

**ANNUAL PROGRESS REPORT FOR THE 2013
FALL CHINOOK SALMON CONSERVATION PLAN
ROGUE SPECIES MANAGEMENT UNIT
OREGON DEPARTMENT OF FISH AND WILDLIFE
ROGUE WATERSHED DISTRICT**

INTRODUCTION

In January of 2013, the Oregon Fish and Wildlife Commission formally adopted a conservation plan for fall 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 report summarizes the status of the SMU in relation to desired status and conservation status through the 2013 return year, completed management actions, and 2014 preseason forecasts in relation to conservation status and maximum sustained yield (Chetco, Winchuck).

A copy of the conservation plan, and annual progress reports, is available on the ODFW website at:

http://www.dfw.state.or.us/fish/CRP/rogue_fall_chinook_conservation_plan.asp

SUMMARY OF SMU STATUS

Two population strata compose the SMU: (1) the Rogue stratum and (2) the coastal stratum. The two strata are differentiated by life history and genetic differences within the constituent independent populations of naturally produced fall Chinook salmon (NP CHF). Where possible, status criteria were developed for each independent population monitored by ODFW. Populations in the Rogue stratum are monitored as an aggregate by sampling at Huntley Park near the mouth of the Rogue River, except that NP CHF in the Lower Rogue population area are also monitored annually by ODFW.

Monitoring of SMU attributes is designed to produce metrics that are to be used to characterize the current status of the SMU. All monitoring needed to update SMU status was completed by ODFW in 2013, and the results are included in tables 1 and 2. Monitoring results that most differed in 2013, as compared to previous years, include significantly reduced escapement in the Winchuck, and above average escapement in the Hunter and Pistol populations.

Table 1. Comparisons of singular elements of current and desired status for naturally produced fall Chinook salmon in the Rogue Species Management Unit. Desired status criteria are described in the conservation plan, and both metrics cover the most recent ten year period. Underlined metrics of current status did not meet desired status criteria.

Status Element	Desired Status	Current Status	2013 Estimate
ROGUE AGGREGATE POPULATIONS			
Adult Abundance ^a	≥54,400	61,970	81,647
Age Structure ^b	≥10%	12%	3%
Run Timing ^c	≥8%	8%	3% ⁱ
Run Composition ^d	≤5%	5%	3%
LOWER ROGUE POPULATION			
Adult Abundance ^e	≥3,500	7,480	3,646
Spawner Composition ^f	≤10%	3%	9%
CHETCO POPULATION			
Adult Abundance ^e	≥3,800	<u>3,309</u>	2,991
Age Structure ^h	≥16%	26%	11%
Spawner Composition ^f	≤18%	13%	17%
WINCHUCK POPULATION			
Adult Abundance ^e	≥1,000	<u>849</u>	347
Juvenile Abundance ^g	≥125,000	149,404	198,596
Spawner Composition ^f	≤10%	4%	4%
PISTOL POPULATION			
Adult Abundance ^e	≥1,300	1,543	1,744
Spawner Composition ^f	≤5%	2%	0%
HUNTER POPULATION			
Adult Abundance ^e	≥560	<u>550</u>	1,665
Spawner Composition ^f	≤5%	2%	0%

^a Number of age 3-6 NP CHF that pass Huntley Park.

^b Relative abundance of age 5+6 fish among NP CHF that pass Huntley Park.

^c Relative abundance of October migrants among NP CHF that pass Huntley Park.

^d Relative abundance of hatchery fish among CHF that pass Huntley Park.

^e Number of NP CHF spawners.

^f Relative abundance of hatchery fish among CHF spawners.

^g Number of juvenile NP CHF produced in areas upstream of the South Fork.

^h Relative abundance of age 5+6 fish among NP CHF spawners.

ⁱ Anecdotal reports indicate that run timing may have been earlier in 2013 due to unusual September rainfall.

Table 2. Status of the Rogue Fall Chinook Salmon Species Management Unit as compared to conservation criteria. Conservation status criteria are described in the conservation plan and cover, unless otherwise noted, the most recent three year period. Underlined metrics of current status did not meet desired status criteria.

Status Element	Conservation Criterion	Comparative Status	2013 Estimate
ROGUE AGGREGATE POPULATIONS			
Adult Abundance ^a	<20,400 ⁱ	75,402	81,647
Age Structure ^b	<3%	5%	3%
Run Composition ^c	<5%	7%	3%
Run Composition ^d	>10%	3%	3%
LOWER ROGUE POPULATION			
Adult Abundance ^e	<1,500	6,373	3,646
Spawner Composition ^f	>15%	5%	9%
CHETCO POPULATION			
Adult Abundance ^e	<1,440 ⁱ	3,636	2,991
Age Structure ^h	<5%	20%	11%
Spawner Composition ^f	>20%	15%	17%
WINCHUCK POPULATION			
Adult Abundance ^e	<300 ⁱ	453	347
Juvenile Abundance ^g	<50,000 ^j	198,596	198,596
Spawner Composition ^f	>15%	4%	4%
PISTOL POPULATION			
Adult Abundance ^e	<540	1,055	1,744
Spawner Composition ^f	>10%	1%	0%
HUNTER POPULATION			
Adult Abundance ^e	<300	980	1,665
Spawner Composition ^f	>10%	1%	0%

^a Number of age 3-6 NP CHF that pass Huntley Park.

