

Coastal Multi-Species Conservation and Management Plan

2014-2019 Implementation Report



Photo by ODFW

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Introduction

The *Coastal Multi-Species Conservation and Management Plan* (CMP) was developed to ensure the continued viability and conservation of Chinook salmon, spring Chinook salmon, chum salmon, winter and summer steelhead trout, and cutthroat trout Species Management Units (SMUs) along the Oregon Coast from Elk River to the Necanicum River, and to achieve a desired status that provides substantial ecological and societal benefits. The plan also provides a framework for how hatchery salmon and steelhead and fisheries are to be managed. The CMP is consistent with requirements for conservation plans described in the Oregon Native Fish Conservation Policy (OAR 635-007-0502 to 0509) and was adopted by the Oregon Fish and Wildlife Commission in June 2014. To track progress toward plan goals, the CMP calls for annual reports of monitoring information through *Hatchery Program Summaries* and *Wild Fish Monitoring Summaries*, as well as annual updates on plan implementation. This report summarizes CMP implementation and SMU metrics from 2014 through 2019.

Desired status for the six SMUs covered by the CMP is to have all populations viable and productive so they can provide greater ecological and fisheries benefits than are currently being provided. A variety of management actions were identified in the CMP to assist in achieving these management goals. These actions included changes to hatchery programs, modifications of wild fish harvest locations and angling regulations, implementation of strategies to protect and restore habitat, research to address critical uncertainties for management, and a monitoring strategy to track metrics associated with desired status goals. Some actions were immediately implemented and are ongoing, while others are dependent on additional funding resources to implement. Below we summarize the status of SMUs and implementation progress over the five years since plan adoption.

Progress Toward Desired Status

Since the adoption of the CMP in 2014, coastal salmon and steelhead have experienced an extreme drought event (2015), declines in ocean productivity, and anomalous warm ocean temperatures (e.g., the [Blob](#)). These conditions have generally resulted in declines in abundances of coastal salmon and steelhead stocks from recent highs in 2014 and 2015. Coastal hatchery returns have also been adversely affected (see *Hatchery Program Summaries*). This is similar to observations in many other salmon and steelhead stocks throughout Oregon and the Northwest. Coastal salmon and steelhead populations are cyclical, as evident in historical trends. ODFW expects these populations, and hatchery returns, to rebound under more favorable ocean conditions, as they have in the past. However, actions to reduce and buffer risk to wild fish in periods of low abundance are important for ensuring continued population viability and long-term fishery sustainability. Summaries of each SMU are provided below, and additional details are available in the report's *Wild Fish Monitoring Summaries*.

Oregon Coastal Chinook Salmon

Due to generally poor ocean conditions, monitoring has indicated substantial declines in returns of Oregon Coastal Chinook Salmon, particularly in 2018 and 2019, where low abundances also coincided with low flows. Declines have been most pronounced in the Coquille and Siuslaw basins,

where abundances in 2019 were the lowest on record from 1986-2018. Forecasts for 2020 predict a modest increase in abundance over 2019, but ODFW has enacted conservative angling regulations (see Fishing/Harvest Actions below) to protect wild fish during this period of low abundance. Spring-run components of coastal Chinook populations have tended to mirror trends in the predominant later-returning components of the Tillamook, Nestucca, Siletz and Alsea populations.

Oregon Coastal Spring Chinook Salmon

Adult returns have declined in recent years for both independent populations in the Coastal Spring Chinook SMU (North Umpqua and South Umpqua). The North Umpqua population fell below critical abundance for the first time in 2018. The abundance estimate for 2019 is pending availability of harvest data but is likely at or above critical abundance. Abundance has declined more substantially in the South Umpqua, with as few as 24 estimated adult spawners in 2018. ODFW is concerned about recent abundance in the South Umpqua and will enact a mark-selective fishery for 2020 to protect wild South Umpqua spring Chinook as they transit the mainstem Umpqua River. The percentage of hatchery fish on the spawning grounds (pHOS) in the North Umpqua population is also a concern, though the available data suggest some spatial segregation of hatchery and wild fish, and the spawning ground destination(s) of hatchery fish requires clarification. ODFW is investigating options for assessing this metric more accurately and will implement additional actions to reduce pHOS, as needed.

Oregon Coastal Winter Steelhead

Stratum-level abundances of winter steelhead indicate trajectories similar to other SMUs. The North Coast stratum fell below critical abundance in 2018 and 2019, and the Mid-South Coast fell below critical abundance in 2017 and 2019. Abundances have been more variable in the Mid Coast stratum, while annual abundance estimates in the Umpqua Stratum and North Umpqua population have generally remained closer to or above desired abundances. Abundance trends in the North Coast and Mid-South Coast strata warrant continued close attention. Stratum and population scale pHOS estimates have been highly variable, but warrant additional scrutiny in several cases where long-term averages are above plan limits.

