**ANNUAL PROGRESS REPORT FOR 2015**
**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 ninth 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 2015, 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 2015; 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 15,320 naturally produced spring Chinook salmon passed the historical site of Gold Ray Dam during 2015. This estimate was derived from the recovery of 2,237 carcasses of unmarked fish and 61 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 | 2015 Estimate |
|---|---|---|---|
| **Abundance (at Gold Ray Dam)** | **≥15,000** | **8,475 (2006-2015)** | **15,320** |
| **Sept. Spawner Distribution[b] (% above Shady Cove)** | **≥40%** | **57% (2006-2015)** | **48%** |
| **Spawner Composition (% hatchery)** | **≤15%** | **9% (2006-2015)** | **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** | **15,320 (2015)[b]** |
| **Abundance (at Gold Ray Dam)** | **<5,000** | **11,140(2013-2015)** |
| **Sept. Spawner Distribution[c] (% above Shady Cove)** | **<30%** | **56% (2013-2015)** |
| **Spawner Composition[d] (% hatchery)** | **>25%** | **4% (2014-2015)** |

[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 2015, are briefly discussed below. A tabulated progress summary related to management actions described in the conservation plan can be found at the end of this document in Appendix Table 1.

### 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 2015. The importance of this cannot be understated given the weather conditions in the watershed. The Rogue experienced the third year of drought in 2015 (the second consecutive year of declared drought). In addition, 2015 was the warmest summer on record in Medford. The National Weather Service reports that the average temperature June through August set a new record, eclipsing the record set in 2014.

Lost Creek Reservoir filled in 2015, but the fill required a sizable decrease in the release down to 800 cubic feet per second (cfs) in mid-March and April. River flow at McLeod dropped to 875 cfs as a result. A side channel near McLeod that is used by numerous spring Chinook for spawning continued to have some flow even at 875 cfs. This should have been enough to keep spring Chinook fry alive and allow them to reach the river.

Inflows into the reservoir dropped dramatically late spring through fall due to very low snowpack from the previous winter. In response to the drought, the Corps agreed to release more water than normal in 2015, dipping into carryover storage. This additional release improved flows in the Rogue below the dam May-early September.

In anticipation of challenging conditions, ODFW recruited Jerry Trotter, volunteer HOST for the BLM at the Rogue River Ranch near Mariel, to monitor the mouths of Stair Creek for evidence of stressed fish. A few Chinook were observed the last week of June. Reports were also received from the US Forest Service on the lower river and the Bureau of Land Management on the middle Rogue. No dead fish were observed in May or June.

Accumulating Chinook and steelhead were observed later in the summer at Stair Creek, with peaks of around 20 fish observed on July 6, July 27 and August 3. A few dead fish were observed at various times and a few fish were observed in other tributaries, but no catastrophic loss of large numbers of Chinook was observed or reported.

2. A project aimed at benefitting downstream migrating juveniles was completed in 2015 at the Gold Hill Irrigation District. The project improved passage for juvenile fish through a pipe back into the Rogue River and eliminated a false attraction flow that caused some adult fish to enter the irrigation ditch.

3. 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. We also participated in the working group the legislation established to develop proposed modifications to the mining regulations.
- 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 City of Shady Cove Planning Commission.
- 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.

4. 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 2015 after projects in 2012 and 2013; however surveys found a peak count of 14 actively spawning fish on October 5, 2015. 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, 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 is re-starting a yearling release. In March 50,000 smolts will be released downstream of Gold Ray. Coded wire tagging of the March release will facilitate evaluation of this release.

## 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).

Monitoring in the summer of 2014 found very little movement of tagged rocks. No monitoring was conducted in 2015, since the peak flows during the winter of 2014-2015 did not exceed the peak flow of the previous winter.

2. ODFW completed the sixth year of sampling needed to eventually generate pre-season forecasts for returns of naturally produced spring Chinook salmon. The samples will be submitted for aging this summer to facilitate a cohort analysis and sibling relationship for forecasts. Accuracy of this technique will increase with additional years of data.

3. ODFW worked previously with Peter Tronquet at the Native Fish Society to collect genetic samples from spring and fall Chinook on the Rogue for Dr. Michael Miller at UC Davis. The samples complement his collection from various rivers along the west coast. In 2015 Dr. Miller confirmed that the master control gene for run-timing that he identified in steelhead also controls the difference between spring and fall Chinook in all those locations including the Rogue. ODFW hopes in the future to be able to submit genetic samples from Rogue carcasses to Dr. Miller and have them identified as either spring Chinook or fall Chinook.

Appendix Table 1. Summary of progress related to management actions described in the Rogue Spring Chinook Salmon Conservation Plan, which was adopted by the Oregon Fish and Wildlife Commission in September 2007. The "X" symbol means that ODFW completed work on an action that requires annual attention. The "Y" symbol means that ODFW completed the action and that no further work is needed. The "Z" symbol means that ODFW completed work on an allied topic that complemented the action item included in the conservation plan. The "--" symbol means that no ODFW work was completed on the action item during the year. The "n/a" symbol means that the action was not applicable or relevant to the specific year.

| Action | Year of completion for action item | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Item | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| | | | | MANAGEMENT STRATEGY 9.1 | | | | | |
| 1.1 | X | X | X | X | X | X | X | X | X |
| 1.2 | Y | | | | | | | | |
| 1.3 | X | X | X | -- | X | -- | -- | -- | X |
| 1.4 | Y | | | | | | | | |
| 1.5 | X | X | X | X | X | X | X | X | X |
| 1.6 | X | X | X | X | X | X | X | X | X |
| 1.7 | X | X | X | X | X | X | X | X | X |
| 1.8 | Y | | | | | | | | |
| 1.9 | X | X | X | X | X | X | X | X | X |
| 1.10 | Y | | | | | | | | |
| 1.11 | Y | | | | | | | | |
| 1.12 | X | X | X | X | X | X | X | X | X |
| 1.13* | X | X | X | Y | | | | | |
| 1.14 | X | X | X | X | X | X | X | X | X |
| 1.15 | -- | X | X | X | X | X | X | X | X |
| | | | | MANAGEMENT STRATEGY 9.2 | | | | | |
| 2.1 | -- | X | X | -- | -- | -- | -- | -- | -- |
| 2.2 | -- | X | X | -- | -- | -- | -- | -- | -- |
| 2.3 | -- | -- | -- | -- | Y | | | | |
| 2.4 | n/a | n/a | n/a | n/a | n/a | X | X | X | -- |
| | | | | MANAGEMENT STRATEGY 9.3 | | | | | |
| 3.1 | -- | -- | Z | Z | Z | Z | Z | X | -- |
| | | | | MANAGEMENT STRATEGY 9.4 | | | | | |
| 4.1 | -- | Y | | | | | | | |
| 4.2 | n/a | n/a | n/a | X | n/a | n/a | n/a | n/a | n/a |
| 4.3 | X | X | X | n/a | n/a | X | n/a | n/a | n/a |
| 4.4 | -- | X | -- | -- | X | -- | -- | -- | -- |
| 4.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4.6 | Y | | | | | | | | |
| 4.7 | -- | -- | -- | -- | -- | -- | -- | X | X |
| | | | | MANAGEMENT STRATEGY 9.5 | | | | | |
| 5.1 | -- | X | X | -- | -- | -- | -- | -- | -- |
| 5.2 | Y | | | | | | | | |
| 5.3 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| 5.4 | -- | Y | | | | | | | |

*The primary mainstem fish passage projects were completed by 2010. Work will continue as opportunities arise, such as described above.