^b Relative abundance of age 5+6 fish among NP CHF that pass Huntley Park.

^c Relative abundance of October migrants among NP CHF that pass Huntley Park.

^d Relative abundance of hatchery fish among CHF that pass Huntley Park.

^e Number of NP CHF spawners.

^f Relative abundance of hatchery fish among CHF spawners.

^g Number of juvenile NP CHF produced upstream of the South Fork.

^h Relative abundance of age 5+6 fish among NP CHF spawners.

ⁱ Criteria are based on a running two year average.

^j Criterion covers every year.

COMPLETED MANAGEMENT ACTIONS - ROGUE STRATUM

The Oregon Fish and Wildlife Commission adopted Rogue Alternative 4, 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 2013, are briefly discussed below. A tabulated progress summary related to management actions described in the conservation plan is included in Table 4.

Management Strategy 4.1

Many of the actions within Management Strategy 4.1 relate to seasonal operations of Lost Creek and Applegate reservoirs 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 fall Chinook (actions 4.1.1, 4.1.2, 4.1.4, 4.1.5, 4.1.6, 4.1.7, 4.1.9). 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 USACE annual winter management coordination meeting.

Average flow at Agness was maintained at 2,205 cfs August 10 – September 15 (action 4.1.7). Disease-related mortality of adult fall Chinook in 2013 was estimated at 3.7%. Mortality estimates are derived from flow-based models. Additional management actions would be triggered if disease-related losses were forecast to reach 40% (action 4.1.8).

The minimum flow needed to protect juvenile fish rearing in the mainstem in summer is 1,000 cfs as measured at the Grants Pass gauge. The flow in 2013 exceeded this level, averaging 1,474 cfs at Grants Pass July 1 – August 10 (action 4.1.9).

ODFW participated in a variety of habitat protection activities (action 4.1.14), including review of water right applications, removal/fill applications, and compliance monitoring of municipal and county riparian ordinances.

Management Strategy 4.2

ODFW's Aquatic Invasive Species program deployed two watercraft inspection crews in the Rogue Watershed District in 2013 (action 4.2.1). Crews based in Central Point and Gold Beach conducted boat inspections, primarily on the I-5, Hwy 97, and Hwy 101 corridors, from late spring through early fall.

Management Strategy 4.3

The minimum flow needed to protect juvenile fish rearing in the mainstem in summer is 1,000 cfs as measured at the Grants Pass gauge. The flow in 2013 exceeded this level, averaging 1,474 cfs at Grants Pass July 1 – August 10. Lower water temperatures in downstream areas, as a result of the increased flow, result in fewer predation losses because of decreases in pikeminnow metabolic rates (action 4.3.2), using storage that is not needed to protect adult spring Chinook and adult fall Chinook.

Management Strategy 4.4

Zone regulations were employed in 2013 because fall Chinook escapement was forecasted to exceed escapement goals related to conservation criteria (action 4.4.1).

Management Strategy 4.5

Broodstock collection practices at Indian Creek STEP Facility were revised in 2013 to increase age at maturity of hatchery-produced fall Chinook (action 4.5.3). The purpose of the revision is to ensure that maturation rates of hatchery-produced fall Chinook are similar to those of naturally produced lower Rogue fall Chinook.

COMPLETED MANAGEMENT ACTIONS - COASTAL STRATUM

The Oregon Fish and Wildlife Commission adopted Coastal Alternative 6, 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 2013, are briefly discussed below. A tabulated progress summary related to management actions described in the conservation plan is included in Table 5.

Management Strategy 6.1

ODFW participated in a variety of habitat protection activities (actions 6.1.2, 6.1.8), including review of water right applications, removal/fill applications, and compliance monitoring of municipal and county riparian ordinances.

Management Strategy 6.2

ODFW's Aquatic Invasive Species program deployed two watercraft inspection crews in the Rogue Watershed District in 2013 (action 6.2.1). Crews based in Central Point and Gold Beach conducted boat inspections, primarily on the I-5, Hwy 97, and Hwy 101 corridors, from late spring through early fall.

