THE OREGON PLAN for Salmon and Watersheds

Western Oregon Adult Coho Salmon, 2024 Spawning Survey Data Report

Report Number: OPSW-ODFW-2025-3

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SUMMARY

This report provides a summary of results from Coho Salmon, *Oncorhynchus kisutch,* spawning ground surveys conducted in Lower Columbia (Oregon side only) and Oregon Coast basins during the 2024-25 spawning season. For a discussion of the history, goals and methods of this long-term monitoring effort see prior reports (e.g., Sounhein et al. 2017). Results in this report are based on data from randomly selected spawning ground surveys as well as alternative methods in areas without random sampling. Results for Coho Salmon standard spawning ground surveys and spawning surveys for other species are covered in data summaries and reports posted on an Oregon Department of Fish and Wildlife (ODFW) web page.

(see: https://odfw-oasis.forestry.oregonstate.edu/).

Long-term monitoring of Coho Salmon spawners in the Oregon portion of the Southern Oregon/Northern California Coast (SONCC) Evolutionarily Significant Unit (ESU) currently relies on seining at Huntley Park in the lower Rogue River (river mile 8) and standard spawning ground surveys in other coastal basins. The ODFW monitoring in the SONCC ESU is described in the Rogue–South Coast Multi-Species Conservation and Management Plan (RSP - ODFW 2021b), which was approved by the Oregon Fish and Wildlife Commission on December 17, 2021. In 2023, the 1996 to 2021 run year Rogue adult Coho Salmon estimates were recalculated to match the Coho Salmon abundance estimation methods as described in Appendix III of the RSP (ODFW 2021b). This method provides an estimate of adult Coho Salmon in the Rogue Basin at Huntley Park. In the past, the Huntley Park estimates (adjusted to account for harvest and hatchery operations above Huntley Park) were included in this report series. Beginning with the 2021 run year these Coho Salmon abundance estimates will be reported under the RSP and posted on an ODFW web page.

(see: https://www.dfw.state.or.us/fish/CRP/rogue_south_coast_multi-species_conservation%20and%20Management_plan.asp).

Wild adult Coho Salmon spawner abundance in 2024 was the fourth highest recorded since monitoring began (2002) in the Lower Columbia River (LCR) ESU, but down from the previous two years. In the Oregon Coast (OC) ESU, wild abundance was slightly up from the previous year, and 125% of the previous 34-year average. In the Oregon portion of the LCR ESU, sufficient surveys were conducted to meet the estimate precision goal at the ESU and two of three strata. In the OC ESU, sufficient surveys were conducted to meet the precision goal for the ESU; three of four strata, and three of 19 populations where estimates were generated.

INTRODUCTION AND METHODS

Monitoring Western Oregon adult Coho Salmon occurs at three hierarchical spatial scales: Evolutionary Significant Unit; stratum; and population. There are three Coho Salmon ESUs located entirely or partially within the State of Oregon: the Lower Columbia River ESU, the Oregon Coast ESU, and the Southern Oregon/Northern California Coast ESU. Boundaries and population structures of the ESUs are presented in Figure 1. This report summarizes results for Coho Salmon populations within the ESU boundaries that Oregon encompasses.

A brief history of sampling designs is available in ODFW status reports (e.g., Sounhein et al. 2017) from prior years. Field methods for establishing and conducting salmon spawning ground surveys are described in ODFW procedures manuals (ODFW 2019, ODFW 2021a). The trapezoidal Area-Under-the-Curve (AUC) technique is used to estimate the number of adult Coho Salmon spawning in each stream segment throughout the spawning season (Jacobs et al. 2002). A more detailed description of how spawner estimates are derived, the criteria used for determining if sites are included in the estimate, methods for determining the proportion of hatchery origin spawners (pHOS) in naturally spawning populations, and the analysis methods for other metrics included in this report can also be found in prior years ODFW status reports.

In areas where surveys are not conducted, other monitoring data is used to document the number of adult Coho Salmon spawners. These include dam counts, mark-recapture estimates, and regressions of standard survey data to abundance estimates. There are two such locations in the LCR ESU including: one dam (River Mill on the Clackamas River), and one hatchery weir (Sandy). In these locations, counts of adult Coho Salmon passed up-stream are added to the estimated abundance of Coho Salmon spawners below the facilities.

In the OC ESU, random spawning ground surveys are conducted in most areas, except for the North Umpqua River above Winchester Dam and above the Alsea Hatchery weir. Winchester Dam counts and results of surveys below the dam are used to document the number of adult Coho Salmon spawners in the North Umpqua population. The Winchester Dam count is adjusted for angler harvest of Coho Salmon in the North Umpqua River above Winchester Dam. Prior to 2020, when Rock Creek Hatchery was still in operation, the Winchester Dam count was also adjusted for Coho Salmon collected and retained at Rock Creek Hatchery. The count of Coho Salmon passed above the Alsea Hatchery weir is added to the spawning survey estimate for the Alsea population. Coho Salmon spawner abundances for the Lakes stratum are calculated using regressions of long-term standard surveys to historic mark-recapture studies and habitat measurements for those locations (Jacobs et.al. 2002).

In addition to the surveys used in the abundance estimates, “calibration” surveys were conducted in the Mill Creek-Yaquina sub-basin to test the accuracy of survey-based AUC estimates. The purpose of these surveys is to compare known passage counts with survey-based AUC estimates using a Generalized Random Tessellation Stratified (GRTS) survey site selection methodology.

RESULTS

Results include data from random spawning ground surveys and data from other sources where random surveys are not conducted. Results are presented in Bullets, Tables and Figures. Results are summarized by Coho Salmon ESU, in four categories: Survey Effort, Spawner Abundance, Distribution and Timing, and Hatchery Proportion. Spatially, results are reported by ESU, stratum, and constituent Coho Salmon populations. The individual components that comprise the results can be found in Appendices A and B (by Coho Salmon ESU). Ancillary data is presented in Appendix C.

Stream flow levels in the LCR and OC ESUs during the 2024 season started below average for October, then increased to above average for much of November and December, before dropping in January. In all areas there was a flow peak in mid to late November before dropping to average, followed by a second peak in mid to late December, followed by slightly below average flows throughout much of January. Temperatures were generally above average for most of the season until January. Only in the OC did temperatures temporarily dip below average in November. Precipitation was generally below average to begin the season, near normal in mid-November and above average through late December before dropping considerably for most of January. Overall, weather patterns for most of the season were conducive to successful surveying. In 2024, the unsuccessful survey rate was near the previous 10-year average rate (plus one standard deviation) for most of the LCR and OC ESU's. Relaxed inclusion criteria were used to determine which sites were used in abundance estimates in some areas. (Appendix Table C-4). Apart from a few populations in the North and Mid-South strata, generally good adult coho carcass recoveries in 2024 resulted in adequate sample sizes for determining pHOS. Thus, standard criteria were used in 15 of 28 populations for which surveys were selected (Appendix Table C-3).

Survey Effort

Lower Columbia River ESU

- Survey effort was up in 2024 compared to the previous 10-year average (Table 1). More than 100 sites were successfully surveyed for the second time since 2019.
- No surveys have been conducted in the Youngs Bay and Big Creek populations since 2013.
- The percentage of sites successfully surveyed was greater than the prior 10-year average for the ESU. (Table C-1).
- Overall, survey conditions were amenable to project protocols, and relatively few surveys had to be excluded from the abundance estimates (see No AUC rate in Table C-5).

Oregon Coast ESU

- Survey effort was up from 2023, but still less than the previous 10-year average (Table 4).
- The percentage of sites successfully surveyed is near the 10-year average (Table C-2).
- Survey conditions and personnel issues were particularly challenging in the North Coast monitoring area during the season and many sites had larger than normal gaps between survey dates. A relaxed criterion was used to assess sites for inclusion in abundance estimates. After this process, relatively few sites had to be excluded from the abundance estimates (see No AUC rate in Table C-5).

Southern Oregon/Northern California Coast ESU

- No random (GRTS) coho spawning ground surveys have been conducted since the 2008 season in the SONCC ESU. Randomly selected spawning surveys targeting Coho Salmon were conducted across the ESU from 1996 through 2008.

Spawner Abundance

Lower Columbia River ESU

- Total wild adult coho spawner abundance in 2024 (22,431) was down from the previous two years, but still the third highest recorded since monitoring began in 2002 (Table 3 and Figure 2).
- Wild adult coho spawner abundance in 2024 was above average in five of the six populations that were monitored. Only in the Hood population was abundance below the previous 22-year average (Table 3).
- Approximately 70% of the wild abundance in the Lower Columbia River ESU was driven by the Clackamas population estimate (Table 3), and approximately 91% of the Clackamas population abundance was determined by counts of wild coho passed above River Mill Dam (Table A-2). The 2024 count marked the fifth year in a row with greater than 9,000 coho passed above the dam.

Oregon Coast ESU

- Total wild adult coho spawner abundance in 2024 (161,293) was 124% of the previous 34-year average (Table 6 and Figure 5).
- Wild adult abundance in 2024 was above, or slightly above, average in three of the five monitoring strata. Only the Lakes and Umpqua strata were below average (Table 6).
- Wild adult coho spawner abundance in 2024 was above average in 14 of the 24 populations where population scale estimates were produced (Table 6). Populations with lower-than-average spawner abundance were in the more southern strata (Lakes, Umpqua and Mid-South Coast).

Calibration Sites

- For the second year in a row, no random coho surveys were conducted in the Mill Creek (Siletz) sub-basin.
- In 2024, the Mill Creek (Yaquina) sub-basin AUC estimate was 84% of the dam count, well above the 10-year average of 76% (Table 7).

Distribution and Timing

Lower Columbia River ESU

- Spawn timing in 2024 was near average, first peaking in early November, holding steady through the end of November before decreasing throughout December (Figure 4).
- The proportion of sites occupied by coho in 2024 was above the prior 10-year average in all but the Hood River population (Table 2).
- The proportion of sites occupied by wild coho in 2024 was also above the prior 10-year average in all but the Hood River population (Table 2).
- Wild occupancy for the ESU was 120% of the prior 10-year average (Table 2).

Oregon Coast ESU

- Spawn timing in 2024 was near normal to begin the season, then dropped off quickly after late-December. Very little spawning was observed into January (Figure 8).
- Total coho and wild coho site occupancy results were very similar. Wild coho site occupancy in 2024 was above average for the ESU, and three of four strata. Only the in the Umpqua stratum was wild occupancy below average (Table 5).

Hatchery Proportion

Lower Columbia River ESU

- Sample sizes for pHOS estimation at the population scale were sufficient in most areas.
- The 2024 proportion of hatchery coho on spawning grounds in the ESU was 3.9%, well below the 22-year average of 20.9% (Table 3). However, the 2013 – 2024 results do not include two populations, Youngs Bay and Big Creek, which typically contribute a sizable portion of hatchery spawners to the ESU total. The previous 10-year average is 8.4%.
- No hatchery coho were observed in the Scappoose and Sandy populations, while the Hood River population was estimated to be comprised of 87% hatchery coho (Table 3).
- In the LCR ESU, pHOS has consistently been below 12% since 2014 (Figure 2).

Oregon Coast ESU

- Sample sizes for pHOS estimation at the population scale were sufficient in most areas.
- The 2024 proportion of hatchery coho on spawning grounds in the ESU was 1%, well below the 34-year average of 8.5% (Table 6).
- At the population and strata scale, pHOS was near or below the 34-year average in most cases (Table 6).
- The Coquille population had an unusually high (6.5%) pHOS in 2024. No hatchery coho have been detected in Coquille since 2013.
- In the OC ESU, pHOS has consistently been below 2% since 2010 (Figure 5).

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Table 1. Lower Columbia River ESU, GRTS spawning survey goals and results for number of surveys and 95% C.I., 2024 run year. Target response sites are reaches within Coho Salmon spawning habitat which were successfully surveyed.

