Oregon Coast Coho Conservation Plan
2017 Annual Report

The Oregon Coast Coho Conservation Plan (OCCCP) was adopted by the Oregon Fish and Wildlife Commission in March 2007. The plan serves as the State of Oregon's management plan for the Oregon Coast (OC) Coho Salmon Evolutionarily Significant Unit (ESU). The OC Coho Salmon ESU is comprised of 5 strata (North Coast, Mid-Coast, Mid-South Coast, Lakes, and Umpqua) and 21 independent OC Coho Salmon populations within these 5 strata.

ESU Status Summary

Still recovering from poor ocean conditions that created adverse effects on the OC Coho Salmon prey sources, survival, and fisheries, OC Coho spawner abundance estimates for the ESU decreased from 2016 estimates, resulting in the second lowest wild OC Coho Salmon spawner abundance estimate recorded since 1999. Fishing harvest was less than half of the allowable harvest approved by the Pacific Fishery Management Council (PFMC) under Amendment 13 (A-13).

Overall, overwinter rearing habitat likely continues to limit freshwater productivity. However, focused efforts for watershed scale OC Coho Salmon habitat restoration are being supported by state and federal agencies, tribes, and other non-governmental organizations. These entities are working to develop and implement Coho Salmon-specific strategic actions plans to address limiting factors. Given that freshwater production continues to be limiting, implementation of the OCCCP should continue.

Measurable Criteria

As mandated by the Native Fish Conservation Policy, measureable criteria were developed to evaluate progress towards reaching the desired status goals for each of the independent populations in six criteria categories: (1) abundance, (2) persistence, (3) productivity, (4) distribution, (5) diversity, and (6) habitat. Using data from the Western Oregon Rearing Project and the Oregon Adult Salmonid Inventory & Sampling Project, the results of each criterion's status for 2017 are summarized below. More information on these measurable criteria can be found at the ODFW Recovery Tracker website (http://www.odfwrecoverytracker.org).

Abundance

This criterion is intended to ensure adequate numbers of naturally-produced spawners return from the ocean to guarantee the health of the population and provide, in the majority of years, economic, societal, and ecological benefits. Naturally-produced OC Coho Salmon spawner abundance estimates for the ESU decreased from 75,904 fish in 2016, to 61,377 fish in 2017. This was the second lowest wild OC Coho Salmon spawner abundance estimate recorded since 1999. Though we were in a Medium marine survival category under A-13, the abundance estimate was approximately 8.5% of the ESU abundance goal identified in the OCCCP.

Escapement abundance goals were developed for each of the independent populations to ensure naturally-produced spawners are broadly distributed throughout the ESU. None of the independent populations met their escapement goals in 2017. The North Coast, Mid-Coast and Umpqua strata accounted for approximately 85% of the total ESU abundance. Estimates were approximately half of the prior 26-year average abundance (129,928 wild Coho Salmon), with wild spawner abundance below average in all populations except the Nestucca and Lower Umpqua. The Lakes stratum abundance estimate was the lowest recorded in 58 years of monitoring.

Persistence

This criterion uses the forecast probability of persistence for each independent population based on results from population viability simulation models. A persistence criterion with a probability of 99% or greater significantly increases the likelihood that the ESU will remain viable under extreme marine survival conditions. This metric was last assessed in 2007, and will be re-assessed during the next twelve year review of the Coho Conservation Plan. In 2007, 11 of the 21 independent populations passed the criteria with three populations (the Necanicum, Salmon, and the Sixes) falling below 95% persistence.

Productivity

The criterion for productivity is the annual estimate of naturally-produced recruits per spawner (R/S) in each independent population and the ESU. The number of recruits must be equal or greater than the number of spawners that produced them for a population to avoid further decline during low levels of abundance. The productivity criterion was designed to confirm individual populations are performing in accordance with this expectation.

Although not directly used in the productivity metric, juvenile density and parr abundance information relative to spawners provides some insight into freshwater productivity (note: the R/S productivity metric also includes marine production, as the "recruits" are returning adult spawners). Density and the number of sites fully seeded in the ESU were similar from 2016 to 2017. Abundance estimates for the 2016-2017 partial brood group were similar to those for the 2001-2015 brood groups and highly relative to those for the 1998-2000 brood group. Site occupancy was 80% for 2017. Since 2008, site occupancy in the ESU has met a NOAA Fisheries recovery criterion of ≥80% of sites occupied.

Data suggest the rearing capacity may be slightly higher in the Mid-South Coast relative to the other strata. The 5 highest (and 12 of the 20 highest) parr abundance estimates were in the Mid-South Coast.

