ANNUAL PROGRESS REPORT FOR 2014
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 eighth 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 2014, 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 2013; 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 5,593 naturally produced spring Chinook salmon passed the historical site of Gold Ray Dam during 2014. This estimate was derived from the recovery of 851 carcasses of unmarked fish and 42 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	2014 Estimate
Abundance (at Gold Ray Dam)	**≥15,000**	**7,523 (2005-2014)**	**5,593**
Sept. Spawner Distribution[b] (% above Shady Cove)	**≥40%**	**57% (2005-2014)c**	**60%**
Spawner Composition (% hatchery)	**≤15%**	**10% (2005-2014)**	**6%**

[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.*
c *Spreadsheet labeling error corrected this year; still exceeds desired status*

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**	**5,593 (2014)[b]**
Abundance (at Gold Ray Dam)	**<5,000**	**10,833(2012-2014)**
Sept. Spawner Distribution[c] (% above Shady Cove)	**<30%**	**60% (2012-2014)e**
Spawner Composition[d] (% hatchery)	**>25%**	**5% (2013-2014)**

[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*
e Spreadsheet labeling error corrected this year; still exceeds conservation status

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 2014, 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.

USACE completed successful operations for fish in 2014. Two operations deserve note:

1) A side channel near McLeod that is used by numerous spring chinook for spawning has historically been dewatered during typical winter flow management and/or when the releases drop during the reservoir fill season. ODFW estimates that flows of about 1150 cfs at McLeod will keep redds in the side channel from being dewatered. During 2013-2014, ODFW monitored conditions in the side channel when the flow at McLeod dropped to 1030 cfs. Even at this reduced flow, some flow was maintained in the side channel through egg incubation and fry emergence.

2) Pre-spawning mortality in upstream migrating adult spring Chinook was successfully minimized despite very low river flows, record hot weather in July and drought conditions in 2014. Over time ODFW has learned the importance of not allowing disease to begin with spring Chinook because losses can be devastating. Releases from Lost Creek Reservoir help meet flow and temperature targets in the lower river to keep disease outbreaks from occurring in spring Chinook.

Governor Kitzhaber issued drought declarations for Jackson and Josephine counties in May 2014. In anticipation of challenging conditions, ODFW recruited John and Lyn McLaughlin, volunteer HOSTS for the BLM at the Rogue River Ranch near Mariel, to monitor the mouths of Mule and Stair Creek for evidence of stressed fish. No accumulations were observed in May or June 2014. 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 were observed later in the summer at Stair Creek, with peaks around July 20th and August 10th. As many as several hundred chinook were observed at the mouth of Stair Creek in August. Small numbers of dead chinook were observed at various times and locations in mid-late summer. Chinook were also observed in other tributaries and tributary mouths in summer. But no catastrophic loss of large numbers of chinook was observed or reported.

2. A project primarily aimed at benefitting downstream migrating juveniles was partially completed at 2014 at the Gold Hill Irrigation District. The project is currently seeking funds to complete the remainder of the project – hopefully in 2015. When completed, the project will safely pass fish through a pipe back into the Rogue River and will eliminate a false attraction flow that causes 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 worked with the City of Gold Hill, the Department of Environmental Quality, and others to develop a Water Quality Management Plan for the City of Gold Hill. .
- ODFW reviewed and provided comments to the Department of Environmental Quality for the draft revisions to the 700PM General Discharge Permit for suction dredges and in-water, nonmotorized mining equipment.
- 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.
- District staff attended site visits and provided comments to the Bureau of Land Management and regulatory agencies concerning existing and potential resource damage from gold mining operations of mining claims on federal lands.

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 2014 after projects in 2012 and 2013, however surveys found a peak count of 8 actively spawning fish on October 6, 2014. An evaluation of gravel transport in Big Butte continued (see below). The evaluation will provide insight into the effectiveness of this project.

Management Strategy 9.3

ODFW did not complete any work related to the specific action called for in the conservation plan in 2014. A full time watercraft inspection technician is stationed in the Rogue Watershed District office. Additional seasonal staff members were added in 2013 to conduct boat inspections as part of ODFW's Aquatic Invasive Species program.

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 2014.

OTHER

1. ODFW continued a project to monitor gravel transport in Big Butte Creek to help evaluate the benefits of gravel augmentation in this unique subbasin. 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). In the summer of 2014, ODFW attempted to recover as many tagged rocks as possible by surveying the areas where tagged rocks were placed with a PIT tag antenna and reader. Across all sites, 92% of tagged rocks were recovered. It appeared that these particles moved very little, if at all. Some of the smaller sized particles (40-64mm max diameter) were located toward the periphery of the creek and some were even recovered on the creek's floodplain. However, the majority of the recovered particles were still in the summer wetted channel and were usable for spawning.

2014 was a drought year in southwest Oregon, however, Big Butte did reach a peak flow of 3000 cfs at the USGS gauging station in February of 2014. At this location, Big Butte reached a peak flow of 3000 cfs or more in 25 of 58 years of record.

This process will be repeated over the next several years. This information will help determine whether future, larger scale gravel placement in Big Butte Creek will be cost effective.

ODFW also completed the fifth year of sampling needed to eventually generate pre-season forecasts for returns of naturally produced spring Chinook salmon. This sampling requires that lengths and scale samples be collected in order to estimate the age of naturally produced fish that spawn in each year. At least six years of sampling will be needed in order to develop the sibling relationships that are needed to generate pre-season forecasts.

2. ODFW redd surveys in the former Gold Ray reservoir did not find redds in September this year. Redd counts in the reservoir site peaked at 41 during mid- November but most of this activity was from fall Chinook.

3. Early September spawning by spring Chinook on the Rogue was verified again in 2014. During a survey conducted on September 5th, over 35 redds were observed being constructed between Cole Rivers Hatchery and Shady Cove, and some redds were already completed.

4. ODFW worked 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. Dr. Miller reports identifying the locus that determines run timing. The samples will complement his collection from various rivers along the west coast. In addition, the lab may be able to help determine the current distribution and timing of fall chinook spawning in the upper river (included in research need in the conservation plan). Additional samples were submitted for this project. Work will continue in 2015 to collect samples and fund the analysis.

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	
1.2	Y								
1.3	X	X	X	--	X	--	--	--	
1.4	Y								
1.5	X	X	X	X	X	X	X	X	
1.6	X	X	X	X	X	X	X	X	
1.7	X	X	X	X	X	X	X	X	
1.8	Y								
1.9	X	X	X	X	X	X	X	X	
1.10	Y								
1.11	Y								
1.12	X	X	X	X	X	X	X	X	
1.13*	X	X	X	Y					
1.14	X	X	X	X	X	X	X	X	
1.15	--	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	
4.3	X	X	X	n/a	n/a	X	n/a	n/a	
4.4	--	X	--	--	X	--	--	--	
4.5	--	--	--	--	--	--	--	--	
4.6	Y								
4.7	--	--	--	--	--	--	--	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	
5.4	--	Y							

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