

Integrated Program Review (IPR)

Fish and Wildlife Costs

June 12, 2008





Integrated Program Review (IPR)

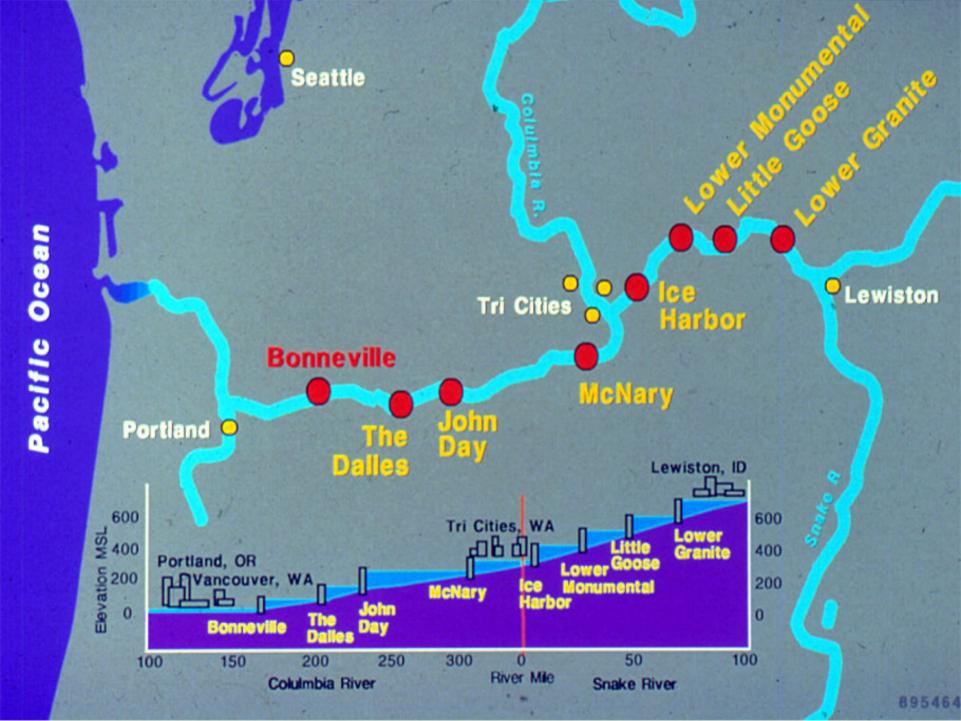
Columbia River Fish Mitigation Project (CRFM)

June 12, 2008





- Purpose: Mitigate impacts to anadromous fish passage at the Columbia/Snake River run-of- river dams
- Authority: Original Congressional Acts for project construction and operation
- Project initiation: 1991
- Funding source: Congressional appropriations
- Costs and schedule
 - Current estimated project cost: \$1.6 Billion
 - Current estimated completion: 2014
 - Will need to update with FY 2010 budget submittal
 - New FCRPS BIOP
 - Addition of Willamette basin (BIOP due in summer 2008)
 - Lamprey passage issues
- BPA repays Treasury for "power share" of costs
 - Transfers to Plant-in-Service:
 - Costs transferred when new facility goes into operation or study completed







Annual Appropr	Annual Appropriations:		Transfers to Plant-in-Service (power share):					
2000:	\$58.1	2000:	\$47.0					
2001:	\$80.5	2001:	\$ 6.2					
2002:	\$71.2	2002:	\$ 8.8					
2003:	\$82.1	2003:	\$68.4					
2004:	\$66.1	2004:	\$62.9					
2005:	\$75.4	2005:	\$51.9					
2006:	\$84.1	2006:	\$347.8					
2007:	\$95.0	2007:	\$56.1					
2008:	\$82.2							

(Dollars are in millions)





Estimated annual transfers to Plant-in Service 2008-2012 (Power share) (Dollars are in millions)

Year:

- FY 2008 FY 2009 FY 2010 FY 2011 FY 2012
- **\$184 \$110 \$88 \$96 \$50**





- Primary focus passage facility configuration and operations at the dams:
 - Evaluate project and system fish passage & survival
 - Identify/develop/construct passage improvements
 - Seek cost effective alternatives
 - Implement Biological Opinions
 - Regional coordination
 - Biological/technical review &input
 - Establish priorities
 - Critical issues/uncertainties for research
 - Biological outputs for alternative actions
 - Costs
- FY 2008 Appropriated Funding \$82 million



CRFM FY 2008 – 2010 Summary



- Major Activities:
 - <u>Bonneville Dam</u>:
 - Complete 2nd PH Bypass improvements
 - Install and test B2 forebay guidance structure
 - Modify B1 sluiceway to improve surface passage
 - Spillway improvements alternative evaluations
 - <u>The Dalles Dam</u>:
 - Design/ initiate construct tailrace spill wall
 - Evaluate and modify, as warranted, adult ladder(s) for reliability and passage efficiency
 - Evaluate sluiceway modifications, as needed
 - Consider forebay guidance (based on B2 results)
 - John Day Dam:
 - Install and test spillway surface bypass weirs
 - Decision on permanent surface bypass facilities
 - Evaluate and modify, as warranted, tailrace passage improvements
 - Consider forebay guidance (based on B2 results)
 - <u>McNary Dam</u>:
 - Continue testing of spillway surface bypass weir
 - Investigate additional surface bypass alternatives
 - Initiate design on a powerhouse surface bypass prototype
 - Initiate design of juvenile bypass outfall relocation