Oregon Coastal Summer Steelhead

There are two native populations of Oregon Coastal Summer Steelhead, one in the Siletz River and the other in the North Umpqua River. In the Siletz population, passage at Siletz Falls has remained relatively strong, falling below desired abundance but remaining above critical abundance in all years since CMP adoption. Similarly, counts of wild summer steelhead at Winchester dam declined from near desired abundance in 2013 but have remained relatively stable and above critical abundance since 2014. In the North Umpqua population, pHOS estimates higher than the CMP target are a concern, but the available data suggests significant spatial segregation between hatchery and wild spawners.

Oregon Coastal Chum Salmon

The CMP does not include specific abundance thresholds for Oregon Coastal Chum Salmon, but abundance of spawners is indexed at a series of standard survey sites. Peak densities on standard surveys have tended to increase through time, with recent declines less pronounced than observed in

many other salmon and steelhead SMUs. Low flows during chum returns in 2019 may have contributed to spatial variability, with some sites trending lower and others higher than expected based on previous performance.

Oregon Coastal Cutthroat Trout

As with chum salmon, the CMP does not include specific abundance targets for coastal cutthroat trout. However, abundance of coastal cutthroat trout is indexed and tracked through resting hole counts in the North Coast (Wilson, Trask and Nestucca rivers) and at Winchester Dam on the North Umpqua. Since CMP adoption in 2014, abundance in resting hole counts has been slightly lower than the previous 5-year average in the Wilson and Nestucca Rivers, but near-average in the Trask. Still, recent counts in these rivers are above long-term averages and higher than previous lows in the long-term records. Counts at Winchester Dam declined in 2014 and 2015 but have been increasing through 2019.

Management Actions

The highest priority conservation goals in the CMP were to address limiting factors for the two populations found to be non-viable (Elk fall-run Chinook and South Umpqua spring Chinook), and to improve the status of the chum salmon SMU to a greater level of viability. *Pilot Implementation Programs* proposed to achieve these goals are in various planning and implementation stages. At Elk River, ODFW has implemented a variety of actions to reduce the number of hatchery Chinook salmon on the spawning grounds (see details below in the **Hatchery Fish Actions** section). In addition, a [Strategic Action Plan](#) to guide habitat restoration and protection in the Elk River watershed was completed by the Elk River Coho Partnership. For South Umpqua spring Chinook, a working group with representatives from multiple agencies, the Cow Creek Band of Umpqua Tribe of Indians, and Wild Salmon Center was formed in 2018 to identify and prioritize actions to address limiting factors for this population. For chum salmon, monitoring of adult spawner abundance in several populations is ongoing and research into critical uncertainties began in 2019. Additional details about the *Pilot Implementation Programs* can be found in the relevant sections below.

The CMP categorized management actions into four categories (**Hatchery Fish Actions**, **Fishing/Harvest Actions**, **Predation Actions**, and **Habitat Actions**). Following is a list of actions that have been completed or are on-going in those categories, as well as updates on **Research and Monitoring**, **Critical Uncertainties**, and **Evaluation and Adaptive Management** since plan adoption.

Hatchery Fish Actions

The CMP identified a set of management actions to reduce the risk from hatchery programs to wild fish populations, while maintaining or improving the harvest opportunities that hatchery fish provide. The plan utilizes a “*portfolio*” approach where risk and fishing opportunities vary in different areas. Hatchery fish actions identified in the plan included changes in release strategies and locations, as well as a variety of research, monitoring and adaptive management actions to reduce risk from hatchery fish. Hatchery program information can be found in the *Hatchery Program Summaries*.

Implementation Highlights:

General Hatchery Fish Actions

- The CMP identified changes in smolt or pre-smolt releases for 19 existing hatchery programs ([Table 13](#)). Releases were increased for 11 programs, decreased for three programs, and discontinued for five programs. All of these changes have been implemented. Two new hatchery spring-run Chinook programs have not been initiated due to a lack of funding.
- Smolt or pre-smolt releases remained the same for 17 existing programs. Releases have been consistent with the program targets identified in the CMP since plan adoption.
- Unfed fry releases in the North Coast Stratum were discontinued, as called for in the CMP.
- For all programs, the percentage of released fish marked with an adipose fin clip is now very close to 100% (see *Hatchery Program Summaries*).