Stratum	Population	Goal	Target response				95% CI as percent of point estimate (goal is +/- 30%)			
			2024	2014 to 2023			2024	2014 to 2023		
				Avg.	Min.	Max.		Avg.	Min.	Max.
Coast	Youngs Bay	0	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Big Creek	0	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Clatskanie	18	21	22	12	27	46%	37%	21%	74%
	Scappoose	20	23	14	8	19	39%	66%	37%	103%
	Total	**38**	**44**	**36**	**27**	**46**	**28%**	**37%**	**24%**	**72%**
Cascade	Clackamas	30	26	24	16	30	66%	64%	33%	110%
	Sandy	30	32	27	8	35	36%	52%	37%	79%
	Total	**60**	**58**	**51**	**24**	**61**	**26%**	**41%**	**31%**	**60%**
Gorge	Lower Gorge	2	1	2	0	6	n.a.	99%	9%	184%
	Hood	2	3	3	0	5	196%	89%	1%	191%
	Total	**4**	**4**	**5**	**0**	**8**	**31%**	**74%**	**1%**	**108%**
ESU Total		**102**	**106**	**91**	**52**	**104**	**17%**	**30%**	**23%**	**42%**

n.a. = Not available (no surveys were selected in the population, less than 2 surveys stayed in rotation, or the abundance estimate was 0).

Table 2. Lower Columbia River ESU adult Coho Salmon occupancy (total & wild) by population, stratum, and ESU for the 2024 run year and previous 10-year average (2014–23). Occupancy = a peak of 4 or more adult Coho Salmon per mile. Wild Occupied = occupied sites with at least one wild Coho Salmon. n.a = Not available, population was not monitored.

ESU, Stratum, and TRT Population	2024 No. sites surveyed	10 yr. avg. No. sites surveyed	Total Coho Salmon		Wild Coho Salmon	
			2024 % Occupied	10 yr. avg. % Occupied	2024 % Occupied	10 yr. avg. % Occupied
Lower Columbia R. ESU	**106**	**93**	**58%**	**48%**	**56%**	**47%**
Coast Stratum	**44**	**36**	**61%**	**52%**	**55%**	**51%**
Youngs Bay	0	0	n.a	n.a.	n.a	n.a.
Big Creek	0	0	n.a	n.a.	n.a	n.a.
Clatskanie River	21	22	67%	59%	67%	57%
Scappoose Creek	23	14	57%	43%	43%	42%
Cascade Stratum	**58**	**52**	**57%**	**42%**	**57%**	**41%**
Clackamas River	26	26	58%	33%	58%	33%
Sandy River	32	27	56%	49%	56%	47%
Gorge Stratum	**4**	**5**	**50%**	**79%**	**50%**	**75%**
Lower Gorge tribs.	1	3	100%	88%	100%	79%
Hood River	3	3	33%	78%	33%	78%

Table 3. Lower Columbia River ESU estimated abundance of adult Coho Salmon spawning naturally by ESU, stratum, and population in the 2024 run year compared to the previous 22-year average.

Geographic scale ESU/Stratum/Population	Origin	Spawning year			
		2024	2002 to 2023		
			Avg.	Min.	Max.
Lower Columbia River ESU (Oregon Only)	**Wild**	**22,431***	**9,518**	**2,988**	**26,642**
	Hatchery	**914***	**2,463**	**285**	**12,230**
	% Hat.	**3.9%***	**20.9%**	**2.4%**	**65.6%**
Coast Stratum *	**Wild**	**n.a.**	**1,836**	**1,140**	**3,993**
	Hatchery	**n.a.**	**838**	**89**	**3,420**
	% Hat.	**n.a.**	**27.8%**	**4.9%**	**74.4%**
Youngs Bay *	Wild	n.a.	119	21	411
	Hatchery	n.a.	510	14	2,506
	% Hat.	n.a.	67.7%	21.9%	92.1%
Big Creek *	Wild	n.a.	300	98	792
	Hatchery	n.a.	317	66	936
	% Hat.	n.a.	46.0%	15.5%	89.8%
Clatskanie	Wild	1,150	820	25	3,246
	Hatchery	168	74	0	413
	% Hat.	12.8%	12.8%	0.0%	67.9%
Scappoose	Wild	856	677	178	1,960
	Hatchery	0	10	0	67
	% Hat.	0.0%	1.5%	0.0%	9.9%
Cascade Stratum	**Wild**	**19,309**	**7,370**	**2,157**	**24,344**
	Hatchery	**373**	**1,358**	**139**	**10,871**
	% Hat.	**1.9%**	**16.6%**	**1.2%**	**71.2%**
Clackamas	Wild	15,809	5,371	1,301	19,916
	Hatchery	373	1,226	50	10,871
	% Hat.	2.3%	19.2%	1.5%	75.8%
Sandy	Wild	3,500	1,999	382	7,152
	Hatchery	0	93	0	515
	% Hat.	0.0%	6.9%	0.0%	57.4%
Gorge Stratum	**Wild**	**1,116**	**485**	**34**	**1,525**
	Hatchery	**373**	**760**	**25**	**2,555**
	% Hat.	**25.0%**	**50.6%**	**11.9%**	**74.7%**
Lower Gorge Tribs. *	Wild	1,086	311	16	920
	Hatchery	167	216	5	1,512
	% Hat.	13.3%	34.3%	0.9%	85.2%
Hood River *	Wild	30	221	0	1,262
	Hatchery	206	535	0	1,717
	% Hat.	87.3%	58.1%	0.0%	100.0%

** = Does not include data for the Youngs Bay and Big Creek Populations. These populations were not sampled, 2013 through present run year. The Lower Gorge and Hood populations were not sampled in 2017 and 2020. Also, the Hood population is an incomplete estimate as no surveys occur upstream of the old Powerdale dam site.*

Table 4. Oregon Coast ESU, GRTS spawning survey goals, responses, and estimate precision by population, 2024 run year. Target response sites are reaches within Coho Salmon spawning habitat which were successfully surveyed.

Stratum	Population	Goal	Target response				95% CI as percent of point estimate (goal is +/- 30%)			
			2024	2014 to 2023			2024	2014 to 2023		
				Avg.	Min.	Max.		Avg.	Min.	Max.
North Coast	Necanicum	13	7	13	6	18	26%	41%	22%	57%
	Nehalem	20	10	15	5	24	35%	43%	34%	64%
	Tillamook	20	16	17	8	25	37%	50%	36%	56%
	Nestucca	20	13	14	7	23	76%	73%	42%	119%
	NC Depend.	7	3	7	4	9	98%	79%	12%	104%
	Total	**80**	**49**	**66**	**30**	**92**	**23%**	**29%**	**22%**	**46%**
Mid-Coast	Salmon	9	10	9	5	17	112%	77%	23%	126%
	Siletz	20	21	18	12	26	57%	41%	22%	56%
	Yaquina	20	19	17	10	22	44%	41%	33%	55%
	Beaver	3	4	4	3	5	63%	67%	24%	130%
	Alsea	20	21	18	11	24	30%	34%	26%	55%
	Siuslaw	20	20	17	12	23	26%	41%	28%	59%
	MC Depend.	8	7	7	2	11	70%	92%	43%	196%
	Total	**100**	**102**	**90**	**65**	**114**	**18%**	**21%**	**16%**	**28%**
Lakes	Siltcoos	0	0	0	0	0	n.a.	n.a.	n.a.	n.a.
	Tahkenitch	0	0	0	0	0	n.a.	n.a.	n.a.	n.a.
	Tenmile	0	0	0	0	0	n.a.	n.a.	n.a.	n.a.
	Total	**0**	**0**	**0**	**0**	**0**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Umpqua	L. Umpqua	20	16	16	11	20	79%	46%	24%	78%
	M. Umpqua	20	4	13	6	17	162%	66%	50%	85%
	N. Umpqua	3	0	1	0	3	n.a.	n.a.	n.a.	n.a.
	S. Umpqua	20	11	15	9	20	82%	71%	37%	107%
	Total	**63**	**31**	**46**	**30**	**55**	**60%**	**37%**	**22%**	**62%**
Mid-South Coast	Coos	20	21	18	11	22	33%	48%	29%	69%
	Coquille	20	22	18	11	24	50%	44%	33%	57%
	Floras	17	10	10	1	22	44%	49%	17%	72%
	Sixes	8	12	8	3	16	107%	84%	40%	176%
	MS Depend	3	1	2	0	6	n.a.	179%	163%	195%
	Total	**68**	**66**	**55**	**34**	**79**	**27%**	**32%**	**26%**	**37%**
ESU Total		**311**	**248**	**256**	**191**	**322**	**13%**	**15%**	**13%**	**18%**

n.a. = Not available (no surveys were selected in the population, less than 2 surveys stayed in rotation, or the abundance estimate was 0).

Table 5. Oregon Coast ESU adult Coho Salmon occupancy (total & wild) by population, stratum, and ESU for the 2024 run year and previous 10-year average (2014–23). Occupancy = a peak of 4 or more adult Coho Salmon per mile. Wild Occupied = occupied sites with at least one wild Coho Salmon. n.a. = not available.

ESU, Stratum, and Population	2024 No. sites surveyed	10 yr. avg. No. sites surveyed	Total Coho Salmon		Wild Coho Salmon	
			2024 % Occupied	10 yr. avg. % Occupied	2024 % Occupied	10 yr. avg. % Occupied
Oregon Coast ESU	**248**	**256**	**73.8%**	**68.1%**	**73.8%**	**66.6%**
North Coast Stratum	**49**	**66**	**85.7%**	**72.6%**	**85.7%**	**71.0%**
Necanicum River	7	13	100.0%	80.2%	100.0%	77.9%
Nehalem River	10	15	100.0%	76.5%	100.0%	75.1%
Tillamook Bay	16	17	93.8%	70.0%	93.8%	68.5%
Nestucca River	13	14	61.5%	74.5%	61.5%	72.4%
NC Dependents	3	7	66.7%	56.2%	66.7%	54.5%
Mid-Coast Stratum	**102**	**90**	**85.3%**	**77.5%**	**85.3%**	**76.2%**
Salmon River	10	9	30.0%	52.4%	30.0%	48.6%
Siletz River	21	18	90.5%	87.9%	90.5%	87.9%
Yaquina River	19	17	94.7%	85.9%	94.7%	85.4%
Beaver Creek	4	4	100.0%	96.7%	100.0%	93.3%
Alsea River	21	18	100.0%	85.4%	100.0%	85.4%
Siuslaw River	20	17	100.0%	74.5%	100.0%	73.4%
MC Dependents	7	7	28.6%	31.7%	28.6%	25.8%
Lakes Stratum	**0**	**0**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Siltcoos Lake	0	0	n.a.	n.a.	n.a.	n.a.
Tahkenitch Lake	0	0	n.a.	n.a.	n.a.	n.a.
Tenmile Lake	0	0	n.a.	n.a.	n.a.	n.a.
Umpqua Stratum	**31**	**46**	**38.7%**	**51.9%**	**38.7%**	**49.9%**
Lower Umpqua River	16	16	50.0%	75.1%	50.0%	71.4%
Mid. Umpqua River	4	13	25.0%	47.6%	25.0%	46.8%
North Umpqua River	0	1	0.0%	n.a.	0.0%	n.a.
South Umpqua River	11	15	27.3%	32.9%	27.3%	31.3%
Mid-South Stratum	**66**	**55**	**63.6%**	**61.9%**	**63.6%**	**60.4%**
Coos River	21	18	95.2%	76.8%	95.2%	75.7%
Coquille River	22	18	63.6%	70.4%	63.6%	69.0%
Floras Creek	10	10	60.0%	72.2%	60.0%	69.7%
Sixes River	12	8	16.7%	25.2%	16.7%	20.2%
MSC Dependents	1	2	0.0%	5.6%	0.0%	5.6%

Table 6. Oregon Coast ESU estimated abundance of adult Coho Salmon spawning naturally by ESU, stratum, and population for the 2024 run year compared to the previous 34-year average.

