

*Coastal Multi-Species Conservation and Management Plan*

**2022 Implementation Report**

**Oregon Department of Fish & Wildlife**

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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 the Necanicum River in the north to the Elk River in the south, 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 approved by the Oregon Fish and Wildlife Commission in June 2014.

CMP implementation is also guided by the Climate and Ocean Change Policy (OAR 635-900-0001 to 0020) adopted by the Oregon Fish and Wild Commission in July 2020. 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 in 2022<sup>1</sup>.

## Progress Toward Desired Status

Since the adoption of the CMP in 2014, coastal salmon and steelhead have experienced multiple years of severe to extreme drought, declines in ocean productivity, and marine heat waves (e.g., the [Blob](#)). These conditions 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. Population trends vary among species and locations within the SMU, reflecting differences in freshwater habitat conditions, life histories (e.g., time spent rearing in freshwater), and ocean migration patterns. Although many populations have exhibited resilience during this period, returns have been highly variable and some populations have shown very concerning trends. Therefore, actions to reduce and buffer risk to wild fish will continue to be necessary in coming years. Summaries of each SMU are provided below, and data and additional details are available in the report's *Wild Fish Monitoring Summaries*.

### *Oregon Coastal Chinook Salmon*

Chinook populations in the Coastal Chinook SMU include early returning (spring or summer) and late returning (fall) adult components. In the CMP, early components, where they occur, are referred to as “spring-run” or “summer-run” Chinook, while the more abundant late components are referred to as “fall-run” Chinook. Two independent populations of spring returning Chinook are called “spring Chinook” (as opposed to spring-run Chinook), and these are considered to be a separate Spring Chinook SMU (see below). Monitoring indicated substantial declines in returns of Oregon Coastal Chinook Salmon populations in the years following CMP adoption. The most pronounced decline occurred in the Coquille population, where the effects of adverse environmental conditions have been exacerbated by non-native fish predators. Overall abundance in the SMU was particularly low in 2018 and 2019, when many populations had at least one year below the critical abundance threshold.

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<sup>1</sup> Though this report was completed in 2023, the data, actions and summaries are reflections of what occurred in 2022. One exception is winter steelhead monitoring results, which include the most recent season (2022-23).

Returns since 2018–2019 have been highly variable from year to year and among populations. Most populations rebounded in 2020 but then declined again in 2021, with several populations falling below the critical abundance threshold. Chinook spawner abundance was higher overall in 2022, and angling regulation changes enacted by ODFW to protect wild fish contributed to higher spawner abundance in some basins that otherwise may have fallen below critical abundance for a second consecutive year. 2023 forecasts indicate modest abundance increases in most populations compared to 2022, but a precautionary approach to angling regulations is warranted, especially in basins that have experienced multiple recent years near or below critical abundance. Abundance trends for the early-run components of coastal Chinook populations have varied and ODFW will continue to monitor this run component, where they occur, as time and resources allow. It should be noted that the CMP’s Desired and Critical Abundance thresholds for Coastal Chinook Salmon populations were recalculated in 2019 after significant revisions to the abundance time series on which the thresholds are based. These revised abundance criteria replace the plan’s original criteria and are detailed in the report’s *Wild Fish Monitoring Summaries*.

#### *Oregon Coastal Spring Chinook Salmon*

Only two independent Spring Chinook populations—both in the upper Umpqua Basin—are identified in the CMP. This SMU has followed a pattern similar to that observed for the Coastal Chinook SMU since CMP adoption. Following several years of decline, the North Umpqua population fell below critical abundance for the first time in 2018. The population rebounded in 2019 and 2020, followed by a decline to levels slightly higher than the critical abundance threshold in 2021 and 2022. In the South Umpqua population, abundance declined more substantially through 2018, when the estimate of adult spawner abundance was only 24 fish. Returns have steadily improved since 2018 but remain critically low. ODFW is concerned about recent low abundance in the South Umpqua and enacted a mark-selective fishery in the mainstem Umpqua River in 2020–2022 to protect wild South Umpqua spring Chinook. In the North Umpqua, ODFW is investigating the distribution of hatchery and wild spawners to assess the percentage of hatchery fish on natural spawning grounds (pHOS) more accurately and will implement actions to reduce pHOS if there is spatial overlap on natural spawning grounds above the pHOS limit.

