

# Klamath River Basin — 2012 Report to Congress

## Introduction

The National Marine Fisheries Service (NMFS) prepared the 2012 Klamath River Basin Report to Congress to provide an update on NMFS' activities in the Klamath River Basin during 2011 pursuant to Section 113(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (MSA; Public Law No. 109-479). This fourth annual Report to Congress provides updated information on: 1) the actions taken under the recovery plan for Klamath River coho salmon (required under the Magnuson-Stevens Reauthorization Act) and other laws relating to recovery of Klamath River coho salmon, and how those actions are specifically contributing to its recovery; 2) the progress made on the restoration of salmon spawning habitat, including water conditions as they relate to salmon health and recovery, with emphasis on the Klamath River and its tributaries below Iron Gate Dam; 3) the status of other Klamath River anadromous fish populations, particularly Chinook salmon; and 4) the actions taken by the Secretary of Commerce to address the calendar year 2003 National Research Council recommendations regarding monitoring and research on Klamath River Basin salmon stocks.

## Recovery and Restoration Actions

In FY 2011, the following funding was provided in the Klamath River basin to advance fisheries science and restoration:

- NMFS Pacific Coastal Salmon Recovery Fund (PCSRF): \$2,768,653
- Other NMFS funding: \$2,750,000

In addition, progress continued on projects funded in previous years. The Connor Creek Fish Passage Project removed one of two barriers, resulting in improved access to 0.3 miles of habitat for coho, steelhead, and Chinook. A second barrier was removed in FY 2012, opening up a total of 2.5 miles for anadromous salmonids. Also in FY 2012, the Grenada Irrigation District began removal of a 12-foot-tall dam located on the mainstem of the Shasta River. Removal of this dam provided 23 miles of access for coho, steelhead, and Chinook. Two Klamath River watershed projects funded under the American Recovery and Reinvestment Act, the Shasta/Big Springs Restoration Project for Coho Recovery, and the Lower Klamath Tributaries Riparian Restoration Projects and Yurok Tribal Native Plant Nursery, were nearing completion and were finished in FY 2012. The combination of these four projects provided access to more than 25 miles of spawning and rearing habitat for threatened coho salmon, improved 11 miles of habitat on Big Springs Creek through improvements in grazing practices, and restored the riparian zone and floodplain connection on Terwer Creek located in the Lower Klamath watershed. Included in those projects are monitoring and research activities that are consistent with the recommendations of the National Research Council.

In terms of water quality conditions and salmonid habitat below Iron Gate dam, preliminary monitoring results have shown that more than 250 juvenile coho and 1,500 juvenile Chinook salmon have taken up residency in newly created pond habitat on Terwer Creek and results indicate the restored habitat may be contributing to increased growth rates as compared to similar nearby unimproved habitats within Terwer Creek. In addition, preliminary monitoring results on the Shasta Big Springs Project show that, in 2 years, average water temperatures during the hot summer months are lower in Big Springs Creek

by 4–5°C. Results also indicate a gradual increase in winter water temperatures, which are also beneficial to rearing coho in freshwater systems.

### Status of Species<sup>1</sup>

a) *Chinook Salmon*

The conservation objective for Klamath River fall-run Chinook salmon represents fishery management and conservation goals that guide the annual planning of ocean and river salmon fisheries. For 2011, the objective was a spawner reduction rate of no more than 67 percent, while achieving a minimum of 35,000 naturally spawning adults. Both components of the conservation objective were achieved; the spawner reduction rate was estimated to be 38 percent and 46,763 adults spawned in natural areas.<sup>2</sup> In 2011, Klamath River fall-run Chinook salmon were neither overfished nor subjected to overfishing.

b) *Coho Salmon*

Coho salmon in the Klamath River basin are a component of the Southern Oregon and Northern California Coast (SONCC) coho salmon Evolutionarily Significant Unit (ESU), which was listed as threatened in 1997 under the Endangered Species Act (ESA). In 2011, counts of adults at long-term monitoring stations counted 62 in the Shasta River, 355 in the Scott River, and 142 in Bogus Creek.<sup>3</sup> In 2011, NMFS completed a 5-year status review of SONCC coho salmon and concluded that its listing status as threatened should not be changed.

c) *Steelhead*

Steelhead populations in the Klamath River basin are part of the Klamath Mountains Province steelhead Distinct Population Segment (DPS). This DPS is not listed under the ESA. In 2011, steelhead abundance in the Salmon River, a tributary to the Klamath River, was estimated to be higher than 20-year averages.<sup>4</sup> Steelhead in the Klamath River basin are widely distributed and include both winter and summer steelhead populations.

