

THE OREGON PLAN *for* *Salmon and* *Watersheds*



**Western Oregon Adult Winter Steelhead and
Lamprey, 2025 Redd Survey Data Report**

Report Number: OPSW-ODFW-2025-09



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SUMMARY

This report provides a summary of results from Winter Steelhead spawning ground surveys conducted in Western Oregon basins in 2025. Also included is a summary of lamprey data collected from the same monitoring efforts. Total wild Winter Steelhead redd estimates in the Southwest Washington (SWW) Evolutionary Significant Unit (ESU) and in the Lower Columbia River (LCR) ESU (Oregon side only) was 34% and 64% of the 11-year average, respectively. Total wild Winter Steelhead redd estimates were 72% of the 11-year average for the Oregon Coast (OC) Distinct Population Segment (DPS). Estimate precision goals were met for Winter Steelhead redd estimates in the OC DPS, the LCR ESU, and the Sandy River population. Precision goals were not met in the SWW ESU, the Clackamas River population, and the four OC monitoring areas. Regional patterns are apparent for Winter Steelhead redd density, proportion of hatchery origin spawners, and spawn timing. Indices for Pacific Lamprey abundance were down in 2025 in both the Lower Columbia and the Oregon Coast.

INTRODUCTION AND METHODS

As part of the Oregon Plan for Salmon and Watersheds, the Oregon Department of Fish and Wildlife (ODFW) initiated a program in 2003 to monitor spawning Winter Steelhead (*Oncorhynchus mykiss*) in coastal Oregon streams; this program is part of the Oregon Adult Salmonid Inventory and Sampling project. The project is designed to assess yearly status and trend in abundance, proportion of hatchery origin spawners (pHOS), and distribution of Winter Steelhead spawners in four Oregon ESU/DPS units (Figure 1). The SWW and LCR ESU's are currently monitored at the population scale, though funding limited efforts to only the Clatskanie, Scappoose, Clackamas, and Sandy populations from 2014 to present. No monitoring has occurred in the Youngs Bay, Big Creek, Gorge, or Hood populations since 2013, except for the upper portions of the Lewis and Clark River (within Youngs Bay population) where an adult trap and survey calibration effort is operated. In the OC DPS, status and trend are evaluated at the monitoring area scale. No monitoring occurred in the KMP DPS between 2016-2021, however monitoring resumed in 2022. Results for the KMP DPS are available in the Rogue–South Coast Multi-Species Conservation and Management Plan annual implementation reports (ODFW 2023).

A spatially balanced, probabilistic sampling design (Stevens 2002) was used to randomly select survey sites across a stream network of Winter Steelhead spawning habitat. Areas above dams or hatcheries, where counts of Winter Steelhead are available, are not sampled. This includes River Mill (Clackamas River) and Winchester (North Umpqua River) dams, as well as Big Creek, Klaskanine, Sandy and Alsea hatcheries. In accordance with prior work (Susac and Jacobs 1999) conducted by ODFW in coastal streams, monitoring of Winter Steelhead abundance is based on counts of redds, and rearing origin is determined from fin-clip observations on live and dead fish. Repeat visits to each site are conducted, at least once every 14 days, from February through May to generate a total redd count for each survey. Post season, each site is evaluated to determine the number and timing of survey dates. Large gaps between survey dates (over 15 days), especially during the central period of Winter Steelhead spawning, could result in undercounting of redds, thus sites with large gaps are not used in calculating

abundance. Many of the random Winter Steelhead spawning sites are also sampled as salmon spawning sites; weekly surveys conducted from October through January. In these cases, survey data from December forward are included in the Winter Steelhead season dataset to ensure any Winter Steelhead (fish & redds) observed during the salmon spawning season are included in the Winter Steelhead season analysis. Pacific lamprey index sites and any Winter Steelhead sites that still have activity at the end of May are typically surveyed into June, or until the end of spawning activity. Specific descriptions of project protocols can be found in the annual survey procedures manual (ODFW 2025).

Winter Steelhead redd abundance estimates are converted to fish abundance using a standard redd-to-fish conversion factor developed in the OC ESU (ODFW 2013). Wild Winter Steelhead abundance estimates (including both dam counts and spawning survey results) for the 2025 spawning season are reported in Table's 2, 4, 5, 6, 7, and 8.

Standard procedures for pHOS estimation require at least 10 fish with known adipose-fin-status (identified as clipped or not clipped). Preference is given to data from dead fish, though if the number of dead fish is less than 10, then live and dead samples are combined. If this still results in a sample of less than 10 fish, pHOS is calculated using a combination of current and previous year counts.

Survey sites adjacent to hatcheries and/or their acclimation areas typically have a higher proportion of both hatchery fish and redd densities and can therefore bias estimates of wild abundance. To reduce bias and increase accuracy of Winter Steelhead estimates, a stratified approach was initiated in 2016. These efforts differ slightly between the various monitoring units. In the SWW ESU, the Clatskanie population is divided into two strata: Plympton Creek and the remaining Clatskanie basin. There are no hatchery Winter Steelhead releases in the Clatskanie population, but hatchery fish are abundant in Plympton Creek. For the LCR ESU, in each of the Sandy and Clackamas populations, strata are defined as: migration corridors, areas adjacent to hatchery releases, and the remaining portions of each population (i.e. areas outside of direct hatchery influence). In each case, individual strata estimates are calculated, then rolled up to final population estimates (Table 7). In the OC DPS, the ODFW Coastal Multi-Species Conservation and Management Plan allows for higher maximum pHOS rates in areas adjacent to acclimated hatchery release sites (ODFW 2014). These areas are known as hatchery "Hot-Spots", subsequently referred to as hatchery hotspots (or simply, hotspots) in this report. Implementation of this stratification results in abundance and pHOS estimates for the areas of each MA that are outside of these hotspots. Estimates within the hotspots for 2025 are presented in Table 8 as a single estimate for the Oregon Coast DPS.

RESULTS

Survey Effort

Southwest Washington & Lower Columbia River ESU's

- Survey effort in the SWW and LCR ESUs was similar to recent years (Table 1).
- The percentage of sites in the SWW ESU successfully surveyed (65%) was above the 10-year average (56%). The percentage of successfully surveyed sites in the LCR ESU (57%) was also above the 10-year average (52%).
- Surveys in the Young's Bay and Big Creek populations have not been conducted since 2013, and surveys in the Gorge and Hood populations have not been conducted since 2012.
- Survey conditions in the SWW and LCR ESUs were challenging during late February through March, with many sites unsurveyable. Precipitation totals for the months of February and March were approximately 130% of average. Conditions improved in early April and continued through May. Temperatures were average for much of the season.

Oregon Coast DPS

- Survey effort in the OC DPS was comparable to recent years (Table 1).
- The percentage of sites successfully surveyed (50.2%) was near the 11-year average (50.9%) for the OC DPS.
- Survey conditions in the OC DPS were challenging during the first half of the season. Heavy precipitation limited site access from late February through March (Figure 11). Conditions were particularly challenging in the Umpqua and the Mid-South Coast MAs, during this period of limited site access, which also coincides with typical peak spawn timing.

Redd Abundance

Southwest Washington & Lower Columbia River ESU's

- The 2025 wild Winter Steelhead redd abundance estimate in the SWW ESU (169 redds) was 34% of the 11-year average. Of the two populations monitored in the SWW ESU, 95% of the estimate comes from the Clatskanie population (Table 2).
- The 2025 wild Winter Steelhead redd abundance estimate for the LCR ESU (1,892 redds) was 64% of the 11-year average (Table 2).

Oregon Coast DPS

- The 2025 wild Winter Steelhead redd abundance estimate in the OC DPS (35,004 redds) was 72% of the 11-year average (Table 2).
- Wild estimates were below the 11-year average in the North Coast, Mid-South Coast and Umpqua MAs (76%, 57% and 45%, respectively), while estimates in the Mid Coast were equal to the 11-year average (100%) (Table 2).

- Within hatchery hotspots there were an estimated 801 wild Winter Steelhead redds, which is 44% of the prior 9-year average (1,831) (Table 2). The estimate of wild redds in hotspots is 2.2% of the total OC DPS wild Winter Steelhead redd abundance estimate.

Hatchery Proportion

Southwest Washington & Lower Columbia River ESU's

- In 2025, the Scappoose and Clackamas populations had a sample size below the 10-fish observation target. As a result, a cumulative pHOS of all prior year's fish observations was used. (Figure 5 & Table 9).
- Managers require information on the pHOS of Summer Steelhead (StS) in the Sandy and Clackamas populations; however, no monitoring targeting this need exists. Winter Steelhead (StW) results are used as a proxy for StS pHOS, however a separate calculation for the common months of StS spawning (December – January) is triggered if StW pHOS is >5%. The 2025 pHOS estimate for the Sandy Population did not exceed 5%. The pHOS estimate for spawning ground surveys in the Clackamas population was 31.5%, requiring a calculation of February Summer Steelhead pHOS which was 0% for 2025.

Oregon Coast DPS

- In the OC DPS, pHOS in 2025 was estimated to be 4.1%, more than half the 11-year average (9.6%, Table 2).
- Estimates of pHOS were well below the prior 11-year average in North and Mid Coast MAs. Alternative methods for calculating pHOS were used in the Umpqua and Mid-South Coast MAs, with results for both slightly below the 11-year average (Table 2).
- In the Umpqua MA, pHOS was estimated using the 5-year average (0.5%). All eight 2025 observations were identified as wild fish.
- In the Mid-South Coast MA, a high proportion of hatchery fish were identified in the NF Coquille sub-basin, and there were very few observations from other basins/sub-basins in 2025. Results from the past five years were calculated by stratifying the NF Coquille to get a 5-year average from all areas outside the NF Coquille sub-basin. Estimates in the NF Coquille were calculated using fish observations from 2025, while the remainder of the Mid South Coast MA used this stratified 5-year average for estimating pHOS.
- Three of the four MAs had a sample size above the 10 live/dead fish-observation target, with the Umpqua MA the exception with 8 observations (Table 9).
- The 2025 pHOS estimate for hatchery hotspots was 62.6%, greater than the 9-year average of 46.1% (Table 2).