#### *Oregon Coastal Winter Steelhead*

Current monitoring resources do not allow for population-scale assessment of CMP criteria in most of the SMU’s constituent populations. 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 approached the CMP critical abundance threshold in 2022. In 2023, this stratum rebounded to above desired abundance. Similar to the North Coast stratum, abundances have been variable in the Mid Coast stratum. After falling below the critical abundance threshold in 2017, abundance estimates for Mid Coast winter steelhead have generally fluctuated between the critical and desired abundance thresholds (2018 was > desired abundance). Annual abundance estimates in the Umpqua Stratum and North Umpqua population have generally remained closer to or above desired abundances. Returns in 2023 were between the critical and desired abundance thresholds, but abundance was the lowest since plan approval in the North Umpqua population and for the stratum as a whole. The Mid-South Coast stratum has alternated above and below the critical abundance threshold since 2017 (2017, 2019, 2021, and 2023 were below critical abundance). It should be noted that the CMP’s desired and critical abundance criteria for Coastal Winter Steelhead were updated in 2019 to ensure that both the criteria and annual

abundance estimates share a common basis for converting redd abundance estimates to fish abundance estimates. These revised abundance criteria replace the plan's original criteria and are detailed in the report's *Wild Fish Monitoring Summaries*.

The CMP pHOS targets for steelhead are assessed as a nine-year moving average. Population-scale estimates of pHOS are not available for most winter steelhead populations; with few exceptions, pHOS can only be assessed at the stratum scale. Nine-year average pHOS estimates for the North Coast and Umpqua strata have been near or below the limits identified in the plans for their constituent populations. However, the Mid Coast and Mid-South Coast strata-level pHOS estimates have been above many of the population-scale limits identified in the plan. Monitoring indicates the nine-year average pHOS is declining toward 10% in the Mid-Coast but has stayed more consistently above pHOS targets in the Mid-South Coast. However, in both strata, observations of mark status have been insufficient for confident estimation of pHOS in some years since plan approval. ODFW is currently evaluating specific locations contributing to the high strata pHOS estimates in the Mid-South Coast Stratum so adaptive management actions can be taken to reduce pHOS within constituent populations if needed.

#### *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 2021, both populations experienced pronounced declines in abundance. Abundance estimates in the North Umpqua population were the lowest in the record dating to 1946, and the count of wild summer steelhead at Siletz Falls (Siletz Population) was similar to previous lows in the record from 1994-2021. Similar declines in summer steelhead returns in 2021 were observed elsewhere in Oregon, likely attributable to poor ocean conditions, and coincided with poor conditions (e.g., drought, high temperatures) for rearing and adult migration in 2021 and several preceding years. Both populations rebounded to above critical abundance in 2022, but abundance in the North Umpqua population remains near critical abundance and historical lows in the long-term record. Available data suggests significant spatial segregation between hatchery and wild spawners in the North Umpqua, but pHOS estimates are likely higher than the CMP target even after accounting for differences in spawning distribution. Although the pHOS estimate for the 2022 run year was higher than in recent years, the North Umpqua summer steelhead program has been eliminated, pending results of litigation (see **Evaluation and Adaptive Management** section), and pHOS is expected to meet the CMP target ( $\leq 10\%$ ) in the future. No hatchery origin spawners are passed above Siletz Falls in the Siletz Population, and pHOS is expected to be below the CMP's 5% target upstream from the falls.

#### *Oregon Coastal Chum Salmon*

The CMP does not include 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. Peak counts on standard surveys in 2022 were lower than the past few years in most populations. Staffing limitations in 2021 and 2022 resulted in lower survey effort for chum salmon in some North Coast survey areas.

