



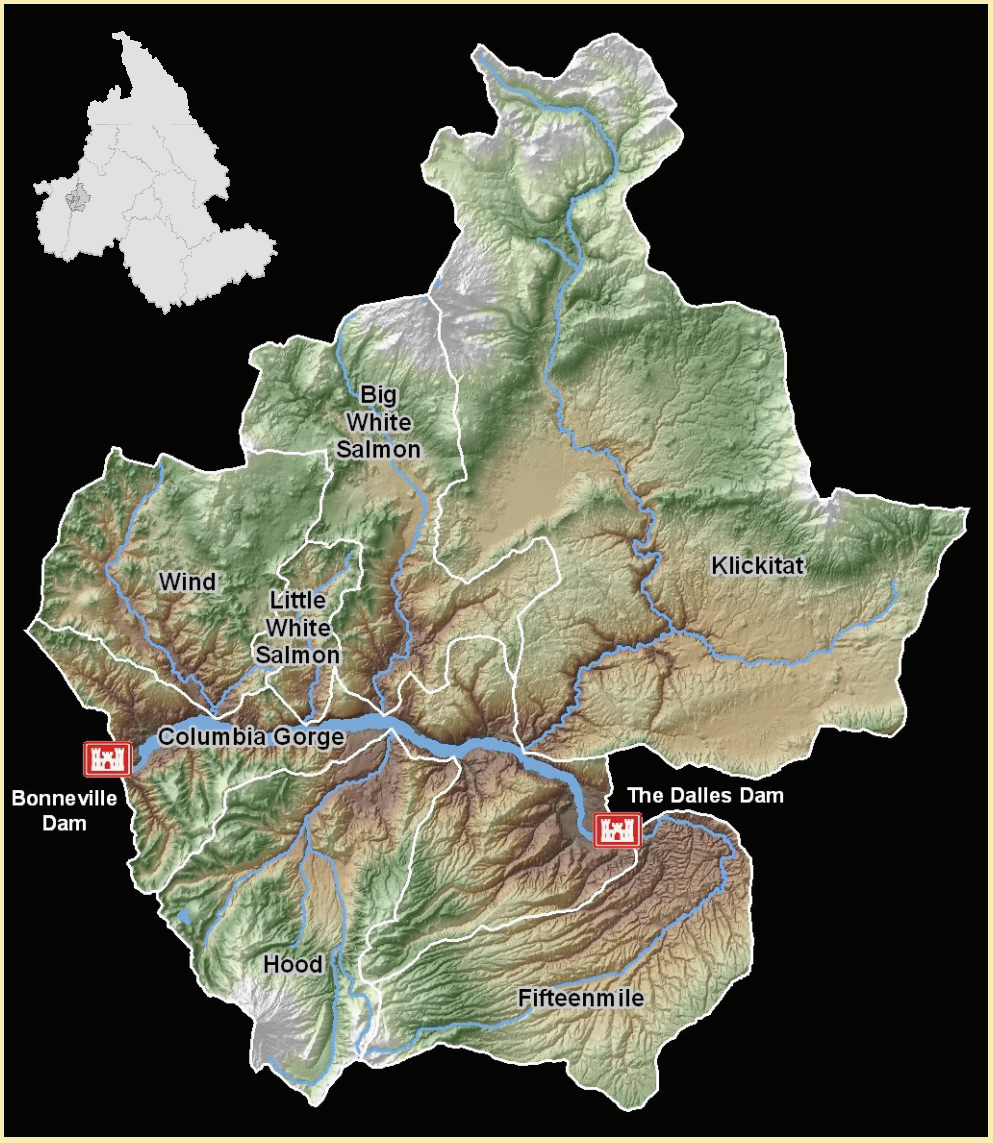
COLUMBIA BASIN FISH AND WILDLIFE AUTHORITY



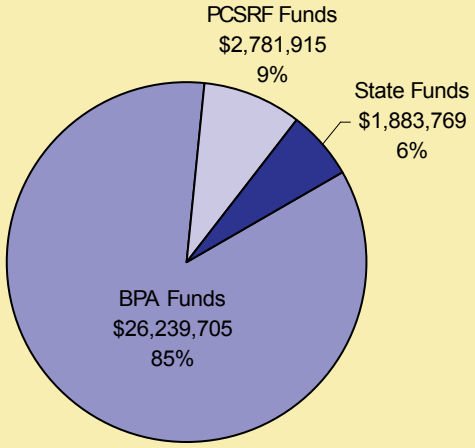
2006

Status of Fish and Wildlife Resources in the Columbia River Basin

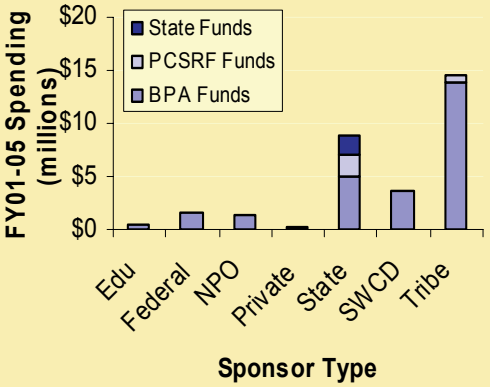
Columbia Gorge



FY01-05 Spending by BPA, PCSRF & the States



Combined FY01-05 Spending by Type of Project Sponsor



The Columbia Gorge Province is located 40 miles east of Portland, Oregon, 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 River, Fifteenmile Creek, Klickitat River, Little White Salmon River, and Wind River. 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. Throughout the Columbia Gorge Province, 28 fish and wildlife projects are funded by the Bonneville Power Administration.

Land Ownership

Federal……....27%
Private…….56%
Tribal……...17%

Listed Fish Species

Federal……...5
State……...2

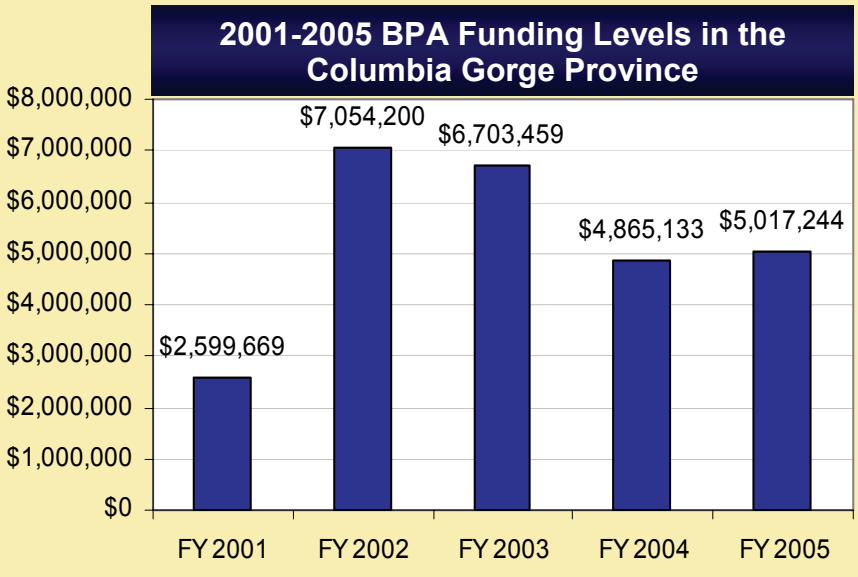
Eight fish species, including two races of Chinook and three life history forms rainbow trout are designated as focal species within the province. Most are listed under the federal Endangered Species Act.

