	8,168	8,168	8,168	67,159
TRP-Additional Implementation					14,060	18,819	20,269	21,239	18,394	92,781
TRP-Addition to Current Proj.							2,200	2,200	2,200	6,600
Current Projects-99Prop's	7,036	9,316	7,685	6,586	5,148	5,181				40,952
Implementation Total	7,036	9,316	7,685	6,586	19,208	24,000	22,469	23,439	20,594	140,333
Implement. Total- Capital			1,000	1,500	6,000	10,000	10,000	10,000	10,000	48,500
Implement. Total - Expense	7,036	9,316	6,685	5,086	13,208	14,000	12,469	13,439	10,594	91,833
O & M - Current Prop's	1,626	1,697	1,506	1,506	1,506	1,506	1,506	1,506	1,506	13,865
O & M - Additional						960	2,160	3,284	4,456	10,860
O & M Total	1,626	1,697	1,506	1,506	1,506	2,466	3,666	4,790	5,962	24,725
Law Enforcement Current	500	1,548	1,523	1,523	1,523	1,523	1,523	1,523	1,523	12,706
Law Enforcement - Additional					500	500	500	500	500	2,500
Law Enforcement Total	500	1,548	1,523	1,523	2,023	2,023	2,023	2,023	2,023	15,206
Monitor/Assess - Current	2,103	2,121	2,739	3,092	2,036	1,498	1,498	1,498	1,498	18,082

Budget Category	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
Monitor/Assess -Additional					9,000	9,000	9,000	9,000	9,000	45,000
Monitor/Assess Total	2,103	2,121	2,739	3,092	11,036	10,498	10,498	10,498	10,498	63,082
Coord/Education - Current	1,026	1,119	1,144	1,139	838	843	843	843	843	8,637
Coord/Education - Additional					3,000	3,000	3,000	3,000	3,000	15,000
Coord/Education Total	1,026	1,119	1,144	1,139	3,838	3,843	3,843	3,843	3,843	23,637
Habitat Total	12,290	15,801	14,597	13,845	37,610	42,830	42,499	44,592	42,919	266,982
Monitor Smolts Current	4,011	5,084	5,255	5,255	5,255	5,255	5,255	5,255	5,255	45,878
Monitor Smolts - Additional										0
Monitor Smolts Total	4,011	5,084	5,255	5,255	5,255	5,255	5,255	5,255	5,255	45,878
PIT Tags	5,596	3,044	2,744	2,244	2,241	1,971	1,971	1,971	1,971	23,753
Predator Control	3,626	3,626	3,696	3,546	3,306	3,306	3,306	3,306	3,306	31,024
Research - Current	1,757	1,509	425	10	10	10	10	10	10	3,750
Research - Additional					2,000	2,000	2,000	2,000	2,000	10,000
Research Total	1,757	1,509	425	10	2,010	2,010	2,010	2,010	2,010	13,750
Research O & E - Current	150	0	990	800	700	600	600	600	600	5,040
Research O & E - Additional					3,000	3,000	3,000	3,000	3,000	15,000
Research O&E Total	150	0	990	800	3,700	3,600	3,600	3,600	3,600	20,040
Mainstem Total	15,139	13,262	13,109	11,854	16,512	16,142	16,142	16,142	16,142	134,445
Construct/Design - Current	27,735	14,918	19,700	11,700	6,900	3,900				
Construction - Retro Fit Existing					5,000	5,000	5,000	5,000	5,000	25,000
Construction-TRP Acclimation					5,058	4,653	3,652	981	600	14,944
Construct/Design - TRP Ongo							2,200	2,200	2,200	6,600
Construction Total	27,735	14,918	19,700	11,700	16,958	13,553	10,852	8,181	7,800	131,397
O & M -Current	7,882	9,219	13,093	13,653	13,058	13,043	13,043	13,043	13,043	109,074
O & M - Additional						500	1,178	1,720	2,129	5,527
O & M Total	7,882	9,219	13,093	13,653	13,058	13,543	14,220	14,763	15,172	114,601
Monitor, Tags, Research-Current	9,085	8,927	9,015	8,933	8,837	8,822	8,822	8,822	8,822	80,088
Monitor, Tags, Research-Additional										
Monitor, Tags, Research Total	9,085	8,927	9,015	8,933	8,837	8,822	8,822	8,822	8,822	80,088
Nat. Prod. Res./M & E - Current	3,249	4,686	4,528	4,431	3,552	3,331	3,331	3,331	3,331	33,769
Nat. Prod. Res./M & E - Additional										
Nat. Prod. Res./M & E Total	3,249	4,686	4,528	4,431	3,552	3,331	3,331	3,331	3,331	33,769