Management Strategy 6.3

Zone regulations were employed in 2013 because fall Chinook escapement was forecasted to exceed escapement goals related to conservation criteria (action 6.3.1), except that temporal (low flow) closures were implemented by temporary rule on the Chetco and Winchuck rivers between August 1 and November 1. Both the Chetco and Winchuck NP CHF populations were forecasted to exceed conservation criteria. The temporary closures were not necessary as conservation measures but were effective at reducing snagging activity during low flow conditions.

Regulations for the Chetco ocean terminal area fishery in 2013 were similar to recent years because escapement to the Chetco and Winchuck were again forecasted to exceed S_{MSY} (action 6.3.5). The recreational season was open October 1-13, harvest was estimated at 814 Chinook. The commercial season was open the earlier of October 13-31 or a quota of 750 Chinook, harvest was 155 Chinook.

Management Strategy 6.4

A release group of approximately 40,000 smolts were acclimated at Ferry Creek reservoir (Chetco) in 2013 (action 6.4.3). The purpose of the project is to determine whether 1) returning adult Chinook acclimated at Ferry Creek contribute to the river fishery at a higher rate than non-

acclimated Chinook; 2) acclimated Chinook are recovered from natural spawning areas at a lower rate than non-acclimated Chinook.

Chetco fall Chinook smolts were released mid-October, 2013 (action 6.4.4).

Broodstock collection practices for Chetco fall Chinook were revised in 2013 to increase age at maturity of hatchery-produced fall Chinook (action 6.4.5). The purpose of the revision is to ensure that maturation rates of hatchery-produced fall Chinook are similar to those of naturally produced Chetco fall Chinook.

Management Strategy 6.5

ODFW did not complete any work specific to Management Strategy 6.5 in 2013.

OTHER

A diet study was initiated in the lower Rogue River in 2013 to determine the level of predation by double-crested cormorants on juvenile salmonids. A Scientific Collecting Permit was obtained from the U.S. Fish and Wildlife Service Migratory Bird Permit Office, allowing lethal collection of up to 50 double-crested cormorants in the lower Rogue River. During the period of August – September 2013, a total 40 cormorants were lethally collected, yielding 39 stomach samples (1 stomach was empty). A preliminary (visual) analysis of stomach contents is included in table 3 (genetic analysis of stomach contents will provide final identification). Additional double-crested cormorant stomach samples are scheduled to be collected from the lower Rogue River August - September 2014 and May - June 2015.

ODFW continued to support the Rogue pinniped hazing project in 2013 with the purchase of hazing supplies.

Table 3. Preliminary 2013 Rogue double-crested cormorant diet analysis, identifiable prey biomass only*

Sample Period	N	Salmonid	Cyprinid ¹	Surfperch	Pleuronectid ²	Stickleback	Sculpin	Unid Nonsal ³	Crustacean ⁴
Late August	19	18.5%	1.8%	0.0%	1.9%	17.4%	24.8%	29.1%	6.5%
Early September	10	0.0%	6.4%	0.0%	0.0%	30.4%	47.2%	14.6%	1.4%
Late September	10	3.4%	34.7%	0.4%	0.0%	2.8%	15.4%	33.3%	10.1%
Total	39	7.3%	14.3%	0.1%	0.6%	16.9%	29.1%	25.7%	6.0%

*based on an average of 98.66% of all prey biomass in foregut having been identifiable (2,516.7 grams identifiable biomass).

¹ redbside shiner, pikeminnow

² starry flounder

³ unidentified non-salmonid prey items

⁴ crayfish

Table 4. Summary of progress related to management actions described in the fall Chinook salmon Conservation Plan, as related to the Rogue Stratum of the SMU. 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.

Action Item	Year of completion for action item									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	
MANAGEMENT STRATEGY 4.1										
4.1.1	X									
4.1.2	X									
4.1.3	Y									
4.1.4	X									
4.1.5	X									
4.1.6	X									
4.1.7	X									
4.1.8	n/a									
4.1.9	X									
4.1.10	--									
4.1.11	--									
4.1.12	--									
4.1.13	--									
4.1.14	X									
4.1.15	X									
4.1.16	X									
4.1.17	X									
MANAGEMENT STRATEGY 4.2										
4.2.1	X									
MANAGEMENT STRATEGY 4.3										
4.3.1	--									
4.3.2	X									
MANAGEMENT STRATEGY 4.4										
4.4.1	X									
4.4.2	n/a									
4.4.3	n/a									
4.4.4	n/a									
MANAGEMENT STRATEGY 4.5										
4.5.1	X									
4.5.2	n/a									
4.5.3	Y									
4.5.4	X									

Table 5. Summary of progress related to management actions described in the fall Chinook salmon Conservation Plan, as related to the Coastal Stratum of the SMU. 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.

