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Fisheries and Oceans Canada | Pêches et Océans Canada

South Coast Salmon Bulletin
17 July, 2026 Smolt Enumeration - Final
Sakinaw Lake Sockeye and Coho – Strait of Georgia Stock Assessment

Overview

The Sakinaw sockeye Conservation Unit was identified as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2002 and again most recently in 2006. This designation has resulted in a recovery strategy lead by Fisheries and Oceans Canada (DFO); which includes a captive breeding program with fry released into the lake each year. The Sechelt (shíshálh) people have a long history with this unique sockeye stock, which are the first salmon to return to this region each year. The adult returns historically provided an important food source for the shíshálh people.

Adult sockeye return from the open ocean and migrate primarily through the Johnstone Strait before entering the lake in June to September each year. Based on run timing data and incidental catch data of Sakinaw sockeye, migration through Johnstone Strait to the lake takes about 8 days and most of the run has entered the lake by mid-August. Most adult returns are 4 year olds, although some return as age 3 or 5 adults. The adults hold in the lake until they are ready to spawn in November and December. The fry from natural spawners emerge from the spawning gravel in the spring each year and fry releases from the captive breeding program are released between May and July each year at 0.5 years old, with an additional fall releases since 2018 (with a portion PIT tagged since 2022). Fry remain in the lake until the next spring when they smolt and migrate to the ocean (at age 1.5) from April to June. Additionally, hatchery smolts (with a portion PIT tagged) have also been released into the lake each spring, since 2019. The enumeration of smolts migrating to the ocean and adults returning to the lake are important measures of the success of the recovery strategy.

In 2019, DFO and Sechelt (shíshálh) First Nation also began additional stock assessment on coho enumeration to develop a wild indicator for the Sunshine Coast. Activities include adult counts during the entire fall migration period as well as creek inspections to determine the distribution of spawners. Starting in the spring of 2020, each year, a portion of the coho smolts have been PIT tagged at the trap to estimate survival. These data will allow a more complete assessment of the heath and productivity of the watershed, as well as a better understanding of the wild coho stocks in the area.

This bulletin provides weekly updates on annual Sakinaw Lake sockeye and coho assessment activities involving DFO and the Sechelt (shíshálh) First Nation. In the spring, this bulletin focuses on smolt emigrations and through the summer the bulletin highlights adult sockeye returns (see our fall escapement bulletin for adult coho data).

Smolt Enumeration Methods

Sockeye and coho smolts are enumerated as they migrate, mainly at night, over the dam to the marine waters from late-March to mid-June each year. A video camera records fish movement down the dewatering slide, and the crew reviews the video data. A portion of the smolts are diverted into the trap box for species composition and biosampling to determine the proportion of sockeye and coho as well as sockeye clip status. Biological samples are taken two or three times per week during the migration to determine age, growth rate, genetics and overall health. Up until 2025, a portion of the coho were also PIT tagged at the trap; this tagging is not occurring in 2026 but will be reevaluated in 2027.

The smolt data are used to estimate the fresh water survival rates of hatchery and naturally spawned sockeye, as well as the average smolts per spawner. Data presented in this bulletin are preliminary in-season estimates and the final estimates will be released once all data has been reviewed and verified.

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2026 Smolt Forecast

An total of 183 adult sockeye entered Sakinaw lake to spawn in 2023 (including 145 clipped and 38 not-clipped). Using the average natural smolts per spawner from 9 years of available data (33.5), we are expecting approximately **6,133 natural origin smolts in 2026**.

A total of 258,361 sockeye fry from the Rosewall Creek Hatchery Captive Brood Program were released to Sakinaw Lake in 2024 spring/summer and fall releases. Based on average hatchery fry to smolt survival rates in the past 8 years, we expect approximately **48,183 hatchery smolts, (32,108 not clipped from the spring 2025 releases, and 16,075 adipose clipped from the fall release of which 1.5% were PIT tagged)**. Additionally, **28,781** adipose clipped sockeye smolts were released in the lake on 17 and 24 March from Rosewall Creek Hatchery Captive Brood Program. A total of 992 of these clipped smolts were also PIT tagged (3.5% of the release) to monitor outmigration behavior and life-cycle survival relative to the lake reared smolts. With this additional release group, and assuming a similar survival of the smolt release to lake emigration as observed over the past 7 years (50.4%, **14,500 clipped smolts**), it is expected that total sockeye smolt emigration will be **68,816 for 2026**.