Focal Species	Big White Salmon	Columbia Gorge	Fifteen-mile	Hood	Klickitat	Little White Salmon	Wind
Bull Trout							
Chinook-Spring							
Chinook-Fall							
Chum							
Coastal Cutthroat Trout							
Coho							
Pacific Lamprey							
Rainbow Trout							
Steelhead – Winter							
Steelhead— Summer							
White Sturgeon							

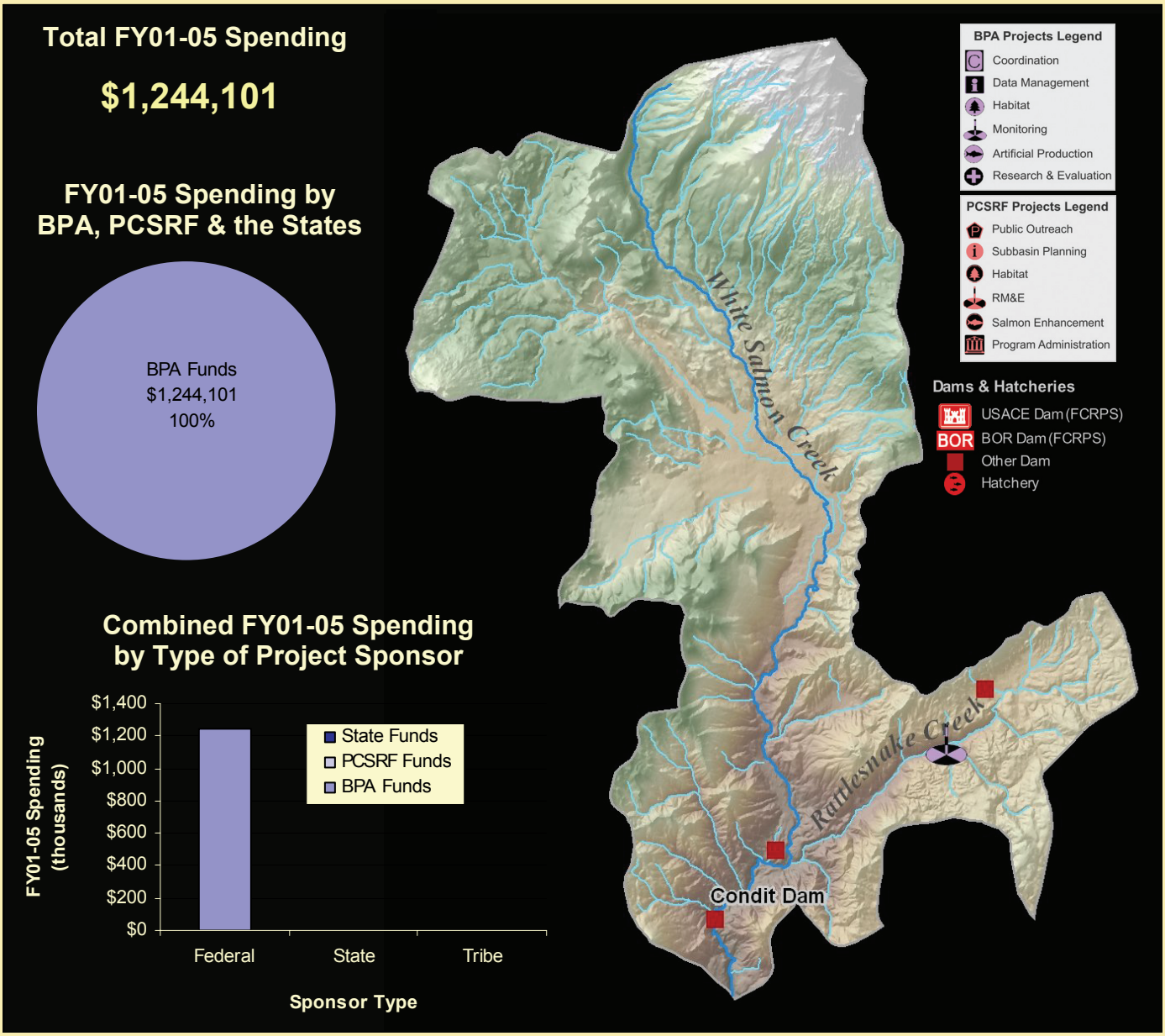
Not a focal species | Not listed | Species of Concern | Threatened

Major limiting factors in the province include:

- Water quality (effects from agriculture, forestry, and urban development)
- Passage impediments (dams (e.g., Bonneville, Condit Clear Branch, and Hemlock), culverts/road crossing, and irrigation diversions)
- Flows (altered due to irrigation, hydropower, and water diversions)
- Lack of in-stream and riparian habitat



Columbia Gorge



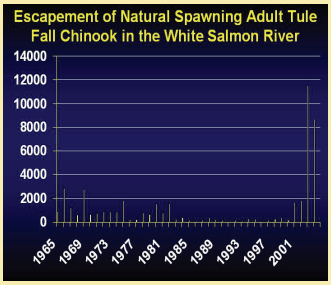
Limiting Factors

Passage Impediments — Construction and operation of Condit Dam prevents access to upstream areas.
Flows — Natural hydrologic regime has been altered by Condit Dam. Minimum flows are 30cfs compared to natural low flows of 700cfs. Power peaking causes diel flow variation, which has led to dewatering, stranding, and an increase in bio-energetics losses due to movements associated with daily flow changes.
In-stream Habitat — Lack of recruitment of spawning gravels and large woody debris due to Condit Dam.

Subbasin: Big White Salmon

Chinook

Waiting for data from the managers



Spring

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 0 (fish cannot access historical spawning areas)[1]
Status:

Fall—Tule

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 982 adult escapement without harvest[1]
Status: 8,691 natural spawning adults (2004)[2]

Steelhead

Federal Designation: Threatened
ESU: Mid-Columbia
Biological Objective: 20 adults (in the absence of harvest)[1]
Status: Unknown—no adequate abundance trend data[1]

Coho

Federal Designation: Threatened
ESU: Lower Columbia/Southwest Washington Coast
Biological Objective: 470 spawners (without harvest)[1]
Status: Unknown-Population modeling does not occur[1]

Rainbow Trout

Federal Designation: None
Population: Big White Salmon
Biological Objectives:: None
Status: Unknown[1]

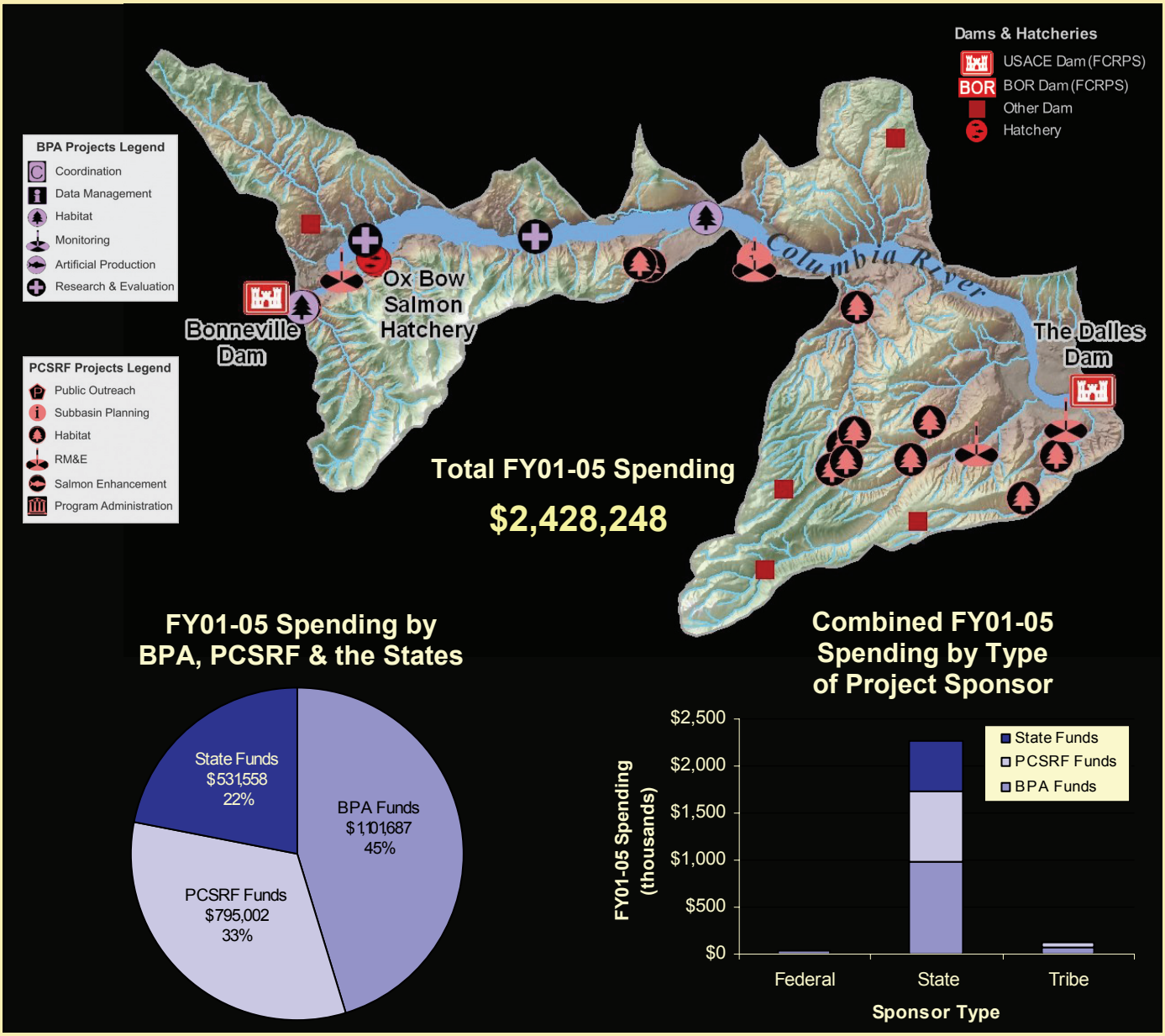
BPA-Funded Projects in the Big White Salmon Subbasin: Selected 2001 — 2005 Project Accomplishments[3]

- Characterized stream (flow, temperature and dissolved oxygen) and riparian habitat (types of vegetation) conditions in the Rattlesnake Creek drainage.
- Determined the status of fish populations in the Rattlesnake Creek drainage.

