Coastal Multi-Species Conservation and Management Plan

Wild Fish Monitoring Summaries

2014 to 2024/25

Oregon Department of Fish and Wildlife
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Salem, OR 97302

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Disclaimer

Section I. Coastal Chinook Salmon

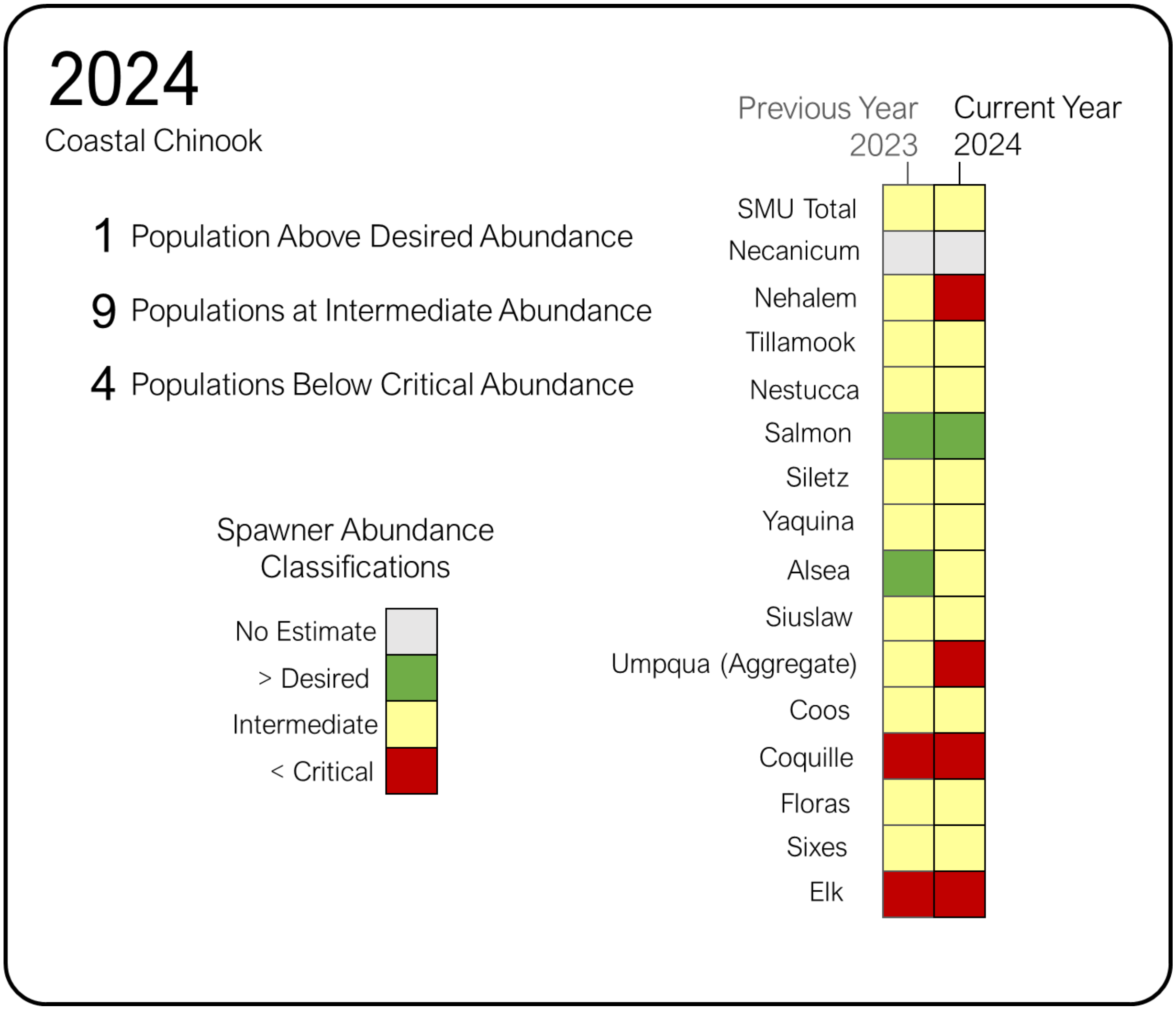


Figure I-1. Spawner abundance classifications for the Coastal Chinook Salmon SMU and its constituent populations for the current and previous reporting years. Classifications are Below the CMP Critical Abundance Threshold (Red), Above the CMP Desired Abundance Target (Green), Intermediate between Critical Abundance and Desired Abundance (Yellow), or No Estimate (Gray). Abundance thresholds and classifications at the SMU scale are the sum of all populations with available data.

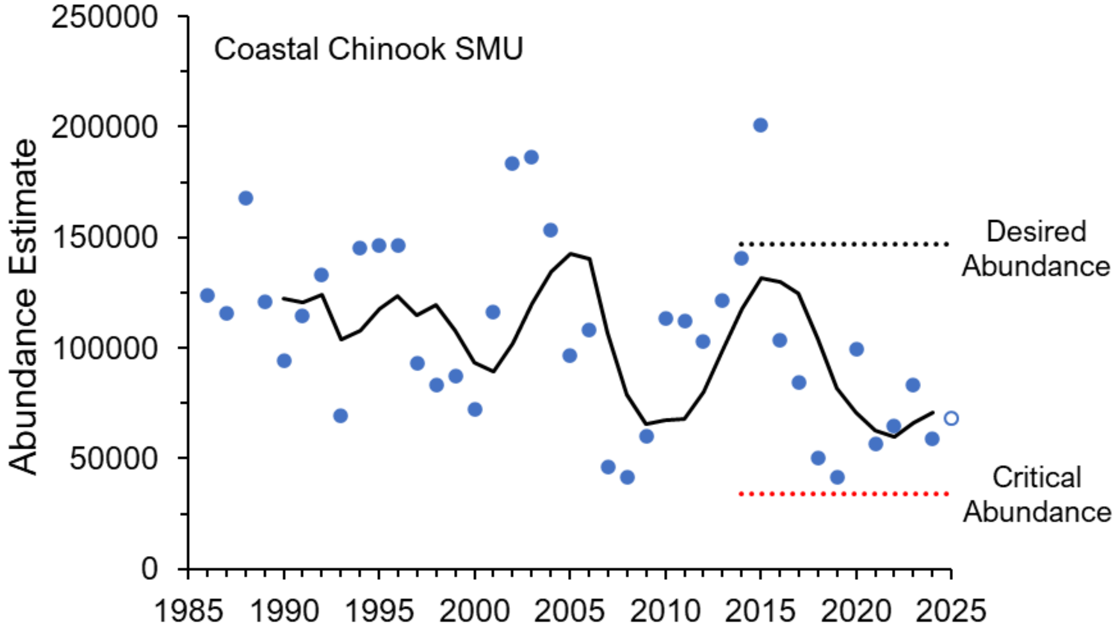


Figure I-2. Spawner abundance estimates for the Coastal Chinook Salmon SMU since 1986 (•; the open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised CMP Desired Abundance (147,192) and Critical Abundance (33,888) thresholds, respectively. Abundance thresholds, abundance estimates, and the forecast abundance are the sum of all populations with available data. Abundance estimates do not include the Elk and Salmon River populations prior to 1998 and 1988, respectively; there are no abundance estimates for the Necanicum and Yachats aggregate populations, and abundance criteria for these populations are not included in the SMU abundance summations.

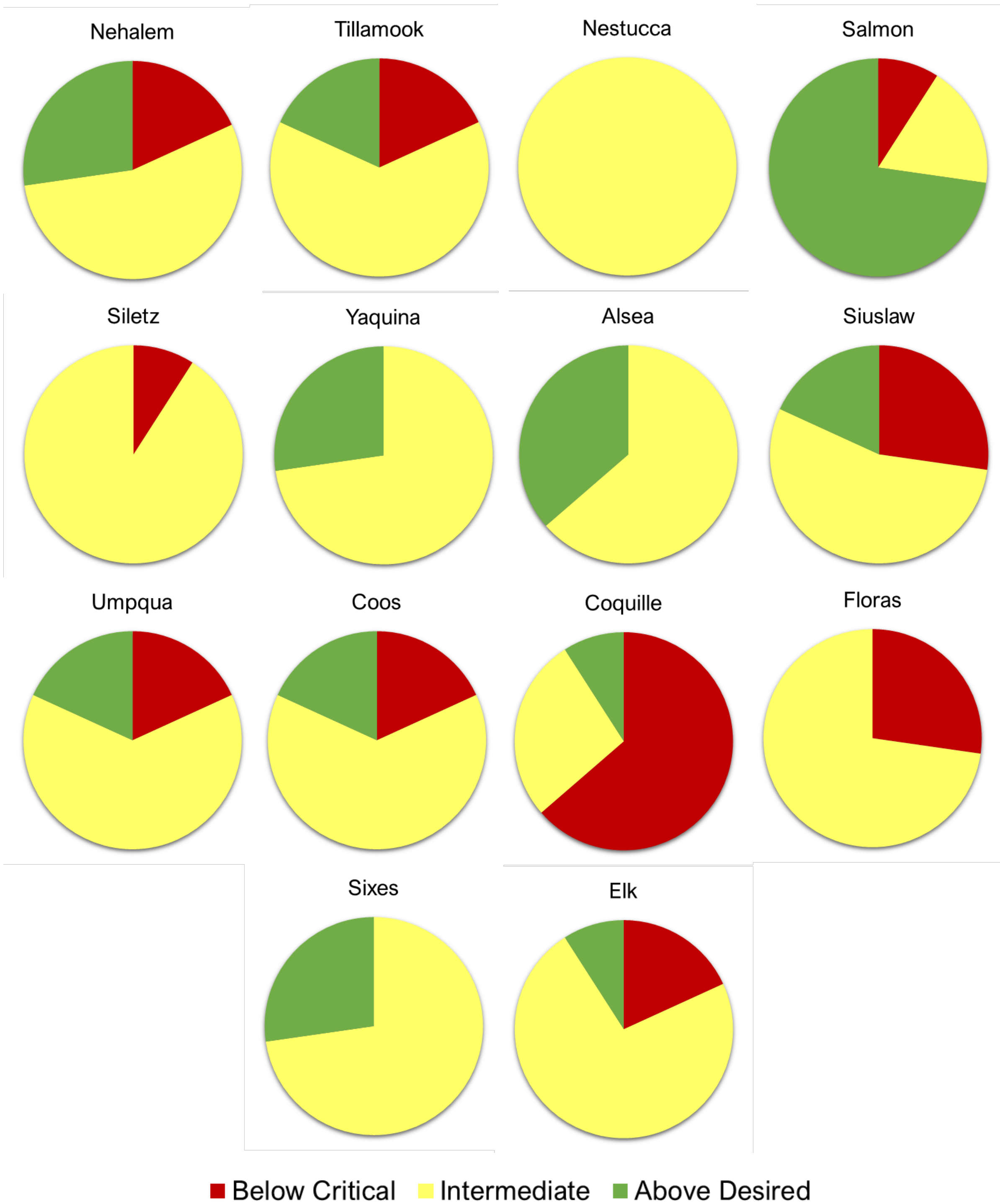


Figure I-3. Coastal Chinook Populations. Percent of years since approval of the CMP (2014) with abundance estimates in the following categories: Below Critical Abundance (Red), Above Desired Abundance (Green), or Intermediate between Critical Abundance and Desired Abundance (Yellow).

Coastal Chinook Salmon SMU - Monitoring and Assessment Notes

Abundance. After adoption of the CMP, ODFW's Oregon Coastal Chinook Technical Team completed a methodological standardization that resulted in revised time series of historical spawner abundances of coastal fall Chinook salmon populations. In 2019, ODFW used these new abundance time series to generate critical thresholds for the sliding scale for harvest (ODFW 2020a). These criteria replace the CMP's original Critical Abundance thresholds. Likewise, ODFW recalculated the Desired Abundance thresholds for Coastal Chinook salmon populations to align the thresholds with the new abundance time series. Additional details regarding recalculated criteria, including comparisons to the original CMP criteria, can be found in Appendix A. The CMP's original thresholds are also provided for comparison in the population-specific monitoring summaries.

Harvest and Hatcheries. Harvest and hatchery influence are addressed in population-specific monitoring summaries.

Productivity. ODFW will evaluate intrinsic productivity of coastal Chinook salmon populations at the 12-year assessment called for in the CMP.

Spatial Structure. ODFW will evaluate spatial structure for each population at the 12-year assessment called for in the CMP.

Diversity. To account for inter-annual variability in environmental conditions, ODFW will evaluate diversity measures at the 12-year assessment period called for in the CMP. Evaluation may include spawning timing, spawner age composition, and adult size composition.

Early-Run Chinook Salmon. Chinook salmon populations in this SMU include early returning (returning in the spring or summer) and late returning (returning in the fall) adult components. In this report where they exist, early returning components of Chinook salmon populations are referred to as early-run Chinook salmon to distinguish them from the more abundant later returning components of the populations. The two independent populations of spring returning Chinook salmon comprising the Coastal Spring Chinook Salmon SMU (North Umpqua and South Umpqua) are referred to as Spring Chinook salmon as opposed to early-run or spring-run Chinook salmon. The CMP indicates that early-run Chinook salmon are present in the Nehalem, Tillamook, Nestucca, Siletz, Alsea, and Coquille Chinook salmon populations (CMP Table 2).

The Chinook salmon spawner abundances reported here generally exclude early-run life history variants, where present, due to the lack of forecasting methods for these early components of the runs, the lack of population-level expansions from different sampling methods, an inability to adequately account for them in the PVA models, and harvest limits and closures intended to add extra measures of protection to these runs. However, spawning surveys begin early (September) in the Nehalem where there is a substantial early component to the run, and monitoring in some populations provides information on early-run Chinook salmon that is independent of monitoring for the later component of the run.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: North Coast

Population: Nehalem

Abundance

A time series of spawner abundance estimates for Nehalem Chinook salmon is used to evaluate the CMP's Desired and Critical Abundance criteria (Table I-1; Fig. I-4), which were revised in 2019 (See Appendix A). The Nehalem population includes a substantial early-run component that spawns primarily in Rock Creek and the upper Nehalem River above Humbug Creek. Relative to other basins, spawning ground surveys for Nehalem Chinook begin in early (September) to better account for these early-returning fish.

Table I-1. Spawner abundance estimates for the Nehalem Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Nehalem Population	13,302 (12,100)	5,369 (3,800)	2014	14,147
			2015	15,605
			2016	12,956
			2017	8,616
			2018	5,773
			2019	8,584
			2020	16,848
			2021	9,675
			2022	4,794
			2023	12,649
			2024	5,282
			2025	-

Estimates in 2017-2022 in the table above were adjusted in the 2025 WFMS to reflect recent revisions of abundance estimates.

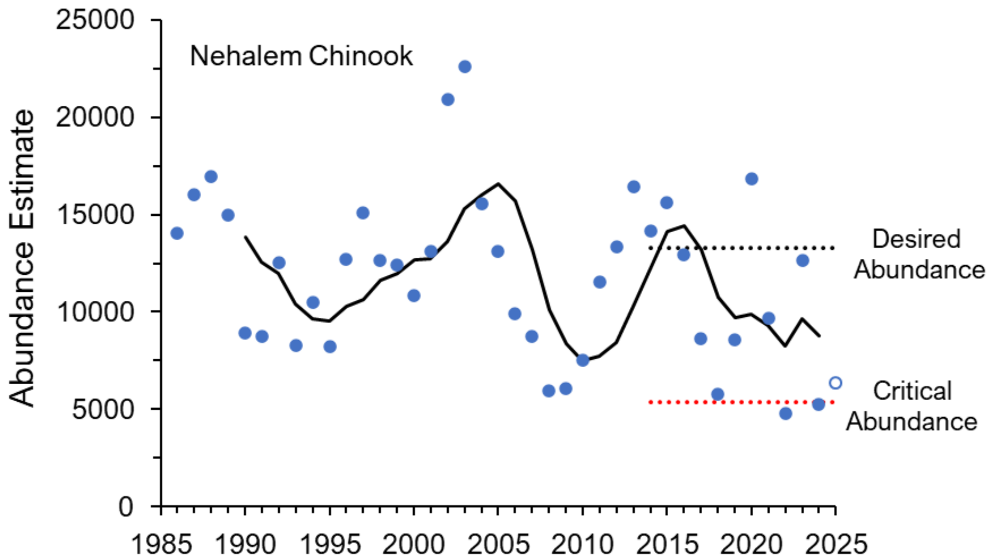


Figure I-4. Spawner abundance estimates for Nehalem Chinook salmon since 1986 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-2).

Table I-2. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Nehalem Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Nehalem Population	5,282	6,346	5,814	5,369

Hatchery Influence

Hatchery Chinook salmon are not currently released into the Nehalem population area. The pHOS target (CMP Table A-III:4) for this population is <10%. Monitoring for Nehalem Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is currently evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS. Preliminary estimates in 2020 indicated that the 9-year average pHOS is likely to be below the CMP target, but the analysis is being refined to account for differences in observation methods and issues including low sample sizes in some years. Estimates will be provided when they are available.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: North Coast

Population: Tillamook

Abundance

A time series of spawner abundance estimates for Tillamook Chinook salmon is used to evaluate the CMP's Desired and Critical Abundance criteria (Table I-3; Fig. I-5), which were revised in 2019 (See Appendix A). Spawner abundances exclude early-run life history variants, but additional information on Tillamook early-run Chinook is provided below (See Tables I-5 & I-6; Figs. I-6 & I-7).

Table I-3. Spawner abundance estimates for the Tillamook Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Tillamook Population	11,910 (10,500)	2,745 (3,700)	2014	12,408
			2015	14,442
			2016	5,254
			2017	5,646
			2018	2,966
			2019	1,655
			2020	5,319
			2021	1,878
			2022	3,822
			2023	4,009
			2024	3,056
			2025	-

Estimates in 2016-2018 and 2022-2023 in the table above were adjusted in the 2025 WFMS to reflect recent revisions of abundance estimates.

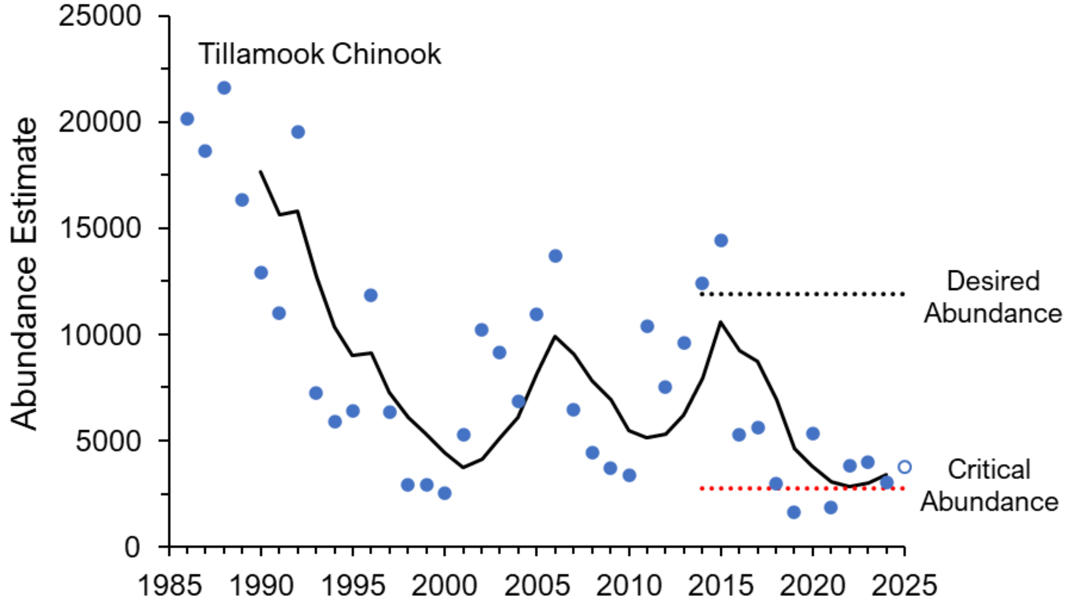


Figure I-5. Spawner abundance estimates for Tillamook Chinook salmon since 1986 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-4).

Table I-4. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Tillamook Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Tillamook Population	3,056	3,762	3,409	2,745

Hatchery Influence

The CMP allows for the release of 150,000 hatchery fall Chinook salmon smolts in the Trask River within the Tillamook population area. The pHOS target (CMP Table A-III:4) for this population is ≤10% (<30%/<60% for significant and less significant spawning areas, respectively, within a two-mile radius around acclimation and hatchery release sites). Monitoring for Tillamook Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is currently evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS. Preliminary estimates in 2020 indicated that the 9-year average pHOS is likely to be below the CMP target, but the analysis is being refined to account for differences in observation methods and issues including low sample sizes in some years. Estimates will be provided when they are available.

Early-Run Chinook

The abundance of early-run Chinook salmon in the Tillamook Population has been indexed through resting hole counts since 1965. Surveys consist of one to four divers (depending on the size of the hole) snorkeling through and counting the number of adult and jack Chinook salmon present. The same holes or reaches within each river system are snorkeled each year in mid- to late-August. Hatchery and wild fish are not differentiated in these surveys (Table I-5; Figs. I-6 & I-7).

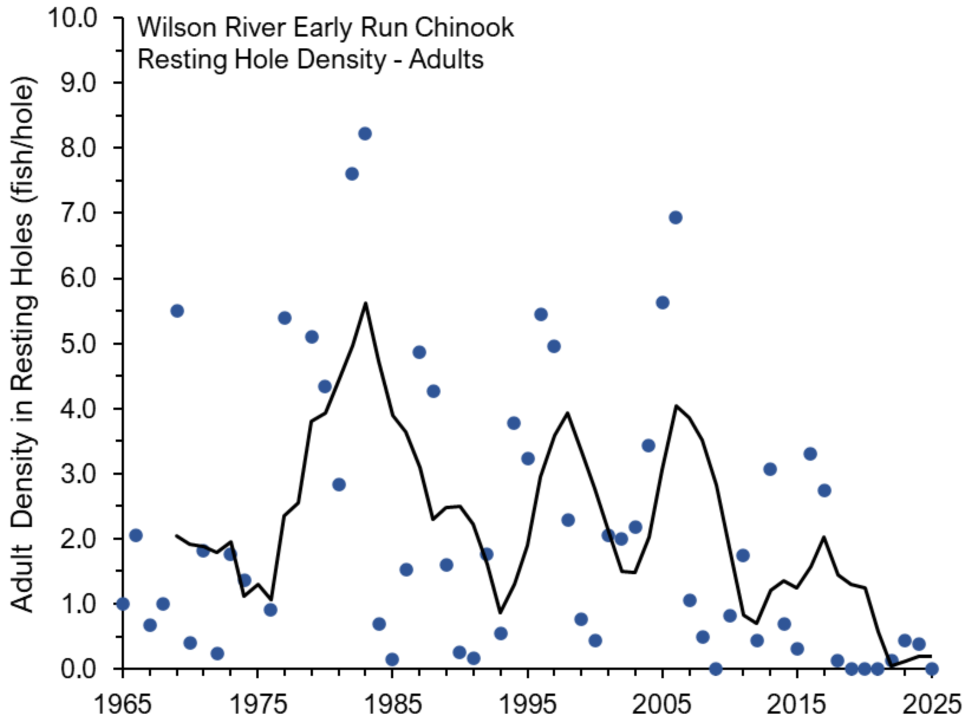
In addition to resting hole counts, ODFW conducted spawning surveys targeting early-run Chinook salmon in the Wilson and Trask rivers (Tillamook) in 2005-2008 (ODFW 2008; 2013a) and in the Wilson River in 2017-2019. Surveys in 2017-2019 were not resourced with new funding; surveys were conducted with existing Fish Research and District resources and were therefore not at the same scale and effort as those conducted in 2005-2008. These surveys provide an index of abundance (peak adult density), distribution (occupancy), and hatchery influence (pHOS) (Table I-6). Due to further budget and personnel limitations, these metrics cannot be estimated after 2019, although limited spawning ground surveys targeting early-run Chinook salmon have continued in the Wilson and Trask rivers.

The CMP allows for the release of hatchery Spring Chinook salmon smolts in the Trask River, while discontinuing releases in the Wilson River. The pHOS target (CMP Table A-III:4) for early-run Chinook salmon in the Tillamook population area is ≤10% (<30%/<60% for significant and less significant spawning areas, respectively, within a two-mile radius around acclimation and hatchery release sites). To date, there are insufficient data and spatial coverage (survey funding was eliminated after CMP adoption) to calculate a 9-year running average of pHOS for comparison with the target specified in the CMP, but annual estimates have been above the target. However, these estimates may have still included hatchery returns to the Wilson River from pre-CMP hatchery releases. A clearer signal of post-CMP hatchery programs would require additional monitoring.

The prevalence of hatchery fish in the Wilson River has been highest in lower portions of the basin, nearer to hatchery release locations (e.g., ODFW 2013a). The amount of disturbance (e.g., recreational use, swimming) is particularly high in the upper Wilson River. This may negatively affect areas in which a higher proportion of wild fish are holding and may disproportionately affect their over-summer survival.

Table I-5. Adult, jack, and total (Adults + Jacks) densities (number/resting hole) of early-run Chinook salmon observed during resting hole snorkel and dive counts in the Wilson River and Trask River Management Areas (Tillamook Population). The CMP does not include specific targets for this abundance index of early-run Chinook salmon. 5-year averages for the period prior to adoption of the CMP (2009-2013) are provided for context.

Spatial Extent	Year	Adult Density (Adults/Resting Hole)	Jack Density (Jacks/Resting Hole)	Total Density (Adults+Jacks/Resting Hole)
Wilson River Management Area (Tillamook Population)	2014	0.7	0.0	0.7
	2015	0.3	0.0	0.3
	2016	3.3	0.0	3.3
	2017	2.8	0.0	2.8
	2018	0.1	0.0	0.1
	2019	0.0	0.1	0.1
	2020	0.0	0.0	0.0
	2021	0.0	0.0	0.0
	2022	0.1	0.0	0.1
	2023	0.4	0.0	0.4
	2024	0.4	0.0	0.4
	2025	0.0	0.0	0.0
	Pre-CMP 5-yr Average (2009-2013)	1.2	0.0	1.2
Trask River Management Area (Tillamook Population)	2014	9.5	0.2	9.7
	2015	8.3	0.0	8.3
	2016	13.1	0.0	13.1
	2017	3.4	0.0	3.4
	2018	0.8	0.0	0.8
	2019	0.5	0.1	0.6
	2020	2.5	0.0	2.5
	2021	0.4	0.0	0.4
	2022	3.2	0.1	3.3
	2023	5.5	1.0	6.5
	2024	2.5	0.0	2.5
	2025	1.1	0.2	1.3
	Pre-CMP 5-yr Average (2009-2013)	9.4	0.3	9.7



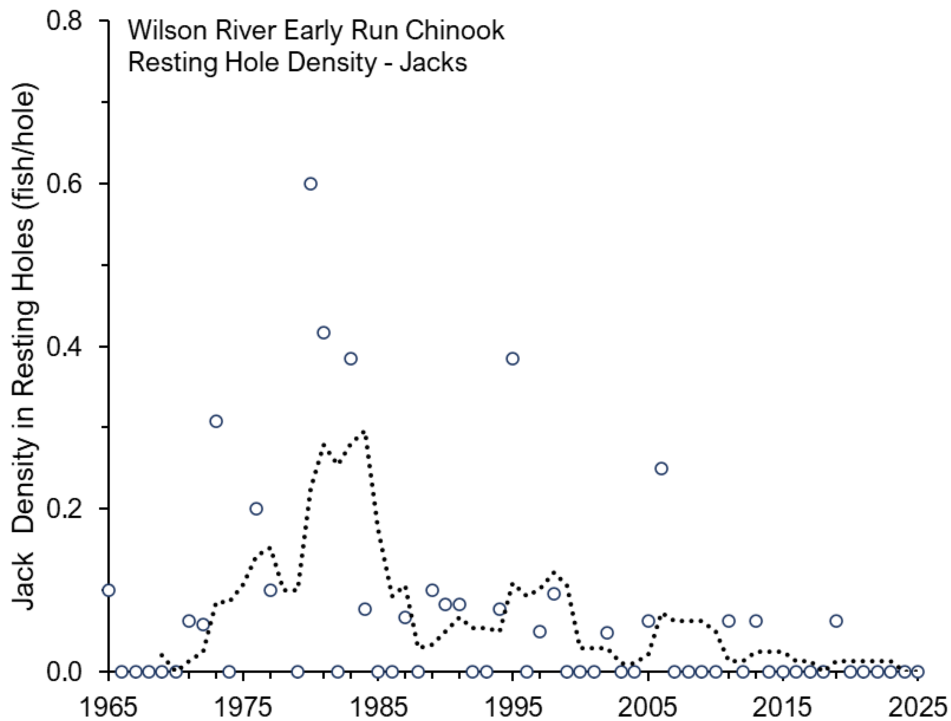


Figure I-6. Densities of adult (top panel) and jack (bottom panel) early-run Chinook in resting holes (fish/resting hole) in the Wilson River sub-basin. Solid and dashed lines are running 5-year averages of adults and jacks, respectively.