Distribution and Timing

Southwest Washington & Lower Columbia River ESU's

- Site occupancy (percentage of sites with at least one Winter Steelhead redd) was below the 11-year average in both the SWW and the LCR ESU's. Occupancy in the Scappoose population (5%) was below the 11-year average (18%). In the Clatskanie population occupancy was 42%, below the 11-year average of 61%. Occupancy in the Clackamas

population (35%) was below the prior 11-year average (48%), and the occupancy rate of 75% in the Sandy population was slightly lower than average (78%) (Table 3).

- Winter Steelhead redd timing in the Clatskanie population saw an initial peak in late February, followed by a steep drop in redds in mid-March, likely due to high flows and poor survey conditions. In April, the Clatskanie population saw a second larger peak in redds. Redd timing in the LCR was consistent with average patterns (mid-March to early-April peak). (Figure 6).

Oregon Coast DPS

- The percentage of occupied sites in the OC DPS varied by MA. The North and Mid Coast MAs were near average, whereas the Mid-South Coast and Umpqua MAs were well below average. (Table 3).
- Winter Steelhead spawn timing was fairly typical for the North Coast and Umpqua MAs in 2025. The Mid-South MA peak spawn timing in late February was normal, however identification of new redds drastically dropped off more significantly than in previous years, starting in March, which could be partially a result of the high stream flows and challenging survey conditions during that time. The Mid Coast MA had the earliest peak on record, while the remainder of the season was fairly typical (Figure 10).

Pacific Lamprey Information

Southwest Washington & Lower Columbia River ESU's

- Pacific Lamprey redd densities (peak redds per mile) continue to decline in the LCR and SWW ESUs, being 22% of the 2012 – 2024 average (Figure 12). Spawn timing coincided with increasing water temperatures during May and early June, which is typical (Figure 13).
- Site occupancy in 2025 (15%) was the lowest recorded (2012-2024) and was 42% of the average (36.3%) (Figure 12).

Oregon Coast DPS

- In the Oregon Coast, Pacific Lamprey occupied 39.2% of Winter Steelhead surveys, slightly below the 22-year average of 39.7%. However, redd density (peak redds per mile) was 182% of the 22-year average, and the third highest result since 2003 (Figure 14).
- Within Pacific Lamprey index surveys on the Oregon Coast, 2025 spawn timing varied from the 5-year average. Peak spawn timing occurred earlier than average, possibly in response to stream flows receding earlier than normal. Timing of redd densities also shows a bimodal distribution, which could be a result of the timing of survey visits on sites with high density of redds (Figure 15).
- As observed in previous years, lamprey redd density and site occupancy seem to track each other (Figure 14), suggesting that site occupancy may provide an index of abundance.

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TABLES & FIGURES

Table 1. Oregon Winter Steelhead site status by monitoring area or population, 2025. Target sites were within, and non-target sites were outside of Winter Steelhead spawning habitat. Response sites were successfully surveyed. Non-response sites were not successfully surveyed because of issues such as lack of landowner permission, site inaccessibility, or gaps in survey effort typically due to stream turbidity. *ns* = no surveys conducted.

ESU/DPS	Population or Monitoring Area	Target Response	Target Non-response	Non-target
Southwest Washington	Youngs Bay	ns	Ns	ns
	Big Cr	ns	Ns	ns
	Clatskanie ^b	21	4	0
	Scappoose	23	20	0
	Total	44	24	0
Lower Columbia River	Clackamas ^b	32	25	0
	Sandy ^b	42	28	4
	Gorge	ns	ns	ns
	Total	74	53	4
Oregon Coast ^a	North Coast	41	21	8
	Mid Coast	40	18	4
	Mid-South Coast	27	36	4
	Umpqua	27	37	6
	Total	135	112	22

a = Oregon Coast DPS does not include sites that were within hatchery hotspots.

b = Surveys in the Clatskanie, Clackamas and the Sandy River basin are shown here as the sum of all components.

Table 2. Western Oregon wild Winter Steelhead spawning abundance (redds and fish) and percent hatchery origin spawners (pHOS), 2025. Includes results from spawning ground surveys (SGS) and counting stations (areas without SGS). Wild proportions and pHOS estimates are derived from fin-mark observations on live and dead Winter Steelhead. *ns* = no surveys conducted.

ESU/DPS	Population or Monitoring Area	Data Source	Wild Winter Steelhead				pHOS	
			<u>Redds</u>		<u>Fish</u>			
			2025	11-Yr Avg	2025	11-Yr Avg	2025	11-Yr Avg
Southwest Washington	Youngs Bay	SGS	ns	ns	ns	ns	ns	ns
	Big Cr	SGS	ns	ns	ns	ns	ns	ns
	Clatskanie	SGS	160	454	276	776	0.0%	3.1%
	Scappoose	SGS	9	39	19	70	0.0%	0.0%
	Total ^a	All	169	494	295	846	0.0%	2.8%
Lower Columbia River	Clackamas	SGS	193	656	332	1,119	31.5%	17.0%
	N Fk Clackamas Dam	Count	-	-	2,053	1,459	-	0.0%
	Sandy	SGS	1,699	2,319	2,892	3,946	0.0%	4.4%
	Gorge	SGS	ns	ns	ns	ns	ns	ns
	Total	All	1,892	2,975	5,277	6,524	2.8%	5.1%
Oregon Coast	North Coast	SGS	11,851	15,527	20,150	26,399	2.5%	8.8%
	Mid Coast	SGS	13,008	12,983	22,117	22,075	2.2%	13.9%
	Alsea Hatchery	Count	-	-	52	73	-	-
	Mid-South Coast	SGS	5,225	9,105	8,886	15,482	15.9%	17.6%
	Umpqua	SGS	4,919	11,022	8,366	18,742	0.5%	2.8%
	Winchester Dam	Count	-	-	5,186	9,062	1.2%	4.9%
	Total	All	35,004	48,637	64,757	91,825	4.1%	9.6%
	<i>Hatchery Hot-Spots ^b</i>	<i>SGS</i>	801	1,831	1,365	3,117	62.6%	46.1%

a = Some populations in DPS are not currently monitored, and the resulting total is incomplete.

b = Surveying of hatchery hotspots began with the 2016 season, average is 2016-2024.

Table 3. Oregon Winter Steelhead redd density and site occupancy, 2025. Sites must have at least one confirmed redd to be considered occupied. *ns* = *no surveys conducted*.

ESU/DPS	Population or Monitoring Area	Redds / Mile		% Sites With Redds	
		2025	11-Yr Avg	2025	11-Yr Avg
Southwest Washington	Young's Bay	ns	ns	ns	ns
	Big Creek	ns	ns	ns	ns
	Clatskanie	2.5	8.0	42%	61%
	Scappoose	0.1	0.8	5%	18%
	Total	1.2	4.7	21%	38%
Lower Columbia River	Clackamas	1.4	4.3	35%	48%
	Sandy Gorge	9.7	15.4	75%	78%
		-	ns	-	ns
	Total	5.2	9.5	52%	61%
Oregon Coast	North Coast	10.1	14.2	68%	67%
	Mid Coast	7.8	9.3	68%	69%
	Mid-South Coast	6.2	11.3	69%	77%
	Umpqua	3.0	6.7	59%	71%
	Total	6.7	10.0	67%	71%
	<i>Hatchery Hot-Spots ^a</i>	<i>17.7</i>	<i>16.8</i>	<i>100%</i>	<i>75%</i>

a = Surveying of hatchery hotspots began with the 2016 season, average is 2016-2024.

Table 4. Annual fish abundance estimates of naturally spawning wild Winter Steelhead by Monitoring Area (MA) in the Oregon Coast Winter Steelhead DPS, run years 2003 to 2025. Includes estimates for areas above counting stations where GRTS surveys are not conducted. n.a. = not available.

Year	Oregon Coast DPS				
	North Coast	Mid Coast	Mid- South Coast	Umpqua	Hatchery Hot-Spots ^a
2003	48,838	30,760	20,154	52,754	n.a.
2004	48,622	23,877	17,335	33,159	n.a.
2005	32,516	13,417	38,884	24,762	n.a.
2006	35,814	22,947	33,239	21,247	n.a.
2007	35,010	17,230	41,334	32,011	n.a.
2008	20,164	21,471	31,974	35,490	n.a.
2009	17,740	20,540	15,535	23,423	n.a.
2010	32,181	28,367	33,880	37,702	n.a.
2011	16,937	32,894	16,161	28,563	n.a.
2012	26,973	32,430	12,608	32,302	n.a.
2013	49,934	47,480	26,223	48,847	n.a.
2014	24,118	15,324	18,495	26,496	n.a.
2015	41,893	26,347	19,635	29,513	n.a.
2016 ^a	26,338	40,484	23,887	28,893	2,938
2017	18,228	9,443	11,749	20,790	2,554
2018	15,481	32,371	18,503	35,495	810
2019	13,410	24,181	9,179	29,704	4,437
2020	33,611	27,640	20,909	27,612	7,994
2021	23,380	12,341	12,373	19,803	4,351
2022	17,612	19,187	14,977	27,245	2,113
2023	38,133	20,411	12,247	21,727	1,931
2024	38,182	15,825	8,344	38,560	922
2025	20,150	22,169	8,887	13,553	1,365

a = Stratification of hatchery hotspots began in 2016 per guidance in CMP (ODFW 2014). Oregon Coast MAs do not include sites that were within hatchery hotspots after 2015.