### *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) on surveys for early-run Chinook salmon, and at Winchester Dam on the North Umpqua. Resting hole densities in the Wilson, Trask, and Nestucca basins were below the post-CMP average in 2022. However, recent estimates have generally been higher than during the 1980s and 90s, and long-term averages have been stable in all three survey basins. In the North Umpqua, counts of coastal cutthroat trout climbed to post-CMP highs in 2019-20 and 2020-21. Counts declined substantially in the 2021-22 period (21<sup>st</sup> percentile of past 25 years), but counts in the 2022-23 period increased to approximately average for the post-CMP period.

## **Management Actions**

To address the limiting factors causing the gap between Current and Desired Status, as well as provide greater population resilience to potential adverse climate change and development impacts, the CMP identifies short- and long-term strategies and actions in four categories (***Hatchery Fish Actions***, ***Fishing/Harvest Actions***, ***Predation Actions***, and ***Habitat Actions***). The following sections provide several implementation highlights for each of those categories in 2022. Many habitat actions are occurring across the SMUs at various scales; a sampling of those actions completed or initiated in 2022 are included in the highlights below. For a more comprehensive summary of implementation since plan adoption, including many ongoing actions that continued in 2022, see reports from previous years [here](#).

### ***Hatchery Fish Actions***

- In the Elk River, ODFW continued to implement actions to decrease pHOS and improve the viability of wild **fall Chinook salmon**. In the nine years since CMP adoption, pHOS in the Elk River has averaged 25%, which is below the 30% target in the plan and less than half the 9-year average at the time of plan adoption (see *Wild Fish Monitoring Summaries*). Additional actions to assure that pHOS remains below the plan target are in progress (see **Research and Monitoring; Evaluation and Adaptive Management**).
- In the Coos Basin, ODFW continued to implement changes to the **fall Chinook salmon** hatchery program that came primarily from results of the 2009-13 Coos Fall Chinook Monitoring and Evaluation (M&E) Project. Namely, in-basin geographic returns of coded wire tagged hatchery fish from releases from multiple sites and acclimation/release strategies were evaluated for potential pHOS. Following completion of the Coos M&E Project, fish reared in the West Fork Millicoma River have been transported to the lower estuary for release and contribution to the fishery below Highway 101 to reduce potential pHOS in upper basin spawning areas.
- ODFW is analyzing results of a multi-year study in the Necanicum River that used creel surveys, remote site trapping, and live capture surveys to evaluate straying and fishery contribution for different hatchery **winter steelhead** release locations. Results of this study will inform actions to reduce pHOS and maintain or increase harvest of hatchery winter steelhead in the Necanicum population.

### ***Fishing/Harvest Actions***

- In 2022, implementation of the wild **fall Chinook salmon** harvest sliding scale ([click here for methods](#)) resulted in changes from permanent regulations in several basins. The Tillamook, Siuslaw, Coquille, and Floras/New populations fell to levels requiring wild Chinook conservation closures. In addition, there were reduced bag limits in basins open to harvest in the Mid-South Coast stratum, which was in the low abundance category in the sliding scale. In several basins, ODFW implemented additional precautionary regulation changes to protect wild fall Chinook salmon (see **Evaluation and Adaptive Management** section).
- ODFW implemented a new harvest sliding scale for wild **spring Chinook salmon** in the Umpqua basin ([click here for methods](#)) to determine bag limits for the 2022 fishery. Due to low observed and forecasted returns to the South Umpqua, a wild spring Chinook conservation closure in the mainstem Umpqua River was implemented in 2022 (the fishery remained open for hatchery spring Chinook).

### ***Predation Actions***

- Double-crested cormorant numbers have declined approximately 10-20% 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. The double-crested cormorant population across the Pacific Flyway has declined about 38% since 2014, primarily as a result of management in the Columbia River estuary.
- In 2022, avian hazing efforts occurred in the Nehalem, Tillamook, Nestucca, Alsea, Siuslaw, Coquille, and Coos Bay estuaries.
- Smallmouth bass removal (electrofishing) continued in the Coquille Basin, in partnership with the Coquille Indian Tribe. Striped bass and largemouth bass were also removed when encountered.
- Data from the 2021 "Smallmouth Blitz" assessment event and subsequent smallmouth removal efforts is being analyzed by the ODFW REDD program to inform possible smallmouth bass control strategies to benefit Chinook salmon and other native fishes in the Coquille Basin. In addition, ODFW is working with staff at Oregon State University to model smallmouth energetics and predation. ODFW assisted the Port of Coquille in conducting a derby for the removal of smallmouth bass by anglers. Fish removal was incentivized by the placement of PIT tags in smallmouth of all sizes that could be exchanged for monetary prizes.
- ODFW continued to implement a seasonal temporary rule allowing for spearfishing as a legal harvest method for smallmouth bass in the Coquille River from late May to the end of October.