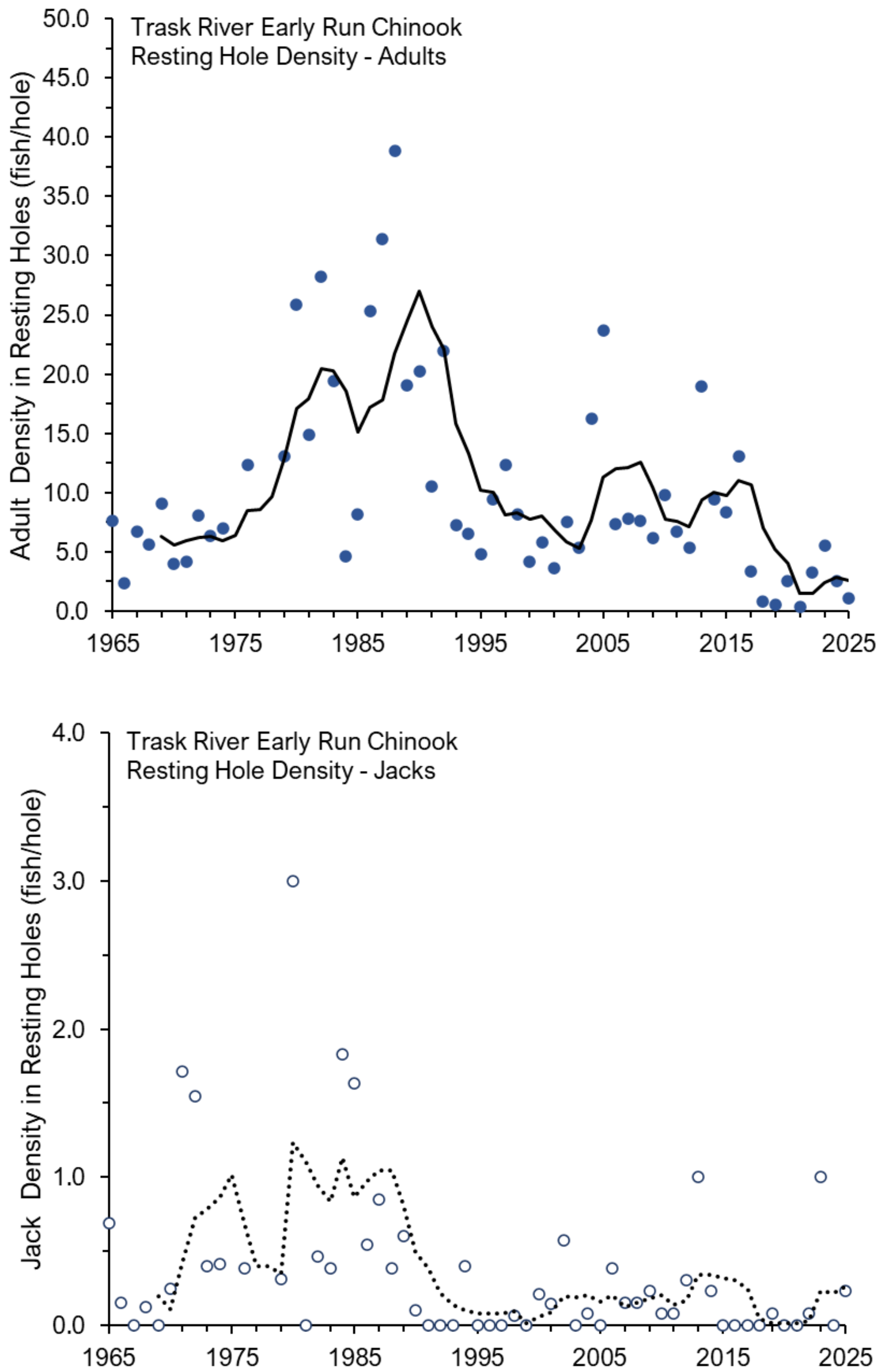


Figure I-7. Densities of adult (top panel) and jack (bottom panel) early-run Chinook in resting holes (fish/resting hole) in the Trask River sub-basin. Solid and dashed lines are 5-year averages of adults and jacks, respectively.

Table I-6. Peak adult density, occupancy, and pHOS for early-run Chinook during early-season (Sept – Oct) spawning ground surveys in the Tillamook Population. The CMP does not include specific abundance and occupancy targets for early-run Chinook. Averages from the last survey period prior to the CMP (2005-2008) provide context to post-CMP surveys. There are insufficient data to calculate a 9-year average pHOS.

Spatial Extent	Year	Peak Adult Density (Adults/mi)	Occupancy (%)	pHOS (%)
Wilson River Management Area (Tillamook Population)	2017	4.6	100	46
	2018	0.9	83	69
	2019	0.4	33	69
	2020	n/a	n/a	n/a
	Average (2005-2008)	3.3	69[1]	68

[1]Pre-CMP Occupancy average is based on 2007 and 2008.

.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: North Coast

Population: Nestucca

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for Nestucca Chinook salmon (Table I-7; Fig. I-8), which were revised in 2019 (See Appendix A). Spawner abundances exclude early-run life history variants, but additional information on Nestucca early-run Chinook salmon is provided below (See Tables I-9 & I-10; Fig. I-9).

Table I-7. Spawner abundance estimates for the Nestucca Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Nestucca Population	16,227 (11,900)	2,066 (1,600)	2014	10,053
			2015	7,397
			2016	6,487
			2017	6,426
			2018	3,060
			2019	3,335
			2020	4,708
			2021	3,206
			2022	4,718
			2023	6,435
			2024	4,338
			2025	-

The estimate in 2016 in the table above was adjusted in the 2025 WFMS to reflect recent revisions of abundance estimates.

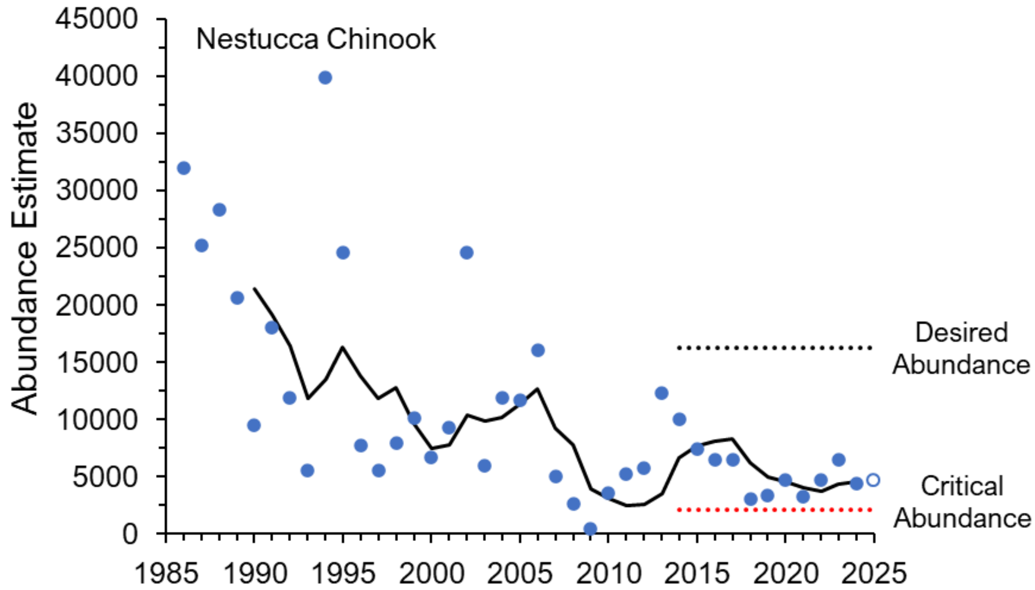


Figure I-8. Spawner abundance estimates for Nestucca Chinook salmon since 1986 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-8).

Table I-8. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Nestucca Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Nestucca Population	4,338	4,663	4,501	2,066

Hatchery Influence

The CMP allows for the release of 100,000 fall Chinook smolts into the Nestucca population area. The pHOS target (CMP Table A-III:4) for this population is ≤10% (<30%/<60% for significant and less significant spawning areas, respectively, within a two-mile radius around acclimation and hatchery release sites). Monitoring for Nestucca Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is currently evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS. Preliminary estimates in 2020 indicated that the 9-year average pHOS is likely to be near the CMP target, but the analysis is being refined to account for differences in observation methods and issues including low sample sizes in some years. Estimates will be provided when they are available.

Early-Run Chinook

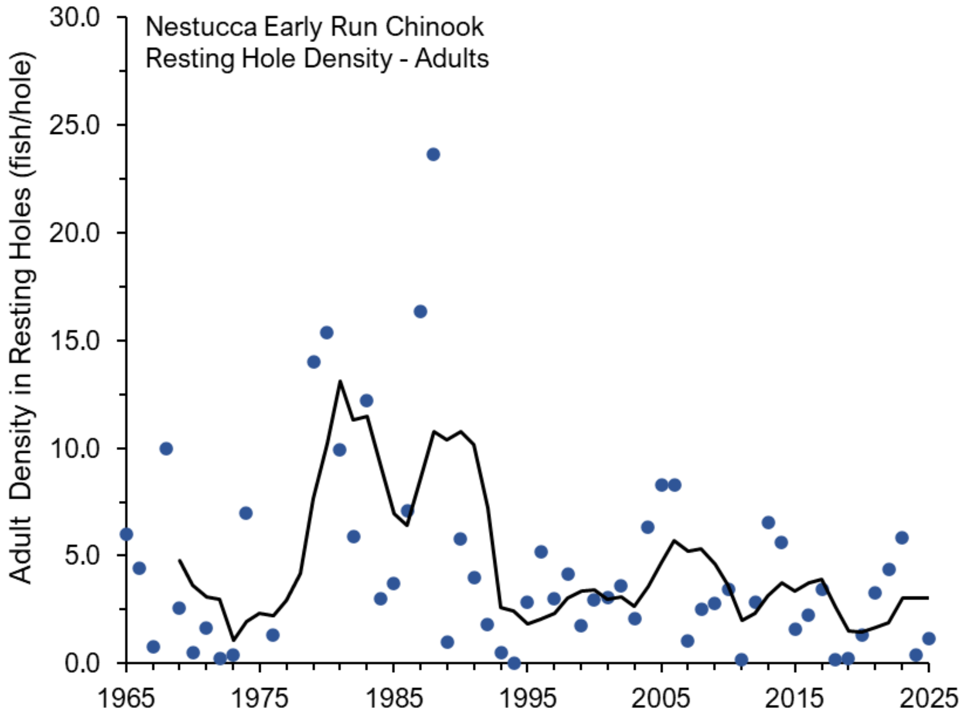
The abundance of early-run Chinook salmon in the Nestucca Population has been indexed through resting hole counts since 1965. Surveys consist of one to four divers (depending on the size of the hole) snorkeling through and enumerating the number of adult and jack Chinook salmon present. The same holes or reaches within each river system are snorkeled each year in mid- to late-August. Hatchery and wild fish are not differentiated in these surveys (Table I-9; Fig. I-9).

In addition to resting hole counts, ODFW conducted spawning ground surveys targeting early-run Nestucca Chinook salmon in 2005-2008 (ODFW 2008; 2013a) and 2017-2019. Surveys in 2017-2019 were not resourced with new funding; surveys were conducted with existing Fish Research and District resources and were therefore not at the same scale and effort as those conducted in 2005-2008. These surveys provide estimates of an abundance index (peak adult density), distribution (occupancy), and hatchery influence (pHOS) (Table I-10). Due to further budget and personnel limitations, these metrics cannot be estimated after 2019, although limited spawning ground surveys targeting early-run Chinook salmon have continued in the Nestucca Basin.

The CMP allowed for increased releases of hatchery Spring Chinook salmon in the Nestucca (100,000 to 200,000) and new releases into the Little Nestucca (0 to 30,000). The pHOS target (CMP Table A-III:4) for early-run Chinook salmon in the Nestucca population area is ≤30% (<60%/<90% for significant and less significant spawning areas, respectively, within a two-mile radius around acclimation and hatchery release sites). To date, there are insufficient data and spatial coverage to calculate a 9-year running average of pHOS for the early-run component for comparison with the target specified in the CMP, but annual estimates have been above the target. However, these estimates may include hatchery returns to the Nestucca from pre-CMP hatchery releases; a clearer signal of post-CMP hatchery programs would require additional monitoring. As in the Wilson River (Tillamook Population), the prevalence of hatchery fish in the Nestucca basin tends to be highest lower in the watershed, and pHOS has been higher, as anticipated, near new hatchery release locations (see Table I-10).

Table I-9. Adult, jack, and total (Adults + Jacks) densities (number/resting hole) of early-run Chinook salmon observed during resting hole snorkel and dive counts in the Nestucca Population. The CMP does not include specific targets for this abundance index of early-run Chinook salmon. 5-year averages for the period prior to adoption of the CMP (2009-2013) are provided for context.

Spatial Extent	Year	Adult Density (Adults/Resting Hole)	Jack Density (Jacks/Resting Hole)	Total Density (Adults+Jacks/Resting Hole)
Nestucca Population	2014	5.6	0.3	5.9
	2015	1.6	0.0	1.6
	2016	2.2	0.0	2.2
	2017	3.5	0.0	3.5
	2018	0.2	0.0	0.2
	2019	0.2	0.0	0.2
	2020	1.3	0.2	1.5
	2021	3.3	0.6	3.9
	2022	4.4	0.0	4.4
	2023	5.8	0.2	6.0
	2024	0.4	0.1	0.5
	2025	1.2	0.1	1.2
	Pre-CMP 5-yr Average (2009-2013)	3.2	0.1	3.3



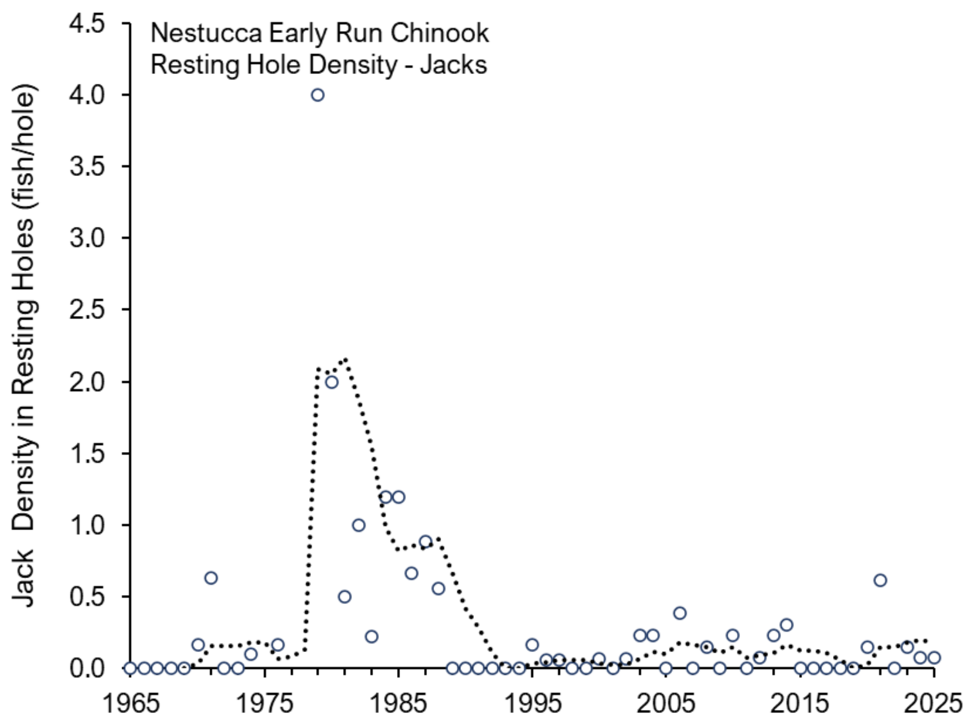


Figure I-9. Densities of adult (top panel) and jack (bottom panel) early-run Chinook in resting holes (fish/resting hole) in the Nestucca basin. Solid and dashed lines are 5-year averages of adults and jacks, respectively.

Table I-10. Peak adult density, occupancy, and pHOS for early-run Chinook during early-season (Sept – Oct) spawning ground surveys in the Nestucca Population. The CMP does not include specific abundance and occupancy targets for early-run Chinook. pHOS values represent observation on mainstem surveys; values in parentheses represent surveys in the Little Nestucca and Beaver Creek, which include new hatchery release locations. Averages from the last survey period prior to the CMP (2005-2008) provide context to post-CMP surveys. There are insufficient data to calculate a 9-year average pHOS.

Spatial Extent	Year	Peak Adult Density (Adults/mi)	Occupancy (%)	pHOS (%)
Nestucca Population (Mainstem)	2017	4.1	65	49 (58)
	2018	2.8	86	72 (96)
	2019	2.2	63	88 (100)
	2020	n/a	n/a	n/a
	Average (2005-2008)	7.0(1)	93(2)	72

[1]Surveys in 2017 through 2019 include the addition of the Little Nestucca and Beaver Creek to monitor new hatchery release locations. These locations were not included in surveys during 2005-2008.
[2]Pre-CMP Occupancy Average is based on 2007 and 2008.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: Mid Coast

Population: Salmon River

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for Salmon River Chinook salmon (Table I-11; Fig. I-10), which were revised in 2019 (See Appendix A). After 2019, the dataset for the Salmon River was revised to address inconsistencies in reporting of hatchery and wild fish. The thresholds below were calculated based on the revised estimates of wild abundance.

Table I-11. Spawner abundance estimates for the Salmon River Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1998 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Salmon River Population	1,933 (1,800)	363 (400)	2014	3,318
			2015	2,413
			2016	2,820
			2017	2,843
			2018	354
			2019	1,420
			2020	3,741
			2021	2,943
			2022	1,807
			2023	2,346
			2024	1,954
			2025	-

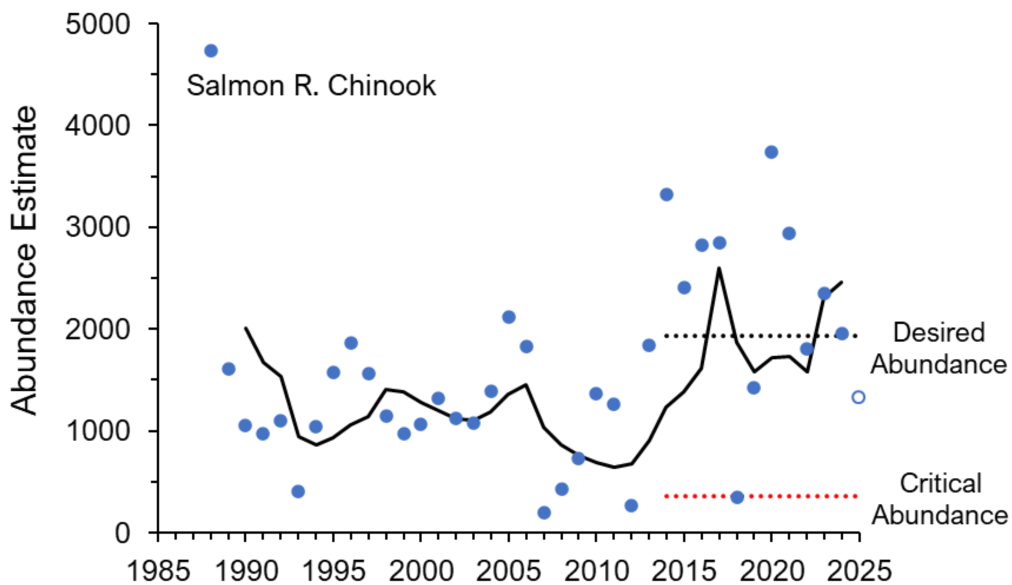


Figure I-10. Spawner abundance estimates for Salmon River Chinook salmon since 1988 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-12).

Table I-12. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Salmon River Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Salmon R. Population	1,954	1,324	1,639	363

Hatchery Influence

The CMP allows for the release of 200,000 fall Chinook salmon smolts into the Salmon River population area. The pHOS target (CMP Table A-III:4) for this population is ≤30% (<60%/<90% for significant and less significant spawning areas, respectively, within a two-mile radius around acclimation and hatchery release sites). The hatchery population from the Salmon River is monitored as a Pacific Salmon Treaty (PST) Exploitation Rate Indicator Stock. This monitoring provides for an estimate of pHOS. Targets for pHOS are evaluated as a running nine-year average to allow for some variability in the level of naturally spawning hatchery fish while ensuring that the long-term impact from hatchery fish is at, or below, targets (Table I-13).

Table I-13. Percent hatchery origin spawners (pHOS) for the Salmon River Population of Chinook salmon. pHOS targets are from CMP Table AIII:4. Targets inside parentheses are for the immediate area (2-mile radius) around acclimation and hatchery release sites and whether they contain significant (lower value) or less significant (higher value) spawning habitat.

Spatial Extent	pHOS Target (%)	Year	Observed	
			pHOS (%)	9-year Average (%)
Salmon River Population	≤30 (<60/<90)	2014	56	57
		2015	58	61
		2016	56	62
		2017	28	58
		2018	6	53
		2019	49	52
		2020	34	48
		2021	36	43
		2022	24	39
		2023	52	38
		2024	34	35
		2025	-	-

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: Mid Coast

Population: Siletz

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for Siletz Chinook salmon (Table I-14; Fig. I-11), which were revised in 2019 (See Appendix A). Spawner abundances exclude early-run life history variants, but additional information on Siletz early-run Chinook is provided below (See Table I-16; Fig. I-12).

Table I-14. Spawner abundance estimates for the Siletz Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Siletz Population	17,469 (8,100)	3,471 (2,300)	2014	16,895
			2015	11,232
			2016	17,327
			2017	14,063
			2018	5,757
			2019	3,263
			2020	13,530
			2021	4,462
			2022	11,275
			2023	14,490
			2024	9,452
			2025	-

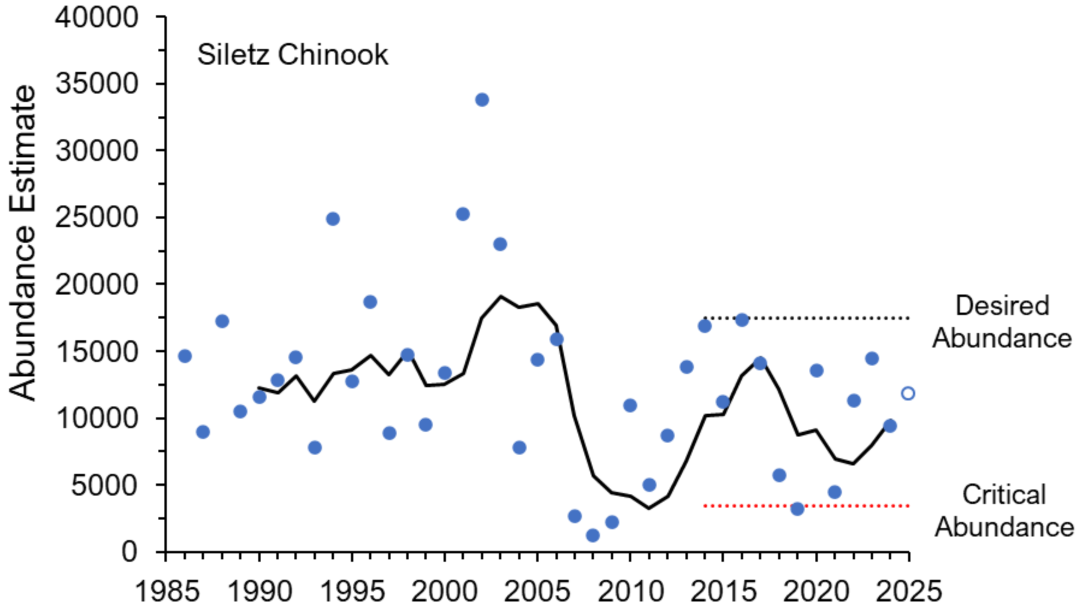


Figure I-11. Spawner abundance estimates for Siletz Chinook salmon since 1986 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-15).

Table I-15. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Siletz Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Siletz Population	9,452	11,782	10,617	3,471

Hatchery Influence

Hatchery Chinook salmon are not currently released into the Siletz population area. The pHOS target (CMP Table A-III:4) for this population is <10%. Monitoring for Siletz Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is currently evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS. Preliminary estimates in 2020 indicated that the 9-year average pHOS is likely to be below the CMP target, but the analysis is being refined to account for differences in observation methods and issues including low sample sizes in some years. Estimates will be provided when they are available.

Early-Run Chinook

Counts of early-run Chinook salmon at the Siletz Falls fish trap (River Mile 64.5) provide an index of abundance for early-run Chinook in the Siletz population (Table I-16; Fig. I-12). Currently, wild early-run Chinook salmon and wild summer steelhead are the only anadromous fish passed above the falls; resident trout and anadromous coastal cutthroat can volitionally pass the trap. The trap has been operated nearly year-round since 1994, and trap closures typically occur outside the period when early-run Chinook are passing the falls. During 1996 and 1997, the trap was run intermittently; data are extrapolated in those years to account for gaps.

Table I-16. Counts of natural origin early-run Chinook at Siletz Falls. The CMP does not include abundance targets for Siletz early-run Chinook. The five-year geometric mean for the period preceding the CMP (2009-2013) is provided for context.

Spatial Extent	Counts at Siletz Falls Trap	
	Year	Wild Adults
Siletz Early-Run Chinook (Above Siletz Falls)	2014	826
	2015	706
	2016	538
	2017	302
	2018	320
	2019	264
	2020	445
	2021	217
	2022	375
	2023	452
	2024	371
	2025	-
	Pre-CMP 5-yr Geomean (2009-2013)	343

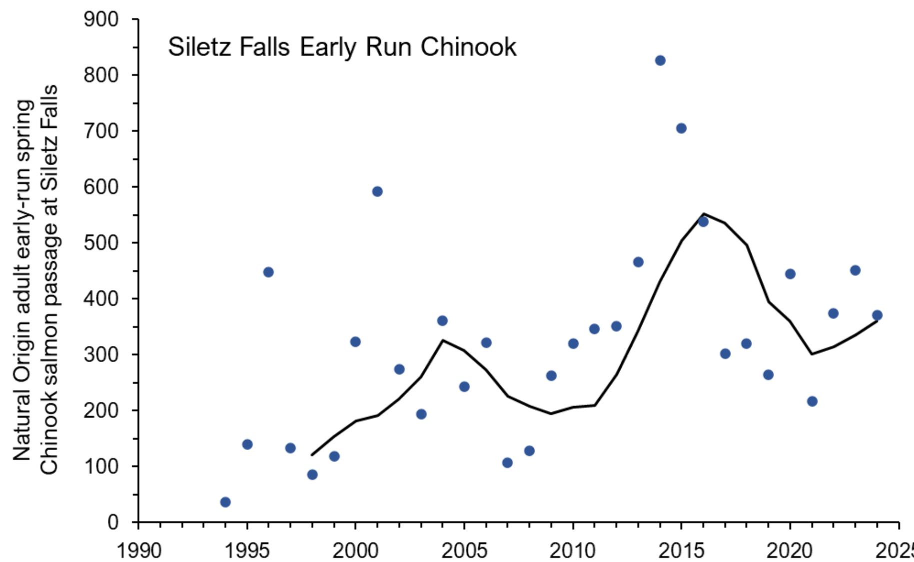


Figure I-12. Counts of natural origin adult early-run Chinook salmon (•) trapped and passed above Siletz Falls since 1994. Solid line is the running 5-year geometric mean of adult counts.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: Mid Coast

Population: Yaquina

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for Yaquina Chinook salmon (Table I-17; Fig. I-13), which were revised in 2019 (See Appendix A).

Table I-17. Spawner abundance estimates for the Yaquina Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Yaquina Population	9,849 (9,600)	1,564 (2,200)	2014	11,625
			2015	17,745
			2016	8,779
			2017	6,159
			2018	5,366
			2019	2,086
			2020	14,904
			2021	7,580
			2022	6,294
			2023	4,759
			2024	7,866
			2025	-

Estimates in 2016-2018 and 2022 in the table above were adjusted in the 2025 WFMS to reflect recent revisions of abundance estimates.

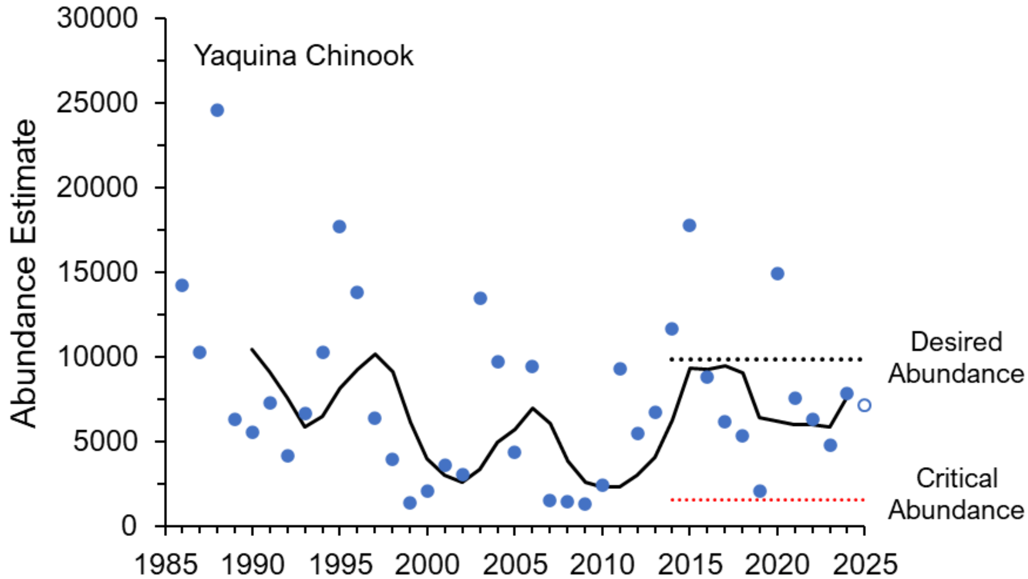


Figure I-13. Spawner abundance estimates for Yaquina Chinook salmon since 1986 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-18).

Table I-18. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Yaquina Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Yaquina Population	7,866	7,075	7,471	1,564

Hatchery Influence

Hatchery Chinook salmon are not currently released into the Yaquina population area. The pHOS target (CMP Table A-III:4) for this population is <10%. Monitoring for Yaquina Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is currently evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS. Preliminary estimates in 2020 indicated that the 9-year average pHOS is likely to be below the CMP target, but the analysis is being refined to account for differences in observation methods and issues including low sample sizes in some years. Estimates will be provided when they are available.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: Mid Coast

Population: Alsea

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for Alsea Chinook salmon (Table I-19; Fig. I-14), which were revised in 2019 (See Appendix A). Spawner abundances exclude early-run life history variants.

Table I-19. Spawner Abundance estimates for the Alsea Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Alsea Population	9,599 (9,300)	3,846 (2,900)	2014	9,782
			2015	14,609
			2016	8,261
			2017	8,010
			2018	8,532
			2019	6,315
			2020	11,458
			2021	7,572
			2022	8,427
			2023	11,559
			2024	8,906
			2025	-

Estimates in 2016-2018 and 2022-2023 in the table above were adjusted in the 2025 WFMS to reflect recent revisions of abundance estimates.