For individual project accomplishment visit www.cbfwa.org/sotr.

[1] 2004. White Salmon Subbasin Plan. Northwest Power and Conservation Council, Portland, Oregon.
[2] Groesbeck, Michelle. 2005. Memorandum dated April 1, 2005– Age composition of naturally spawning chum and Chinook in Washington Columbia River tributaries down stream of Bonneville Dam, 2003-2004. Washington Department of Fish and Wildlife.
[3] as described in the Northwest Power and Conservation Council's FY2007-09 Columbia River Fish and Wildlife Program Project Solicitation Proposal

Columbia Gorge



Limiting Factors

Water Quality — Elevated water temperature affects white sturgeon eggs and sedimentation/contaminants may reduce adhesiveness of eggs. Contaminants also may affect survival, growth, and reproductive potential of white sturgeon adults.

Passage Impediments — White sturgeon are unable to use fish ladders at Columbia River dams and chum have a lower propensity to ascend the fishways at Bonneville Dam. Transportation corridors and/or hatchery weirs block chum access to tributary habitats. Passage measures developed for salmon do not necessarily provide optimum benefits to lampreys.

Flows - Altered flows create suboptimal spawning conditions for white sturgeon. Operations provide for intermittent dewatering of spawning gravels used by chum and changes to seasonal and longer-term recruitment of spawning gravels. Frequent pool elevation fluctuations impact ability of juvenile lamprey to use nearshore substrates for long periods of time.

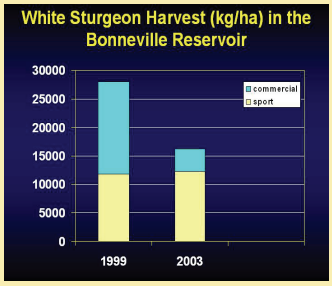
Harvest — Sport and commercial harvest of adult white sturgeon.

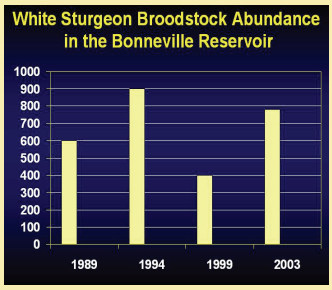
Land Development — Historic chum spawning, incubation, and rearing areas in low gradient streams and rivers lost due to urban, industrial, and agricultural development.

Instream Habitat — Mainstem spawning and rearing habitat lost due to inundation by Bonneville Dam. Decreased rate of recruitment of large woody debris to lower reaches of tributaries and nearshore areas of the mainstem. Sedimentation of spawning and rearing habitats used by chum in tributaries and nearshore areas of the mainstem.

Subbasin: Columbia Gorge

White Sturgeon





Designations: None
Population: Bonneville Reservoir
Biological Objective: Harvest of 5kg/ha, target exploitation rates equal 21% of fish 42-60" in sport fisheries and 25% of fish 45-60" in commercial fisheries, increase broodstock by 10% every three years[1]
Status: Harvest =1.9kg/ha (2003)[2]
Sport exploitation = 10% (2003)[2]
Commercial exploitation = 26% (2003)[2]
Broodstock abundance = 746 (2003)[2]

Chum

Federal Designation: Threatened
ESU: Columbia River
Biological Objective:
Status:

Waiting for data from the managers

Pacific Lamprey

Federal Designation: Species of Concern
Population: Unknown
Biological Objective: None[1]
Status: Unknown[1]

BPA-Funded Projects in the Columbia Gorge Subbasin: 2001 — 2005 Project Accomplishments[3]

- Over 850 western pond turtles released in the Columbia River Gorge since 1991
- Implemented activities to western pond turtle habitat
- Prepared a report on the status of coastal cutthroat trout

For individual project accomplishment visit www.cbfwa.org/sotr.

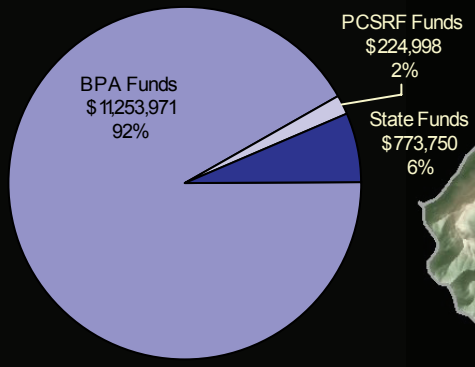
[1] Oregon Department of Fish and Wildlife. 2004. Columbia Gorge Mainstem Subbasin Plan. Northwest Power and Conservation Council. Portland, Oregon.
[2] Weaver, Michele, and Tom Rien. Oregon Department of Fish and Wildlife, Personal Communication.
[3] as described in the Northwest Power and Conservation Council's FY2007-09 Columbia River Fish and Wildlife Program Project Solicitation Proposal

