

Upper Columbia River Salmon Recovery Region

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The Upper Columbia River Salmon Recovery Region in north central Washington includes the Columbia River and its tributaries upstream of the confluence of

the Yakima River to the base of Chief Joseph Dam. The geography is varied and the climate includes extremes in temperatures and precipitation, with most precipitation falling in the mountains as snow. Melting snowpack, groundwater, and runoff maintain stream flows. A large portion of the land in the upper Columbia basin is in public ownership. There are three lead entities in the region.



STEVE VOGHT - FLICKR



BRAD MOHR - FLICKR

Listed Fish

Steelhead (threatened) – 1997

Spring Chinook (endangered) – 1999

Bull trout (threatened) – 1998

Major Factors Limiting Recovery

- Degraded floodplain and channel structure
- Riparian degradation
- Degraded water quality and temperature
- Impaired stream flows in tributaries
- Excessive sediment
- Barriers to fish passage in tributaries
- Harvest impacts
- Hatchery impacts
- Hydropower system mortality on Columbia River

Recovery Plan Snapshot

- Plan status – Steelhead recovery plan: adopted by the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service in 2007. Chinook recovery plan: adopted by NOAA Fisheries Service in 2007. Federal draft bull trout recovery plan: status review underway.
- Time frame – 10-30 years
- Estimated cost – \$734 million over the next 10 years

Recovery Plan Implementation

Current three-year implementation schedule identifies \$85 million in total habitat project needs.

Regional Recovery Organization

Upper Columbia Salmon Recovery Board

Federally Recognized Tribes

Confederated Tribes of the Colville Reservation, Yakama Nation

Counties

Chelan, Douglas, Okanogan

Threats to Salmon Recovery

Threats to salmon and steelhead recovery in the Upper Columbia River Salmon Recovery Region include climate change, the uncertainty of stable funding, and the potential challenges of coordination of activities between harvest, hatchery, hydropower, and habitat within the region and with other areas. Major threats in this region include:

Climate Change will decrease snowpack and associated flow, and increase stream temperatures.

Hatchery Fish increase competition, disease, and genetic interactions with wild fish.

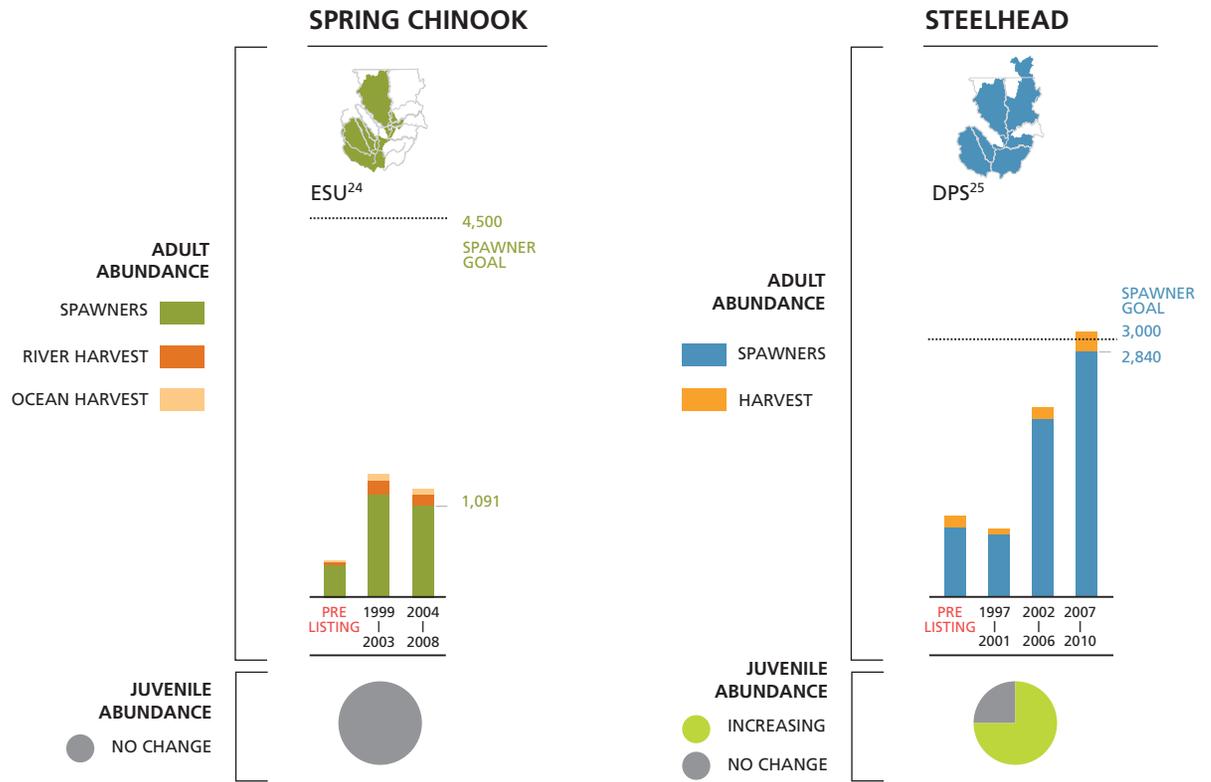
Uncertain Long-term Funding for implementation of recovery actions, especially larger, more complex projects (federal, state, and other sources), will challenge our ability to stay the course.

