

Oregon Coast Coho Conservation Plan

2015 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), within these 5 strata, are 21 independent OC coho salmon populations.

ESU Status Summary

In 2015, the forecast was for 206,600 fish, however, the OC coho ESU had approximately 57,106 naturally-produced spawners following ocean and in-basin harvest impacts, which was approximately 15% of the abundance goal identified in the OCCCP. Abnormally warm ocean conditions persisting since 2014 contributed to a significant decrease in OC coho ESU abundance, resulting in the lowest level recorded since 1999. All five strata were substantially below the prior 25 year average abundance. Wild OC coho spawner abundance decreased between 2014 and 2015, from the highest to the eighth lowest observed during 26 years of monitoring.

During the 2010-2014 fisheries, the allowable rate was consistent across all strata in the ESU. Due to a wider variation in parental returns to the individual basins in 2015, different allowable rates were assigned to each stratum and (consistent with Amendment-13), exploitation rates were based on the most constrained OC coho stratum, which was the North strata. Therefore, a wild OC coho salmon fishery was not implemented in the Nehalem River basin. Terminal (estuary/freshwater) wild coho salmon fisheries were implemented in twelve systems under the Coastal Rivers Fishery Management and Evaluation Plan approved by NOAA Fisheries in 2009.

Western Oregon Rearing Project (WORP) monitoring of parr abundance in pools and the Oregon Adult Salmonid Inventory & Sampling (OASIS) monitoring of abundance of female spawners that produced them suggests productivity is limited when spawner abundance exceeds 80,000 females. This implies there are limitations to parr production in freshwater habitats.

All data reviewed suggested that the strategies in the OCCCP should continue to be implemented without revision. However, budget constraints have led to a significant reduction in ODFW staff to support priority habitat restoration planning and implementation actions to address key limiting factors. Therefore, high priority habitat restoration projects that create high quality OC coho salmon rearing habitat continue to be developed and implemented at a highly reduced scale across the ESU.

Data Reviewed

Coho Adult Monitoring

Wild coho salmon spawner abundance estimates in the OC coho ESU decreased substantially from 359,624 (the highest level recorded) in 2014, to 57,106 in 2015, (the lowest level recorded since 1999). This abundance estimate represents 27.6% of the Pacific Fishery Management Council (PFMC) pre-harvest abundance estimate of 206,600 fish. There were no new record lows or highs observed in wild OC coho salmon abundance for any of the 21 independent populations, and the distribution of spawners between populations in each of these two years was comparable.

Five populations were the minimum number needed to reach 50% of the ESU total abundance, and the top five populations accounted for 52% of the total ESU abundance. Those top five populations were in three of the five strata: Mid-Coast, Umpqua, and Mid-South Coast. This is very similar to the prior five year average (2011 through 2015) where the top five abundance populations accounted 53% of the OC coho salmon ESU wild abundance. The Siuslaw population had the highest observed abundance at 10,352 wild adult spawners, accounting for 19% of the ESU total. In 2014, the Coquille had the highest abundance at 12% of the ESU total abundance.

Coho Juvenile Monitoring

The WORP monitoring program calculates fish density estimates using snorkel surveys to get visual estimates, then dividing the number of fish by the surface area of the pool they are located in. OC coho salmon density estimates for the ESU were higher in 2015 than in 2014, and similar to the 1998-2014 average for the ESU. Abundance estimates in 2015 were similar to 2004-2014, and higher than those in 1998-2003. The site occupancy rate from 2015 was lower than in 2014; however, it appeared to be increasing for the ESU since the start of our monitoring in 1998. The average occupancy rate from 2010-2015 has been similar to the average from 2004-2009 and higher than the average from 1998-2003.

Habitat

Trends in habitat conditions vary across individual metrics and by strata (some increases, some declines, and a significant amount of no trend). Overall, overwinter rearing habitat continues to limit freshwater capacity. Wood volume is lower and fine sediment is higher, respectively, than reference conditions. The Oregon Plan for Salmon and Watersheds has fostered significant investments in habitat restoration. Increases in instream habitat restoration structures have been documented by ODFW habitat monitoring, more time may be needed for restoration actions to become detectable in habitat trends at the larger scale of monitoring.

Coho Harvest Impact

OC coho salmon harvest is managed by the Pacific Fishery Management Council (PFMC) following direction under Amendment -13 (A-13) to their Fishery Management and Evaluation Plan. A-13 uses a conservative harvest matrix found by NOAA Fisheries to be consistent with the recovery of OC coho salmon. Preliminary estimated spawning escapement data for the ESU from OASIS, following ocean and in-basin harvest impacts, was 57,106 fish for 2015. Following the A-13 approach, exploitation rates were set based on the most constrained naturally produced stratum in the ESU, which was the North Coast stratum.