Columbia Gorge

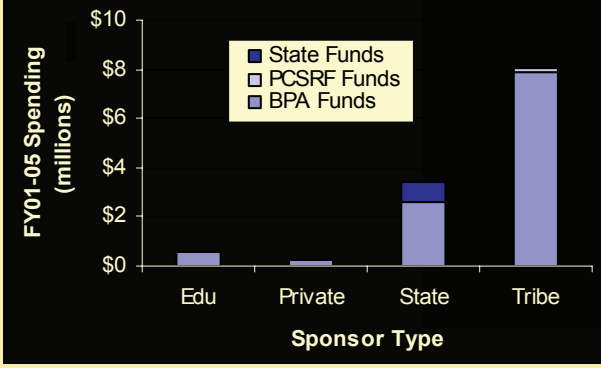
Total FY01-05 Spending

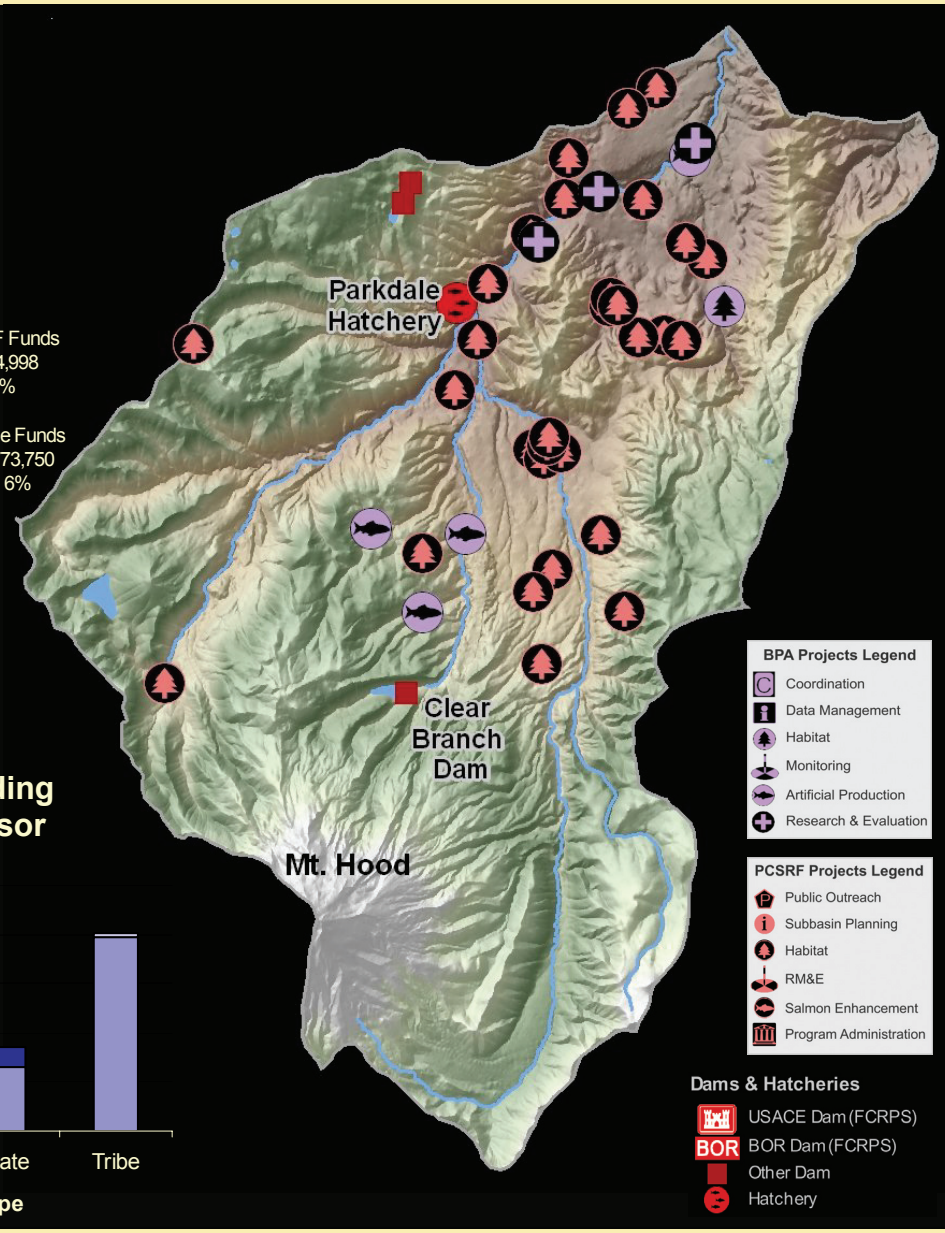
$12,252,719

FY01-05 Spending by BPA, PCSRF & the States



Combined FY01-05 Spending by Type of Project Sponsor





Limiting Factors

Water Quality — Alteration by sediment inputs from roads (forest service roads) and irrigation networks (Neal Creek), pesticide (Neal, Indian, Trout, Lenz creeks and Hood River) and nutrient contamination from agriculture and other non-point sources (Odell, Lenz, and Baldwin creeks and Laurance Lake), temperature increases from flow modification (East Fork Hood River below the East Fork Irrigation Diversion and Hood River from Powerdale Dam to the powerhouse), reservoir discharge (Clear Branch below Laurance Lake Reservoir), or riparian vegetation removal (Neal Creek). Exceed Oregon 303-d standards for temperatures, pH, chemicals, and dissolved gas.

Passage Impediments — Dams (Powerdale and Clear Branch), diversions (East Fork Hood River, mainstem Hood River, Coe, Elliott, and Clear branches, and West Fork Hood River) and road crossings. Downstream entrainment at Clear Branch and Powerdale dams.

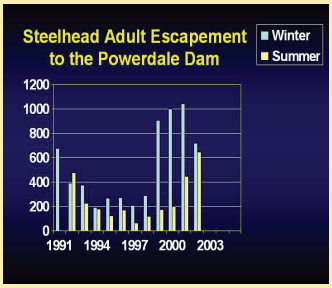
Flows-Altered flows due to irrigation (Baldwin, Odell, Tieman, and West Fork Neal creeks), hydropower (Powerdale Dam), and municipal water diversions (upper Dog River).

In-stream Habitat — Loss of large woody debris recruitment caused by historic timber practices and clearing of streams (East Fork Hood River between Robinhood and Sherwood campgrounds).

Riparian Habitat — Confined and disrupted by roads and other land uses.

Subbasin: Hood

Steelhead



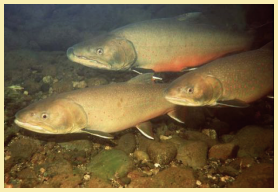
Summer

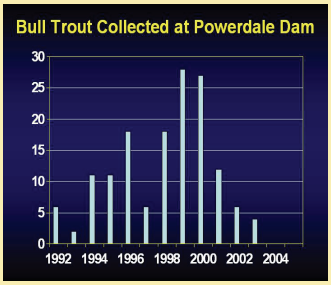
Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 600 adults[1]
Status: 650 adults collected at Powerdale Dam (2002)[2]

Winter

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 1,100 adults[1]
Status: 717 adults collected at Powerdale Dam (2002)[2]

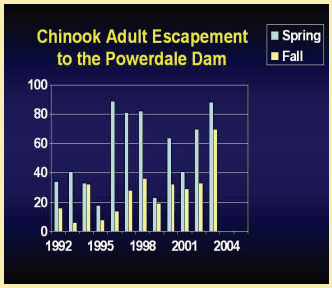
Bull Trout





Federal Designation: Threatened
Core Population: Hood
Biological Objective: ≥ 500 adults[1]
Status: < 300 adults[3]

Chinook



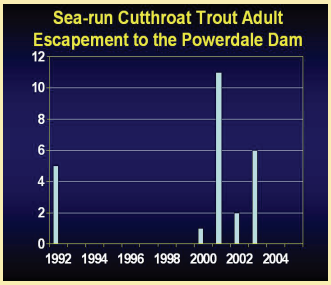
Spring

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objectives: 125 natural adults[1]
Status: 88 adults collected at Powerdale Dam (2003)[2]

Fall

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 1,400 natural adults (TRT)
Status: 70 adults collected at Powerdale Dam (2003)[2]

Coastal Cutthroat Trout



Resident

Federal Designation: Species of Concern
Population: Hood
Biological Objective: None[1]
Status: Too little data exist to assess population trend[1]

Sea-Run

Federal Designation: Species of concern
Population: Hood
Biological Objective: None[1]
Status: 6 adults collected at Powerdale Dam (2003)[2]

Pacific Lamprey

Federal Designation: Species of Concern
Population: Unknown
Biological Objective: None[1]
Status: Current abundance and carrying capacity unknown[1]

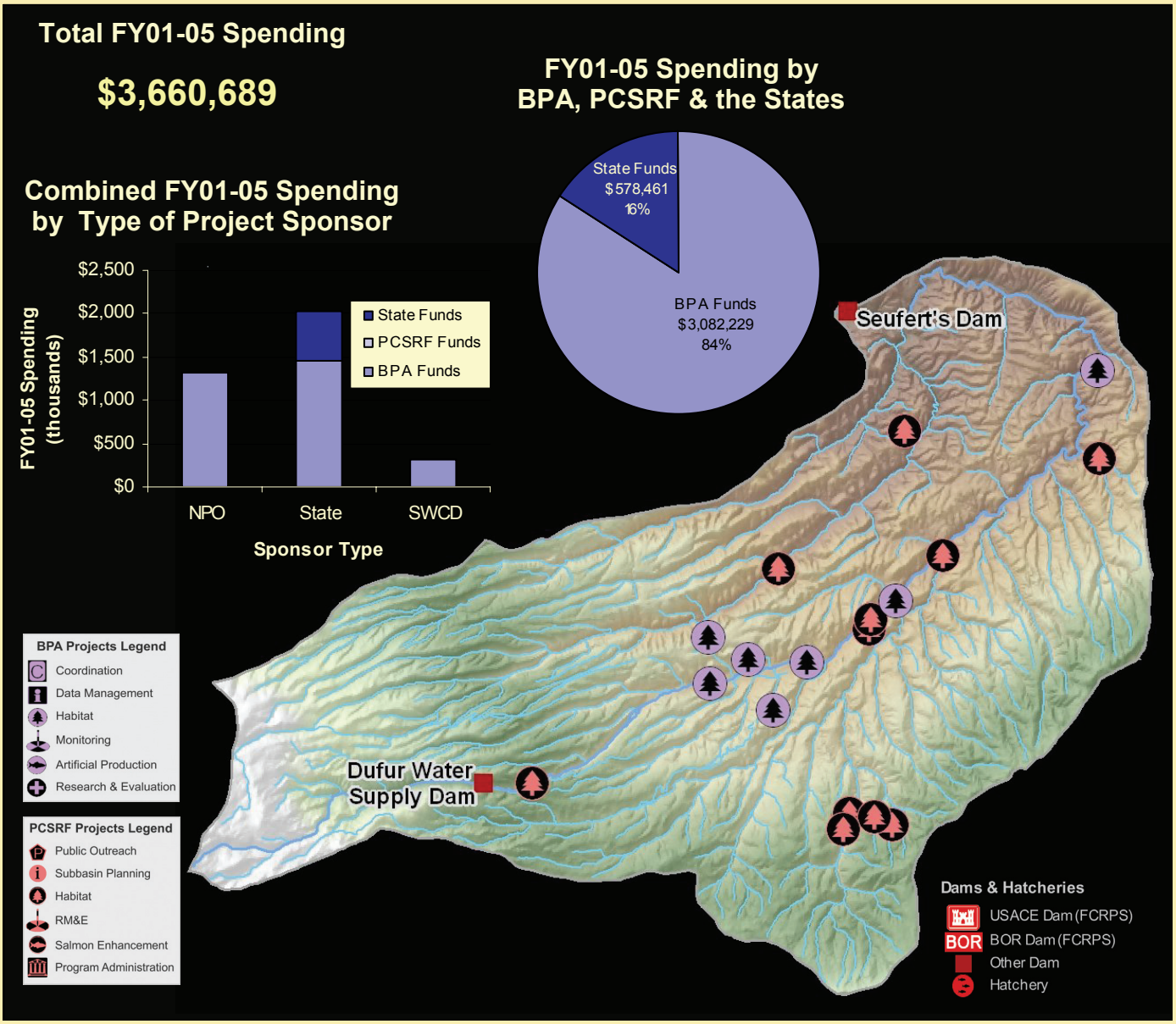
BPA-Funded Projects in the Hood Subbasin: Selected 2001 — 2005 Project Accomplishments[4]