- Major Activities:
 - <u>Lower Monumental</u>:
 - Complete construction and initiate testing of Removable Spillway Weir
 - Initiate design of juvenile bypass facility outfall relocation
 - <u>Little Goose</u>:
 - Complete design and construction, and initiate testing of spillway surface bypass weirs
 - Complete design and construction of juvenile bypass facility PIT tag monitoring system, dewatering structure modification and outfall relocation
 - Lower Granite Dam:
 - Complete design of juvenile bypass facility upgrade
 - <u>System Actions</u>:
 - Turbine passage index testing
 - IH replacement runner development
 - Lamprey passage research and improvements
 - Estuary tern relocation
 - Estuary post- passage and transport survival studies in the estuary





Initiated program starting in FY 2008

Rationale:

- Major tributary to the Columbia Corps operates 13 dams
- Two (2) listed anadromous ESUs in the basin
- ESA consultation underway
- Alternative to separate program

Scope:

- "Reconnaissance level" evaluation in 2008
- Detailed feasibility level evaluation to follow, to include
 - Evaluate introduction of passage at existing non-passage dams
 - Additional d/s temperature control facilities
- Upgrade of existing adult collection facilities





•Forecast in WP-07 Rate Proposal

\$ in Thousands		Rate Case					
					FY 2007-2009		
Description	on FY 200	6 FY 2007	FY 2008	FY 2009	Average		
CRFM	393,5	00 82,600) 59,800	62,000	68,300		

•Original IPR forecast

\$ in Thousands	Actuals SOY		IPR				
Description	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
CRFM	366,400	49,410	60,000	63,000	114,000	71,000	135,000
Increase/Decrease *		-316,990	10,590	3,000	51,000	(43,000)	64,000

*Change is calculated from the prior year. The "Rate Case Average" column is not used in calculations of increases and decreases.

•Revised forecast

Description	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
CRFM (Updated Numbers)**	184,000	110,000	88,000	96,000	50,000
Increase/Decrease from Original*	124,000	47,000	(26,000)	25,000	(85,000)

**Numbers were updated on 06/02/08

Program Background: This program includes the power portion of investment funded by Corps of Engineers appropriations for investment on mitigation efforts for fish and wildlife on the Federal Columbia River dams. This investment becomes BPA's obligation to repay to the U.S. Treasury at the time it is placed in service, and is reflected in amortization, depreciation and interest beginning in the year after it is placed in service.

Drivers of Change:

•Investments include Spill Divider Wall at the Dalles (FY 2011), Pit Tag Study, Delayed Mortality Study (FY 2011), Spillway improvements (FY 2009), Little Goose Spillway Weir

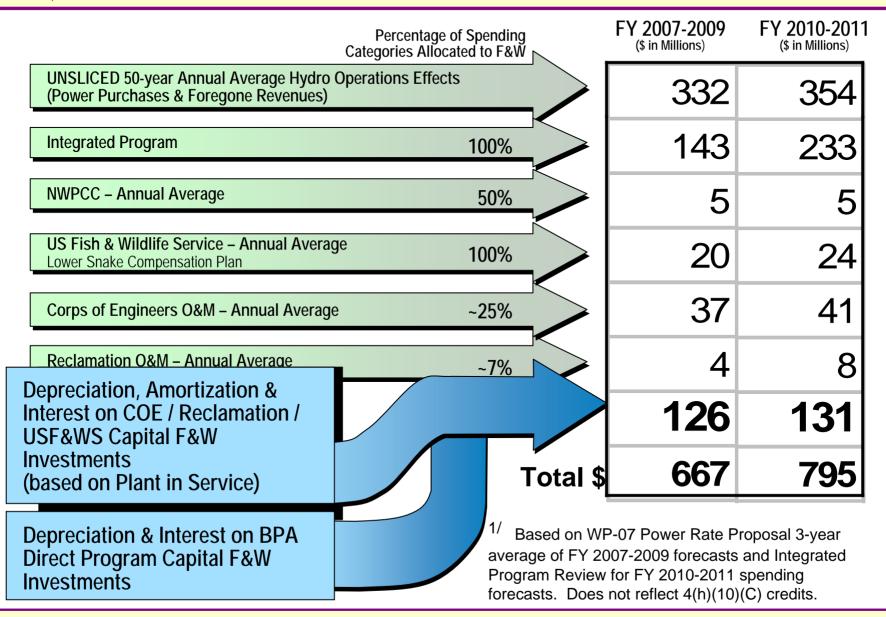
•The Corps has indicated it will fund Willamette BiOp investment through this project.

Forecast Risk: The schedule of investment and placement into service could change.



Integrated Program Review (IPR) **BPA Borrowing for Capital Fish and Wildlife Investments June 12, 2008**

Total Annual Average Cost of BPA Fish and Wildlife Actions





Capital Funding Mechanisms

BPA currently funds capital fish and wildlife investments in two ways: Bonds Issued to Treasury, and Capital Appropriations.

Bonds Issued to Treasury

- Bonds issued to Treasury are the debt issued by Bonneville to the US Treasury since the late 1970's to finance its investments in transmission, fish & wildlife, and conservation, and in direct-funded Corps of Engineers and Bureau of Reclamation investments.
- Total BPA bonds outstanding are limited by law to \$4.45 billion. Interest rates are set at prevailing government corporation rates.
- This specifically includes bonds to fund the capital investment in BPA's Fish & Wildlife Direct Program. The term of these bonds is not to exceed the average life of the associated investments, which is 15 years. Interest is paid semi-annually on these bonds, and the principal is paid at the end of the term. Callable bonds may be issued, and can be "called" or paid early, but BPA must then pay a premium. BPA funds the full amount of these investments, then receives reimbursement from the Treasury for the non-power portion of the investment in the form of credit against its year-end Treasury payment, under section 4(h)(10)(C) of the Northwest Power Act.