Hatchery Fall-run Chinook Actions

- At Elk River, several actions have been implemented to decrease pHOS and improve the viability of wild fall-run Chinook salmon. Specific actions include:
 - Reducing the hatchery release from 325,000 to 275,000 smolts.
 - Modifying the hatchery ladder to improve attraction, and trapping fish at the hatchery throughout the run.
 - Holding Chinook salmon juveniles as a natural attractant.
 - Conducting research with the Oregon Hatchery Research Center (OHRC) on movement patterns of adult Chinook within the basin using radio telemetry.
 - Initiating research with OHRC on olfactory imprinting using naturally-occurring chemical attractants to reduce straying by hatchery fish.
 - Attempting to remove hatchery fish at a seasonal trap in Anvil Creek (this strategy was not practical).

Since CMP adoption, pHOS has declined substantially in Elk River:

- 10-yr average pre-CMP = 53%
- 5-yr average post-CMP = 22%



Elk River, ODFW

- At Salmon River, modifications of the hatchery weir and changes in protocols for fish captured at the hatchery have been made to reduce the number of hatchery fish spawning in the basin. Continued monitoring will help determine the effectiveness of these actions to reduce pHOS.



Salmon River Weir, ODFW

Hatchery Spring-Run & Spring Chinook Actions

- A direct release of 30,000 spring-run Chinook smolts was established in the Little Nestucca River. The first cohort of 4-year-old fish returned in 2019, and differential marking of smolts will allow for an assessment of returns.
- The Rock Creek Hatchery Dam trap was completed, and is being used to remove hatchery-origin spring Chinook from Rock Creek in the North Umpqua as time and resources allow.

Hatchery Winter Steelhead Actions

- In the Necanicum River, a study is underway to evaluate releases in the mainstem versus a tributary site. Differential marking of smolts began in the 2016 brood year, and a trap was established in the release tributary. The first returns from the tributary release occurred in 2019, and monitoring to evaluate harvest and pHOS will be conducted for several years.
- In the Tenmile Lake/Creek management area, hatchery winter steelhead are now being removed at Eel Lake Dam, with a limited number of fish being recycled through the winter steelhead fishery.

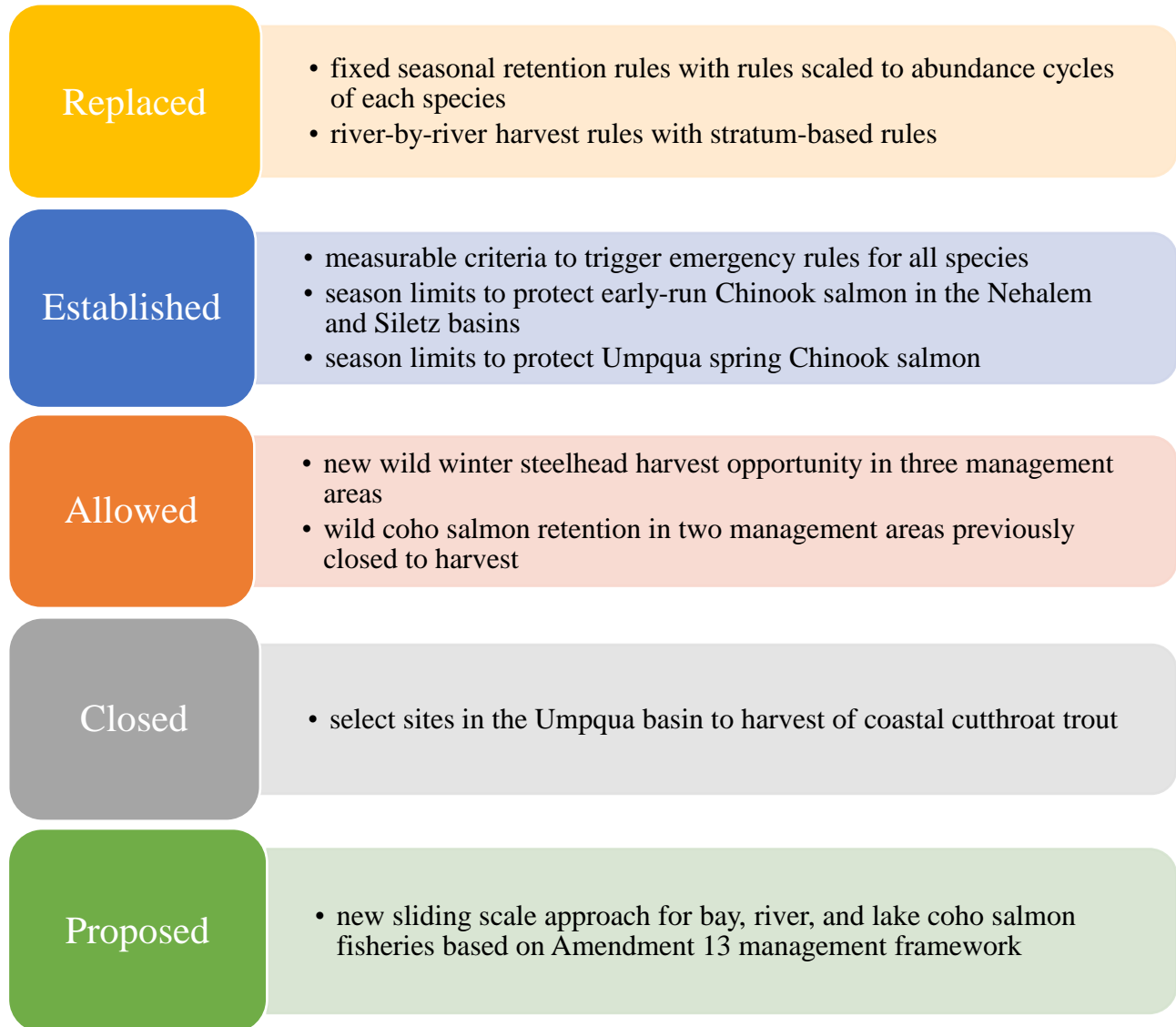
The intent of pHOS targets is for all hatchery programs to be managed such that they do not impact the viability of wild populations.