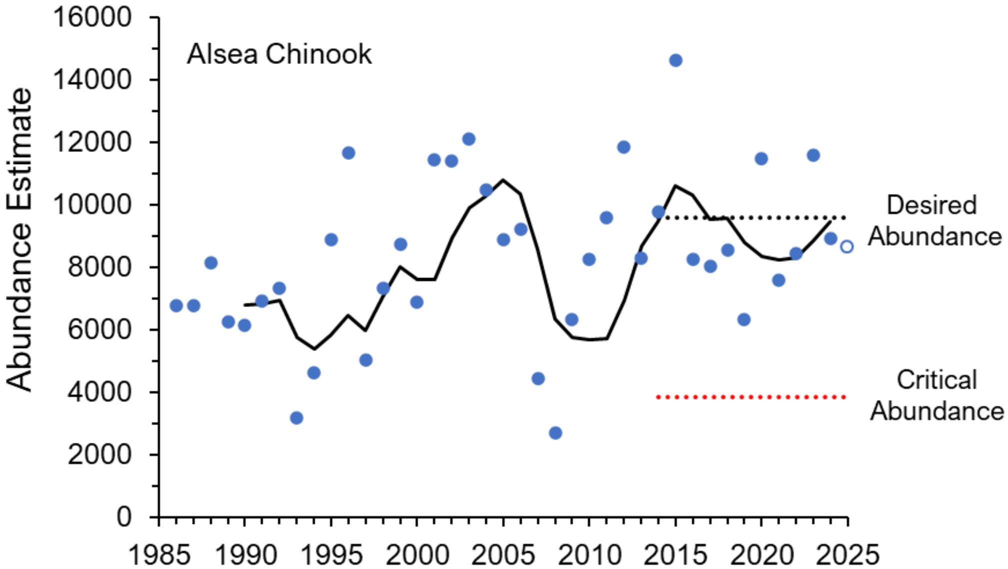


Figure I-14. Spawner abundance estimates for Alsea Chinook salmon since 1986 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-20).

Table I-20. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Alsea Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Alsea Population	8,906	8,627	8,767	3,846

Hatchery Influence

Hatchery Chinook salmon are not currently released into the Alsea population area. The pHOS target (CMP Table A-III:4) for this population is <10%. Monitoring for Alsea Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is currently evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS. Preliminary estimates in 2020 indicated that the 9-year average pHOS is likely to be below the CMP target, but the analysis is being refined to account for differences in observation methods and issues including low sample sizes in some years. Estimates will be provided when they are available.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: Mid Coast

Population: Siuslaw

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for Siuslaw Chinook salmon (Table I-21; Fig. I-15), which were revised in 2019 (See Appendix A).

Table I-21. Spawner abundance estimates for the Siuslaw Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Targets		Year	Abundance Estimate
	Desired	Critical		
Siuslaw Population	16,274 (26,200)	3,987 (6,900)	2014	16,395
			2015	18,061
			2016	8,859
			2017	7,333
			2018	2,958
			2019	1,653
			2020	4,518
			2021	3,655
			2022	6,081
			2023	7,355
			2024	7,477
			2025	-

Estimates in 2016-2023 in the table above were adjusted in the 2025 WFMS to reflect recent revisions of abundance estimates.

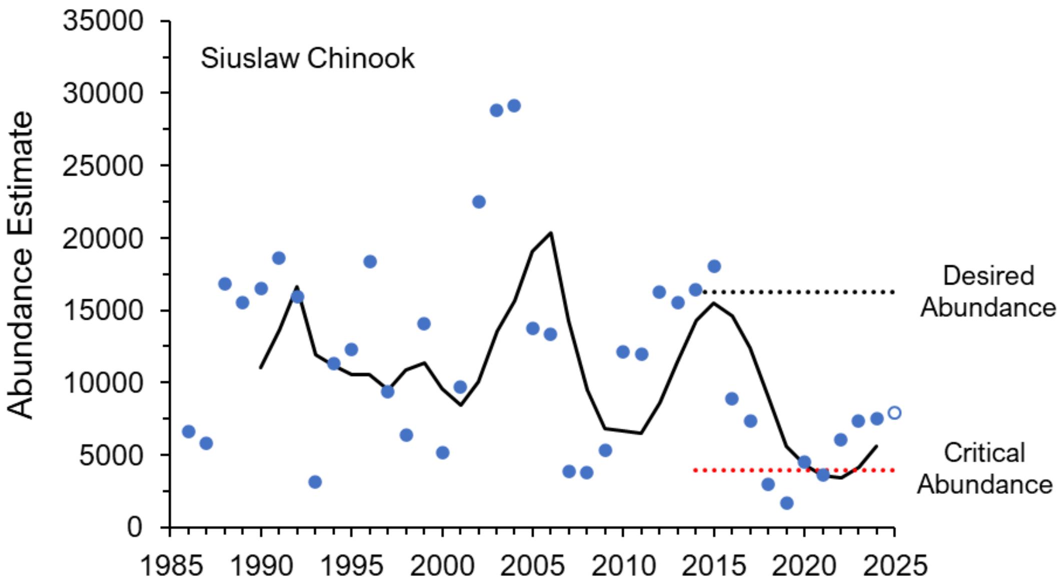


Figure I-15. Spawner abundance estimates for Siuslaw Chinook salmon since 1986 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-22).

Table I-22. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Siuslaw Population of Chinook Salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Siuslaw Population	7,477	7,840	7,659	3,987

Hatchery Influence

Hatchery Chinook salmon are not currently released into the Siuslaw population area. The pHOS target (CMP Table A-III:4) for this population is <10%. Monitoring for Siuslaw Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is currently evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS. Preliminary estimates in 2020 indicated that the 9-year average pHOS is likely to be below the CMP target, but the analysis is being refined to account for differences in observation methods and issues including low sample sizes in some years. Estimates will be provided when they are available.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: Umpqua

Population: Lower, Middle, South and North Umpqua Populations

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for Umpqua Chinook salmon (Table I-23; Fig. I-16), which were revised in 2019 (See Appendix A). For sliding scale harvest management, the abundance estimate for the Umpqua basin was calculated as the South Umpqua abundance estimate divided by 0.467, an apportionment based on three years of radio telemetry data from fish tagged in the lower mainstem Umpqua River.

Table I-23. Spawner abundance estimates for Umpqua Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of estimates from 1986-2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Umpqua Population Aggregate	17,740 (TBD[1])	3,197 (TBD[1])	2014	17,889
			2015	45,430
			2016	10,698
			2017	11,804
			2018	7,903
			2019	2,861
			2020	6,741
			2021	8,870
			2022	5,574
			2023	8,399
			2024	1,318
			2025	-
South Umpqua Population	8,284 (6,500)	1,493 (1,500)	2014	8,356
			2015	21,222[(2)]
			2016	4,997
			2017	5,514
			2018	3,692
			2019	1,337
			2020	3,149
			2021	4,143
			2022	2,604
			2023	3,924
			2024	616
			2025	-

[1]The CMP (Table A-III) included abundance targets only for the S. Umpqua population. Targets for the Lower Umpqua and Middle Umpqua were "To Be Determined" (TBD). The Sliding Scale for harvest is implemented at the stratum-scale for the Umpqua; targets for the S. Umpqua are shown.
[2]2015 was a change in methodology to a basis in the sum of carcasses. The estimate for the Umpqua Aggregate in 2015 and the S. Umpqua estimates were revised in the 2025 WFMS to reflect recent revisions.

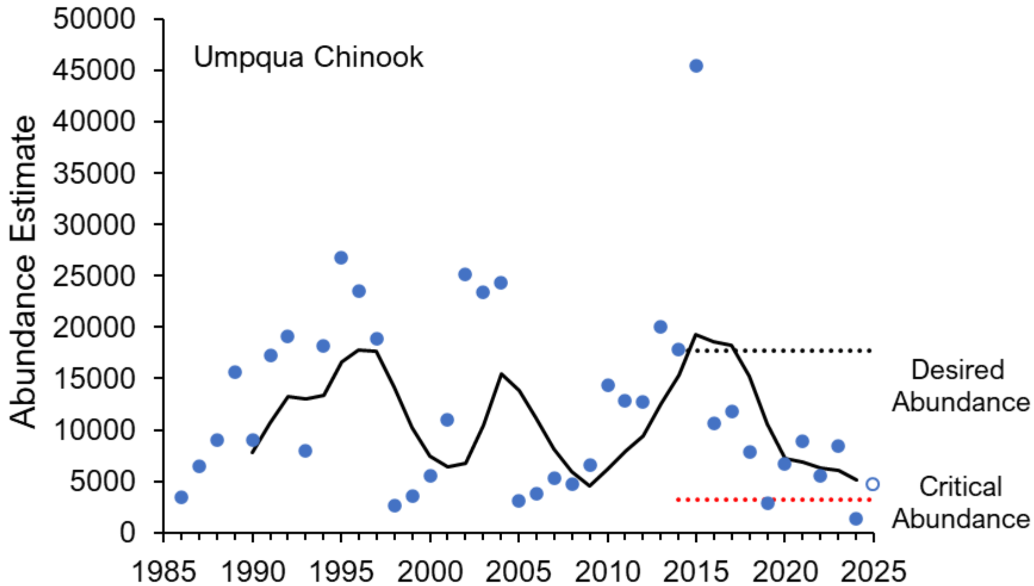


Figure I-16. Spawner abundance estimates for Umpqua Chinook salmon since 1986 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-24).

Table I-24. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for Umpqua Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Umpqua	1,318	4,710	3,014	3,197

Hatchery Influence

The CMP allows for the release of Fall Chinook salmon smolts/pre-smolts in the Lower Umpqua and Middle Umpqua population areas. The pHOS target (CMP Table A-III:4) for the Lower Umpqua and Middle Umpqua populations is ≤10% (<30%/<60% for significant and less significant spawning areas, respectively, within a two-mile radius around acclimation and hatchery release sites). The pHOS target for the South Umpqua population is <10%. Monitoring for Coastal Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is currently evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS. Preliminary estimates in 2020 indicated that the 9-year average pHOS is likely to be below CMP targets for Umpqua populations in aggregate, but the analysis is being refined to account for differences in observation methods and issues including low sample sizes in some years. Estimates will be provided when they are available.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: Mid-South Coast

Population: Coos

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for the Coos Population of Chinook salmon (Table I-25; Fig. I-17), which were revised in 2019 (See Appendix A).

Table I-25. Spawner abundance estimates for the Coos Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Coos Population	9,711 (6,300)	2,531 (1,800)	2014	9,708
			2015	18,484
			2016	4,404
			2017	2,066
			2018	4,800
			2019	6,883
			2020	9,888
			2021	2,229
			2022	6,116
			2023	5,833
			2024	6,510
			2025	-

Estimates in 2014 and 2023 in the table above were adjusted in the 2025 WFMS to reflect recent revisions of abundance estimates.

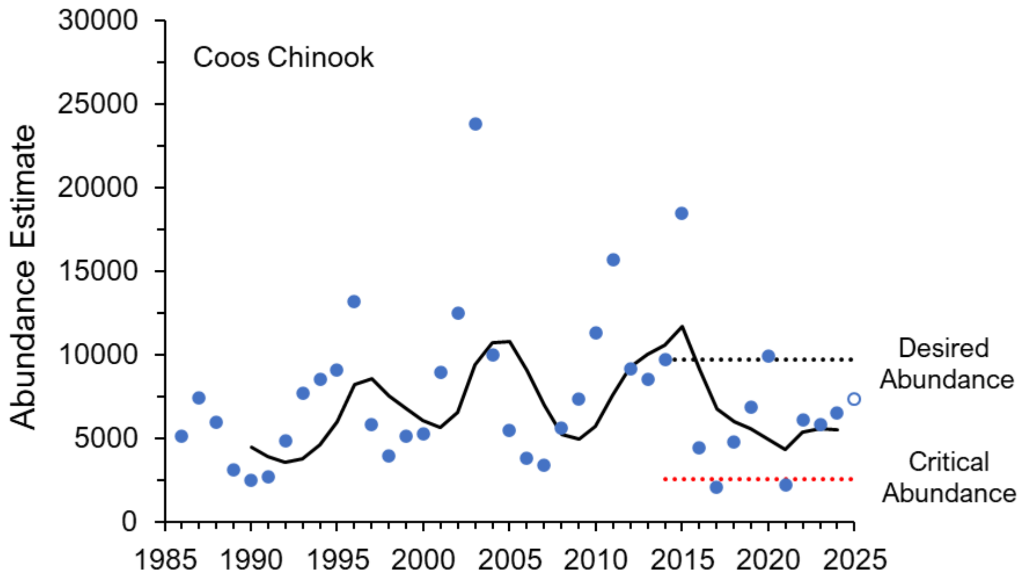


Figure I-17. Spawner abundance estimates for Coos Chinook salmon since 1986 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-26).

Table I-26. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Coos Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Coos Population	6,510	7,342	6,926	2,531

Hatchery Influence

The CMP allows for the release of approximately 2 million fall Chinook salmon smolts/pre-smolts into the Coos Bay Frontal management area. The pHOS target (CMP Table A-III:4) for the Coos population is ≤10% (<30%/<60% for significant and less significant spawning areas, respectively, within a two-mile radius around acclimation and hatchery release sites). Monitoring for Coos Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is currently evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS. Preliminary estimates in 2020 indicated that the 9-year average pHOS may be higher than CMP targets, but the analysis is being refined to account for differences in observation methods, issues including low sample sizes in some years, and to account for acclimation and hatchery release sites. Estimates will be provided when they are available.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: Mid-South Coast

Population: Coquille

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for Coquille Chinook salmon (Table I-27; Fig. I-18), which were revised in 2019 (See Appendix A). Spawner abundances exclude early-run life history variants. There are no independent indices of abundance currently available for early-run Chinook salmon in the Coquille population; there have been no observations of early-run Chinook salmon on limited surveys and spot checks since plan adoption.

Table I-27. Spawner abundance estimates for the Coquille Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Coquille Population	13,782 (14,300)	2,833 (3,500)	2014	12,586
			2015	14,669
			2016	9,720
			2017	6,002
			2018	385
			2019	226
			2020	966
			2021	349
			2022	846
			2023	633
			2024	341
			2025	-

Estimates in 2017-2022 in the table above were adjusted in the 2025 WFMS to reflect recent revisions of abundance estimates.

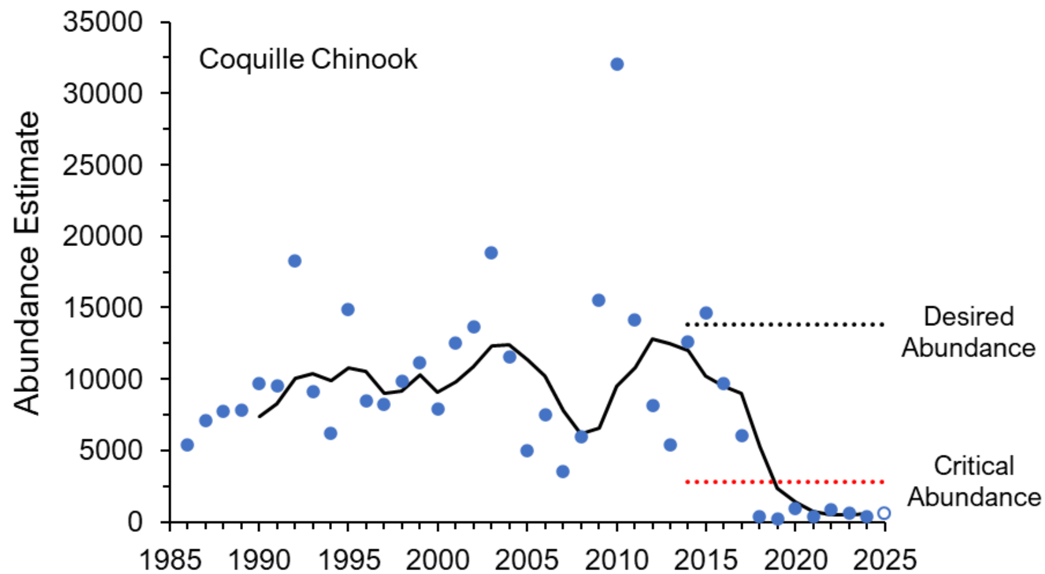


Figure I-18. Spawner abundance estimates for Coquille Chinook salmon since 1986 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-28).

Table I-28. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Coquille Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Coquille Population	341	574	458	2,833

Hatchery Influence

The CMP allows for the release of 175,000 hatchery fall Chinook salmon smolts/pre-smolts into the lower Coquille River (Coquille Bay). The pHOS target (CMP Table A-III:4) for this population is ≤10% (<30%/<60% for significant and less significant spawning areas, respectively, within a two-mile radius around acclimation and hatchery release sites). In 2022, a fall Chinook conservation hatchery program was initiated in the Coquille Basin. Conservation hatchery releases are marked differently than harvest augmentation releases and are intended to supplement the naturally spawning population. Monitoring for Coquille Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is currently evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS. Preliminary estimates in 2020 indicated that the 9-year average pHOS is likely to be below the CMP target, but the analysis is being refined to account for differences in observation methods and issues including low sample sizes in some years. Estimates will be provided when they are available.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: Mid-South Coast

Population: Floras

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for Floras Chinook salmon (Table I-29; Fig. I-19), which were revised in 2019 (See Appendix A).

Table I-29. Spawner abundance estimates for the Floras Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Floras Population	600 (700)	100 (100)	2014	199
			2015	593
			2016	343
			2017	173
			2018	23
			2019	69
			2020	266
			2021	42
			2022	151
			2023	135
			2024	361
			2025	-

Estimates in 2016-2018 in the table above were adjusted in the 2025 WFMS to reflect recent revisions of abundance estimates.

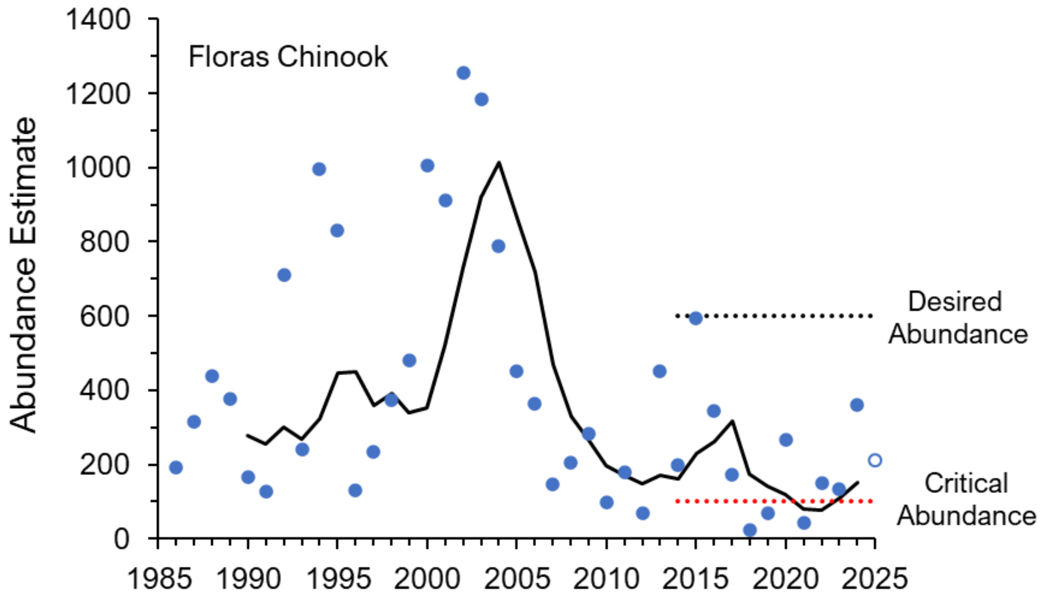


Figure I-19. Spawner abundance estimates for the Floras population of Chinook salmon since (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-30).

Table I-30. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Floras Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Floras Population	361	211	286	100

Hatchery Influence

Hatchery Chinook salmon are not currently released into the Floras population area. The pHOS target (CMP Table A-III:4) for this population is <10%. Monitoring for Floras Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS for the Floras Population. These estimates will be provided when they become available. Targets for pHOS will be evaluated using the running nine-year average rather than annual point estimates to account for error in estimates and to allow for some variability in the level of naturally spawning hatchery fish while ensuring that the long-term impact from hatchery fish is at, or below, targets.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: Mid-South Coast

Population: Sixes

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for Sixes River Chinook salmon (Table I-31; Fig. I-20), which were revised in 2019 (See Appendix A).

Table I-31. Spawner abundance estimates for the Sixes Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Sixes Population	4,124 (4,400)	712 (1,200)	2014	3,829
			2015	16,883
			2016	5,444
			2017	3,398
			2018	994
			2019	1,491
			2020	4,686
			2021	3,113
			2022	3,105
			2023	3,855
			2024	1,500
			2025	-

Estimates in 2016-2019 in the table above were adjusted in the 2025 WFMS to reflect recent revisions of abundance estimates.

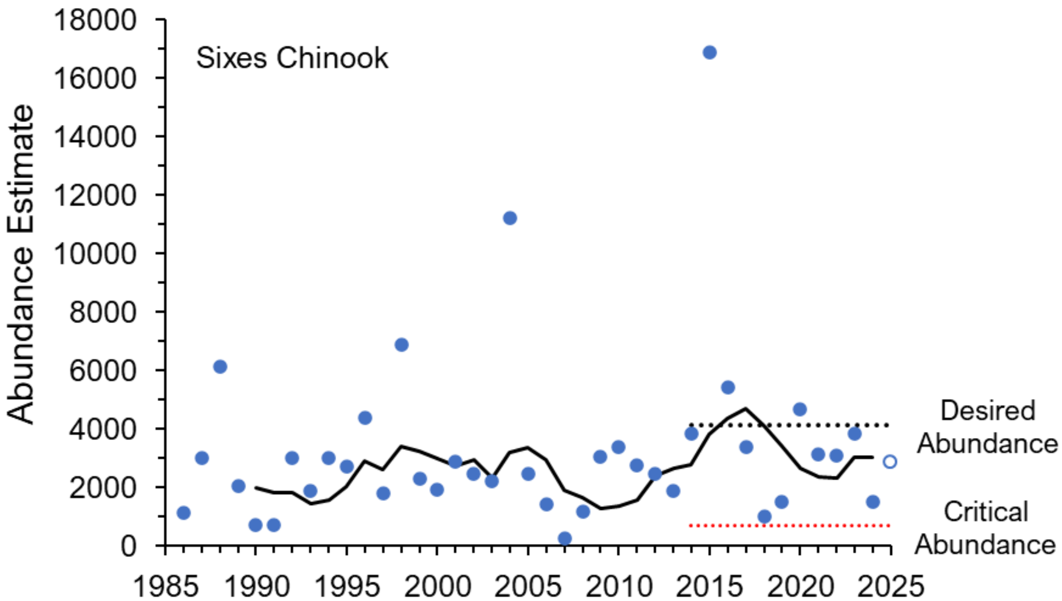


Figure I-20. Spawner abundance estimates for Sixes River Chinook salmon since 1986 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-32).

Table I-32. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Sixes Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
Sixes Population	1,500	2,877	2,189	712

Hatchery Influence

Hatchery Chinook salmon are not currently released into the Sixes population area. The pHOS target (CMP Table A-III:4) for this population is <10%. Monitoring for Sixes Chinook salmon was not specifically designed to estimate pHOS at the population scale, but ODFW is evaluating the existing data (e.g., carcass observations on spawning surveys) to provide the best possible estimates of pHOS for the Sixes Population. These estimates will be provided when they are available. Targets for pHOS will be evaluated using the running nine-year average rather than annual point estimates to account for error in estimates and to allow for some variability in the level of naturally spawning hatchery fish while ensuring that the long-term impact from hatchery fish is at, or below, targets.

WILD FISH MONITORING SUMMARY

SMU: Coastal Chinook Salmon

Stratum: Mid-South Coast

Population: Elk River

Abundance

A time series of spawner abundance estimates is used to evaluate the CMP's Desired and Critical Abundance criteria for Elk River Chinook salmon (Table I-33; Fig. I-21), which were revised in 2019 (See Appendix A). In the CMP, ODFW classified the Elk River Chinook population as non-viable. Given this non-viable status, ODFW will continue to evaluate the adequacy of these abundance thresholds for Elk River Chinook.

Table I-33. Spawner abundance estimates for the Elk River Population of Chinook salmon. Desired and Critical Abundance thresholds are calculated as the 75th and 5th percentile, respectively, of the lognormal distribution of abundance estimates from 1986 through 2018. For comparison, the CMP's original desired and critical thresholds (CMP Table AIII:2) are provided in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Elk River Population	2,243 (2,000)	690 (800)	2014	1,628
			2015	3,472
			2016	2,151
			2017	1,880
			2018	1,260
			2019	1,566
			2020	1,719
			2021	985
			2022	1,743
			2023	624
			2024	659
			2025	-

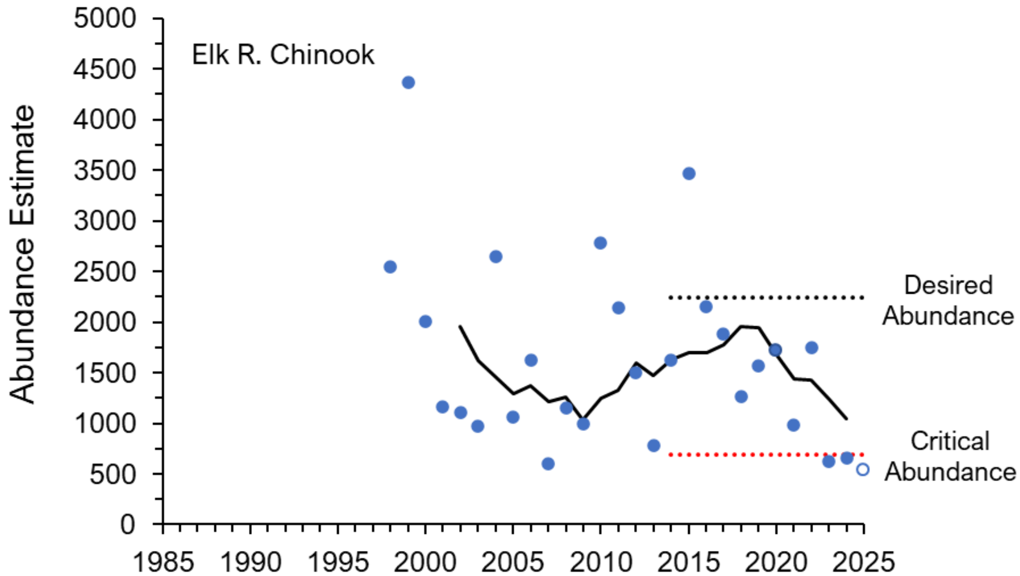


Figure I-21. Spawner abundance estimates for Elk River Chinook salmon since 1998 (•; open circle is the abundance forecast). The solid black line is the running 5-year geometric mean of abundance estimates; the black and red dashed lines are the revised Desired and Critical Abundance thresholds, respectively.

Harvest - Sliding Scale

The CMP Chinook sliding scale is intended to help determine the allowable bag limits for fisheries on wild coastal fall Chinook salmon. The sliding scale Decision Metric is the average of the spawner abundance estimate and the upcoming year's forecast abundance (Table I-34).

Table I-34. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the Elk River Population of Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Closure Metric	Critical Abundance
Elk River Population	659	541	600	690

Hatchery Influence

The CMP allows for the release of 275,000 Fall Chinook salmon smolts into the Elk River population area. The pHOS target (CMP Table A-III:4) for this population is ≤30%. The hatchery population from the Elk River is monitored as a Pacific Salmon Treaty (PST) Exploitation Rate Indicator Stock. This monitoring provides for an estimate of pHOS. Targets for pHOS are evaluated as a running nine-year average to allow for some variability in the level of naturally spawning hatchery fish while ensuring that the long-term impact from hatchery fish is at, or below, targets (Table I-35). Nine-year averages of pHOS were higher than the CMP target immediately after plan adoption but have since declined to the target level.

Table I-35. Percent hatchery origin spawners (pHOS) for the Elk River Population of Chinook salmon. pHOS targets are from CMP Table AIII:4.

Spatial Extent	pHOS Target (%)	Year	Observed	
			pHOS (%)	9-year Average (%)
Elk River Population	≤30	2014	28	52
		2015	20	50
		2016	31	48
		2017	25	43
		2018	6	36
		2019	27	31
		2020	24	28
		2021	45	29
		2022	23	25
		2023	60	29
		2024	32	30
		2025	-	-

Section II. Coastal Spring Chinook Salmon

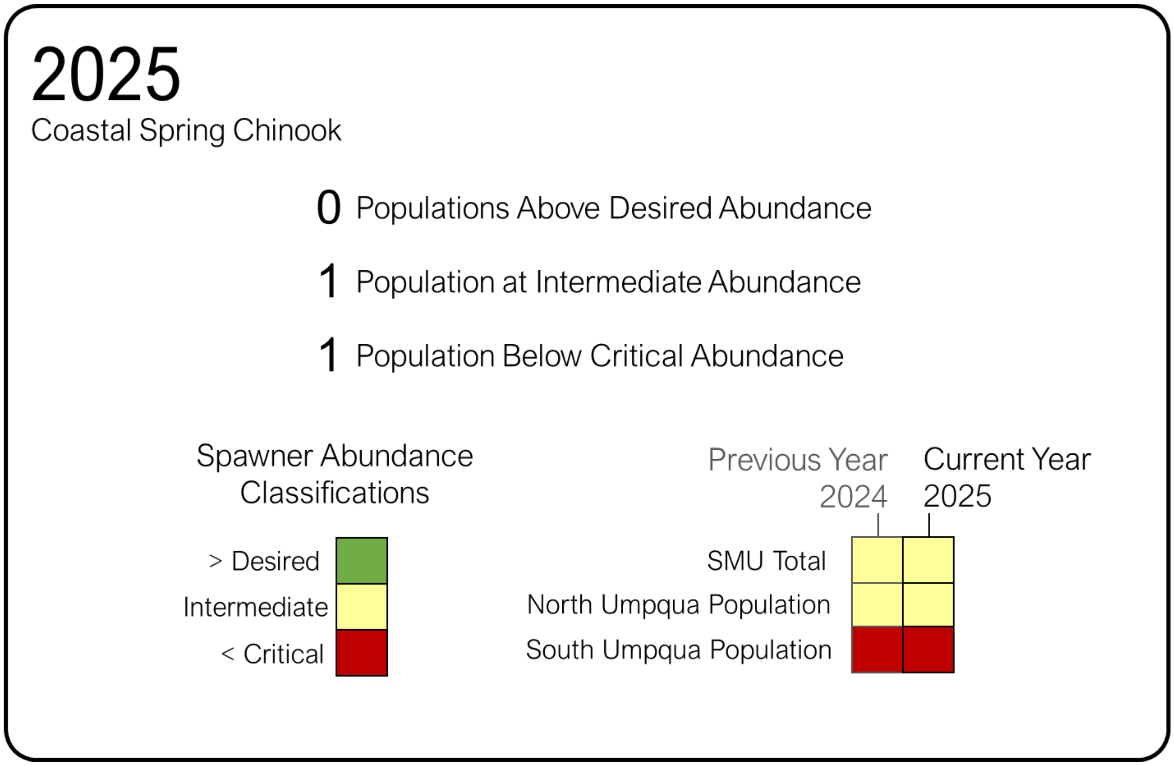


Figure II-1. Spawner abundance classifications for the Coastal Spring Chinook Salmon SMU and its constituent populations for the current and previous reporting years. Classifications are Below the CMP Critical Abundance Threshold (Red), Above the CMP Desired Abundance Target (Green), or Intermediate between Critical Abundance and Desired Abundance (Yellow). Abundance thresholds and classifications at the SMU scale are the sum of both populations.