Congressional Capital Appropriations

- Appropriations are funds provided by Congress for Corps and Reclamation capital investments in hydro-related facilities, including fish recovery measures. With passage of the 1996 BPA Appropriations Refinancing Act, interest rates are at Treasury's prevailing market rates, without mark-up.
- Currently, the primary recipient of capital appropriations is the Corps of Engineers' Columbia River Fish Mitigation project (CRFM). The Corps receives appropriated funds for construction. When a project is completed, it is recorded in plant-inservice in the FCRPS accounting system. It is at this point that the power portion becomes BPA's obligation to repay to the US Treasury. These obligations must be paid within 50 years.



The capital components of fish & wildlife investment in the Power Services revenue requirement are:

- **Depreciation** The depreciation of appropriated investment for fish mitigation programs at hydro projects managed by the Corps of Engineers and the Lower Snake hatcheries managed by the U.S. Fish and Wildlife Service. This is straight-line depreciation over the average service life of 75 years.
- Amortization The depreciation of non-revenue producing assets such as BPA's integrated program fish and wildlife capital investments, amortized over 15 years, and the intangible asset portion of CRFM investments, amortized over 75 years.
- Net Interest Comprised of interest on bonds and appropriations netted against interest credit from the Bonneville Fund and certain non-cash items.

Depreciation and amortization are direct results of the level of capital investment, so will increase or decrease based on investment levels (for amortization) and timing of project completion (for depreciation). Net interest expense, however, has several components, and is influenced by other factors, such as BPA's debt management decisions and the cash balance in the Bonneville fund, in addition to capital investment levels.



Net Interest, Depreciation & Amortization

*in Millions	Act	uals	SOY		IPR	
Plant in Service by Year	2006	2007	2008	2009	2010-11	Average
CRFM (Original IPR forecast)	366.4	49.4	60.0	62.4	92.5	
CRFM (Updated IPR forecast)			184.0	110.0	92.0	
F&W Direct Program	35.4	35.2	36.0	50.0	6	5.0
Program Fixed Expenses- Capital Investments (\$ millions)	2006	2007	2008 (2nd Quarter)	2009	2010	2011
Interest Expense	53.4	76.0	71.4	67.4	77.3	85.3
Amortization Expense	17.4	22.9	25.4	27.1	29.4	32.0
Depreciation Expense	16.7	14.0	14.6	17.1	18.5	19.7
Total Fixed Expense	87.5	112.9	111.4	111.6	125.2	137.0



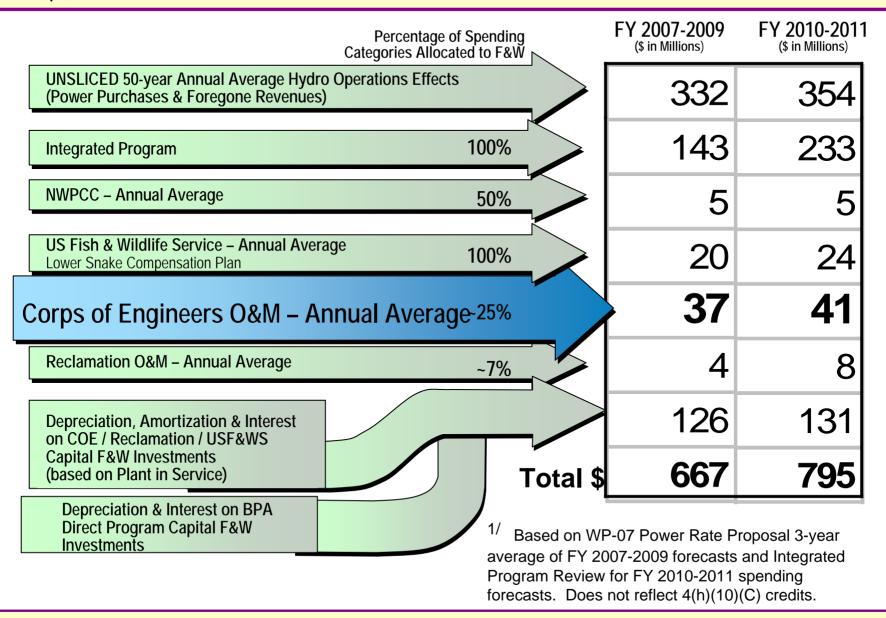


Integrated Program Review (IPR)

US Army Corps of Engineers Direct Funded Fish and Wildlife Program Technical Workshop

June 12, 2008

Total Annual Average Cost of BPA Fish and Wildlife Actions







- Appropriated Budget from Congress
 - Environmental Stewardship
 - Budgeted 2 Years Out
 - Sometimes differences in the President's Budget and Appropriations
- Direct Funded Program
 - Matched on a project-by project basis
 - Have a 5 year plan
- Uncertainty in funding levels from year to year



BPA Integrated Program Review

producing dams

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- Priority 3 = Items pending legal requirement

Priority 4 = Have not been funded in many years

We cooperatively rank each task as to its relative importance

Willamette & Rogue Basins (9/15)

Lower Columbia River (4)

Upper Columbia Basin (3)

Snake River Basin (5)

- (5%)
- Priority 2 = Required by law that are needed irregularly * (17%)

Priority 1 = Required by law that are needed every year * (78%)