- Completed the Hood River Watershed Action Plan
- Implemented various actions according to the plan (i.e., completed 3.3 miles of riparian fence
- Replaced two major passage barriers, Irrigation improvement projects including fish screen improvement and replacement, placement of large woody debris, changes to pesticide use best management practices, etc.).
- Conducted Annual spring Chinook Tribal fishery on the Hood River
- Completed the Hood River Program Review with consensus agreement among co-managers on how to adaptively manage the Program.
- Operation and Maintenance of Powerdale Dam Fish Trap—Collected life history characteristics, monitored escapements, and collected broodstock
- Operation and Maintenance of Parkdale Fish Facility for Chinook and steelhead supplementation.

For individual project accomplishment visit www.cbfwa.org/sotr.

[1] Coccoli, H. and 9 coauthors. 2004. Hood River Subbasin Plan including Lower Columbia Gorge tributaries. Northwest Power and Conservation Council. Portland, Oregon.
[2] Pribyle, S. 2003. Mid-Columbia Fish District Annual Report. Oregon Department of Fish and Wildlife.
[3] United States Fish and Wildlife Service. 2003. Chapter 6, Mount Hood Recovery Unit, Oregon. *In*: U.S. Fish and Wildlife Service. Bull Trout (*Salvelinus confluentus*) Recovery Plan. Portland, Oregon.
[4] as described in the Northwest Power and Conservation Council's FY2007-09 Columbia River Fish and Wildlife Program Project Solicitation Proposal

COLUMBIA GORGE



Limiting Factors

Water Quality — Fifteenmile and Eightmile Creeks listed for sediment on the 2002 Oregon State (303)d list. Priority sites for reducing sedimentation are the lower and upper reaches of Eightmile Creek, the upper reaches of Ramsey Creek, and the lower reaches of Fifteenmile Creek. Land used for cereal grains, roads, and eroding streambanks are primary sources of sediment in the Fifteenmile Subbasin. Fifteenmile and Eightmile Creeks are listed for temperature on the 2002 Oregon State 303(d) list. Temperature restoration is a high priority in Fifteenmile Creek from Seufert Falls to Ramsey Creek, in Eightmile Creek from the mouth to the Wolf Run Diversion, in Fivemile Creek from the mouth to North Fork, in Ramsey Creek from the mouth to Olsen Diversion, and Dry Creek .

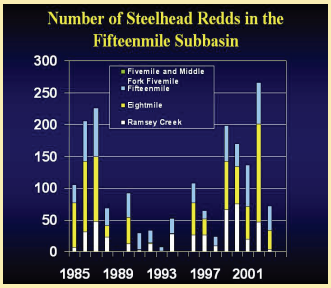
Passage Impediments — Culverts that function as partial (Lower Eightmile campgrounds and Ramsey Creek) or complete barriers (Middle Fork Fivemile Creek) and Dufur Reservoir.

Flows— Fluctuations in flow levels are enhanced by irrigation and human-caused changes (e.g., high road densities in rural areas and forest roads). Low flows are problematic in the lower reaches of Eightmile and Fivemile creeks, in Fifteenmile from the confluence upstream to Dufur, in Ramsey Creek from the confluence to the Olsen Diversion and in Dry Creek. Peak flows are considered limiting factors for the lower reaches of Fivemile, Eightmile and Fifteenmile Creeks and in Dry Creek.

Riparian Habitat — Channel stability is a negative factor in all reaches except headwater areas.

Subbasin: Fifteenmile

Steelhead



Winter

Federal Designation: Threatened
ESU: Mid-Columbia
Biological Objective: 500 adults (417 in the Fifteenmile watershed and 17 in Mill Creek Watershed)[1]
Status: 72 redds identified in the watershed (includes Fifteenmile, Fivemile, Eightmile, and Ramsey Creeks) (2003)[2]. Baseline monitoring is required to determine the current condition of the steelhead population in the Mill Creek Watershed.[2]

Pacific Lamprey

Federal Designation: Species of concern
Population: Unknown
Biological Objective: None[3]
Status: Current capacity, productivity, abundance, and life history

Coastal Cutthroat Trout

Federal Designation: Species of concern
Population: Fifteenmile
Biological Objective: None[3]
Status: Current capacity, productivity, abundance, and life history

Rainbow Trout

Federal Designation: Species of concern
Population: Fifteenmile
Biological Objective: None[3]
Status: Current capacity, productivity, abundance, and life history

BPA-Funded Projects in the Fifteenmile Subbasin: 2001 — 2005 Project Accomplishments[4]

- Inspected and maintained all riparian fence, water gaps, fish habitat structures, fishways and screens
- Completed weed control
- Collected stream temperature and spawning data as well as photo-point pictures.
- Installed 19 off-stream livestock water locations
- Annually conduct 30 miles of stream surveys
- Installed 38.5 miles od fence
- Completed 89 riparian buffer contracts on 94.5 miles of stream

For individual project accomplishment visit www.cbfwa.org/sotr.

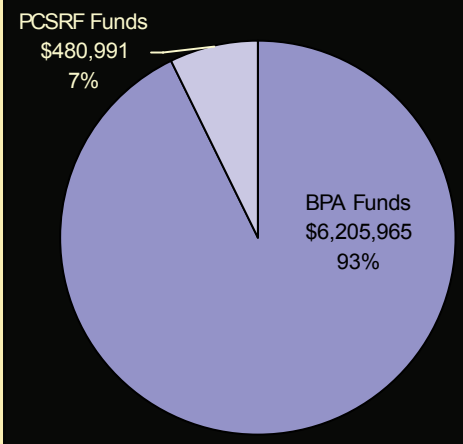
[1] Interior Columbia Basin Technical Recovery Team. 2003. Independent populations of Chinook, steelhead, and sockeye for listed evolutionary significant units within the Interior Columbia River Domain, Working Draft. NOAA Fisheries.
[2] Pribyl, Steve. 2003. Mid-Columbia Fish District annual report, Oregon Department of Fish and Wildlife
Morgan, Darcy. 2001. Fifteenmile Creek watershed winter steelhead spawning survey 1964-2001: ODFW and USFS combined data. Mount Hood National Forest Service
[3] Wasco County Soil and Water Conservation District and Fifteenmile Coordinating Group. 2004. Fifteenmile Subbasin Plan. Northwest Power and Conservation Council. Portland, Oregon.
[4] as described in the Northwest Power and Conservation Council's FY2007-09 Columbia River Fish and Wildlife Program Project Solicitation Proposal