Table 5. Annual fish abundance estimates of naturally spawning wild Winter Steelhead by Population in the Lower Columbia Winter Steelhead ESUs, run years 2003 to 2025. n.a. = not available. TBD = Random surveys predate the current effort, and the data has not yet been included in this analysis.

Year	Southwest Washington ESU				Lower Columbia ESU	
	Youngs Bay	Big Creek	Clatskanie	Scappoose	Clackamas	Sandy
2003	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2004	TBD	TBD	TBD	TBD	TBD	TBD
2005	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2006	n.a.	n.a.	n.a.	n.a.	1,164	1,060
2007	n.a.	n.a.	n.a.	n.a.	1,208	1,140
2008	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2009	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2010	n.a.	n.a.	n.a.	n.a.	n.a.	TBD
2011	n.a.	n.a.	n.a.	n.a.	n.a.	TBD
2012 ^a	340	54	415	171	2,733	357
2013	164	53	1,530	375	2,427	3,509
2014	n.a.	n.a.	n.a.	n.a.	3,404	3,249
2015	n.a.	n.a.	1,950	198	3,740	4,670
2016	n.a.	n.a.	827	178	4,144	5,488
2017	n.a.	n.a.	293	35	2,531	2,125
2018	n.a.	n.a.	371	24	3,030	5,981
2019	n.a.	n.a.	422	5	1,500	1,896
2020	n.a.	n.a.	1,403	118	2,005	2,634
2021	n.a.	n.a.	328	n.a.	990	3,868
2022	n.a.	n.a.	815	34	1,566	4,388
2023	n.a.	n.a.	854	0	1,277	4,789
2024	n.a.	n.a.	487	96	4,175	4,317
2025	n.a.	n.a.	276	19	2,385	2,892

a = Current GRTS sampling effort began with the 2012 spawning season.

Table 6. Oregon Winter Steelhead redd abundance estimates, 2025. Estimates do not include areas above counting stations and are thus not complete population estimates in some areas. Estimates without a 95% Confidence Interval (CI) are based on alternative methods due to inadequate samples. ns = no surveys conducted.

ESU/DPS	Population or Monitoring Area	Winter Steelhead Redd Abundance			
		<u>Total</u>		<u>Wild</u>	
		Estimate	95% CI	Estimate	95% CI
Southwest Washington	Youngs Bay	ns	ns	ns	ns
	Big Cr	ns	ns	ns	ns
	Clatskanie ^a	160	67	156	67
	Scappoose	9	15	9	-
	Total	169	69	165	-
Lower Columbia River	Clackamas ^a	283	112	193	-
	Sandy ^a	1,699	458	1,699	458
	Gorge	ns	ns	ns	ns
	Total	1,982	473	1,892	-
Oregon Coast ^b	North Coast	12,154	3,730	11,851	3,637
	Mid Coast	13,303	4,254	13,008	4,159
	Mid-South Coast	6,212	2,372	5,225	-
	Umpqua	4,942	1,832	4,919	-
	Total	36,611	6,509	35,003	-

a = Estimates are derived from stratified samples. See intro/method section for stratification overview.

b = Oregon Coast DPS does not include sites that were within hatchery hotspots.

Table 7. Oregon Winter Steelhead redd abundance estimates within stratified samples, 2025. Estimates without a 95% CI are based on alternative methods due to insufficient sample size. ns = no surveys conducted.

ESU		Survey Effort		Approximate Spawning Miles	Winter Steelhead Redd Abundance			
					Total		Wild	
					Estimate	95% Confidence Interval	Estimate	95% Confidence Interval
Population	Number of Surveys	Miles						
Southwest Washington	Clatskanie Strata	20	16.1	63.9	156	67	156	67
	Plympton Cr. Strata	1	1.0	1.0	4	-	3	-
	Clatskanie Total	21	17.1	64.9	160	-	159	-
Lower Columbia River	Clackamas Strata	22	21.0	161.1	163	-	139	-
	Clackamas Migration Strata	7	12.1	29.3	7	-	5	-
	Eagle Cr. Hatchery	3	3.7	16.2	112	-	49	-
	Lower Clackamas Total	32	36.8	206.6	283	-	193	-
	Sandy Strata	32	34.9	153.7	1,589	449	1,589	449
	Sandy Migration Strata	10	18.5	22.1	110	90	110	90
	Cedar Cr. Hatchery Strata	ns	ns	ns	ns	ns	ns	ns
	Sandy Total	42	53.5	175.8	1,699	-	1,699	-
	Lower Columbia ESU Total	74	90.3	382.4	1,982	-	1,892	-

Table 8. Oregon Winter Steelhead redd abundance estimates within Oregon Coast Hotspots in 2025. Estimates are calculated at the DPS scale, due to insufficient sample size at the MA scale. Estimates without a 95% CI are based on alternative methods due to inadequate samples.

DPSMonitoring Area		Survey Effort		Spawning Miles within Hotspots	Winter Steelhead Redd Abundance			
		Number of Surveys	Miles		Total		Wild	
				Estimate	95% CI	Estimate	95% CI	
Oregon Coast	North Coast Hotspots	1	0.3	49	2,147	1,171	801	-
	Mid Coast Hotspots	5	4.1	89				
	Mid-South Hotspots	0	0.0	61				
	Umpqua Hotspots	0	0.0	42				
	Total	6	4.4	241				

Table 9. The number of known adipose fin-mark status dead and live Winter Steelhead observed on spawning grounds, 2025. Calculation of pHOS based on a minimum sample size of 10. Preference order: 1-current year dead fish; 2-current year combined dead and live fish; 3-recent years combined sample. ns = no surveys conducted.

ESU/DPS	Population/Sub-Pop. or Monitoring Area	Number Dead Fish		Number Live Fish	
		2025	11-Yr Avg	2025	11-Yr Avg
Southwest Washington	Young's Bay	ns	ns	ns	ns
	Big Cr	ns	ns	ns	ns
	Clatskanie	0	1	13	16
	<i>Clatskanie Exc. A</i>	0	0	11	7
	<i>A. Plympton Creek</i>	0	1	2	9
	Scappoose	0	0	1	1
	Total	0	1	14	17
Lower Columbia River	Clackamas Population ^a	0	3	2	11
	<i>Clackamas Exc. A & B</i>	0	0	2	2
	<i>A. Migration Corridor</i>	0	1	0	1
	<i>B. Eagle Creek</i>	0	2	0	7
	Sandy Population	2	4	20	47
	<i>Sandy Exc. A & B</i>	1	1	8	13
	<i>A. Migration Corridor</i>	1	2	12	6
	<i>B. Cedar Creek</i>	ns	4	ns	52
	Gorge	ns	ns	ns	ns
	Total	2	6	22	57
Oregon Coast	North Coast	6	4	34	67
	Mid Coast	1	3	44	49
	Mid-South Coast	0	1	20	48
	Umpqua	0	1	8	27
	Total ^b	7	9	106	203
	<i>Hatchery Hot-Spots</i>	0	0	4	23

a = Area below North Fork Clackamas Dam.

b = Oregon Coast DPS total does not include sites that were within hatchery hotspots.

Table 10. Annual estimates of Winter Steelhead per redd based on calibration survey areas, run years 2014 to 2025. n.a. = not available. Currently used conversion formula:

$$\text{Total Winter Steelhead} = (1.70 * \text{Redds}) + 3.74 \text{ (ODFW 2013)}.$$

Year	SWW ESU	Oregon Coast DPS				Annual Average
	Lewis & Clark River	N. Fk. Nehalem River	E. Fk. of S. Fk. Trask River	Fall Cr. (Alsea R.)	Mill Cr. (Yaquina R.)	
2014	2.08	n.a.	3.45	1.27	1.79	2.15
2015	1.06	n.a.	2.19	1.55	2.00	1.70
2016	1.23	1.98	1.21	0.49	1.02	1.19
2017	0.86	n.a.	n.a.	n.a.	2.69	1.78
2018	1.23	n.a.	n.a.	n.a.	0.76	0.99
2019	1.28	n.a.	n.a.	n.a.	1.11	1.19
2020	1.07	n.a.	n.a.	n.a.	0.93	1.00
2021	0.48	n.a.	n.a.	n.a.	1.94	1.21
2022	0.79	n.a.	n.a.	n.a.	n.a.	0.79
2023	0.94	n.a.	n.a.	n.a.	1.94	1.44
2024	1.04	n.a.	n.a.	n.a.	1.86	1.45
2025	1.28	n.a.	n.a.	n.a.	1.02	1.15
Avg.	1.11	1.98	2.28	1.10	1.55	1.34