Funding for O&M tasks in areas affected by the operation of Corps hydropower





- Anadromous Fish (92%)
 - Operation/maintenance of fish passage facilities at dams, mitigation hatcheries, smolt transportation, multi-year fish passage research outlined by BiOp, program management
 - Spare parts for fish passage facilities, painting fish barges, coordinating and conducting fish operations, and conducting irregular fish passage or disease research, project management
- Wildlife and Resident Fish (5%)
 - Baseline wildlife management, habitat mitigation, mitigation hatchery maintenance, and invasive species coordination, project management
- Water Quality (3%)
 - Total Dissolved Gas and Temperature monitoring/modeling, and TMDL coordination, project management





• Alternative breakdown of line items

	Previous	
	Rate Period	2007-2008
Prj/Pgm Management	(5%)	(3%)
• Research	(15%)	(9%)
• Fish Passage	(37%)	(43%)
• Hatcheries	(19%)	(22%)
Transportation	(11%)	(11%)
• Wildlife & Res. Fish	(6%)	(10%)
• Water Quality	(5%)	(3%)



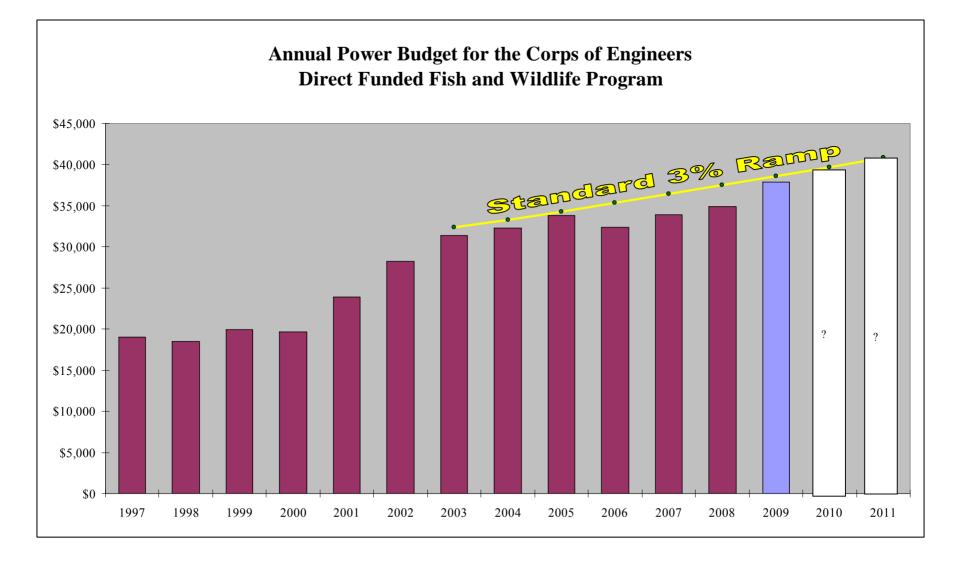
Corps F&W Expense Budget (Then and Now)



	Last Rate Case Estimates	Last Rate Case Estimates With Willamette BiOp	Actuals	Updated Estimates (with Willamette BiOp)	Сар
2006	\$34,001	\$37,156	\$32,347		\$35,427
2007	\$36,306	\$42,412	\$33,866		\$36,596
2008	\$35,824	\$39,371	\$34,889		\$37,804
2009	\$34,902	\$39,399		\$37,606	\$39,051
2010	\$35,506	\$38,687		\$38,734	\$40,340
2011	\$36,207	\$37,474		\$39,896	\$41,672

Program Past and Present (This Rate Period)









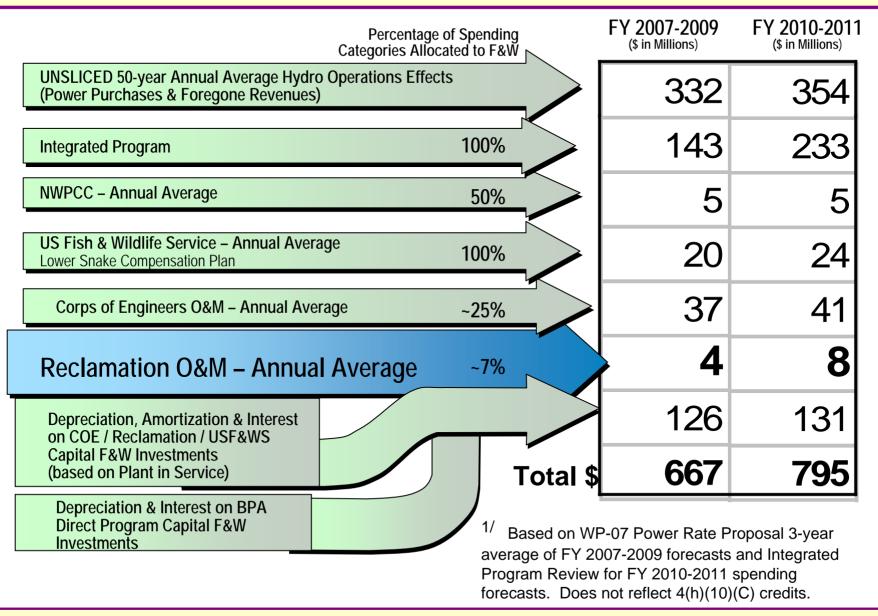
- More Fish and Wildlife Program requirements are/may be putting a <u>direct</u> strain on the budget
 - Willamette BiOp
 - Clean Water Requirements, Total Maximum Daily Load (TMDL)
 - Mass marking of hatchery fish
 - Albeni Falls?
 - Nationwide appropriated funds
- More ES requirements at non-hydro projects are putting an <u>indirect</u> strain on the budget
 - More requirements at non-hydro projects reduce the available appropriated funds at a faster rate
 - Mill Creek
 - Howard Hanson