Allocations were set for 11.4% exploitation for marine fisheries and 3.5% for freshwater fisheries, for a total of 14.9% out of a 15% limit. Strata-specific exploitation rates were applied which increased the allowed exploitation rate on the Mid-Coast and South Coast rivers to 20% and 30%, respectively. The post-season estimate of combined exploitation rate on the North Coast stratum exceeded the 15% PFMC limit rate at 17%. The Mid-Coast stratum total exploitation rate of 20% was exceeded with 21.4%. The exploitation rate for the South Coast stratum was within the limitations at 18.7% out of 30% allowed.

Coho Natural Fish Survival Rates

As part of the Oregon Plan for Salmon and Watersheds, the Salmonid Life Cycle Monitoring (LCM) project monitors migration and survival of salmonids in western Oregon streams. The LCM project estimates natural fish survival rates for OC coho using abundance estimates of spawning adult and out-migrant juvenile OC coho that passed through seven ODFW LCM sites. The OASIS program conducts naturally spawning coho salmon surveys annually across the ESU, this provides a more expansive dataset for estimating natural fish survival rates.

Table 1 lists marine survival (MS) before and after harvest impacts by spawner return year since 1999. The calculation is an average of the marine survival rate at all of the LCM sites for OC coho spawners back to the river, including harvest impacts (column 2). Column 3 lists MS adjusted to include pre-harvest survival. MS for 2015 was significantly lower than recent return years. This is attributed to unusually warm ocean temperatures referred to as “the blob” that started in 2014 and encompassed a large portion of the Pacific West Coast and combined with a strong El Nino pattern in 2015. This increase in ocean temperature had adverse effects on the OC Coho salmon food web and survival.

| Return Year | All LCM Sites MS + Harvest Impacts | All LCM Sites MS - Harvest Impacts |
|-------------|---------------------------------------|---------------------------------------|
| 1999 | 1.5% | 1.6% |
| 2000 | 3.8% | 4.0% |
| 2001 | 9.0% | 9.4% |
| 2002 | 8.5% | 8.9% |
| 2003 | 10.0% | 10.9% |
| 2004 | 5.5% | 6.0% |
| 2005 | 5.0% | 5.2% |
| 2006 | 2.5% | 2.7% |
| 2007 | 2.3% | 2.6% |
| 2008 | 6.3% | 6.4% |
| 2009 | 9.6% | 10.2% |
| 2010 | 8.3% | 8.6% |
| 2011 | 10.9% | 11.6% |
| 2012 | 5.9% | 7.2% |
| 2013 | 4.6% | 5.4% |
| 2014 | 14.1% | 16.4% |
| 2015 | 2.0% | 2.5% |

Table 1. MS before and after harvest impacts by spawner return year.

Conservation Project Implementation

In 2015, 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 implemented and is on-going. The last hatchery coho releases into the North Umpqua occurred in May, 2006. The last hatchery releases into the Salmon River occurred in May, 2007.

Harvest Management- This commitment was implemented and is on-going. Harvest impact rates to naturally-produced OC coho salmon from fisheries continues to be managed through the PFMC’s Salmon Fishery Management Plan and the use of Amendment 13 Harvest Management Matrix, found by NOAA Fisheries to be consistent with the recovery of OC coho salmon.

Western Oregon Stream Restoration Program- This commitment was implemented and is on-going. However, budget constraints have led to a significant reduction in ODFW staff to support this program. High priority habitat restoration projects that create high quality OC coho salmon rearing habitat continue to be developed and implemented at a reduced scale across the ESU. Priority is placed on projects with willing landowners in areas that support high quality OC

coho salmon rearing habitat. Technical assistance is being provided to local partners; and new restoration techniques for addressing key limiting factors are continually being explored.

Habitat Protection- This commitment was implemented and is on-going. ODFW continues to work collaboratively with state and federal agencies on a multitude of habitat related actions. In 2015, ODFW staff in partnership with the Oregon Watershed Enhancement Board (OWEB), National Marine Fisheries Service, Wild Salmon Center, and the National Fish and Wildlife Foundation started a “Business Plan” for the conservation of Oregon’s coast coho. The intent of the 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 Business Plan are generated through a scientific planning process local communities use to develop a Strategic Action Plan (SAP) for a local coho population. OWEB funded the development of this framework and its application to SAPs developed in three pilot watersheds (the Nehalem, Siuslaw, and Elk Rivers).