Geographic scale ESU/Stratum/Population	Origin	Spawning year			
		2024	1990 to 2023		
			Avg.	Min.	Max.
Oregon Coast ESU	**Wild**	**161,293**	**129,816**	**21,139**	**359,692**
	Hatchery	**1,569**	**7,401**	**386**	**26,128**
	% Hat.	**1.0%**	**8.5%**	**0.4%**	**31.4%**
North Coast Stratum	**Wild**	38,534	22,631	1,524	67,370
	Hatchery	11	1,662	0	15,563
	% Hat.	0.0%	14.9%	0.0%	79.0%
Necanicum River	Wild	1,859	1,327	97	5,727
	Hatchery	11	106	0	501
	% Hat.	0.6%	13.3%	0.0%	40.1%
Nehalem River	Wild	19,228	11,970	527	32,517
	Hatchery	0	1,246	0	14,014
	% Hat.	0.0%	16.4%	0.0%	87.7%
Tillamook Bay	Wild	11,756	5,301	80	20,090
	Hatchery	0	253	0	1,498
	% Hat.	0.0%	13.4%	0.0%	68.9%
Nestucca River	Wild	4,850	3,301	160	16,698
	Hatchery	0	49	0	274
	% Hat.	0.0%	4.7%	0.0%	15.3%
North Coast Dependents	Wild	841	731	0	4,607
	Hatchery	0	15	0	111
	% Hat.	0.0%	0.9%	0.0%	6.3%
Mid-Coast Stratum	**Wild**	**69,521**	**37,954**	**2,444**	**121,963**
	Hatchery	**784**	**1,655**	**0**	**9,633**
	% Hat.	**1.1%**	**10.7%**	**0.0%**	**50.1%**
Salmon River	Wild	701	621	5	3,680
	Hatchery	0	492	0	2,621
	% Hat.	0.0%	46.8%	0.0%	97.6%
Siletz River	Wild	10,864	6,747	207	33,094
	Hatchery	395	214	0	962
	% Hat.	3.5%	12.9%	0.0%	58.4%
Yaquina River	Wild	16,661	6,286	317	25,582
	Hatchery	0	143	0	1,526
	% Hat.	0.0%	5.7%	0.0%	25.0%
Beaver Creek	Wild	2,032	1,715	90	6,564
	Hatchery	65	41	0	405
	% Hat.	3.1%	3.0%	0.0%	23.8%
Alsea River	Wild	12,421	7,240	108	28,337
	Hatchery	0	269	0	2,214
	% Hat.	0.0%	12.6%	0.0%	93.8%
Siuslaw River	Wild	24,578	13,924	501	55,445
	Hatchery	324	480	0	4,136
	% Hat.	1.3%	8.3%	0.0%	37.6%
Mid Coast Dependents	Wild	2,264	1,421	51	8,179
	Hatchery	0	26	0	118
	% Hat.	0.0%	1.6%	0.0%	5.9%

Table 6. Continued

Geographic scale ESU/Stratum/Population	Origin	Spawning year			
		2024	1990 to 2023		
			Avg.	Min.	Max.
Lakes Stratum	**Wild**	**7,631**	**13,395**	**1,302**	**38,744**
	Hatchery	**15**	**44**	**0**	**251**
	% Hat.	**0.2%**	**0.4%**	**0.0%**	**2.2%**
Siltcoos Lake	Wild	2,065	3,666	385	7,998
	Hatchery	0	21	0	124
	% Hat.	0.0%	0.9%	0.0%	8.7%
Tahkenitch Lake	Wild	1,590	2,581	269	10,681
	Hatchery	0	11	0	107
	% Hat.	0.0%	0.4%	0.0%	3.1%
Tenmile Lake	Wild	3,976	7,148	318	20,385
	Hatchery	15	12	0	123
	% Hat.	0.4%	0.2%	0.0%	3.4%
Umpqua Stratum	**Wild**	**16,223**	**27,081**	**3,334**	**94,655**
	Hatchery	**17**	**3,670**	**41**	**17,758**
	% Hat.	**0.1%**	**14.7%**	**0.2%**	**36.0%**
Lower Umpqua River	Wild	6,438	9,999	1,257	36,942
	Hatchery	0	215	0	1,484
	% Hat.	0.0%	2.6%	0.0%	15.7%
Middle Umpqua River	Wild	3,394	6,145	563	19,962
	Hatchery	0	180	0	1,259
	% Hat.	0.0%	3.5%	0.0%	20.6%
North Umpqua River	Wild	2,925	2,794	355	9,397
	Hatchery	17	2,574	41	14,094
	% Hat.	0.6%	40.3%	0.8%	84.3%
South Umpqua River	Wild	3,466	8,144	0	49,958
	Hatchery	0	701	0	7,040
	% Hat.	0.0%	11.9%	0.0%	57.2%
Mid-South Coast Stratum	**Wild**	**29,384**	**28,754**	**4,890**	**82,077**
	Hatchery	**742**	**369**	**0**	**2,766**
	% Hat.	**2.5%**	**1.8%**	**0.0%**	**23.8%**
Coos River	Wild	17,396	13,682	1,112	38,880
	Hatchery	0	168	0	1,387
	% Hat.	0.0%	1.8%	0.0%	36.4%
Coquille River	Wild	10,742	12,853	2,033	55,667
	Hatchery	742	142	0	1,832
	% Hat.	6.5%	1.5%	0.0%	15.4%
Floras Creek	Wild	1,139	2,291	340	11,329
	Hatchery	0	51	0	400
	% Hat.	0.0%	3.1%	0.0%	22.8%
Sixes River	Wild	105	169	19	567
	Hatchery	0	14	0	182
	% Hat.	0.0%	6.8%	0.0%	65.7%
Mid-South Coast Dependents	Wild	2	71	0	484
	Hatchery	0	1	0	9
	% Hat.	0.0%	0.7%	0.0%	4.6%

Table 7. Comparison of two independent coho abundance estimates at each of two life-cycle monitoring sites in the Oregon Coast ESU. An estimate based on AUC protocol compared to a Mark–Recapture estimate (Mill Cr., Siletz R) or a Dam Count (Mill Cr., Yaquina R).

Spawning Year	Mill Creek (Siletz R.)			Mill Creek (Yaquina R.)		
	M-R Est.	AUC Est.	AUC/M-R	Dam Count	AUC Est.	AUC/Dam
2014	1,844	1,642	89%	1,471	1,677	114%
2015	316	196	62%	275	142	52%
2016	451	440	98%	760	607	80%
2017	518	471	91%	405	211	52%
2018	363	276	76%	382	298	78%
2019	674	611	91%	473	291	62%
2020	656	834	127%	*No comparison*		
2021	2,321	2,102	91%	1,223	993	81%
2022	1,175	1,038	88%	590	521	88%
2023	*No comparison*			886	600	68%
2024	*No comparison*			1,217	1,022	84%
Mean	**924**	**846**	**90%**	**734**	**636**	**76%**

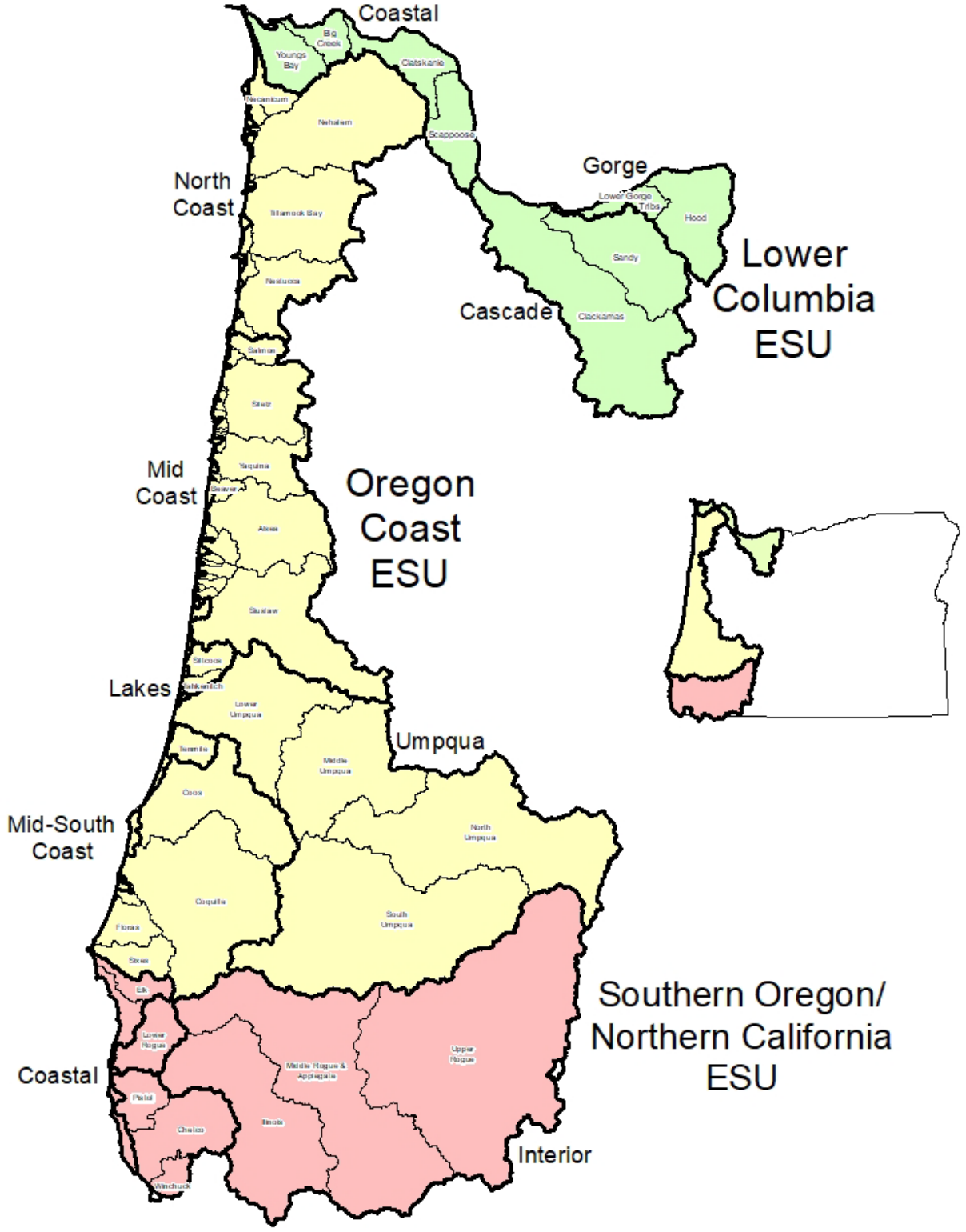
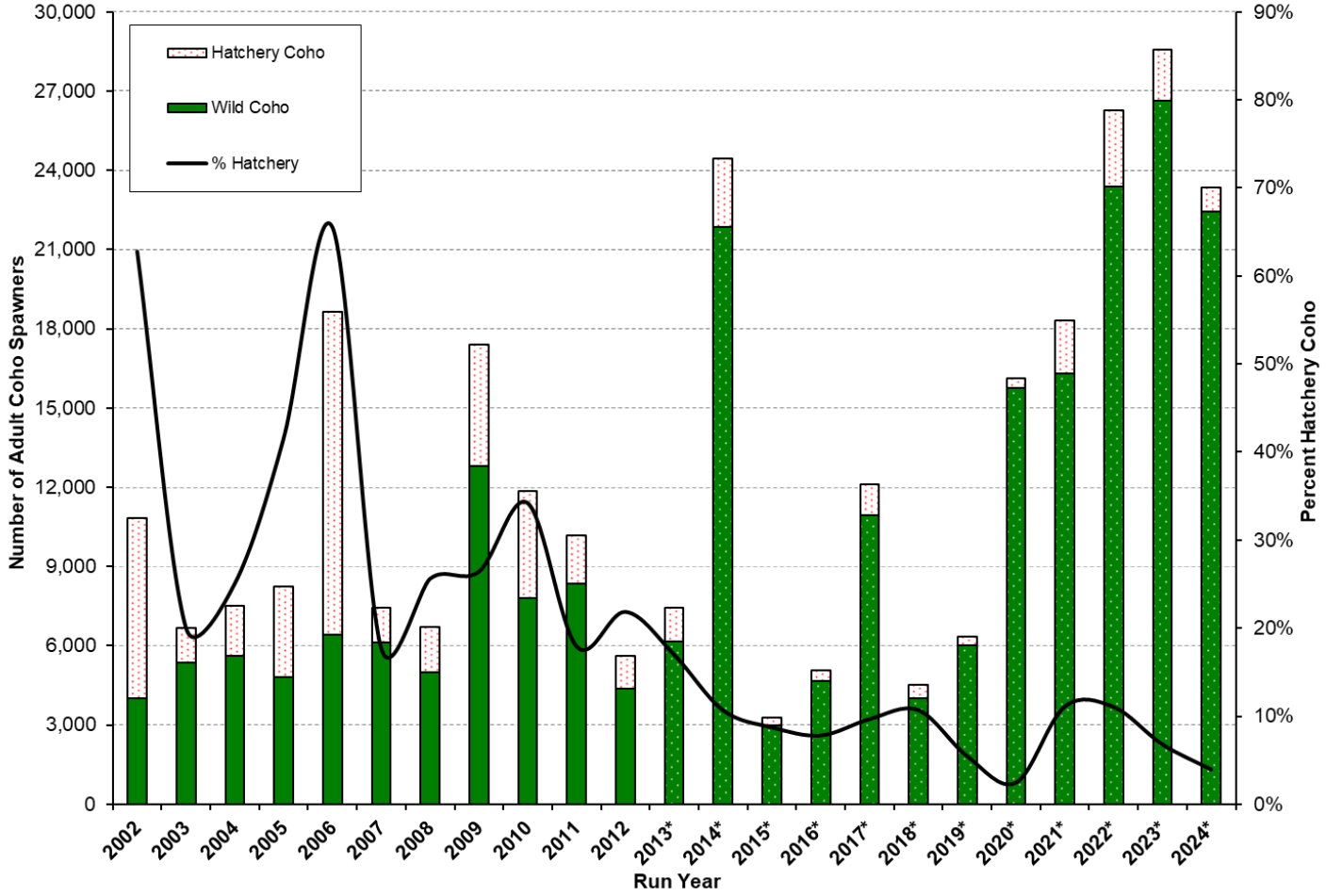