Are listed populations abundant and productive?

FISH: ABUNDANCE TRENDS

- Graphs show wild adult and juvenile abundance data for species at the Evolutionarily Significant Unit (ESU) or Distinct Population Segment (DPS) scale. This is the scale at which species are listed and de-listed under the federal Endangered Species Act.
- Bar charts show the number of returning adult wild fish, separated by what was harvested and what returned to spawn.
- Pie charts show the percentage of juvenile sampling locations where trends have increased, decreased, or not changed. Juvenile data were available for all populations of each species (three for Chinook and four for steelhead) of each species.

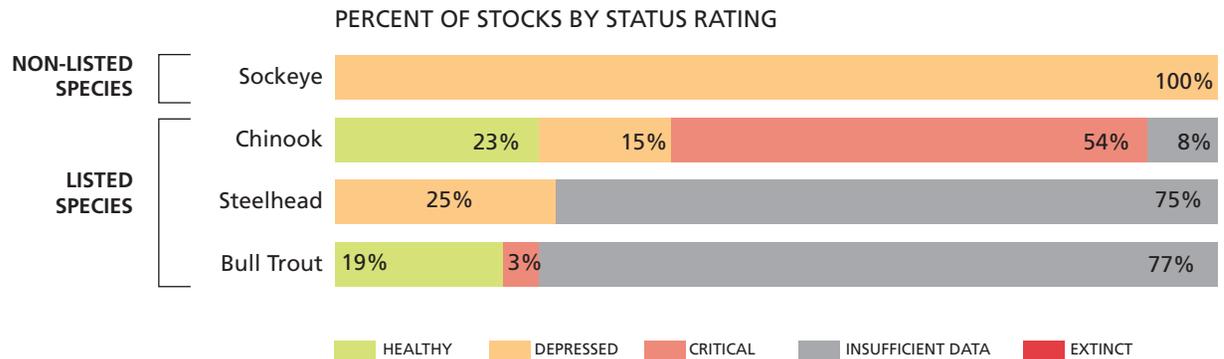
DATA SOURCES: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE AND TRIBES



FISH: STATUS SUMMARY

- 2010 status ratings are determined by the Washington Department of Fish and Wildlife and tribes.
- Includes listed and non-listed species.