2026 Smolt Enumeration

The smolt enumeration trap, PIT tag antenna and video camera were operational from mid-March and the trap was set to capture 100% of the fish up until numbers increased on April 20, when the trap catch proportion was changed to 50%. The first fish observed at the fence was 4 coho on 23 March, with the next fish observed on 26 March with 1 coho and 1 clipped sockeye. The crew monitored the trap regularly. Sockeye emigration increased significantly in late April, and the trap % was changed to 25% on 1 May, and back up to 75% by 8 May and to 100% on 11 May, when catches decreased. Sockeye run timing was about 2 weeks early this year, compared to the previous average. Data has been reviewed and the preliminary final estimates are reported below. See the tables and figures below for a summary of the results.

Cumulative totals for this seasons emigration, up to 5 June are:

	Trap total	% of Forecast
Not-clipped Sockeye smolts (2025 not-clipped fry release and wild production)	**64,621**	**169%**
Clipped Sockeye smolts (2025 clipped fry and 2026 spring smolt release)	**30,803**	**101%**
Coho smolts	**7,173**	**57%**

Number of PIT tagged sockeye smolts detected on antennas to 5 June: 716
Water temperature varied between 4.7°C and 16.0°C throughout the enumeration period (April average 8.0°C, May average 13.5°C).

Contacts

For additional information on the enumeration of Sakinaw Lake sockeye please contact:

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Sakinaw Sockeye Data

Table 1. The numbers of adult sockeye salmon that returned to Sakinaw Lake each brood year (BY), including those removed as male and female broodstock. The estimated number of adults that spawned naturally in the lake is the difference between the return and the hatchery removal, minus any natural mortality before spawning. The numbers of fry (in thousands) released into the lake in the following year (BY+1) separated by 1st year brood releases and captive brood releases, and the numbers of natural and hatchery smolts (in thousands) emigrating from the lake after two years (BY+2) are also shown. Zeros indicate no fish; dashes indicate no data. ***Unk*** indicates an unknown number of natural smolts were included in the hatchery smolt total because there was no adipose clipping of hatchery juveniles from that year. Numbers in parentheses indicate Sakinaw sockeye parents from which fertilized eggs were used to found the captive breeding program at Rosewall hatchery.

	Adult Escapement (BY)				Fry (BY+1) + Smolt (BY+2) Releases (000's)			Smolt Migrants (BY+2) (000's)		
Brood Year	Returns		Hatchery Removal		Wild Brood Releases	Captive Brood Releases	Total	Natural	Hatchery	Total
	Adult	Jack	Female	Male						
2000	122		10	9	15	0	15	-	-	-
2001	87		15	14	31.9	0	31.9	4.3	8.1	12.4
2002	78		6(5)	10(9)	2.8	0	2.8	0.103	0.039	0.142
2003	3		0	0	0	0	0	0.011	0.002	0.013
2004	99		31(28)	31(28)	25.9	0	25.9	2.9	8.4	11.3
2005	28		6(6)	8(8)	7.6	87.9	95.5	0.272	3.7	4.0
2006	1		0	0	0	84.6	84.6	0	12.2	12.2
2007	0		0	0	0	420.8	420.8	0	62.6	62.6
2008	0		0	0	0	726.4	726.4	0	69.9	69.9
2009	1		0	0	0	329.4	329.4	0	32.9	32.9
2010	29		4	9	5.1	1368.7	1373.8	unk	162.9	162.9
2011	554		0	0	0	963.3	963.3	28.0	224.6	252.5
2012	244		0	0	0	856.2	856.2	4.4	121.6	126.0
2013	114	29	0	0	0	320.4	320.4	0.632	16.5	17.1
2014	452	12	0	0	0	644.7	644.7	0.722	78.2	78.9
2015	695	26	0	0	0	329.1	329.1	4.8	30.0	34.8
2016	171	1	0	0	0	256.6	256.6	11.9	33.4	45.3
2017	12		0	0	0	529.7 + 25.0	554.7	1.1	83.9	85.0
2018	3		0	0	0	774.0 + 23.5	797.5	unk	209.0	209.0
2019	13		0	0	0	632.7+21.4	654.1	unk	169.2	169.2
2020	85		0	0	0	583.9+23.4	607.3	2.3	65.7	68.0
2021	26		0	0	0	777.6+24.2	801.7	unk	138.5	138.5
2022	213		0	0	0	297.5+29.4	326.9	7.3	106.2	113.5
2023	121		0	0	0	258.4+28.8	287.1	5.0	55.6	60.6
2024	183		0	0	0	321.4	321.4	6.3	91.1	97.4
2025	308		0	0	0					

