

2007



COLUMBIA
BASIN
FISH AND
WILDLIFE
AUTHORITY



Northwest
Power and
Conservation
Council

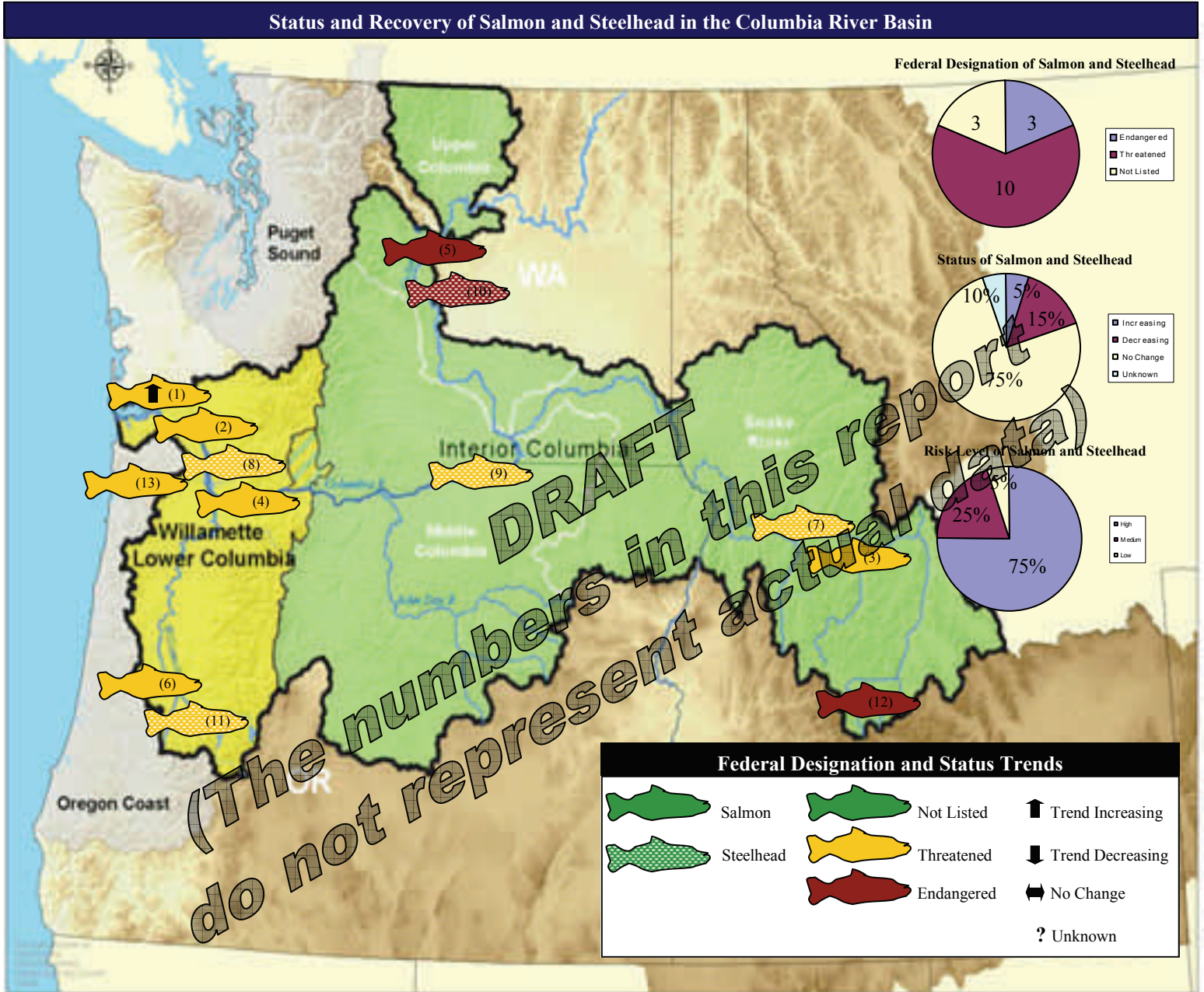
BONNEVILLE
POWER ADMINISTRATION



DRAFT
Status of Fish and Wildlife Resources in the Columbia River Basin
(The numbers in this report do not represent actual data)

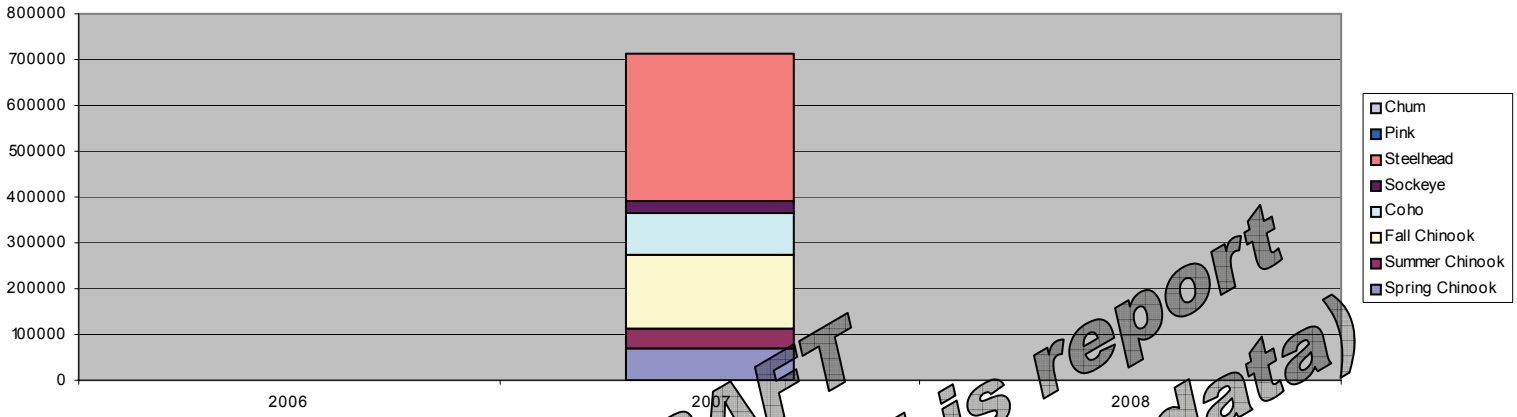
Columbia River Basin High Level Indicator: ESUs

Status and Recovery of Salmon and Steelhead in the Columbia River Basin



Recovery Domain	ESU/DPS	Federal Designation (year listed)	Recovery Goal	Status	Risk Level
Willamette/Lower Columbia	Columbia River Chum (1)	Threatened (1999)		Increasing, Decreasing, No Change, Unknown	High, Medium, Low
	Lower Columbia River Chinook (2)	Threatened (1999)			
	Upper Willamette River Chinook (3)	Threatened (1999)			
	Lower Columbia River Steelhead (4)	Threatened (1998)			
	Lower Columbia River Coho (5)	Threatened (2005)			
	Upper Willamette River Steelhead (6)	Threatened (1999)			
Interior Columbia	Snake River Fall Chinook (7)	Threatened (1992)			
	Snake River Spring/Summer Chinook (8)	Threatened (1992)			
	Upper Columbia River Spring Chinook (9)	Endangered (1999)			
	Snake River Basin Steelhead (10)	Threatened (1997)			
	Middle Columbia River Steelhead (11)	Threatened (1999)			
	Upper Columbia River (13)	Endangered (1997)			
	Snake River Sockeye (14)	Endangered (1991)			

Adult Salmon and Steelhead Counts at Bonneville Dam (1938-2008)

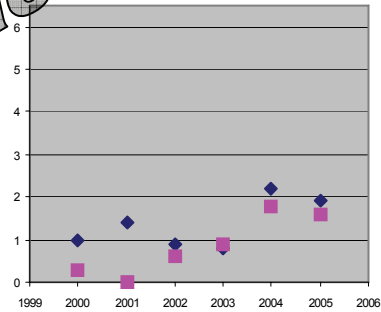
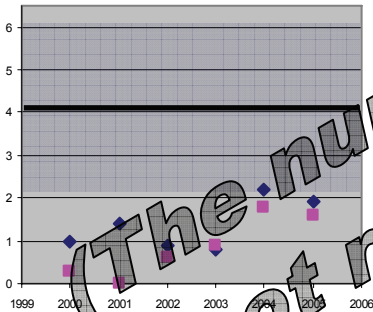


Smolt-to-Adult Return

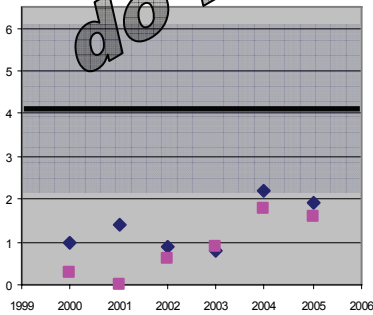
SAR Ratio to Transport-In-River

Wells/Rock Island...