Integrated Program Review (IPR) **Bureau of Reclamation O&M Proposed Spending Levels** Leavenworth Fish Hatchery Complex **Pacific Northwest Region** June 12, 2008

Total Annual Average Cost of BPA Fish and Wildlife Actions







- Mitigation for Permanent Barrier Created by Construction of Grand Coulee Dam.
- Bureau had responsibility to restore, to preconstruction levels of abundance, the salmon resources jeopardized by the construction of Grand Coulee Dam.
- Complex is composed of Leavenworth, Entiat and Winthrop National Fish Hatcheries (NFH).
- Following construction, complex transferred to Fish and Wildlife Service for operation and maintenance.
- 92 percent of construction, operation and maintenance expenses to be repaid to the government by the power users.





- The Leavenworth National Fish Hatchery Complex was authorized by the Grand Coulee Fish Maintenance Project April 3, 1937 and reauthorized by the Mitchell Act (52 Stat. 345) May 11, 1938.
- The Complex consists of three Mid-Columbia fish hatcheries constructed by the Bureau of Reclamation as fish mitigation facilities for the construction of Grand Coulee Dam, Columbia Basin Project. Construction of the Entiat, Leavenworth and Winthrop National Fish Hatcheries occurred from 1938-1940. Responsibility for operation and maintenance of the hatcheries was transferred to the United States Fish & Wildlife Service in 1949.
- Today, the United States Fish & Wildlife Service operates the facilities to mitigate for depleted pacific salmon stocks and is funded through a reimbursable agreement with the Bureau of Reclamation.
- The Complex budget covers the operations of the three hatcheries as well as a portion of the United States Fish & Wildlife Service Mid-Columbia Fisheries Resource Office and Olympia Fish Health Center. The Mid-Columbia Fisheries Resource Office provides monitoring and evaluation of hatchery stocks, marking programs, and permitting compliance for all station programs and activities. The Olympia Fish Health Center provides fish diagnostic services in support of healthy salmon stocks.





Current Complex hatchery operations meet requirements of the following treaties, judicial decisions and legislation:

- Treaty with the Yakama, 06/09/1855
- Treaty with the Nez Perce, and Tribes of Middle Oregon, 06/25/1855
- Treaty with the Bands of Colvilles, 04/08/1872
- U.S. v. Oregon ("Belloni Decision", Case 899), 07/08/1969
- Endangered Species Act of 1973
- Pacific Salmon Treaty Act of 1985
- Salmon and Steelhead Conservation and Enhancement Act, 1980
- Treaty with the Walla Walla, Cayuse, Umatilla Tribes, 06/09/1855





- The Leavenworth Complex Fish production programs support mitigation efforts in the Columbia River Basin. Production goals are set by the Columbia River Fisheries Management Plan under the U.S. v Oregon decision of 1969.
- The Leavenworth NFH currently rears 1.625 million spring Chinook salmon smolts annually and provides a tribal and sport fishery on Icicle Creek.
- The Entiat NFH rears 400,000 spring Chinook salmon smolts annually for release into the Entiat River.
- The Winthrop NFH rears 600,000 spring Chinook salmon and 100,000 summer steelhead for release in the Methow River.





- The fish production programs of the Leavenworth NFH Complex hatcheries were recently reviewed by the USFWS's Hatchery Review Team (HRT); and based on this review, there are several recommended program changes at the Leavenworth Complex hatcheries.
- FWS personnel are working through implementation of HRT recommendations as well as incorporating new actions from the:
 - FCRPS BiOP;
 - FCRPS MOA;
 - New inter-agency agreement under U.S. v. Oregon;
 - Recent Upper Columbia Hatchery Scientific Review Group's (HSRG) Review.
- All of the recommendations and actions are expected to contribute to more sustainable fisheries programs that reduce risks to listed species and increase recovery efforts in the Columbia Basin.





- FCRPS BiOp:
 - New requirements
- Aging Infrastructure:
 - Original construction in 1939
 - Indicates significant rehabilitation of hatcheries required
- World Market:
 - Significant material cost increases





Budget Allocation:

- O&M for Leavenworth, Entiat, and Winthrop Complex: ~ 58 percent
- Mid-Columbia FRO Support: ~23 percent
 - Monitoring and evaluation program, tagging, marking programs, permit compliance, Biological Assessments, Hatchery and Genetic Management Plans, ESA compliance, supplies and materials.
 - O&M: ~12 percent
- Olympia Fish Health Center Support: ~7 percent
 - Diagnostic fish health services at Leavenworth, Entiat and Winthrop NFH's Monthly fish health inspection throughout the entire rearing cycle of the salmon (egg to adult), diagnostic work, supplies, and materials.