Figure 1. Coho Salmon monitoring area showing populations, strata, and evolutionary significant units.



** Estimates for 2013 to present do not include Big Creek and Youngs Bay populations and are therefore incomplete. These populations combined account for an average of 12% of the total estimate for the ESU (about 7% of the wild, and 27% of the hatchery components). Note: The Hood River and Lower Gorge populations were not sampled in 2017 (wildfire) and 2020 (budget).*

Figure 2. Lower Columbia River ESU estimated abundance of adult Coho Salmon spawning naturally by rearing origin for the 2002 through 2024 run years.

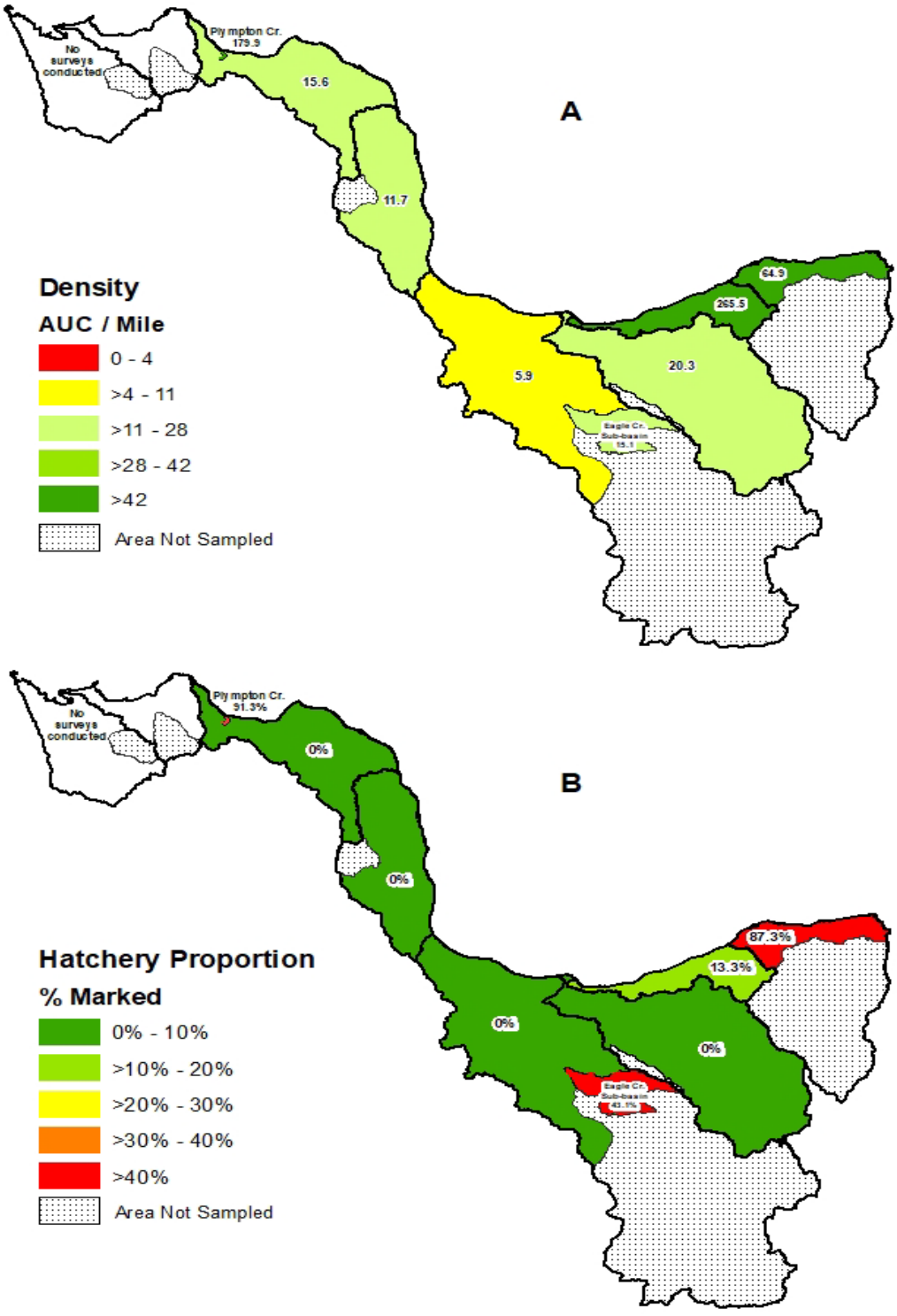


Figure 3. A) Coho salmon density (Adult Coho AUC/mile) in GRTS surveys by lower Columbia River population, 2024. B) Percentage of marked adult coho salmon in GRTS surveys by lower Columbia River population, 2024.

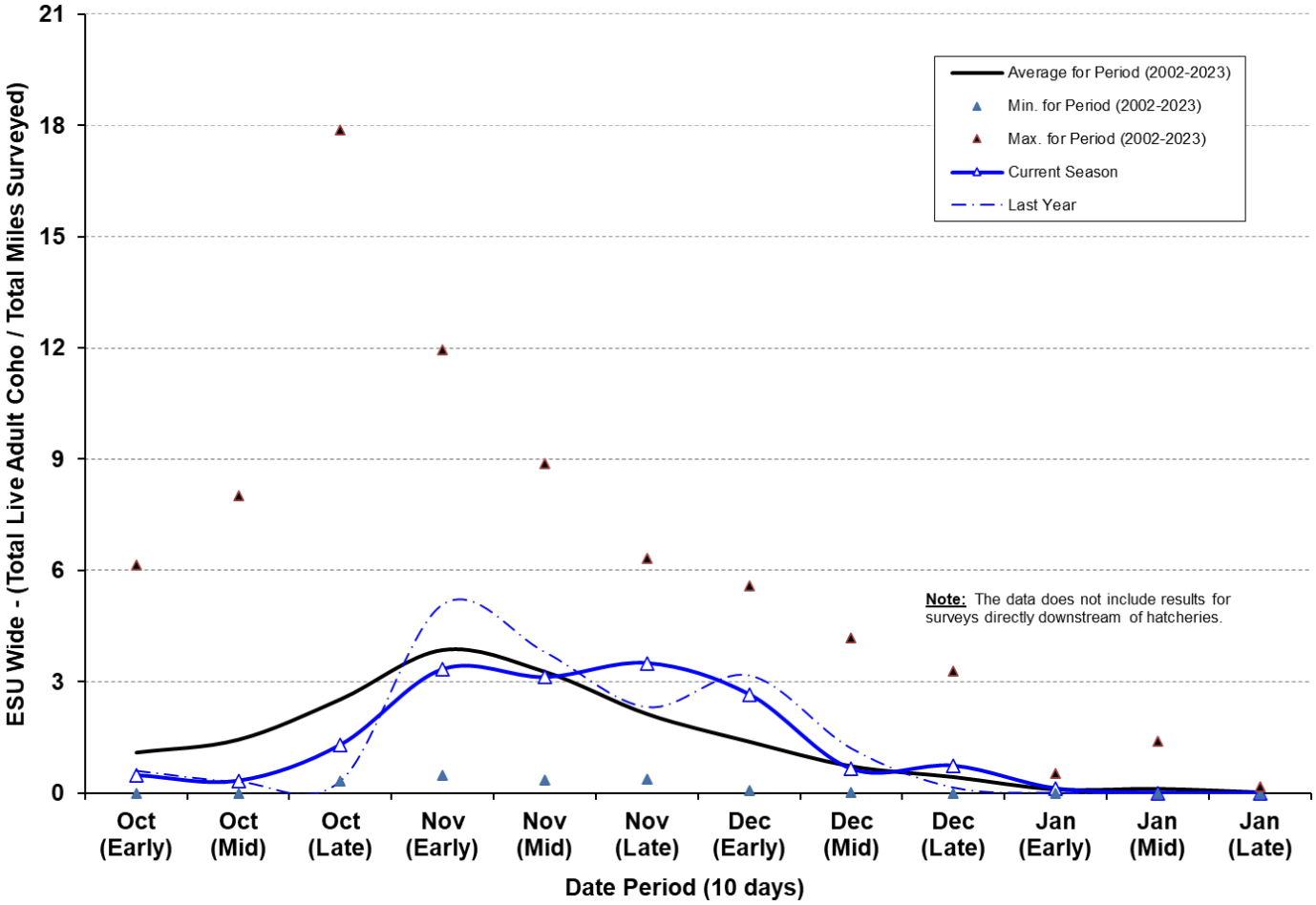


Figure 4. Spawn timing of live adult Coho Salmon on GRTS spawning ground surveys in the Lower Columbia River ESU, 2024-25.