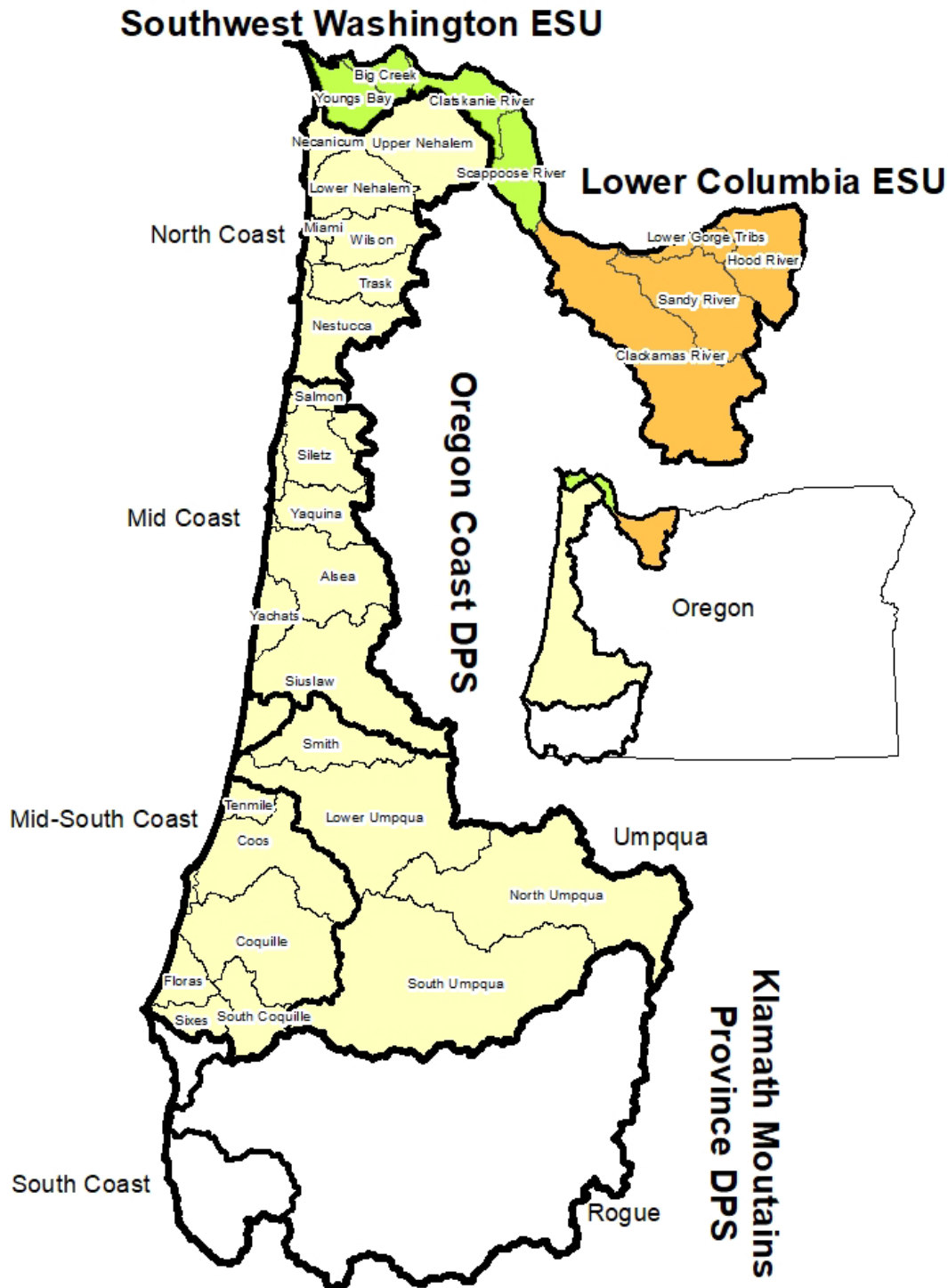


Figure 1. Geographic scope of Winter Steelhead monitoring, 2025. Monitoring scales include Evolutionary Significant Unit (ESU), Dependent Population Segment (DPS), Monitoring Area (MA), and population. Areas without color shading were not surveyed in 2025. Boundaries as defined by Busby et.al. (1996) for ESU/DPS, by Myers et al. (2006) for the LCR ESU populations, by the 2005 Oregon Native Fish Status Report (ODFW 2005) for other populations.

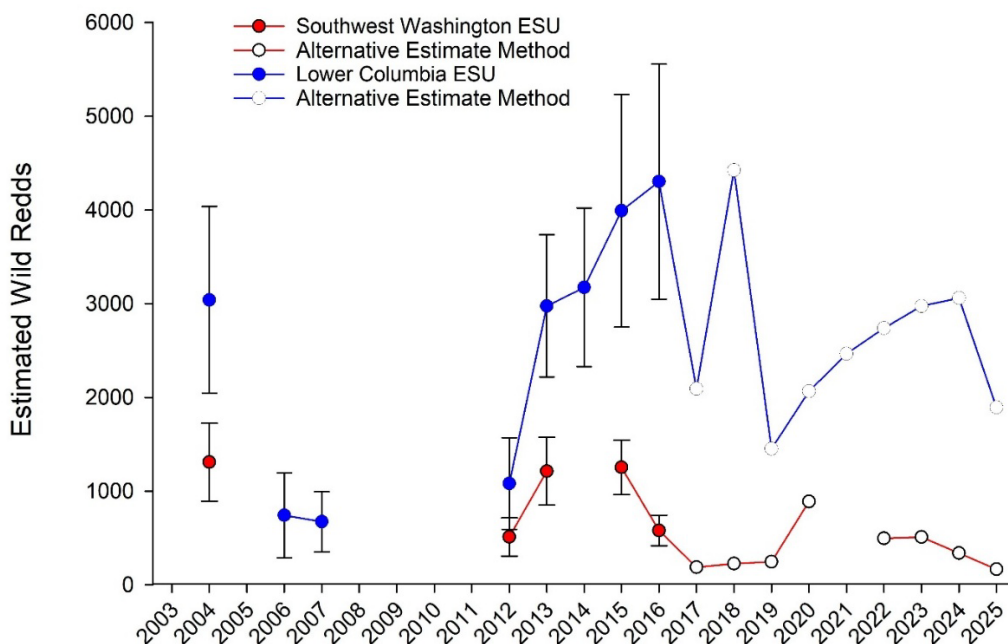


Figure 2. Wild Winter Steelhead redd estimates in the Oregon portions of the SWW and LCR ESUs based on random surveys, 2004 to 2025. Error bars represent 95% confidence intervals. Inclusion of survey data from specific populations has varied across years. Note: 2017-2025 error bars are not present because estimates were calculated with alternative methods. Additionally, an estimate at the strata level for the SWW ESU was not available for 2021 due to an insufficient sample size for an estimate in the Scappoose population.

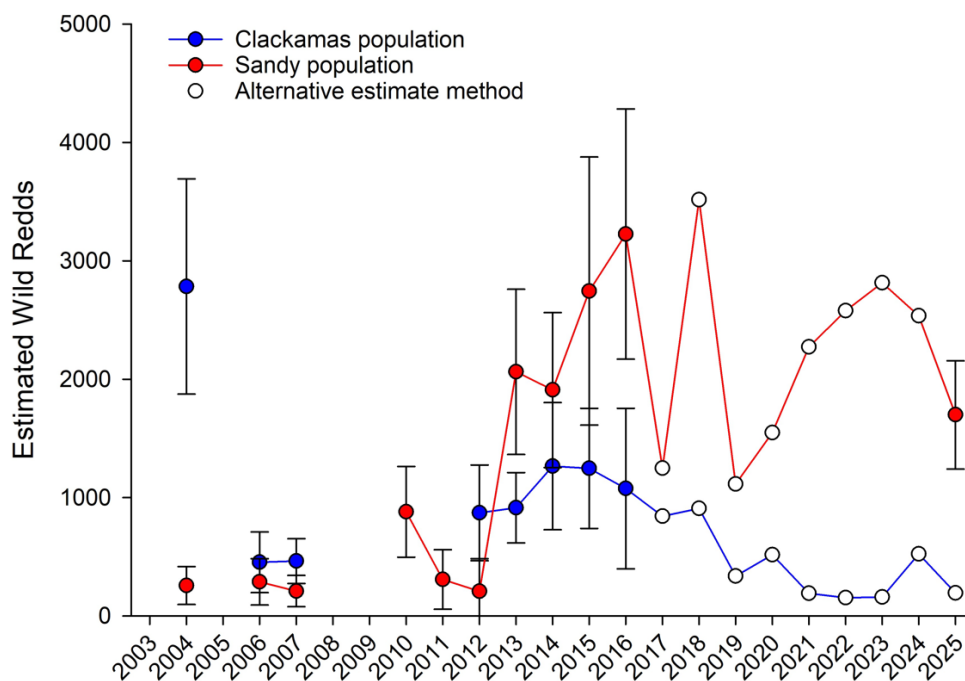


Figure 3. Wild Winter Steelhead redd estimates in the Clackamas and Sandy River populations based on random surveys from 2004 to 2025. Error bars represent 95% confidence intervals. Note: 2017-2025 error bars are not present because estimates were calculated with alternative methods.

