

**ANNUAL PROGRESS REPORT FOR 2022
ROGUE RIVER SPRING CHINOOK SALMON CONSERVATION PLAN
ROGUE WATERSHED DISTRICT
OREGON DEPARTMENT OF FISH AND WILDLIFE**

INTRODUCTION

In September of 2007, the Oregon Fish and Wildlife Commission formally adopted a conservation plan for spring Chinook salmon in the Rogue Species Management Unit (SMU). The plan calls for the Oregon Department of Fish and Wildlife (ODFW) to complete annual reports that will include, at least, the following elements: (1) SMU status in relation to the desired status and conservation status statements embedded in the conservation plan, (2) summaries of annual efforts to monitor SMU attributes, (3) implications of any research or evaluation projects completed during the reporting year, (4) any updated assessments of population attributes completed during the reporting year, and (5) presentation of the rationale associated with any changes in management actions made during the reporting year.

This document is the fourteenth annual report to be completed. A copy of the conservation plan, the comprehensive assessment and update, along with annual progress reports previously completed are available on the ODFW website at:
http://www.dfw.state.or.us/fish/CRP/rogue_spring_chinook_conservation_plan.asp

MONITORING RESULTS AND SMU STATUS

Monitoring of SMU attributes is designed to produce metrics that are to be used to characterize the current status of the SMU. All possible monitoring needed to update SMU status was completed by ODFW in 2022, with results presented in Table 1 and Table 2.

The ability to monitor naturally produced spring Chinook salmon changed significantly with the removal of Gold Ray Dam in 2010 and the allied loss of the fish counting station. Beginning in 2011, all monitoring is now based on counts of spring Chinook salmon carcasses found (1) in the Rogue River between Cole M. Rivers Hatchery and the historical pool upstream of Gold Ray Dam and (2) in the lower mile of Big Butte Creek. These locations are the primary spawning areas of naturally produced spring Chinook salmon in the Rogue River Basin.

ODFW used results from the spawner surveys to hindcast the number of naturally produced spring Chinook salmon that would have passed Gold Ray Dam in 2022; had the dam and fish counting station not been removed. During the 2004-2010 surveys of fish that spawned in September, carcass counts of naturally produced fish averaged 15% (95% confidence interval = $\pm 2\%$) of the number of live counterparts that passed Gold Ray Dam. This relationship between carcass and dam counts is used to estimate the number of live fish that passed the historical site of Gold Ray Dam. No analogous methods could be devised to hindcast two other metrics in the plan: the percentage of jacks in the run and adult migration timing at Gold Ray Dam. These two management criteria for naturally produced spring Chinook salmon in the Rogue SMU were thus abandoned; beginning in 2011.

An estimated 8,740 naturally produced spring Chinook salmon passed the historical site of Gold Ray Dam during 2022. This estimate was derived from the recovery of 1,258 carcasses of unmarked fish and 53 carcasses of unexamined fish (all assumed to be naturally produced).

Table 1. Comparisons of singular elements of current and desired status for naturally produced spring Chinook salmon in the Rogue Spring Chinook Salmon Species Management Unit. Desired status elements are described in the conservation plan, and the plan also called for the description of current status based on average values noted during the previous ten years (where available). Two conservation plan elements of desired status (migration timing and age structure) can no longer be estimated as a result of the removal of Gold Ray Dam in 2010.

Status Element	Desired Status	Current Status	2022 Estimate
Abundance (at Gold Ray Dam)	≥15,000	8,595 (2013-2022)	8,740
Sept. Spawner Distribution^b (% above Shady Cove)	≥40%	62% (2013-2022)	70%
Spawner Composition (% hatchery)	≤15%	3% (2013-2022)	2%

^a Metric estimated as described in the text.

^b This element only covers September spawners because October spawners cannot be distinguished from fall Chinook salmon that spawn in overlapping areas.

Table 2. Status of the Rogue Spring Chinook Salmon Species Management Unit as compared to adopted conservation criteria. Conservation criteria are based on a three year running average, except where noted. Two conservation plan elements of desired status (migration timing and age structure) can no longer be estimated as a result of the removal of Gold Ray Dam in 2010.

Status Element	Conservation Criterion	Conservation Status (years)
Abundance^a (at Gold Ray Dam)	<3,500	8,740 (2022)^b
Abundance (at Gold Ray Dam)	<5,000	5,664 (2020-2022)
Sept. Spawner Distribution^c (% above Shady Cove)	<30%	66% (2020-2022)
Spawner Composition^d (% hatchery)	>25%	2% (2021-2022)

^a During any single year.

^b Metric estimated as described in the text.

^c This element only covers September spawners because October spawners cannot be distinguished from fall Chinook salmon that spawn in overlapping areas.

^d Average during two consecutive years

COMPLETED MANAGEMENT ACTIONS

The Oregon Fish and Wildlife Commission adopted Alternative 9, outlined in the conservation plan, as the preferred suite of management strategies to be employed by ODFW. Some of the relevant actions, completed by ODFW during 2022, are briefly discussed below.