Within Population Distribution

This criterion has two metrics. The first uses the percentage of random, spatially-balanced surveys that have greater or equal to four wild adult Coho spawners/mile for each independent population. In 2017, 60% of the 306 sites surveyed in the OC Coho ESU were occupied by adult Coho Salmon. The occupancy rate was slightly higher than the 5-year average in the North Coast

stratum, however, it was lower than the 5-year average for the ESU overall. Due to not being able to meet sampling protocols this year, we were unable to determine occupancy rates for the North Umpqua population or the Lakes stratum.

The second metric for this criterion uses a comparison of the spatial pattern of potential spawning distribution to that observed using spatial statistics for each independent population. Data for this second metric are not currently available.

Diversity

The metric for this criterion is the average of the 100-year harmonic mean of spawner abundance (projected from a population viability model) for each independent population. The threshold value for the metric is a harmonic mean of at least 1,200 naturally-produced adult Coho Salmon spawners. This metric was last assessed in 2007, and will be re-assessed during the next twelve year review of the OCCCP. Although annual spawner abundance estimates are not the same as the 100-year harmonic mean projection for spawner abundances, in 2017, 12 of the 21 independent populations had annual estimates that exceeded 1,200 spawners.

Habitat Condition

This metric is defined as the amount of available high quality habitat across all freshwater life stages in each independent, non-lake population. With the exception of the three lake populations, achieving the desired status goals of the OCCCP will require significant improvement to the quality of freshwater habitat. High quality habitat is defined as habitat that can produce 2,800 smolts/mile. Many different metrics go into the estimation of high quality habitat.

A 5-year roll-up assessment of habitat trends at the strata level was last completed for the NOAA Fisheries Status Review in 2015, additionally, the data was used in NOAA's Endangered Species Act OC Coho Recovery Plan (2016). Even though restoration efforts have been ongoing, there was minimal evidence of an improving trend in stream habitat conditions for the ESU. There was evidence of declines in habitat complexity and increases in fine sediment in several strata. Overall, overwinter rearing habitat likely continues to limit freshwater productivity.

Conservation Project Implementation

In 2017, ODFW continued to implement its commitments identified in the OCCCP. The status of those commitments are discussed below by action, as identified in the OCCCP.

Hatchery Management- This commitment was met and is being maintained. Hatchery releases were significantly curtailed; the last hatchery Coho releases into the North Umpqua occurred in May 2006 and the last hatchery releases into the Salmon River occurred in May 2007.

Harvest Management- This commitment was met and is being maintained. Harvest impact rates to naturally-produced OC Coho Salmon from fisheries continue to be managed through the Pacific Fishery Management Council's Salmon Fishery Management Plan and the

use of A-13 Harvest Management Matrix, found by NOAA Fisheries to be consistent with the recovery of OC Coho Salmon. The Table below shows allowable harvest impacts approved by the PFMC under Amendment 13 and the actual harvest impact calculated post-season from 2013-2017.

Year	A-13 Allowable Harvest Impact	Actual Harvest Impact
2013	30%	15.8%
2014	30%	14.4%
2015	15%	19.9%
2016	20%	8.7%
2017	30%	11.6%

Table 1. Allowable and actual harvest impacts for 2013-2017.

Western Oregon Stream Restoration Program- This commitment is on-going. Budget constraints have led to a continued reduction in ODFW biologists supporting this program. High priority habitat restoration projects that create high quality OC Coho Salmon rearing habitat continue to be developed and implemented by various entities across the ESU, with a reduced level of ODFW technical involvement. Priority is placed on projects with willing landowners in areas that support high quality OC Coho rearing habitat. Technical assistance is being provided to local partners, and new restoration techniques for addressing key limiting factors are continually being explored.

ODFW has two Western Oregon Stream Restoration Program biologists that provide a significant amount of support in coordinating, planning, and implementing OWEB's investments in the strata where these biologists are located (North Coast and Umpqua).

The OWEB Investment Tracking Tool located in Oregon Explorer was used to identify activities funded by OWEB to support conservation and recovery of the OC Coho ESU in 2017.

The Table below summarizes the OWEB's investments by category for each OC Coho Salmon population for actions implemented by organizations such as watershed councils, tribes, Soils and Water Conservation Districts, state, and federal agencies. Occasionally, grants are awarded by strata if actions target more than one population.