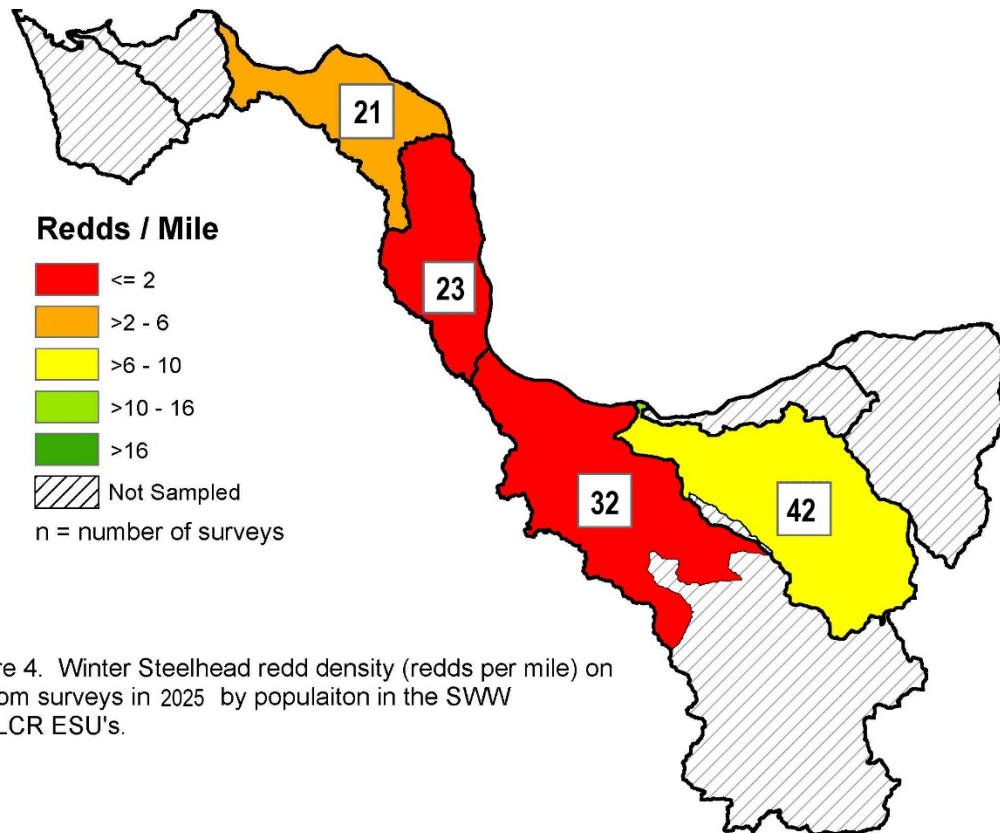


Figure 4. Winter Steelhead redd density (redds per mile) on random surveys in 2025 by population in the SWW and LCR ESU's.

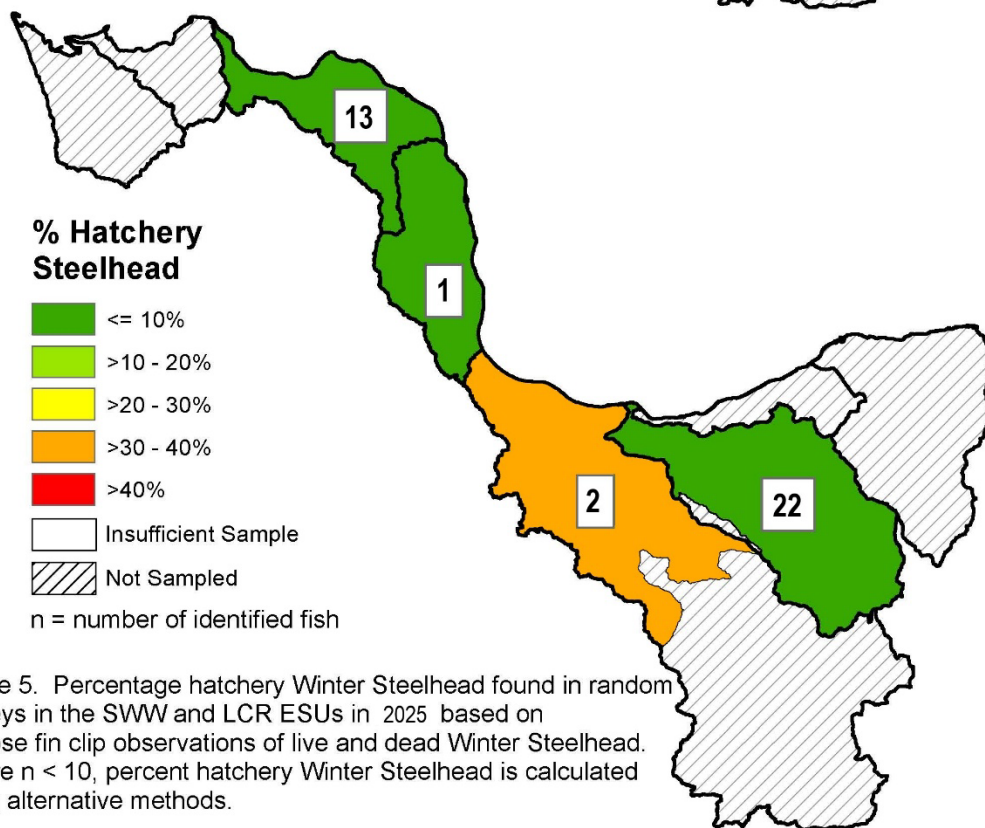


Figure 5. Percentage hatchery Winter Steelhead found in random surveys in the SWW and LCR ESUs in 2025 based on adipose fin clip observations of live and dead Winter Steelhead. Where n < 10, percent hatchery Winter Steelhead is calculated using alternative methods.

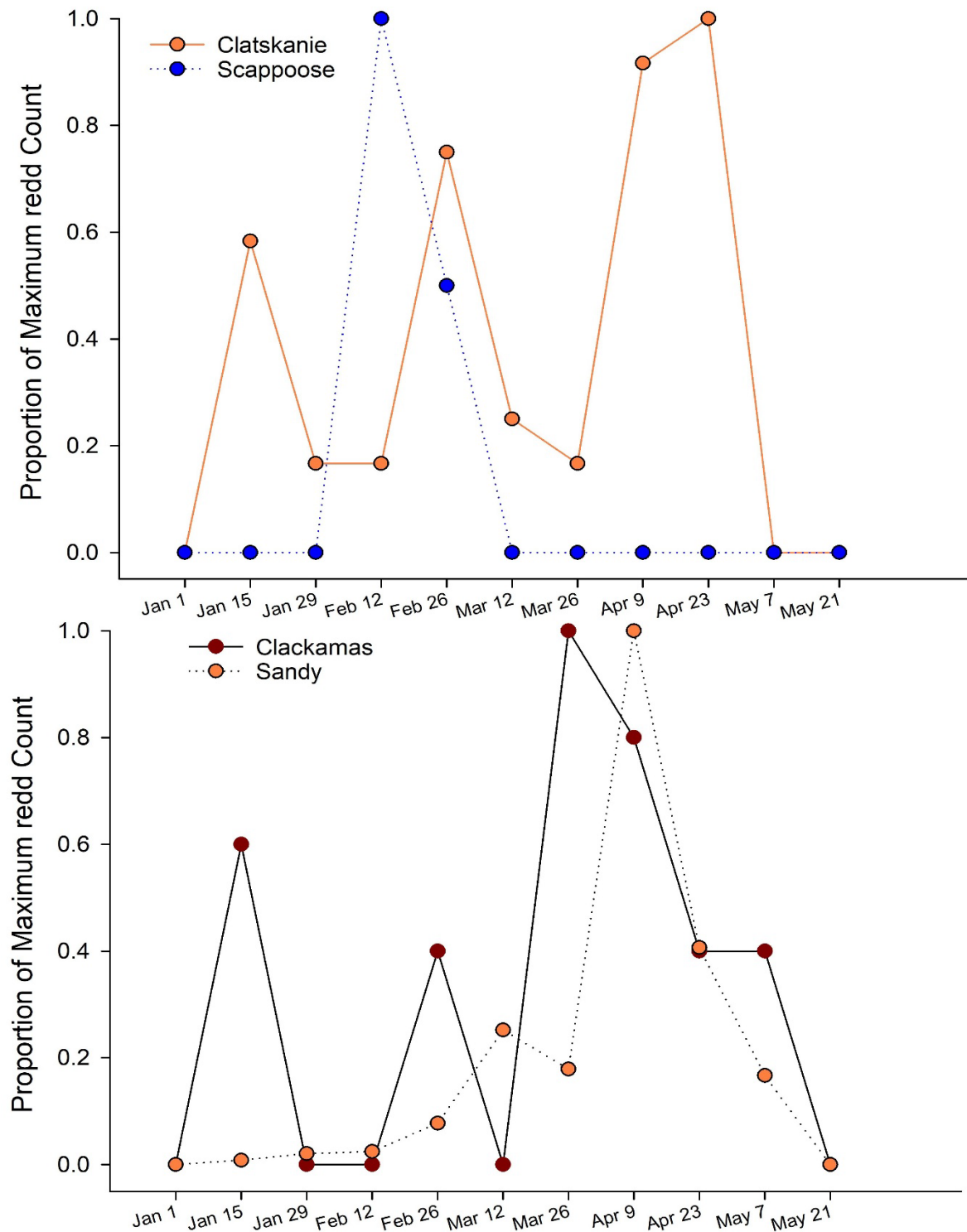


Figure 6. Winter Steelhead spawn timing, represented by proportion of the maximum redd count in a) SWW ESU populations and b) LCR ESU populations, 2025.