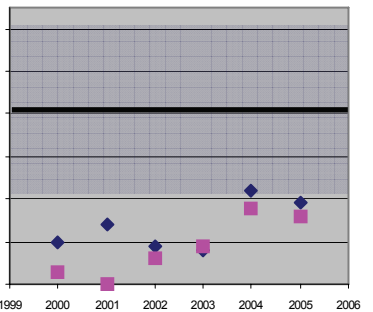
over Granite to Bonneville



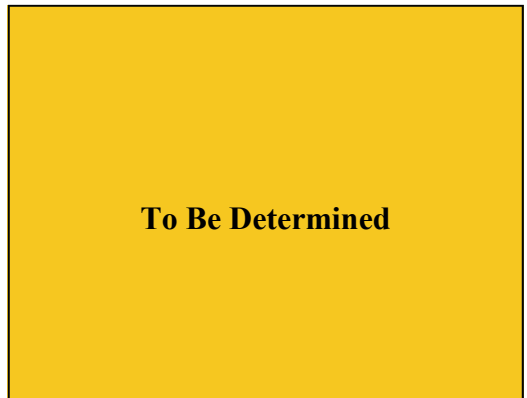
Granite Dam



McNary



System Survival



Predation

Fish

Birds

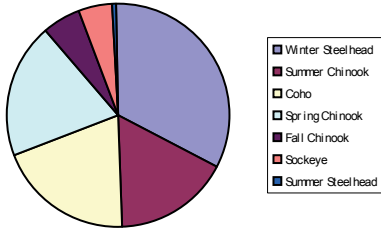
Pinnipeds

DRAFT (The numbers in this report do not represent actual data)

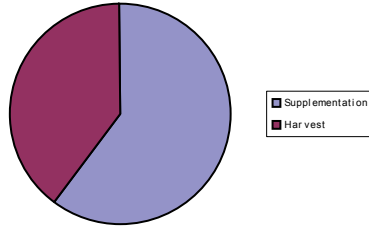
Columbia River Basin High Level Indicator:Harvest

Hatchery Production of Salmon and Steelhead in the Columbia River Basin (2007-2008)

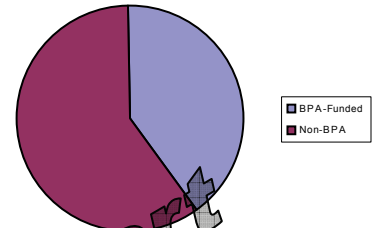
Hatchery Releases
Total Release = #####



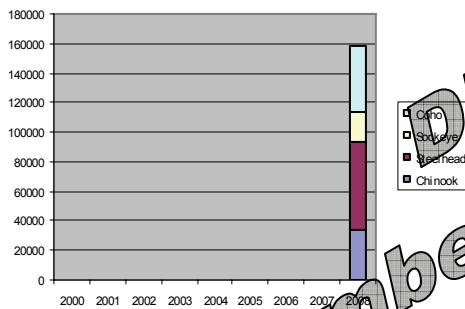
Hatchery Releases by Production Type



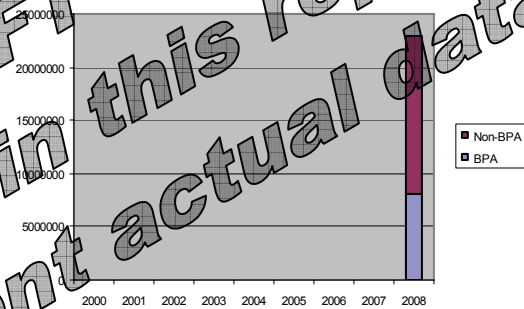
Hatchery Releases by Entity



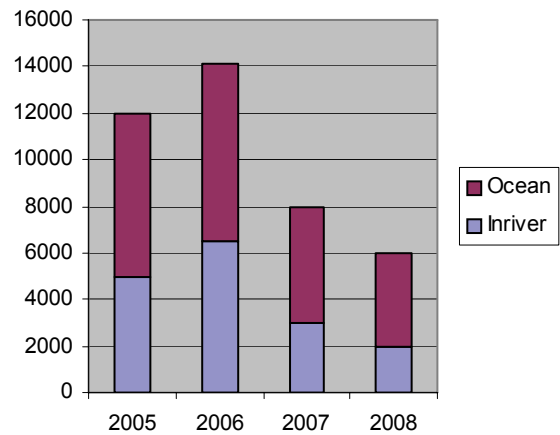
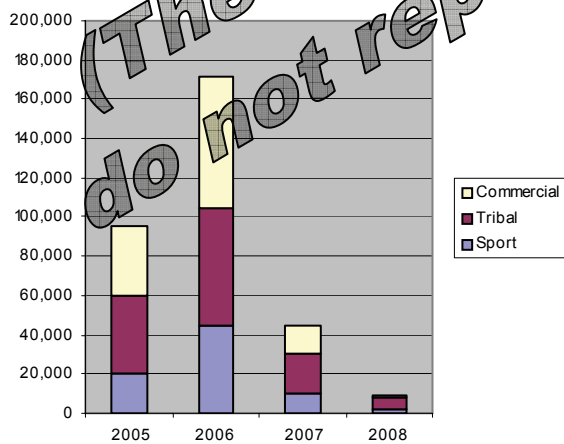
Returns by Species to Hatcheries



Hatchery Fund-

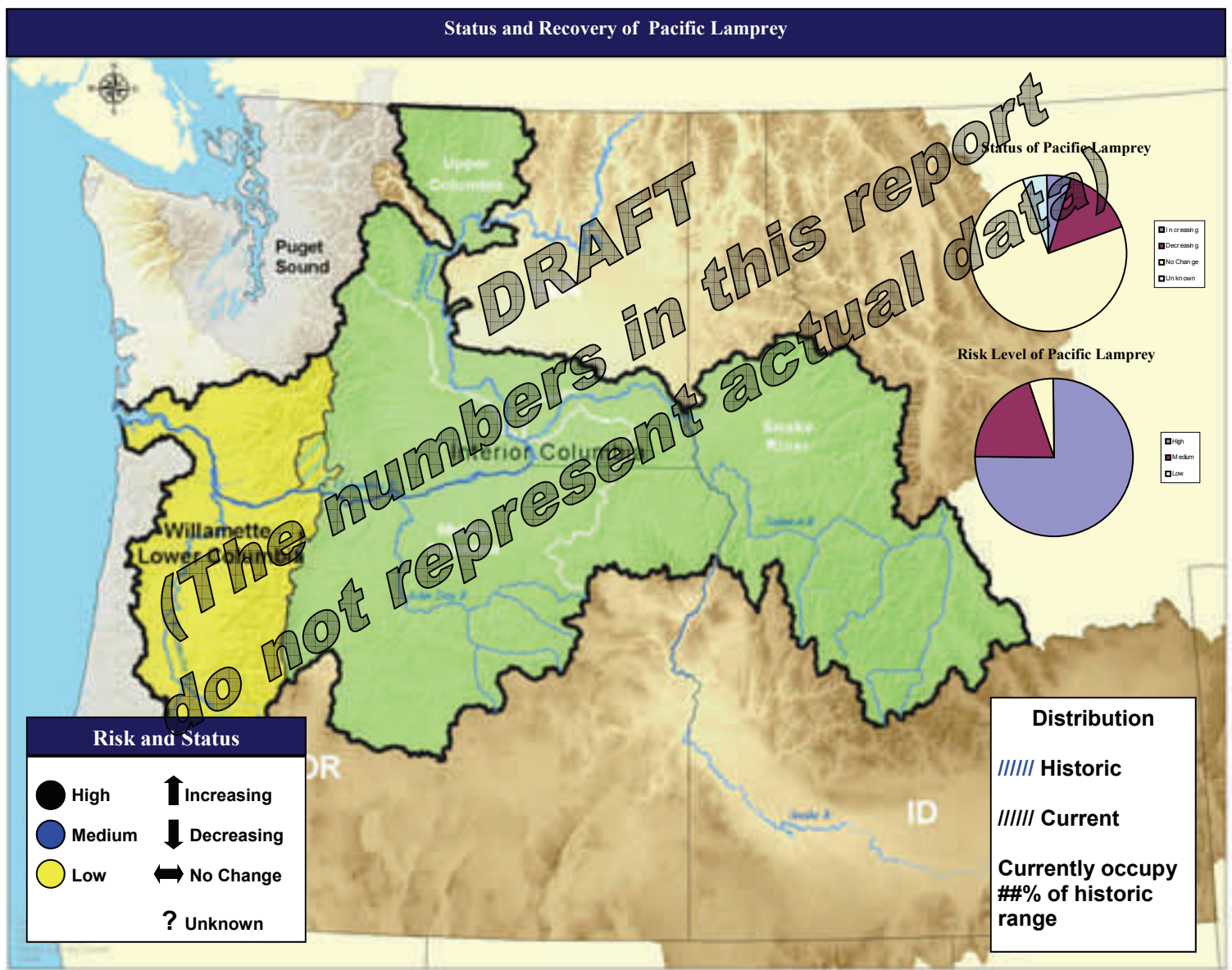


Columbia River Basin Salmon and Steelhead Harvest (2007-2008)