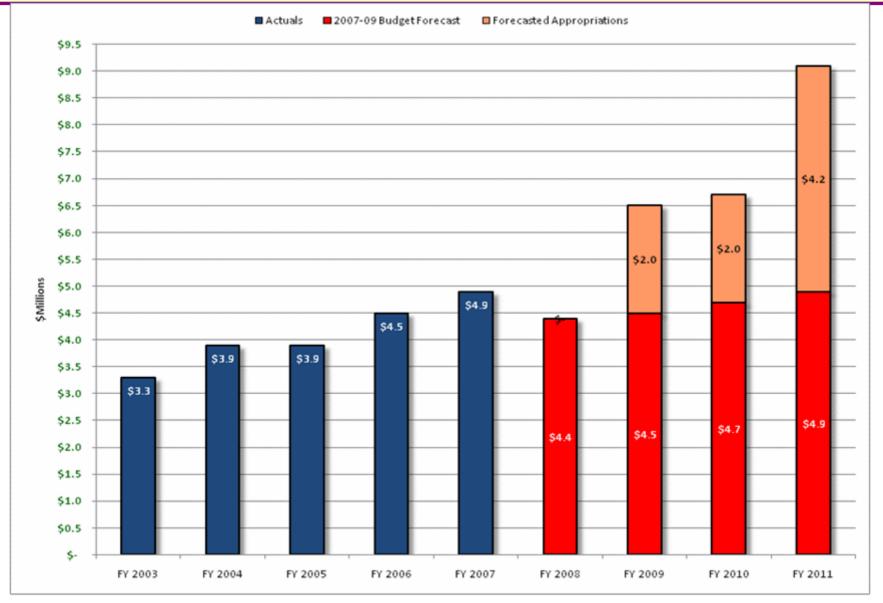
Ac	tuals	
FY 200	03: \$	3.3
FY 200	04: \$	3.9
FY 200	05: \$	3.9
FY 200	06: \$	4.5
FY 200	07: \$	4.9

	2	007-			Т	otal	
	2	009	Fc	Forecasted		Revised	
	Budget		Арр	Appropirations		Budget	
	Foi	recast			For	ecast	
FY 2008:	\$	4.4	\$	-	\$	4.4	
FY 2009:	\$	4.5	\$	2.0	\$	6.5	
FY 2010:	\$	4.7	\$	2.0	\$	6.7	
FY 2011:	\$	4.9	\$	4.2	\$	9.1	



Reclamation F&W FY 2003-2007 Actuals / FY 2008-2011 Proposed



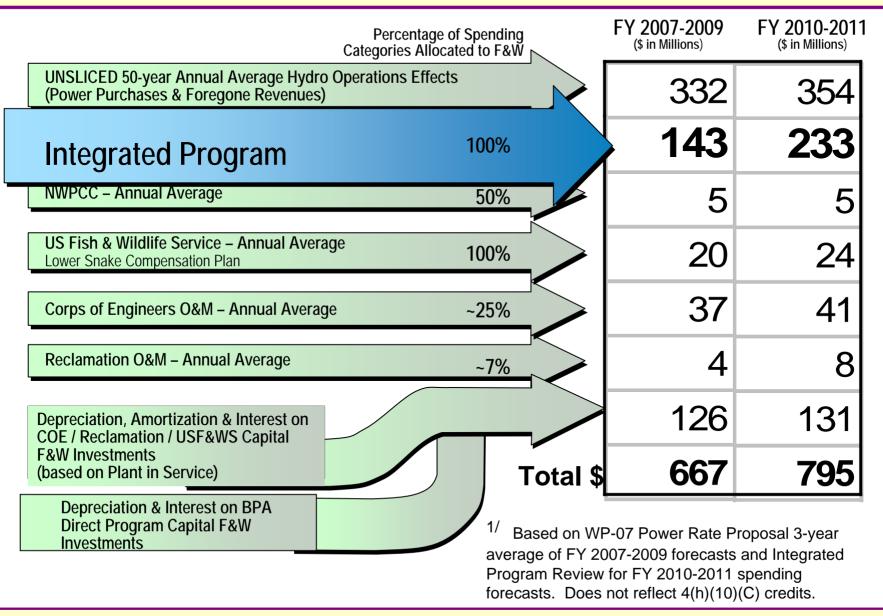


BPA Integrated Program Review



Integrated Program Review (IPR) BPA's Fish and Wildlife Direct Program FY 2010-2011 Costs June 12, 2008

Total Annual Average Cost of BPA Fish and Wildlife Actions



BPA Integrated Program Review



Fish & Wildlife Direct Program

				Rate Case	Rate			
\$ in Thousands	Actuals		SOY	Average	Case	IPR	IPR	IPR
	FY 2006	FY 2007	FY 2008	FY 2007-09	FY 2009	FY 2009	FY 2010	FY 2011
Program Level Spending	137,900	139,500	143,000	143,000	143,000	200,000	230,000	236,000
Increase/Decrease *		1,600	3,500		0	57,000	30,000	6,000

* for FY 2006-2008, Rate Case FY 2009, 2010 and 2011, change is from the prior year. For FY 2009 Forecast, change is calculated from "Rate Case".

Program Background:

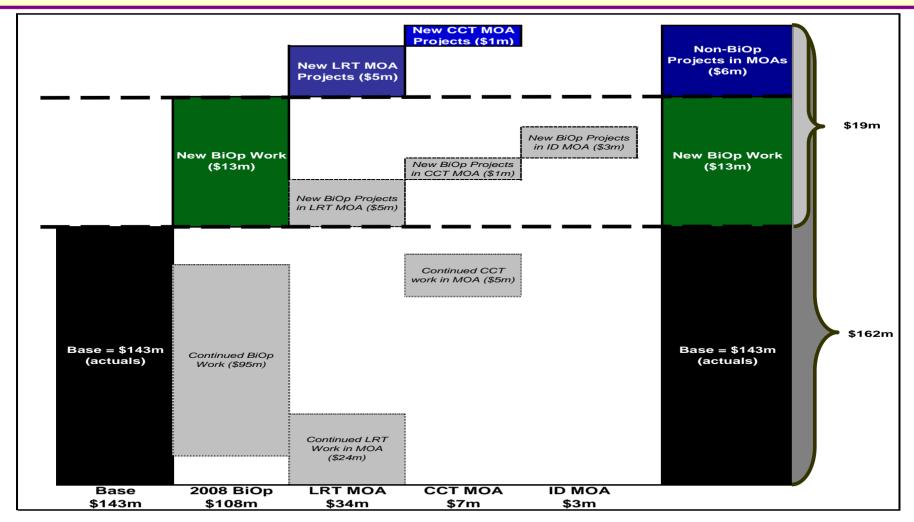
This program represents BPA's Direct Fish and Wildlife Program which manages projects intended to meet BPA's mitigation objectives under the Northwest Power Act, consistent with the Northwest Power and Conservation Council, as well as BPA's Endangered Species Act offsite fish and wildlife requirements under biological opinions from the U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration (NOAA) Fisheries.