Management Strategy 9.1

1. Most of the action items within this management strategy relate to seasonal operations of Lost Creek Reservoir by the United States Army Corps of Engineers (USACE). ODFW worked cooperatively with the USACE to identify and implement reservoir release strategies designed to enhance naturally produced spring Chinook salmon. A weekly conference call is conducted to facilitate communication. ODFW provides an orientation session on fish needs to dam operations staff and participated in the Corps' annual winter management coordination meeting. Coordination on reservoir management continues to be a very large workload for ODFW staff to protect spring Chinook.

The year 2022 began with Lost Creek Reservoir experiencing critically low storage. Lost Creek stayed low through the winter due to much lower-than-normal precipitation and snowfall. However, April and May provided much needed relief as those two months were the third snowiest at Crater Lake National Park in the last 100 years. This much needed precipitation provided enough water to fill Lost Creek and spring Chinook were able to migrate safely.

2. ODFW continued to participate in a wide variety of habitat protection activities (Action 1.14 in the conservation plan), including the following:

- ODFW reviewed and commented on numerous plans and permit applications for development activities, fill and removal projects, mining operations, forest operations, and water rights to ensure that activities were completed in a way that minimized impacts to fisheries resources.

3. ODFW continued to implement projects to encourage good stewardship by streamside landowners, primarily through activities in the Salmon Trout Enhancement Program (Action 1.15 in the conservation plan).

Management Strategy 9.2

No additional gravel was placed in the mainstem or Big Butte Creek in 2022. However, in 2021 ODFW was able to fund the purchase of 225 cubic yards of Chinook sized spawning gravel which is currently stored on USACE property adjacent to the upper Rogue. ODFW is still trying to permit the mainstem Rogue gravel placement project. Another project to place gravel in Big Butte Creek on BLM land is still in the design phase and seeking funding. We are hoping to jointly implement this project in 2023.

Management Strategy 9.3

A pilot project to encourage Umpqua Pikeminnow removal was initiated in the Grants Pass area of the Rogue River in 2019. The project was in the form of a derby with donated gifts available to anglers with the largest and most fish caught. ODFW has repeated this project annually through 2022.

A full time watercraft inspection technician is stationed in the Rogue Watershed District office.

Management Strategy 9.4

6D. Actions 4.6 and 4.7

Beginning with the 2013 brood year, the production goal for Coho salmon at Cole Rivers Hatchery has been decreased, and the production goal for spring Chinook has been increased (Action 9.4.7 in the conservation plan). The September smolt release group has been increased to 193,250 smolts from 162,000 smolts. In addition, ODFW has re-started a yearling release. In March, at least 50,000 smolts are released near Gold Hill. Coded wire tagging of the March release will facilitate evaluation of this release.

6E. Management Changes

The Rogue Spring Conservation Plan Comprehensive Assessment and Update, completed by ODFW in 2019, included a framework for providing additional harvest opportunity for wild (naturally produced) spring Chinook as the population builds toward desired status. The abundance triggers and associated changes in seasons and bag limits are described in the 2019 Comprehensive Assessment and Update (see Table 4 on page 32) and the Rogue Spring Chinook Annual Progress Report for 2019. In 2022, the abundance triggers for additional harvest opportunity were not met.

In 2022, ODFW implemented several actions in response to ongoing drought conditions and spring Chinook abundance falling below one of the Conservation Status metrics in 2021. These actions included public outreach about avoiding disturbance of spawning fish and redds in the shallow riffles and tailouts of the upper Rogue; coordination with the Oregon Department of State Lands (DSL) to prevent dredging of gravel bars in the upper Rogue, both intended and unintended; and partnership with Oregon State Police (OSP) on an expanded program of enforcement floats on the upper Rogue directed at snagging during the spring chinook season.

Management Strategy 9.5

ODFW did not complete any work related to the only action item that was relevant to this management strategy during 2022.

10. Monitoring, Evaluation and Research Needs

The Plan acknowledged that not all the tasks identified in this section would be completed and that prioritization would be needed. Adaptive management was likely to identify additional monitoring, evaluation and research needs.

9A. Monitoring Needs

Reports detailing the results of multiple years of genetic analysis of Rogue spring Chinook carcasses collected from the spawning grounds and from the lower Rogue fishery can be found at the link below:

9C. Research Needs

Preseason forecasts of abundance for naturally produced Rogue spring Chinook are now available as ODFW continues to collect scales from spawned out spring Chinook carcasses which provide necessary age data. Two separate models were used for the forecast for 2023, sibling regression and an ARIMAX model with multiple covariates such as river flow during spawning, NPGO, and date of upwelling spring transition. The preseason forecast for 2023 follows:

Technique	Covariates	2023 Prediction
Sibling Regression	None	7,407
ARIMAX	Multiple	9,460

The 2022 forecast, as detailed in the Annual Progress Report for 2021, was 5,032 spring Chinook using the sibling regression model and 6,070 spring Chinook using the ARIMAX model. ODFW's estimate of spawners from spawning ground surveys in 2022 is 8,740.