Species/Race	Ocean	Mainstem	Tributary	Program Fish	Non-Program Fish
Chum					
Fall Chinook					
Spring Chinook					
Spring/Summer Chinook					
Winter Steelhead					
Summer Steelhead					
Coho					
Sockeye					

Status and Recovery of Pacific Lamprey



Risk and Status

● High	↑ Increasing
● Medium	↓ Decreasing
● Low	↔ No Change
	? Unknown

Distribution

//// Historic

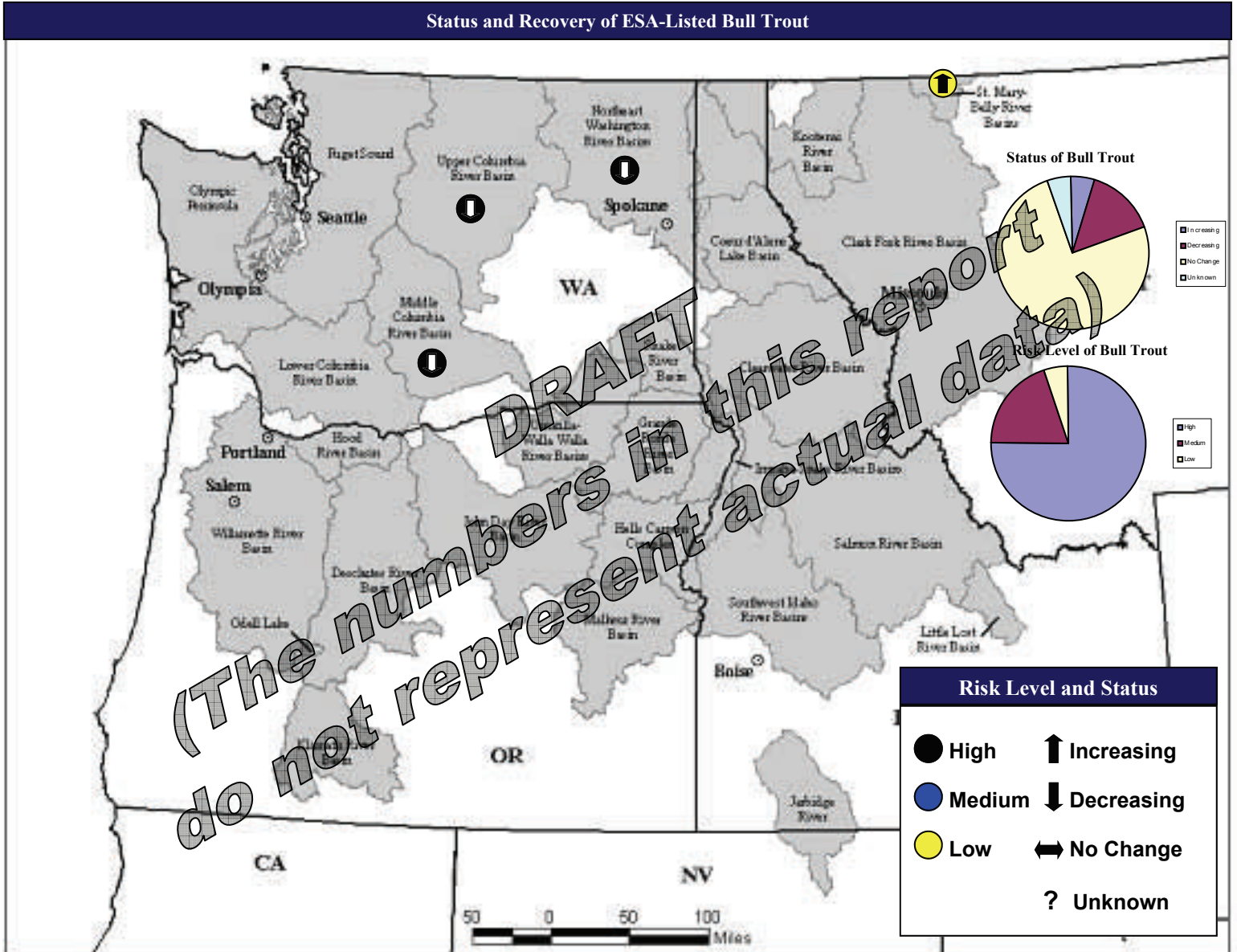
///// Current

Currently occupy ##% of historic range

Dam	2007 Adult Count	5 Year Average	Risk Level
Bonneville			
The Dalles			
John Day			
McNary			