Columbia Gorge

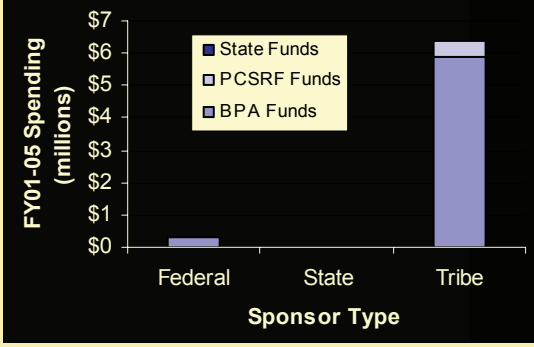
Total FY01-05 Spending

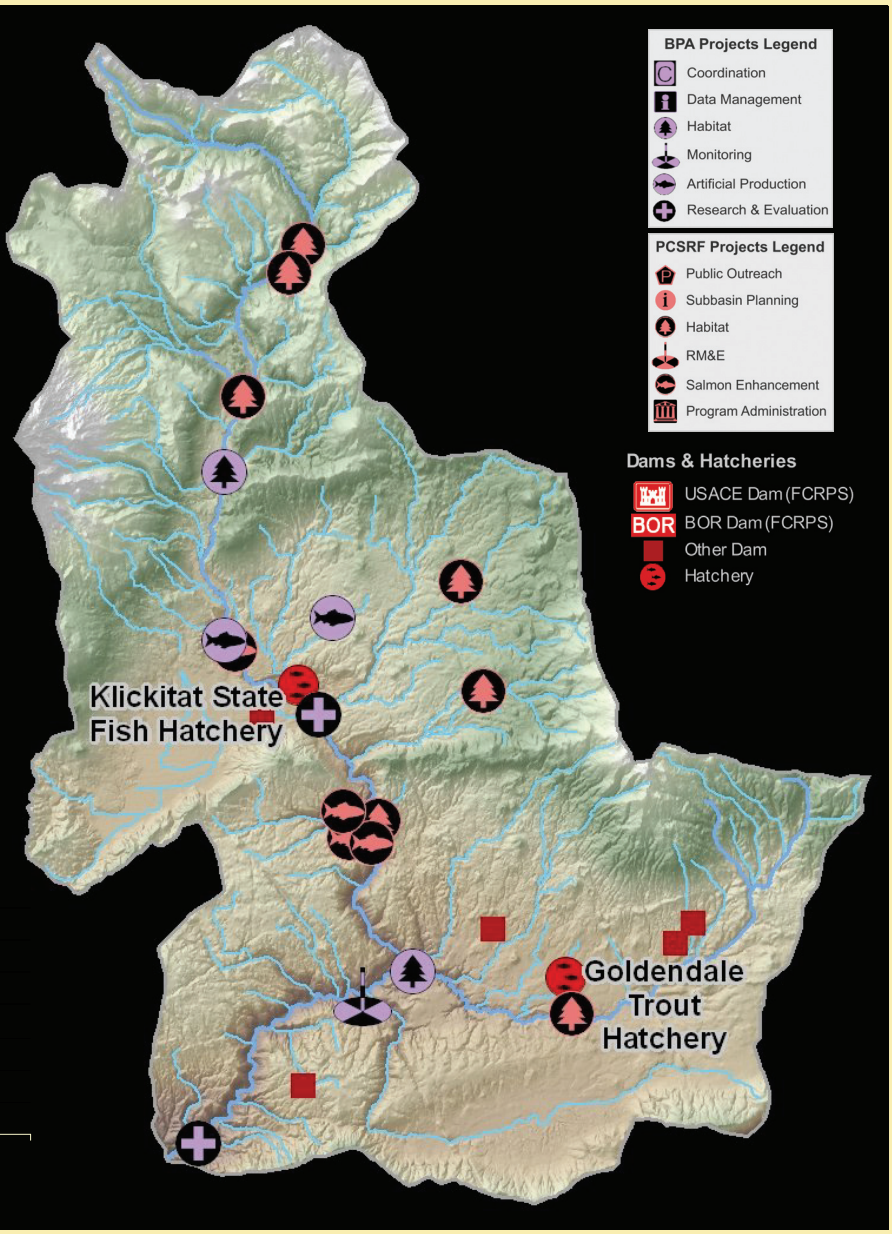
$6,686,956

FY01-05 Spending by BPA, PCSRF & the States



Combined FY01-05 Spending by Type of Project Sponsor





Limiting Factors

Water Quality — Increased percentages of fine sediment throughout entire subbasin. Increased temperatures in the lower sections of the Klickitat River provide increased habitat for non-native predators and increased feeding levels.

Passage Impediments — A 2,400 ft flume, 2 culverts, and dam in Snyder Creek create depth/velocity barrier. Poor passage percentage and survival exists at Lyle Falls fish ladder. Access to Dead Canyon is limited due to a undersized road crossing and road bed construction.

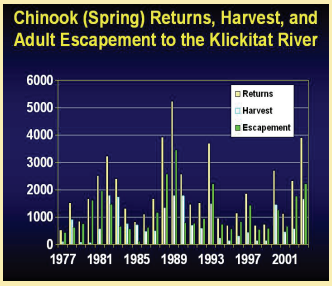
Flows— Loss of wetland structure and groundwater withdrawals lower base flows in lower Swale Creek

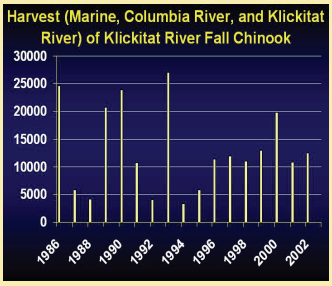
In-stream Habitat — Lack of large woody debris in the upper and middle portions of the Klickitat Subbasin, including White Creek watershed, Trout Creek watershed, the upper and middle sections of the mainstem of the Klickitat River, and lower portions of the Little Klickitat River.

Riparian Habitat — Loss of riparian vegetation, modifications of streambanks, channel instability, decreased channel sinuosity in meadows in White Creek watershed and mainstem of the Klickitat River. Side channels have been isolated in Diamond Fork, and the upper mainstem of Klickitat River. Native vegetation has been lost in floodplain areas of the White Creek watershed, mainstem Klickitat River, and lower portions of Little Klickitat River. There has been a loss of wetlands in upper Swale Creek.

Subbasin: Klickitat

Chinook





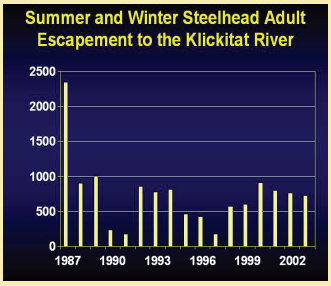
Spring

Federal Designation: None
ESU: None (not native to subbasin)
Biological Objectives: return number = 5,000-10,000, harvest = 35-40% annually, >50% of fish returning would be available for escapement[1]
Status: Returns = 3,892 (2003)[1], harvest = 1,666 (42.8%) (2003)[1], escapement = 2,226 (57.2%) (2003)[1]

Fall—Upriver Bright and Tule

Federal Designation: None (not native)
ESU: None (not native in subbasin)
Biological Objective: Combined annual harvest = 14,000[1]
Status: 12,425 combined harvest (2003)[1]

Steelhead



Waiting for data from the managers

Summer

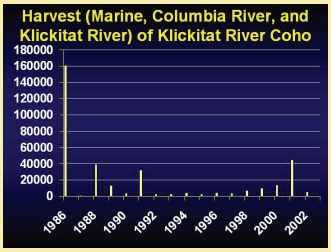
Federal Designation: Threatened
ESU: Mid-Columbia
Biological Objective:
Status: 725 adults (2002-2003) (summer, winter, hatchery, and wild combined– likely an underestimate due to difficulties in conducting accurate counts during spring flow conditions)[1]

Winter

Federal Designation: Threatened
ESU: Mid-Columbia
Biological Objective:
Status: Little is known about the present status of winter-run steelhead[1]

Coho

Federal Designation: None (not native to subbasin)
ESU: None (not native to subbasin)
Biological Objective: Combined average annual harvest (ocean, Columbia River, and Klickitat Basin) of 14,000[1]
Status: harvest = 5,521 (2002) (marine data missing)[1]