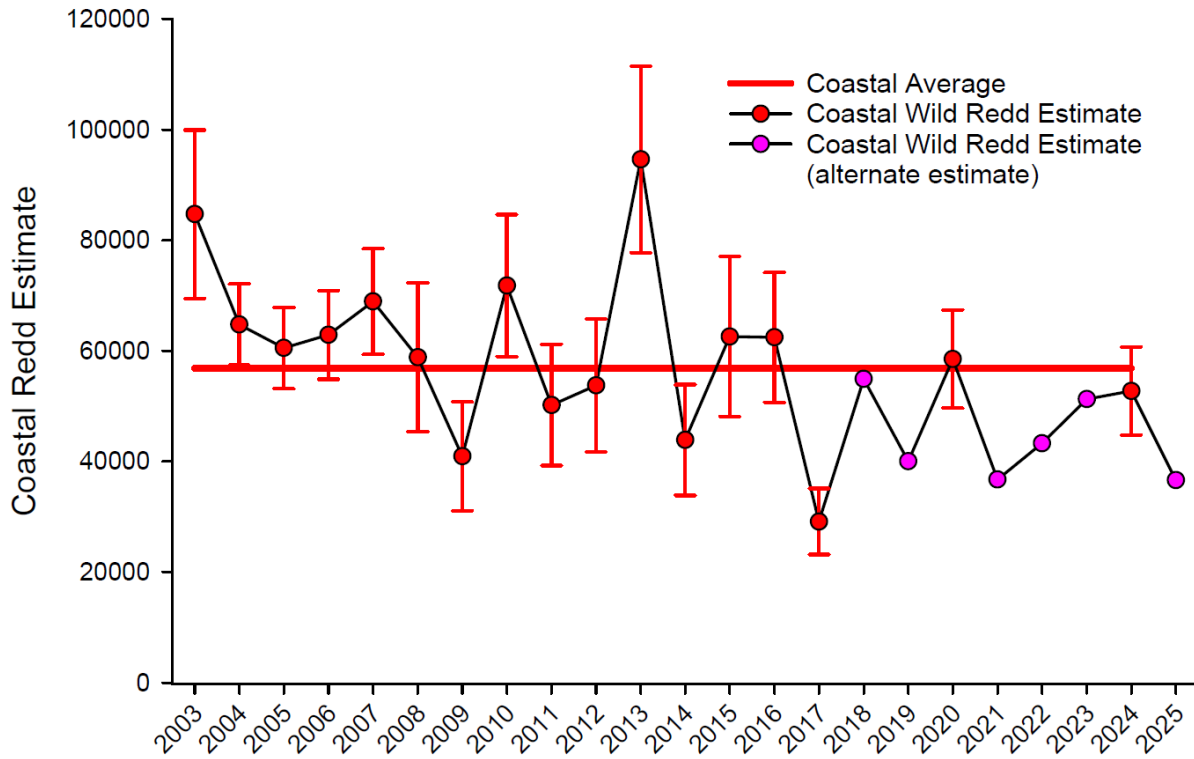


Figure 7. Estimated number of wild Winter Steelhead redds in the Oregon Coast DPS, 2003 to 2025. Error bars represent 95% confidence intervals. Note: 2018-2019, 2021-2023 and 2025 error bars are not present because estimates were calculated with alternative methods.

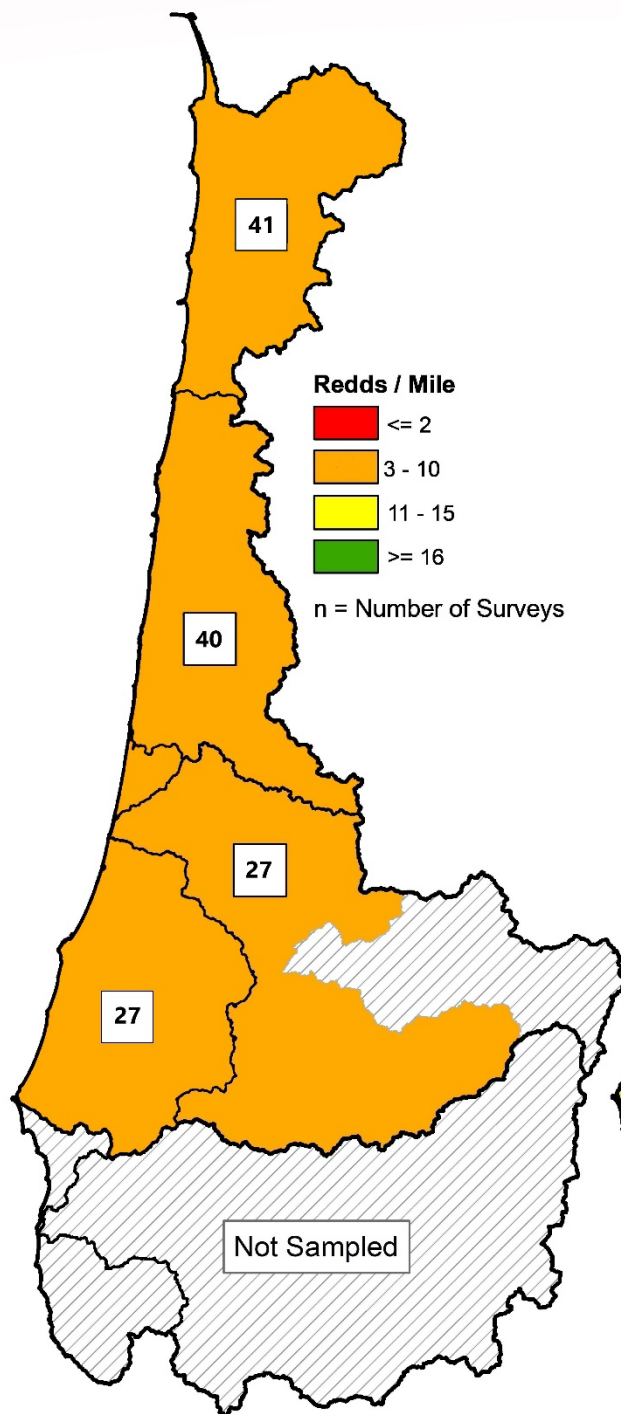


Figure 8. Steelhead redd density (redds per mile) in random surveys in 2025 by monitoring area in the Coastal and KMP DPS's.

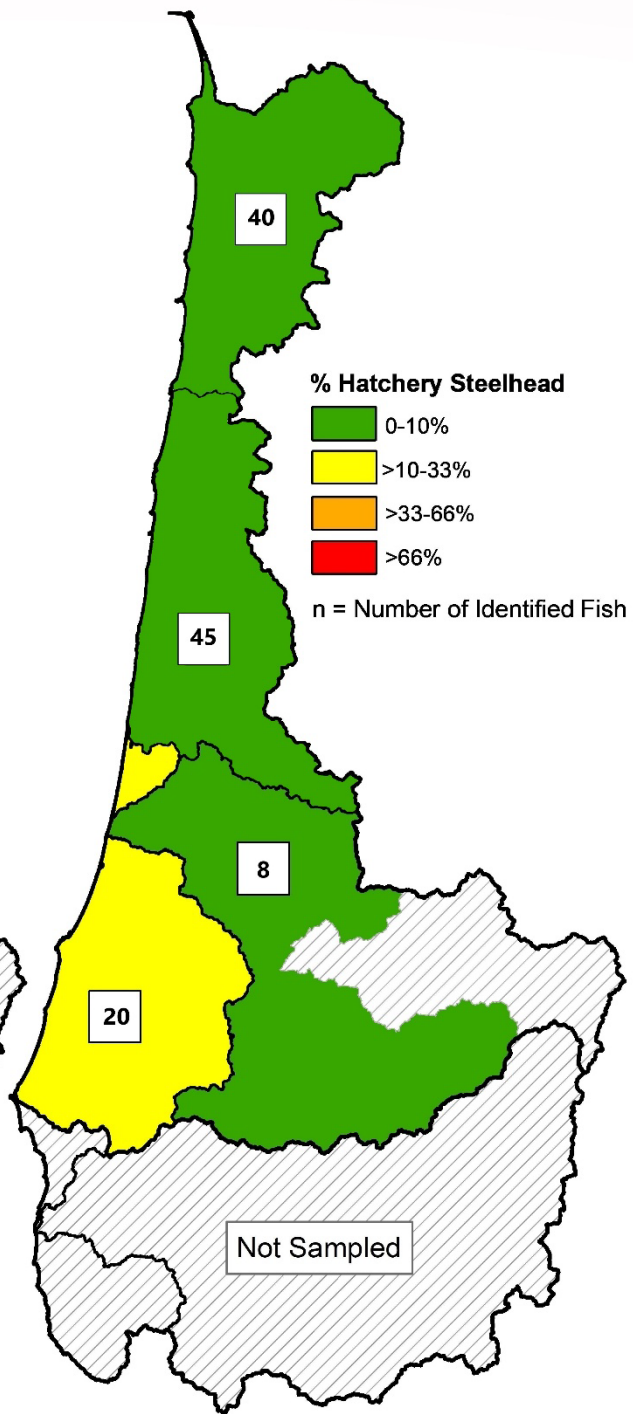


Figure 9. Percentage hatchery steelhead found in random surveys in each of the six Coastal and KMP monitoring areas in 2025 based on fin clip observations of live and dead steelhead.