### ***Habitat Actions***

- Instream water rights are the state's mechanism to provide stream flows that support healthy ecosystems and multiple public uses for fish and wildlife, water quality, recreation, scenic attraction, tourism, cultural values, and healthy economies. In 2022, the Oregon Water Resources Department (OWRD) issued Final Orders and Certificates for 45 instream water right applications submitted by ODFW to establish biological flow targets for various reaches in the

Umpqua and Mid-South Coast strata.

- ODFW participated and provided guidance in the Private Forest Accord (PFA) negotiation process, which concluded in October 2021 with an agreement to modify Oregon's forest practice laws and regulations to craft a Habitat Conservation Plan (HCP) for aquatic species (click [here](#) for more information). In 2022, the Oregon Board of Forestry approved the proposed administrative rule changes to the Forest Practices Act that provide more protection for aquatic habitats by increasing stream buffers, creating new standards for forest roads, and retaining more trees on steep slopes, among other changes.
- ODFW continued a statewide effort to identify priority watersheds for protection and restoration based on habitat quality and climate resilience.
- ODFW's Western Oregon Stream Restoration Program (WOSRP) restored biologist positions in the Mid-Coast and Mid-South Coast, and there is now a WOSRP habitat restoration biologist in all four CMP strata (North Coast, Mid-Coast, Umpqua, and Mid-South Coast). These biologists coordinated, planned, reviewed, and implemented numerous restoration projects in 2022 (see following bullets for a description of some of these projects). This was accomplished by coordination with and direct technical support to Watershed Councils, private landowners, other state agencies, federal agencies, and others. Many of these projects involved coordination with the Oregon Department of Forestry and private industrial timberland partners.
- In the North Coast Stratum, three restoration projects were implemented in the Nehalem Basin associated with and funded by a DEQ settlement for a fish kill. Projects included riparian planting throughout the Fishhawk Lake watershed; Warner Creek restoration, including 29 large woody debris (LWD) structures, 1 beaver dam analog (BDA), and willow planting; and Tweedle Creek restoration, including a channel reroute through an historic oxbow, LWD and BDA installations, and riparian planting. An additional 15 LWD structures were installed in the upper Nehalem basin. In the Tillamook basin, an impassable culvert on the Kilchis River was replaced with a bridge and LWD was installed downstream to help improve fish passage into the system. Additional LWD was placed upstream of the bridge to create habitat complexity and increased pool habitat.
- In the Mid-Coast Stratum, district staff implemented a LWD project and an off-channel pond re-configuration project to improve stream complexity; partnered with the US Forest Service and Bureau of Land Management (BLM) to develop a LWD helicopter placement project that crosses management areas in three subbasins; and partnered with the BLM and Weyerhaeuser Company to replace fish passage impediments in the Alsea basin. Staff also revisited past LWD projects to assess whether more LWD needs to be placed after 25 years since the original effort and planned a large-scale willow planting project in the Yaquina basin.
- In the Mid-South Coast Stratum, district staff in the Tenmile Lakes Basin provided technical support for development and designs of two wetland projects that prioritize fish and water quality benefits; developed a large-scale willow planting project; and consulted with the Willamette Partnership on Tenmile strategic action plan development. District staff in the Coos Basin provided restoration support for Tioga Creek instream structures and two culvert replacements with bridges, the Kentuck Creek channel restoration with three wetland ponds, and the Millicoma Confluence dike setback. In the Coquille basin, district staff collaboratively

assisted the Soil and Water Conservation District and Watershed Council with finalization of design and implementation of three tidal floodplain connectivity restoration projects; and provided continued technical support for instream wood structures in Sandy Creek.