DATA SOURCE: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

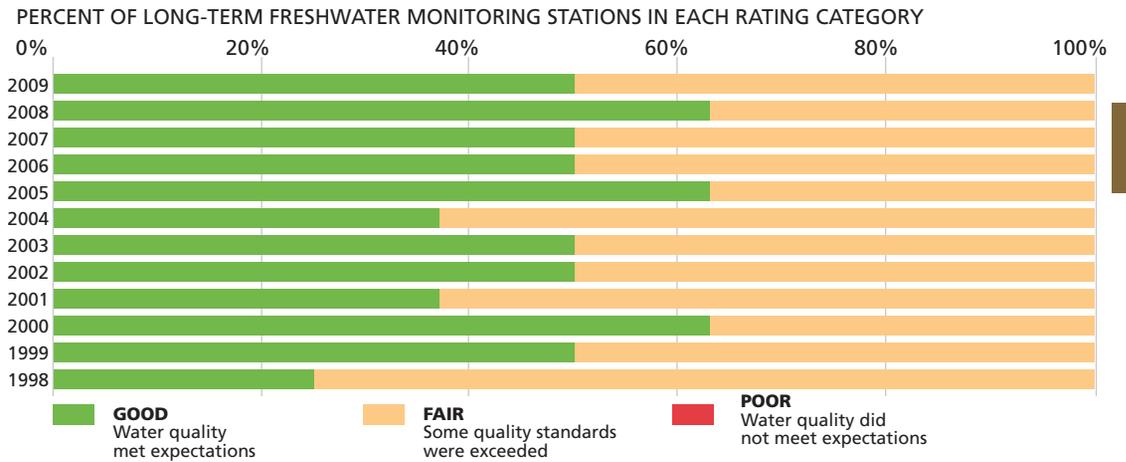


Is water clean enough to support wild salmon?

WATERSHED HEALTH: WATER QUALITY

- Water quality is measured by a Water Quality Index. This is a number that aggregates water quality data at a monitoring station for temperature, acidity, fecal coliform bacteria, dissolved oxygen, nutrients, and sediments from October 1 to September 30.
- Eight sampling stations are reflected in this index.
- There are six sites requiring management for high water temperature.

DATA SOURCE: WASHINGTON DEPARTMENT OF ECOLOGY

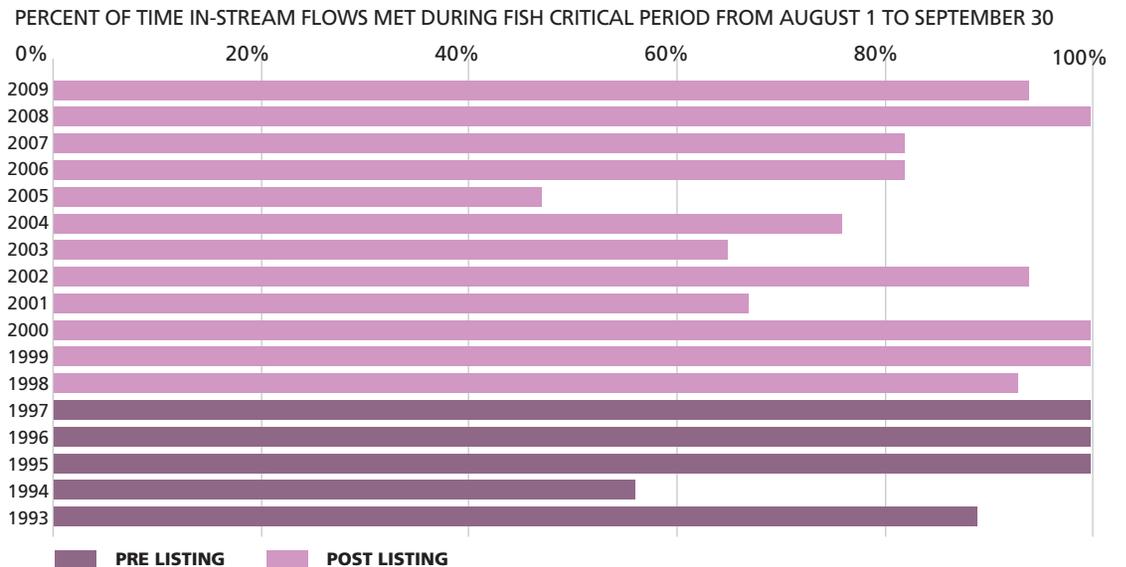


Do rivers and streams have flows that support wild salmon?

WATERSHED HEALTH: WATER QUANTITY

- Most years based on 17 monitoring stations.

DATA SOURCE: WASHINGTON DEPARTMENT OF ECOLOGY



What are trends in salmon funding?