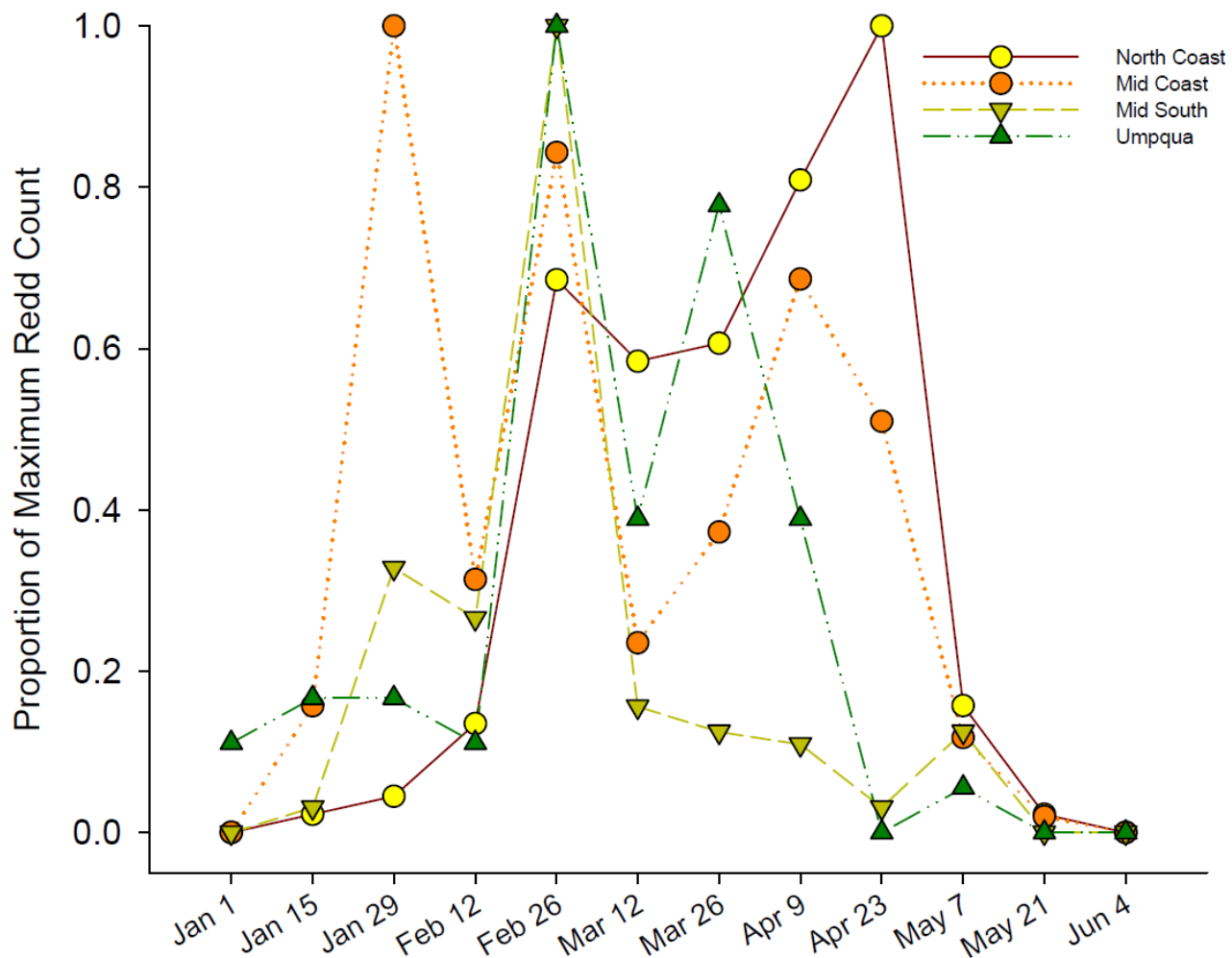


Figure 10. Winter Steelhead spawn timing, represented by proportion of the maximum redd count in each of the four Oregon Coast DPS monitoring areas, 2025.

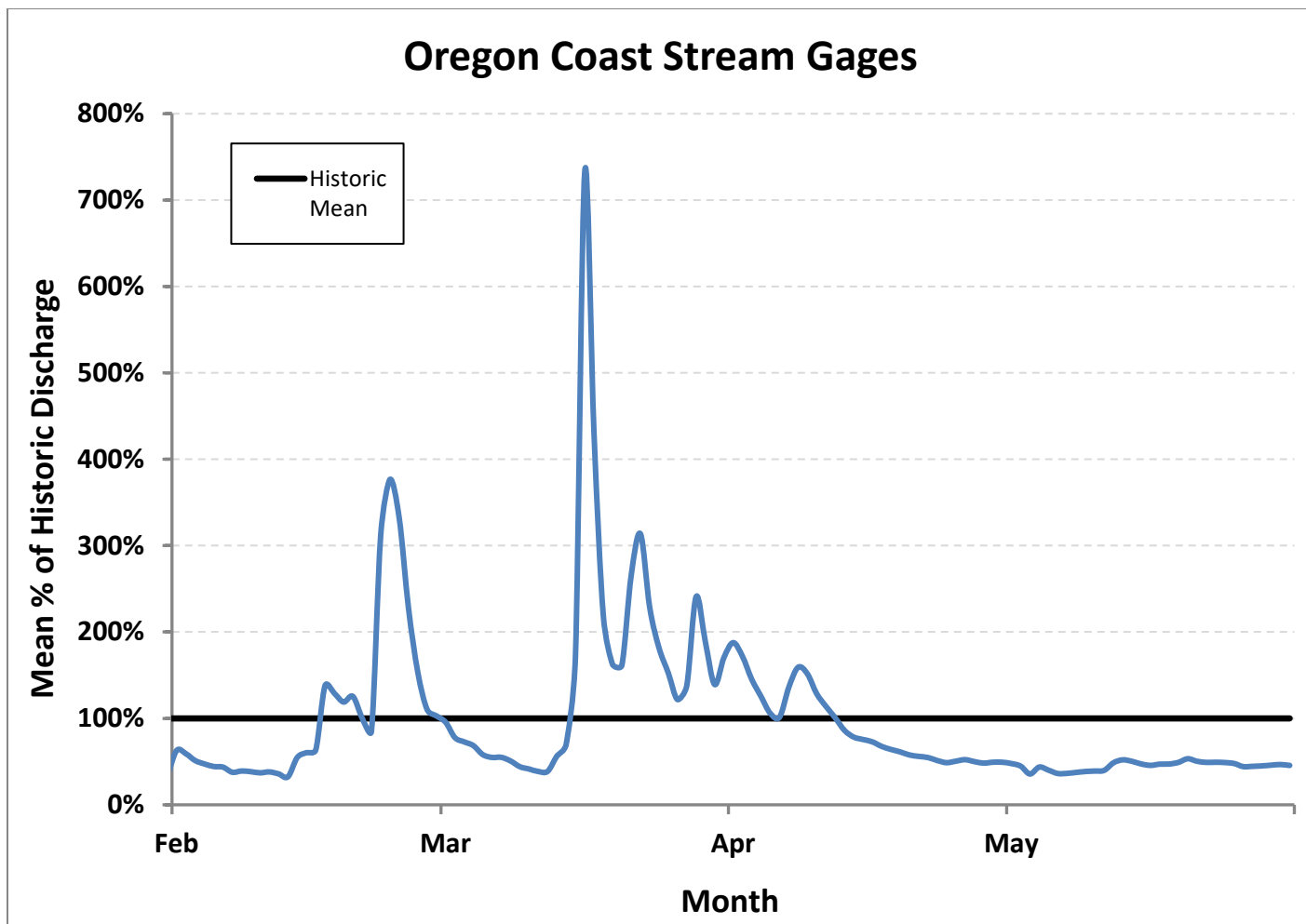


Figure 11. Mean discharge at Oregon Coast stream gages in 2025, presented as percentage of historic mean discharge (years of history varies by stream gage).

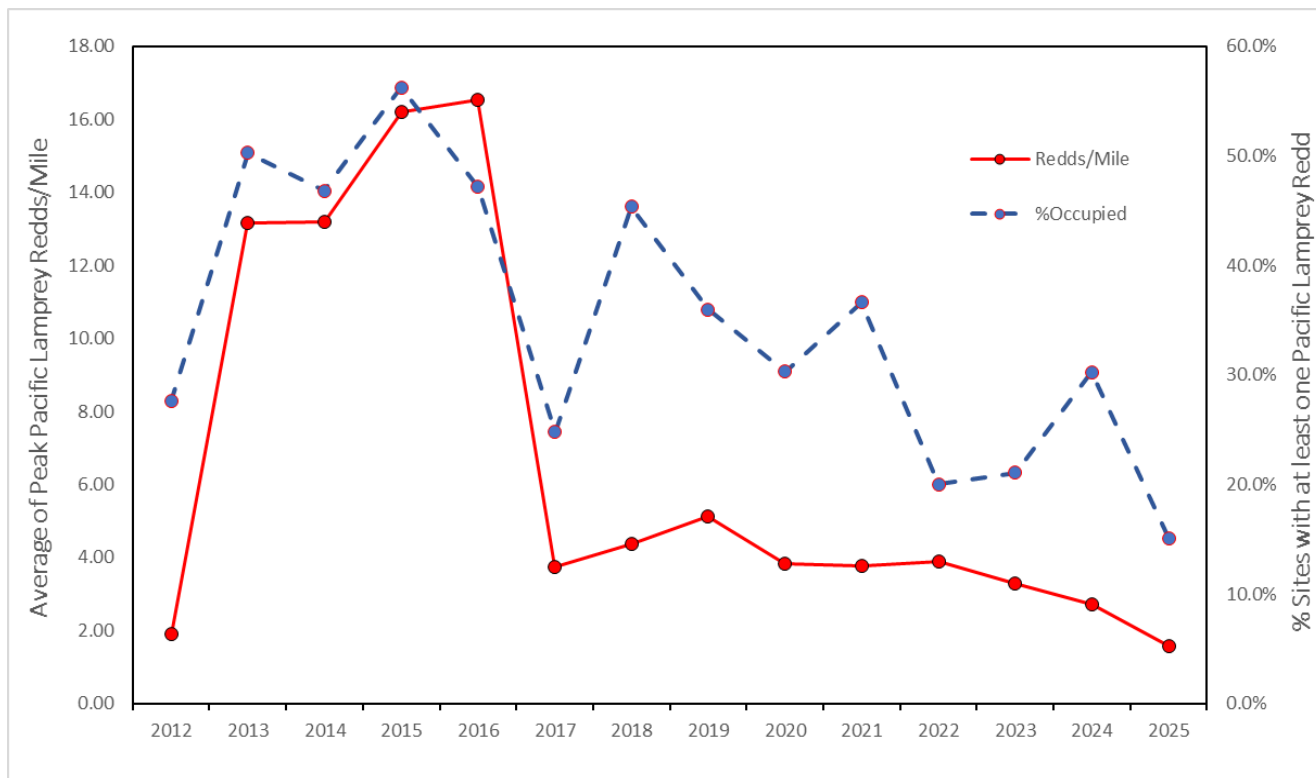


Figure 12. Lower Columbia Pacific Lamprey peak redd density and percent of sites occupied in random Winter Steelhead spawning surveys, 2012 to 2025.