Steelhead, ODFW

Fishing/Harvest Actions

To meet desired status and fishing opportunity objectives, the CMP applies the “*portfolio*” approach to assign and allow different fishing risks to wild fish in different areas and times. Fishing/harvest management actions for each SMU were identified in the CMP. Management actions revised harvest rules in the following ways:



Implementation Highlights:

- The CMP identified changes in Management Areas where wild fish may be harvested ([Table 17](#)). Regulation changes for winter steelhead and cutthroat trout have been implemented. Changes in wild harvest locations for coho salmon have not been applied since 2015 due to lower returns and reduced terminal fisheries. Harvest management of wild coho salmon in coastal rivers is guided by a Fishery Management and Evaluation Plan (FMEP) with specific criteria that must be met to implement terminal fisheries.

- Retention periods for wild fish presented in [Table 18](#) have been implemented. See the Adaptive Management section for information on conservation modifications.
- The CMP identified changes in angling regulations proposed by staff and the public that were consistent with the CMP management direction ([Table 19](#)). All of these regulations were implemented in 2015.
- Harvest regulations in the CMP that are protective of spring- and summer-run Chinook where they exist in coastal Chinook populations were implemented. This includes Protected Periods that either (1) include conservative bag limits for wild Chinook in locations with stable and relatively abundant spring-run or summer-run Chinook life history variants (i.e., Nehalem, Siletz) or (2) prohibit retention of wild Chinook where these early returning fish are less abundant and stable.
- A sliding scale for wild fall Chinook salmon harvest was developed ([click here for methods](#)) and implemented for the first time in 2019. Prior to this, “average” limits were in place that were generally consistent with the sliding scale had it been implemented in those years. Following guidelines in the CMP, daily and annual harvest limits are determined annually for each of four coastal strata (North Coast, Mid-Coast, Umpqua, and Mid-South Coast) based on the predicted return and observed escapement the previous year. Additionally, conservation closures for individual populations may also be triggered when the previous year’s escapement estimate and the forecast fall below an established critical abundance threshold. Implementation of the sliding scale in 2019 resulted in reduced bag limits in the North Coast, Mid-Coast, and Mid-South Coast strata.
- A sliding scale for wild spring Chinook salmon in the Umpqua basin based on observed and forecast returns to the North Umpqua population is currently under development.

The *portfolio* approach accomplishes a balance of wild fish protection, wild fish harvest opportunity, and hatchery fish harvest opportunity within each stratum and across the coastal region. It is intended to provide consistent returns into the future by allowing different hatchery and fishing risks to wild fish in different areas.

Predation Actions

The CMP identified numerous pinniped, avian, and non-native fish predation actions that address limiting factors and support management strategies to quantify impacts of predation on the wild and hatchery SMUs ([Table 20](#)). In addition to prohibiting introduction of non-native fish into flowing waters, the plan calls for developing and supporting programs to reduce predation and decrease illegal introductions of non-native species.