Drivers of Change:

- New Biological Opinions require increased costs for hydro system operations, habitat restoration, research, monitoring and evaluation.
- The 2008 Columbia Basin Accords, agreements with States and Tribes on Fish and Wildlife costs, include some costs necessary for implementing the Bi-Op, but also have incremental costs. These agreements benefit the agency and the region, by: moving key players from adversaries to partners, ending years of divisiveness; including accountability for results; including defined biological objectives, so that the actions will be measured for their effectiveness against those objectives; providing known costs which will mean more stable rates. The projects are expected to produce biological benefits and cost less than litigation.
- These increased costs are partially offset by 4(h)(10)(C) credits, which in essence reimburse BPA for the portion of these costs that are attributable to non-power purposes of the FCRPS.



FY 2008 Expense Estimates

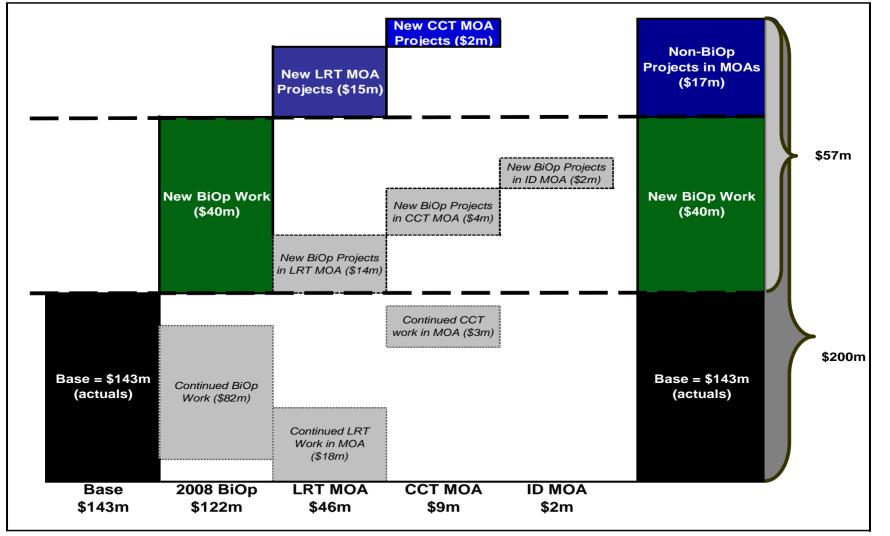


Assumptions

Ramp-up results in spending on new BiOp and MOA work at 33% of planning levels



FY 2009 Expense Estimates

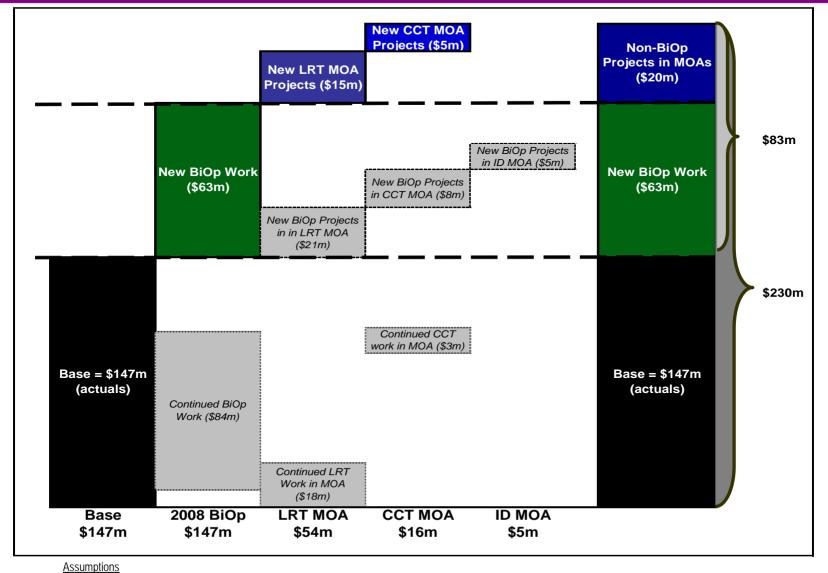


Assumptions

Ramp-up result in spending on new BiOp and MOA work at 75% of planning levels



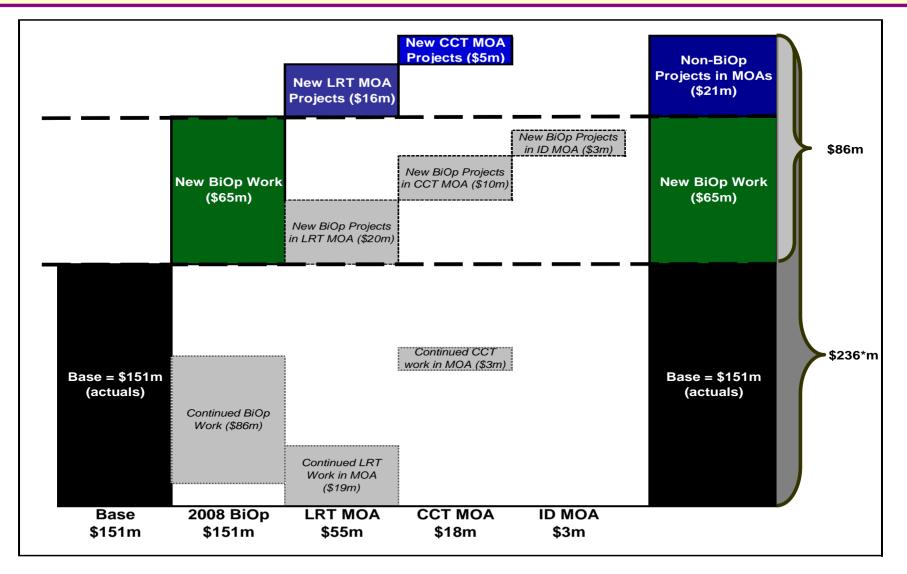
FY 2010 Expense Estimates



Inflation applied to \$143 base and expansions at 2.5%

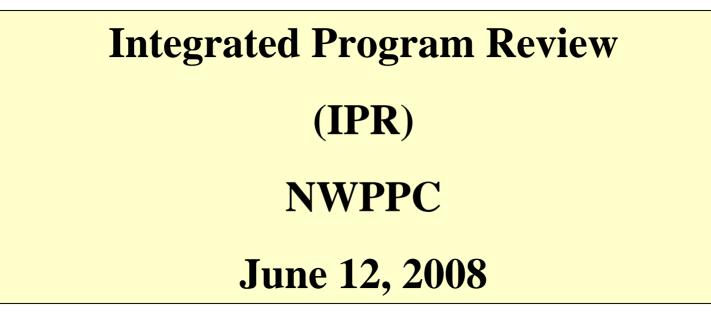


FY 2011 Expense Estimates



<u>Assumptions:</u> Inflation applied to \$143 base and expansions at 2.5% *Note: Not \$ 237 due to rounding.







Total Annual Average Cost of NWPPC

Percentage of Spending Categories Allocated to F&W	FY 2007-2009 (\$ in Millions)	FY 2010-2011 (\$ in Millions)		
UNSLICED 50-year Annual Average Hydro Operations Effects (Power Purchases & Foregone Revenues)	332	354		
Integrated Program 100%	143	233		
NWPCC – Annual Average 50%	5	5		
US Fish & Wildlife Service – Annual Average Lower Snake Compensation Plan 100%	20	24		
Corps of Engineers O&M – Annual Average ~25%	37	41		
ہا Reclamation O&M – Annual Average 7%		8		
Depreciation, Amortization & Interest on COE / Reclamation / USF&WS	126	131		
Capital F&W Investments	otal \$ 667	795		
average	sed on WP-07 Power Rate F ge of FY 2007-2009 forecasts am Review for FY 2010-2011	and Integrated		
•	forecasts. Does not reflect $4(h)(10)(C)$ credits.			

BPA Integrated Program Review



Program Level Spending