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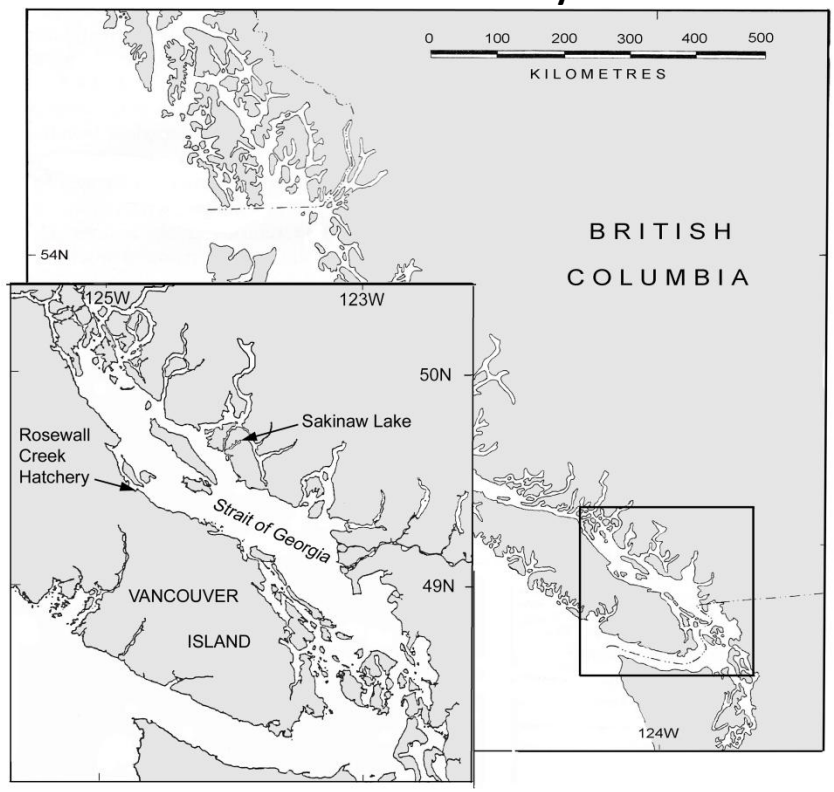

Figure 1: Location of Sakinaw Lake, on the Sunshine Coast of British Columbia, Canada.

