



South Coast Salmon Bulletin #1 September 26, 2024 Escapement Update Chum – Strait of Georgia Stock Assessment

Overview

This bulletin provides weekly updates on Chum returns in the Strait of Georgia. The bulletin briefly describes assessment methods and escapement targets for key Chum spawning streams within the strait. In-season cumulative escapement updates for these key streams are plotted relative to pre-season expectation, run timing variability and escapement targets. A productivity analysis was conducted in 2014 in order to review escapement targets in the major chum systems of the Strait of Georgia. The results of this analysis have led to new interim escapement targets in Big Qualicum, Little Qualicum and Nanaimo Rivers.

There is a very high uncertainty with chum forecasts in the Strait of Georgia, especially due to the **decreasing marine survival observed in recent years (2017-2023)**, resulting in low returns. Forecasts shown in this bulletin use methodology consistent to previous years, but if conditions and survival are the same as in 2023, we could expect lower returns. Table 1 is a summary of the forecast information below, with our consistent forecast ranges, and an adjusted “Like Last Year” model.

Mid-Vancouver Island

The Puntledge, (Big) Qualicum and Little Qualicum rivers are combined into the mid-Vancouver island chum aggregate for management purposes. The escapement target for the aggregate is 230,000. The terminal chum forecast for the aggregate for 2024 is a range from 50,600 to 75,800. Cumulative returns to the mid-Vancouver island chum aggregate are provided in **Figures 1, 2 and 3** along with the run timing curves.

Puntledge River (Figure 1):

Escapements are estimated by hatchery staff. Estimates are derived from a combination of assessment methods including hatchery counts, above fence bypass counts and below fence swim surveys. The Puntledge River Chum escapement target is 60,000. As of 24 September, **zero Chum** have been counted in the river.

(Big) Qualicum River (Figure 2):

Escapements are estimated by the Big Qualicum Hatchery. These estimates are a combination of daily fence counts, into the spawning channel and a below fence visual estimate. The Big Qualicum interim escapement target is 85,000. As of 25 September the hatchery has reported **3 chum** have migrated above the fence. The hatchery will be sorting more fish today.

Little Qualicum River (Figure 3):

Escapement estimates provided by the Little Qualicum Hatchery and Stock Assessment. These estimates are a combination of counts of the spawning channel and a river estimates from swim counts. The Little Qualicum interim escapement target is 85,000. A swim survey on 19 September estimated **zero chum** in the lower river. The next swim survey is planned for today.

Sliammon Creek

Sliammon Creek fence is operated by Tla’amin First Nation. The Sliammon median limit reference point is 11,000 and the 2024 pre-season expectation range is 5,800 to 8,600 (Figure 4). As of 23 September there has been **zero Chum** observed.



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Nanaimo River

Nanaimo River assessments include swims by Nanaimo River Hatchery staff and a sonar counting system (ARIS) in the lower river. The ARIS project is in collaboration with Snuneymuxw First Nation. The Nanaimo River interim escapement target is 40,000 and the 2024 terminal return expectation range is 38,400 to 57,600. Average run timing curve is shown in Figure 5. On 23 September the swim survey observed **9 chum**.

Cowichan River

Chum escapements to the Cowichan River have been estimated using fence counts and a DIDSON sonar system in the lower river in a collaborative project with DFO stock assessment and Cowichan Tribes since 2006. The Cowichan River escapement target is 160,000 and the 2024 pre-season expectation range is 106,900 to 160,300 (Figure 6). There have been **4 chum** past the counting fence as of 25 September at 8:00 AM.

Goldstream River

Weekly stream walks are conducted on Goldstream River by Goldstream Hatchery staff to estimate Chum escapement. The Goldstream escapement target is 15,000 and the 2024 pre-season expectation range is 14,700 to 22,100. Bi-weekly stream walks will occur every Saturday and Wednesday each week starting in October. In-season counts will be displayed in Figure 7 once stream walks commence.

Other systems

Enumeration of chum escapement occurs intermittently on many other river systems tributary to the Strait of Georgia and Southern Vancouver Island area. Unfortunately data for these systems are, in general, too limited for visual presentation in this bulletin. Forecasts are now calculated for Theodosia River, Okeover Creek and Lang Creek and are shown in Table 1. An aggregate forecast for the Jervis/Narrows Inlet Rivers is also shown in Table 1 which includes Tzoonie (Narrows Inlet), Deserted, Brittain, Vancouver and Skwawka Rivers (Jervis Inlet).