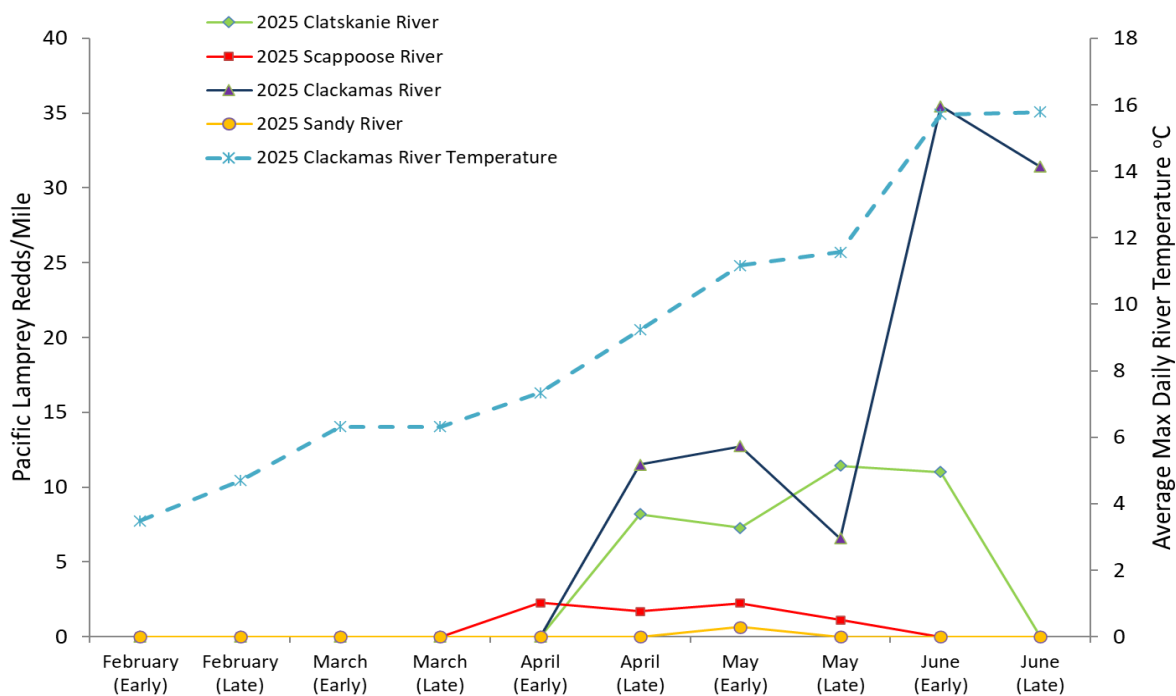


Figure 13. Lower Columbia Pacific Lamprey spawn timing in random and supplemental Winter Steelhead surveys in 2025 and average daily max water temperature in the Clackamas River.

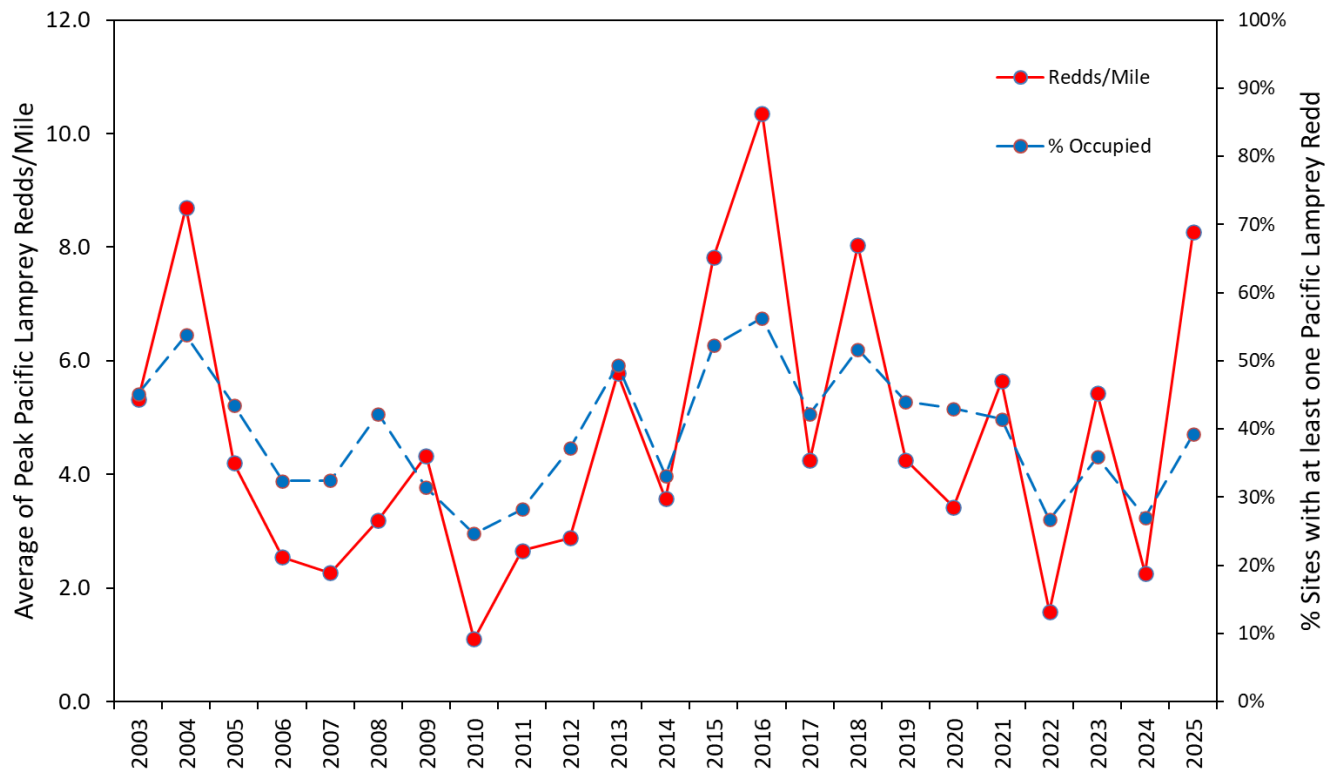


Figure 14. Oregon Coast Pacific Lamprey peak redd density and percentage of sites occupied in random Winter Steelhead spawning surveys, 2003 to 2025.

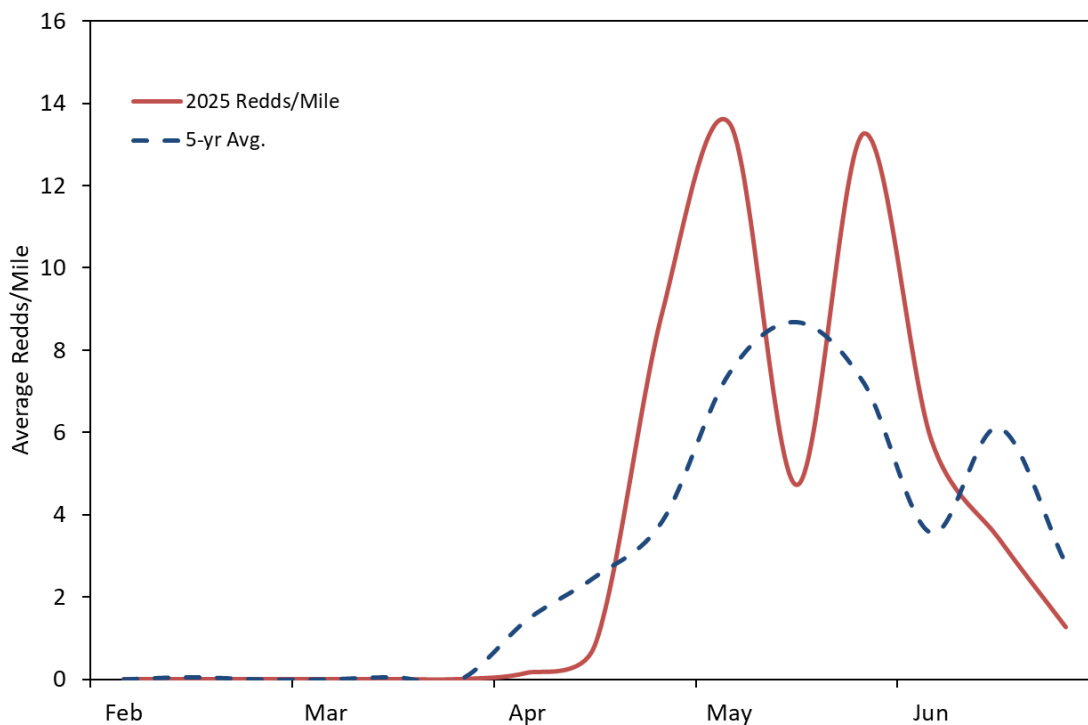


Figure 15. Oregon Coast Pacific Lamprey spawn timing in index surveys, 2025.



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