The Partnership will select up to three additional coho populations for developing SAPs after these first three are drafted. Selections are based on Letters of Interest submitted by local partner organizations working on the coast. Participation in the program is entirely voluntary. 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.

Promote Beaver Dams and Associated Habitat- This commitment was implemented and is on-going. ODFW continues to coordinate a Beaver Workgroup with a variety of participants that work collectively to improve understanding of beaver ecology, and promote beaver dams in OC Coho rearing habitats that support the objectives of the OCCCCP.

Research, Monitoring and Evaluation Program- This commitment was implemented and is on-going. ODFW continues to conduct research, monitoring, and evaluation related to the OCCCCP. The Mill Creek-Siletz large wood placement research and monitoring project was implemented 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.

Oregon Plan Outreach Program- This commitment was implemented and is on-going. ODFW has designated staff to coordinate media information with key partners on actions and projects to address the objectives in the Oregon Plan and the OCCCCP.

The Oregon Coast Coho Conservation Plan established six measurable criteria for the assessment of conservation status of the 21 independent populations in the OC coho salmon ESU. More information on the analyses of the measurable viability criteria identified in the OC coho salmon conservation and recovery plans can be found at the ODFW Recovery Tracker on the link provided here. <http://www.odfwrecoverytracker.org/>

Recommendations Regarding the ESU

ODFW Recommendation 1) Continue implementation of all agency actions.

ODFW Recommendation 2) Identify and secure alternative funding for the Western Oregon Stream Restoration Program. On-going implementation of this commitment will require a sustainable budget to maintain the level of coordination, technical assistance, and habitat restoration needed to address the primary limiting factors for the OC coho salmon ESU.

The OWEB Tracking Tool was used to identify activities that OWEB funded in 2015, to support conservation and recovery of the OC coho salmon ESU. Table 2 below summarizes the OWEB's investments by category for each OC coho salmon population.

| Population | Council Support | Education | Monitoring | Restoration | Technical Assistance | Total |
|------------------------|-----------------|-----------|------------|--------------|----------------------|--------------|
| North Coast | | | | | \$10,000 | \$ 10,000 |
| Necanicum | \$110,275 | | | \$ 2,500 | | \$ 112,775 |
| Nehalem | \$220,550 | | | \$ 451,073 | \$18,294 | \$ 689,917 |
| Tillamook | \$110,275 | | | \$ 561,611 | \$45,920 | \$ 717,806 |
| Nestucca | \$110,275 | | | \$ 5,000 | | \$ 115,275 |
| Mid-Coast | \$123,508 | | \$ 125,399 | | \$10,000 | \$ 258,907 |
| Salmon | | \$34,000 | \$ 31,572 | \$ 12,457 | \$87,600 | \$ 165,629 |
| Siletz | | | \$125,831 | | \$49,985 | \$ 175,816 |
| Yaquina | | | | \$ 11,168 | | \$ 11,168 |
| Beaver | | | | | | - |
| Alsea | | | | \$ 10,686 | | \$ 10,686 |
| Siuslaw | \$110,275 | \$ 50,757 | | | | \$ 161,032 |
| Lakes | | | | | \$10,000 | \$ 10,000 |
| Siltcoos | | | | | | - |
| Tahkenitch | | | | \$ 258,675 | | \$ 258,675 |
| Tenmile | \$110,275 | | | \$ 5,000 | \$18,424 | \$ 133,699 |
| Umpqua | | | | | \$10,000 | \$ 10,000 |
| Lower Umpqua | \$88,275 | | | \$ 128,441 | \$88,154 | \$ 304,870 |
| Middle Umpqua | \$88,275 | | \$204,789 | \$ 28,711 | | \$ 321,775 |
| North Umpqua | | | | | | - |
| South Umpqua | \$116,892 | \$11,196 | | \$ 37,813 | \$ 49,938 | \$ 215,839 |
| Mid-South Coast | | | | | \$10,000 | \$ 10,000 |
| Coos | \$110,275 | \$ 37,002 | \$ 85,682 | \$ 1,266,815 | \$ 187,986 | \$ 1,687,760 |
| Coquille | \$110,275 | | | \$ 48,148 | | \$ 158,423 |
| Floras | | | | \$ 12,500 | | \$ 12,500 |
| Sixes | | | | | | - |

Table 2. OWEB Oregon Coast Coho ESU 2015 Investments