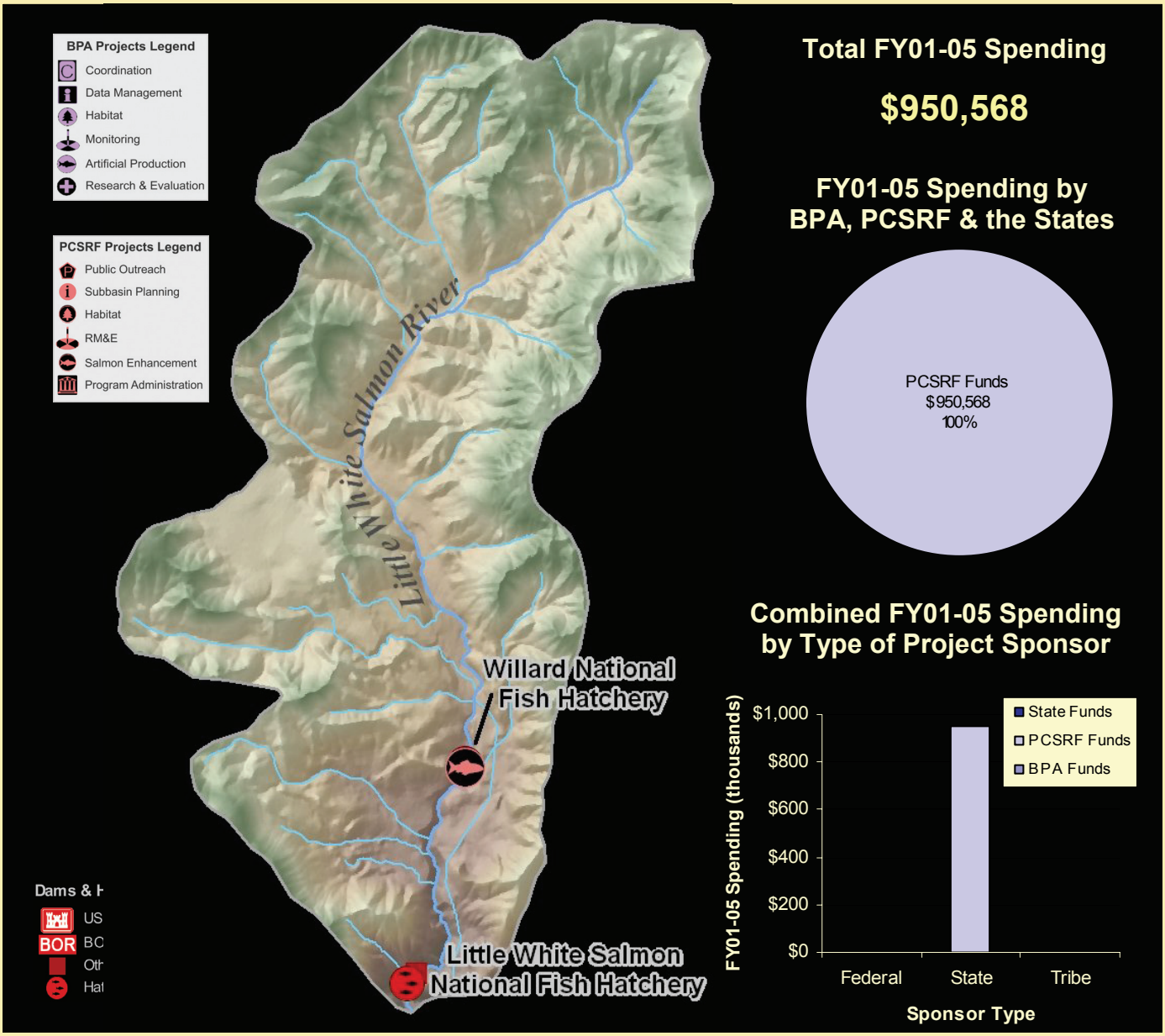
BPA-Funded Projects in the Klickitat Subbasin: 2001 — 2005 Project Accomplishments[2]

- Removed passage obstructions, repaired off-channel livestock watering systems, and installed 3000 feet of cattle exclusion fence.
- Restored and enhanced 2900 feet on Diamond Fork, large woody debris jams on 2100 feet of the upper Klickitat River, in-channel restoration of 1700 feet of White Creek.
- Castile Falls Fishway Improvements opened 45 miles of spawning and rearing habitat for spring Chinook and 65 miles for steelhead
- Completed the Klickitat Subbasin Plan, Klickitat Subbasin Summary, Klickitat Subbasin anadromous fish Master Plan, Klickitat Management Plan Supplement, Strategic Habitat Plan for the Klickitat and the Klickitat steelhead EDT model.
- Existing data systems were inventoried and documented; habitat survey, stream temperature, and screw trap monitoring databases were developed, topographic maps were completed.
- Completed annual spawning surveys (redd counts) on approximately 140 stream miles.
- Operated 3 rotary screw traps (partial year).
- Collected scale samples and DNA samples.
- Completed habitat surveys.
- Monitored stream temperature.

For individual project accomplishment visit www.cbfwa.org/sotr.

[1] Bosch, W., W. Sharp, W. Conley, J. Zendt, and J. Woodward. 2004. Klickitat Subbasin anadromous fishery master plan. Northwest Power and Planning Council, Portland, OR.
[2] as described in the Northwest Power and Conservation Council's FY2007-09 Columbia River Fish and Wildlife Program Project Solicitation Proposal

Columbia Gorge



Limiting Factors

Water Quality — Little White Salmon headwaters, mid-Little White Salmon/Cabbage Creek, mid-Little White Salmon/Berry Creek and the two lowermost mainstem watersheds considered moderately impaired relative to conditions that influence sediment supply. Exceedance of the 60.8F standard has occurred in Dry Creek, the mainstem above 201 Road, the mainstem above Lusk Creek, the mainstem at Berry Creek, and the mainstem above Moss Creek. Turbidity levels are high throughout the the mainstem and Lusk Creek and are attributed to bank cutting on the mainstem and timber harvest in the upper basin. The greatest impairments relative to sediment are located in the lower two watersheds and in the Lava Creek drainage.

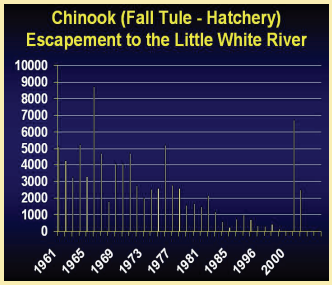
Passage Impediments — Two dams (one is located at the Little White Salmon Hatchery and the other is located on Lost Creek (north) adjacent to a diversion intake) restrict passage in the basin. Fifteen culverts present barriers to fish passage. High temperatures in Drano Lake may affect passage.

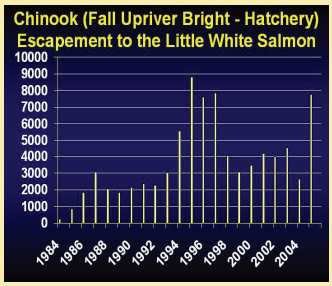
Flows— Flow diversion on Lost Creek directs flow into the Coyote Ditch reducing flow in lower Lost Creek by one-third during low flow periods.

In-stream Habitat — Current large woody debris levels are low throughout the basin especially in Lost Creek (north) and Goose Lake Creek.