PLAN IMPLEMENTATION: FUNDING

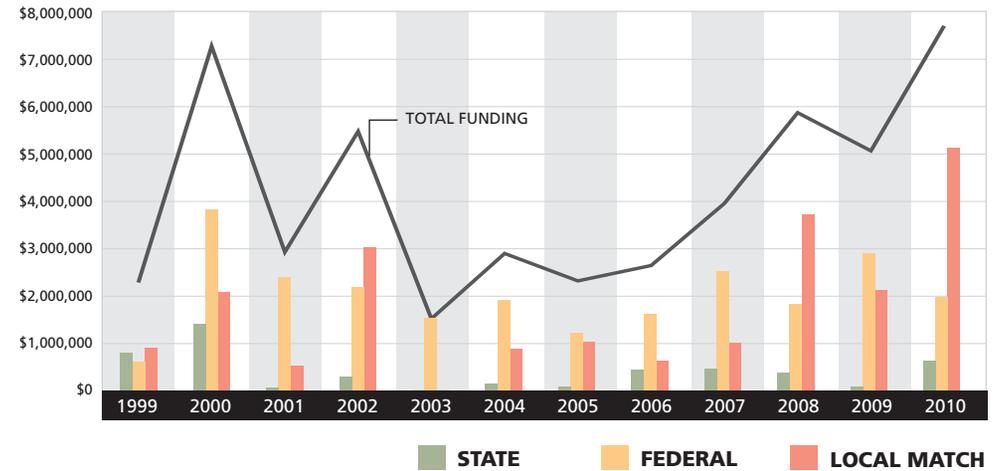
- Total Salmon Recovery Funding Board-related funding was \$50 million in state and federal, and local match from 1999-2010. 2010 data are preliminary.
- Charts to the right reflect all money administered by the Salmon Recovery Funding Board through the Pacific Coastal Salmon Recovery Fund, salmon recovery fund (state match), Family Forest and Fish Passage Program, and hatchery reform.
- The table of percentages below reflects funding from the Pacific Coastal Salmon Recovery Fund and salmon recovery fund (state match) only – the two primary funding sources for grants through the Salmon Recovery Funding Board. The large statewide monitoring projects funded by the board are reflected in the statewide funding overview, not in individual regional overviews.

DATA SOURCE: WASHINGTON RECREATION AND CONSERVATION OFFICE

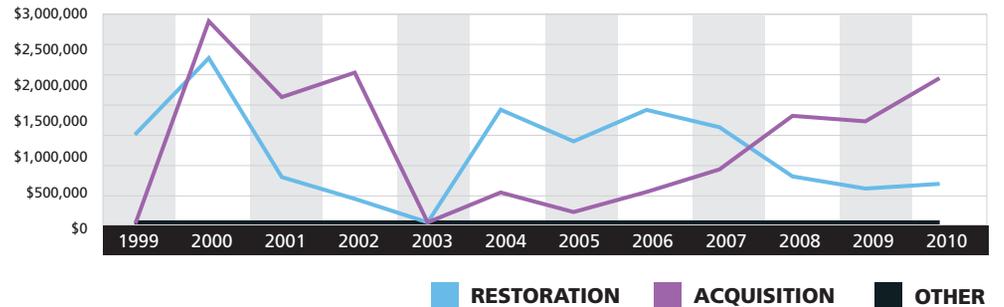
DISTRIBUTION OF PACIFIC COASTAL SALMON RECOVERY FUND AND SALMON RECOVERY FUND (STATE MATCH) BY CATEGORY

	PROJECTS	ADMIN.	MONITORING	TOTAL
1999	90%	10%	0%	\$1,402,228
2000	100%	0%	0%	\$5,200,665
2001	100%	0%	0%	\$2,426,794
2002	0%	0%	0%	\$2,466,086
2003	0%	0%	0%	\$1,523,723
2004	100%	0%	0%	\$1,975,693
2005	100%	0%	0%	\$1,217,456
2006	100%	0%	0%	\$1,741,386
2007	71%	29%	0%	\$2,960,048
2008	100%	0%	0%	\$2,170,000
2009	65%	35%	0%	\$2,952,400
2010	100%	0%	0%	\$2,589,402

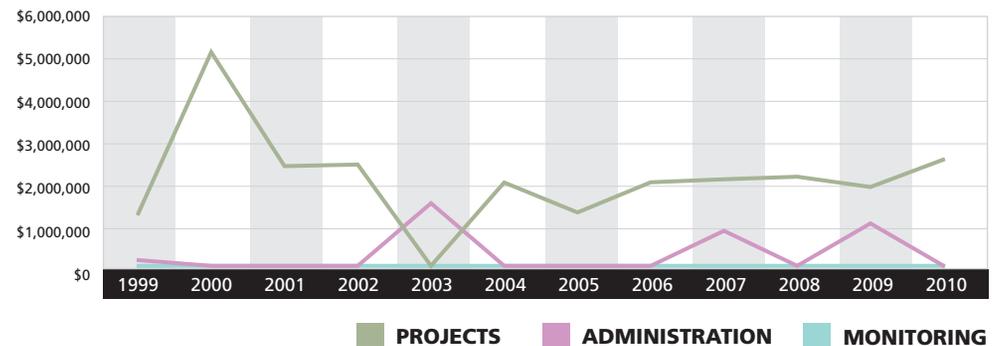
TOTAL FUNDING BY SOURCE (ADMINISTERED BY THE SALMON RECOVERY FUNDING BOARD)



