

Lower Columbia River Salmon Recovery Plan

THE LOWER COLUMBIA RIVER Salmon Recovery Plan (LCSRP) was developed with broad regional participation to guide recovery of salmon, steelhead and bull trout populations listed for protection under the federal Endangered Species Act (ESA). The plan, the first of its kind ever endorsed by the National Marine Fisheries Service (NMFS), identifies causes of mortality for those species, establishes recovery goals and outlines strategies for achieving those goals.

The Washington portion of the LCSRP was completed in December 2004 and was adopted by the National Marine Fisheries Service (NMFS) in 2005 as an interim ESA recovery plan for the Washington populations in the lower Columbia. Oregon is in the process of completing the corresponding recovery plans for the Oregon populations, and the two plans will eventually be integrated to cover all populations in the lower Columbia population segment in a final recovery plan.

In addition to guiding ESA recovery efforts, the LCSRP informs the Northwest Power and Conservation Council's sub-basin plans for 11 sub-basins from the White Salmon River downstream to the mouth of the Columbia River. It also incorporates the Washington state Watershed Management Act and the Washington Salmon Recovery Act, which provides funding for habitat restoration and protection efforts.

Developing the Recovery Plan

The majority of native salmon and steelhead populations returning to the lower Columbia River have now been listed for protection under the federal ESA. The latest – lower Columbia coho populations – was listed as threatened in February 2006. Other listed species in the region include Chinook salmon, chum salmon, steelhead and bull trout. The only lower Columbia populations not listed are steelhead in tributaries downstream of the Cowlitz River in Washington and downstream of the Willamette River in Oregon.

The Lower Columbia Fish Recovery Board (LCFRB) led and coordinated the development of the recovery plan, which anticipated the recent coho listing. The LCFRB is comprised of representatives from the state legislature, city and county governments, the Cowlitz Tribe, private property owners, hydro project operators, environmental community, and concerned citizens. The LCFRB also partnered with state and federal agencies and other regional organizations and tribes in the planning process. Technical and policy coordination with Oregon was achieved through the Willamette/Lower Columbia Technical Review Team (TRT) and the Willamette/Lower Columbia Executive Recovery Committee.

Lower Columbia River Salmonid Populations in Washington

Grays - Fall Chinook, chum, winter steelhead, coho

Elochoman/Skamokawa - Fall Chinook, chum, winter steelhead, coho

Mill/Abernathy/Germany - Fall Chinook, chum, winter steelhead, coho

Lower Cowlitz - Fall Chinook, chum, winter steelhead, coho

Upper Cowlitz - Fall Chinook, spring Chinook, winter steelhead, coho

Cispus - spring Chinook, winter steelhead, coho

Tilton - spring Chinook, winter steelhead, coho

SF Toutle - spring Chinook, winter steelhead, coho

NF Toutle - Fall Chinook, winter steelhead, coho

Coweeman - Fall Chinook, winter steelhead, coho

Kalama - Fall Chinook, spring Chinook, chum, winter steelhead, summer steelhead, coho

EF Lewis - Fall Chinook, chum, winter steelhead, summer steelhead, coho

Salmon Cr. - chum, winter steelhead, coho

Washougal - Fall Chinook, chum, winter steelhead, summer steelhead, coho

Lower Gorge - Fall Chinook, chum, winter steelhead, coho

Upper Gorge - Fall Chinook, chum, winter steelhead, summer steelhead, coho

White Salmon - Fall Chinook, spring Chinook, coho

In developing the plan, each listed salmonid population was analyzed relative to levels of human impacts and threats that constrain population viability. Those sources include:

- Tributary habitat development reducing smolts produced per adult spawner.
- Estuary habitat changes reducing survival of juvenile migrants.
- Loss of habitat access and passage mortality as a result of dam construction and operations.
- Predation by northern pikeminnow, marine mammals, and Caspian terns.
- Direct and indirect harvest rates from fishing.
- Reduction in natural population fitness and predation due to hatchery production.

The level of improvement needed in manageable human impacts was determined for each population depending on the level of improvement needed in fish survival to meet recovery criteria for that particular population. That percentage improvement was applied to habitat, hydro, harvest, hatcheries, and predation to address impact reduction in all sources of mortality.

The criteria for the level of population improvements to reach recovery of the listed species in the lower Columbia was developed by a NMFS organized group of scientists called the Technical Review Team (TRT). The LCFRB used Washington Department of Fish and Wildlife technical information concerning fish abundance to determine the current condition of the individual populations.

Individual population targets were variable but the sum of all the improvements had to reach a level that met the TRT recovery criteria for the combined populations of the listed species. Population targets include:

- **Primary populations:** Populations that must reach a high level of viability.

- **Contributing populations:** Populations that must improve their current status to contribute to the species recovery as a whole.
- **Stabilizing populations:** Populations that must be maintained at current levels.

Recovery scenarios were developed for each species in coordination with NMFS, WDFW, and local communities. The individual population targets within the recovery scenario considered historic population importance, current status, and potential for improvement based on habitat and other factors. The lower Columbia populations were divided into three strata: coast, cascade, and gorge. The recovery scenarios were aimed at fulfilling TRT criteria in each strata.

All-H Recovery Implementation

Strategies and a set of actions were developed for each source of mortality, by species and watershed, to achieve the necessary reductions in mortality. The implementation plan includes a list of agencies responsible for implementation of particular actions. A summary of actions includes:

- **Habitat:** Actions are largely dependent on forest conservation plans, land use plans, and restoration and preservation projects that include removal of passage barriers, acquisitions, stream function improvement projects, and renewal of stream complexity.
- **Hydro:** Actions are largely connected with Federal Energy Regulatory Commission (FERC) license agreements in lower river tributaries, and mainstem flow at Bonneville Dam. Restoration of healthy estuary function for juvenile migrants is considered a key action for all Columbia Basin populations.
- **Harvest:** Is being addressed through reductions in a new 10-year Chinook agreement in the Pacific Salmon Treaty, ESA limits in the Pacific Fishery Management Council management area in the ocean, and through ESA reductions associated with the LCSR and *U.S. v. Oregon* in the mainstem Columbia River. Continued development of selective fishing is a large part of the implementation plan for harvest.
- **Hatchery:** The Hatchery Science Review Group (HSRG) reviewed lower Columbia River hatchery programs and made recommendations for changes to reduce interaction between hatchery and wild salmon and steelhead. The HSRG was funded by Congress and is reviewing all Columbia Basin hatcheries. WDFW began implementing HSRG recommendations in the lower Columbia this year with a Hatchery Conservation and Sustainable Fisheries Plan. The plan reduces production in some areas, moves production to other areas, and establishes weirs in some systems to sort hatchery fish before they spawn in the wild. A key to meeting the conservation goals is to increase the harvest of hatchery fish through further development of selective fisheries.

The recovery plan and associated implementation strategies require that all of the H's participate in the recovery, including fisheries and hatchery programs. Those two elements of salmon and steelhead recovery will be topics of discussion during Phase II of the Columbia River Fish Working Group's deliberations.