Population	Council Support	Outreach	Monitoring	Restoration	Technical Assistance	Total
North Coast	118,425		$10,199			$128,624
Necanicum	$118,425			$15,000		$133,425
Nehalem	$236,850			$763,276	$49,825	$1,049,951
Tillamook	$94,695			$698,494		$793,189
Nestucca	$118,425			$5,000	$156,083	$279,508
Mid-Coast	$118,425		$115,015	$55,924	$99,980	$389,344
Salmon			$26,141			$26,141
Siletz				$732,497		$732,497
Yaquina				$103,371	$42,468	$145,839
Beaver				$234,332		$234,332
Alsea				$4,990	$143,198	$148,188
Siuslaw	$118,425	$8,850	$17,578	$212,657	$49,964	$407,474
Lakes						-
Siltcoos						-
Tahkenitch						-
Tenmile	$118,425		$36,437	$146,567		$301,429
Umpqua			$276,832			$276,832
Lower Umpqua	$118,425			$196,514	$49,975	$364,914
Middle Umpqua	$118,425			$238,353		$356,778
North Umpqua				$161,384		$161,384
South Umpqua				$36,853		$36,853
Mid-South Coast						-
Coos	$118,425		$56,052	$394,614	$49,354	$618,445
Coquille	$118,425			$223,823	$39,688	$381,936
Floras				$21,941		$21,941
Sixes						-
Totals	$1,515,795	$8,850	$538,254	$4,245,590	$680,535	$6,989,024

Table 2. OWEB funded activities by population and activity type in 2017.

Habitat Protection- This commitment is on-going. The Oregon Plan for Salmon and Watersheds has fostered significant investments in habitat restoration and protection. Steady increases in instream habitat restoration structures have been documented by ODFW habitat monitoring. More time is likely needed for these and on-going restoration projects to become detectable in habitat trends at the ESU and strata scale of monitoring.

ODFW staff continue to work collaboratively with multiple agencies on habitat related actions. In 2017, the Southern Flow Corridor project in Tillamook was completed after almost 20 years in the making. With multiple federal, state, and nonprofit contributors, the Southern Flow Corridor project combined flood mitigation and habitat restoration culminating in over 500 acres of restored tidal wetlands and 14 miles of historical tributaries reopened. This project has the potential to produce a large increase in the productive capacity of the coho population during good ocean conditions.

Additionally, ODFW has staff committed to the Coho Business Plan partnership with the Oregon Watershed Enhancement Board (OWEB), NOAA Restoration Center, Wild Salmon Center, and the National Fish and Wildlife Foundation on a Business Plan approach for the conservation of Oregon's coast Coho Salmon. The intent of the Coho Business Plan is to achieve the following:

1) Promote conservation and recovery of coast Coho in Oregon, and describe the essential role of voluntary habitat protection and restoration efforts.

2) Identify the highest priority projects required at the population (watershed) scale to advance regional recovery goals.

3) Aggregate the cumulative costs and anticipated benefits of these projects, and coordinate funding to support locally-led implementation.

Projects included in the Coho Business Plan are generated through a scientifically-based planning process that local communities use to develop a Strategic Action Plan (SAP) for a given Coho Salmon population. As the number of projects contained in the Business Plan increase, the Partnership will work with state, federal, and private partners to direct funding into locally-led project implementation. Additionally, OWEB developed the Focused Investment Partnership grant program, which can focus significant funding toward implementing SAP projects if grants are successfully obtained.

Promote Beaver Dams and Associated Habitat- This commitment is on-going. ODFW continues to promote beaver dams in OC Coho rearing habitats that support the objectives of the OCCCP. In December 2017, ODFW hosted a Beaver Work Group meeting that was attended by multiple state, federal and non-profit organizations. Updates on recent publications and multiple agency activities were shared. No new recommendations for beaver management were discussed.

Research, Monitoring and Evaluation Program- This commitment is on-going. ODFW continues to maintain a rigorous monitoring program for OC Coho through extensive spawning, habitat, and juvenile surveys, as well as life cycle monitoring in select basins.

The Mill Creek-Siletz large wood placement research and monitoring project began in 2014. The goal of this project is to identify the relationship between fine-scale geomorphic responses to large wood addition and reach-scale habitat conditions, then link these changes to fish survival and production at the basin scale. Effectiveness monitoring is being conducted annually for 6 years.

The Avian Predation Program is currently monitoring cormorant abundance and suspected impacts on salmonids across the Oregon Coast.

Oregon Plan Outreach Program- This commitment is on-going. ODFW has designated staff to coordinate with key partners on actions to address the objectives in the OCCCP.