TOTAL FUNDING BY PROJECT TYPE (ADMINISTERED BY THE SALMON RECOVERY FUNDING BOARD)



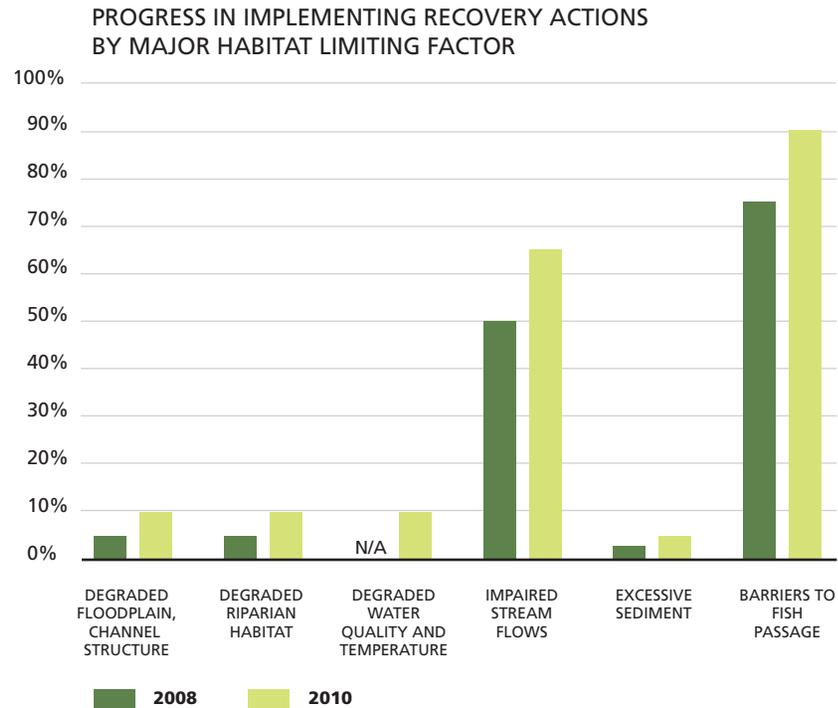
TOTAL FUNDING BY CATEGORY (ADMINISTERED BY THE SALMON RECOVERY FUNDING BOARD)



Are public resources used cost-effectively and efficiently?

PLAN IMPLEMENTATION:

RECOVERY PLAN IMPLEMENTATION



- Major limiting factors are identified in recovery plans, and are based on federal listing determinations. These are the main habitat factors that must be addressed for recovery.
- Percentages are averages of progress toward implementing actions addressing each major habitat limiting factor. They do not represent the biological response of fish.
- Estimates of progress are based on best professional judgement.
- Recovery plan implementation is relatively recent—from 4 to 6 years.

DATA SOURCE: UPPER COLUMBIA SALMON RECOVERY BOARD

Are public resources being used cost-effectively and efficiently?

PLAN IMPLEMENTATION:

WATERSHED PLANNING SUMMARY

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In-stream flow rules were developed based on the Watershed Planning Act in Wenatchee and Entiat Water Resource Inventory Areas (WRIA) (45 and 46).

All six Water Resource Inventory Areas in the salmon recovery region are participating in the Watershed Planning Act and have adopted plans. The WRIs are: Moses Coulee (44), Wenatchee (45), Entiat (46), Methow (48), and Foster Creek (50). The Okanogan (WRIA 49) plan was adopted by the county but is not deemed adequate by the state.