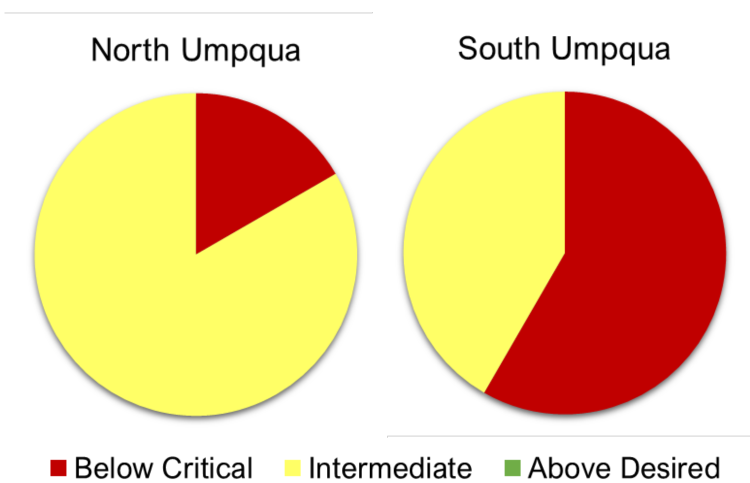


Figure II-2. Coastal Spring Chinook salmon. Percent of years from since 2014 (excluding 2015 for S. Umpqua – unsurveyed) with abundance estimates Below Critical Abundance (Red), Above Desired Abundance (Green), or Intermediate between Critical Abundance and Desired Abundance (Yellow). The CMP did not include a Critical Abundance threshold for the South Umpqua population, where harvest is prohibited. In 2022, reporting was revised to include a critical abundance threshold of 150, established for this population as a part of the Umpqua River Spring Chinook Sliding Scale for harvest management (ODFW 2022a).

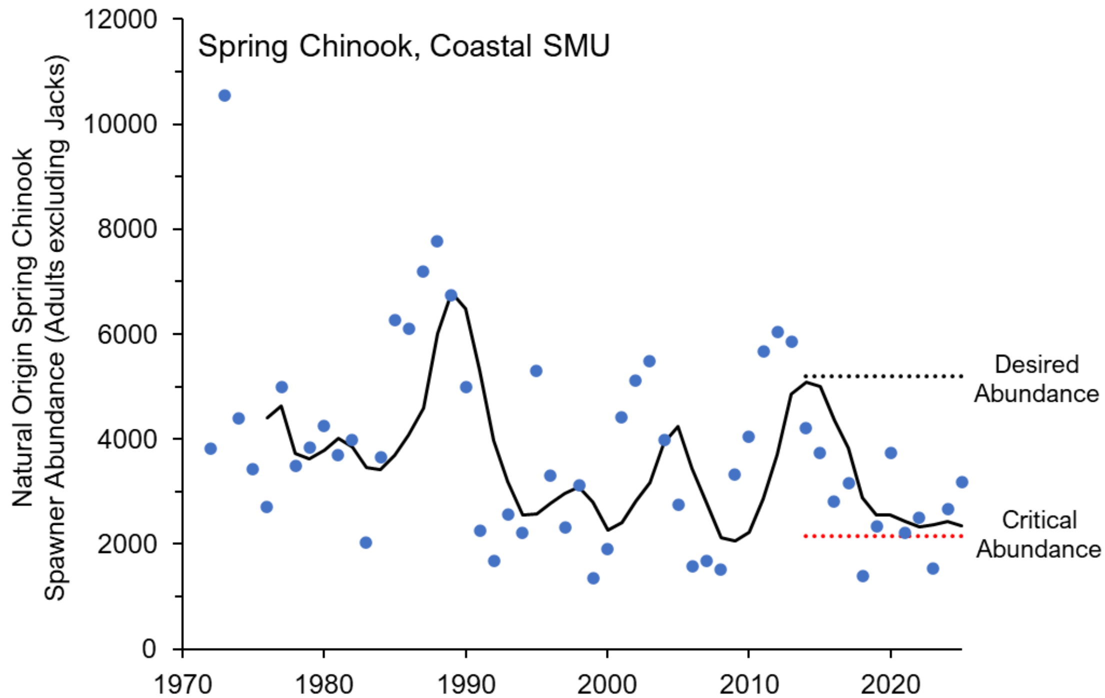


Figure II-3. Abundance of Coastal Spring Chinook Salmon (Adults, excluding Jacks) since 1972 (•). 1972 is the start of the base period for the CMP assessment. The solid black line is the running 5-year geometric mean of abundance estimates; dashed black and red lines are the CMP Desired and Critical Abundance thresholds, respectively, calculated as the sum of abundance thresholds for the SMU's constituent populations, the North and South Umpqua.

Monitoring and Assessment Notes

Abundance

Abundances of Spring Chinook salmon in the North and South Umpqua populations are estimated based on Winchester Dam counts and surveys of adult Spring Chinook salmon holding in resting holes, respectively. Abundance estimates and comparisons against CMP targets are provided in the population summaries. The CMP did not include a Critical Abundance threshold for South Umpqua Spring Chinook salmon because harvest of Chinook salmon is prohibited in the South Umpqua Basin. However, a Critical Abundance was developed for this population as a part of a sliding scale for harvest management of natural origin Spring Chinook salmon in the Umpqua Basin (See *Harvest*, below).

Hatchery Influence

Hatchery influence is addressed separately in the population summaries.

Harvest

The CMP directed ODFW to develop a sliding scale for fishery management of natural origin Spring Chinook salmon in the mainstem Umpqua River. Developed in 2022, this sliding scale uses the abundance of the North Umpqua population to facilitate annual adjustment of bag limits and, when necessary, conservation closures in the mainstem Umpqua River and North Umpqua River (ODFW 2022a). This framework also includes an additional conservation closure criterion for the mainstem Umpqua River fishery based solely on the South Umpqua River Spring Chinook Salmon Population. This criterion is intended to ensure sufficient escapement for that small population. South Umpqua Spring Chinook salmon returns have been very low in recent years, resulting in conservation closures for the mainstem Umpqua River and the need for a critical abundance threshold to guide decisions about the mainstem fishery. Note that bag limits for hatchery Spring Chinook salmon are not affected by the sliding scale. Additional information is provided in the population summaries.

Productivity

ODFW will use size composition to assess productivity measures. Although a lack of age composition, marine harvest impacts or current smolt abundance estimates preclude estimation of adult-to-adult survival, smolt-to-adult survival or adult-to-outmigrant survival estimation at this time, there is some ability to collect age information during existing and planned sampling.

Spatial Structure

Spatial structure is not directly assessed for South Umpqua or North Umpqua Spring Chinook salmon because sampling is not conducted throughout the range of spawning or rearing habitat for these populations.

Diversity

Measurement of phenotypic diversity for Coastal Spring Chinook salmon is limited to estimates of run timing of the North Umpqua population at Winchester Dam. To account for influences of inter-annual differences in environmental conditions, ODFW will evaluate diversity at the next assessment period called for in the CMP.

WILD FISH MONITORING SUMMARY

SMU: Coastal Spring Chinook Salmon

Stratum: Umpqua

Population: South Umpqua

Abundance

The abundance of South Umpqua Spring Chinook salmon is indexed through snorkel and dive counts in resting holes in the upper portion of the South Umpqua River (Table II-1; Fig.II-4). These counts consist of underwater observations of summer-holding adults in select index pools. The counts have been conducted annually for over 40 years and provide a long-term index of trend for this population. The base period for the CMP assessment began in 1972 because exploitation rates prior to this time are unknown. Recent resting hole counts are assumed to equal 95% of the census population and are expanded accordingly. The CMP did not include a Critical Abundance threshold for the South Umpqua Population of Spring Chinook salmon; a Critical Abundance threshold of 150 was developed with the Umpqua Spring Chinook sliding scale for harvest management (ODFW 2022a). This threshold is applied to the current assessment.

Table II-1. Resting-hole abundance estimates for natural origin Spring Chinook in the South Umpqua Population. Desired Abundance Targets are from CMP Table A-III:2. Estimates are adults, excluding jacks. The CMP does not include a Critical Abundance threshold for South Umpqua Spring Chinook salmon.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
South Umpqua Population	600(1)	150(2)	2014	245
			2015	Not Surveyed(3)
			2016	247
			2017	216
			2018	24
			2019	43
			2020	107(4)
			2021	116(5)
			2022	160(6)
			2023	19
			2024	111
			2025	131

1Desired Abundance for South Umpqua Spring Chinook is calculated as the Minimum Equilibrium Threshold (n = 500) + 20%

2The CMP did not include a critical abundance threshold for South Umpqua Spring Chinook because there is no harvest on this population within the South Umpqua basin. However, a critical abundance threshold (n = 150) was developed for an Umpqua Spring Chinook harvest sliding scale in early 2022 (ODFW 2022a).

3Resting hole surveys were not conducted in 2015 to avoid additional stress to fish given low flow conditions and high water temperatures.

4The value initially reported for 2020 (102) was revised in 2022 to reflect expansion of the raw count (102/0.95 = 107).

5The 2021 estimate includes adjustments to account for changes to the temporal and spatial extent of surveys due to wildfires.

[6]The 2022 estimate was based on a complete census of resting pools with no expansion of the estimate.

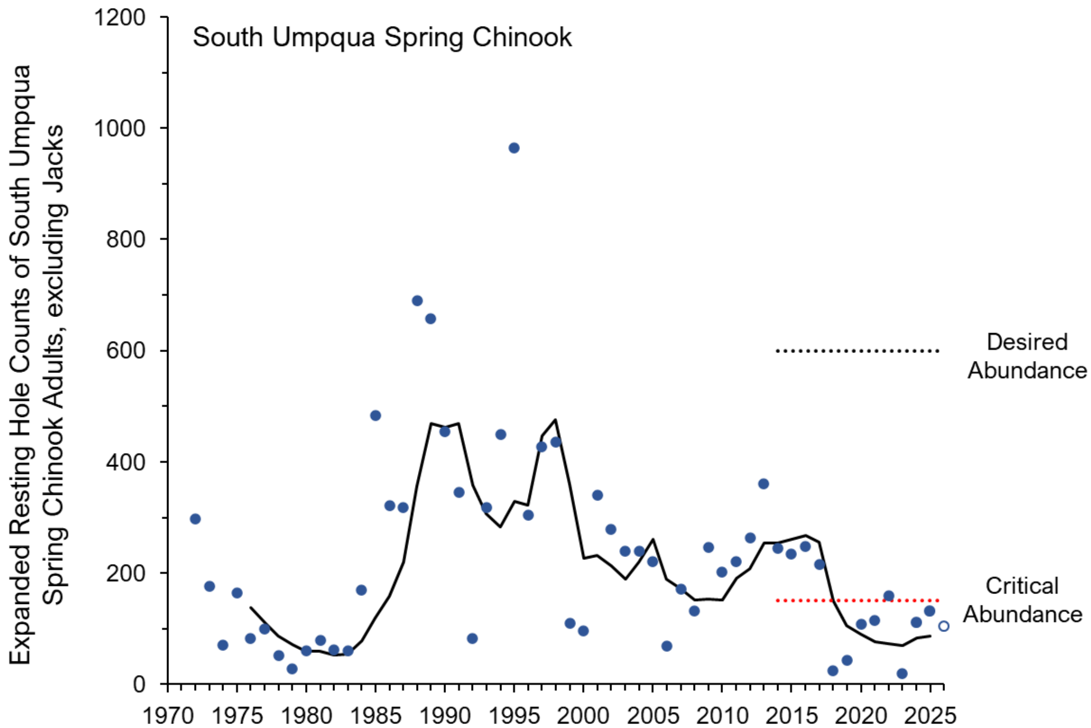


Figure II-4. Resting hole counts of natural origin South Umpqua Spring Chinook (Adults, excluding jacks) expanded by the proportion of the population represented in index pool counts since 1972 (•). The open circle is the forecast abundance. The solid black line is the running 5-year geometric mean of abundance estimates, and the black dashed line is CMP Desired Abundance. The CMP did not define a Critical Abundance threshold for South Umpqua Spring Chinook. A critical abundance threshold of 150 was developed for the Umpqua Spring Chinook sliding scale for harvest management (ODFW 2022a).

Harvest

Under a sliding scale for harvest management, finalized in January 2022 (ODFW 2022a), a conservation closure to harvest of natural origin Spring Chinook salmon will be implemented on the mainstem Umpqua River if the decision metric (average of pre-season forecast abundance and previous year's spawner abundance) for the South Umpqua population falls below a critical abundance threshold of 150 spawners (Table II-2). This precautionary approach is warranted given that this population is below the CMP's Minimum Equilibrium Threshold (MET = 500). The critical abundance threshold of 150 spawners identified here is 25% below median abundance for the period assessed in the CMP and well above historical lows for this population.

Table II-2. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the South Umpqua Population of spring Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
South Umpqua Population	131	104	118	150

Hatchery Influence

Hatchery Spring Chinook salmon are not currently released into the South Umpqua River. Annual estimates of pHOS for the South Umpqua population of Spring Chinook salmon are based on observations of fin-clipped fish during resting hole surveys (Table II-3). All unmarked fish are assumed to be wild. pHOS targets are evaluated as a running nine-year average to allow for some variability in the level of naturally spawning hatchery fish while ensuring that the long-term impact from hatchery fish is at, or below, targets.

Table II-3. Percent hatchery origin spawners (pHOS) for the South Umpqua Population of Spring Chinook salmon. pHOS targets are from CMP Table AIII:4. pHOS estimates were revised in 2025 to reflect adults, excluding jacks, resulting in a ~2% increase in pHOS estimates in 2019 and 2023.

Spatial Extent	pHOS Target[1]	Year	Observed	
			pHOS (%)	9-year Average (%)
South Umpqua Population	< 10%	2014	1	1
		2015	Not Surveyed[1]	1
		2016	0	1
		2017	0	1
		2018	0	1
		2019	5	2
		2020	0	2
		2021	1	1
		2022	1	1
		2023	5	1
		2024	0	1
		2025	0	1

[1]Resting hole surveys were not conducted in 2015 to avoid stress to fish due to low water and high water temperatures.

WILD FISH MONITORING SUMMARY

SMU: Coastal Spring Chinook Salmon

Stratum: Umpqua

Population: North Umpqua

Abundance

ODFW estimates the abundance of North Umpqua Spring Chinook salmon through video counts at Winchester Dam (Table II-4; Fig. II-5). Wild fish are distinguished from hatchery fish by the presence of intact adipose fins. Estimates of naturally produced spawners are adjusted to account for jacks by origin (hatchery or wild), a change in counting methods in 1992, wild fish retained at hatchery facilities (wild broodstock), and recreational harvest upstream of Winchester Dam. The CMP used a base period of 1972 – 2010 for calculation of Desired and Critical Abundance thresholds.

Table II-4. Natural Origin Spawner Abundance estimates for the North Umpqua Population of Spring Chinook salmon. Estimates are adults, excluding jacks, after accounting for a change in counting methods in 1992, unmarked fish retained at hatcheries, and recreational harvest upstream of Winchester Dam. Desired and Critical Abundance Targets are from CMP Table A-III:2.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
North Umpqua Population	4,600	2,000	2014	3,973
			2015	3,492
			2016	2,570
			2017	2,942
			2018	1,374
			2019	2,298
			2020	3,630[(1)]
			2021	2,100
			2022	2,332
			2023	1,515
			2024	2,562
			2025	3,048

[1]The initial estimate for 2020 (3,563) was revised after finalization of passage and harvest data.

Harvest

Under a sliding scale for harvest, finalized in January 2022 (ODFW 2022a), bag limits for natural origin Spring Chinook salmon in the Umpqua Basin are determined annually based on abundance of the North Umpqua population. Abundance is calculated as the average of the current year's pre-season forecast and the previous year's observed spawner abundance. A harvest closure for natural origin spring Chinook salmon will be implemented on the mainstem Umpqua River and North Umpqua River if decision metric (average of pre-season forecast and previous year's spawner abundance) for the North Umpqua population falls below the CMP critical abundance threshold (Table II-5).

Table II-5. Current reporting year abundance estimate, Reporting year + 1 forecast abundance, Decision Metric, and Critical Abundance for the North Umpqua Population of spring Chinook salmon.

Spatial Extent	Abundance Estimate	Forecast Abundance	Decision Metric	Critical Abundance
North Umpqua Population	3,048	2,395	2,722	2,000

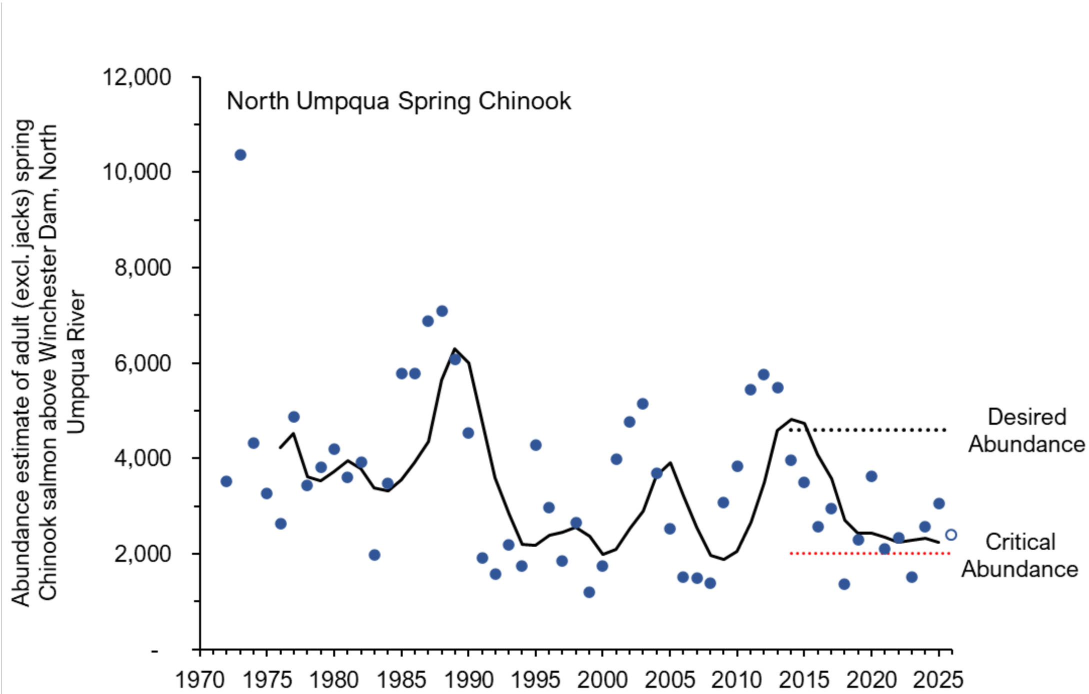


Figure II-5. Abundance estimates of natural origin adult Spring Chinook salmon (excluding jacks) above Winchester Dam on the North Umpqua River (•) since 1972. The open circle is the forecast. Estimates are based on counts of unmarked Spring Chinook salmon passing Winchester Dam counting facilities (Mar. 1 – Sept. 30) after adjusting for jacks by origin, fish retained at hatchery facilities, a change in counting methods in 1992, and recreational harvest above Winchester Dam. Desired and Critical Abundance thresholds from the CMP are shown as dashed black and red lines, respectively.

Hatchery Influence

The CMP allows for the release of 342,000 hatchery Spring Chinook salmon smolts into the North Umpqua River. Estimates of the abundance of naturally spawning hatchery fish are derived by subtracting returns to Rock Creek Hatchery and hatchery fish harvested in the North Umpqua upstream of Winchester Dam from video counts of fin-clipped fish at the dam. This estimate is used with the estimate of naturally produced spawners to provide an estimate of pHOS. Targets for pHOS are evaluated as a running nine-year average to allow for some variability in the level of naturally spawning hatchery fish while ensuring that the long-term impact from hatchery fish is at, or below, targets (Table II-6).

After accounting for harvest and retention at hatchery facilities, estimates of pHOS above Winchester Dam (River Mile 7) have been higher than the CMP pHOS target for the North Umpqua Population (Table II-6). However, the 9-year running average of pHOS estimates has been steadily declining since a peak in 2007, and the estimates in Table II-4 are not weighted to account for spatial segregation of hatchery and wild fish. After accounting for harvest and hatchery retention, pHOS estimates above Winchester Dam (RM 7) have exceeded the CMP target for the North Umpqua population (Table II-6). Although the 9-year running average has declined steadily since peaking in 2007, recent annual estimates have increased over the past two years. These estimates are unweighted and do not account for potential spatial segregation of hatchery and wild fish.

Available evidence suggests spatial segregation does occur and may alter effective pHOS on the spawning grounds in different portions of the basin. For example, the hatchery proportion of Spring Chinook salmon passing Soda Springs Dam (River Mile 70, ~34 river miles above Rock Creek) has been typically around a third of unweighted pHOS estimates, and carcass surveys in the upper basin indicate pHOS near or below the CMP target (≤10%). In contrast, snorkel surveys in Rock Creek, near the hatchery and release site, show high pHOS (>80%). Less is known about pHOS in mainstem areas between Rock Creek and upper basin spawning reaches.

Despite prior information indicating spatial segregation, it is notable that unusually high numbers of hatchery jack Chinook were observed passing Soda Springs Dam in 2022 and 2023. Although CMP pHOS targets apply only to adults, recent adult passage counts and spawning ground surveys indicate elevated hatchery proportions in the upper basin that are consistent with recent increases in annual, unweighted basin-wide pHOS estimates. ODFW is continuing to evaluate the distribution of hatchery and wild spawners to determine whether additional adaptive management actions are warranted.

Table II-6. Percent hatchery origin spawners (pHOS) for the North Umpqua population of Spring Chinook salmon. pHOS targets are from CMP Table AIII:4.

Spatial Extent	pHOS Target	Year	Observed	
			pHOS (%)	9-year Average (%)
North Umpqua Population	≤10 (<30/<60)	2014	52	52
		2015	46	52
		2016	41	50
		2017	32	46
		2018	36	44
		2019	30	41
		2020	27	40
		2021	44	40
		2022	34	38
		2023	26	35
		2024	62	37
		2025	55	38

9-year averages were revised in 2023 to correct an error that included hatchery jacks in the calculation.

Section III. Coastal Winter Steelhead

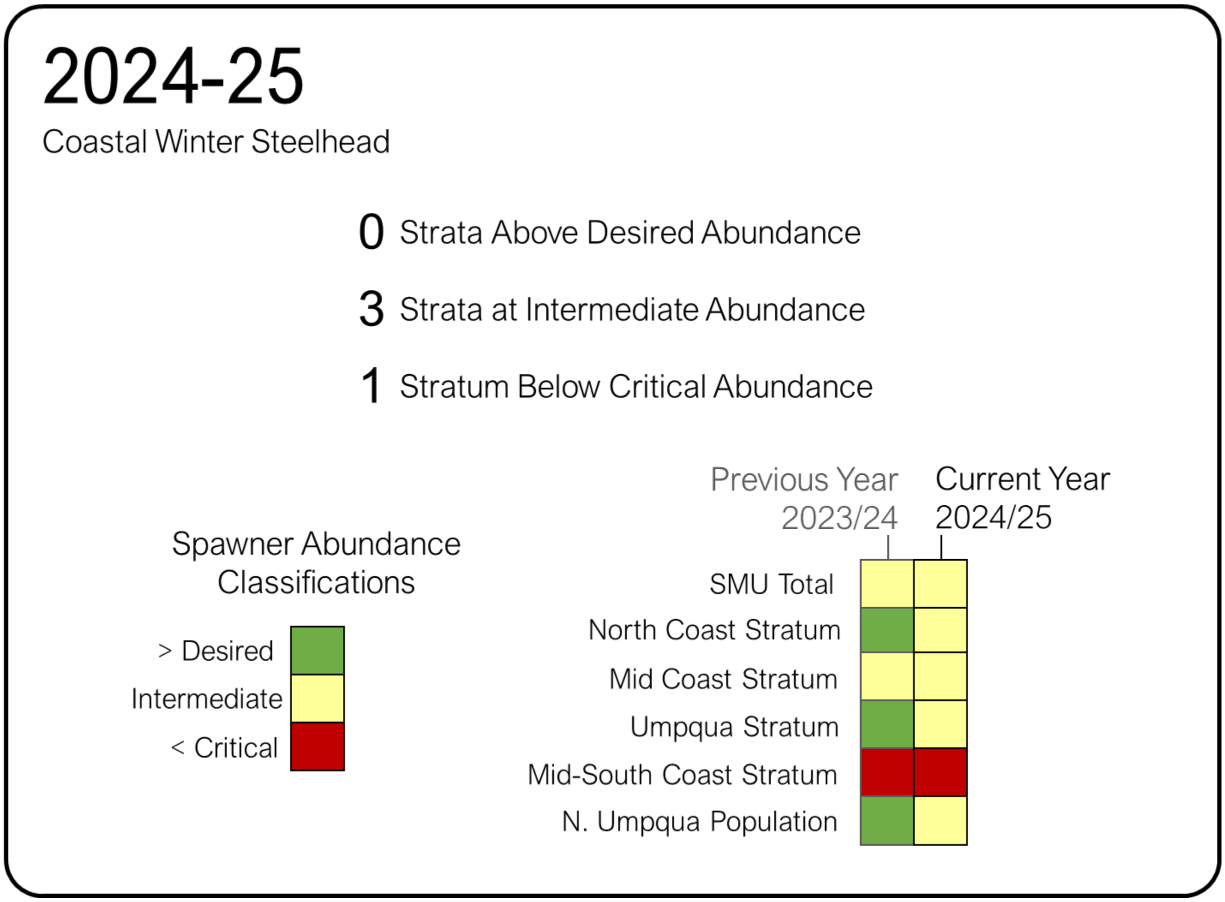


Figure III-1. Spawner abundance classifications for the Coastal Winter Steelhead SMU, its constituent strata, and the North Umpqua Population for the current and previous reporting years. Classifications are Below the CMP Critical Abundance Threshold (Red), Above the CMP Desired Abundance Target (Green), or Intermediate between Critical Abundance and Desired Abundance (Yellow). Abundance thresholds and classifications at the SMU scale are the sum of all strata (North Coast, Mid Coast, Umpqua, and Mid-South Coast).

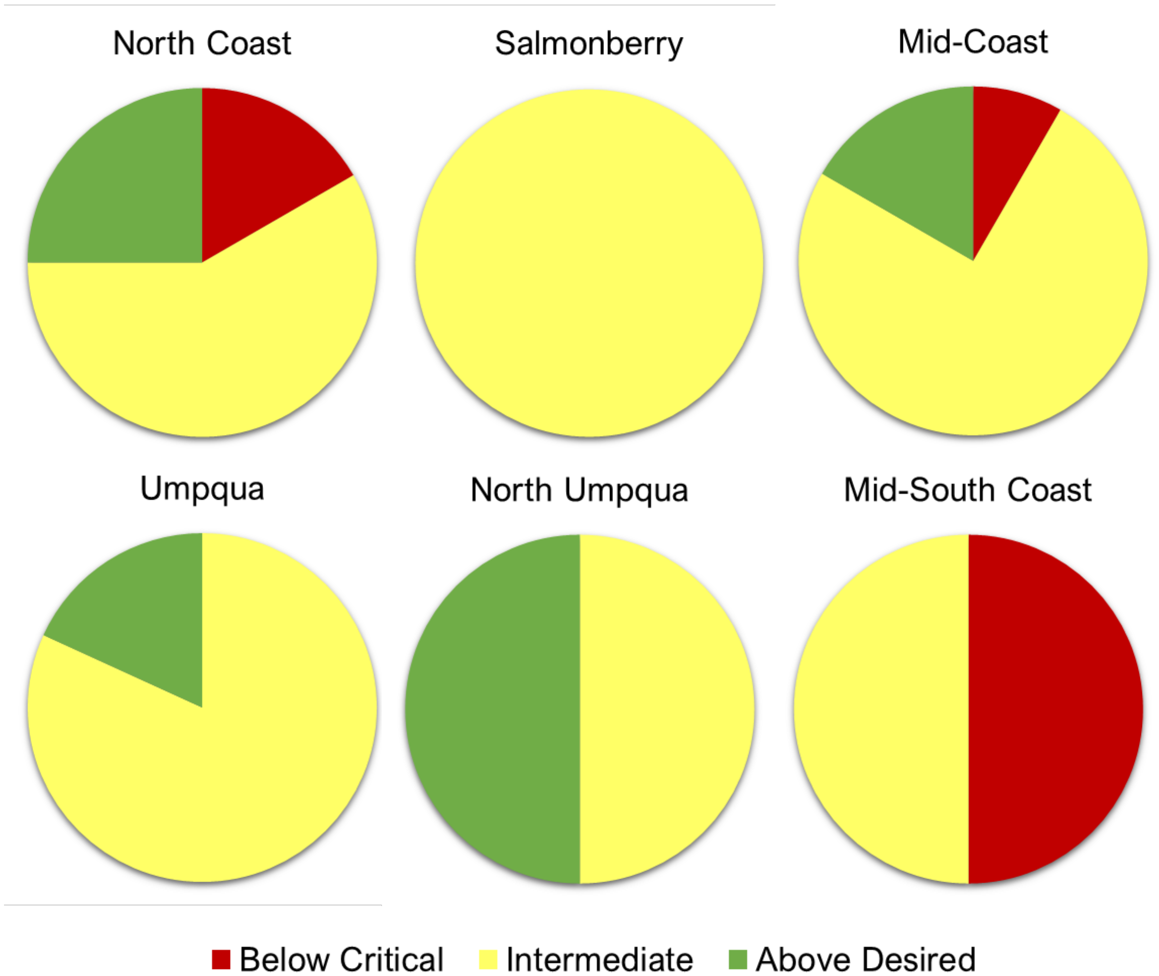


Figure III-2. Coastal Winter Steelhead. Percent of years since 2014 with wild abundance estimates in the following categories: Below Critical Abundance (Red), Above Desired Abundance (Green), or Intermediate between Critical Abundance and Desired Abundance (Yellow). Abundance estimates for the North Coast, Mid Coast, Umpqua, and Mid-South Coast are stratum-scale abundances, while estimates for the North Umpqua and Salmonberry are for the population and subpopulation, respectively. The CMP does not include Desired or Critical Abundance targets for the Salmonberry sub-populations; comparisons above for Desired and Critical Abundance are based on the 75^{th} and 5^{th} percentiles, respectively, of the Salmonberry abundance time series from 1973-2013.

