# ANNUAL PROGRESS REPORT FOR 2012
# 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 for 2012 represents the first annual report to be completed. As the Rogue Fall Chinook Conservation Plan was not adopted until January 2013 no research or evaluation projects or updated assessments of population attributes, or changes in management actions related to plan adoption occurred during the reporting period. This report summarizes status of the SMU in relation to desired status and conservation status through the 2012 return year, and summarizes 2013 preseason forecasts in relation to conservation status and maximum sustained yield (Chetco, Winchuck).

This document is the first annual report to be completed. A copy of the conservation plan 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 2012, and the results are included in Table 1 and Table 2. Monitoring results that most differed in 2012, as compared to previous years, include significantly reduced escapement in the Pistol, Winchuck and the lower Rogue 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 | 2012 Estimate |
|---|---|---|---|
| **ROGUE AGGREGATE POPULATIONS** | | | |
| Adult Abundance[a] | ≥54,400 | 79,294 | 69,156 |
| Age Structure[b] | ≥10% | 13% | 6% |
| Run Timing[c] | ≥8% | 9% | 7% |
| Run Composition[d] | ≤5% | 5% | 4% |
| **LOWER ROGUE POPULATION** | | | |
| Adult Abundance[e] | ≥3,500 | 10,607 | 3,759 |
| Spawner Composition[f] | ≤10% | 3% | 4% |
| **CHETCO POPULATION** | | | |
| Adult Abundance[e] | ≥3,800 | 3,195 | 4,282 |
| Age Structure[h] | ≥16% | 29% | 29% |
| Spawner Composition[f] | ≤18% | 12% | 11% |
| **WINCHUCK POPULATION** | | | |
| Adult Abundance[e] | ≥1,000 | 919 | 560 |
| Juvenile Abundance[g] | ≥125,000 | 141,613 | 71,433 |
| Spawner Composition[f] | ≤10% | 4% | 6% |
| **PISTOL POPULATION** | | | |
| Adult Abundance[e] | ≥1,300 | 1,487 | 469 |
| Spawner Composition[f] | ≤5% | 2% | 0% |
| **HUNTER POPULATION** | | | |
| Adult Abundance[e] | ≥560 | 463 | 445 |
| 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.

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 | 2012 Estimate |
|---|---|---|---|
| **ROGUE AGGREGATE POPULATIONS** | | | |
| Adult Abundance[a] | <20,400[i] | 71,448 | 69,156 |
| Age Structure[b] | <3% | 5% | 6% |
| Run Composition[c] | <5% | 11% | 7% |
| Run Composition[d] | >10% | 4% | 4% |
| **LOWER ROGUE POPULATION** | | | |
| Adult Abundance[e] | <1,500 | 6,401 | 3,759 |
| Spawner Composition[f] | >15% | 3% | 4% |
| **CHETCO POPULATION** | | | |
| Adult Abundance[e] | <1,440[i] | 3,223 | 4,282 |
| Age Structure[h] | <5% | 21% | 29% |
| Spawner Composition[f] | >20% | 13% | 11% |
| **WINCHUCK POPULATION** | | | |
| Adult Abundance[e] | <300[i] | 399 | 560 |
| Juvenile Abundance[g] | <50,000[j] | 71,433 | 71,433 |
| Spawner Composition[f] | >15% | 4% | 6% |
| **PISTOL POPULATION** | | | |
| Adult Abundance[e] | <540 | 540 | 469 |
| Spawner Composition[f] | >10% | 3% | 0% |
| **HUNTER POPULATION** | | | |
| Adult Abundance[e] | <300 | 509 | 445 |
| Spawner Composition[f] | >10% | 3% | 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.

## 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 2013, no additional constraints appear warranted for any of the freshwater recreational fisheries (Table 3).

Table 3. Forecasted 2013 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 2013 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] | 71,488[ab] | 0 |
| Lower Rogue | 1,500[c] | 6,401[c] | 0 |
| Chetco | 1,440[b] | 3,223[b] | 0 |
| Winchuck | 300[b] | 399[b] | 0 |
| Pistol | 540[c] | 540[c] | 0 |
| Hunter | 300[c] | 509[c] | 0 |

[a] Criterion covers passage at Huntley Park instead of spawning escapement.
[b] Covers 2012 (estimated spawners) and 2013 (forecasted spawners).
[c] Covers 2011 and 2012 (estimated spawners) and 2013 (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 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 2011 and 2012, and the pre-season forecast for spawner numbers in 2013, there is an opportunity to harvest NP CHF in the terminal fishery during 2013 (Table 4).

Table 4. Forecasted 2013 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 2013 forecast and estimated spawner numbers in 2011 and 2012.

| Population | $S_{msy}$ | Forecasted number of spawners | Difference |
|---|---|---|---|
| Chetco | 2,740 | 4,346[a] | 1,606 |
| Winchuck | 560 | 606[a] | 46 |

[a] Covers 2011 and 2012 (estimated spawners) and 2013 (forecasted spawners).