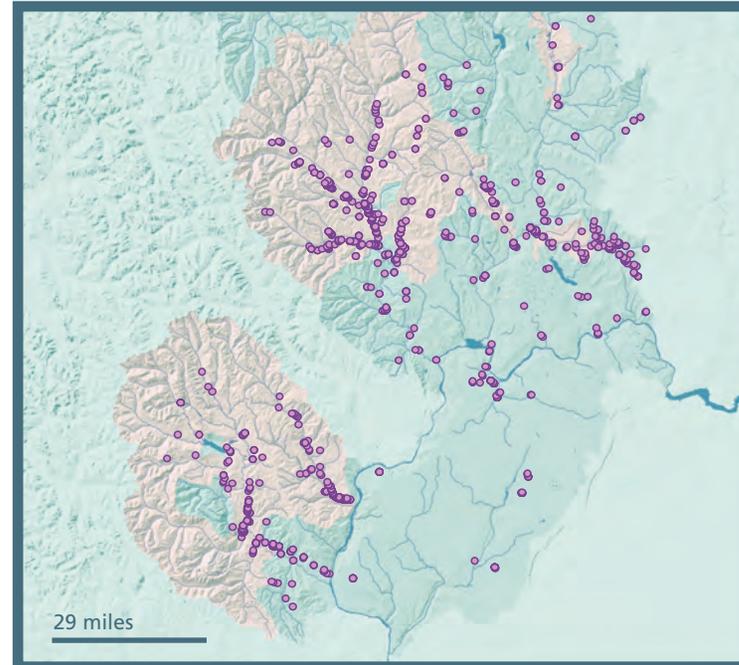
Watershed Planning Highlights and Outcomes

- Moses Coulee/Foster Creek (WRIs 44 and 50): The watershed planning group is developing in-stream flow recommendations and conducting wetland assessments.
- Wenatchee (WRIA 45): The planning unit and lead agency are working on hydro-geologic monitoring, outreach, water quality studies, and a method to track water use held in an in-stream flow domestic water reservation system.
- Entiat (WRIA 46): The planning group is implementing its Detailed Implementation Plan with project grants.
- Methow (WRIA 48): The planning group is studying the current in-stream flow rule and developing amendment language to address a reach-by-reach domestic water use reservation system.

DATA SOURCE: WASHINGTON DEPARTMENT OF ECOLOGY

PLAN IMPLEMENTATION:

FISH PASSAGE AND HABITAT PROJECTS



- Fish Passage and Habitat Projects
- Priority Habitat Areas

- Map shows fish and habitat protection and restoration project locations from 2000 to 2010.

DATA SOURCES: WASHINGTON RECREATION AND CONSERVATION OFFICE, WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, WASHINGTON DEPARTMENT OF NATURAL RESOURCES, NORTHWEST INDIAN FISHERIES COMMISSION, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NORTHWEST FISHERIES SCIENCE CENTER, U.S. FOREST SERVICE, BONNEVILLE POWER ADMINISTRATION, REGIONAL FISHERIES ENHANCEMENT GROUPS

Are hydroelectric facilities operating in a fish friendly manner?

PLAN IMPLEMENTATION:

DAMS WITH FISH PASSAGE STANDARDS

- This indicator is intended to show large dams in tributaries requiring a Federal Energy Regulatory Commission license or other similar license or permit.
- Mainstem Columbia River dams are not included in this regional indicator.
- Many dams are operating in non-anadromous fish zones and are not included in this indicator.

DATA SOURCE: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

	NO STANDARDS			HAVE STANDARDS			
	DON'T HAVE STANDARDS	STANDARDS UNDER NEGOTIATION	TOTAL	NOT MEETING STANDARDS	MEETING STANDARDS	CAN'T TELL IF MEETING STANDARDS	TOTAL
2008	N/A	N/A	0	N/A	N/A	N/A	0
2010	N/A	N/A	0	N/A	N/A	N/A	0

Are streams accessible to wild salmon?

PLAN IMPLEMENTATION:

FISH PASSAGE BARRIERS

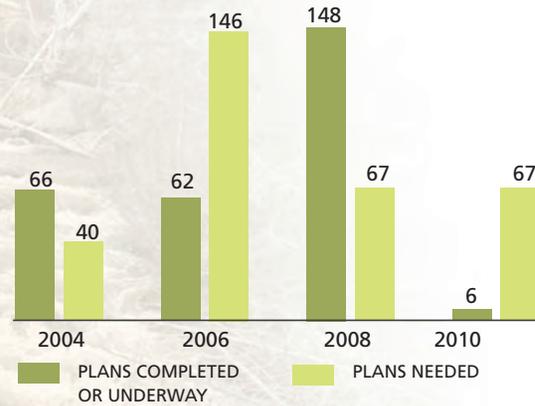
- Number of barriers corrected are estimates. Because of incomplete reporting, these numbers are expected to be lower than actual values.
- Stream miles opened reflects the number of miles estimated to be opened to fish passage by year.