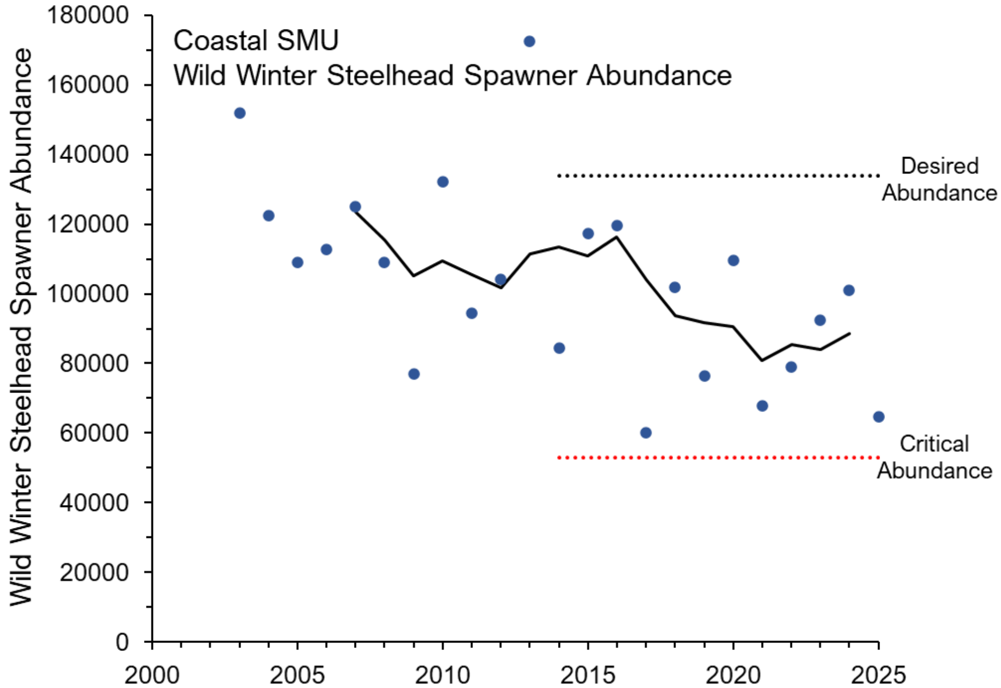


Figure III-3. Abundance estimates for wild winter steelhead in the Coastal SMU (•) since 2003, derived from random redd surveys (expanded to fish abundance) and counts of wild winter steelhead at Winchester Dam (North Umpqua) after adjustment for harvest and retention at hatchery facilities. The solid black line is the running five-year geometric mean of abundance estimates. Revised Desired and Critical Abundance thresholds at the SMU-scale, calculated as the sum of revised stratum-scale abundance criteria, are shown as dashed black and red lines, respectively.

Coastal Winter Steelhead SMU - Monitoring and Assessment Notes

Abundance. The CMP's stratum-level Desired and Critical Abundance thresholds were calculated as the 75th percentile and 0.5×median, respectively, of abundance estimates over a base period of 2003 through 2012. The stratum-level Critical Abundances were calculated as 0.5×median abundance because of the limited time series available to develop percentiles at the time of CMP development and because the base period encompassed a recent period of relatively high abundance based on abundance estimates in the Salmonberry subpopulation and the North Umpqua population, where longer time series were available.

The CMP's stratum-level winter steelhead abundance time series were developed based on estimates of the abundance of steelhead redds expanded to adult fish abundance using the following redds-to-fish expansion: fish abundance = 1.04×redds + 42. The CMP recognized that this expansion was conservative, and following adoption of the CMP, ODFW began to apply a revised redds-to-fish expansion factor (fish abundance = 1.7×redds + 3.74) for annual fish abundance estimates. Revision of the expansion factor for coastal winter steelhead was based on a re-analysis of the relationship between the abundances of redds and fish at sites where independent estimates of fish abundance were available (e.g., dam counts or mark-recapture studies) (ODFW 2013b).

To align the CMP's coastal winter steelhead abundance thresholds with current fish abundance estimates, the thresholds were recalculated using the current redds-to-fish conversion. It is important to recognize that, with one exception, adjusting the CMP thresholds by applying the current redds-to-fish expansion does not change assessment results (i.e., classification of annual abundance estimates relative to CMP desired and critical abundance targets) because both the thresholds and annual estimates of redd abundance are adjusted using the same expansion equation. The exception is the North Umpqua population, where the Desired Abundance assessment would become more conservative (thresholds become higher relative to annual abundance estimates). For this reason, the Desired Abundance criterion for the North Umpqua population was set to the 75^{th} percentile of the long-term record based on counts at Winchester Dam. This criterion is discussed further in the Umpqua Stratum summary. For transparency, all winter steelhead stratum summaries include thresholds and annual abundance estimates derived from both the original and the current redds-to-fish expansion equations.

Harvest. Harvest of wild winter steelhead is prohibited in the coastal planning area, except as allowed in the Salmon River and Sixes River populations and in the Big Elk Creek (Yaquina Population) and East Fork Coquille (Coquille Population) Management Areas. Harvest rate estimates for these areas are provided in the Mid Coast and Mid-South Coast monitoring summaries.

Hatchery Influence. ODFW uses randomly selected spawning ground surveys to support annual estimates of pHOS within each stratum. Because recovery of steelhead carcasses is typically low, live spawners are observed for the presence of intact adipose fins, and un-clipped fish are assumed to be wild. Estimates in any given year should be interpreted cautiously as they may be subject to considerable error due to issues including low sample sizes and few observations of hatchery origin spawners. For example, a pHOS estimate of zero may indicate that pHOS is low, but complete absence of hatchery fish in an entire stratum is unlikely. Targets for pHOS are evaluated as a running nine-year average to account for this uncertainty and to allow for some variability in the level of naturally spawning hatchery fish while ensuring that the long-term impact from hatchery fish is at, or below, targets.

The CMP allows for higher pHOS in areas within four stream miles of acclimated hatchery steelhead release sites in some populations. Beginning in 2016, survey sites were stratified to aid in reducing bias associated with hotspots and to assess management goals for the strata and hotspots separately. To date, sample size within hotspots has been insufficient to provide annual estimates of hotspot pHOS at the stratum scale; pHOS within hotspot areas has been estimated at an SMU scale (40%, 57%, 93%, 0%, 9%, 37%, 39%, 55%, and 85% in 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, and 2024 respectively). Some of the volatility in these estimates may be attributable to few surveys falling within hotspot areas (5 to 8 surveys annually SMU-wide).

Productivity. At the next assessment called for in the CMP, ODFW will assess age composition where possible at life cycle monitoring sites. ODFW also conducts random juvenile surveys in wadeable streams to provide information on juvenile abundance, density, and distribution (Table III-1).

Table III-1. Abundance, density, and site occupancy of steelhead parr in the Coastal SMU. Data are from un-calibrated snorkel surveys in 1st – 3rd order streams. 95% Confidence Intervals are expressed as a percentage of the estimate. The CMP does not include specific targets for juvenile abundance, density, or occupancy. The 5-year averages of the period prior to adoption of the CMP are provided for context.

Spatial Extent	Year	Abundance ±95% CI	Average Density in Pools (parr/m^2 ±95% CI)	Occupancy (% ± 95% CI)
Coastal Winter Steelhead SMU	2014	274,672 ± 24%	0.029 ± 18%	88 ± 34%
	2015	136,759 ± 23%	0.015 ± 28%	65 ± 18%
	2016	247,939 ± 19%	0.020 ± 17%	73 ± 22%
	2017	313,308 ± 20%	0.021 ± 16%	84 ± 29%
	2018	166,980 ± 20%	0.018 ± 19%	71 ± 19%
	2019	185,529 ± 22%	0.014 ± 17%	72 ± 8%
	2020	349,654 ± 24%	0.030 ± 23%	82 ± 7%
	2021	213,708 ± 20%	0.031 ± 34%	77 ± 6%
	2022	279,329 ± 15%	0.029 ± 20%	79 ± 7%
	2023	250,284 ± 16%	0.033 ± 28%	81 ± 6%
	2024	191,414 ± 22%	0.026 ± 23%	79 ± 7%
	2025	159,992 ± 20%	0.019 ± 16%	84 ± 6%
	2026	-	-	-
	Pre-CMP 5-yr Average (2009-2013)	261,424[1]	0.039	79

[1]The 5-year average abundance for the period 2009 through 2013 is calculated as a geometric mean.

Spatial Structure. Spatial structure will be evaluated for each population at the next assessment called for in the CMP. Summaries of adult site occupancy are provided in the population summaries below.

Diversity. To account for influence of inter-annual variability in environmental conditions, ODFW will evaluate metrics of phenotypic diversity at the next assessment period called for in the CMP.

WILD FISH MONITORING SUMMARY

SMU: Coastal Winter Steelhead

Stratum: North Coast

Population: Population Aggregate, Salmonberry Management Area (Nehalem), Nestucca

Abundance

Spawner abundance of wild winter steelhead in the North Coast Stratum is evaluated based on redd surveys (redd abundance expanded to fish abundance) (Table III-2; Fig. III-4). As previously described, the CMP's stratum-level abundance thresholds for winter steelhead were recalculated using a revised redds-to-fish expansion equation. This does not change assessment results because both the thresholds and annual redd abundance estimates are adjusted using the same expansion equation. Regardless, Table III-2 provides thresholds and annual abundance estimates calculated using both expansions.

Population-scale Desired Abundance targets for winter steelhead are based on the expected apportionment of strata goals to the populations (See CMP Table A-III:2). These apportionments were based on a variety of information, including population-specific kilometers of distribution, estimated population redd densities using data aggregated from 2003-2012, juvenile snorkel surveys, smolt trap data, historical harvest data, and professional judgment; population apportionments should be considered preliminary and may be adjusted in the future.

Beginning in 2017, ODFW increased the number of random redd surveys in the Nestucca Population to better assess pHOS targets. This densification of surveys allowed for a population-level abundance estimate for 2017-2020. Due to resource limitations, this work was discontinued after 2020 (Table III-2).

Since 1994, volunteers coordinated through ODFW's Salmon and Trout Enhancement Program (STEP) have surveyed winter steelhead redds in the Salmonberry subpopulation at eight standard survey sites in addition to the Enright standard survey reach. The CMP's annual abundance assessments are based only on expansion of a long-term standard spawning survey (the Enright Reach) because of the longer time series available for that site (ca. 1973). Here, the abundance expansion assumes zero hatchery fish given no substantial history of hatchery programs (Table III-2; Fig. III-5). Redd density (redds/mile) across the full suite of standard sites provides an additional trend index for the Salmonberry subpopulation (Fig. III-6).

Table III-2. Natural origin spawner abundance targets and estimates for North Coast winter steelhead. Desired and Critical Abundance Targets are from CMP Table A-III:2, with stratum-level estimates adjusted using a revised redds-to-fish expansion factor. For comparison, the original abundance thresholds and annual abundance estimates derived using the CMP's original expansion factor are shown in parentheses.

Spatial Extent	Abundance Targets		Year	Abundance Estimate
	Desired	Critical		
North Coast Stratum	35,613 (21,800)	16,174 (9,900)	2014	24,118 (14,794)
			2015	41,893 (25,669)
			2016	26,338 (16,153)
			2017	18,228 (11,191)
			2018	15,481 (9,510)
			2019	13,410 (8,243)
			2020	33,611 (20,602)
			2021	23,380 (14,343)
			2022	17,612 (10,814)
			2023	38,133 (23.368)
			2024	38,182 (23,398)
			2025	20,150 (12,367)
			2026	-
Salmonberry Management Area, Nehalem[1]	*n/a*	*n/a*	2014	1,233
			2015	2,100
			2016	1,933
			2017	1,433
			2018	1,367
			2019	1,296
			2020	1,963
			2021	2,667
			2022[2]	704
			2023[3]	593
			2024	1,778
			2025	370
			2026	-

[1]The CMP does not include Desired and Critical Abundance criteria for the Salmonberry subpopulation of the Nehalem population. The critical abundance threshold for the Nehalem population is 600.

[2]The estimate for 2022 is highly uncertain due to poor survey conditions.

[3]Surveys in 2023 were affected by snow and high flows; no surveys were possible in April, and surveys were after the typical peak. The estimate is likely biased low.

Table III-2. (Continued)

Spatial Extent	Abundance Targets		Abundance Targets	Abundance Estimate
	Desired	Critical		
Nestucca Population	25% of Stratum Target 8,903 (5,450)	*TBD*	2017	1,753 (1,112)
			2018	2,991 (1,869)
			2019	2,489 (1,562)
			2020	5,352 (3,314)

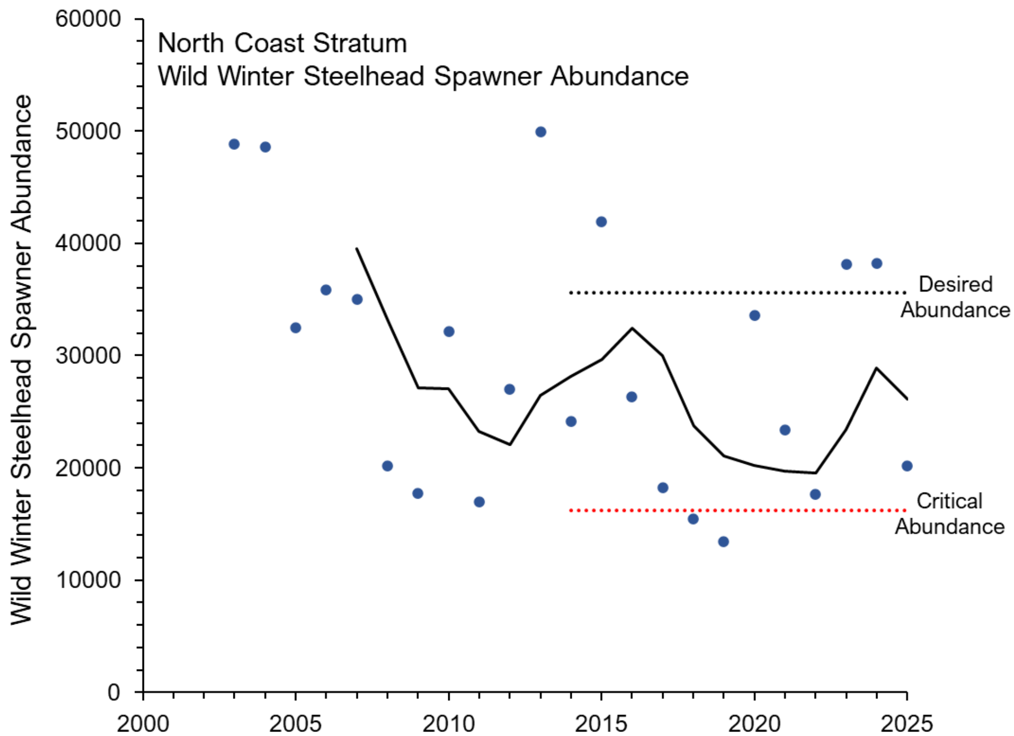


Figure III-4. Abundance estimates for the North Coast Stratum of wild winter steelhead (•) derived from random redd surveys (expanded to abundance) since 2003. The solid black line is the running five-year geometric mean of abundance estimates. Revised Desired and Critical Abundance thresholds are shown as dashed black and red lines, respectively.

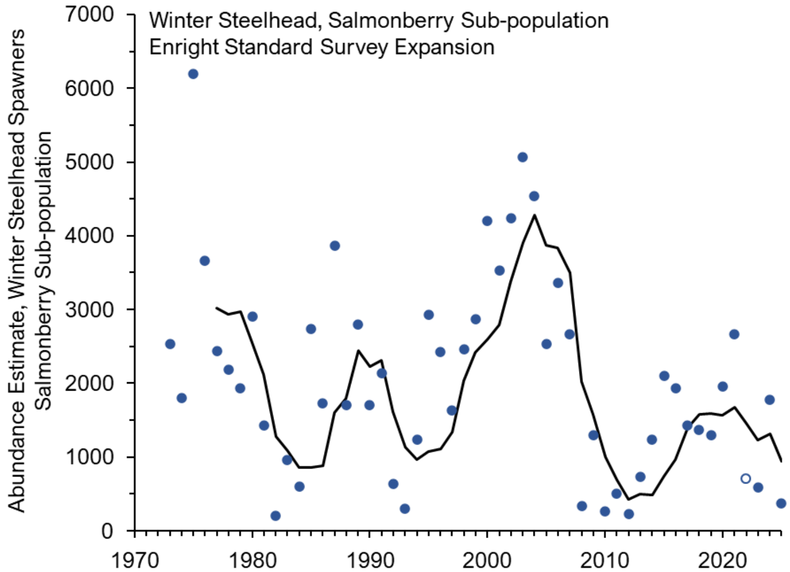


Figure III-5. Abundance estimates for winter steelhead (•) in the Salmonberry River subpopulation (Nehalem population) since 1973. Estimates are based on expansion of peak redd counts on a 3.0-mile standard survey that has been conducted since 1973. The solid black line is the running five-year geometric mean of abundance estimates. The CMP does not include Desired and Critical Abundance thresholds for the Salmonberry subpopulation of the Nehalem population. The estimate for 2022 (open circle) is highly uncertain due to poor survey conditions. The 2023 estimate also is likely biased low due to poor early season accessibility and high flows.

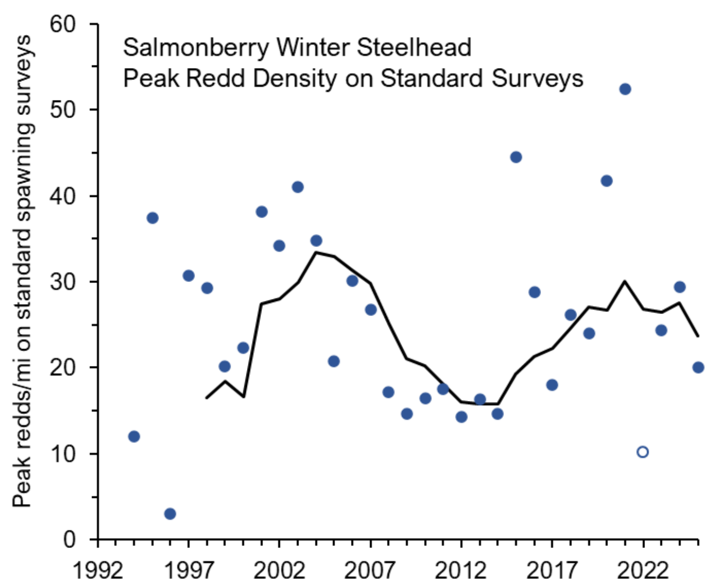


Figure III-6. Peak redd density (redds/mile) on nine standard survey sites for winter steelhead (•) in the Salmonberry River subpopulation (Nehalem Population) since 1994. Not all surveys were conducted in all years (n = 6 to 9 surveys; 6 to 12 miles). No attempt has been made to impute missing values. The black line is the running 5-year geometric mean. The estimate for 2022 (open circle) is highly uncertain due to poor survey conditions. The 2023 estimate is likely biased low due to poor early season accessibility and high flows.

Harvest

Retention of wild winter steelhead is prohibited in the North Coast Stratum.

Hatchery Influence

Targets for pHOS are evaluated as a running nine-year average to allow for some variability in the level of naturally spawning hatchery fish while ensuring that the long-term impact from hatchery fish is at, or below, targets (Table III-3). In the North Coast Stratum, pHOS cannot be assessed at the population-level except for the Nestucca population in 2017-2020, when there was expanded survey effort (Table III-3). However, pHOS estimates at the stratum level have been near or below targets set for North Coast populations. In the Nestucca population, single-year pHOS estimates have been above the basin-wide average in two of four monitoring years for both the basin-wide estimate and the estimate above Blaine (Table III-3). Estimates above Blaine in 2019 were based on few observations of mark status (n = 8). Population-level monitoring of Nestucca winter steelhead was discontinued after 2020 due to budget constraints; the population will continue to be monitored in aggregate with the other populations in the North Coast Stratum.

Table III-3. Percent hatchery origin spawners (pHOS) for North Coast Stratum Winter Steelhead. pHOS targets are from CMP Table AIII:4. Targets inside parentheses are for the immediate area (within 4 stream miles) around acclimation and hatchery release sites and whether they contain significant (lower value) or less significant (higher value) spawning habitat.

Spatial Extent	pHOS Target	Year	pHOS Estimate	
			pHOS (%)	9-year Average
North Coast Stratum	No Stratum-Level Target *Population Targets are:* *Necanicum ≤30* *Nehalem ≤10 (<30/<60)* *Tillamook ≤10 (<30/<60)* *Nestucca ≤30*	2014	4	12
		2015	4	11
		2016	11	9
		2017	13	7
		2018	30	9
		2019	9	9
		2020	6	9
		2021	6	10
		2022	13[(1)]	11
		2023	0	10
		2024	0	10
		2025	3	9
		2026	-	-
Nestucca (Population)	Population-Wide ≤30%	2017	3	-
		2018	38	-
		2019	33[1]	-
		2020	20	-
	Above Blaine <10%	2017	4	-
		2018	26	-
		2019	25[1]	-
		2020	4	-

[1]pHOS estimates in the Nestucca were based on few observations of mark status in 2019. Due to insufficient observations of mark status, the pHOS estimate for 2022 is a 5-year average.

Spatial Structure

Occupancy in random spawning ground surveys is shown below (Table III-5). Survey sites are considered occupied based on the presence of at least one steelhead redd. In the 12-year assessment of the CMP, occupancy will be reassessed with the goal being occupancy in all major tributaries over the assessment period.

Table III-5. Percent of randomly selected spawning survey sites occupied by adult winter steelhead in the North Coast Stratum. Survey sites were considered occupied based on the presence of at least one steelhead redd.

Spatial Extent	Year	Observed Occupancy (%)
North Coast Stratum	2014	57
	2015	61
	2016	73
	2017	60
	2018	77
	2019	65
	2020	79
	2021	64
	2022	71
	2023	81
	2024	78
	2025	68
	2026	-

WILD FISH MONITORING SUMMARY

SMU: Coastal Winter Steelhead
Stratum: Mid Coast
Population: Population Aggregate

Abundance

Spawner abundance of winter steelhead in the Mid Coast Stratum is evaluated based on redd surveys (redd abundance expanded to fish abundance) (Table III-6; Fig. III-7). As previously described, the CMP's stratum-scale abundance thresholds for winter steelhead were recalculated using a revised redds-to-fish expansion factor. This does not change assessment results, however, because both the thresholds and redd abundance estimates are adjusted using the same expansion equation. Regardless, for transparency, Table III-6 provides thresholds and annual abundance estimates calculated using the current and original (values in parentheses) expansion equations.

Table III-6. Natural origin spawner abundance targets and estimates for Mid Coast winter steelhead. Desired and Critical Abundance Targets are from CMP Table A-III:2, with stratum-scale estimates adjusted using a revised redds-to-fish expansion factor. For comparison, the original abundance thresholds and annual abundance estimates derived using the CMP's original expansions are shown in parentheses. For the 2021-22 report, abundance estimates after 2014 were revised to account for wild fish passed above the Alsea Hatchery weir.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Mid Coast Stratum	30,162 (18,500)	11,706 (7,200)	2014	15,324 (9,414)
			2015	26,347 (16,193)
			2016	40,484 (24,830)
			2017	9,443 (5,837)
			2018	32,371 (19,875)
			2019	24,181 (14,861)
			2020	27,640 (17,003)
			2021	12,341 (7,598)
			2022	19,187 (11,810)
			2023	20,380 (12,507)
			2024	15,825 (9,661)
			2025	22,169 (13,570)

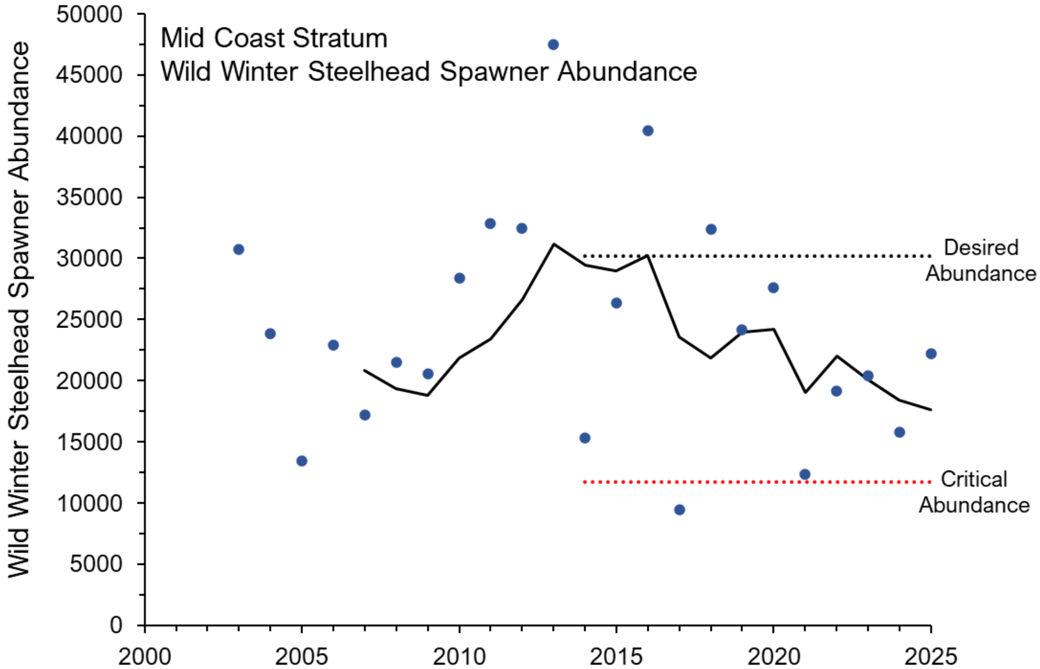


Figure III-7. Abundance estimates for the Mid Coast Stratum of wild winter steelhead (•) derived from random redd surveys (expanded to abundance), 2003-2023. The solid black line is the running five-year geometric mean of abundance estimates. Desired and Critical Abundance thresholds are shown as dashed black and red lines, respectively.

Harvest

Within the Mid Coast Stratum, harvest of wild winter steelhead is allowed only in the Salmon River population and the Big Elk Creek (Yaquina) Management Area. Harvest rates of wild winter steelhead in the Mid Coast Stratum have been assessed using two methods:

- Salmon River: creel and spawning ground surveys, 2017-2019 (ODFW 2018; 2019; 2020b). This project was shifted to the Sixes River in 2020.
- Both Areas: Stratum abundance estimates downscaled to the population or management area using estimates of historic abundance ratios (Kenaston 1980) and harvest card estimates of wild steelhead harvest.

Harvest rates have been low and within CMP thresholds regardless of assessment method (Table III-7). Estimates for the most recent run year are provisional pending finalization of catch estimates.

Table III-7. Estimates of harvest rates for wild winter steelhead in the Salmon River Population and Big Elk Creek (Yaquina) Management Area. Downscaled abundance estimates are stratum-scale estimates apportioned to the population or management area using historic abundance ratios (Kenaston 1980).

Spatial Extent	Target (%)	Year	Harvest Rate, Monitoring Approach	
			Spawning Surveys & Creel (%)[1]	Downscaled Abundance & Harvest Cards (%)
Salmon River (Population)	<10	2015	*n/a*	3
		2016	*n/a*	2
		2017	12[(2)]	2
		2018	2	4
		2019	2	3
		2020	*n/a*	2
		2021	*n/a*	6
		2022	*n/a*	6
		2023	*n/a*	3
		2024	*n/a*	3
		2025	*n/a*	2
		2026	-	-
Big Elk Creek (Yaquina)	<10	2015	*n/a*	<1
		2016	*n/a*	<1
		2017	*n/a*	3
		2018	*n/a*	<1
		2019	*n/a*	1
		2020	*n/a*	1
		2021	*n/a*	3
		2022	*n/a*	0
		2023	*n/a*	1
		2024	*n/a*	1
		2025	*n/a*	<1
		2026	-	-

[1]Estimates based on spawning surveys and creel are available only for the Salmon River, 2017-2019.
[2]Estimate in 2014 is considered an overestimate because spawning ground surveys ended before the peak of the run (abundance of natural origin spawners was underestimated) (ODFW 2018).
[3]Most recent year is a provisional estimate pending finalization of harvest statistics.

Hatchery Influence

Targets for pHOS are evaluated as a running nine-year average to allow for some variability in the level of naturally spawning hatchery fish while ensuring that the long-term impact from hatchery fish is at, or below, targets (Table III-8). In the Mid Coast Stratum, pHOS cannot be assessed at the population level. However, the running 9-year average at the stratum level has been higher than the stratum's individual population targets. While the 9-year average pHOS at the stratum level has been greater than 10%, there has been a declining trend in the running 9-year average since plan adoption.

Table III-8. Percent hatchery origin spawners (pHOS) for Mid Coast Stratum winter steelhead. pHOS targets are from CMP Table AIII:4. Targets inside parentheses are for the immediate area (within 4 stream miles) around acclimation and hatchery release sites and whether they contain significant (lower value) or less significant (higher value) spawning habitat.

Spatial Extent	pHOS Target	Year	pHOS Estimate	
			pHOS (%)	9-year Average (%)
Mid Coast Stratum	No Stratum-Level Target *Population Targets are:* *Salmon ≤10* *Siletz ≤10 (<30/<60)* *Yaquina <10* *Alsea ≤10 (<30/<60)* *Yachats Aggregate <10* *Siuslaw ≤10 (<30/<60)*	2014	22	26
		2015	22	25
		2016	10	21
		2017	29	19
		2018	17	19
		2019	5	16
		2020	0	14
		2021	12(1)	14
		2022	6	14
		2023	8(1)	12
		2024	23	12
		2025	2	11
		2026	-	-

[1]In 2021, mark status was determined for only 2 individual fish; the pHOS estimate is a 5-year average of observations. Observations of mark status in 2023 were also insufficient to estimate pHOS; the estimate provided is a 5-year average.

Spatial Structure

Occupancy in random spawning ground surveys is shown below (Table III-9). Survey sites are considered occupied based on the presence of at least one steelhead redd. In the 12-year assessment of the CMP, occupancy will be re-assessed with the goal being occupancy in all major tributaries over the assessment period.

Table III-9. Percent of random spawning ground survey sites occupied by adult winter steelhead in the Mid Coast Stratum. Survey sites were considered occupied based on the presence of at least one steelhead redd.