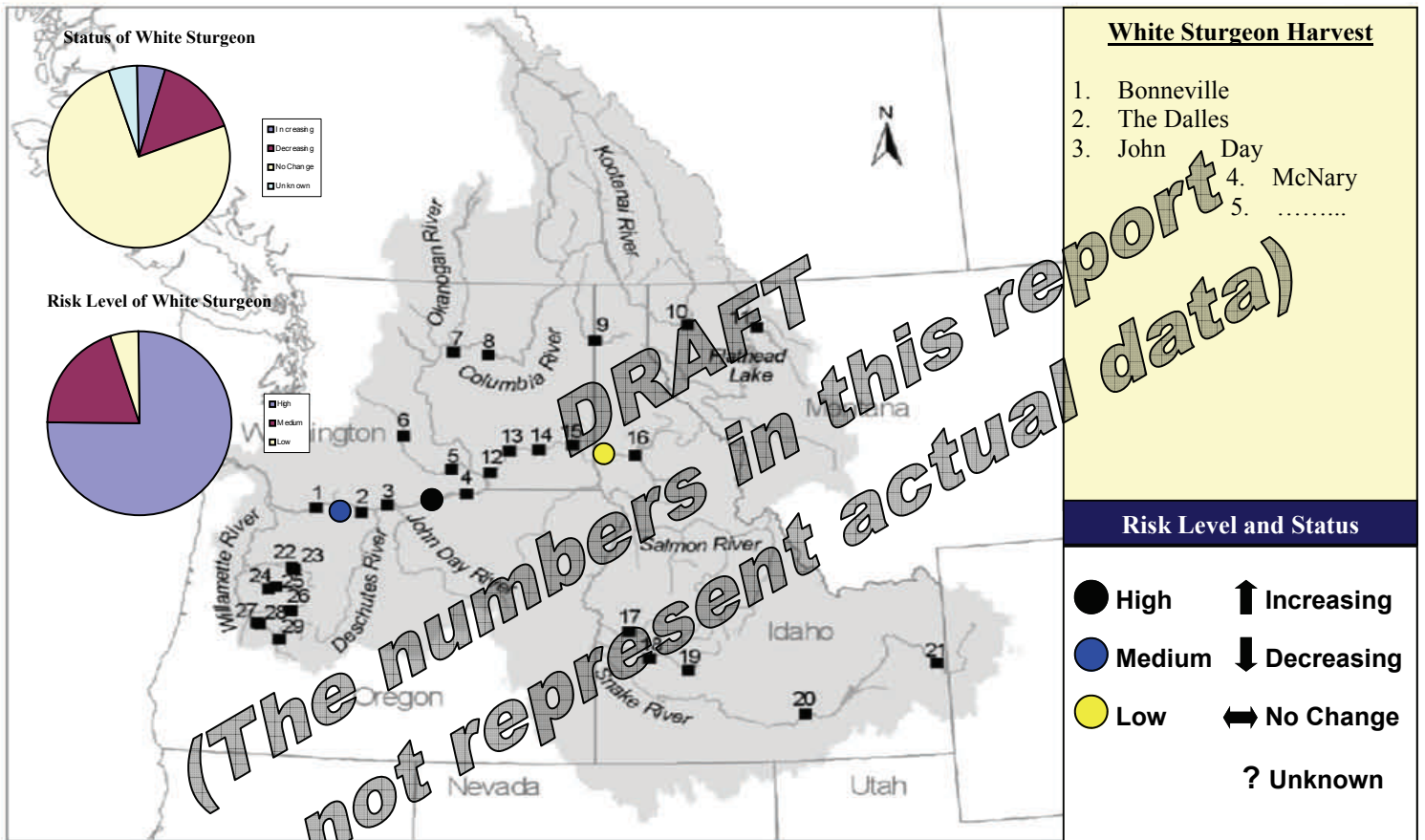


Columbia River Basin High Level Indicators: Total Abundance

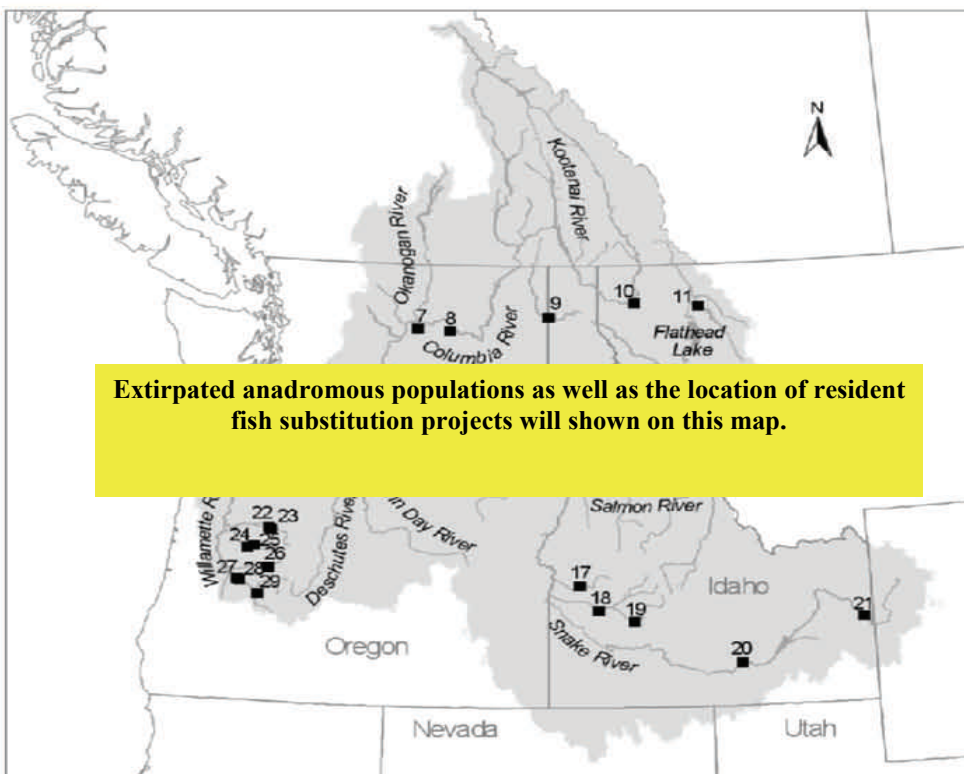


Recovery Unit	Number of Local Populations	Number of Adult Spawners	Risk Level	Recovery Unit	Number of Local Populations	Number of Adult Spawners	Risk Level
Clark Fork River				Coeur d'Alene Lake Basin			
Kootenai River				Clearwater River			
Willamette River				Salmon River			
Hood River				Southwest Idaho			
Deschutes River				Little Lost River			
Odell Lake				Lower Columbia River			
John Day River				Middle Columbia River			
Umatilla-Walla Walla River				Upper Columbia River			
Grande Ronde River				Northeast Washington			
Imnaha-Snake River				Snake River Washington			
Hells Canyon Complex				Jarbidge River			
Malheur River							

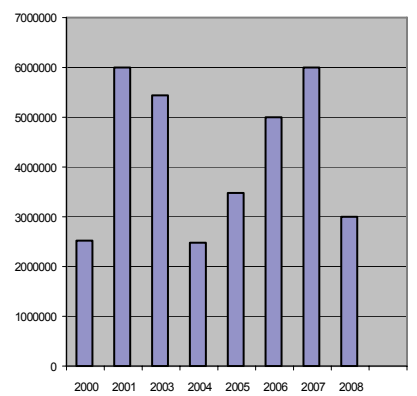
White Sturgeon Population Status (2007-2008)



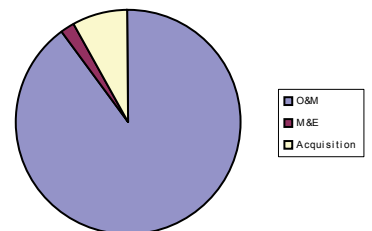
Resident Fish Substitution (2007-2008)



BPA Resident Fish Substitution Funding



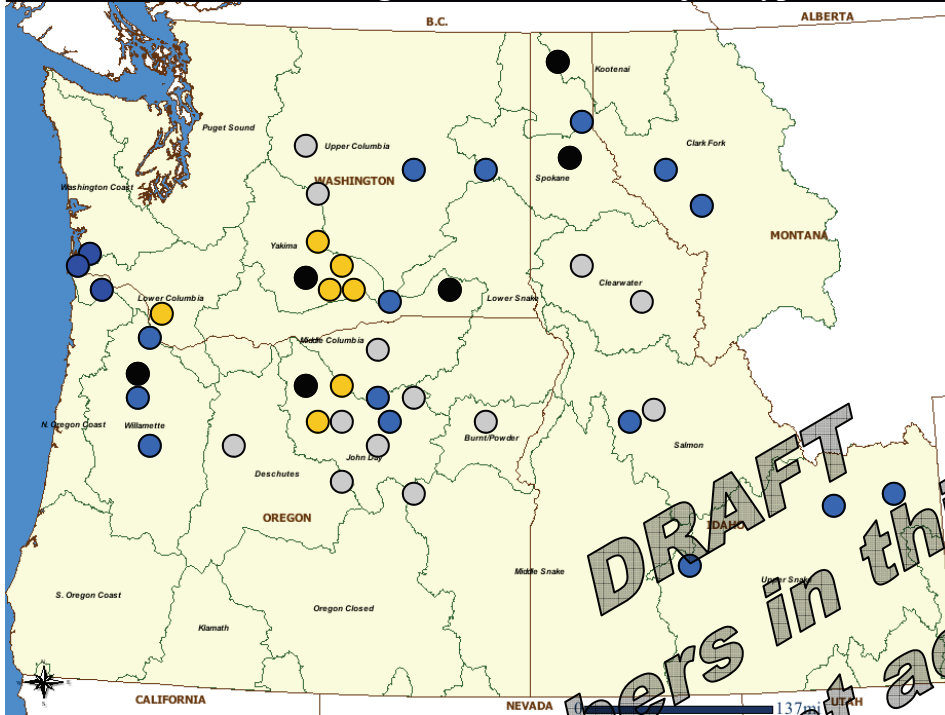
BPA Resident Fish Substitution Funding by Category



Columbia River Basin

Implementation Indicator: Habitat

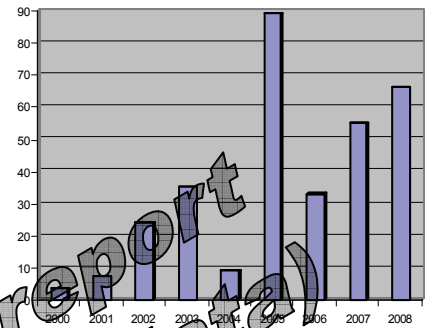
BPA –Funded Region-wide Habitat Project Types



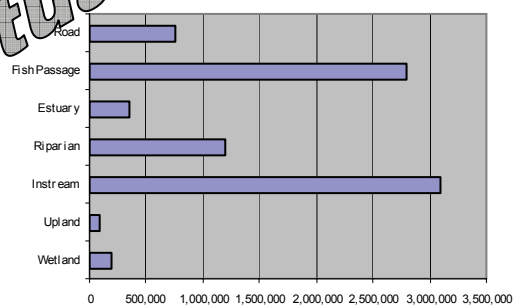
- Instream
- Riparian
- Road Projects
- Upland
- Land Acquisition
- Wetland
- Estuary
- Water Acquisition
- RM&E

Funding for Region-wide Habitat Project Types

BPA Funding for Habitat Restoration by Year (in millions)