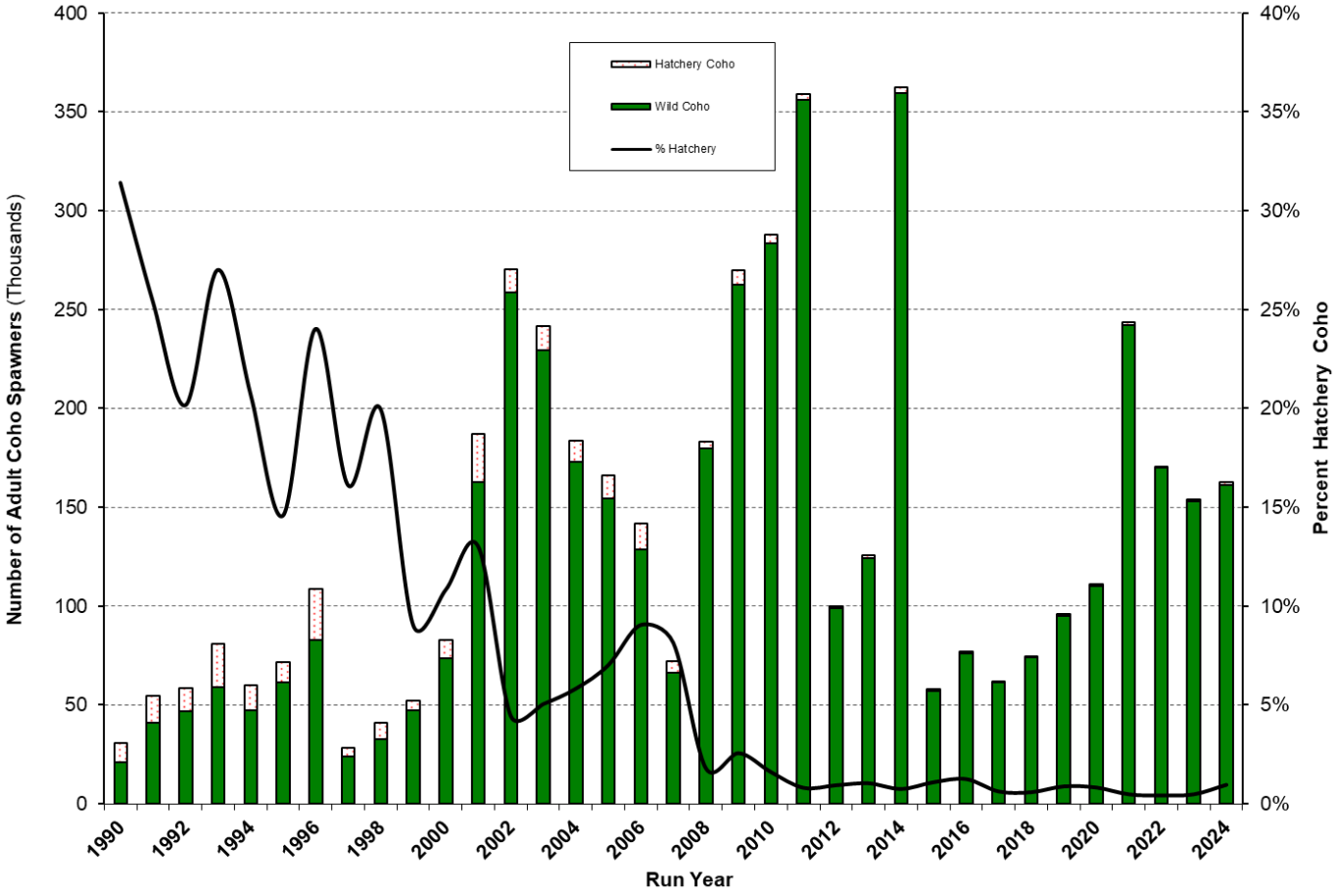


Figure 5. Oregon Coast ESU estimated abundance of adult Coho Salmon spawning naturally by rearing origin for the 1990 through 2024 run years.

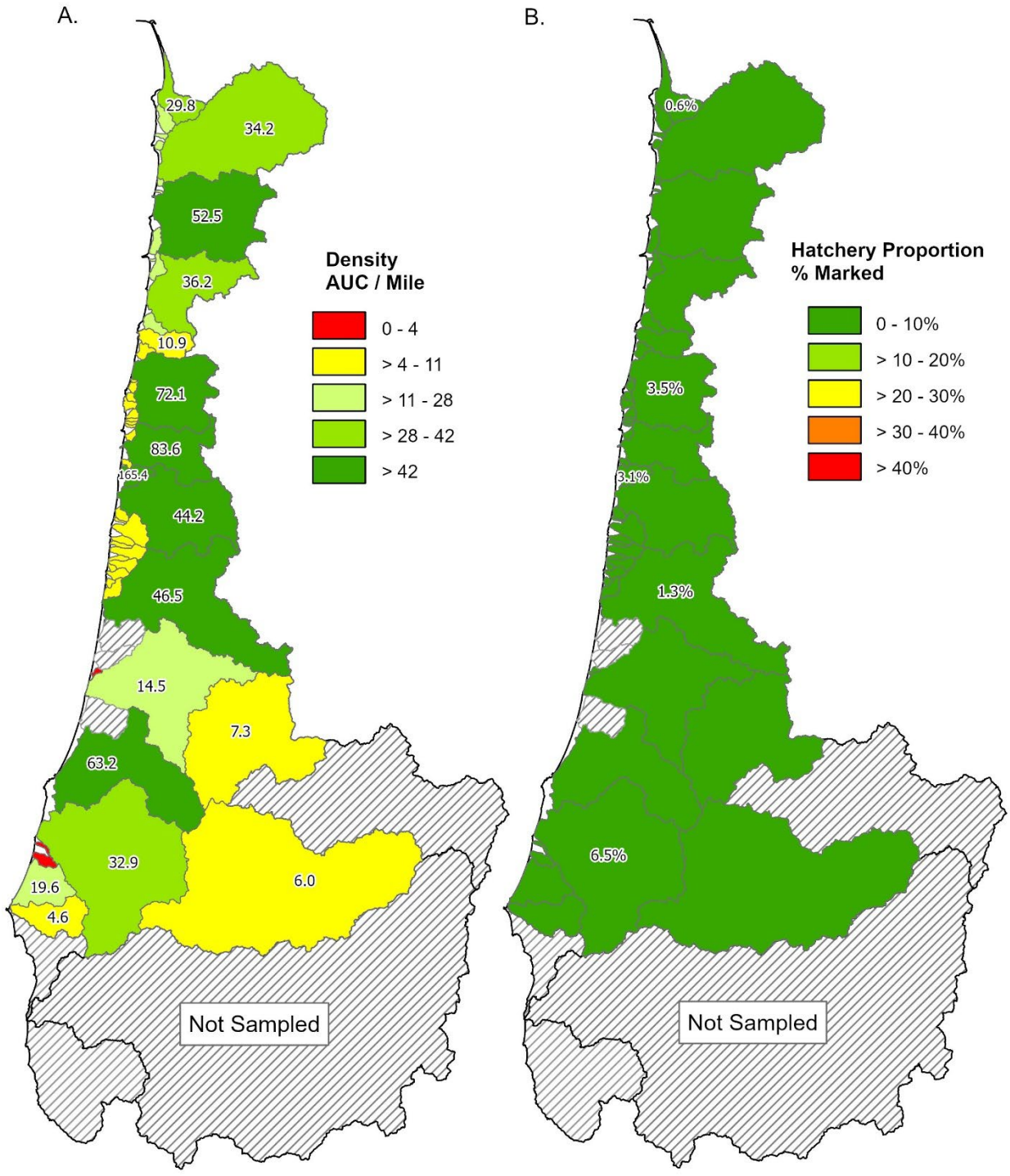


Figure 6. A) Coho salmon density (Adult Coho AUC/mile) in GRTS surveys by Oregon Coast population, 2024. B) Percentage of marked adult coho salmon in GRTS surveys by Oregon Coast population, 2024.

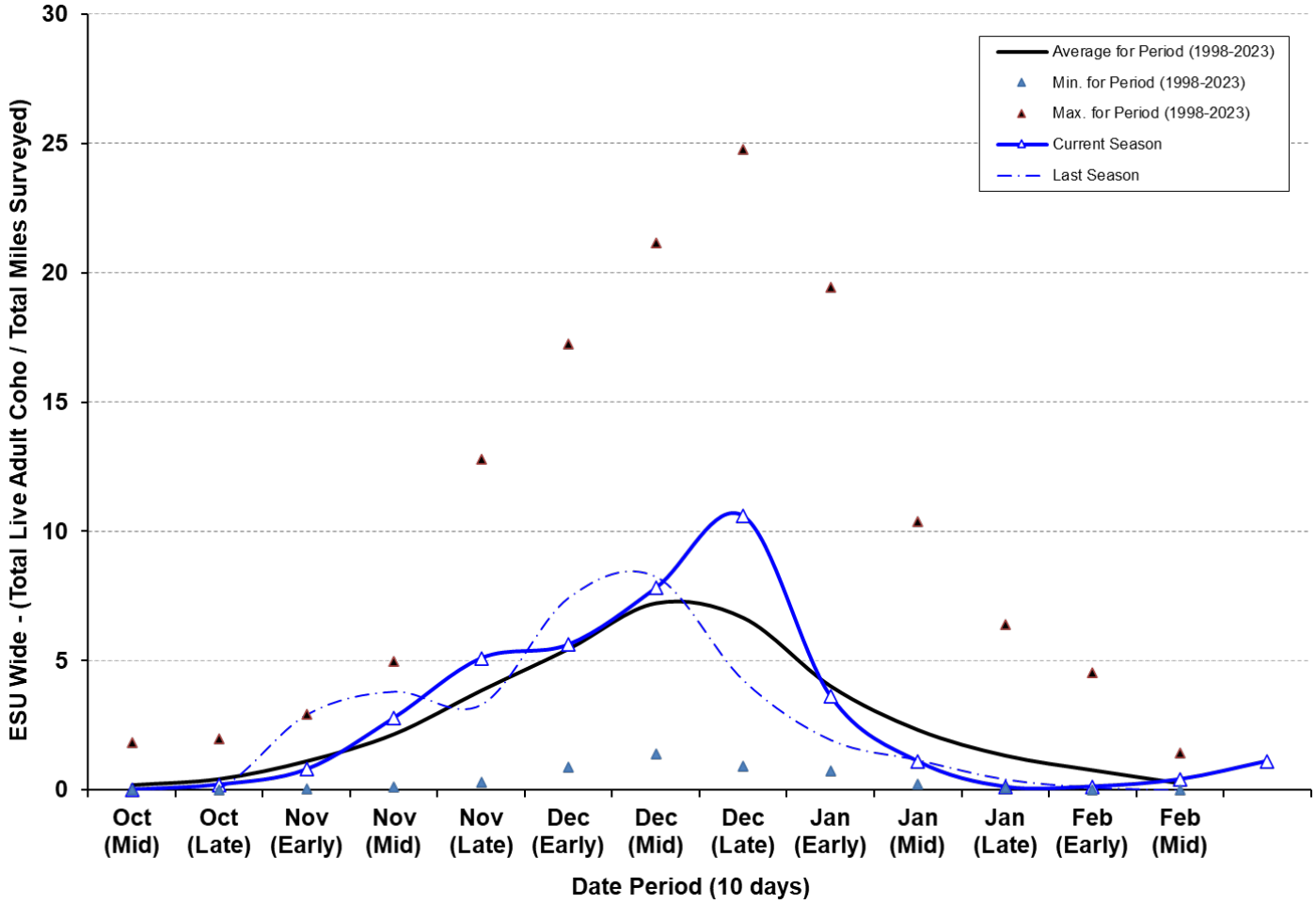


Figure 7. Spawn timing of live adult Coho Salmon on GRTS spawning ground surveys in the Oregon Coast ESU, 2024-25.

APPENDIX A (LCR ESU)

Table A-1. Results of randomly selected spawning ground surveys for Coho Salmon in the Oregon portion of the LCR ESU, run year 2024. Estimates derived using GRTS protocol. Estimates of wild spawners derived through application of fin-mark observations. Missing values for populations indicate inadequate samples for determining total and/or wild abundance.

ESU, Stratum, and TRT Population	Survey effort number of		Adult Coho Salmon spawner abundance			
			Total		Wild	
	Surveys	Miles	Estimate	*95% CI*	Estimate	*95% CI*
Lower Columbia River ESU	**106**	**95.0**	**7,996**	***1,372***	**7,081**	***1,271***
Coast Stratum	**44**	**35.6**	**2,174**	***617***	**2,006**	***617***
Youngs Bay	0					
Big Creek	0					
Clatskanie River (ex. Plympton)	20	16.4	1,134	*519*	1,134	*519*
Plympton Cr. (Clatskanie R.)	1	1.0	184	*0*	16	*0*
Scappoose River	23	18.2	856	*334*	856	*334*
Cascade Stratum	**58**	**56.8**	**4,333**	***1,135***	**3,959**	***1,109***
Clackamas River (ex. Eagle Cr.)	13	11.7	939	*623*	939	*623*
Eagle Creek (Clackamas R.)	13	13.5	867	*292*	494	*166*
Sandy River	32	31.6	2,526	*902*	2,526	*902*
Gorge Stratum	**4**	**2.7**	**1,489**	***463***	**1,116**	***59***
Lower Gorge	1	0.4	1,253	*0*	1,086	*0*
Hood River	3	2.3	236	*463*	30	*59*

Table A-2. The number of unmarked adult Coho Salmon passed upstream of counting stations into areas without GRTS spawning surveys. Oregon portion of the LCR ESU, run year 2024.