Spatial Extent	Year	Observed Occupancy (%)
Mid Coast Stratum	2014	69
	2015	74
	2016	81
	2017	54
	2018	58
	2019	77
	2020	78
	2021	62
	2022	75
	2023	65
	2024	69
	2025	68
	2026	-

WILD FISH MONITORING SUMMARY

SMU: Coastal Winter Steelhead

Stratum: Umpqua

Population: Multiple Population Aggregate, North Umpqua Population

Abundance

Spawner abundance targets for Umpqua winter steelhead are evaluated using two monitoring programs. Redd surveys (redd abundance expanded to fish abundance) provide an estimate of wild spawner abundance at the stratum level, excluding unsurveyed areas above Winchester Dam on the North Umpqua River (Table III-10). The wild abundance estimate for the remaining portion of the stratum (the North Umpqua Population above Winchester Dam) is derived from video counts at the dam. The sum of estimates from both monitoring programs provides the stratum-level estimate of abundance (Table III-10; Fig. III-8). Figure III-9 provides the long-term abundance time series for North Umpqua winter steelhead, based on counts of wild winter steelhead at Winchester Dam, adjusted to account for a change in enumeration methods in 1992, hatchery strays from the South Fork program beginning in 1971, hatchery summer steelhead counted during the winter period, and harvest (when allowable) above Winchester Dam.

As previously described, ODFW has revised the equation used to expand redd abundance to fish abundance, and this has required revision of the CMP's stratum-scale abundance thresholds so that the thresholds are aligned with current annual fish abundance estimates. For transparency, Table III-10 provides thresholds and annual abundance estimates calculated using the current and original (values in parentheses) expansion equations. Since the revised redds-to-fish expansion is applied to both the calculation of thresholds and to annual estimates of fish abundance (excluding areas above Winchester Dam, which are based on passage counts), there is no effect on the assessment of the stratum abundance estimates against the stratum abundance thresholds (See Table III-10).

Although revising the stratum abundance thresholds for Umpqua winter steelhead does not change the stratum-scale assessment results, there are implications for assessing the Desired Abundance for the North Umpqua Population. The stratum Desired Abundance target was calculated as the sum of two quantities: the 75th percentile of abundances estimated at the stratum scale via redd surveys (2003-2012; redd surveys, excluding areas above Winchester Dam on the North Umpqua) and the 75th percentile for the North Umpqua population (1946-2011, based on counts at Winchester Dam). Only the stratum level quantity is affected by the revision of the redds-to-fish expansion; North Umpqua population abundances are based on adjusted Winchester Dam counts, which are independent of redds-to-fish expansions. Since the CMP's preliminary Desired Abundance target for the North Umpqua was set to a percentage of the stratum target[1], the revision of the redds-to-fish expansion equation would result in an increase in the population Desired Abundance target with no concomitant upward adjustment of annual North Umpqua population abundance estimates.

[1] Population-level Desired Abundance targets for winter steelhead were based on an apportionment of strata goals to the populations (See CMP Table A-III:2). These apportionments were based on a variety of information, including population-specific kilometers of distribution, and estimated population redd densities using data aggregated from 2003-2012, juvenile snorkel surveys, smolt trap data, historical harvest data, and professional judgment; population apportionments were considered in the CMP to be preliminary and subject to adjustment.

To address this issue, the Desired Abundance target for the North Umpqua population was set to the 75th percentile of the long-term abundance time series (1946-2011). This is the same value used in the calculation of the stratum Desired Abundance target, and it uses the same basis for calculation applied to viable populations in other SMUs where there were abundance time series sufficient for calculating percentiles. As with other populations, the 75th percentile was used, as opposed to a value based on the stock-recruit relationship or PVA results, because PVA results indicated the population was already viable, but improvements were nevertheless desired.

Table III-10. Natural origin spawner abundance targets and estimates for Umpqua Stratum winter steelhead. Estimates for the North Umpqua Population are based on adjusted counts of wild winter steelhead at Winchester Dam; the stratum estimate is the North Umpqua abundance + the estimate based on expansion of randomly selected redd surveys in the remaining portions of the stratum. Desired and Critical Abundance Targets are from CMP Table A-III:2 with stratum-scale estimates adjusted using a revised redds-to-fish expansion factor. For comparison, the original CMP stratum thresholds and abundance estimates derived using the CMP's original expansion factor are shown in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Umpqua Stratum	34,540 (24,600)	12,121 (8,200)	2014	26,396 (19,972)
			2015	29,360 (22,155)
			2016	28,790 (22,809)
			2017	20,589 (16,679)
			2018	35,382 (24,887)
			2019	29,663 (21,424)
			2020	27,552 (20,805)
			2021	19,732[1] (14,191)
			2022	27,234 (18,777)
			2023	21,569 (15,222)
			2024	38,556 (28,300)
			2025	13,547 (10,339)
			2026	-

[1]The 2021 stratum estimate was revised in 2022 (previously 19,726) based on finalized data.

Table III-10. (Continued)

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
North Umpqua Population	8,795	2,200	2014	9,748
			2015	10,699
			2016	13,282
			2017	10,416
			2018	8,247
			2019	8,339
			2020	10,071
			2021	5,357
			2022	5,348
			2023	5,119
			2024	12,037
			2025	5,181
			2026	-

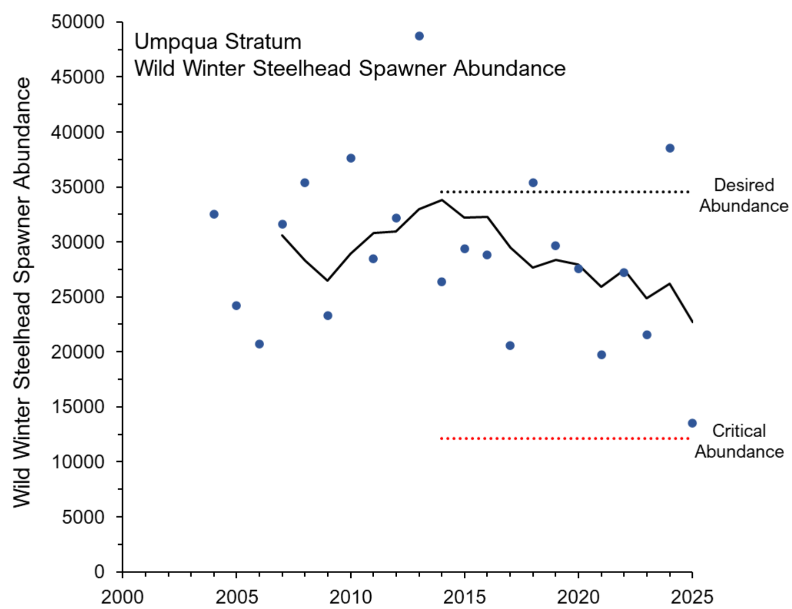


Figure III-8. Abundance estimates for wild winter steelhead in the Umpqua Stratum (•) since 2003. The solid black line is the running 5-year geometric mean. Estimates for the North Umpqua are based on adjusted counts of wild winter steelhead at Winchester Dam; the stratum estimate is the adjusted North Umpqua count + the estimate from expansion of random redd surveys in the Umpqua basin, excluding the unsurveyed portion above Winchester Dam. Revised Desired and Critical Abundance thresholds are shown as dashed black and red lines, respectively.

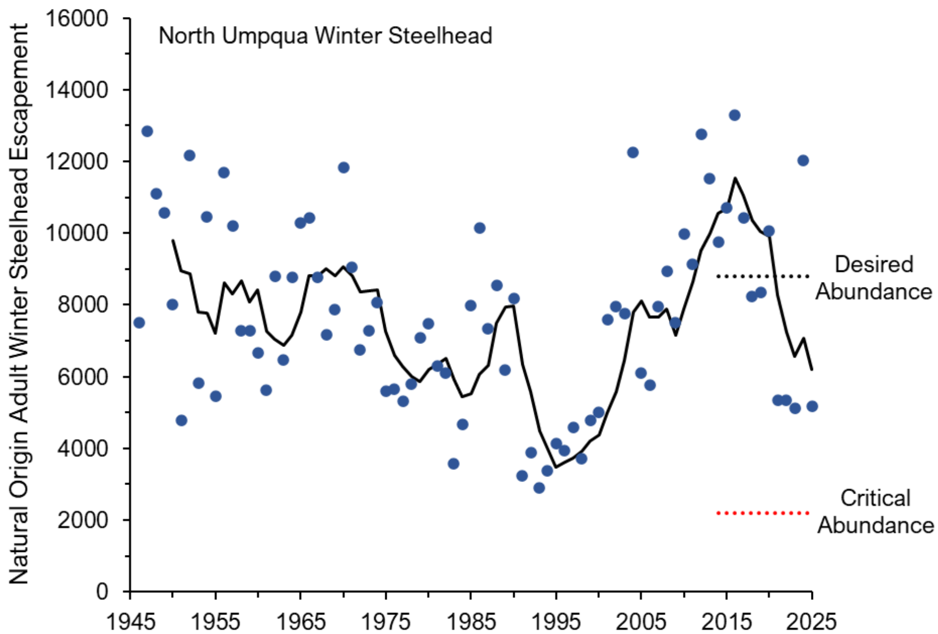


Figure III-9. Abundance estimates (•) for wild winter steelhead above Winchester Dam since 1946, after accounting for a change in enumeration methods in 1992, hatchery strays from the South Fork program beginning in 1971, hatchery summer steelhead counted during the winter period, and harvest above Winchester Dam. The solid black line is the running 5-year geometric mean. Desired and Critical Abundance thresholds are shown as dashed black and red lines, respectively.

Harvest

Retention of wild winter steelhead is prohibited in the Umpqua Stratum.

Hatchery Influence

Targets for pHOS are evaluated as a running nine-year average to allow for some variability in the level of naturally spawning hatchery fish while ensuring that the long-term impact from hatchery fish is at, or below, targets (Table III-11). Except for the North Umpqua population, pHOS in the Umpqua Stratum cannot be assessed at the population level. However, the stratum-level pHOS estimates (excluding the North Umpqua above Winchester Dam) have been lower than the stratum's population-level targets. In the Umpqua Stratum, random spawning surveys are not conducted in areas above Winchester Dam on the North Umpqua River. Estimates of pHOS above Winchester Dam are calculated based on counts of wild and hatchery origin fish at Winchester Dam adjusted to account for harvest.

Spatial Structure

Spatial structure will be evaluated for each population at the next assessment called for in the CMP. Occupancy in random spawning ground surveys is shown below (Table III-12). Survey sites are considered occupied based on the presence of at least one steelhead redd. At the next assessment, occupancy will be assessed with the goal being occupancy in all major tributaries over the assessment period.

Table III-11. Percent hatchery origin spawners (pHOS) for Umpqua Stratum winter steelhead. pHOS targets are from CMP Table AIII:4. Targets inside parentheses are for the immediate area (within 4 stream miles) around acclimation and hatchery release sites and whether they contain significant (lower value) or less significant (higher value) spawning habitat. Estimates for the Umpqua Stratum are based on observations of live fish during random spawning surveys, excluding un-surveyed areas above Winchester Dam on the North Umpqua; estimates for the North Umpqua are based on counts at Winchester Dam, adjusted for harvest.

Spatial Extent	pHOS Target	Year	pHOS Estimate	
			pHOS (%)	9-year Average (%)
Umpqua Stratum, Excluding above Winchester Dam	No Stratum-Level Target *Population Targets are:* *L. Umpqua ≤30* *Middle Umpqua (<30/<60)* *N. Umpqua ≤10 (<30/<60)* *S. Umpqua ≤30*	2014	26[1]	8
		2015	0	7
		2016	2	7
		2017	0	4
		2018	0	4
		2019	1[2]	4
		2020	1[2]	4
		2021	1[2]	4
		2022	0	3
		2023	0	1
		2024	0	1
		2025	<1	<1
		2026	-	-
North Umpqua (Population)	≤10 (<30/<60)	2014	6	6
		2015	3	5
		2016	6	4
		2017	4	4
		2018	4	5
		2019	1	4
		2020	3	4
		2021	2	4
		2022	11	5
		2023	3	4
		2024	<1	4
		2025	1	4
		2026	-	-

[1]In 2014, all hatchery steelhead observed in the Umpqua basin, not inclusive of unsurveyed areas above Winchester Dam, were in Canyon Creek, which encompasses a hatchery acclimation site (13 of 15 steelhead observed in this survey were hatchery origin - 87%).

[2]In 2019, an extended period of poor survey access due to heavy snowfall and extensive downed timber contributed to a lower survey success rate in the Umpqua Stratum, excluding the North Umpqua above Winchester Dam. Fewer than 10 known fin-clip status (live or dead) were observed, so the wild abundance estimate was based on an alternative method, incorporating data from prior years. The same approach was necessary in 2020 and 2021 due to small sample size.

Table III-12. Percent of random spawning ground survey sites occupied by adult winter steelhead in the Umpqua Stratum, excluding unsurveyed areas upstream of Winchester Dam on the North Umpqua. Survey sites were considered occupied based on the presence of at least one steelhead redd.

Spatial Extent	Year	Observed Occupancy (%)
Umpqua Stratum	2014	71
	2015	64
	2016	64
	2017	67
	2018	73
	2019	80
	2020	70
	2021	50
	2022	68
	2023	83
	2024	90
	2025	59
	2026	-

WILD FISH MONITORING SUMMARY

SMU: Coastal Winter Steelhead

Stratum: Mid-South Coast

Population: Multiple Population Aggregate

Abundance

Spawner abundance of winter steelhead in the Mid-South Coast Stratum is evaluated based on redd surveys (redd abundance expanded to fish abundance) (Table III-13; Fig. III-10). As previously described, the CMP's stratum-scale abundance thresholds for winter steelhead were recalculated using a revised redds-to-fish expansion factor. This does not change assessment results, however, because both the thresholds and redd abundance estimates are adjusted using the same expansion equation. Regardless, for transparency, Table III-13 provides thresholds and annual abundance estimates calculated using the current and original (values in parentheses) expansion equations.

Table III-13. Natural origin spawner abundance targets and estimates for Mid-South Coast winter steelhead. Desired and Critical Abundance Targets are from CMP Table A-III:2, with stratum-scale estimates adjusted using a revised redds-to-fish expansion factor. For comparison, the original abundance thresholds and annual abundance estimates derived using the CMP's original expansion factor are shown in parentheses.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate
	Desired	Critical		
Mid-South Coast Stratum	33,719 (20,700)	13,032 (8,000)	2014	18,495 (11,354)
			2015	19,635 (12,052)
			2016	23,887 (14,653)
			2017	11,749 (7,227)
			2018	18,503 (11,359)
			2019	9,179 (5,655)
			2020	20,909 (12,831)
			2021	12,373 (7,609)
			2022	14,977 (9,202)
			2023	12,247 (7,532)
			2024	8,344 (5,144)
			2025	8,886 (5,476)
			2026	-

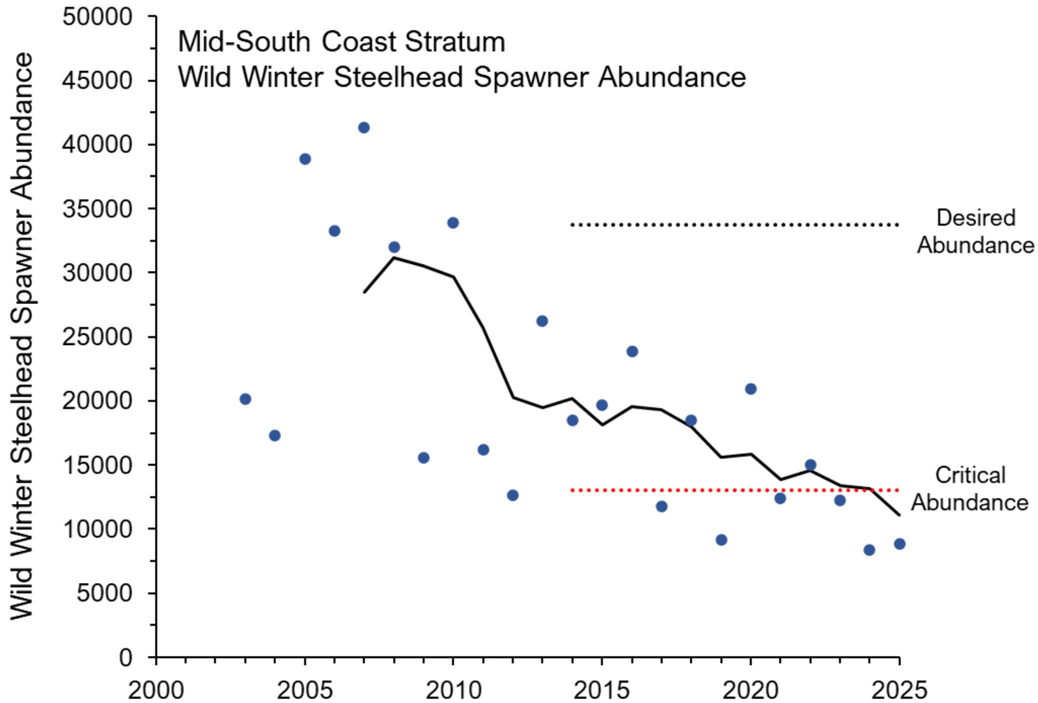


Figure III-10. Abundance estimates for the Mid-South Coast Stratum of wild winter steelhead (•) derived from random redd surveys (expanded to abundance) since 2003. The solid black line is the running five-year geometric mean of abundance estimates. Revised Desired and Critical Abundance thresholds are shown as dashed black and red lines, respectively.

Harvest

Within the Mid-South Coast Stratum, harvest of wild winter steelhead is allowed only in the East Fork Coquille Management Area (beginning in 2018) and in the Sixes Population, where harvest of wild winter steelhead was allowed prior to the adoption of the CMP. Harvest rates of wild winter steelhead in the Mid-South Coast Stratum have been assessed using stratum abundance estimates downscaled to the population or management area using estimates of historical abundance ratios (Kenaston 1980) and harvest card estimates of wild steelhead retention. Harvest rates are below CMP thresholds in the East Fork Coquille Management Area (Table III-14). The CMP does not provide a specific harvest rate target for the Sixes Population. However, harvest estimates in the Sixes are approximately equal to the 10% target applied elsewhere. Estimates based on creel and spawning ground surveys are available for verification of harvest rates in the Sixes River in 2020. The creel-based harvest rate in 2020 (6%) was higher than that estimated using downscaled abundance and angler reporting (2%), but both estimates were below the 10% target. Estimates of harvest rates for the most recent run year are provisional pending finalization of catch estimates.

Hatchery Influence

Targets for pHOS are evaluated as a running nine-year average to allow for some variability in the level of naturally spawning hatchery fish while ensuring that the long-term impact from hatchery fish is at, or below, targets (Table III-15). In the Mid-South Coast Stratum, pHOS cannot be assessed at the population level. However, stratum-level estimates have been higher than targets set for most Mid-South Coast populations.

Table III-14. Estimates of harvest rates for wild winter steelhead in the East Fork Coquille Management Area (Coquille Population) and the Sixes Population. Downscaled abundance estimates are stratum-scale abundance estimates apportioned to the population or management area using historic abundance ratios (Kenaston 1980).

Spatial Extent	Target (%)	Year	Harvest Rate, Monitoring Approach	
			Spawning Surveys & Creel (%)[1]	Downscaled Abundance & Harvest Cards (%)
East Fork Coquille (Management Area)	<10	2015	*n/a*	Wild Retention Not Allowed
		2016	*n/a*	Wild Retention Not Allowed
		2017	*n/a*	Wild Retention Not Allowed
		2018	*n/a*	2
		2019	*n/a*	8
		2020	*n/a*	4
		2021	*n/a*	4
		2022	*n/a*	4
		2023	*n/a*	0
		2024	*n/a*	1
		2025	*n/a*	1
		2026	*n/a*	-
Sixes (Population)	*n/a*[(2)]	2015	*n/a*	10
		2016	*n/a*	7
		2017	*n/a*	9
		2018	*n/a*	11
		2019	*n/a*	14
		2020	6	2
		2021	*n/a*	6
		2022	*n/a*	<1
		2023	*n/a*	2
		2024	*n/a*	4
		2025	*n/a*	<1
		2026	*n/a*	-

[1]Estimates of harvest rates based on spawning surveys and creel are available in the Sixes population beginning in 2020.
[2]Harvest of wild steelhead in the Sixes River was allowed prior to adoption of the CMP; the CMP does not specify harvest rate target Sixes Population, but harvest rates are expected to be low as in other areas.
[3]Estimates for the most recent year are provisional estimates pending finalization of harvest statistics.

Table III-15. Percent hatchery origin spawners (pHOS) for Mid-South Coast Stratum winter steelhead. pHOS targets are from CMP Table AIII:4. Targets inside parentheses are for the immediate area (within 4 stream miles) around acclimation and hatchery release sites and whether they contain significant (lower value) or less significant (higher value) spawning habitat.

Spatial Extent	pHOS Target	Year	pHOS Estimate	
			pHOS (%)	9-year Average (%)
Mid-South Coast Stratum	No Stratum-Level Target *Population Targets are:* *Tenmile ≤30 (<60/<90)* *Coos ≤10 (<30/<60)* *Coquille ≤10 (<30/<60)* *Floras <10* *Sixes <10*	2014	21	16
		2015	12	16
		2016	30	19
		2017	2	17
		2018	*n/a*[1]	17
		2019	37	20
		2020	0[1]	17
		2021	8	16
		2022	24	17
		2023	16	16
		2024	27	18
		2025	16	16
		2026	-	-

[1]pHOS for Mid-South Coast winter steelhead was not calculated in 2018 due to small sample size of known origin live fish or carcasses. Due to low sample size in 2020, pHOS was calculated based on an alternative method, incorporating data from prior years.

Spatial Structure

Spatial structure will be evaluated for each population at the next assessment called for in the CMP. Occupancy in random spawning ground surveys is shown below (Table III-16). Survey sites are considered occupied based on the presence of at least one steelhead redd. At the next assessment, occupancy will be assessed with the goal being occupancy in all major tributaries over the assessment period.

Table III-16. Percent of random spawning ground survey sites occupied by adult winter steelhead in the Mid-South Coast Stratum. Survey sites were considered occupied based on the presence of at least one steelhead redd.

Spatial Extent	Year	Observed Occupancy (%)
Mid-South Coast Stratum	2014	75
	2015	79
	2016	81
	2017	64
	2018	83
	2019	69
	2020	78
	2021	74
	2022	95
	2023	77
	2024	73
	2025	69
	2026	-

Section IV. Coastal Summer Steelhead

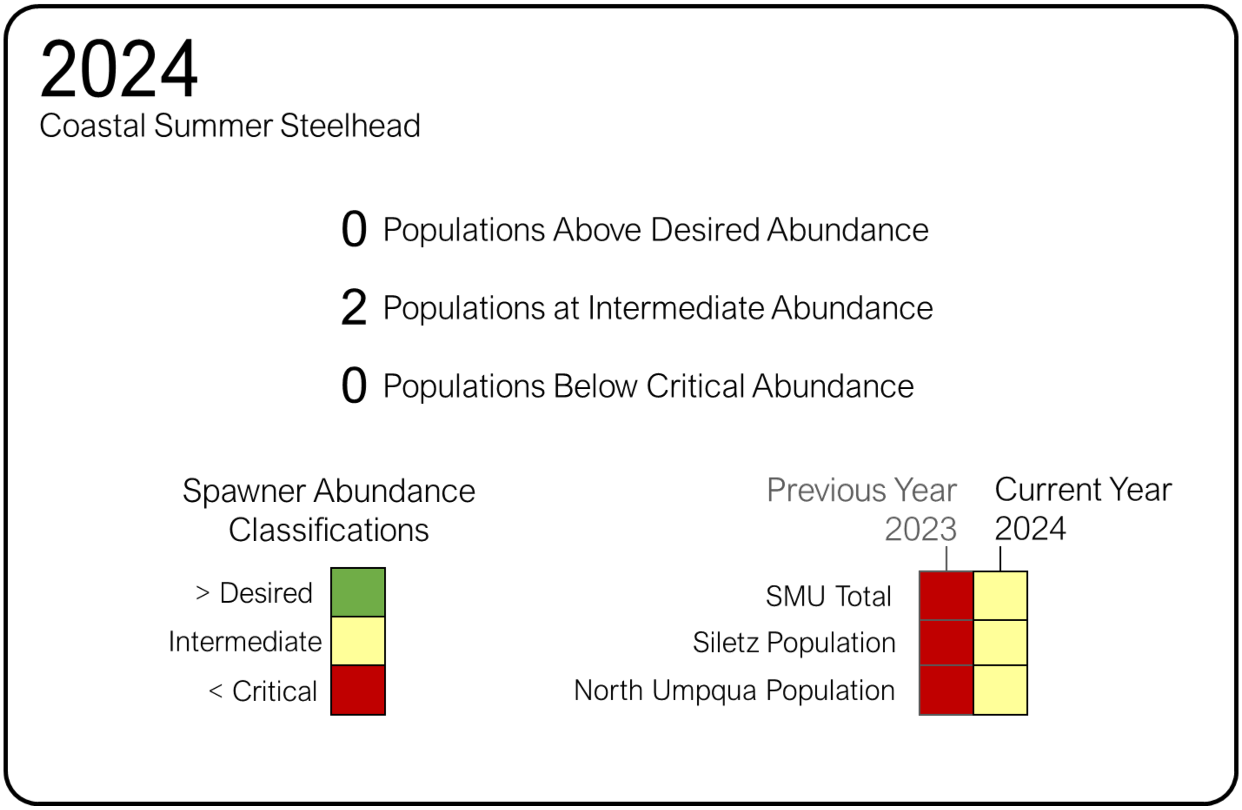


Figure IV-1. Spawner abundance classifications for the Coastal Summer Steelhead SMU and its constituent populations for the current and previous reporting years. Classifications are shown as below the CMP Critical Abundance Threshold (Red), above the CMP Desired Abundance Target (Green), or intermediate between Critical Abundance and Desired Abundance (Yellow). Abundance thresholds and classifications at the SMU scale are the sum of those for both constituent populations.

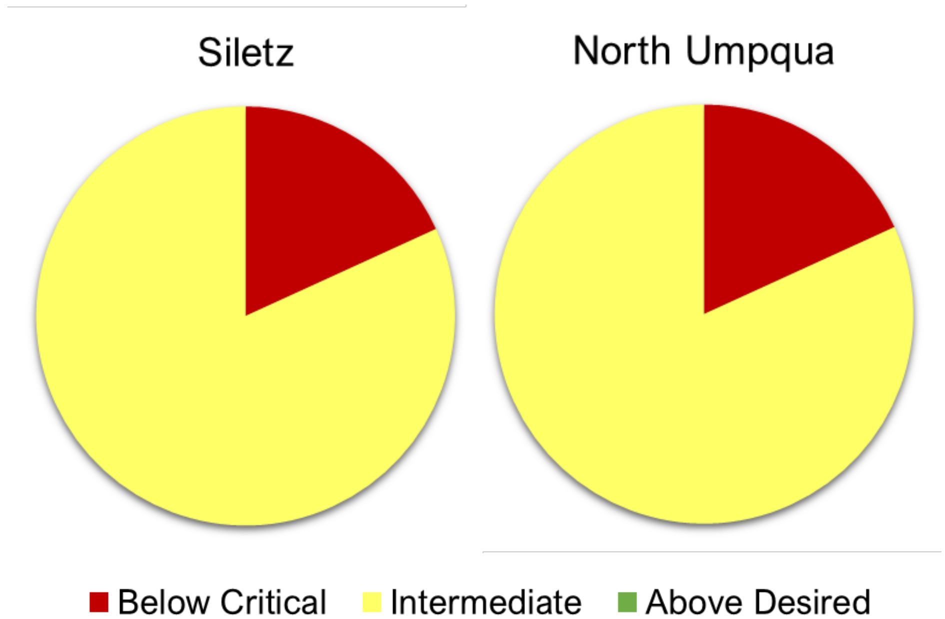


Figure IV-2. Coastal Summer Steelhead Populations. Percent of years since 2014 with abundance estimates in the following categories: Below Critical Abundance (Red), Above Desired Abundance (Green), or Intermediate between Critical Abundance and Desired Abundance (Yellow).

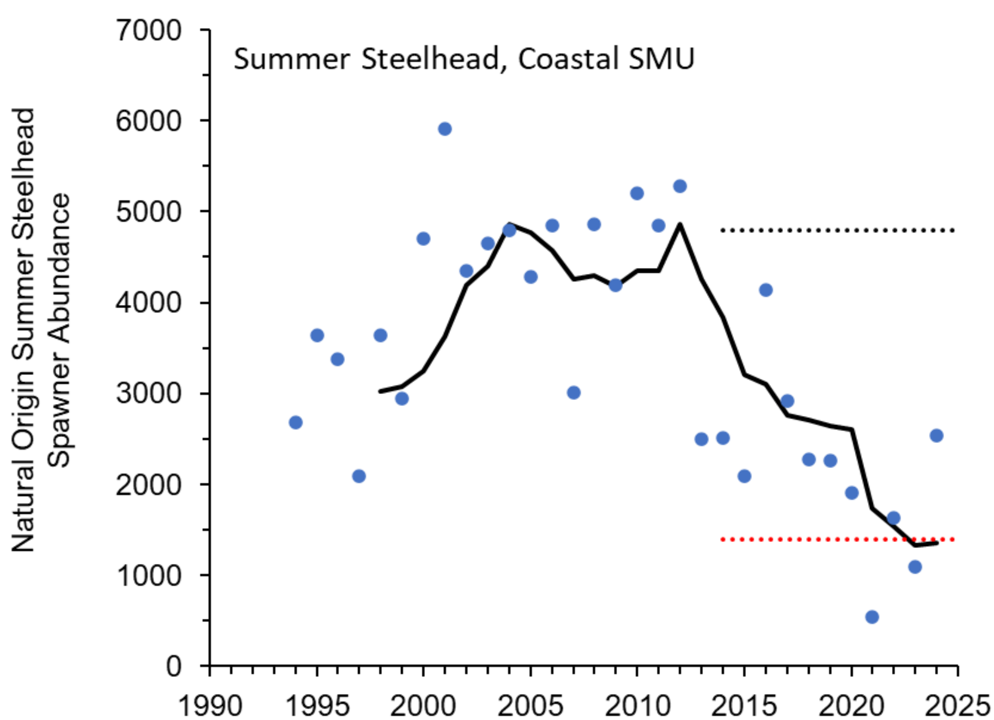


Figure IV-3. Abundance of natural origin Coastal Summer Steelhead (Adults) for the period of concurrent estimates for both constituent populations (Siletz and North Umpqua since 1994 (•). The solid black line is the running 5-year geometric mean of abundance estimates; dashed black and red lines are the CMP Desired and Critical Abundance thresholds, respectively, calculated as the sum of abundance thresholds for the SMU's constituent populations.