BPA Funding for Habitat Restoration by Activity Type

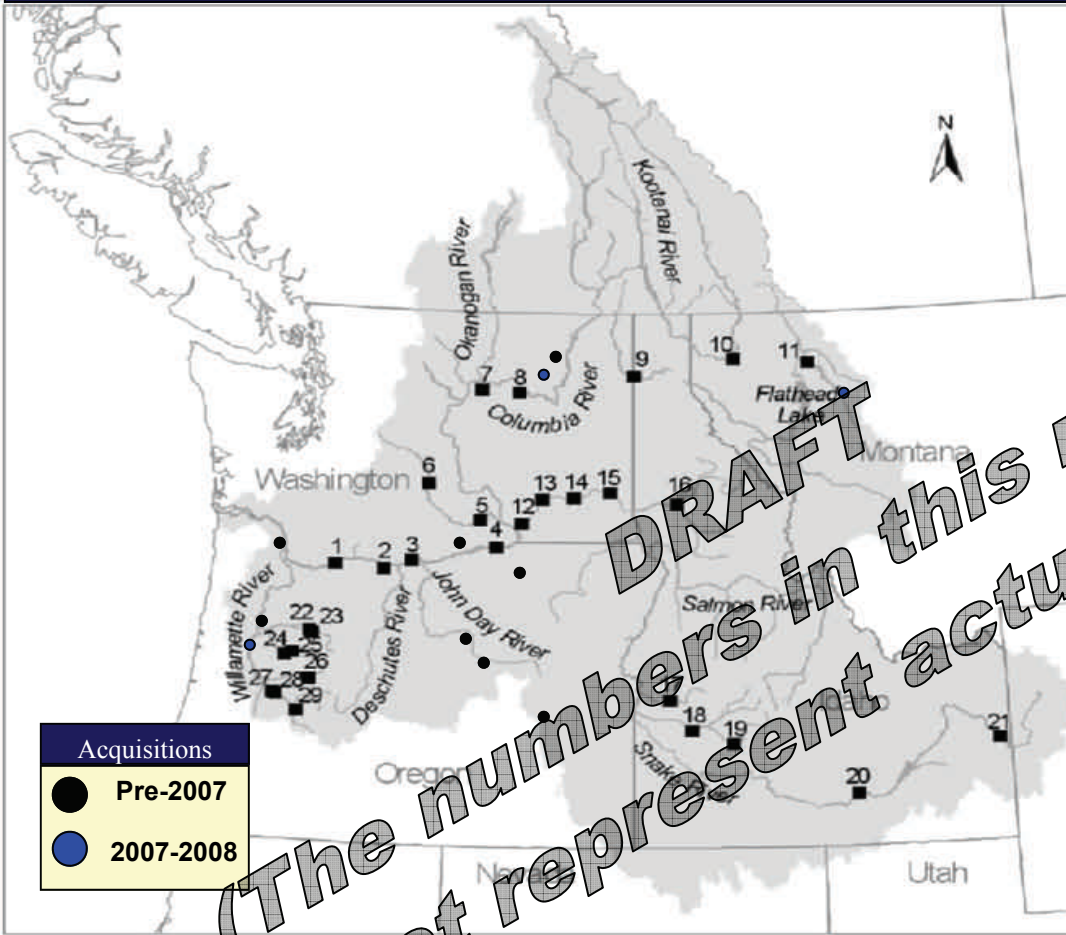


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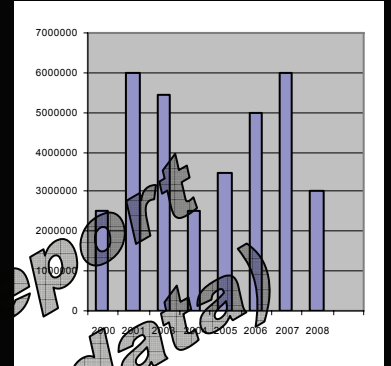
BPA 2008 Region-wide Habitat Status

Project-type	Performance indicator	2000-2008 Average
Instream habitat projects	2,000 stream miles treated	1,850
Wetland habitat projects	8,445 acres created 20,100 acres treated	7,500 16,345
Estuarine habitat projects	1,045 acres created 3,560 acres treated	900 2,980
Land acquisition projects	132,00 acres acquired/protected 390 streambank miles acquired protected	145,000 410
Riparian habitat projects	4,125 stream miles treated 25,600 acres treated	5,010 23,390
Upland habitat projects	410,360 acres treated	345,500
Fish passage projects	3,845 barriers removed 7,900 stream miles accessed 375 fish screens installed	2,230 6,650 285
Watershed planning and assessment projects		
Research, monitoring, and evaluation projects	60,000 miles of streams monitored 135 assessments completed	58,350 105
Water acquisition projects	3,060 acre –feet of water restored to streams	2,450
Road projects	350 miles corrected	220

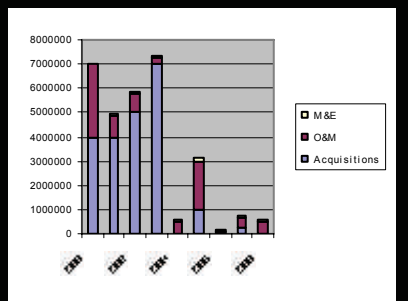
Wildlife Acquisitions



BPA Funding for Wildlife (2007-2008)

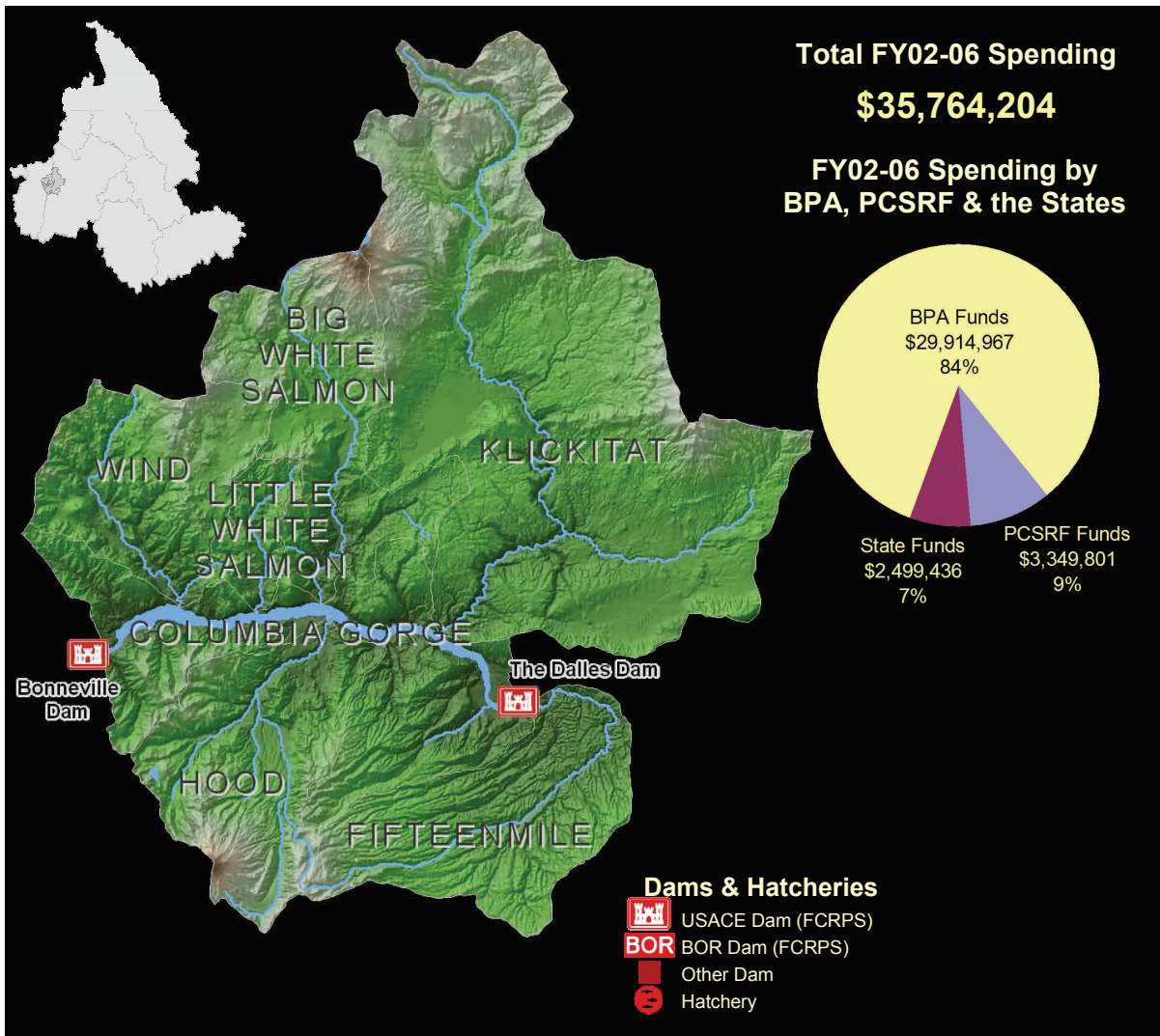


Wildlife Funding by Category



Wildlife Habitat Losses Hydroelectric Facilities in the Columbia River Basin					
Dam	Habitat Units Lost	Goal	Total HUs Credited	% Mitigated	% of Projects with Long-term Management Funds Agreement
Bonneville (OR) (1)	6,159		590		
Bonneville (WA) (1)	6,159		871		
The Dalles (OR) (2)	1,165		0		
The Dalles (WA) (2)	1,165		329		
John Day (OR) (3)	18,280		14,057		
John Day (WA) (3)	18,280		11,019		
McNary (OR) (4)	4,710		8,406		
McNary (WA) (5)	18,834		32,810		
Albeni Falls (9)	28,658		9,872		
Chief Joseph (7)	8,833		567		
Grand Coulee (8)	111,785		107,842		
Big Cliff (22)	413		32		
Cougar (26)	11,124		511		
Detroit (23)	11,298		0		
Dexter (27)	6,648		196		
Foster (24)	3,544		96		
Hills Creek (29)	19,489		1,565		
Lookout Point (28)	25,454		1,296		
Anderson Ranch (19)	9,619		1,063		
Black Canyon (17)	2,170		57		
Minidoka (20)	10,503		1,744		
Palisades (21)	37,070		16,093		