Implementation Highlights:

- The Avian Predation Program is currently monitoring cormorant abundance and suspected salmon and trout impacts across the Oregon Coast. A diet study conducted in partnership with Oregon State University found that cormorants consumed 5% or less of available outmigrants during most years, and predation rates on coho salmon ranged up to 22% during a few years on Tillamook and Winchester bays. Available evidence is unclear on whether cormorant predation is additive or compensatory across the salmonid life-cycle, thus the effect of cormorant predation on adult returns is uncertain. ODFW is currently working with research partners to help clarify the influence of avian predation on adult returns in the Columbia River basin, which will help inform our understanding of cormorant impacts for the Oregon Coast.
- Double-crested cormorant numbers have declined approximately 20% along the Oregon Coast since CMP implementation. The decline is likely associated with increasing bald eagle abundance and possibly effects related to management in the Columbia River estuary.
- Avian hazing efforts are occurring in the Nehalem, Nestucca, Alsea, Siuslaw, and Coquille river estuaries, and Tillamook Bay. Hazing is planned to start in the upper Coos Bay in 2021.
- Actions identified to address pinniped predation have not been implemented due to a lack of funding.
- Public education about the impacts of non-native introduced fish species is ongoing.
- Bag limits on smallmouth bass were removed in the Umpqua and Coquille basins, and bag limits on striped bass were removed coast-wide, consistent with statewide policy concerning the management of bass and other non-native sport fishes in locations where they pose a risk to native species.

Habitat Actions

The CMP identified the following seven Management Strategies to support and guide habitat actions.

- 1) Work with habitat restoration implementers to complete or update watershed assessments (as necessary), prioritize watersheds for restoration, and implement watershed-scale restoration work to restore natural processes.
- 2) Work with habitat restoration implementers to increase restoration activities in lower mainstem rivers and estuaries.
- 3) Protect all habitat areas where chum salmon are currently known to spawn, and prioritize habitat rehabilitation and barrier work that expands the habitat base for chum.

- 4) Actively pursue and promote habitat protection and restoration necessary to achieve the goals and management strategies for aquatic resources within the CMP area by means of tactics identified in [Table 21](#).
- 5) Coordinate with and advise other agencies, tribes, landowners, water users, watershed councils, and others to implement habitat protection and restoration activities, with emphasis on habitat protection and a focus on priority projects (as opposed to non-priority and opportunist projects).
- 6) Consistent with the Habitat Mitigation Policy (OAR 635-415-0000) and natural ecosystem processes, work to prevent or reduce potential losses of fish production from land and water use actions and habitat alteration to the extent possible, encourage utilization of Best Management Practices for habitat protection when conducting land and water use projects, and promote greater coordination among government partners to facilitate protective measures against emerging threats such as placer mining, climate change, and invasive species.
- 7) Consider and demonstrate preference for alternatives which address both natural hazard damage mitigation and restoration of natural disturbance regimes and habitat function when implementing and making recommendations about natural hazard mitigation actions that address hazards such as flooding or fire.

ODFW continues to coordinate with habitat restoration implementers and agency partners to actively pursue, promote, and implement these habitat protection and restoration strategies and their associated tactics necessary to achieve the desired status goals for the SMUs. Habitat protection is a very high priority because it is easier to maintain existing high quality habitat than it is to create it. ODFW works with other entities to protect habitat in multiple ways (e.g. comments and recommendations to agencies with regulatory authority on natural hazard damage mitigation, and land use and development activities; coordination on land acquisition or easements; instream flow protection). Aquatic protection and restoration actions provide benefits to multiple species.

Implementation Highlights:

- With collaboration of many state, federal, and local partners over many years, the Southern Flow Corridor project combined flood mitigation with habitat restoration by restoring over 500 acres of tidal wetland and reconnecting 14 miles of historical lower river tributaries that will provide significant over-winter rearing habitat for juvenile salmonids in the Tillamook basin.
- The Winter Lake Restoration project was completed on working lands with the collaboration of multiple state, federal, and local partners. By reconnecting nearly 8 miles of tidal channels, restoring 408 acres of tidal wetlands, and installing 7 new tide gates that improve water control on 1,700 acres of land, the project allows cattle to graze in the summer for

several additional weeks and greatly improves conditions for winter rearing juvenile salmonids in the Coquille basin.