ESU, Stratum, and TRT Population	Counting station	Spawning year			
		2024	2002 to 2023		
			Avg.	Min.	Max.
Lower Columbia River ESU					
Coast Stratum					
Youngs Bay	Klaskanine Hatchery	23	23	2	68
Big Creek	Big Creek Hatchery	439	280	46	606
Scappoose River	Bonnie Falls Trap [a]	n.a.	47	4	136
Cascade Stratum					
Clackamas River	River Mill Dam	14,376	4,597	835	19,201
Sandy River	Sandy Hatchery [b]	974	285	36	832
	Marmot Dam	n.a.	809	310	1,173
Gorge Stratum					
Hood River	Powerdale Dam	n.a.	52	27	126

a = Trap count discontinued after 2018 season, and area above trap included in GRTS sampling starting in 2020.
b = Sandy Hatchery count through 2009 is number released above Marmot Dam, which was removed in 2006. Beginning in 2010, Sandy Hatchery switched the release site for these fish to above the hatchery weir on Cedar Creek.
n.a. = Not Applicable. Marmot dam was removed in 2006 and Powerdale Dam was removed in 2010, so there are no longer any dam counts.

Table A-3. Annual abundance estimates of naturally spawning wild adult Coho Salmon in the Oregon portion of the LCR ESU, run years 2002 through 2024. n.a. = not available.

Return Year	Youngs Bay	Big Creek	Clatskanie*	Scappoose	Clackamas*	Sandy	Lower Gorge	Hood River
2002	411	98	167	500	1,985	382	338	147
2003	113	435	563	336	2,495	1,348	n.a.	41
2004	149	111	398	755	2,733	1,213	n.a.	126
2005	79	219	494	348	1,301	856	263	1,262
2006	74	225	421	719	3,464	923	226	373
2007	25	212	927	375	3,438	687	126	170
2008	82	360	995	294	1,800	1,277	223	69
2009	28	792	1,195	778	8,642	1,493	468	65
2010	68	279	1,686	1,960	4,009	901	920	223
2011	161	160	1,546	297	2,253	3,494	216	232
2012	129	409	619	210	1,663	1,165	96	169
2013	n.a.	n.a.	611	979	4,012	667	151	561
2014	n.a.	n.a.	3,246	1,587	10,672	5,942	362	42
2015	n.a.	n.a.	240	487	1,784	443	30	4
2016	n.a.	n.a.	464	1,200	1,628	939	395	57
2017	n.a.	n.a.	566	387	7,598	2,384	n.a.	n.a.
2018	n.a.	n.a.	25	178	3,159	537	16	107
2019	n.a.	n.a.	146	384	4,044	1,052	184	193
2020	n.a.	n.a.	1,233	n.a.	n.a.	n.a.	n.a.	n.a.
2021	n.a.	n.a.	476	921	10,572	3,819	n.a.	510
2022	n.a.	n.a.	1,139	508	13,991	7,152	523	60
2023	n.a.	n.a.	890	660	19,916	4,428	748	0
2024	n.a.	n.a.	1,150	856	15,809	3,500	1,086	30

** = Stratified abundance estimation. Plympton Creek is estimated separately from the rest of the Clatskanie population and Eagle Creek is estimated separately from the rest of the Clackamas population.*

APPENDIX B (OC ESU)

Table B-1. Results of randomly selected spawning ground surveys for Coho Salmon in the OC ESU, run year 2024. Estimates derived using GRTS protocol. Estimates of wild spawners derived through application of fin-mark observations. Missing values for populations indicate inadequate samples for determining total and/or wild abundance.

ESU, Stratum, and TRT Population	Survey effort number of		Adult Coho Salmon spawner abundance			
			Total		Wild	
	Surveys	Miles	Estimate	*95% CI*	Estimate	*95% CI*
Oregon Coast ESU	**248**	**186.5**	**151,912**	***19,016***	**150,375**	***18,801***
North Coast Stratum	**49**	**39.1**	**38,544**	***8,871***	**38,534**	***8,871***
Necanicum River	7	5.4	1,870	*480*	1,859	*477*
Nehalem River	10	7.4	19,228	*6,751*	19,228	*6,751*
Tillamook Bay	16	13.1	11,756	*4,312*	11,756	*4,312*
Nestucca River	13	11.9	4,850	*3,689*	4,850	*3,689*
NC Dependents	3	1.4	841	*826*	841	*826*
Mid-Coast Stratum	**102**	**72.2**	**69,945**	***12,374***	**69,161**	***12,211***
Salmon River	10	9.2	701	*782*	701	*782*
Siletz River	21	14.8	11,259	*6,425*	10,864	*6,200*
Yaquina River	19	10.7	16,661	*7,309*	16,661	*7,309*
Beaver Creek	4	2.1	2,097	*1,315*	2,032	*1,274*
Alsea River	21	16.3	12,061	*3,560*	12,061	*3,560*
Siuslaw River	20	11.5	24,902	*6,394*	24,578	*6,311*
MC Dependents	7	7.5	2,264	*1,581*	2,264	*1,581*
Umpqua Stratum	**31**	**21.4**	**13,299**	***8,006***	**13,299**	***8,006***
Lower Umpqua River	16	10.5	6,438	*5,074*	6,438	*5,074*
Middle Umpqua River	4	3.5	3,394	*5,496*	3,394	*5,496*
North Umpqua River	0	0.0				
South Umpqua River	11	7.5	3,466	*2,853*	3,466	*2,853*
Mid-South Coast Stratum	**66**	**53.8**	**30,124**	***8,108***	**29,382**	***7,849***
Coos River	21	19.1	17,396	*5,698*	17,396	*5,698*
Coquille River	22	16.0	11,484	*5,745*	10,742	*5,374*
Floras Creek	10	8.2	1,139	*501*	1,139	*501*
Sixes River	12	10.0	105	*113*	105	*113*
MSC Dependents	1	0.6	0			

Table B-2. Coho Salmon spawners in the Oregon Coastal Lakes populations based on calibrated standard surveys, 2024.

ESU, Stratum, & TRT Population	Survey goal	Survey effort number of		Adult Coho Salmon spawner abundance			
				Total		Wild	
		Surveys	Miles	Estimate	*95% CI*	Estimate	*95% CI*
Standard Surveys							
Lakes Strata	**14**	**9**	**8.7**	**7.646**	--	**7,631**	**--**
Siltcoos	5	2	2.5	2,065	--	2,065	--
Tahkenitch	2	2	1.6	1,590	--	1,590	--
Tenmile	7	5	4.6	3,991	--	3,976	--

Table B-3. Coho passage above the Alsea Hatchery into an area without GRTS surveys (Alsea Population) and estimates of adult Coho Salmon run size in the North Umpqua Population derived through adjustment of Winchester Dam count. Dam count adjusted for adult Coho Salmon retained by hatchery operations and harvest above Winchester Dam, 2024, compared to the previous 10 years.

Data component	Coho salmon origin	Spawning year			
			2014 to 2023		
		2024	Avg.	Min.	Max.
Alsea Population Passed above Alsea Hatchery	**Wild**	360	133	9	475
North Umpqua Population	**Wild**	**2,925**	**3,197**	**1,148**	**6,878**
	Hatchery	**17**	**164**	**41**	**404**
	% Hat.	**0.6%**	**5.4%**	**0.8%**	**10.9%**
GRTS Estimate below Winchester Dam [1]	Total	n.a.	57	0	298
	Wild	n.a.	57	0	298
	Hatchery	n.a.	0	0	0
Winchester Dam [2]	Total	2,977	3,382	1,252	6,938
	Wild	2,950	3,199	1,148	6,884
	Hatchery	27	183	47	407
Freshwater Catch [3] Above Winchester Dam	Total	35	20	3	60
	Wild	25	2	0	6
	Hatchery	10	18	2	60
Rock Creek Hatchery [4]	Total	n.a.	1	0	10
	Wild	n.a.	0	0	0
	Hatchery	n.a.	1	0	10

1 = Estimate of adult Coho Salmon observed in GRTS surveys below Winchester Dam (i.e., Sutherlin Creek and tributaries). No surveys in 2024.

2 = Counts of adult Coho Salmon by mark type (marked =hatchery, unmarked = wild) at Winchester Dam on the North Umpqua River.

3 = Estimated freshwater harvest of Coho Salmon in the North Umpqua basin above Winchester Dam based on Angler Harvest Cards (see: http://www.dfw.state.or.us/resources/fishing/sportcatch.asp). Selective harvest of mark Coho Salmon began in 2004.

4 = Number of adult Coho Salmon collected from the North Umpqua population (at Rock Creek and at Winchester Dam) and retained at Rock Creek Hatchery. These numbers do not include Coho Salmon collected and released alive back into the wild.

Table B-4. Annual abundance estimates of naturally spawning wild adult Coho Salmon in the Oregon Coast ESU, run years 1990 through 2024 n.a. = not available. *Numbers in italics are partial estimates of spawners in dependent populations*.

Stratum and Population	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
North Coast											
Necanicum River	126	752	133	512	269	181	416	97	575	351	359
Nehalem River	1,158	6,837	1,392	3,049	2,844	1,700	527	1,187	1,206	3,555	14,462
Tillamook Bay	80	1,577	176	571	1,105	341	733	437	358	1,831	2,178
Nestucca River	160	618	604	340	266	1,537	440	230	202	2,357	1,219
NC Dependents	*0*	*444*	*24*	*41*	*77*	*108*	*275*	*61*	*0*	*47*	*0*
Mid-Coast											
Salmon River	19	5	11	13	91	105	82	16	86	14	179
Siletz River	228	410	2,386	207	621	314	395	298	316	1,209	3,387
Yaquina River	318	317	528	458	2,040	4,723	4,578	419	510	2,563	637
Beaver Creek	90	484	618	275	675	308	1,296	497	401	1,511	1,464
Alsea River	775	1,011	6,273	694	828	441	1,060	601	108	1,341	3,363
Siuslaw River	2,269	2,808	3,554	4,600	3,159	6,161	7,234	501	1,020	2,980	6,532
MC Dependents	*487*	*51*	*1,037*	*467*	*317*	*348*	*1,364*	*112*	*173*	*150*	*91*
Umpqua											
Lower Umpqua River	1,678	3,123	1,797	7,877	2,762	10,854	7,985	1,257	4,552	2,623	5,781
Middle Umpqua River	1,222	4,546	5,275	2,947	2,162	3,250	5,086	563	1,257	1,748	4,555
North Umpqua River	355	1,301	1,579	906	899	1,293	1,069	577	765	1,194	1,677
South Umpqua River	2,934	2,233	435	3,723	1,081	4,715	7,040	937	3,177	3,011	2,581
Lakes											
Siltcoos	1,578	2,868	385	3,569	1,302	4,415	4,707	2,653	3,122	2,756	3,835
Tahkenitch	1,085	1,215	317	954	1,056	1,577	1,627	1,842	2,817	3,664	634
Tenmile	1,687	3,033	1,271	5,544	3,354	5,092	7,092	4,092	5,169	6,123	8,278
Mid-South Coast											
Coos River	2,243	2,426	16,722	14,932	14,500	10,302	12,128	1,112	2,985	4,818	4,704
Coquille River	2,589	4,782	2,033	7,291	5,119	2,034	15,814	5,720	2,412	2,667	6,253
Floras Creek	n.a	n.a	n.a.	n.a.	2,653	1,351	1,519	482	879	670	1,477
Sixes River	58	35	92	253	238	77	194	143	558	56	136
MSC Dependents	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table B-4. Continued.