\$ thousands	Actuals		SOY	Rate Case Average	IPR		
	FY 2006	FY 2007	FY 2008	FY 2007-09	FY 2009*	FY 2010	FY 2011
Program Level Spending	8,510	8,390	9,266		9,453	9,641	9,838
Total Increase/Decrease (\$ amount)					187	188	197

*FY 2009 increase is over SOY FY 2008 program spending level.

Program Descriptions: BPA funds the Northwest Power and Conservation Council. Half the costs are considered "fish and wildlife" costs, the other half "Power".

Drivers for Change: The IPR forecast of total Council spending levels reflects a small inflation factor. However, the Council is currently holding a public comment period on their draft budget for FY 2010-2011. Their draft budget estimates, in \$thousands, are

FY 2009 - \$9,467

FY 2010 - \$9,683

FY 2011 - \$9,861

The Council is taking comments on their draft budget through June.



- All forums are open to the public and will be noticed on the IBR external web site at: <u>http://www.bpa.gov/corporate/Finance/IBR/IPR/</u> Staff from the Corps of Engineers, Bureau of Reclamation, and Energy Northwest will participate in presentations on costs they manage.
- All Technical and Managerial workshops will be held at BPA Headquarters.
- The comment period for the IPR opens Thursday, May 15, 2008. Close of comment for FY 2009 Power costs is June 19, 2008. Close of comment for all other costs is August 15, 2008. You have several options to provide comments to BPA:
 - 1. Attend one or more of the scheduled workshops and give BPA your comments.
 - 2. Discuss your input with your Customer Account Executive, Constituent Account Executive, or Tribal Liaison.
 - 3. Submit written comments to Bonneville Power Administration, P.O. Box 14428, Portland, OR 97293-4428.
 - 4. Submit comments via e-mail to: comment@bpa.gov or submit on line at: http://www.bpa.gov/comment.
 - 5. Comments can also be sent via fax to (503) 230-3285.



- 1. All FY 2008-2013 information was provided in May 2008 and cannot be found in BPAapproved Agency Financial Information, but is provided for discussion or exploratory purposes only as projections of program activity levels, etc. This information is a derived estimate for presentation purposes and cannot be found in BPA-approved Agency Financial Information but is provided for discussion or exploratory purposes only as "*projections of program activity levels, etc.*"
- 2. All FY 2007 and earlier information was provided in May 2008 and is consistent with audited actuals that contain BPA-approved Agency Financial Information.