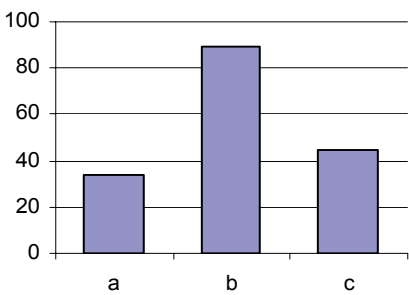
Columbia Gorge



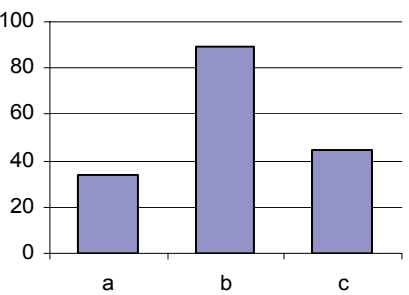
The Columbia Gorge Province is bounded by Bonneville Lock and Dam at river mile 145 and The Dalles Dam at river mile 191 on the Columbia River, and encompasses an area of 3,293 square miles. Subbasins in the Columbia Gorge Province include the Big White Salmon River, Columbia Gorge Mainstem (i.e., Bonneville Reservoir), Hood, Fifteenmile, Klickitat, Little White Salmon, and Wind. Chinook (spring and fall), chum, steelhead (summer and winter), and bull trout populations throughout the province are listed under the federal Endangered Species Act. This province is characterized by a complex geologic structure and vegetation pattern. Fed by glaciers in the Oregon and Washington Cascades, the rivers in the province flow from high elevation coniferous forests and transition through fruit orchards and other irrigated agriculture in the lowlands before entering the Columbia River. Forestry, ranching, agriculture, orchards, and tourism are significant factors in the economy of communities in the province.

Land Ownership	
Federal.....	27%
Private.....	56%
Tribal.....	17%

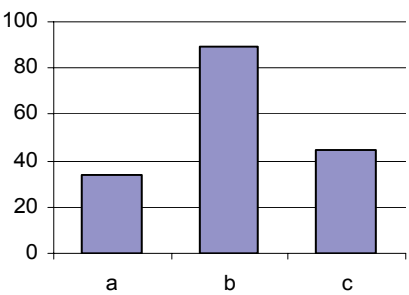
Distribution of PCSRF and State-Matching Funds



Distribution of BPA Funds



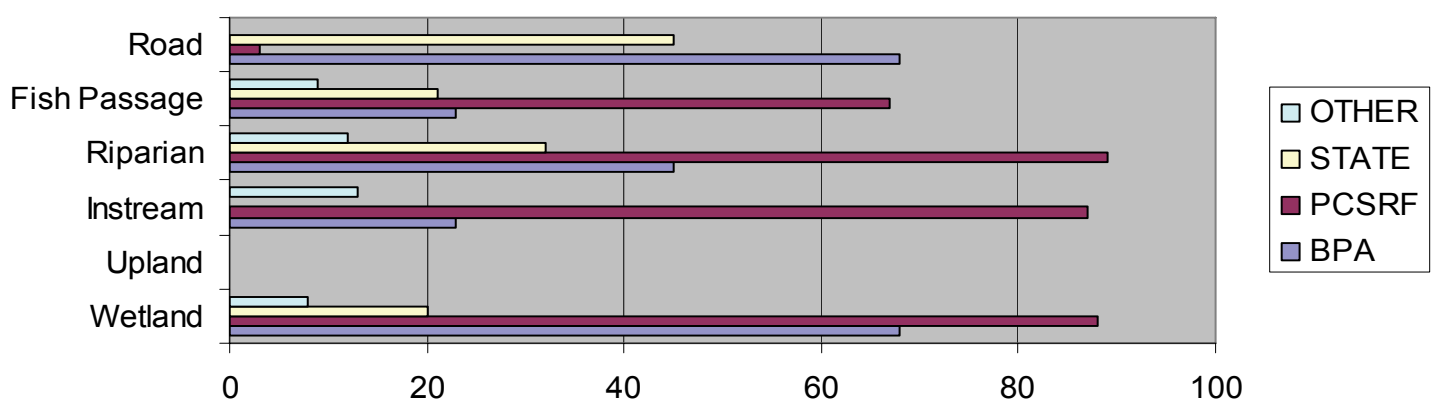
Distribution of OWEB Funds



Major Habitat Factors Limiting Recovery in the Columbia Gorge Province							
Major Limiting Factors	Big White Salmon	Columbia Gorge	Fifteenmile	Hood	Klickitat	Little White Salmon	Wind
Physical habitat quality/quantity	•	•		•			
Water quality			•	•		•	
Water quantity	•	•					
BPA projects addressing major habitat limiting factors							

Habitat Status in the Columbia River Gorge Province		
Project-type	Performance indicator	2000-2008 Average
Instream habitat projects	2,000 stream miles treated	1,850
Wetland habitat projects	8,445 acres created 20,100 acres treated	7,500 16,345
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Watershed planning and assessment projects		
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Water acquisition projects	3,060 acre –feet of water restored to streams	2,450
Road projects	350 miles corrected	220

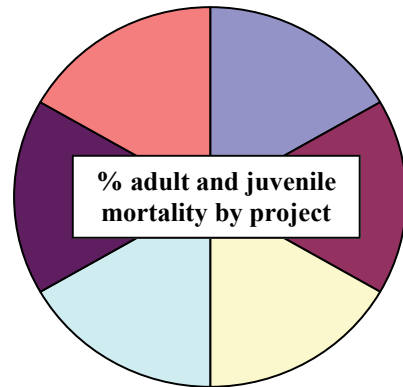
2007-2008 Funding for Completed and Reported Restoration by Activity Type



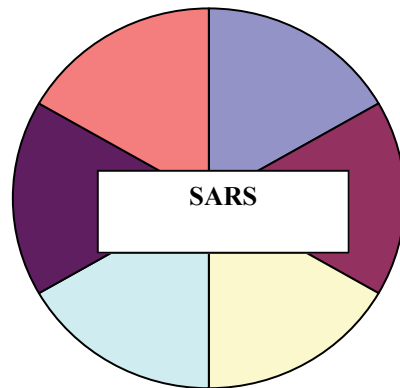
Columbia Gorge

Fish Status	
Bull Trout	Threatened
Chinook (Spring)	Threatened
Chinook (Fall)	Threatened
Chum	Threatened
Coastal Cutthroat Trout	Depressed
Coho	Threatened
Pacific Lamprey	Depressed
Rainbow Trout	Unknown
Steelhead (Summer)	Threatened
Steelhead (Winter)	Threatened
White Sturgeon	Depressed

Hydrosystem Performance



System Survival

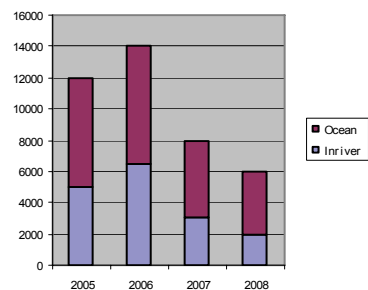


Hatchery Releases and Returns to Hatcheries in the Hood Subbasin			
Hatchery	Species	Released	Hatchery Spawners (Target and Non-target)
Carson			
	Spring Chinook		
Klickitat			
	Spring Chinook		
Little White Salmon			
	Spring Chinook		
	Fall Chinook (Upriver)		
	Coho		
PowerDale Dam			
	Spring Chinook		
	Fall Chinook		
	Summer Steelhead		
	Winter Steelhead		
	Coho		
Spring Creek			
	Fall Chinook (Tule)		
Total			

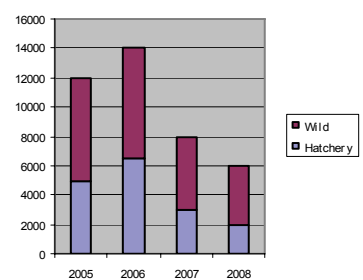
Salmon and Steelhead Harvest

Total Harvest
#####

Location (River/Ocean)