Stratum and Population	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
North Coast											
Necanicum River	4,832	2,047	2,377	2,198	1,218	750	431	1,055	3,827	4,445	2,120
Nehalem River	21,928	17,164	32,517	18,736	10,451	11,614	14,033	17,205	21,753	32,215	15,322
Tillamook Bay	1,944	13,334	13,008	2,532	1,995	8,774	2,295	4,828	16,251	14,890	19,250
Nestucca River	4,164	16,698	10,194	4,695	686	1,876	394	1,844	4,252	1,947	7,857
NC Dependents	*71*	*16*	*0*	661	2,116	1,121	376	639	2,052	1,473	1,341
Mid-Coast											
Salmon River	225	543	42	1,642	79	513	59	652	753	1,382	3,636
Siletz River	1,595	2,129	8,038	8,179	14,567	5,205	2,197	20,634	24,070	6,283	33,094
Yaquina River	3,589	23,800	16,484	5,539	3,441	4,247	3,158	10,913	11,182	8,589	19,074
Beaver Creek	1,832	3,217	5,552	4,569	2,264	1,950	611	1,218	3,575	2,072	2,389
Alsea River	3,228	9,073	10,281	5,233	13,907	1,972	2,146	13,320	14,638	9,688	28,337
Siuslaw River	10,606	55,445	29,003	8,729	16,907	5,869	3,552	17,491	30,607	25,983	28,082
MC Dependents	*816*	*5,308*	*1,852*	8,179	246	1,468	546	3,910	1,610	2,548	4,487
Umpqua											
Lower Umpqua River	11,639	18,881	16,494	8,989	18,591	7,994	4,237	9,023	19,245	17,516	18,715
Middle Umpqua River	8,940	10,738	11,090	6,375	7,608	4,852	1,587	4,472	15,075	18,123	19,962
North Umpqua River	2,634	3,368	2,862	3,559	1,969	3,000	1,410	3,438	7,720	9,397	6,020
South Umpqua River	11,871	10,517	4,337	10,997	14,364	2,246	4,549	20,935	15,944	24,983	49,958
Lakes											
Siltcoos	5,104	4,636	6,628	7,998	4,364	5,452	1,447	3,873	5,197	7,678	6,354
Tahkenitch	3,510	3,480	3,188	3,496	1,897	3,611	3,551	2,604	2,977	10,681	6,644
Tenmile	10,990	13,861	6,260	7,148	8,464	15,064	3,957	17,131	9,175	20,385	7,284
Mid-South Coast											
Coos River	33,595	33,120	25,761	23,337	17,048	11,266	1,329	14,881	26,979	27,658	10,999
Coquille River	13,833	7,676	22,403	22,138	11,806	28,577	13,968	8,791	22,286	23,564	55,667
Floras Creek	5,664	3,272	952	7,446	506	1,104	340	786	3,203	11,329	9,217
Sixes River	95	95	86	403	105	294	97	43	176	92	334
MSC Dependents	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	188	484	100

Table B-4. Continued.

Stratum and Population	2012	2013	2014	2015	2016	2017	2018	2019	2020 [a]	2021	2022
North Coast											
Necanicum River	902	798	5,727	847	936	529	393	698	n.a.	n.a.	n.a.
Nehalem River	2,963	4,539	30,577	3,079	7,549	5,486	4,190	12,383	n.a.	n.a.	n.a.
Tillamook Bay	1,686	4,402	20,090	1,345	7,102	2,927	2,035	3,961	n.a.	n.a.	n.a.
Nestucca River	1,751	946	6,369	1,029	2,412	4,495	1,072	4,602	n.a.	n.a.	n.a.
NC Dependents	218	271	4,607	440	699	206	262	616	n.a.	n.a.	n.a.
Mid-Coast											
Salmon River	297	1,165	3,680	332	1,054	450	103	215	n.a.	571	1,324
Siletz River	4,495	7,660	19,496	2,216	3,015	5,202	4,064	4,509	n.a.	15,428	16,466
Yaquina River	6,268	3,553	25,582	2,400	3,730	2,491	4,672	3,452	n.a.	16,721	6,484
Beaver Creek	1,878	2,015	6,564	332	1,709	1,553	494	814	n.a.	2,483	2,058
Alsea River	8,470	9,283	25,855	6,185	7,375	4,377	5,112	4,915	n.a.	13,633	19,141
Siuslaw River	11,946	14,118	38,896	10,352	9,141	7,129	6,635	5,881	n.a.	38,031	24,892
MC Dependents	492	1,929	1,890	856	464	1,646	958	289	n.a.	1,747	1,568
Umpqua											
Lower Umpqua River	3,731	7,792	36,942	3,725	4,422	10,848	14,080	9,152	n.a.	23,714	6,448
Middle Umpqua River	2,447	4,272	13,939	2,245	1,159	1,788	3,888	3,104	n.a.	6,354	1,665
North Umpqua River	3,134	2,774	3,979	3,012	1,148	1,772	2,481	3,302	3,003	4,795	1,519
South Umpqua River	11,636	12,178	11,412	5,878	765	1,084	3,125	3,600	n.a.	14,403	0
Lakes											
Siltcoos	3,945	3,797	7,178	1,558	2,421	715	2,256	1,065	2,832	3,885	3,056
Tahkenitch	5,675	3,413	3,691	1,085	1,249	269	1,678	1,405	1,526	2,398	1,586
Tenmile	9,302	6,449	11,141	2,086	4,374	318	2,770	4,963	5,364	13,381	3,407
Mid-South Coast											
Coos River	9,414	6,884	38,880	3,030	4,624	2,689	7,292	13,289	n.a.	n.a.	7,370
Coquille River	5,911	23,637	41,660	3,357	9,494	4,641	5,688	11,841	n.a.	n.a.	19,078
Floras Creek	2,502	1,936	1,022	1,585	942	693	628	904	n.a.	n.a.	871
Sixes River	34	567	410	168	120	69	174	155	n.a.	n.a.	113
MSC Dependents	48	32	105	0	0	0	10	23	n.a.	n.a.	0

n.a. = Survey effort was reduced (COVID19 budget cuts) to a point so far below goal that no estimate was produced.

Table B-4. Concluded.

Stratum and Population	2023	2024
North Coast		
Necanicum River	1,637	1,859
Nehalem River	14,388	19,228
Tillamook Bay	13,325	11,756
Nestucca River	3,894	4,850
NC Dependents	1,893	841
Mid-Coast		
Salmon River	1,249	701
Siletz River	5,410	10,864
Yaquina River	5,833	16,661
Beaver Creek	943	2,032
Alsea River	7,653	12,421
Siuslaw River	21,391	24,578
MC Dependents	83	2,264
Umpqua		
Lower Umpqua River	5,263	6,438
Middle Umpqua River	9,652	3,394
North Umpqua River	7,071	2,925
South Umpqua River	8,810	3,466
Lakes		
Siltcoos	2,006	2,065
Tahkenitch	1,357	1,590
Tenmile	9,033	3,976
Mid-South Coast		
Coos River	24,020	17,396
Coquille River	7,707	10,742
Floras Creek	369	1,139
Sixes River	19	105
MSC Dependents	0	2

n.a. = Survey effort was reduced (COVID19 budget cuts) to a point so far below goal that no estimate was produced.

APPENDIX C

Table C-1. Site status of 2024 GRTS samples in the Lower Columbia River ESU by population. Target sites fell within Coho Salmon spawning habitat; response sites were successfully surveyed, and non-response sites were not surveyed because of issues such as lack of landowner permission, site inaccessibility, or gaps in survey effort usually from stream turbidity. Non-target sites are outside of Coho Salmon spawning habitat. The average is for 2014 to 2023.

		Target response				Target non-response				Non-target			
Stratum	Population	**2024**	Avg.	Min	Max	**2024**	Avg.	Min	Max	**2024**	Avg.	Min	Max
Coast	Youngs Bay	0	0	0	0	0	0	0	0	0	0	0	0
	Big Creek	0	0	0	0	0	0	0	0	0	0	0	0
	Clatskanie	20	21	11	26	4	6	0	16	0	1	0	3
	Plympton Cr	1	1	1	2	0	0	0	0	0	0	0	0
	Scappoose	23	14	8	19	20	20	10	28	0	0	0	2
	Total	**44**	**36**	**27**	**46**	**24**	**25**	**15**	**39**	**0**	**1**	**0**	**3**
Cascade	Clackamas	13	19	12	30	24	20	11	29	0	1	0	2
	Eagle Cr	13	7	3	10	2	4	0	12	0	0	0	0
	Sandy	32	27	8	35	27	21	14	46	0	1	0	2
	Total	**58**	**52**	**24**	**64**	**53**	**46**	**27**	**83**	**0**	**1**	**0**	**3**
Gorge	Lower Gorge	1	2	0	6	4	3	0	6	0	0	0	1
	Hood	3	3	0	5	0	2	0	6	0	0	0	2
	Total	4	5	0	8	4	6	0	12	0	1	0	2
ESU Total		**106**	**93**	**52**	**105**	**81**	**77**	**46**	**129**	**0**	**3**	**1**	**8**

Table C-2. Site status of 2024 GRTS samples in the Oregon Coast ESU by population. Target sites fell within Coho Salmon spawning habitat; response sites were successfully surveyed, and non-response sites were not surveyed because of issues such as lack of landowner permission, site inaccessibility, or gaps in survey effort usually from stream turbidity. Non-target sites are outside of Coho Salmon spawning habitat. The average is for 2014 to 2023.

		Target response				Target non-response				Non-target			
Stratum	Population	**2024**	Avg.	Min	Max	**2024**	Avg.	Min	Max	**2024**	Avg.	Min	Max
North Coast	Necanicum	7	13	6	18	13	7	1	16	3	1	0	2
	Nehalem	10	15	5	24	20	11	1	24	2	4	2	8
	Tillamook	16	17	8	25	10	9	3	18	2	2	0	5
	Nestucca	13	14	7	23	16	12	4	19	2	5	2	9
	NC Depend.	3	7	4	9	6	2	1	4	2	3	2	4
	Total	**49**	**66**	**30**	**92**	**65**	**40**	**20**	**77**	**11**	**14**	**9**	**24**
Mid-Coast	Salmon	10	9	5	17	12	12	8	17	0	1	0	1
	Siletz	21	18	12	26	7	7	1	15	3	6	3	12
	Yaquina	19	17	10	22	13	7	3	12	1	3	1	6
	Beaver	4	4	3	5	0	1	0	3	0	0	0	1
	Alsea	21	18	11	24	9	8	3	16	2	1	1	2
	Siuslaw	20	17	12	23	7	9	3	14	3	2	1	4
	MC Depend.	7	7	2	11	2	3	2	7	1	0	0	1
	Total	**102**	**90**	**65**	**114**	**50**	**47**	**26**	**73**	**10**	**14**	**7**	**21**
Lakes	Siltcoos	0	0	0	0	0	0	0	0	0	0	0	0
	Tahkenitch	0	0	0	0	0	0	0	0	0	0	0	0
	Tenmile	0	0	0	0	0	0	0	0	0	0	0	0
	Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Umpqua	L. Umpqua	16	16	11	20	15	11	7	21	0	1	0	3
	M. Umpqua	4	13	6	17	28	16	11	22	1	2	1	4
	N. Umpqua	0	1	0	3	5	6	4	9	0	1	0	1
	S. Umpqua	11	15	9	20	21	14	8	17	0	2	0	5
	Total	**31**	**46**	**30**	**55**	**69**	**46**	**33**	**59**	**1**	**6**	**3**	**12**
Mid-South Coast	Coos	21	18	11	22	6	8	2	13	1	2	0	4
	Coquille	22	18	11	24	13	16	9	24	1	2	0	4
	Floras	10	10	1	22	22	19	8	28	5	3	1	6
	Sixes	12	8	3	16	5	9	2	16	0	1	0	1
	MS Depend.	1	2	0	6	12	11	4	18	4	4	1	7
	Total	**66**	**55**	**34**	**79**	**58**	**63**	**44**	**94**	**11**	**12**	**5**	**18**
ESU Total		**248**	**256**	**191**	**322**	**242**	**196**	**132**	**272**	**33**	**45**	**32**	**63**

Table C-3. Adult Coho Salmon density (AUC/mile) and marked proportion information for valid GRTS surveys by population in the Lower Columbia River and Oregon Coast ESUs during the 2024 spawning year. Averages in *italics* do not include data for all years.