Lang Creek fishway counts total **25 Chum** as of 23 September. Helicopter surveys for Chum in Jervis and Narrows Inlets will start mid-October. Sooke River swim surveys observed 390 Chum on 24 September.

Strait of Georgia Stock Assessment is also distributing an Escapement Bulletin; separate to this Chum Bulletin, which outlines all in-season salmon escapement data to date. Contact us if you are interested in receiving this bulletin as well and we will add you to the distribution list.

For additional information on the Chum escapements in the Strait of Georgia please contact:

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Table 1. Forecast Expectations in the Strait of Georgia for 2024 using methodology consistent with previous years (contributing brood year escapements and a historical marine survival) and an adjusted “Like Last Year” model expectation due to a decreasing marine survival.

| Forecast 2024 | Recent Escapements | | | Forecast (Terminal) | | Escapement Target | 2023 Escapement | Adjusted "Like Last Year" |
|-----------------------|--------------------|--------------|--------------|---------------------|---------|-------------------|-----------------|---------------------------|
| | 2021 (Age 3) | 2020 (Age 4) | 2019 (Age 5) | Low | High | | | |
| Mid-Vancouver Island | 45,000 | 62,500 | 18,200 | 50,600 | 75,800 | 230,000 | 23,755 | 39,900 |
| - Puntledge | 17,200 | 27,700 | 6,500 | 21,800 | 32,600 | 60,000 | 11,989 | 18,500 |
| - Big Qualicum | 14,300 | 11,600 | 2,000 | 10,200 | 15,400 | 85,000 | 6,336 | 14,500 |
| - Little Qualicum | 11,900 | 24,500 | 9,700 | 19,200 | 28,800 | 85,000 | 5,430 | 8,600 |
| Jervis/Narrows Inlets | 2,900 | 28,100 | 6,600 | 19,800 | 29,800 | 85,000 | 9,869 | 20,400 |
| Nanaimo River | 26,900 | 47,600 | 21,900 | 38,400 | 57,600 | 40,000 | 22,219 | 23,800 |
| Cowichan River | 23,500 | 153,600 | 94,900 | 106,900 | 160,300 | 160,000 | 31,095 | 32,900 |
| Goldstream River | 9,400 | 16,800 | 21,500 | 14,700 | 22,100 | 15,000 | 4,238 | 2,600 |
| Sliammon Creek | 8,700 | 6,800 | 1,800 | 5,800 | 8,600 | 11,000* | 5,483 | 8,200 |
| Theodosia River | 3,900 | 19,400 | 2,700 | 14,100 | 21,100 | 21,000 | 6,198 | 15,200 |
| Okeover Creek | 60 | 2,800 | 100 | 1,800 | 2,800 | 6,000 | 1,444 | 5,100 |
| Lang Creek | 1,600 | 2,400 | 1,000 | 1,300 | 1,900 | 2,500 | 2,088 | 1,400 |