Hatchery vs Wild

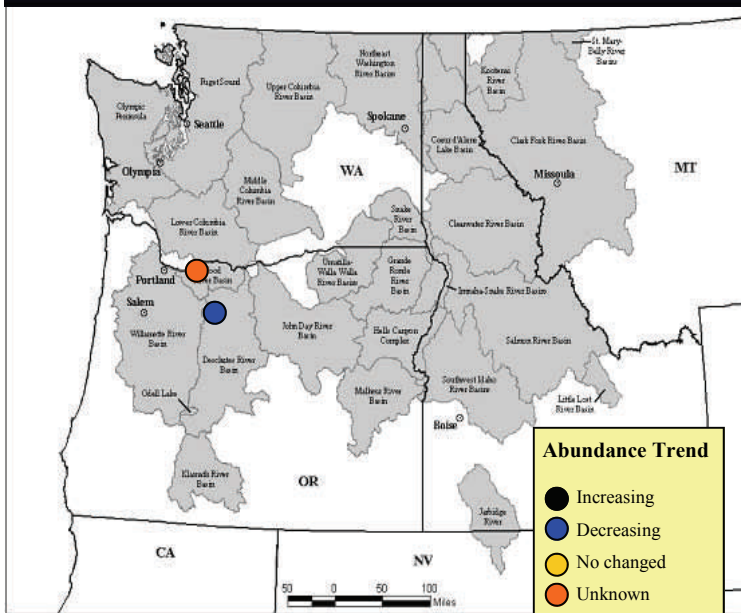


Status and Recovery of ESA-Listed Salmon and Steelhead in the Columbia Gorge Province

Potential information to be included in this section:

- Abundance
 - total spawners and NORs relative to aggregate ESU target
 - MPGs meeting targets
 - Trend: MPGs increasing, stable, decreasing
- Productivity
 - MPGs meeting targets
 - Trend: MPGs increasing, stable, decreasing
 - SARs
- Spatial Structure
 - MPGs meeting targets
 - Trend: MPGs increasing, stable, decreasing
 - % accessible area utilized
- Diversity
 - MPGs meeting targets
 - Trend: MPGs increasing, stable, decreasing

Bull Trout Status in the Columbia Gorge Province



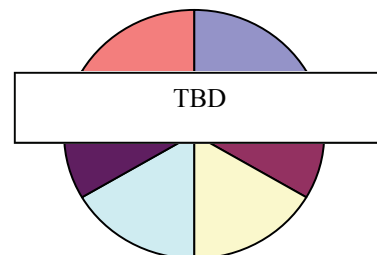
Recovery Unit	Number of Local Populations	Number of Adult Spawners
Hood River		
Lower Columbia River		

**Wildlife Habitat Losses
Hydroelectric Facilities in the Columbia Gorge Province ***

Dam	HUs Lost	Goals	HUs Credited	% Mitigated	% of Projects with Long-term Management Funds Agreement
Bonneville (OR)	6,159				
Bonneville (WA)	6,159				
The Dalles (OR)	1,165				
The Dalles (WA)	1,165				

*BPA. 2007. Wildlife Crediting for BPA's Fish and Wildlife Program. Bonneville Power Administration, Portland, OR.

Acres Meeting Objectives



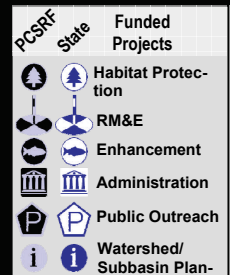
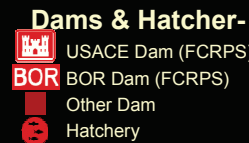
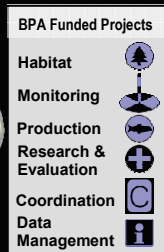
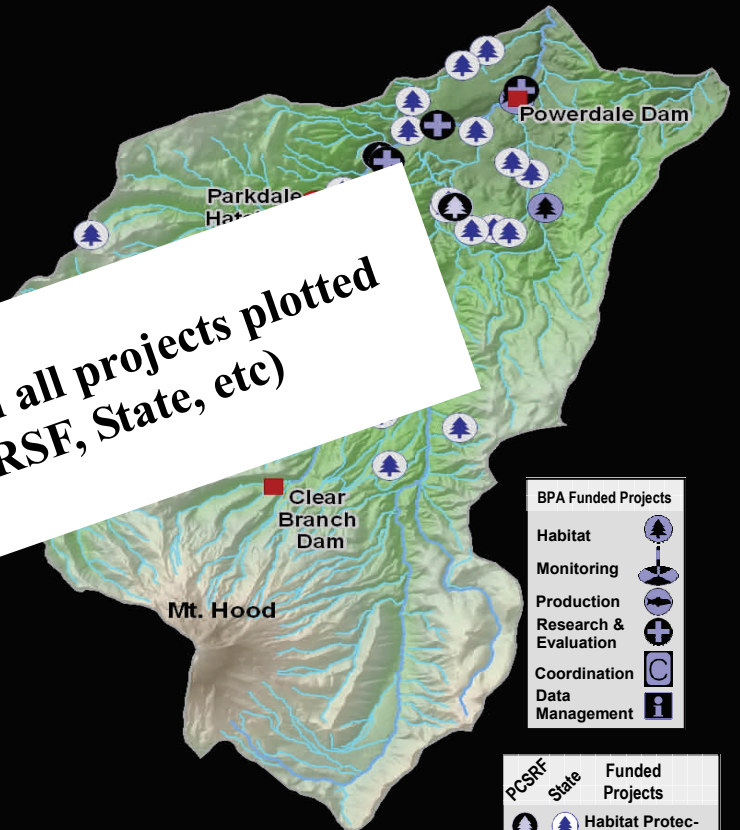
Pie chart represents six subbasins sampled in the Columbia Gorge Province during 2007-2008.

Columbia Gorge

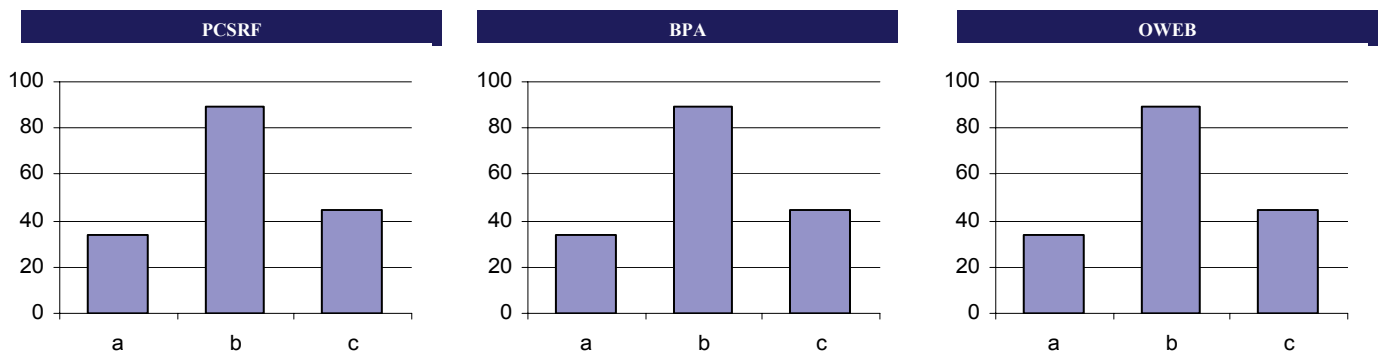
Total FY07-08 Spending

\$35,764,204

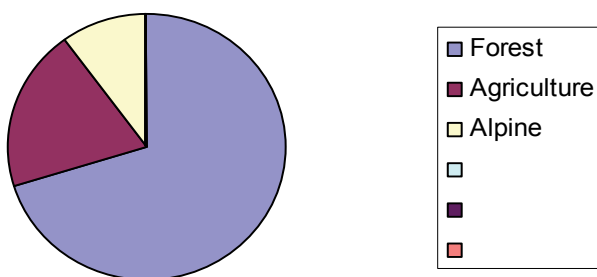
Larger map with all projects plotted
(BPA, PCRSE, State, etc)