Location **ESU** / ***Stratum*** / Population	Total Surveys	Survey Miles	Sample of marks * dead (live)	2024 Density	2014-23 Avg. Density	2024 % Marked	2014-23 Avg. % Marked
Lower Columbia River ESU							
Coastal Stratum							
Youngs Bay	0	--	--	--	--	--	--
Big Creek	0	--	--	--	--	--	--
Clatskanie [a]	20	16.4	30	15.6	14.8	0.0%	14.5%
Plympton Creek	1	1.0	46	179.9	83.5	91.3%	77.5%
Scappoose	23	18.2	49	11.7	8.9	0.0%	1.1%
Cascade Stratum							
Clackamas River [a]	13	11.7	12	5.9	4.6	0.0%	13.3%
Eagle Creek	13	13.5	50	15.1	13.7	43.1%	65.4%
Sandy River	32	31.6	89	20.3	26.4	0.0%	2.6%
Gorge Stratum							
Lower Gorge	1	0.5	7 (147)	265.5	*89.2*	13.3%	*14.6%*
Hood River	3	2.3	1 (179)	64.9	*87.6*	87.3%	*65.4%*
Oregon Coast ESU							
North Coast Stratum							
Necanicum River	7	5.4	4 (172)	29.8	25.1	0.6%	2.7%
Nehalem River	10	7.4	11	34.2	30.1	0.0%	0.6%
Tillamook Bay	16	13.1	82	52.5	29.6	0.0%	0.5%
Nestucca River	13	11.9	3 (467)	36.2	37.7	0.0%	0.3%
NC Dependents	3	1.4	2 (21)	13.8	31.2	0.0%	0.7%
Mid-Coast Stratum							
Salmon River	10	9.2	8 (78)	10.9	21.4	0.0%	1.7%
Siletz River	21	15.2	57	72.1	55.7	3.5%	0.2%
Yaquina River	19	10.7	227	83.6	51.2	0.0%	0.5%
Beaver Creek	4	2.2	32	165.4	142.0	3.1%	0.4%
Alsea River	21	16.3	77	44.2	38.0	0.0%	0.5%
Siuslaw River	20	11.5	77	46.5	25.0	1.3%	0.1%
MC Dependents	7	7.6	4 (63)	10.8	6.2	0.0%	1.4%
Lakes Stratum							
Siltcoos Lake	0	--	--	--	--	--	--
Tahkenitch Lake	0	--	--	--	--	--	--
Tenmile Lake	0	--	--	--	--	--	--
Mid-South Coast Str.							
Coos Bay	21	19.1	74	63.2	58.2	0.0%	0.1%
Coquille River	22	16.0	5 (258)	32.9	39.1	6.5%	0.0%
Floras Creek	10	8.2	2 (46)	19.6	15.5	0.0%	0.0%
Sixes River	12	10.0	0 (11)	4.6	4.2	0.0%	0.0%
MS Dependents	1	0.6	0 (0)	0.0	0.6	--	*0.6%*
Umpqua Stratum							
Lower Umpqua	16	10.5	13	14.5	35.1	0.0%	0.3%
Middle Umpqua	4	3.5	1 (15)	7.3	14.7	0.0%	0.1%
North Umpqua	0	0.0	--	--	2.0	--	*3.4%*
South Umpqua	11	7.5	1 (27)	6.0	8.8	0.0%	8.9%

a = Stratified sampling. Results for population excluding the sub-area listed below.
* = Use carcass (i.e., dead) sample only if greater than 10, otherwise use both live and dead sample.

Table C-4. The percentage of selected GRTS sites classified "Target Response" that were included in abundance estimates based on non-standard criteria (i.e., some level of relaxed criteria). Average, Minimum and Maximum are for 2014 to 2023. n.a. = not available.

Stratum	Population	Percent by Relaxed Criteria			
		2024	Avg.	Min	Max
Coastal	Youngs Bay	n.a.	n.a.	n.a.	n.a.
	Big Creek	n.a.	n.a.	n.a.	n.a.
	Clatskanie	19.0%	3.7%	0.0%	37.0%
	Scappoose	26.1%	8.8%	0.0%	57.9%
	Total	**22.7%**	**5.4%**	**0.0%**	**45.7%**
Cascade	Clackamas	3.8%	7.9%	0.0%	60.0%
	Sandy	18.8%	8.1%	0.0%	47.6%
	Total	**12.1%**	**7.8%**	**0.0%**	**37.7%**
Gorge	Lower Gorge	0.0%	0.0%	0.0%	0.0%
	Hood	0.0%	2.5%	0.0%	20.0%
	Total	0.0%	1.8%	0.0%	14.3%
Lower Columbia ESU Total		**16.0%**	**6.6%**	**0.0%**	**39.4%**
North Coast	Necanicum	0.0%	19.1%	0.0%	66.7%
	Nehalem	20.0%	24.5%	0.0%	80.0%
	Tillamook	6.3%	18.2%	0.0%	63.6%
	Nestucca	7.7%	19.2%	0.0%	57.1%
	NC Depend.	0.0%	7.1%	0.0%	37.5%
	Total	**8.2%**	**18.4%**	**0.0%**	**50.0%**
Mid Coast	Salmon	40.0%	36.3%	0.0%	100.0%
	Siletz	0.0%	12.5%	0.0%	50.0%
	Yaquina	0.0%	6.5%	0.0%	31.6%
	Beaver	0.0%	10.7%	0.0%	40.0%
	Alsea	4.8%	6.7%	0.0%	27.8%
	Siuslaw	0.0%	7.7%	0.0%	27.3%
	MC Depend.	28.6%	6.8%	0.0%	42.9%
	Total	**6.9%**	**11.2%**	**0.0%**	**20.8%**
Lakes	Siltcoos	n.a.	n.a.	n.a.	n.a.
	Tahkenitch	n.a.	n.a.	n.a.	n.a.
	Tenmile	n.a.	n.a.	n.a.	n.a.
	Total	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Umpqua	L. Umpqua	0.0%	11.0%	0.0%	33.3%
	M. Umpqua	0.0%	30.0%	0.0%	75.0%
	N. Umpqua	n.a.	44.4%	0.0%	100.0%
	S. Umpqua	0.0%	14.1%	0.0%	68.4%
	Total	**0.0%**	**18.2%**	**0.0%**	**58.2%**
Mid-South Coast	Coos	9.5%	10.2%	0.0%	66.7%
	Coquille	31.8%	28.4%	0.0%	100.0%
	Floras	50.0%	16.6%	0.0%	86.4%
	Sixes	66.7%	30.2%	0.0%	100.0%
	MS Depend.	0.0%	25.0%	0.0%	100.0%
	Total	**33.3%**	**22.8%**	**0.0%**	**77.8%**
Oregon Coast ESU Total		**13.3%**	**16.4%**	**0.0%**	**45.5%**

Table C-5. The percentage of selected GRTS sites classified as "Target Non-Response" in three main categories. No AUC - Site surveyed but didn't meet inclusion criteria for estimates. Denied - Sites not surveyed; lacked access permission. Inaccessible - Sites not surveyed, safety concerns or time required (greater than 3 hours). Average, minimum and maximum are for the period 2008 through 2023.

			No AUC				Denied				Inaccessible			
ESU	Strata	Population	**2024**	Avg.	Min.	Max.	**2024**	Avg.	Min.	Max.	**2024**	Avg.	Min.	Max.
Lower Columbia River	Coastal	Youngs Bay	n.a.	8.2%	0.0%	24.1%	n.a.	3.2%	0.0%	8.7%	n.a.	1.7%	0.0%	8.7%
		Big Creek	n.a.	22.0%	0.0%	37.5%	n.a.	3.3%	0.0%	8.3%	n.a.	0.0%	0.0%	0.0%
		Clatskanie	8.0%	11.8%	0.0%	42.3%	8.0%	7.9%	0.0%	23.1%	0.0%	1.0%	0.0%	4.5%
		Scappoose	0.0%	6.8%	0.0%	13.8%	37.2%	27.5%	10.3%	52.8%	9.3%	1.2%	0.0%	5.7%
	Cascade	Clackamas	11.5%	18.1%	5.6%	37.8%	30.8%	14.4%	2.9%	33.9%	1.9%	1.4%	0.0%	7.5%
		Sandy	3.4%	8.5%	0.0%	28.2%	11.9%	4.1%	0.0%	13.0%	30.5%	13.2%	4.8%	24.5%
	Gorge	Lower Gorge	0.0%	2.2%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	20.0%	8.3%	0.0%	100.0%
		Hood	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	0.0%	16.7%	0.0%	10.5%	0.0%	100.0%
Oregon Coast	North Coast	Necanicum	39.1%	5.1%	0.0%	25.8%	0.0%	4.4%	0.0%	12.0%	4.3%	7.5%	0.0%	19.2%
		Nehalem	15.6%	16.1%	0.0%	66.7%	6.3%	2.8%	0.0%	9.5%	9.4%	4.7%	0.0%	9.5%
		Tillamook Bay	7.1%	10.1%	0.0%	47.7%	7.1%	6.3%	2.0%	13.3%	3.6%	5.2%	0.0%	15.6%
		Nestucca	6.5%	14.9%	0.0%	41.9%	6.5%	6.9%	2.1%	16.7%	9.7%	6.3%	0.0%	17.1%
		NC Depend.	45.5%	3.6%	0.0%	18.2%	9.1%	7.6%	2.6%	13.3%	0.0%	0.6%	0.0%	3.2%
	Mid Coast	Salmon	13.6%	20.4%	0.0%	47.6%	9.1%	6.8%	0.0%	11.5%	18.2%	19.1%	0.0%	37.5%
		Siletz	0.0%	11.7%	0.0%	36.6%	0.0%	1.3%	0.0%	5.9%	9.7%	5.0%	0.0%	9.1%
		Yaquina	0.0%	9.6%	0.0%	26.8%	15.2%	11.3%	6.3%	20.6%	12.1%	3.1%	0.0%	13.3%
		Beaver Creek	0.0%	11.0%	0.0%	35.7%	0.0%	3.4%	0.0%	16.7%	0.0%	0.0%	0.0%	0.0%
		Alsea	0.0%	6.3%	0.0%	14.9%	15.6%	15.3%	8.5%	25.8%	3.1%	1.9%	0.0%	7.1%
		Siuslaw	0.0%	13.8%	0.0%	51.3%	10.0%	6.5%	2.4%	13.3%	3.3%	6.5%	3.2%	16.7%
		MC Depend.	0.0%	12.5%	0.0%	50.0%	20.0%	14.9%	3.6%	22.2%	0.0%	1.5%	0.0%	6.1%
	Lakes	Siltcoos Lake	n.a.	3.8%	0.0%	20.0%	n.a.	19.2%	11.1%	36.4%	n.a.	6.5%	3.0%	11.1%
		Tahkenitch Lake	n.a.	6.3%	0.0%	30.8%	n.a.	5.5%	0.0%	15.4%	n.a.	0.0%	0.0%	0.0%
		Tenmile Lake	n.a.	3.3%	0.0%	13.3%	n.a.	28.9%	18.2%	43.3%	n.a.	7.7%	2.6%	15.2%
	Mid-South Coast	Coos Bay	0.0%	12.7%	0.0%	62.2%	7.1%	10.2%	4.7%	16.1%	0.0%	1.8%	0.0%	6.7%
		Coquille	0.0%	9.2%	0.0%	36.7%	19.4%	22.4%	14.8%	31.6%	5.6%	8.2%	1.9%	15.0%
		Floras Creek	10.8%	20.3%	0.0%	51.9%	27.0%	25.6%	9.7%	42.1%	13.5%	5.9%	2.9%	11.8%
		Sixes	5.9%	21.5%	0.0%	63.2%	17.6%	18.1%	5.0%	38.1%	5.9%	6.7%	0.0%	11.8%
		MS Depend.	17.6%	3.7%	0.0%	13.0%	52.9%	57.1%	35.0%	78.3%	0.0%	0.6%	0.0%	4.5%
	Umpqua	Lower Ump.	0.0%	12.3%	3.2%	40.5%	6.5%	8.7%	2.4%	19.4%	0.0%	11.4%	7.1%	21.6%
		Middle Ump.	15.2%	20.5%	7.7%	41.4%	15.2%	19.3%	7.7%	26.5%	3.0%	3.8%	0.0%	11.8%
		North Ump.	0.0%	34.2%	0.0%	80.0%	0.0%	17.3%	0.0%	40.0%	0.0%	1.9%	0.0%	12.2%
		South Ump.	0.0%	12.1%	0.0%	39.3%	15.6%	18.8%	8.5%	36.4%	0.0%	4.9%	0.0%	9.1%