## Research and Monitoring

[Table A-V: 4](#) of the CMP provides an overview of base monitoring components being conducted within SMUs to track measurable criteria that inform progress toward desired status. Data produced from the monitoring will be used to re-assess species productivity, persistence, spatial structure, and diversity every 12-years as called for in the plan. The CMP also identified several critical uncertainties relative to each SMU that require additional research to address ([Appendix V](#)). Research and monitoring developments in 2022 include the following:

- The Oregon Hatchery Research Center (OHRC) continued research on olfactory imprinting and homing at Elk River Hatchery. In 2022, researchers and hatchery staff collected coded wire tags from adult **fall Chinook salmon** that had previously been incubated as embryos at the hatchery in either well or river water. Also in 2022, the third experimental cohort of juvenile fall Chinook salmon was released from the hatchery. These fish were exposed to higher concentrations of a naturally-occurring chemical odorant during hatchery rearing. Adult returns from treatment and control groups will be monitored to determine how odorant exposure affects homing rates to the hatchery. This study promises to inform future efforts to reduce straying by hatchery fish in the Elk River and other basins.
- ODFW continued to develop analytical methods to estimate pHOS in coastal **fall Chinook salmon** populations (see *Wild Fish Monitoring Summaries*).
- ODFW collaborated with partners to conduct a comprehensive survey of all known or suspected **spring Chinook salmon** spawning habitat in the South Umpqua River to evaluate the precision of resting-hole counts as an indicator of spring Chinook salmon spawner abundance.
- ODFW biologists continued working with Oregon's State Fisheries Genomics Lab (<https://agsci.oregonstate.edu/state-fisheries-genomics-lab>) to test for associations between variation at genetic markers and the return timing of adult **Chinook salmon** to coastal rivers. This research is designed to first evaluate the utility of markers used in other river systems, then document the diversity of these markers among hatchery and wild populations of Chinook salmon. Results will offer managers new information and tools to protect the genetic diversity that underpins run timing in Oregon's coastal Chinook salmon populations.
- ODFW continued to investigate options for developing stratum-scale abundance forecasts for **winter steelhead** to allow for more proactive, timely actions in response to population downturns.
- Staff from the State Fisheries Genomics Lab at Oregon State University and ODFW completed a pilot study investigating population genetic structure of **chum salmon** on the Oregon coast. The study evaluated genotyping success for different tissue types collected from chum salmon carcasses; demonstrated that a chum salmon GT-seq SNP panel developed for genetic stock identification in British Columbia and Washington is effective for identifying population genetic

structure in Oregon coastal chum salmon; found evidence for an isolation by distance pattern among populations; and identified additional research that could help improve our understanding of chum salmon population structure on the Oregon coast.

- ODFW staff and collaborators conducted research on thermal tolerance of juvenile **summer steelhead** in the North Umpqua River. This research is part of an ongoing project to investigate how native fish in Oregon may respond to changing stream temperatures ([click here for more information](#)).

## Evaluation and Adaptive Management

The previously discussed monitoring efforts and subsequent evaluation and adaptive management are important components of CMP implementation. Key evaluation and adaptive management actions that occurred in 2022 include the following:

- In addition to implementing the wild **fall Chinook salmon** harvest sliding scale (see *Fishing/Harvest Actions*), ODFW implemented additional precautionary regulation changes in several rivers to protect wild fall Chinook salmon. These actions included:
  - Closing the salmon fishery in the Coquille River (see additional details below).
  - Reducing the annual bag limit for wild Chinook salmon in the Coos basin to one fish.
  - Implementing a low flow closure in the Sixes River from the mouth of Crystal Creek downstream to Hughes House Boat Ramp from October 1–November 8.
  - Closing the Elk River to retention of wild Chinook salmon.
- In the Coquille River, **fall Chinook salmon** abundance was far below the critical abundance threshold for the fifth consecutive year in 2022. Based on recent returns and the preseason forecast, ODFW implemented a complete closure of the Coquille salmon fishery in 2022 to eliminate the risk of hooking mortality for wild Chinook salmon. In addition, no wild Chinook salmon were collected for broodstock for the harvest augmentation hatchery program, consistent with direction in the CMP.
- ODFW and the Coquille Indian Tribe began implementing the *Coquille Fall Chinook Conservation Hatchery Program Operational Plan* in 2022. A trap was installed in the mainstem Coquille near the head of tide to collect wild broodstock, but very few fish were collected before weather conditions precluded further trap operation. As a result, the brood year 2022 conservation hatchery smolt release will be small relative to the target identified in the operational plan.
- Broodstock availability has limited production for the Coquille **fall Chinook salmon** harvest augmentation hatchery program for several years (see *Hatchery Program Summaries*). To facilitate broodstock collection at Bandon Hatchery and rebuild the program, all releases for the 2018–2020 brood years occurred at Ferry Creek. In 2022, ODFW, Coquille STEP, and the Coquille Indian Tribe continued a collaborative effort to increase broodstock collection and succeeded in meeting the program collection goal for the first time since 2017.
- In the Elk River, a mark-selective fishery for **fall Chinook salmon** was implemented for the

third consecutive year to maximize hatchery salmon harvest and wild fish escapement as part of ongoing efforts to reduce pHOS. In addition, ODFW increased the daily bag limit for hatchery Chinook salmon to three fish from September 26–December 31.

- In April 2022, the Oregon Fish and Wildlife Commission decided by a 4-3 vote to eliminate the Rock Creek (North Umpqua) **summer steelhead** hatchery program. A smolt release for the program occurred in May 2022 under a preliminary injunction granted by the Marion County Circuit Court.
- ODFW developed and implemented a new decision support framework for the **summer steelhead** fishery in the Umpqua basin based on in-season monitoring of abundance at Winchester Dam. The framework is used to determine the likelihood that wild summer steelhead counts will fall below the critical abundance threshold based on in-season counts and historical passage timing at Winchester Dam. In 2022, in-season monitoring indicated that summer steelhead returns would likely exceed critical abundance and so no additional fishing restrictions beyond bubble closures around mainstem Umpqua River tributaries were triggered. The final estimate of wild summer steelhead abundance in 2022 exceeded the critical abundance threshold, a marked increase from the historically low return in 2021 (see *Wild Fish Monitoring Summaries*).
- In 2022, ODFW staff continued to make significant adjustments involving multiple facilities to maintain fish production for Umpqua hatchery programs after the loss of Rock Creek Hatchery in the September 2020 wildfires.

## Summary

Since finalization of the CMP in 2014, coastal salmon, steelhead, and cutthroat trout have experienced multiple years of severe drought and poor ocean conditions. The effects of these adverse environmental conditions have been apparent in wild populations and hatchery returns, although the magnitude and timing of effects have varied substantially among populations and SMUs. Recent trends have underscored the importance of implementing plan actions that reduce risk for these populations, as well as the need for robust monitoring and adaptive management. Most populations have demonstrated resilience in recent years, but several populations warrant particularly close attention given recent declines. These populations include summer steelhead in the North Umpqua; spring Chinook in the South Umpqua; and fall Chinook in the Coquille, Siuslaw, and Tillamook basins. Implementation priorities for 2023 will be to: 1) closely monitor North Umpqua summer steelhead returns and make any necessary changes in fishing regulations based on monitoring results; 2) continue development of the Coquille fall Chinook conservation hatchery program in partnership with the Coquille Indian Tribe and Coquille STEP; 3) continue work with the Coquille Indian Tribe and other partners to reduce bass predation risk for Chinook salmon and other native species in the Coquille River Basin; 4) consider adaptive management needs for fall Chinook fisheries in basins with consistently poor returns in recent years; and 5) where pHOS estimates appear to be above plan thresholds, explore details of hatchery fish presence on natural spawning grounds in order to understand adaptive management needs. ODFW will continue to be responsive to variable and changing conditions by implementing meaningful adaptive management actions informed by monitoring.