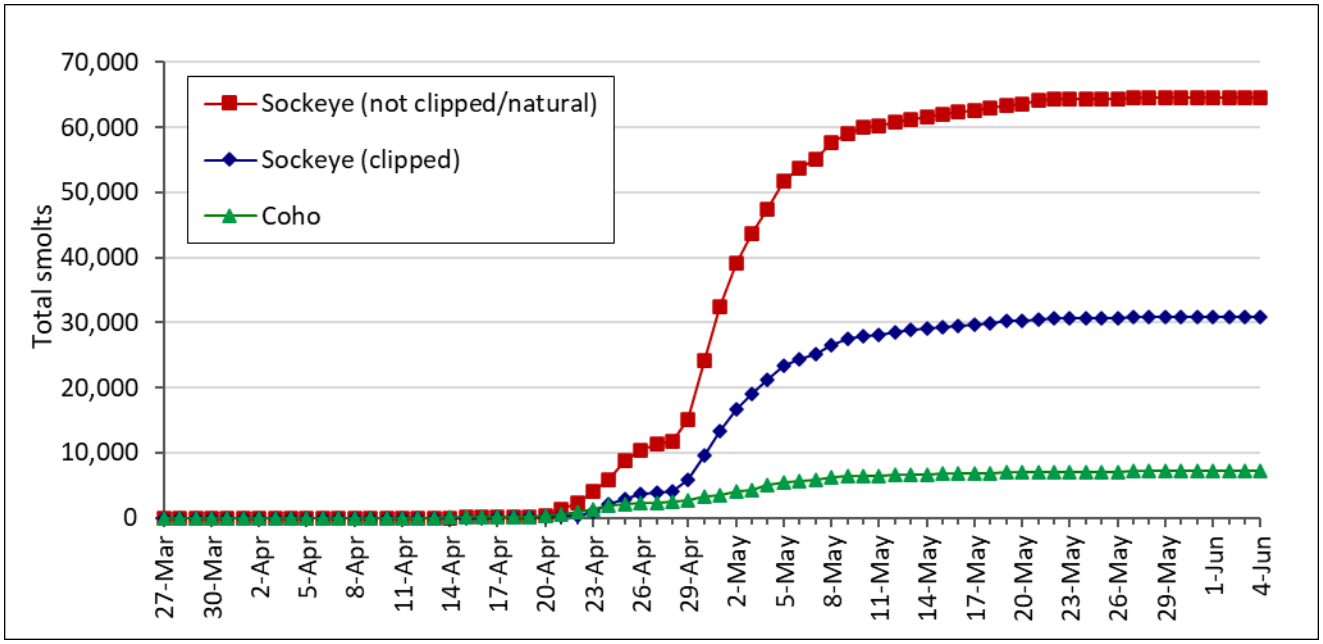

Figure 2: Cumulative sockeye and coho smolt counts 2026.

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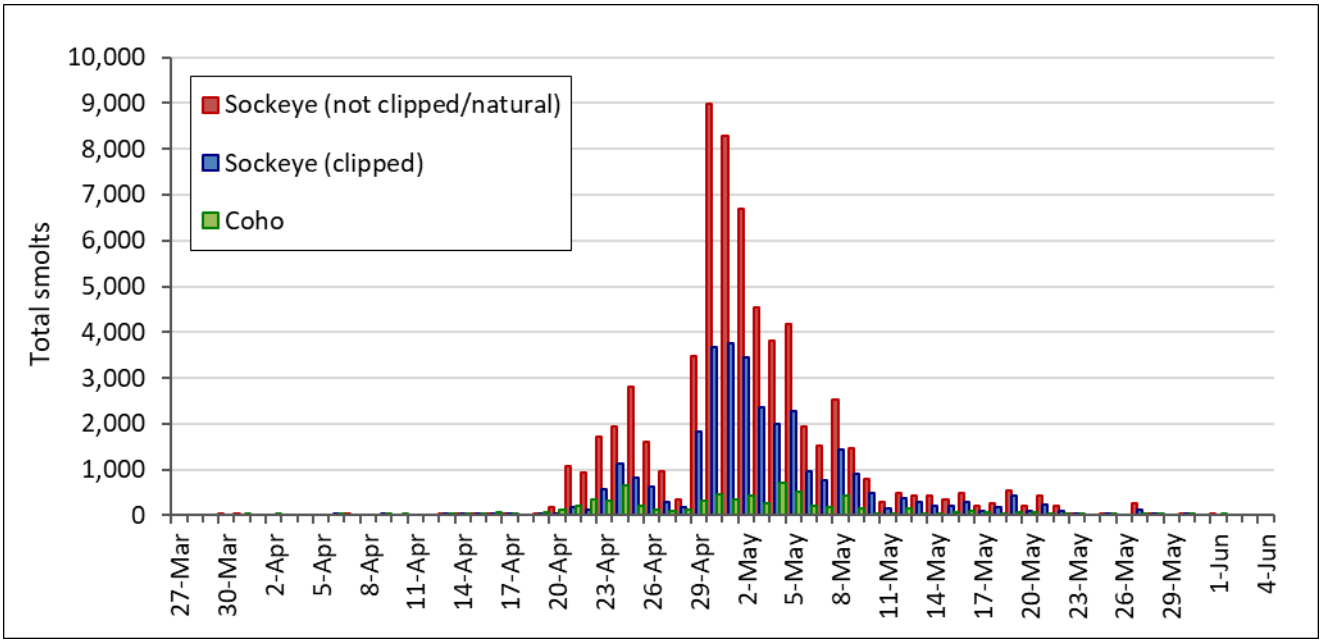

Figure 3: Daily sockeye and coho smolt counts 2026.

