

## Overview:

NOAA Fisheries

2008-2023 Willamette Basin Biological Opinion

July 11, 2008

## Background

The National Marine Fisheries Service (NMFS) has completed a consultation with the U.S. Army Corps of Engineers, Bonneville Power Administration, and the Bureau of Reclamation (Action Agencies) on the impact of the Willamette River Basin Project on species listed for protection under the Endangered Species Act.

## Willamette Basin Projects

The Willamette Valley Flood Control Project consists of 13 dams operated by the Corps of Engineers. Most of these dams are “high head” dams that are over 250 feet tall. The primary purpose of the dams is to provide critical flood damage reduction for the entire Willamette Valley, including the cities of Eugene, Salem and Portland. The projects also provide some hydroelectric generation (about 180 mw annually), along with recreational and fishing opportunities, water quality benefits, and municipal and irrigation water. The Willamette Project also includes maintenance of 42 miles of bank protection projects and operation of a hatchery mitigation program. Reducing the adverse effects of the Willamette Project is one component of the basin’s ESA recovery plan for salmon and steelhead.



The Willamette Project has adversely affected Upper Willamette River Chinook and Steelhead by blocking access to a large amount of their historic habitat upstream of the dams and contributing to degradation of their remaining downstream habitat. The associated mitigation hatcheries that accompanied the dam building had an effect on the genetic diversity of fish stocks in the Willamette basin. Other factors in the decline of Willamette fish include habitat degradation by others, hatchery effects, and harvest.

## ESA Species Covered

- 13 salmon & steelhead species, including Upper Willamette River Chinook and Steelhead
- Green Sturgeon of the Southern DPS
- Southern Resident Killer Whales

## Conclusions of 2008 Willamette Basin Biological Opinion

NMFS has concluded that the actions proposed by the federal dam agencies, combined with additional actions detailed by NMFS in a Reasonable and Prudent Alternative, will ensure that the operation of the Willamette Project avoids jeopardy and contributes to recovery of ESA salmon and steelhead, and also avoids destruction of critical habitat.

In a 2007 Supplemental Proposed Action, the Action Agencies proposed to reduce adverse effects on ESA-listed species by improving flow management; constructing, operating, and maintaining fish collection and passage facilities at priority sites above and below dams; improving management of mitigation hatcheries;

and carrying out a series of research, monitoring, and evaluation (RM&E) measures to develop appropriate actions and evaluate their effectiveness.

However, in its Biological Opinion, NMFS found that these actions were not sufficient to avoiding jeopardizing the survival of, and adversely modifying the critical habitat of, Upper Willamette spring Chinook and winter steelhead. Consequently, NMFS developed a Reasonable and Prudent Alternative (RPA).

In its RPA, NMFS provided additional measures to reduce the projects' effects and timelines for implementation of each action. These measures include providing fish passage at three dams, temperature improvements downstream of another dam, improvements in downstream flows, screening of irrigation diversions, improving hatchery practices and facilities and habitat improvement projects.

The following major actions that will significantly help recover listed salmon and steelhead in the Willamette Basin:

- Reduce the impacts of altered water temperatures in the North Santiam by actively managing releases from Detroit Dam and reservoir to benefit listed fish survival in 2009 and beyond;
- Achieve long-term temperature improvements at Detroit Dam through operational changes or structural modifications by 2018.
- Construction and operation of downstream passage facilities to safely pass emigrating listed fish at Cougar Dam by 2014, at Lookout Point Dam by 2021 and at Detroit Dam by 2023.
- Reconstruction and operation of the collection facilities at various Willamette Project dams to facilitate safe collection and transport of listed fish for outplanting above the dams and for hatchery broodstock purposes.
- Construction of a sorter/seperator at Leaburg Dam on the McKenzie River by 2014 to create a natural fish sanctuary.

As noted above, these actions will be subject to testing and modification based on biological and technical feasibility.

Significant flow modifications began in 2000. Other measures will be implemented in the short-term to protect the species until the longer-term passage and temperature control measures are completed. The biological opinion includes an important program of research and monitoring to ensure that any improvements made to the dams to help fish are scientifically based and are likely to succeed.

### **Best Available Science and Climate Change**

The Biological Opinion uses the best available information on Willamette species from numerous sources, including the Willamette/Lower Columbia Technical Recovery Team and draft Recovery Plan.

Over time, ongoing climate change is likely to pose additional problems for salmon in the Willamette basin by increasing water temperatures and changing the amount and timing of stream flows. The RPA addressed these issues by requiring actions to improve the Corps' ability to control water temperatures downstream from its projects, by employing an adaptive flow management plan, and by adopting an overall adaptive management and implementation strategy whereby future operations may be changed as new information warrants.

### **Ongoing Collaboration**

A new entity called the Willamette Action Team for Ecosystem Restoration (WATER) Committee will foster an ecosystem-wide perspective and cooperation among all concerned parties, including states and Tribes. Five committees will address implementation and adaptive management.

### **Long-term Recovery Planning**

While today's biological opinion is not a salmon recovery plan, efforts to make the dams more fish-friendly, and to improve river water temperatures, and to improve hatchery practices will measurably aid long-term recovery efforts. Oregon is leading efforts to complete a formal salmon-recovery plan for the Willamette Basin, which should be completed in 2009.