Subbasin: Little White Salmon

Chinook





Fall—Tule (Hatchery)

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective:
Status: 2 adults (2004)[1]

Fall—Upriver Bright (Hatchery)

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objectives:
Status: 2,282 adults, 23 jacks, and 5,453 unknown (2005)[1]

Chum

Federal Designation: Threatened
ESU: Columbia River
Biological Objective:
Status:

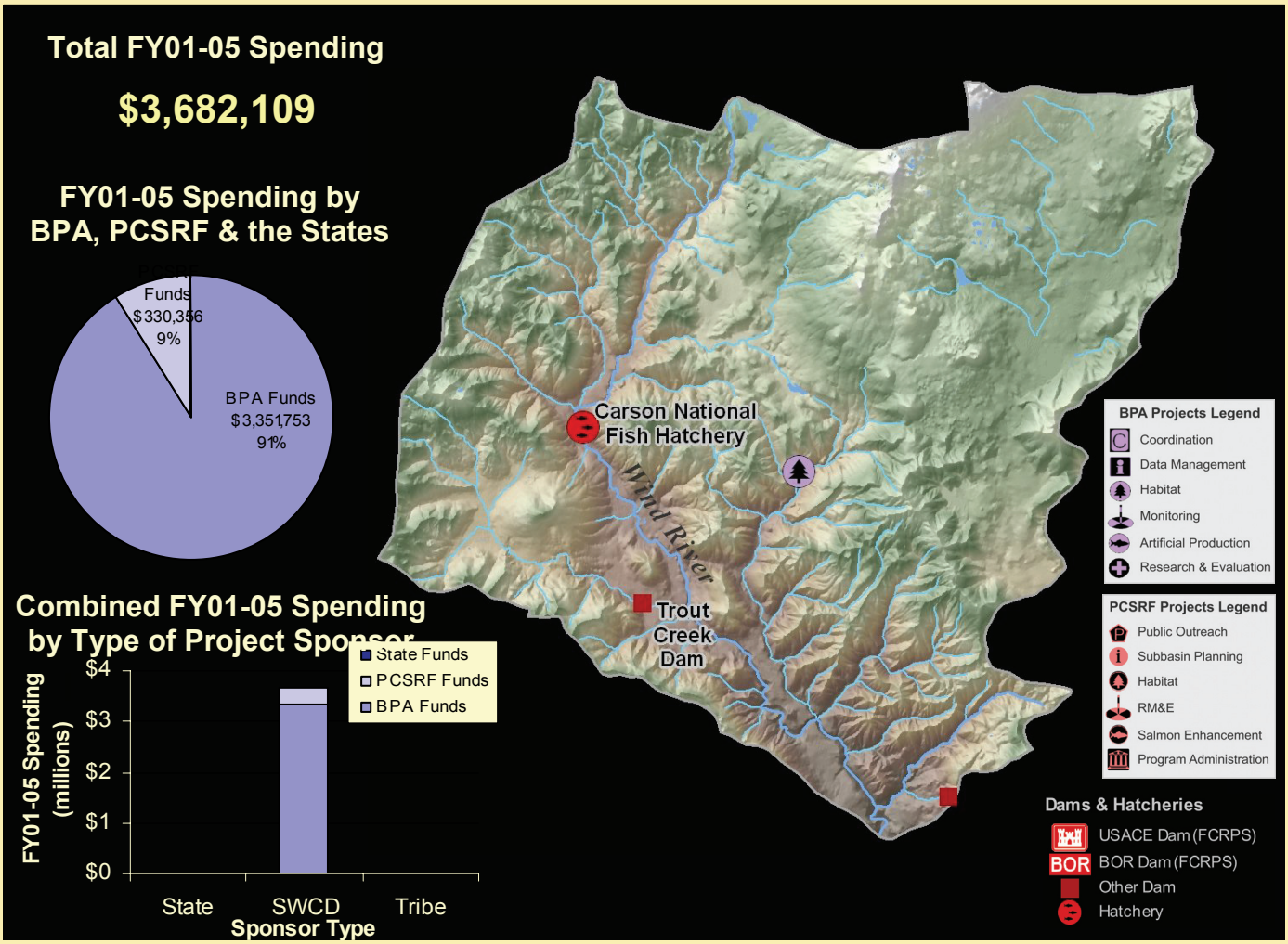
Waiting for data from the managers

BPA-Funded Projects in the Little White Salmon Subbasin: 2001 — 2005 Project Accomplishments

No BPA-Funded projects exist in this subbasin.

[1] Pastor, Steve. Columbia River Information System (CRIS), U.S. Fish and Wildlife Service, Vancouver, Washington.

Columbia Gorge



Limiting Factors

Water Quality — Bear and Eight-mile creeks listed on the Washington State's 1996 303(d) for exceeding 60.8F temperature standard. Trout Creek (above Hemlock Lake) has been under the 60.8F standard for only one year since 1977. Trout and Bear creeks are susceptible to temperature increases due to water withdrawals for irrigation and the city of Carson's domestic water supply, respectively. Pete's Gulch, Youngman, Dry, and Paradise creeks, and the lower and Little Wind rivers have excessive in-stream sediment levels. Excessive runoff and soil erosion originate from the Carson Golf Course.

Passage Impediments — The fish ladder at Hemlock Dam (RM 2.1 on Trout Creek) is poorly designed and is not efficient for providing passage. Culverts prevent passage in Youngman and Oldman creeks. Subsurface flows can potentially isolate fish in Martha and Dry creeks and portions of the Trout Creek Flats area. Passage in Tyee Creek is blocked by the water intake for the Carson Hatchery

Flows — High road densities in the lower Wind, middle Wind, and Trout Creek combined with timber harvest and past fires have increased the the potential for altered peak flow timing and magnitude. The Wind headwaters and subwatersheds for Ninemile, Compass/Crater, upper Trout, upper Panther, and Layout creeks rank the highest for increased peak flows. Dry and Martha creeks as well as portions of the Trout Creek Basin go subsurface in late summer. Irrigation occurs in Trout Creek.

In-stream Habitat — Large woody debris conditions are poor throughout the basin.

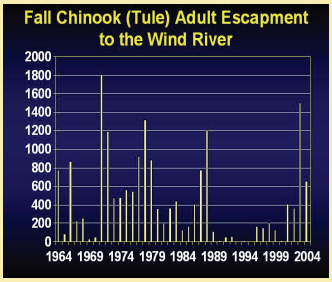
Riparian Habitat — Bank stability concerns exist for Compass, upper Trout, and Layout creeks as well as for upper, middle, and lower Wind basins. The middle Wind River (RM 12-19) experiences rapid channel migration and avulsions during high flow events. On the middle Wind River, Forest Road 30, diking, Beaver Campground, and Carson Fish Hatchery limit floodplain connectivity. In the Mining Reach, Forest Road 30 intercepts the floodplain from RM 21-25.

Land Development — The mainstem Wind River between RM 12 and 19 contains rural residential and agricultural development that has resulted in cleared riparian forests.

Subbasin: Wind

Chinook

Fall—Tule



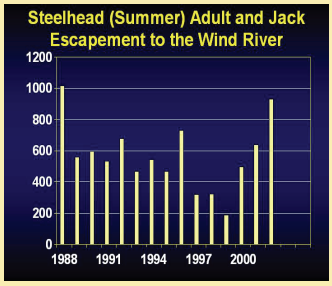
Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 0-400 adults[1]
Status: 752 natural spawning adults (2004)[2]

Coho

Waiting for data from managers

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 600 adults[1]
Status:

Steelhead



Winter

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 100 adults
Status: Wild adult escapement estimates not available[3]

Summer

Federal Designation: Threatened
ESU: Lower Columbia
Biological Objective: 957 adults[5], 1,200-1,900 adults[1]
Status: 930 natural spawning adults (2002)[4]

Chum

Waiting for data from managers

Federal Designation: Threatened
ESU: Columbia River
Biological Objective: <100-1,100 adults[1]
Status:

BPA-Funded Projects in the Wind Subbasin: 2001 — 2005 Project Accomplishments

- Performed coordination and outreach activities with local stakeholders.
- Operated adult/juvenile fish traps.
- Conducted snorkel and redd surveys.
- Water quality and temperature sampling conducted.
- Removed weeds on 28 acres.
- Planted 81 acres of vegetation.
- Thinned 40 acres.
- Improved 2 miles of in-stream habitat.

For individual project accomplishment visit www.cbfwa.org/sotr.

[1] Recovery criteria developed by the Willamette/Lower Columbia Technical Recovery Team convened by NOAA Fisheries
[2] Groesbeck, Michelle. 2005. Memorandum dated April 1, 2005– Age composition of naturally spawning chum and Chinook in Washington Columbia River tributaries downstream of Bonneville Dam, 2003-2004. Washington Department of Fish and Wildlife.
[3] Lower Columbia Fish Recovery Board 2004. Lower Columbia Salmon Recovery and Fish and Wildlife Plan, Volume II-Subbasin Plan, Chapter J-Wind. Northwest Power and Conservation Council.
[4] Groesbeck, Michelle. 2005. Memorandum dated July 13, 2005– Historical steelhead escapement data. Washington Department of Fish and Wildlife.
[5] WDFW. 2005. Salmonid Stock Inventory (WRIA 29—Wind-White Salmon). Washington Department of Fish and Wildlife.
[6] as described in the Northwest Power and Conservation Council's FY2007-09 Columbia River Fish and Wildlife Program Project Solicitation Proposal