Budget Category	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**Total**
Supplementation Research-Current.	5,471	5,761	5,991	5,702	5,293	5,043	5,043	5,043	5,043	48,389
Supplementation Research-Additional										
Supplementation Research Total	5,471	5,761	5,991	5,702	5,293	5,043	5,043	5,043	5,043	48,389
Coordination	1,820	1,132	1,142	1,142	1,142	1,142	1,142	1,142	1,142	10,946
Production Total	55,241	44,643	53,468	45,561	48,840	45,434	43,410	41,282	41,310	419,189
Construction - Current	6,092	6,968	5,817	5,481	3,057	1,701				29,115
Construction-On-going Additional						655	1,523	1,542	1,561	5,281
Construction - Additional					7,706	10,209	10,410	10,475	10,125	48,925
Construction Total	6,092	6,968	5,817	5,481	10,763	12,565	11,933	12,017	11,686	83,321
O & M _ Current	1,580	1,720	1,672	1,672	1,673	1,673	1,673	1,673	1,673	15,009
O & M _ Additional						385	896	1,492	2,093	4,867
O & M Total	1,580	1,720	1,672	1,672	1,673	2,058	2,569	3,165	3,766	19,875
M & E	676	914	674	674	674	674	674	674	674	6,308
Tributary Passage Total	8,348	9,602	8,163	7,827	13,110	15,297	15,176	15,856	16,126	109,505
ESA Additional		1,000	1,000	5,000	5,000	5,000	5,000	5,000	5,000	32,000
Anadromous Total (w/o inflation)	97,318	90,711	97,081	90,662	129,535	132,871	130,395	131,041	129,665	1,029,279
ANADROMOUS FISH (Inflated @3%, post-MOA)	**97,318**	**90,711**	**97,081**	**90,662**	**133,421**	**140,963**	**142,486**	**147,487**	**150,317**	**1,090,447**
Resident Fish - Current Levels	15,887	16,206	15,000	15,000	15,000	15,000	15,000	15,000	15,000	137,093
Resident Fish - Reschedule Excess	0	0	0	0	1,612	7,860	6,009	3,057	1,515	
Resident Fish - Additional ESA	0	0	0	0	5,000	5,000	5,000	5,000	5,000	25,000
Resident Fish-Deep Drawdown Mitigation					2,000	2,000	2,000	2,000	2,000	10,000
Resident Fish Total (w/o inflation)	15,887	16,206	15,000	15,000	23,612	29,860	28,009	25,057	23,515	192,146
RESIDENT FISH (Inflated @3%, post-MOA)	**15,887**	**16,206**	**15,000**	**15,000**	**24,320**	**31,678**	**30,606**	**28,202**	**27,260**	**204,160**
Wildlife - Current	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	135,000
Wildlife - Additional					15,000	15,000	15,000	15,000	15,000	75,000

Budget Category	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
Wildlife Total (w/o inflation)	15,000	15,000	15,000	15,000	30,000	30,000	30,000	30,000	30,000	210,000
WILDLIFE (Inflated @3%, post-MOA)	**15,000**	**15,000**	**15,000**	**15,000**	**30,900**	**31,827**	**32,782**	**33,765**	**34,778**	**224,052**
BPA Admin./ISRP Total	9,000	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	82,600
BPA ADMINISTRATION/ISRP (Inflated @3%, post-MOA)	**9,000**	**9,200**	**9,200**	**9,200**	**9,476**	**9,760**	**10,053**	**10,355**	**10,665**	86,909
Recommended F&W Budget	137,206	131,117	136,281	129,862	192,347	201,930	197,604	195,298	192,381	1,514,025
TOTAL F&W BUDGET (Inflated @3%, post-MOA)	**137,206**	**131,117**	**136,281**	**129,862**	**198,117**	**214,228**	**215,928**	**219,810**	**223,021**	**1,605,569**
Estimated Capital Needs (C12, C45, C64)	33,827	21,886	26,517	18,681	33,721	36,118	32,785	30,198	29,486	263,218
Inflated @3% (post-MOA)	33,827	21,886	26,517	18,681	34,732	38,317	35,825	33,988	34,182	277,956

All figures in thousands of dollars



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