- ODFW Fish Passage and research staff are collaborating to develop a tide gate prioritization tool to identify locations where improved fish passage is likely to have the greatest benefit for salmonids and other native fish.
- 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 to develop scientifically-based strategic action plans (SAPs) with local partners for the conservation and recovery of Oregon's coast coho salmon. Along the Oregon coast, coho salmon management is guided by the [*Oregon Coast Coho Conservation Plan*](#) adopted in 2007, and is consistent with the Pacific Fishery Management Council's Amendment 13 to their Salmon Fishery Management Plan. While projects identified in the SAPs address primary limiting factors for coho salmon conservation and recovery, the projects also provide benefits to the SMUs covered in the CMP. SAPs have been completed for the Elk River and the Siuslaw River coho salmon populations, and are under development for the Siletz River, Nehalem River, Coos River, and Upper Rogue River coho salmon populations.



Juvenile Coho Salmon, ODFW

- ODFW has worked in partnership with watershed councils, The Salmon SuperHwy project, federal agencies, private landowners, and other organizations to remove artificial obstructions to fish passage. ODFW also maintains a Statewide Fish Passage Barrier Priority List to help direct restoration efforts toward projects that will have the greatest benefit for native migratory fish.
- ODFW continues to have dedicated staff participating on OWEB's regional review teams to ensure fish habitat actions that are funded and implemented support the CMP management objectives and priorities.
- ODFW's Western Oregon Stream Restoration Program biologists provide a significant amount of support in coordinating, planning, and implementing OWEB's investments in the North Coast and Umpqua strata where these biologists are located.

- ODFW partnered with the Upper Nehalem Watershed Council, NOAA Restoration Center and National Fish and Wildlife Foundation to implement a beaver dam analogue (BDA) Pilot Study to advance our knowledge of the use of BDAs as a dam building foundation to provide persistent ponds that are known to provide the highest quality over-winter rearing habitat for juvenile salmonids.

The project contains an extensive monitoring component designed to quantify salmonid response and profile the attributes of both successful and unsuccessful BDAs for future use by aquatic habitat restoration technicians interested in facilitating recovery of the functional habitat that beaver dams create on the landscape in western Oregon.



Beaver Dam Analogue, ODFW

- Large wood placement projects to increase stream complexity have been implemented in watersheds throughout the coast. The effects of large wood placement and other restoration actions on salmonid populations are being evaluated at ODFW Salmonid Life Cycle Monitoring (LCM) sites at Mill Creek in the Siletz basin and West Fork Smith River in the Umpqua basin.

At the Mill Creek LCM site, ODFW has partnered with Oregon State University (OSU), MidCoast Watersheds Council, Weyerhaeuser, and Oregon DEQ, with support from OWEB, OSU, and the Spirit Mountain Community Fund, to investigate relationships between fine-scale geomorphic responses to large wood addition, reach-scale habitat conditions, and fish survival and production at the watershed scale.



Habitat with instream complexity, ODFW

- ODFW worked with the Oregon Department of Forestry and the Oregon Department of Environmental Quality on review of riparian rules for streamside protections for small and medium-sized streams with salmon, steelhead, and bull trout (SSBT streams). Effective in July 2017, new rules adopted by the Oregon Board of Forestry require increased buffer widths and increased basal area retention along these streams.
- The Oregon Department of Forestry (ODF) is currently evaluating a Habitat Conservation Plan (HCP) for Western Oregon. HCPs are a mechanism for Endangered Species Act compliance intended to ensure species protection and conservation while also providing

greater certainty to landowners. ODFW has worked on HCP planning and scoping teams with multiple agencies and entities, including ODF, the Oregon Department of Environmental Quality, Oregon Department of State Lands, the U.S. Fish and Wildlife Service, NOAA Fisheries, and Oregon State University,

- ODFW is developing a Climate and Ocean Change Policy that provides high level direction to: 1) ensure the Department understands the risks and opportunities associated with changing climate and ocean conditions and incorporates that understanding into all of the Department's actions to maximize the conservation, use, and enjoyment of fish, wildlife, and their habitats for present and future generations; (2) provide leadership toward a coordinated statewide and regional response that minimizes the impacts of changing climate and ocean conditions on Oregon's natural resources and the communities, culture and economies reliant on them, and allows for sustainable use of natural resources in the future; and 3) provide leadership towards achieving the reductions in global greenhouse gases emissions that will be needed to prevent worsening of the impacts by reducing the Department's carbon footprint to the extent practicable, with the goal reaching carbon neutrality. The Oregon Fish and Wildlife Commission is expected to adopt the policy in 2020.
- ODFW staff continue to provide constructive comments that eliminate, reduce, or mitigate impacts to native fish from land- and water-use projects.
- ODFW [REDD](#) staff are currently modeling potential future stream temperature and flow conditions under various climate change scenarios to understand the scope of change expected and prioritize watersheds for protection and restoration based on their climate resilience.