DATA SOURCES: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, WASHINGTON DEPARTMENT OF NATURAL RESOURCES, WASHINGTON DEPARTMENT OF TRANSPORTATION, WASHINGTON RECREATION AND CONSERVATION OFFICE, FORESTS AND FISH, U.S. FOREST SERVICE, BUREAU OF LAND MANAGEMENT



Is water clean enough to support wild salmon?

PLAN IMPLEMENTATION: WATERSHED CLEANUP PLANS



- Cleanup plans address water quality impairments covered by total maximum daily load management plans.

DATA SOURCE: WASHINGTON DEPARTMENT OF ECOLOGY

Do hatchery practices protect wild salmon?

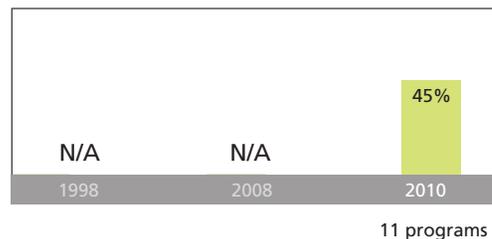
PLAN IMPLEMENTATION: HATCHERY PROGRAMS MEETING SCIENTIFIC STANDARDS

- Standards are recommendations from the Hatchery Scientific Review Group, an independent scientific panel established and funded by Congress to assemble, organize, and apply the best available scientific information for hatchery reform.
- Programs are defined as a single release or group of smolt releases, that come from the same broodstock and are released in the same watershed. Releases from a broodstock into a different watershed, are considered to be independent hatchery programs.
- Data are for Washington Department of Fish and Wildlife programs.
- Washington Department of Fish and Wildlife data are not available at the regional scale prior to 2010.

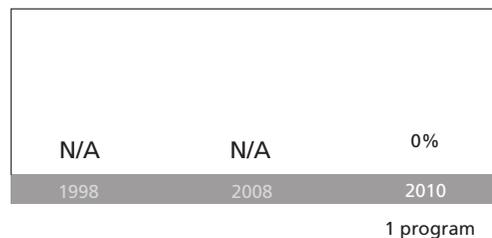
DATA SOURCE: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

PERCENTAGE OF HATCHERY PROGRAMS MEETING STANDARDS

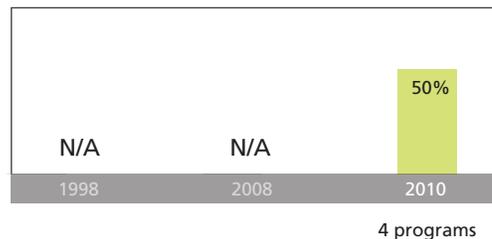
CHINOOK



COHO

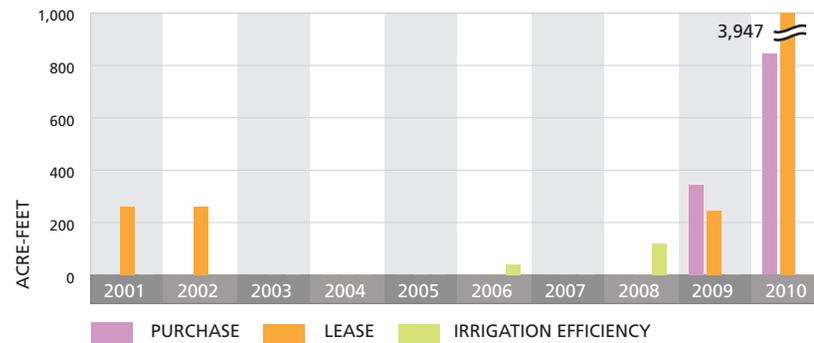


STEELHEAD



Do rivers and streams have flows that support wild salmon?

PLAN IMPLEMENTATION: STREAMFLOW



- Water restored to streams includes water from purchases, donations, or leases. The focus is on summer low flow periods and in-stream reaches where water availability is a limiting factor for fish.
- An acre-foot is one foot of water covering one acre of land.
- 67 percent (4 of 6) of the WRIAs have in-stream flows set.

DATA SOURCE: WASHINGTON DEPARTMENT OF ECOLOGY