Action Item	Year of completion for action item									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	
MANAGEMENT STRATEGY 6.1										
6.1.1	--									
6.1.2	X									
6.1.3	--									
6.1.4	--									
6.1.5	--									
6.1.6	--									
6.1.7	--									
6.1.8	X									
6.1.9	--									
6.1.10	X									
6.1.11	--									
6.1.12	X									
6.1.13	--									
6.1.14	--									
6.1.15	--									
6.1.16	n/a									
6.1.17	--									
MANAGEMENT STRATEGY 6.2										
6.2.1	X									
MANAGEMENT STRATEGY 6.3										
6.3.1	X									
6.3.2	n/a									
6.3.3	n/a									
6.3.4	n/a									
6.3.5	X									
6.3.6	n/a									
6.3.7	n/a									
6.3.8	--									
MANAGEMENT STRATEGY 6.4										
6.4.1	X									
6.4.2	n/a									
6.4.3	X									
6.4.4	X									
6.4.5	Y									
6.4.6	X									
MANAGEMENT STRATEGY 6.5										
6.5.1	--									

PRE-SEASON FORECASTS

ODFW fishery managers will utilize pre-season forecasts to determine if (1) NP CHF populations might reach conservation criteria and (2) to determine the number of NP CHF that can be harvested in the late-season terminal fishery that operates off the mouths of the Chetco and Winchuck rivers. The efficacy of any annual forecast will, by default, be questionable because of substantial uncertainty in (1) the stock size estimates before the onset of any fishing in spring, (2) the forecasted harvest rates of CHF in the ocean fisheries that operate in federally managed waters, and (3) the forecasted harvest rates in the recreational freshwater fisheries. However, management criteria for each population are based on spawner escapements over multiple (2 or 3) years, which helps buffer the uncertainty associated with the pre-season forecasts.

Preseason Forecasts in Relation to Conservation Criteria

Harvest opportunities in the recreational freshwater fisheries will be constrained to some degree if the pre-season forecasts indicate that NP CHF populations will drop into conservation status. As described in the conservation plan, this situation can be expected in 6-23% of the years, depending on the population in question. Based on the pre-season forecasts for 2014, no additional constraints appear warranted for any of the freshwater recreational fisheries except the Winchuck River (Table 6).

Table 6. Forecasted 2014 spawning escapement of age 3-6 NP CHF in relation to conservation status criteria that cover multiple years. For each population, the forecasted number of spawners includes the 2014 forecast and estimated spawner numbers in the previous year or previous two years.

Population(s)	Conservation criterion	Forecasted number of spawners	Conservation shortfall
Rogue Aggregate	20,400 ^{ab}	85,386 ^{ab}	0
Lower Rogue	1,500 ^c	3,457 ^c	0
Chetco	1,440 ^b	3,077 ^b	0
Winchuck	300 ^b	325 ^b	0
Pistol	540 ^c	1,202 ^c	0
Hunter	300 ^c	1,296 ^c	0

^a Criterion covers passage at Huntley Park instead of spawning escapement.

^b Covers 2013 (estimated spawners) and 2014 (forecasted spawners).

^c Covers 2012 and 2013 (estimated spawners) and 2014 (forecasted spawners).

Preseason Forecasts in Relation to Management of the Chetco Terminal Fishery

The conservation plan outlines that harvest opportunities in the late-season, near-shore, Chetco terminal fishery will be based on the number of estimated spawners needed for maximum sustained yield (Smsy) in population areas proximal to the Chetco River (Action 6.3.5 in Management Strategy 6.3 for the Coastal Stratum). ODFW completed an assessment of the efficacy of pre-season forecasting needs associated with this fishery and because the Smsy estimates pertain to *average* conditions, ODFW concluded that harvest opportunities in the Chetco terminal fishery should be based on a three year arithmetic mean. ODFW also concluded that management of the Chetco terminal fishery should only be based on the Chetco and Winchuck populations, because the other populations in the SMU contribute to the fishery at very low rates; as described in the conservation plan.

Harvest opportunities in the late-season, near-shore, Chetco terminal fishery will be constrained to some degree if the pre-season forecasts indicate that NP CHF populations will drop below individual Smsy needs estimated for the Chetco and Winchuck populations of NP CHF. ODFW estimates that this situation can be expected in 40% of the years. Based on spawner numbers in 2012 and 2013, and the pre-season forecast for spawner numbers in 2014, there is an opportunity to harvest NP CHF in the terminal fishery during 2014, although Winchuck escapement is forecasted to fall below Smsy and action should be taken to reduce harvest impacts (Table 7).

Table 7. Forecasted 2014 spawning escapement of age 3-6 NP CHF in relation to Smsy estimates for the Chetco and Winchuck populations. For each population, the forecasted number of spawners includes the 2014 forecast and estimated spawner numbers in 2012 and 2013.

Population	S _{msy}	Forecasted number of spawners	Difference
Chetco	2,740	3,479 ^a	739
Winchuck	560	403 ^a	-157

^a Covers 2012 and 2013 (estimated spawners) and 2014 (forecasted spawners).