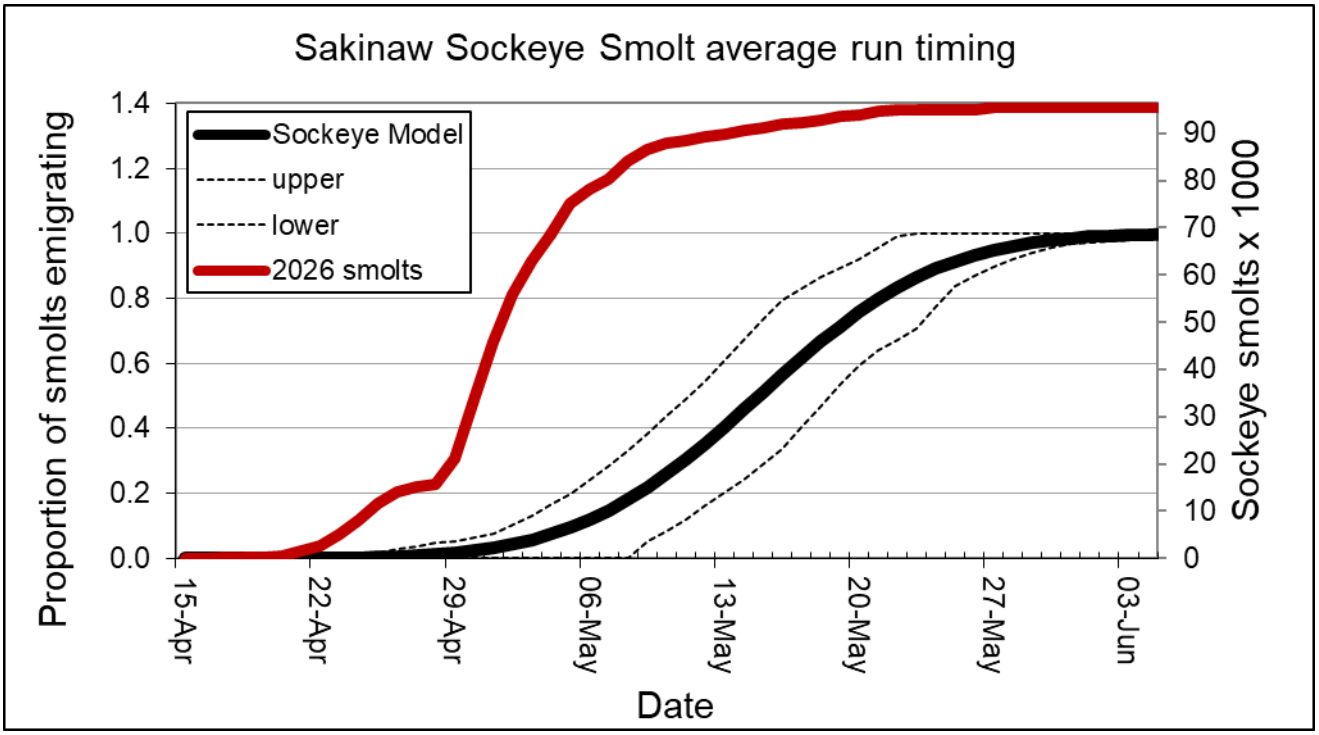

Figure 4: Average proportion of Sakinaw sockeye smolt emigration timing by date (natural and hatchery smolts combined), with one standard deviation limits (upper and lower, left axis) and current 2026 total sockeye smolt migration by date (right axis). The model is scaled to the 68,816 total sockeye smolt forecast on the right axis (combined natural and hatchery smolts) based on average run timing (left axis).