Coastal Summer Steelhead – Monitoring and Assessment Notes

Abundance. The abundance of Coastal Summer Steelhead is assessed in two population areas – Siletz and South Umpqua. A roll-up of population abundance thresholds and annual abundance estimates to the SMU level is provided in Figure IV-3. Since 2014, both populations were generally intermediate between Desired and Critical Abundance, but abundance in both populations fell below Critical Abundance in 2021 and 2023. Additional population-specific abundance data are presented in the population summaries that follow.

Hatchery Influence. Hatchery influence is addressed separately in each population summary below.

Harvest. Retention of wild summer steelhead is prohibited in both the Siletz basin and the Umpqua Stratum.

Productivity. ODFW conducts random juvenile surveys in wadeable streams to provide information on juvenile distribution, density, and abundance. Methods to distinguish juvenile winter and summer steelhead will be needed to draw conclusions specific to summer steelhead (See Section III, Table III-1).

Spatial Structure. Spatial structure will not be assessed for Siletz or North Umpqua summer steelhead because sampling is not conducted throughout the range of spawning or rearing habitat.

Diversity. Monitoring of phenotypic diversity is limited to estimates of run timing at Siletz Falls and Winchester Dam on the North Umpqua River. ODFW will evaluate diversity at the next assessment period called for in the CMP.

WILD FISH MONITORING SUMMARY

SMU: Coastal Summer Steelhead

Stratum: Mid Coast

Population: Siletz

Abundance

The Siletz wild summer steelhead population spawns almost exclusively in the areas above Siletz Falls. ODFW indexes the spawner abundance of adult summer steelhead in the Siletz population through trap counts at the falls (Table IV-1; Fig. IV-4). Wild fish are distinguished from hatchery fish by the presence of intact adipose fins. Only wild fish are passed above the falls.

Table IV-1. Natural origin spawner abundance estimates and targets for Siletz Summer Steelhead. Desired and Critical Abundance Targets are from CMP Table A-III:2.

Spatial Extent	Abundance Thresholds		Year	Abundance Estimate (Trap Count)
	Desired	Critical		
Siletz Population	600	200	2014	335
			2015	493
			2016	501
			2017	449
			2018	458
			2019	334
			2020	459
			2021	94
			2022	315
			2023	152
			2024	283
			2025	-

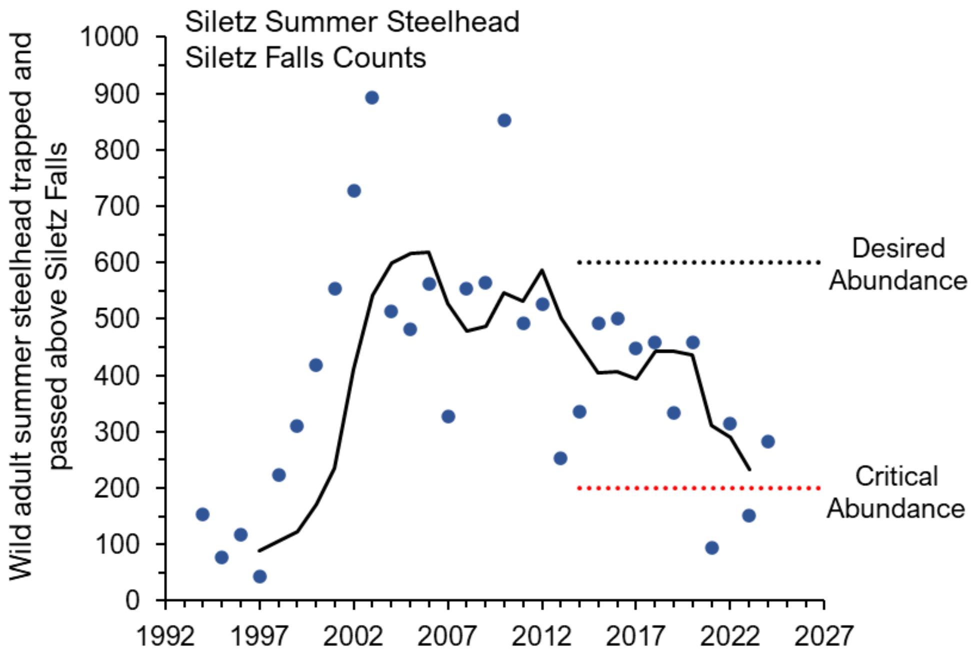


Figure IV-4. Counts of wild adult summer steelhead trapped and passed above Siletz Falls since 1994 (•). Only wild fish are passed above the falls. The solid line is the running 5-year geometric mean of the counts. The CMP targets for Desired Abundance and Critical Abundance are shown as black and red dashed lines, respectively.

Hatchery Influence

The proportion of natural steelhead spawners comprised by hatchery-origin steelhead is targeted for a level of 5% or less in the spawning areas above Siletz Falls. The CMP does not specify annual monitoring of pHOS for Siletz summer steelhead because no hatchery-origin fish are passed upstream of the falls. However, the CMP acknowledged uncertainty regarding trap efficiency for summer steelhead. In 2014 and 2015, snorkel surveys upstream of Siletz Falls showed pHOS to be 5% and 20%, respectively. Volitional passage of the falls by hatchery summer steelhead was addressed by modification of a gap under the trap's main doors and efforts to divert more flow through the trap during low flows (ODFW 2016).

WILD FISH MONITORING SUMMARY

SMU: Coastal Summer Steelhead

Stratum: Umpqua

Population: North Umpqua

Abundance

Abundance estimates for North Umpqua summer steelhead are based on counts of natural origin steelhead passing Winchester Dam from May 1 through November 30. Counts are adjusted for a change in counting methods in 1992 and harvest mortality. After implementation of catch-and-release regulations for natural origin summer steelhead, estimates include an estimate of mortality incidental to harvest of hatchery summer steelhead above Winchester Dam (Table IV-2; Fig. IV-5).

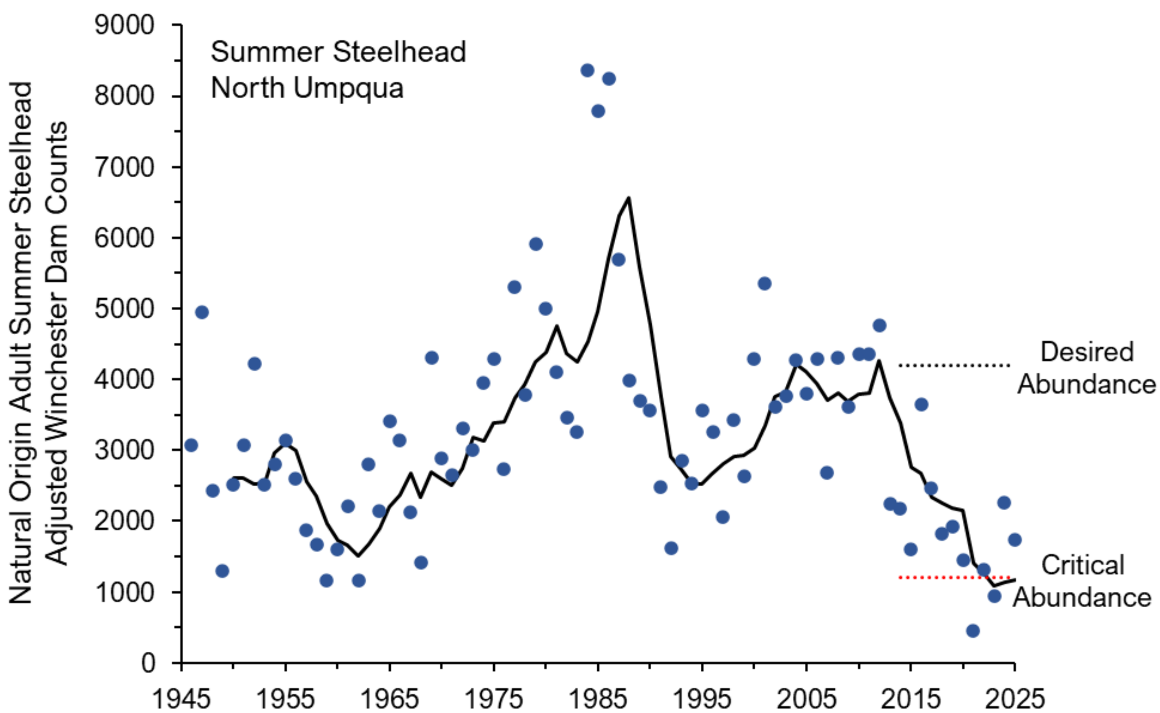


Figure IV-5. Abundance estimates for natural origin adult summer steelhead above Winchester Dam on the North Umpqua River (•) since 1946. Estimates are based on counts of unmarked summer steelhead at Winchester Dam (May 1 to November 30), adjusted to account for a change of counting methods in 1992 and harvest above Winchester Dam. Harvest after implementation of catch-and-release regulations for natural origin fish is an estimate of mortality incidental to harvest of hatchery summer steelhead. The solid line is the running 5-year geometric mean of abundance estimates. The CMP targets for Desired Abundance and Critical Abundance are shown as black and red dashed lines, respectively.

Table IV-2. Natural origin spawner abundance estimates for the North Umpqua Population of summer steelhead. Desired and Critical Abundance Targets are from CMP Table A-III:2.

Spatial Extent	Abundance Thresholds		Run Year	Abundance Estimate
	Desired	Critical		
North Umpqua Population	4,200	1,200	2014	2,182
			2015	1,598
			2016	3,652
			2017	2,472
			2018	1,820
			2019	1,924
			2020	1,452
			2021	449
			2022	1,318
			2023	942
			2024	2,261
			2025	1,733

Hatchery Influence

The CMP established a target of ≤10% for the percent of hatchery origin summer steelhead on the spawning grounds (pHOS) for the North Umpqua summer steelhead population. The CMP provides an exception to this target within a four-mile radius around Rock Creek Hatchery, where the target is <30% or < 60% for significant or less significant wild spawning areas, respectively. "Significant wild spawning areas" are determined based on the quality of the habitat within the area and the proportion of all spawning habitat that it represents. The appropriate target for the four-mile radius around Rock Creek Hatchery is 60% because water temperatures are likely to limit spawning and rearing, and because this area represents a low proportion of the spawning habitat used by naturally produced spawners (See discussion of spatial segregation below).

Counts of natural and hatchery origin summer steelhead passing Winchester Dam can provide an estimate of the proportion of the total summer steelhead passage comprised of hatchery origin fish. However, this proportion does not account for removal of adults that occurs prior to spawning (i.e., fishery-related mortality; retention at hatchery facilities). Therefore, estimates of the abundance of naturally spawning hatchery fish are derived by subtracting estimates of fin-clipped fish harvested by anglers in the North Umpqua upstream of Winchester Dam and fin-clipped fish retained at Rock Creek Hatchery. This estimate is used with the estimate of naturally produced spawners to provide an estimate of the proportional escapement of wild and hatchery fish upstream of Winchester Dam.

The proportional escapement of hatchery fish in the North Umpqua above Winchester Dam reflects pHOS only to the degree that natural and hatchery origin steelhead share a common spawning distribution, and the CMP specifies that spatial segregation of spawning should be incorporated into pHOS estimates:

> *"(I)n determining the population-level pHOS estimate, the spawning habitats will be weighted by their wild fish use (i.e., areas with a higher proportion of the wild spawning population will be weighted heavier than areas with low percentages of the wild spawning population; quality and proportion of spawning habitat within an area may also be considered in the weighting). This will allow for higher pHOS levels in areas that are not significantly used by wild fish but must be offset by pHOS estimates that are lower in areas that are more heavily used by the wild population to meet the population-wide/majority spawning area target."*

Radio telemetry tracking data has indicated a high degree of segregation of spawning areas favored by natural and hatchery origin summer steelhead in the North Umpqua population (Loomis et al. 2003). Consistent with the guidance in the CMP, ODFW used radio telemetry inferred spawning distributions for hatchery and natural origin summer steelhead to estimate pHOS as follows (ODFW 2022b):

(1) Counts of summer steelhead at Winchester Dam (May 1 through November 30) were adjusted to account for harvest[2] and hatchery origin summer steelhead passing the dam during the winter counting period (December 1 through April 30). These adjusted counts represent escapement estimates for natural and hatchery origin summer steelhead upstream from Winchester Dam prior to removal of hatchery fish at Rock Creek Hatchery.

(2) Natural and hatchery origin escapement estimates from Step 1 were apportioned to five sub-basins using telemetry-based distribution proportions (Table IV-6).

Table IV-6. Number and proportion of hatchery and naturally produced summer steelhead (passing Winchester Dam May 1 to November 30) spawning in North Umpqua sub-basins as determined by radio telemetry. Data are from Loomis et al. (2003).

Sub-Basin	Proportion of Tagged Summer Steelhead Tracked to Spawning Sub-basin by Origin	
	Natural	Hatchery
Lower North Umpqua	0.098	0.100
Rock Creek	0.109	0.800
Little River	0.054	0.000
Upper North Umpqua	0.217	0.100
Steamboat Creek	0.522	0.000

(3) Hatchery fish removed at Rock Creek Hatchery were subtracted from the hatchery origin escapement estimate for the Rock Creek sub-basin.

(4) Sub-basin pHOS estimates were calculated as sub-basin hatchery escapement divided by the combined sub-basin escapement of natural and hatchery origin summer steelhead.

(5) A basin-wide estimate of pHOS was calculated from sub-basin pHOS estimates, weighted by each sub-basin's proportion of naturally produced spawners (Table IV-7).

[2] After the harvest of wild summer steelhead was prohibited, a fishery mortality rate for naturally produced summer steelhead was estimated by applying a 10% incidental mortality rate to an encounter rate set equal to the harvest rate of hatchery summer steelhead. Harvest rates of hatchery summer steelhead upstream from Winchester Dam are based on the count of hatchery summer steelhead upstream from Winchester Dam (adjusted for hatchery summer steelhead passing during the winter counting period) and angler reported harvest of hatchery summer steelhead upstream from Winchester Dam.

Additional methodological details and assessment results are available in ODFW (2022b).

Table IV-7. Annual estimates of hatchery proportions in the North Umpqua summer steelhead population. Proportions are shown for unadjusted passage counts at Winchester Dam and estimates of unweighted and weighted basin-wide percent hatchery origin spawners (pHOS) for North Umpqua summer steelhead, 2013-2021. Unweighted basin-wide pHOS estimates are based on counts of hatchery and naturally produced summer steelhead counted at Winchester Dam, adjusted to account for harvest, hatchery summer steelhead passing the dam during the winter counting period, and retention of hatchery fish at Winchester Dam. These estimates assume no spatial segregation of hatchery and natural-origin spawners. Weighted basin-wide estimates of pHOS are based on the five sub-basin pHOS estimates, weighted based on the proportion of the total naturally produced escapement spawning in each sub-basin. These estimates account for spatial segregation of hatchery and naturally produced spawners based on telemetry data reported in Loomis et al. (2003). 9-year averages of weighted basin-wide pHOS estimates are provided for comparison with the CMP target ≤10%).

Run Year	Hatchery Proportion at Winchester Dam	Unweighted Basin-wide pHOS (%)	Weighted Basin-wide pHOS (%)	9-year Average, Weighted Basin-Wide pHOS (%)
2014	52	42	21	15
2015	50	40	20	15
2016	47	41	20	15
2017	42	34	18	16
2018	27	20	12	16
2019	33	25	15	16
2020	45	38	19	17
2021	29	29	15	17
2022	65	59	26	18
2023	7	6	5	16
2024	3	3	2	14
2025	5	4	4	13

Section V. Coastal Chum Salmon

WILD FISH MONITORING SUMMARY

SMU: Coastal Chum Salmon

Stratum: Aggregate of Multiple Strata

Population: Aggregate of Multiple Populations

Abundance

ODFW assesses abundance of coastal chum salmon through counts of spawning adults on standard spawning surveys in the Necanicum, Nehalem, Tillamook, Netarts Bay, Nestucca, Siletz and Yaquina basins. Peak counts of spawners at additional sites in the Salmon River and Coos Bay population areas are also provided below (Table V-1). Trends in peak counts across surveys are shown by SMU (Fig. V-1) and population areas within the North and Mid Coast strata (Figs. V-2 and V-3).

Table V-1. Abundance Index (Peak Count of Adult Spawners/mile) of chum salmon in standard index spawning surveys. The CMP does not include abundance targets for Coastal Chum Salmon. 5-year geometric means for the period preceding the CMP are provided for context.

Chum Salmon Peak Count/Mile in Standard Index Surveys									
Stratum	North Coast					Mid Coast			Mid-South Coast
Year	Necanicum	Nehalem	Tillamook	Netarts Bay	Nestucca	Salmon	Siletz	Yaquina	Coos
2014	42	334	425	39	1	1	16	144	2
2015	14	686	1022	177	8	3	95	362	2
2016	43	878	914	137	9	1	138	370	2
2017	24	441	259	47	6	5	64	89	3
2018	35	265	467	16	3	0	134	302	3
2019	36	143	263	198	0	0	13	92	0
2020	33	531	792	804	76	9	188	153	60
2021	NS[1]	1,029[2]	652[2]	175	16	0	129	152	11
2022	NS[1]	NS[1]	466	176	1	11	83	56	23
2023	NS[1]	NS[1]	1,132	496	15	8	42	144	2
2024	NS[1]	NS[1]	561	784	9	13	168	567	2
2025	-	-	-	-	-	-	-	-	-
Pre-CMP 5-yr Geometric Mean (2009-2013)	9	201	319	42	n/a[4]	n/a[5]	26	152	Not Surveyed

[1]Necanicum surveys were not conducted in 2021-2024, and Nehalem surveys were not conducted in 2022-2024 due to staffing limitations.

[2]Due to staffing limitations in 2021, peak counts were available only for a subset of surveys typically conducted in the Nehalem and Tillamook Population areas. No attempt has been made to impute values for missing surveys, so 2021 estimates are not directly comparable to estimates from previous years.

[3]Netarts Bay chum salmon are not known to be a historically independent population.

[4]The survey in the Nestucca River was not surveyed in 2010-2012. Peak Count/mile was 0 and 11 in 2009 and 2013, respectively.

[5]Geomean for the Salmon River could not be calculated; peak densities = 0, 0.5, 0, 0, and 0 in 2009, 2010, 2011, 2012, and 2013, respectively.

Harvest

Retention of chum salmon is prohibited in the Coastal SMU.

Hatchery Influence

Coastal chum salmon are not systematically assessed for pHOS because no hatchery programs exist in the Coastal SMU.

Productivity

Adult-to-adult survival (AAS) may be estimated at standard survey sites in some basins where age composition can be estimated through analysis of scales from carcasses. Analysis of age composition is ongoing (See *Diversity* below). However, due to budget reductions, surveyors have subsampled chum carcasses for scales in some years. This will reduce the data available for analysis of age composition.

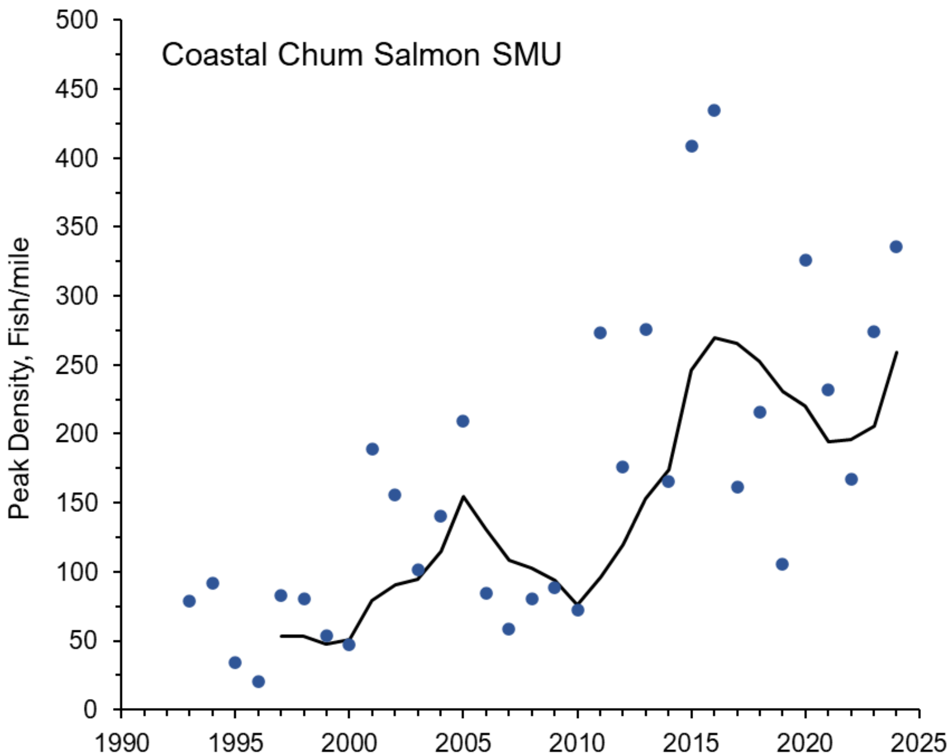


Figure V-1. Running 5-year geometric means of the peak densities (fish/mi) of chum salmon on standard surveys in the Coastal SMU. The period shown (since 1993), is a period in which surveys were conducted with greater regularity than earlier in the record. Estimates do not include imputation of values for missing surveys. Staffing limitations in 2021 and 2022 precluded peak counts at several surveys in North Coast population areas. Missing values were not interpolated for this assessment.

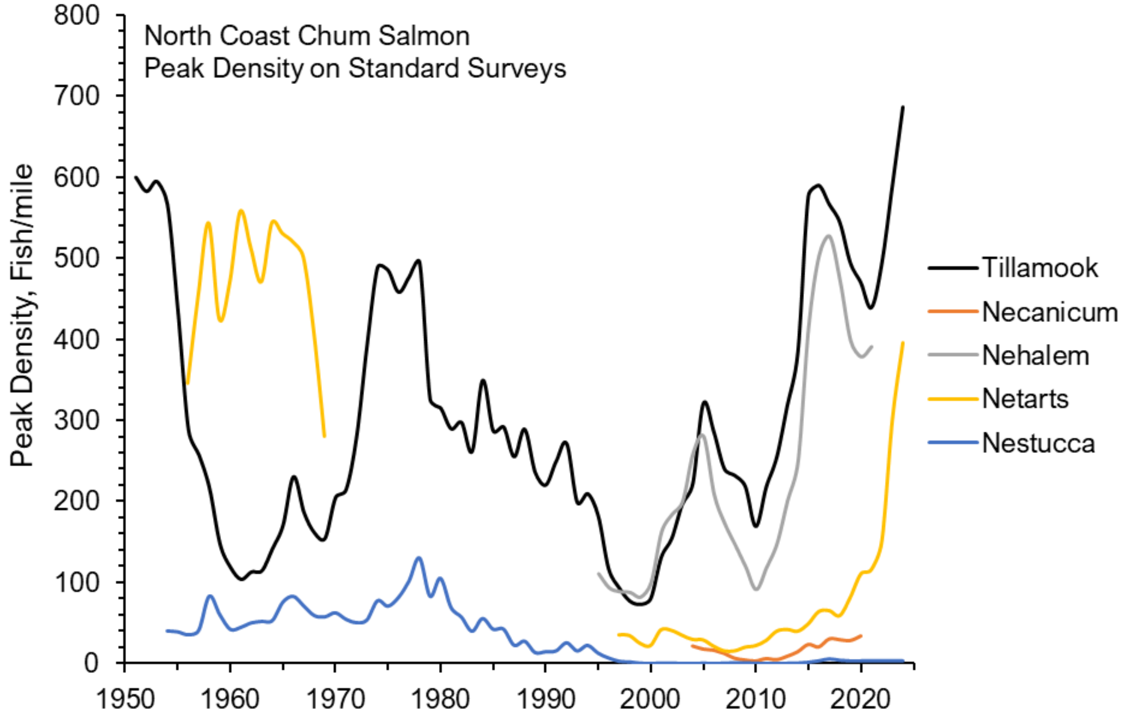


Figure V-2. Running 5-year geometric means of the peak densities (fish/mi) of chum salmon on standard index surveys in North Coast population areas. Individual data points are omitted for figure clarity. Staffing limitations in 2021- 2022 precluded peak counts at several surveys in North Coast population areas. Missing values were not interpolated for this assessment.

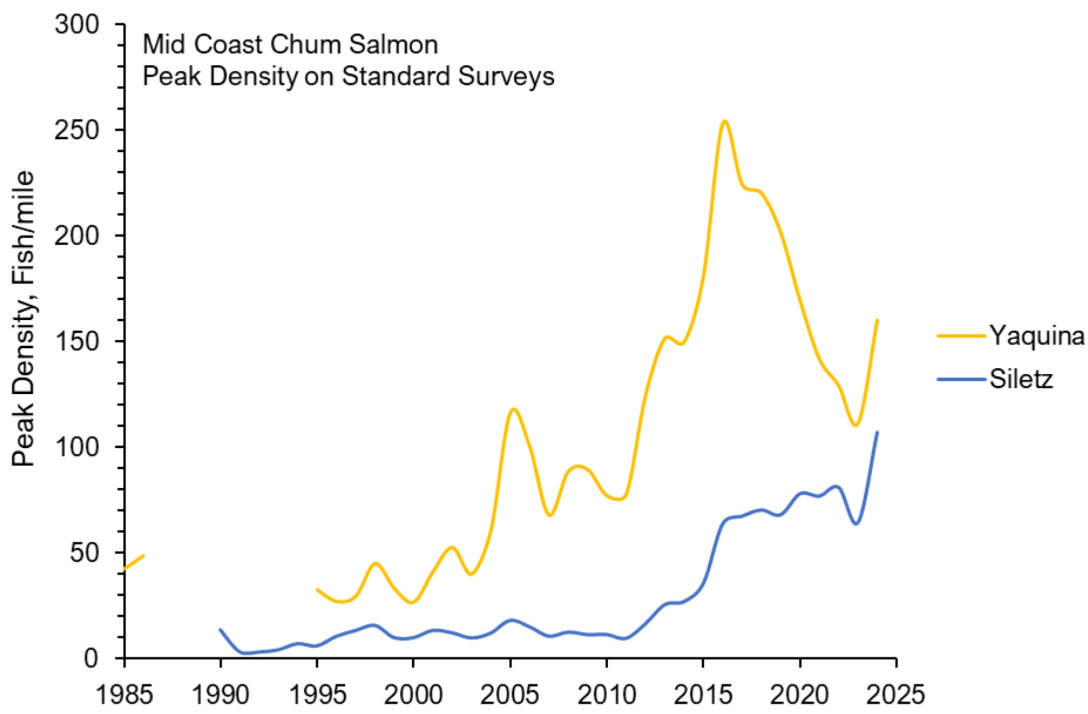


Figure V-3. Running 5-year geometric means of the peak densities (fish/mi) of chum salmon on standard index surveys in the Yaquina and Siletz population areas (Mid Coast Stratum). Individual data points are omitted for figure clarity.

Distribution

Specific distribution benchmarks have not been developed for Coastal chum salmon. Because of their limited distribution, trends in spatial structure will be evaluated at the next assessment period called for in the CMP.

Diversity

The CMP identifies annual estimates of age composition of spawners as a critical uncertainty for chum salmon. Annual estimates of age composition based on scales obtained from carcasses at standard surveys in some basins are reported below (Table V-2). ODFW will evaluate phenotypic diversity, including spawner age composition, spawning timing, and spawner size composition at the next assessment period called for in the CMP.

Table V-2. Coastal Chum Salmon age composition from scales retrieved from carcasses on standard index surveys.

Population	Return Year	Percentage				Scales Aged (n)
		Age 3	Age 4	Age 5	Age 6	
Necanicum[1]	2014	20	80	0	0	5
	2015	67	33	0	0	6
	2016	0	100	0	0	1
	2017	-	-	-	-	0
	2018	100	0	0	0	1
	2019	-	-	-	-	0
	2020	67	33	0	0	12
	2021	-	-	-	-	0
	2022	0	100	0	0	1
	2023	0	0	0	0	0
	2024	0	100	0	0	1
	2025	-	-	-	-	-
Nehalem	2014	14	68	17	0	249
	2015	33	65	3	0	120
	2016	15	76	8	0	249
	2017	11	70	18	0	245
	2018	28	66	6	0	287
	2019	40	58	1	0	280
	2020	84	16	<1	0	321
	2021	0	50	50	0	2
	2022	-	-	-	-	0
	2023	-	-	-	-	0
	2024	26	70	4	0	23
	2025	-	-	-	-	-
Tillamook	2014	16	57	27	0	191
	2015	40	55	5	0	250
	2016	7	88	5	0	271
	2017	16	57	27	<1	304
	2018	71	29	0	0	105
	2019	32	65	2	0	174
	2020	74	26	0	0	208
	2021	0	92	0	0	12
	2022	26	71	4	0	127
	2023	0	100	0	0	9
	2024	0	21	79	0	34
	2025	-	-	-	-	-

Table V.2, Continued.

Population	Return Year	Percentage				Scales Aged (n)
		Age 3	Age 4	Age 5	Age 6	
Netarts Bay[1]	2014	100	0	0	0	1
	2015	75	25	0	0	4
	2016	33	67	0	0	3
	2017	100	0	0	0	1
	2018	-	-	-	-	0
	2019	0	91	5	0	56
	2020	91	9	0	0	11
	2021	0	100	0	0	3
	2022	50	50	0	0	2
	2023	0	100	0	0	1
	2024	40	60	0	0	10
	2025	-	-	-	-	-
Siletz	2014	-	-	-	-	0
	2015	-	-	-	-	0
	2016	32	61	7	0	28
	2017	3	90	7	0	62
	2018	93	6	1	0	117
	2019	0	100	0	0	1
	2020	82	18	0	0	39
	2021	40	60	0	0	78
	2022	35	61	4	0	23
	2023	67	31	2	0	52
	2024	42	58	0	0	57
	2025	-	-	-	-	-
Yaquina	2014	7	67	25	0	405
	2015	78	21	2	0	327
	2016	6	89	5	0	572
	2017	11	61	27	1	232
	2018	91	9	<1	0	381
	2019	53	45	1	0	256
	2020	59	39	2	0	49
	2021	44	53	3	0	205
	2022	23	77	0	0	81
	2023	57	41	2	0	133
	2024	42	58	0	0	24
	2025	-	-	-	-	-

[1]Age composition is not well-resolved in some population areas where sample sizes are small.