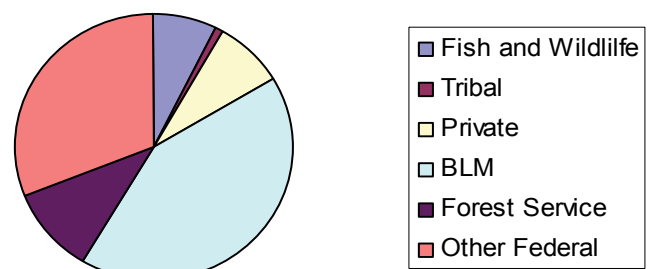
2000-2008 Funding Sources



Land Cover



Land Ownership



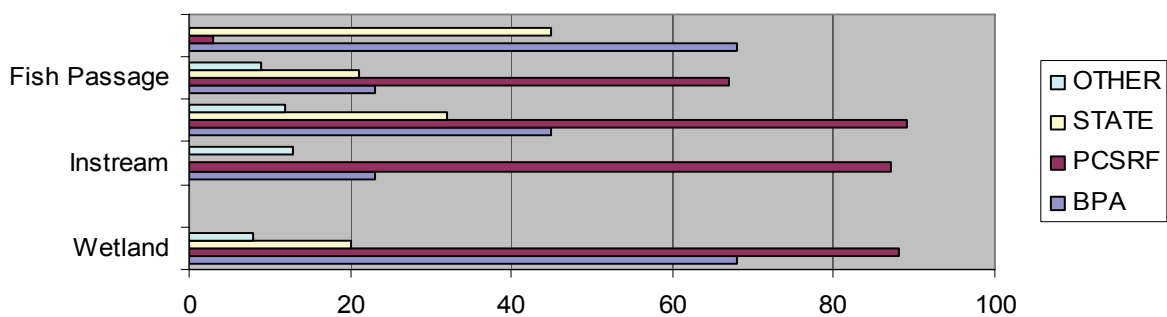
Subbasin: Hood



Major Habitat Factors Limiting Recovery in the Hood Subbasin							
Major Limiting Factors	Summer Steelhead	Winter Steelhead	Spring Chinook	Fall Chinook	Bull Trout	Coastal Cut-throat Trout	Pacific Lamprey
Physical habitat quality/quantity	•	•		•			
Water quality			•	•		•	
Water quantity	•	•					
BPA projects addressing major habitat limiting factors							

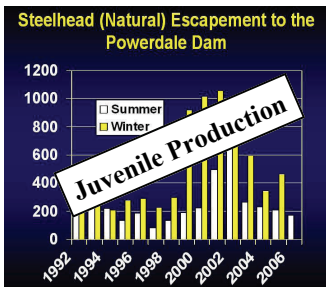
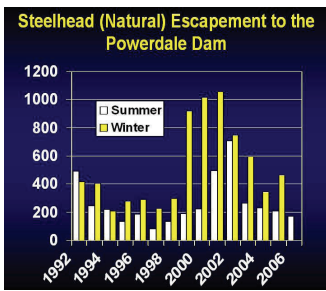
2007-2008 BPA –funded Habitat Projects in the Hood Subbasin		
Project-type	Performance indicator	2000-2008 Average
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Upland habitat projects	410,360 acres treated 45,980 acres restored	345,500 60,790
Fish passage projects	3,845 barriers removed 7,900 stream miles accessed 375 fish screens installed	2,230 6,650 285
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2007-2008 Funding for Completed and Reported Restoration by Activity Type



Columbia Gorge

Steelhead



Pacific Lamprey



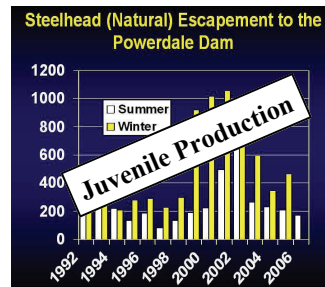
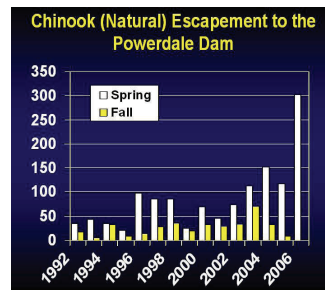
Summer

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 600 adults¹
Status: 168 natural adults (2006)²
Trend: (Increasing/Stable/
Decreasing/Unknown)
Wild Juvenile Production:
% MSA Occupied:
Lambda:

Winter

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 1,100 adults¹
Status: 597 adults (2005)²
Trend: (Increasing/Stable/
Decreasing/Unknown)
Wild Juvenile Production:
% MSA Occupied:
Lambda

Chinook



Spring

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objectives: 125 natural adults¹
Status: 302 adults and jacks (2006)²
Trend: (Increasing/Stable/
Decreasing/Unknown)
Wild Juvenile Production:
% MSA Occupied:
Lambda:

Fall

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 1,400 natural adults (TRT)
Status: 8 adults and jacks (2005)²
Trend: (Increasing/Stable/
Decreasing/Unknown)
Wild Juvenile Production:
% MSA Occupied:
Lambda

Hatchery Releases and Returns to Hatcheries in the Hood Subbasin

Hatchery	Species	Program Type	Released (By life stage)	Returns to Hatchery	Harvest	Harvest Fraction	PNI
	Spring Chinook						
	Summer Steelhead						
	Winter Steelhead						
	Fall Chinook						
Total							

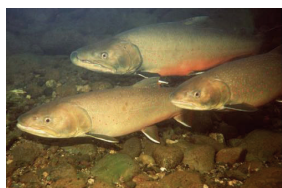
¹ Coccoli, H. and 9 coauthors. 2004. Hood River Subbasin Plan including Lower Columbia Gorge Tributaries. A Report Prepared for the Northwest Power and Conservation Council. Portland, Oregon.

² Olsen, W. A. 2007. Hood River and Pelton Ladder Evaluation Studies: Annual Report 2006. Oregon Department of Fish and Wildlife. Salem, Oregon. (via Stream-Net)

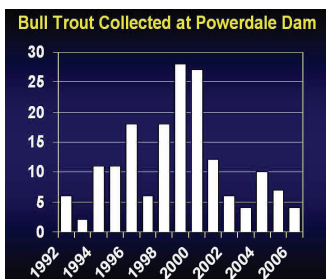
Subbasin: Hood



Bull Trout



Federal Designation: Threatened
Core Population: Hood (Within Hood River Recovery Unit)
Biological Objective: ≥ 500 adults¹
Status: 4 adults passed Powerdale Dam (2006)²

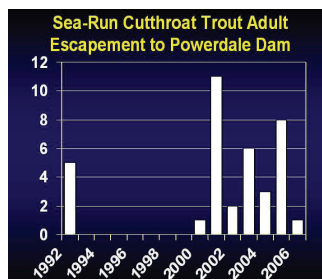


Coastal Cutthroat Trout



Resident

Federal Designation: Species of Concern
Biological Objective: None
Status: Unknown

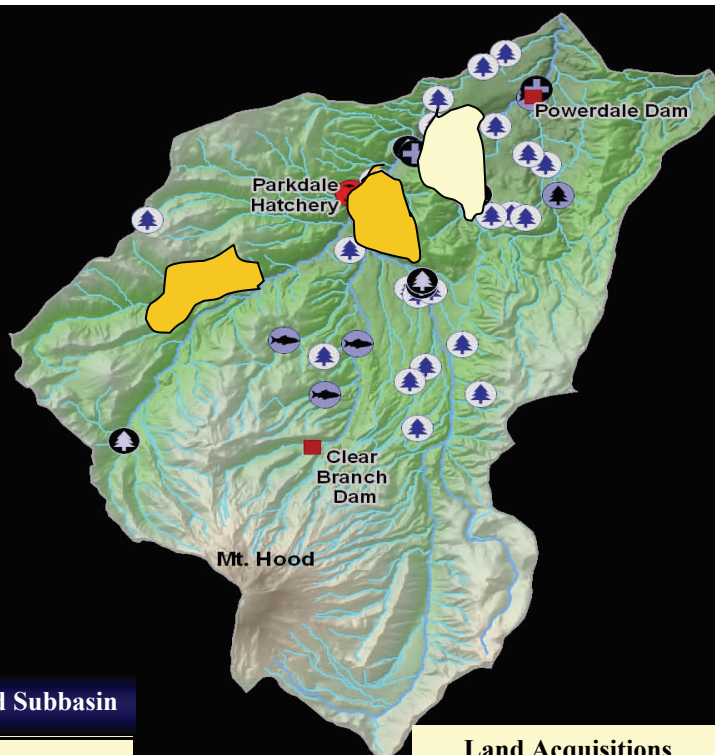


Sea-Run

Federal Designation: Species of Concern
Biological Objective: None
Status: 1 adult passed Powerdale Dam (2006)²

Wildlife Priority Focal Habitat

- Big game winter range
- Riparian habitat
- Oak-pine woodland



BPA-Funded Wildlife Projects in the Hood Subbasin

No BPA-funded wildlife projects exist in this subbasin

Land Acquisitions

- 2007-2008
- Prior to 2007

¹ Coccoli, H. and 9 coauthors. 2004. Hood River Subbasin Plan including Lower Columbia Gorge Tributaries. A Report Prepared for the Northwest Power and Conservation Council. Portland, Oregon.

² Olsen, W. A. 2007. Hood River and Pelton Ladder Evaluation Studies: Annual Report 2006. Oregon Department of Fish and Wildlife. Salem, Oregon. (via Stream-Net)