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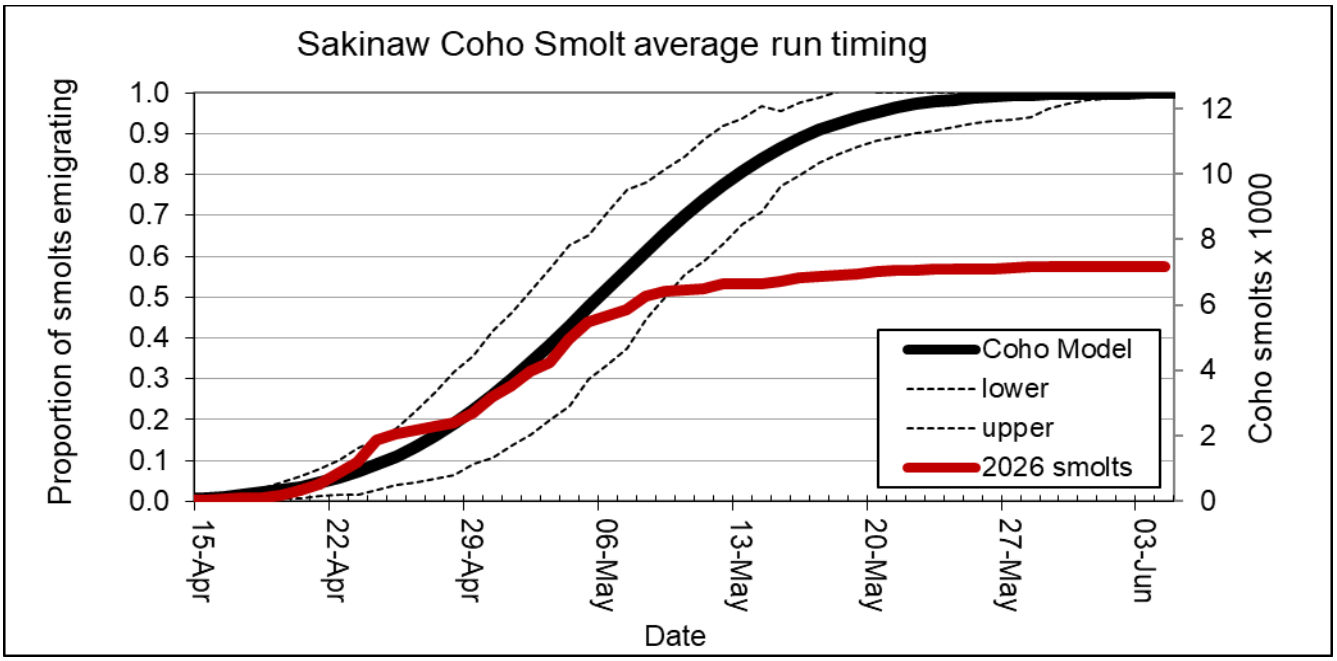

Figure 5: Average proportion of Sakinaw coho smolt emigration timing by date, with one standard deviation limits (upper and lower, left axis) and current 2026 total coho smolt migration by date (right axis). The model is scaled to the 12 year average on the right axis (2013-2024) based on average run timing (left axis).