Section VI. Coastal Cutthroat Trout

WILD FISH MONITORING SUMMARY

SMU: Coastal Cutthroat Trout

Stratum: North Coast, Umpqua

Populations: Tillamook Bay, Nestucca, North Umpqua

Abundance

Coastal cutthroat trout in the Coastal SMU are not systematically monitored, but ODFW assesses abundance of anadromous forms with snorkel surveys in the Wilson, Trask, and Nestucca rivers (Table VI-1; Figs. VI-1 – VI-3) and passage at Winchester Dam (N. Umpqua) (Table VI-II; Fig.VI-4).

Table VI-1. Density (fish/resting hole) of coastal cutthroat trout observed during resting hole surveys for early-run Chinook salmon in the Tillamook (Wilson & Trask Basins) and Nestucca populations.[1] The CMP does not include abundance targets for coastal cutthroat trout. 5-year geometric mean densities for the period preceding the CMP are provided for context.

Population	Management Area	Year	Resting Holes Surveyed	Fish Density (#/Resting Hole)
Tillamook	Wilson	2014	16	3.3
		2015	16	0.6
		2016	16	2.0
		2017	16	2.9
		2018	16	2.9
		2019	16	2.3
		2020	16	4.1
		2021	16	5.8
		2022	16	1.9
		2023	16	6.7
		2024	16	2.1
		2025	16	2.6
		Pre-CMP 5-yr Geomean (2009-2013)		3.5
	Trask	2014	13	21.7
		2015	13	10.7
		2016	13	13.6
		2017	13	10.7
		2018	13	25.5
		2019	13	13.8
		2020	13	5.7
		2021	13	11.3
		2022	13	8.8
		2023	13	23.2
		2024	13	12.2
		2025	13	9.5
		Pre-CMP 5-yr Geomean (2009-2013)		20.1

Table continues on next page

Table VI-1. *Continued*

Population	Management Area	Year	Resting Holes Surveyed	Fish Density (#/Resting Hole)
Nestucca	*n/a*	2014	13	1.4
		2015	13	1.7
		2016	13	2.5
		2017	13	4.0
		2018	13	2.5
		2019	13	3.8
		2020	13	2.5
		2021	13	4.3
		2022	13	1.7
		2023	13	3.6
		2024	13	3.7
		2025	13	1.5
		Pre-CMP 5-yr Geomean (2009-2013)		3.4

[1]This abundance index for coastal cutthroat trout is based on the number of observations per pool surveyed. Snorkel surveys were initiated primarily for determining relative abundance of spring Chinook salmon in resting holes; timing may not coincide with the peak abundance of coastal cutthroat trout in freshwater.

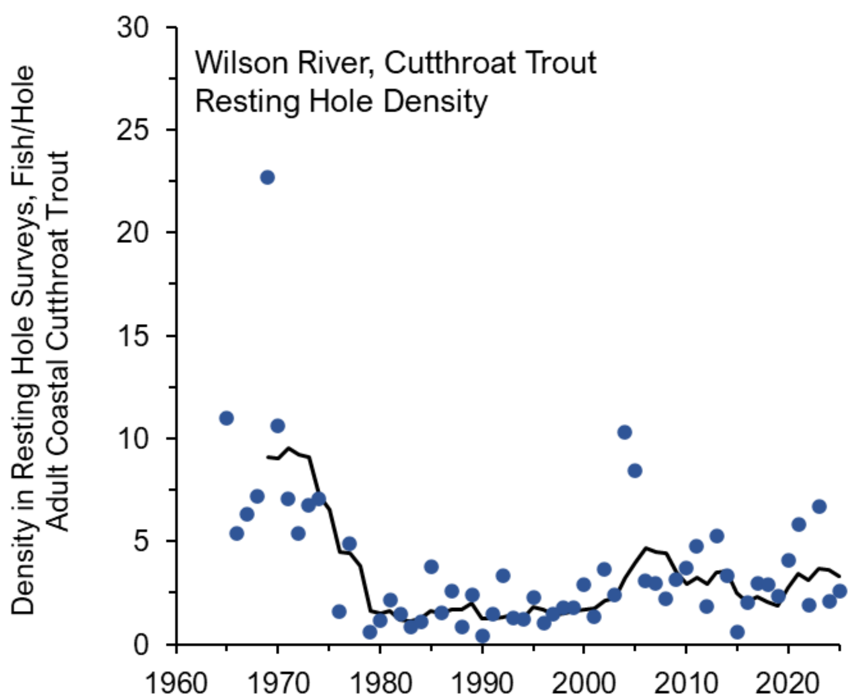


Figure VI-1. Density (fish/hole) of coastal cutthroat trout (•) in resting holes in the Wilson River basin since 1965. Numbers prior to the early 1990s may be influenced by releases of hatchery cutthroat into North Coast basins. Solid line shows a running 5-year geometric mean of densities in resting holes.

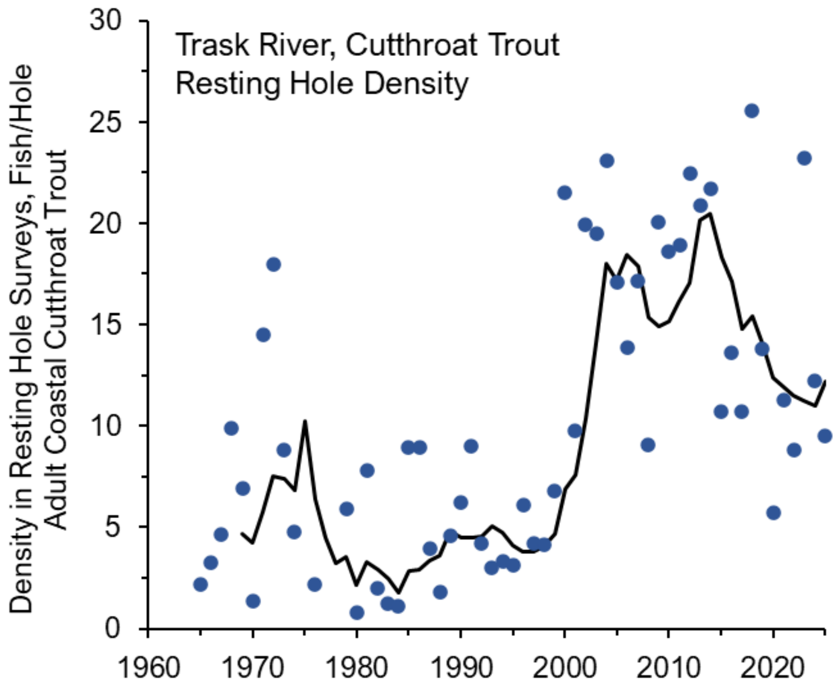


Figure VI-1. Density (fish/hole) of coastal cutthroat trout (•) in resting holes in the Trask River basin since 1965. Numbers prior to the early 1990s may be influenced by releases of hatchery cutthroat into North Coast basins. Solid line shows a running 5-year geometric mean of densities in resting holes.

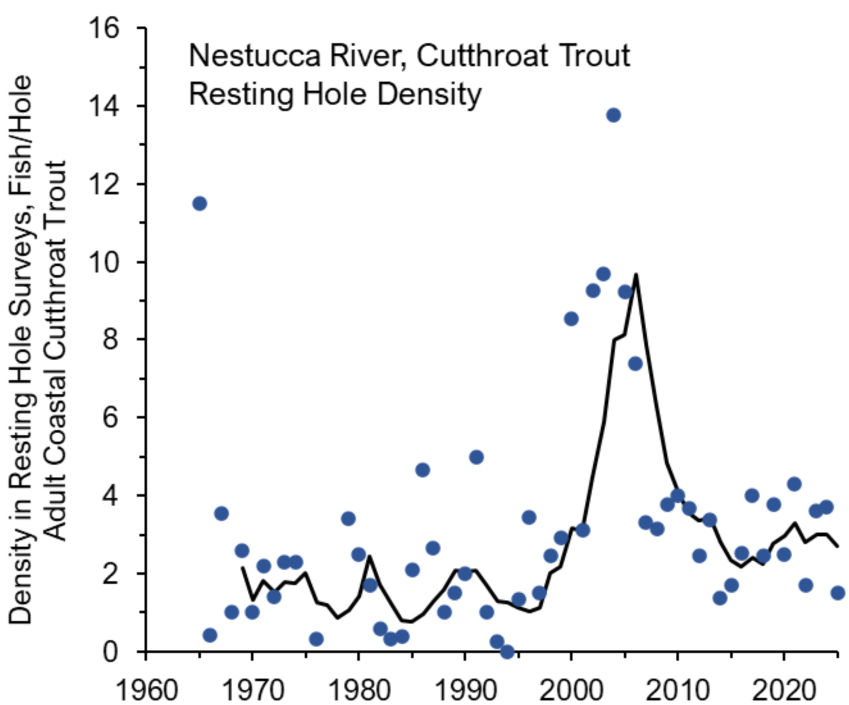


Figure VI-1. Density (fish/hole) of coastal cutthroat trout (•) in resting holes in the Nestucca River basin since 1965. Numbers prior to the early 1990s may be influenced by releases of hatchery cutthroat into North Coast basins. Solid line shows a running 5-year geometric mean of densities in resting holes.

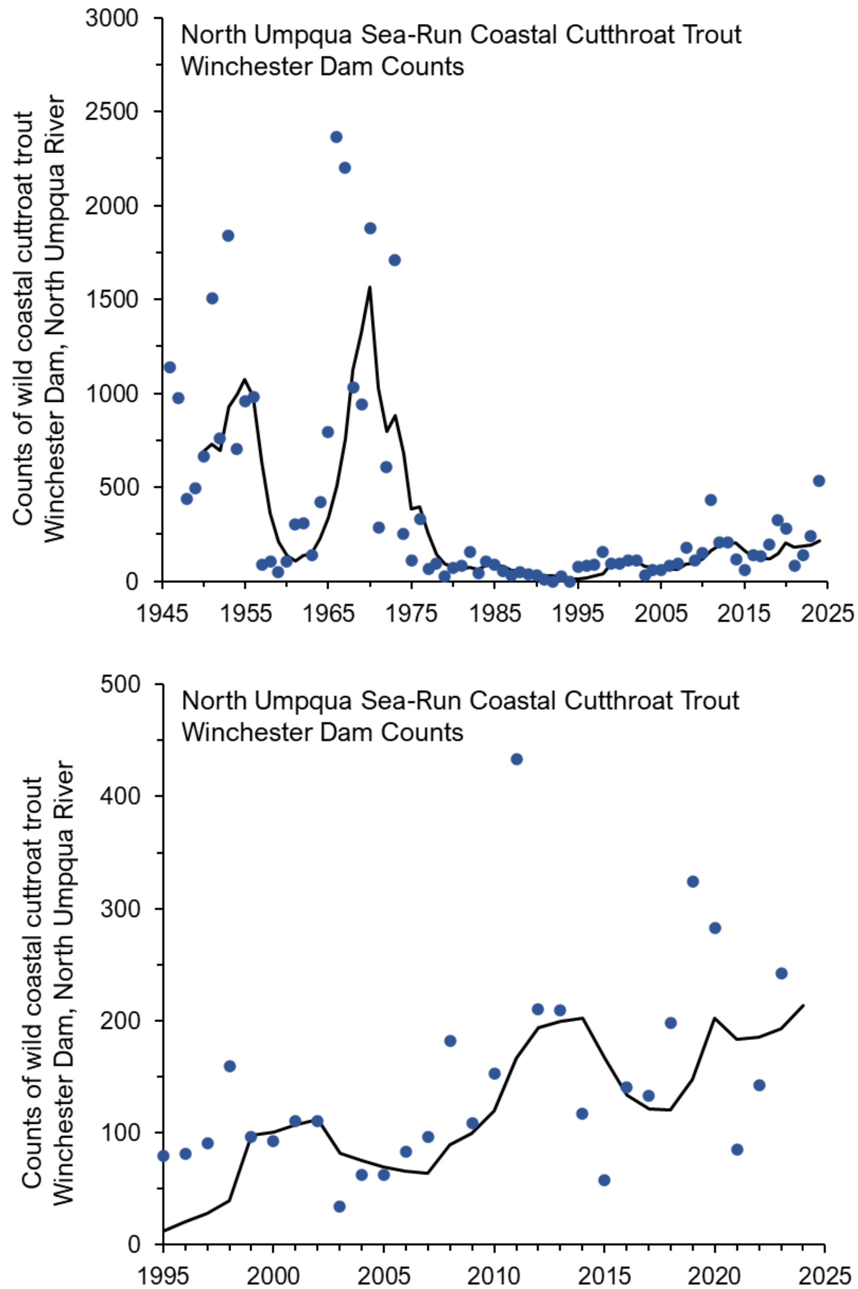


Figure VI-4. Counts of wild coastal cutthroat trout at Winchester Dam on the North Umpqua River (•), since run year 1945-46 (Top Panel). Counts prior to the 1990s may be influenced by releases of hatchery cutthroat trout into the North Umpqua River and elsewhere in the Umpqua basin. Data from run years 1994-95 through the current reporting year are shown on the lower panel to expand the scale for current trends. Solid black lines show the running 5-year geometric mean of passage counts.

Table VI-2. Counts of wild coastal cutthroat trout at Winchester Dam, North Umpqua River, April 1 – March 31. The CMP does not include abundance targets for coastal cutthroat trout. The 5-year geometric mean of counts for the period preceding the CMP is provided for context.

Spatial Extent	Run Year (April 1 to March 31)	Passage Count at Winchester Dam
North Umpqua Population	2014-15	117
	2015-16	58
	2016-17	141
	2017-18	133
	2018-19	198
	2019-20	324
	2020-21	283
	2021-22	85
	2022-23	142
	2023-24	242
	2024-25	533
	2025-26	-
	Pre-CMP 5-yr Geomean (2009/10 to 2013/14)	200

Harvest

The CMP calls for ODFW to consider closure of tidally influenced sections of mainstem rivers to the harvest of coastal cutthroat trout during periods of very low coho marine survival. Amendment 13 of the Pacific Salmon Treaty uses a marine survival index for the Oregon Coast Coho harvest matrix that is based on biological and oceanographic indicators. This index classifies marine survival into four categories, High, Medium, Low, and Extremely Low. The index has not been classified as Extremely Low in the period after adoption of the CMP (Table VI-3; data from Table V-8, PFMC, 2023).

Table VI-3. Coho Marine Survival Indicator, Amendment 13 Matrix. Data are from Table V-8 in PFMC (2024).

Spatial Extent	Fishery Year	Oregon Coast Coho Marine Survival Indicator
Oregon Coast Coho SMU	2014	Medium
	2015	Medium
	2016	Medium
	2017	Medium
	2018	Low
	2019	Low
	2020	Low
	2021	High
	2022	Medium
	2023	Medium
	2024	High
	2025	-
	2026	-

The CMP also calls for ODFW to consider modifying harvest of coastal cutthroat trout if winter steelhead abundances fall below stratum-level Critical Abundances in consecutive years. Since adoption of the CMP, stratum-scale winter steelhead abundance has fallen below Critical Abundances in consecutive years in the North Coast Stratum and Mid-South Coast Stratum. However, neither North Coast index pool surveys (Table VI-1; Fig. VI-1) nor other ODFW monitoring results have shown declines in cutthroat trout abundance that would indicate that angling regulation changes are needed.

Hatchery Influence

Coastal cutthroat trout are not assessed for pHOS because no hatchery programs exist in the Coastal SMU.

Productivity

Productivity will not be assessed for coastal cutthroat trout. There are no available data on all demographic factors needed to assess productivity criteria for this species.

Distribution

ODFW will monitor changes in the distribution of coastal cutthroat trout based on occurrence during snorkel surveys targeting juvenile coho in wadeable streams.

Diversity

Specific metrics for phenotypic diversity are not yet developed for coastal cutthroat trout.

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APPENDIX A.

Recalculation of Abundance Thresholds for Oregon Coastal Chinook Populations

The Oregon Department of Fish and Wildlife (ODFW) used time series of Chinook salmon spawner abundances from a base period of 1986 through 2011 to develop the Coastal Multi-Species Conservation and Management Plan's (CMP) thresholds for Desired Abundance and Critical Abundance (CMP Table AIII:2; ODFW 2014). The methods used to derive the abundance time series differed among populations. After adoption of the CMP, ODFW's Oregon Coastal Chinook Technical Team (OCCTT) completed a methodological standardization that resulted in revised time series of historical spawner abundances of coastal fall Chinook populations (1986-2018).

Revised population abundance time series are currently available for the Nehalem, Tillamook, Nestucca, Salmon River, Siletz, Yaquina, Alsea, Siuslaw, Umpqua (derived from South Umpqua), Coos, Coquille, Floras, Sixes, and Elk River populations. Counts of Chinook salmon on groupings of select index reaches have been calibrated to mark-recapture abundance estimates[3] for 10 populations or subpopulations. A variety of methods have been used to estimate abundances in the Tillamook, Yaquina, Alsea, and Floras populations, where there have not been mark-recapture investigations. Estimates in these populations are therefore subject to greater uncertainty. Abundance time series are not available for the Necanicum and Yachats Aggregate populations.

Critical and Desired Abundance. ODFW used the new Chinook population abundance time series to generate critical thresholds for the sliding scale for harvest (discussed further in Population Summaries below) (ODFW 2020a). These criteria replace the CMP's original Critical Abundance thresholds. Likewise, ODFW recalculated the Desired Abundance thresholds for Coastal Chinook populations to align the thresholds with the new abundance time series. Revision of the Critical and Desired Abundance thresholds ensures that abundance criteria:

- are benchmarked to the best available time series of Coastal Chinook population abundances;
- apply a consistent statistical basis for assessing contemporary annual abundance estimates; and
- align with critical thresholds for sliding scale harvest management.

Further details regarding the revision of Critical and Desired Abundance criteria for Coastal Chinook populations are provided below. Revised thresholds are the primary basis for assessment in the population summaries that follow, but in all cases the CMP's original thresholds are provided for comparison (See Tables A-1, A-3 & Population Summaries in main report).

The revised Critical Abundance thresholds differ from the CMP's original criteria for three reasons:

- *Revision of Abundance Time Series.* Revision of the abundance time series for Coastal Chinook populations means that the base datasets used to calculate the CMP's original

[3] Mark & recapture population estimates are derived from capturing, marking (e.g., tagging), and releasing a subset of individuals in the population and recapturing marked and unmarked individuals in a subsequent capture event or events.

thresholds are different than the current abundance datasets. Revising critical criteria based on the new time series ensures a consistent basis of comparison for Critical Abundance thresholds and ongoing annual abundance estimates.

- *Statistical Basis for Calculation.* The CMP's original Critical Abundance criteria were calculated as (Smsy+20%)*0.5, where Smsy is the spawner abundance at maximum sustainable yield from the stock-recruit (S/R) relationship for the population, the 20% increase in Smsy is a risk buffer for uncertainty in the estimation of Smsy and future threats to populations, and taking half of the resulting product is consistent with Critical Abundances identified in other plans and ocean harvest management forums.[4] Instead of retaining the basis in Smsy, revised critical criteria were simply benchmarked to a 5th percentile[5] of the revised historical abundance time series because of uncertainty in the S/R relationships used to estimate Smsy. ODFW will revisit the statistical basis of Critical Abundance thresholds when meaningful spawner-recruit relationships are more fully developed.
- *Base Period for Data.* The base period for calculation of the CMP's original Critical Abundance thresholds was 1986 through 2011. ODFW used a longer base period (1986 through 2018) to calculate the revised thresholds.

Differences between the original and revised Critical Abundance thresholds (Table A-1) are driven primarily by the revision of the population abundance time series and, in some cases, changing the statistical basis of the calculation to the 5th percentile; the effects of extending the time series are comparatively small (Table A-2; but see the Coquille population for an exception).

Whether the revised Critical Abundance criteria are more conservative or less conservative than the CMP's original criteria cannot be determined by a simple comparison of the original and revised threshold values shown in Table A-1. This is because the base data underlying the two thresholds are different; each population's original and revised time series have different statistical distributions. However, comparisons can be drawn by considering the original and revised criteria as percentiles of their respective base datasets. The original critical criteria for the Tillamook, Nestucca, Salmon River and Floras populations were calculated as the 5th percentile (rounded to 100s) of the original abundance time series for the period of 1986-2011. The revised critical criteria are also calculated as a 5th percentile but using the revised abundance time series. From this standpoint neither criterion is more conservative or less conservative than the other relative to the respective base data; both reflect the value below which we would expect the lower 5% of the abundance distribution to fall.

[4] The CMP's original Critical Abundance thresholds for the four Chinook populations with divergent PVA results (Tillamook, Nestucca, Salmon, and Floras) were calculated as the 5th percentile of spawner abundance during the base period rather than (Smsy+20%)*0.5 given the conflicting model results (which are used to derive Smsy). In these cases, the statistical basis (5th percentile) for calculating the revised Critical Abundance Thresholds is the same as that used to calculate the CMP's original Critical Abundance thresholds.

[5] A percentile of a dataset is a statistical measure that indicates the value below which a specified percentage of the data falls. For example, a 5th percentile of an abundance dataset indicates a value below which 5% of the abundance estimates fall. The percentiles discussed in this section are calculated as percentiles of the lognormal distribution of abundance time series.

Table A-1. Comparison of original and revised Critical Abundance Criteria for Coastal Chinook salmon populations. Revised thresholds were calculated as the 5th percentile of the lognormal distribution of the revised time series over a base period of 1986-2018. For comparison, the original thresholds are shown as percentiles of the original time series over the original base period, 1986-2011.

Chinook Population	Critical Abundance Threshold		
	Original Threshold	Revised Threshold	Percentile of Original Threshold *Original Time Series* *Original Base Period, 1986-2011*
Nehalem	3,800	5,369	1st
Tillamook	3,700	2,745	5th
Nestucca	1,600	2,066	5th
Salmon	400	363	5th
Siletz	2,300	3,471	3rd
Yaquina	2,200	1,564	5th
Alsea	2,900	3,846	<1st
Siuslaw	6,900	3,987	<1st
South Umpqua[1]	1,500	1,493	5th
Coos	1,800	2,531	5th
Coquille	3,500	2,833	<1st
Floras	100	100	5th
Sixes	1,200	712	11th
Elk	800	690	<1st

[1]The original CMP criteria are for the South Umpqua, with the remainder of the stratum 'To Be Determined'. The dataset for the sliding scale was for the Umpqua Stratum, based on the South Umpqua Abundance/0.467. The sliding scale is based on the Umpqua stratum number, but here it is converted to just the South Umpqua for comparison to the CMP abundance thresholds.

The original Critical Abundance thresholds for the remaining populations were calculated as a function of Smsy (previously discussed). Except for the Sixes population, this approach resulted in critical thresholds set equal to or lower than the 5th percentiles of the original abundance time series (Table A-1). In these populations, the new thresholds could be considered more conservative (they are set to a higher percentile of the revised abundance time series) in the Nehalem, Alsea, Siuslaw, Coquille, and Elk River populations. This can be counterintuitive when the numbers are compared directly. For example, in the Siuslaw, Coquille, and Elk River populations, the revised Critical Abundance values are lower than the originals, but the original values were equivalent to a lower percentile of the datasets used to compute them (i.e., <1st percentile vs. 5th percentile) (Table A-1). As a percentile of the respective base datasets, the revised critical criterion is less conservative than the original only in the Sixes population (Table A-1).

Table A-2. Comparison of the 5th percentile of the Chinook population abundance estimates calculated using the revised abundance datasets over the original base period (1986-2011) and the longer base period (1986-2018) used to calculate the revised Critical Abundance criteria. The effect of lengthening the base period was small except for the larger difference in the Coquille population.

Chinook Population	5th Percentile *New Time Series Original Base Period, 1986-2011*	5th Percentile *New Time Series New Base Period, 1986-2018*
Nehalem	5,218	5,369
Tillamook	2,771	2,745
Nestucca	1,951	2,066
Salmon	413	363
Siletz	3,049	3,471
Yaquina	1,370	1,564
Alsea	3,852	3,846
Siuslaw	4,006	3,987
S.Umpqua[1]	1,333	1,493
Coos	2,612	2,531
Coquille	4,411	2,833
Floras	103	100
Sixes	656	712
Elk	637	690

Revised Desired Abundance targets use the same benchmark to historical abundance time series as the original criteria (75th percentile) and differ from the originals only due to revisions to the base abundance estimates and the duration of the base period (extending it to 2018). The exception is the Elk River population, where the CMP used the median abundance over the base period plus 20%. This calculation was used for the original Desired Abundance threshold because of the Elk River population's non-viable status (i.e., this calculation resulted in a higher or more conservative value than the 75th percentile of the original dataset). However, the revised critical criterion for the Elk River population is based on the 75th percentile because, when calculated using the revised dataset over the longer base period, the CMP calculation method results in a lower or less conservative value than the 75th percentile. Where populations were determined to be viable, the CMP set Desired Abundance targets to 75th percentiles, as opposed to a value based on the stock-recruit relationship or PVA results, because improvements were desired despite the populations' viable status. The desire is to have a population's abundance be greater or equal to the goal half the time (i.e., moving median abundance toward the base period 75th percentile).

Revised Desired Abundance criteria are not inherently more or less conservative than the originals when the criteria are considered relative to their respective base datasets. This is because the statistical basis (75th percentile) for calculating the original and revised targets has not changed. Comparison of the 75th percentiles of the new abundance datasets over the original base period (1986-2011) and the new base period (1986-2018) indicate that differences between the original and revised Desired Abundance targets is largely the result of revisions of the underlying abundance time series rather than extension of the base period through 2018 (Table A-3).

Table A-3. Comparison of the CMP's original Desired Abundance targets and those recalculated using revised time series of population abundance estimates over a longer base period (1986-2018). The 75th percentiles of lognormal distribution of the revised time series over the original base period (1986-2011) are provided to show the influence of the extended base period (comparison of right two columns).

Chinook Population	Desired Abundance Target		
	Original Target *75th Percentile[1] Original Time Series Original Base Period, 1986-2011*	Revised Target *75th Percentile Revised Time Series Revised Base Period, 1986-2018*	75th Percentile *Revised Time Series Original Base Period, 1986-2011*
Nehalem	12,100	13,302	12,816
Tillamook	10,500	11,910	12,365
Nestucca	11,900	16,227	18,422
Salmon	1,800	1,933	1,707
Siletz	8,100	17,469	17,875
Yaquina	9,600	9,849	9,702
Alsea	9,300	9,599	9,314
Siuslaw	26,200	16,274	16,402
South Umpqua[2]	6,500	8,284	7,516
Coos	6,300	9,711	9,507
Coquille	14,300	13,782	13,313
Floras	700	600	613
Sixes	4,400	4,124	3,736
Elk	2,000(3)	2,243	2,257

[1] Original Desired Abundance targets were based on the 75th percentile of the lognormal distribution of abundance time series, but the values used as targets were rounded to 100s.
[2]The original CMP criteria are for the South Umpqua, with the remainder of the stratum To Be Determined. The dataset for the sliding scale was for the Umpqua Stratum, based on the South Umpqua Abundance/0.467. Data here are converted back to South Umpqua for comparison to the CMP target.
[3]The original Desired Abundance target for the Elk River population was calculated as the median abundance plus 20%.

Practical Implications of Revised Abundance Criteria. Annual abundance estimates for Coastal Chinook populations should be compared to revised abundance criteria because the current annual abundance estimates, and revised criteria share the same basis for derivation. Comparing contemporary annual abundance estimates against the CMP's original criteria would effectively set critical abundances to values ranging from less than the 1st percentile to greater than the 23rd percentile of the revised abundance distributions (Table A-4). Likewise, the original Desired Abundance thresholds reflect percentiles ranging from as low as the 30th percentile to greater than the 90th percentile of the revised abundance distributions (Table A-4). For critical criteria, the results since 2014 would be the misclassification of two below-critical years in the Siletz population and one below-critical year in the Coos Population (Table A-5). For Desired

Abundance, the misapplication of the original criteria to the new abundance estimates would have resulted in the assignment of more years as above Desired Abundance in some populations (most notably in the Siletz and Coos populations) and fewer years above Desired Abundance in the Siuslaw population (Table A-5).

Table A-4. The CMP's original Desired and Critical Abundance thresholds expressed as percentiles of revised abundance time series over a base period of 1986-2018. For comparison, revised Desired and Critical Abundance thresholds have been set to the 75th and 5th percentiles, respectively.

Chinook Population	Desired Abundance *Percentile of Original Threshold in New Abundance Time Series*	Critical Abundance *Percentile of Original Threshold in New Abundance Time Series*
Nehalem	67	<1
Tillamook	68	12
Nestucca	63	3
Salmon	73	10
Siletz	33	1
Yaquina	74	11
Alsea	72	<1
Siuslaw	93	23
South Umpqua	64	5
Coos	47	4
Coquille	77	9
Floras	81	5
Sixes	78	17
Elk	67	9

Table A-5. Comparison of the number of years after CMP adoption (2014-2019) in which abundance estimates either were (1) below the original or revised Critical Abundance threshold or (2) above the original or revised Desired Abundance targets. Specific years are shown in parentheses.

Chinook Population	Number of Years below Critical Threshold, 2014-2019		Number of Years Above the Desired Abundance Target, 2014-2019	
	Original	Revised	Original	Revised
Nehalem	0	0	3 *(2014 - 2016)*	2 *(2014, 2015)*
Tillamook	2 *(2018, 2019)*	2 *(2018, 2019)*	2 *(2014, 2015)*	2 *(2014, 2015)*
Nestucca	0	0	0	0
Salmon	1 *(2018)*	1 *(2018)*	5 *(2014 - 2017, 2019)*	4 *(2014 - 2017)*
Siletz	0	1 *(2019)*	4 *(2014 - 2017)*	0
Yaquina	0	0	2 *(2014, 2015)*	2 *(2014, 2015)*
Alsea	0	2 *(2018, 2019)*	2 *(2014, 2015)*	2 *(2014, 2015)*
Siuslaw	2 *(2018, 2019)*	2 *(2018, 2019)*	0	2 *(2014, 2015)*
South Umpqua	1 *(2019)*	1 *(2019)*	2 *(2014, 2015)*	2 *(2014, 2015)*
Coos	0	1 *(2017)*	3 *(2014, 2015, 2019)*	1 *(2015)*
Coquille	2 *(2018, 2019)*	2 *(2018, 2019)*	1 *(2015)*	1 *(2015)*
Floras	0	0	1 *(2016)*	1 *(2016)*
Sixes	0	0	1 *(2015)*	1 *(2015)*
Elk	0	0	2 *(2015, 2016)*	1 *(2015)*