Research and Monitoring

The monitoring approach for Oregon's coastal SMUs is guided by the CMP, which addresses the ODFW Native Fish Conservation Policy (OAR 635-007-0502 to 0509) need to "include specific, measurable criteria of species performance." An overview of base monitoring components being conducted within SMUs to track measurable criteria that inform progress toward desired statuses is provided in [Table A-V: 4](#) of the plan. Data produced from the monitoring will be used to re-assess species productivity, persistence, spatial structure, and diversity in the 12-year assessment called for in the CMP. Abundance is being assessed annually to inform adaptive actions related to abundance levels.

- *Wild Fish Monitoring Summaries* have been developed for all CMP species. These contain extensive data collected through ODFW monitoring efforts conducted by multiple units within the agency.
- After adoption of the CMP, ODFW initiated a limited spawning survey effort for spring-run Chinook in the Wilson and Nestucca rivers (2017-2019), implemented monitoring of wild

winter steelhead harvest in the Salmon River (see **Evaluation and Adaptive Management**, below), and increased spawning ground surveys for winter steelhead in the Nestucca basin to provide estimates of the population and upper basin pHOS targets (see *Wild Fish Monitoring Summaries*).

Critical Uncertainties

The CMP identified several critical uncertainties relative to each SMU that require additional research to address ([Appendix V](#)). Research on some of the uncertainties has started and is ongoing, while others are still dependent on additional funding sources to implement.

Implementation highlights:

Chinook

- Research is in progress to evaluate the long-term feasibility of surveying non-wadeable channels for spawning adults.

Spring Chinook

- ODFW is working with partners to plan a comprehensive survey of all known or suspected spawning habitat in the South Umpqua to evaluate the precision of South Umpqua resting-hole counts as an indicator of spawner abundance.

Chum

- In 2019, ODFW staff collected tissue samples from chum salmon carcasses from several CMP populations to support a genetic investigation of current population structure. Surveyors collected at least 50 samples from the Nehalem, Tillamook (Miami and Kilchis rivers), and Yaquina populations. A small number of samples were collected from the Netarts (Whiskey Creek) and Siletz populations, as well. Study results will be presented in a future CMP report.
- Assessment of annual age composition of chum spawners at standard survey sites is in progress, incorporating contemporary and, where available, historical age data. This will allow for evaluation of trends in age composition and possible future assessment of adult to adult survival.

Winter Steelhead

- Since 2014, monitoring to validate the conversion of redd estimates to total steelhead abundance has been conducted at several calibration sites.
- ODFW is attempting to calibrate visual fin mark identification with known marks from captured fish in the Necanicum basin.
- Ongoing monitoring is occurring at life cycle monitoring sites (Mill Creek on the Yaquina River and West Fork Smith River in the Umpqua basin) to obtain annual estimates of age composition of spawners.

Cutthroat Trout

- ODFW continues to conduct annual resting hole counts in select North Coast rivers to track trends in sea-run cutthroat trout abundance.
- Modifications of the adult trap at the Cascade Creek life cycle monitoring (LCM) site in the Alsea basin allow for a complete count of migratory cutthroat (≥ 10 inches) entering this system to spawn or overwinter annually.

Evaluation and Adaptive Management

The previously discussed monitoring efforts and subsequent data evaluation are important components of CMP implementation. If review of the annually collected information appears to show that progress is not being made towards desired status goals, including optimizing harvest opportunities, or some populations are moving towards their critical abundance levels, ODFW will consider if additional, or alternative, actions need to be implemented for improvements. Data will also be used to modify actions called for in the plan as necessary. ODFW will also incorporate results from OHRC and other research into adaptive management considerations. Adaptive management may also occur to address logistical or social circumstances that warrant changes to CMP actions. *CMP Annual Implementation Reports* are intended to be used for documenting adaptive management changes.