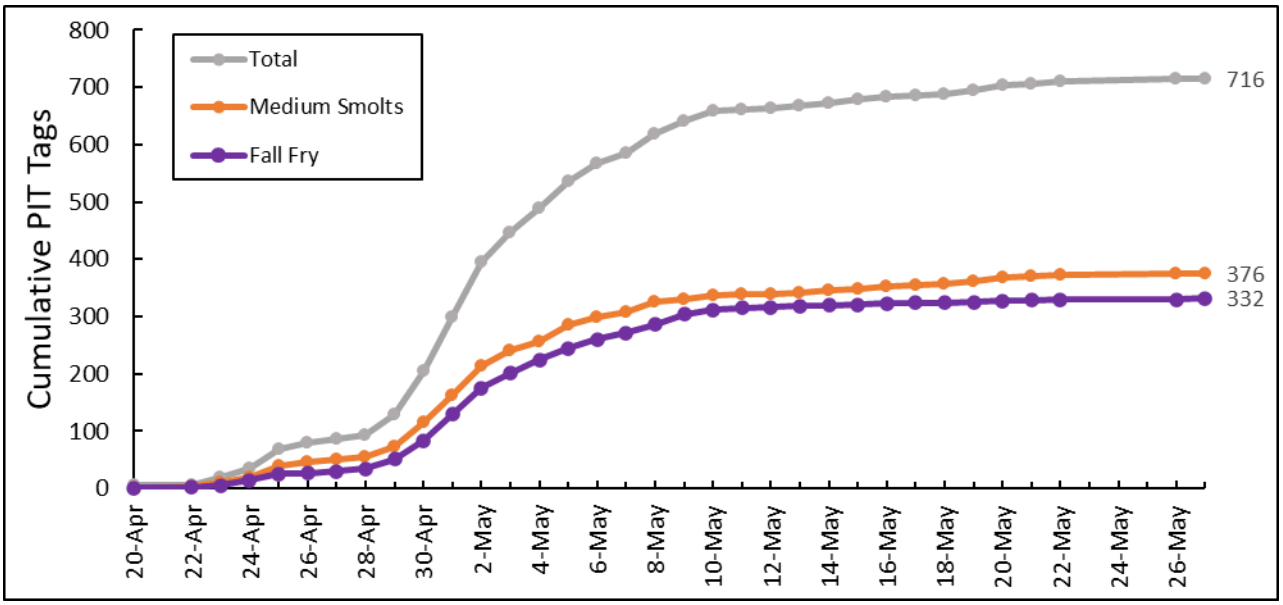

Figure 6: PIT tagged Sockeye smolts detected leaving Sakinaw Lake at the counting fence in 2026. A total of 1.52% of clipped fall fry and 3.45% of clipped spring smolts (Medium) released from brood-year 2024 were PIT tagged. There have been 8 PIT tags detected from brood-year 2023 releases, which are included in the total.

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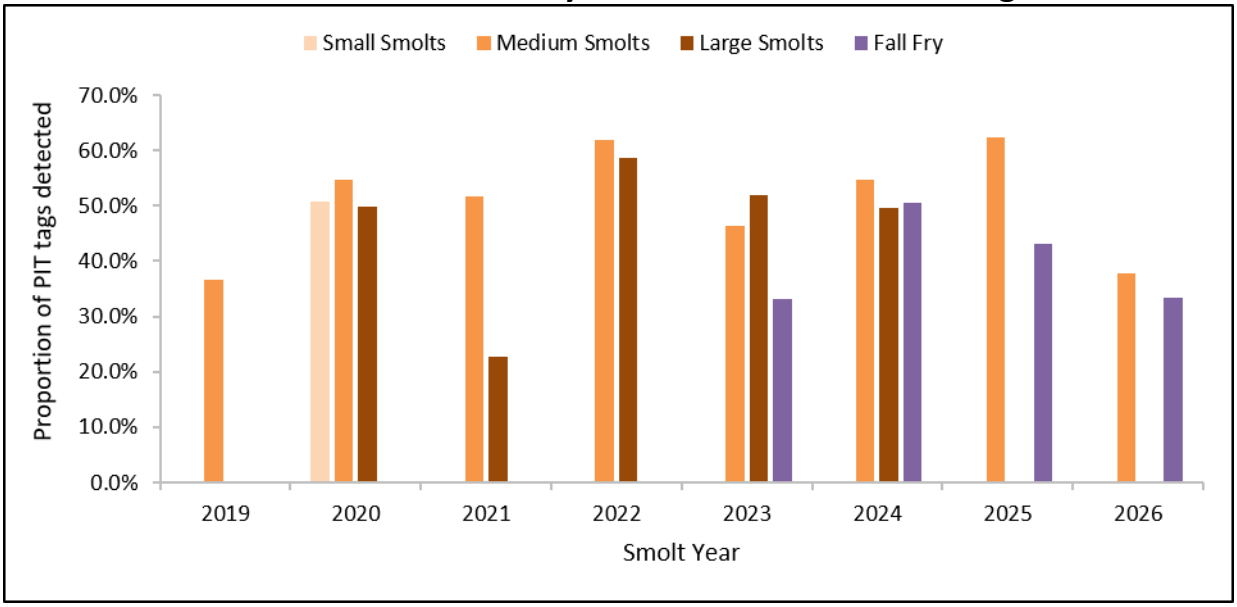

Figure 7: Proportion of PIT tags detected outmigrating at the fence from the different release groups of smolts (small, medium and large) and fall fry since smolt year 2019.