Notable in this year's report, in 2011 improved abundance forecasts for Sacramento River fall Chinook salmon (SRFC) and for Klamath River fall Chinook salmon (KRFC) allowed for the first substantial ocean salmon fisheries off of California and Oregon to occur since 2007. Chinook salmon management measures in these waters were guided by the conservation objectives for the SRFC and KRFC and by ESA consultation standards for Sacramento River winter-run Chinook salmon, California Coastal Chinook salmon, Lower Columbia River natural coho salmon, Oregon Coast Natural coho salmon, and SONCC coho salmon (see Pacific Fisheries Management Council Reports at: <http://www.pcouncil.org/salmon/stock-assessment-and-fishery-evaluation-safe-documents>).

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<sup>1</sup> For previous years reporting on status of the three species described, please refer to earlier NMFS Reports to Congress at [http://www.westcoast.fisheries.noaa.gov/klamath/salmon\\_management.html](http://www.westcoast.fisheries.noaa.gov/klamath/salmon_management.html).

<sup>2</sup> Source: Pacific Fishery Management Council. 2012. *Review of 2012 Ocean Salmon Fisheries: Stock Assessment and Fishery Evaluation Document for the Pacific Coast Salmon Fishery Management Plan*. (Document prepared for the Council and its advisory entities.) Pacific Fishery Management Council, 7700 NE Ambassador Place, Suite 101, Portland, Oregon 97220-1384.

<sup>3</sup> Source: California Department of Fish and Game, Northern Region, Yreka. *Salmon Studies Final Report, 2011 and 2012*. Available from M. Knechtle, CDFG, 601 Locust Street, Redding, CA 96001.

<sup>4</sup> Source: Salmon River Restoration Council (SRRC), Sawyers Bar, CA. *Spring Chinook/Summer Steelhead Dive Data*. Available from Tom Hotaling of SRRC, 25631 Sawyers Bar Rd., Etna, CA 96027.

## NMFS Southwest Fisheries Science Center Applied Research on Klamath River Basin Salmon Populations

Research activities by the NMFS Southwest Fisheries Science Center have expanded in the Klamath River basin (<http://swfsc.noaa.gov/default1.aspx?Division=FED&id=554>). These include:

- Economic analysis and biological modeling in support of the Klamath Hydroelectric Settlement Agreement Secretarial Determination (described below)
- Fall-run Chinook salmon stock and fishery assessment
- Impacts of fish disease on fall-run Chinook salmon population dynamics
- Stream temperature modeling and use of thermal refugia by salmonids
- Application of genetic tagging for Chinook salmon at Trinity River Hatchery
- Genetic broodstock management of coho salmon at Iron Gate Hatchery

### Klamath Basin Restoration Agreement

The Klamath Basin Restoration Agreement (KBRA) and the Klamath Hydroelectric Settlement Agreement (KHSA) were signed on February 18, 2010. They provide a comprehensive solution for water, fishery, and power issues in the Klamath Basin. There are 45 Parties to these agreements representing federal agencies, California and Oregon, three Indian tribes, two counties, irrigators, and conservation and fishing groups. The federal agencies cannot sign the KBRA until federal legislation is enacted. The KBRA is intended to result in effective and durable solutions that will: 1) restore and sustain natural fish production and provide for full participation in ocean and river harvest opportunities of fish species throughout the Klamath basin; 2) establish reliable water and power supplies that sustain agricultural uses, communities, and National Wildlife Refuges; and 3) contribute to the public welfare and the sustainability of all Klamath Basin communities.

The KHSA lays out the process for additional studies, environmental review, and a determination by the Secretary of the Interior regarding whether removal of four dams owned by PacifiCorp on the Klamath River: 1) will advance restoration of the salmonid fisheries of the Klamath Basin; and 2) is in the public interest, which includes but is not limited to consideration of potential impacts on affected local communities and tribes.<sup>5</sup> The Secretary of the Interior cannot make this determination until authorized by Congress.

On September 21, 2011, Secretary of the Interior Ken Salazar announced that the federal government completed numerous peer-reviewed scientific studies providing new and detailed information about the environmental and economic impacts of removing four Klamath River hydroelectric dams—fulfilling a major condition of the KHSA. The analysis and studies describe pluses and minuses to potential dam removal on the Klamath River. They reveal that, over the next few decades, dam removal and the implementation of a related watershed-wide restoration program could significantly increase salmon harvests in the river and ocean, eliminate the toxic algae blooms in reservoirs, and restore more normal water temperatures in the river, which is important for salmon. (See <http://klamathrestoration.gov> for more information on these agreements and related studies.)

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<sup>5</sup> Background information was taken from the KBRA Annual Report, May 2011 (see <http://www.edsheets.com/Klamathdocs.html>).