Evaluation and adaptive management actions that have occurred since CMP implementation include:

- Retention periods for wild fish presented in [Table 18](#) have been implemented except in select cases where the same protections could be achieved with simplified angling regulations.
- In 2016, the regulation that closed Nehalem Bay and River tributaries not listed in Zone regulations to all angling was inadvertently omitted from the regulations when the trout simplification rules were being adopted. Reinstatement of this rule was not pursued due to low fishing participation and, therefore, low risk to cutthroat trout populations or juvenile salmon and steelhead.
- The fall Chinook hatchery program in the Middle Umpqua River was suspended due to poor performance and a lack of feasible solutions. ODFW staff and volunteers agreed that it is impractical to continue the program at this time.
- Since plan adoption, the methodology for calculating abundance estimates of natural-origin fall Chinook was evaluated by ODFW's Coastal Chinook Research and Monitoring Program. This review resulted in revised methods and updated spawner abundance estimates (see *Wild Fish Monitoring Summaries* for additional details, including application to harvest sliding scale and status thresholds). For the Elk River fall Chinook population, an updated stock-recruit and viability analysis based on the revised abundance data was completed by ODFW REDD staff. Results of the updated assessment were qualitatively

consistent with those in the CMP, but indicated even higher viability risk for the Elk River fall Chinook population ([Click here for report](#)). As discussed in the *Hatchery Fish Actions* section above, ODFW has implemented a variety of actions to reduce pHOS in the Elk River since plan adoption, and is conducting research to inform additional actions. ODFW will continue to monitor this population and fishery closely to determine short- and long-term actions needed to improve viability of Elk River fall Chinook.

- When implementing the sliding scale for wild fall Chinook salmon harvest in 2019, ODFW concluded that a sliding scale approach for the Yachats population would be more consistent with the intent of this harvest management action than the constant bag limit identified in the CMP (1 fish per day/5 fish per year across all abundance categories). In 2019, the bag limit for adult fall Chinook in the Yachats River was set at 1 fish per day/2 fish per year. This bag limit will be implemented in the future if the Mid-Coast Stratum falls in the low abundance category. Additional changes in bag limits or other fishing regulations may also be implemented in the Yachats based on a weight-of-evidence approach.
- In addition to implementing sliding scale bag limits, ODFW has taken additional steps to restrict harvest of wild fall Chinook salmon where necessary in response to the recent downturn in ocean survival and adult returns.
 - In 2018, ODFW responded to reports of poor migration conditions by enacting emergency regulations closing Northwest Zone coastal rivers and upper tidewater areas (Necanicum south to Siuslaw) to fall Chinook fishing, effective November 1. Portions of the Siletz, Yaquina, and Alsea reopened in November only after a period of increased river flows in early November and subsequent observations of migrating fish by Mid Coast Fish District staff.
 - In 2019, ODFW enacted emergency closures of fall Chinook fisheries from the Necanicum River south to the Nestucca River after observations of substantial pre-spawning mortality in some North Coast rivers.
 - In 2019, ODFW enacted harvest restrictions beyond sliding scale reductions for the Coquille River, and a closure on Floras Creek. Critically low fall Chinook returns in the Coquille basin in recent years have been a particular concern. ODFW is investigating potential causes and actions to address them.
- Focused evaluation (harvest and population monitoring) of the new wild winter steelhead harvest opportunity in the Salmon River over a three-year period indicates that harvest rates are within limits identified in the plan (see *Wild Fish Monitoring Summaries*). Starting in 2020, evaluation efforts will shift to the Sixes River. Wild steelhead harvest in the Salmon River, Big Elk Creek, and the East Fork Coquille will continue to be monitored based on available spawning ground surveys and angler-reported harvest (see *Wild Fish Monitoring Summaries*).

- Hatchery summer steelhead are not passed above the trap at Siletz Falls, so there is no systematic monitoring for hatchery fish in spawning areas above the falls. The CMP acknowledged uncertainty about whether summer steelhead can pass the falls without using the trap. After adoption of the CMP, limited monitoring above the falls indicated that some hatchery summer steelhead were bypassing the trap under certain flow conditions. ODFW addressed volitional passage of the falls by hatchery summer steelhead through modification of the trap's main doors and more effective diversion of flow through the trap during low flows.

Summary

In the five years since CMP adoption, ODFW and partners have successfully implemented most of the management actions identified in the plan. These actions, and others planned or in progress, are expected to result in progress toward Desired Status over the long term. Adverse environmental conditions (poor ocean conditions, droughts) in recent years have impacted coastal SMUs, and additional actions to reduce risks to some populations of wild fish may be necessary to ensure viability should this period of low abundances persist. Likewise, it will be important to continue implementation of current management actions and monitoring to ensure that these SMUs perform as expected as conditions improve. The South Umpqua Spring Chinook and Coquille Chinook populations warrant particularly close attention given the substantial declines over the past two years.

Some key implementation needs ODFW will be focused on over the next year include developing a sliding scale for harvest of spring Chinook in the Umpqua basin (including a critical abundance threshold for South Umpqua Spring Chinook), completion of pHOS assessments for coastal Chinook populations, and continued progress on critical uncertainties.