ANNUAL PROGRESS REPORT FOR 2016
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). This 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 tenth annual report to be completed. A copy of the conservation plan, along with annual progress reports previously completed, is 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 2016, 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 has been 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 2016; had not the dam and fish counting station been removed. During the 2004-2010 surveys of fish that spawned in September, carcass counts of naturally produced fish averaged 15% (95% confidence interval = ±2%) of the number of live counterparts that passed Gold Ray Dam. This relationship will be used to estimate the number of live fish that passed the historical site of Gold Ray Dam, until some better estimation methods can be developed through future analyses or research. However, no analogous methods could be devised to hindcast 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 9,573 naturally produced Spring Chinook salmon passed the historical site of Gold Ray Dam during 2016. This estimate was derived from the recovery of 1,402 carcasses of unmarked fish and 34 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	2016 Estimate
Abundance (at Gold Ray Dam)	**≥15,000**	**8,956 (2007-2016)**	**9,573**
Sept. Spawner Distribution[b] (% above Shady Cove)	**≥40%**	**56% (2007-2016)**	**52%**
Spawner Composition (% hatchery)	**≤15%**	**7% (2007-2016)**	**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**	**9,573 (2016)[b]**
Abundance (at Gold Ray Dam)	**<5,000**	**10,282 (2014-2016)**
Sept. Spawner Distribution[c] (% above Shady Cove)	**<30%**	**53% (2014-2016)**
Spawner Composition[d] (% hatchery)	**>25%**	**2% (2015-2016)**

[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 2016, 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 was implemented to facilitate communication. ODFW provided 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.

USACE completed successful operations for fish in 2016. Lost Creek Reservoir filled easily and conditions in the river were more stable in the first year following the most recent multi-year drought (2013-2015). The reservoir release dropped to 1200 cfs by September 13th to minimize the risk of dewatering Spring Chinook redds. The released stayed at or above that level throughout the egg incubation period.

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

- ODFW provided comments concerning the development of legislation intended to modify the regulations pertaining to gold mining in and near streams
- ODFW reviewed and commented on the draft of a proposed riparian protection ordinance for the City of Shady Cove. We provided testimony in support of the plan before the Shady Cove City Council. The City Council ultimately approved the ordinance.
- 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 done 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 Big Butte Creek in 2016 after projects in 2012 and 2013. An evaluation of gravel transport in Big Butte continues (see below). The evaluation will provide insight into the effectiveness of this project.

Management Strategy 9.3

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

Management Strategy 9.4

Beginning with the 2013 brood year, hatchery releases of Spring Chinook were increased at the same time that production of Coho Salmon at Cole Rivers Hatchery was decreased (Action 9.4.7 in the conservation plan). The September smolt release group was increased to 193,250 smolts from 162,000 smolts. In addition, ODFW re-started a yearling release in March. The first returns of four year old adult Chinook from the March release are expected in 2017.

Management Strategy 9.5

ODFW did not complete any work related to the only action item that was relevant to this management strategy during 2015.

OTHER

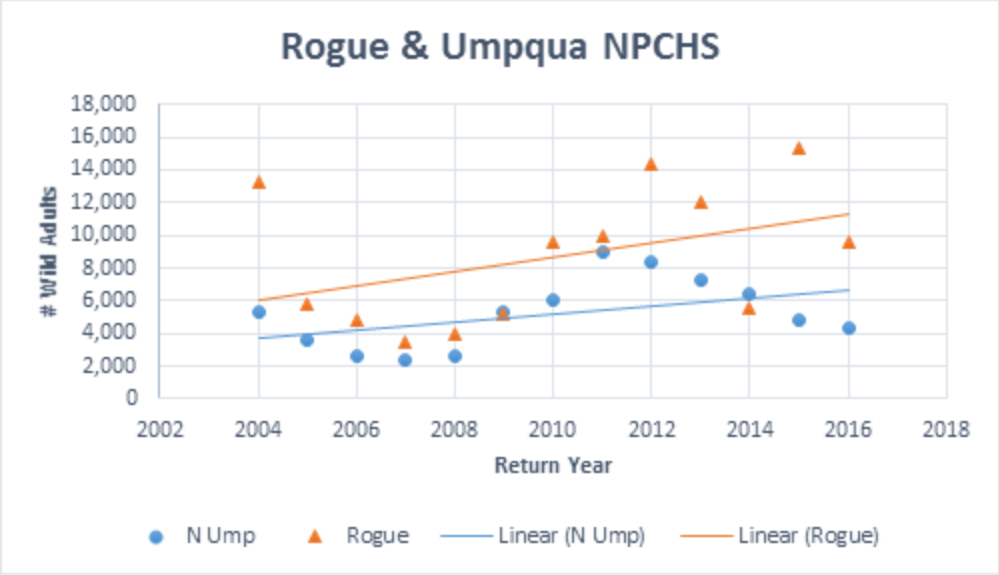
1. During spring and summer of 2013, ODFW inserted PIT tags into Chinook-sized spawning gravels. Approximately 275 rocks were tagged in all. These rocks were distributed at 6 different sites in Big Butte Creek, including the gravel placement site. Rocks were placed individually and in groups and a GPS waypoint was taken at each site. All sites where tagged rocks were placed are either sites where Chinook are known to spawn or are areas that could be candidates for future gravel augmentation projects (pending access for equipment, etc).

Similar to past years, monitoring in 2016 found little movement of tagged rocks. While fewer tagged rocks were recovered in 2016 than in previous years, the overall recovery rate remained high – especially for the smallest tagged rocks ranging in size from 40-64mm. In addition Spring Chinook Salmon have spawned at the gravel placement site each year since completion.

2. ODFW completed the seventh year of sampling needed to eventually generate pre-season forecasts for returns of naturally produced spring Chinook salmon. The scales from the first six years have been aged by ODFW's Fish Life History Analysis Program. ODFW is looking at various models to produce a forecast of abundance. The accuracy of this technique will increase with additional years of data.

3. ODFW developed a random sampling framework for collecting genetic samples off the spawning grounds. Samples were collected in 2016, and sampling will continue for three years before being submitted for analysis.

4. Below is a comparison of returns for Rogue NPCHS abundance and North Umpqua NPCHS. The Rogue run is showing a higher rate of increase than North Umpqua NPCHS since plan development and adoption.


Rogue & Umpqua NPCHS
Wild Adults
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
2002
2004
2006
2008
2010
2012
2014
2016
2018
Return Year
N Ump
Rogue
Linear (N Ump)
Linear (Rogue)