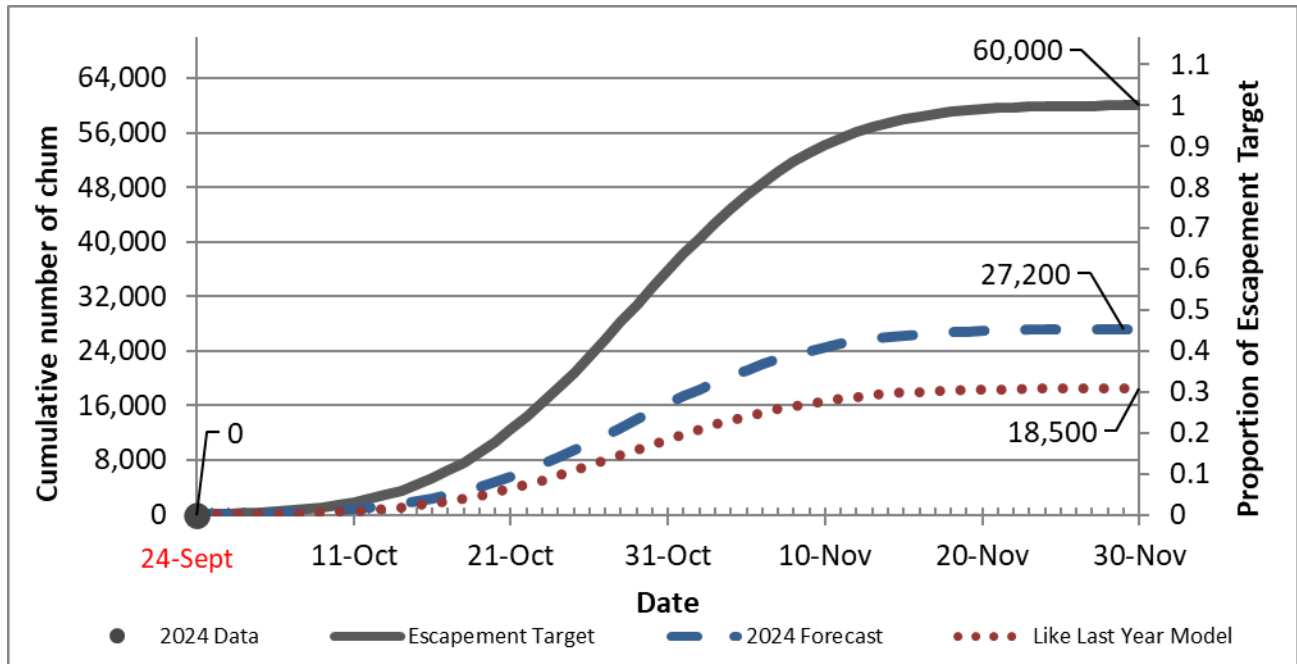


Figure 1. Expected and actual cumulative returns to Puntledge River, 2024.



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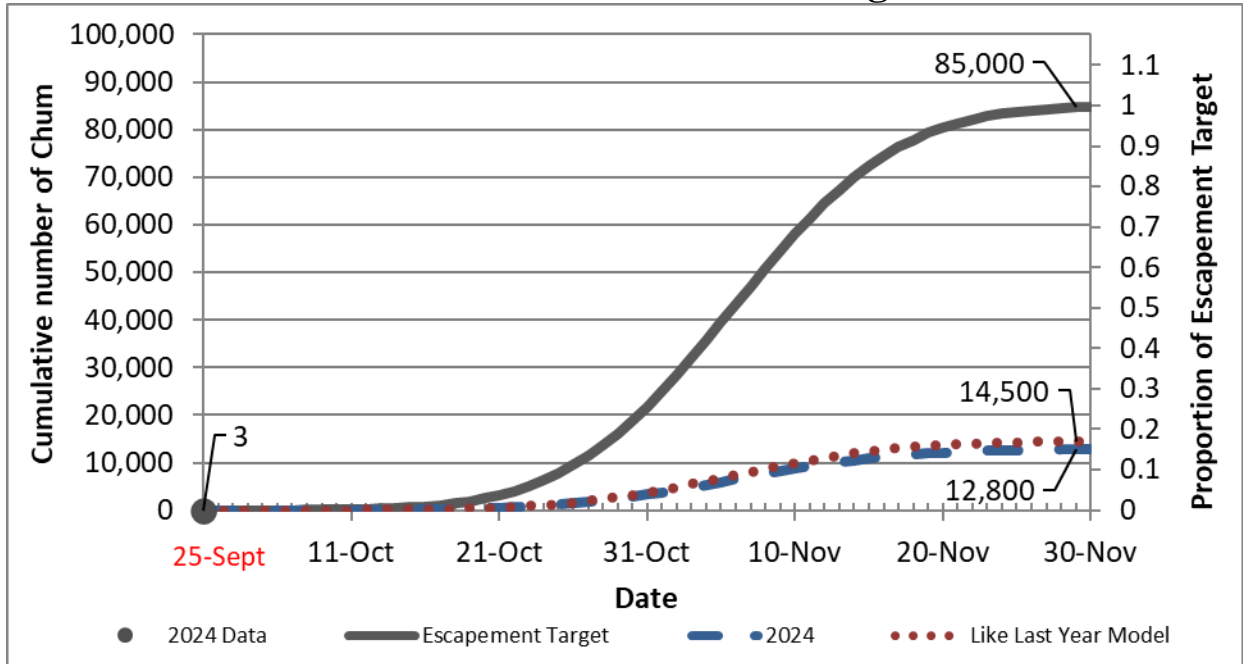


Figure 2. Expected and actual cumulative returns to Big Qualicum River, 2024

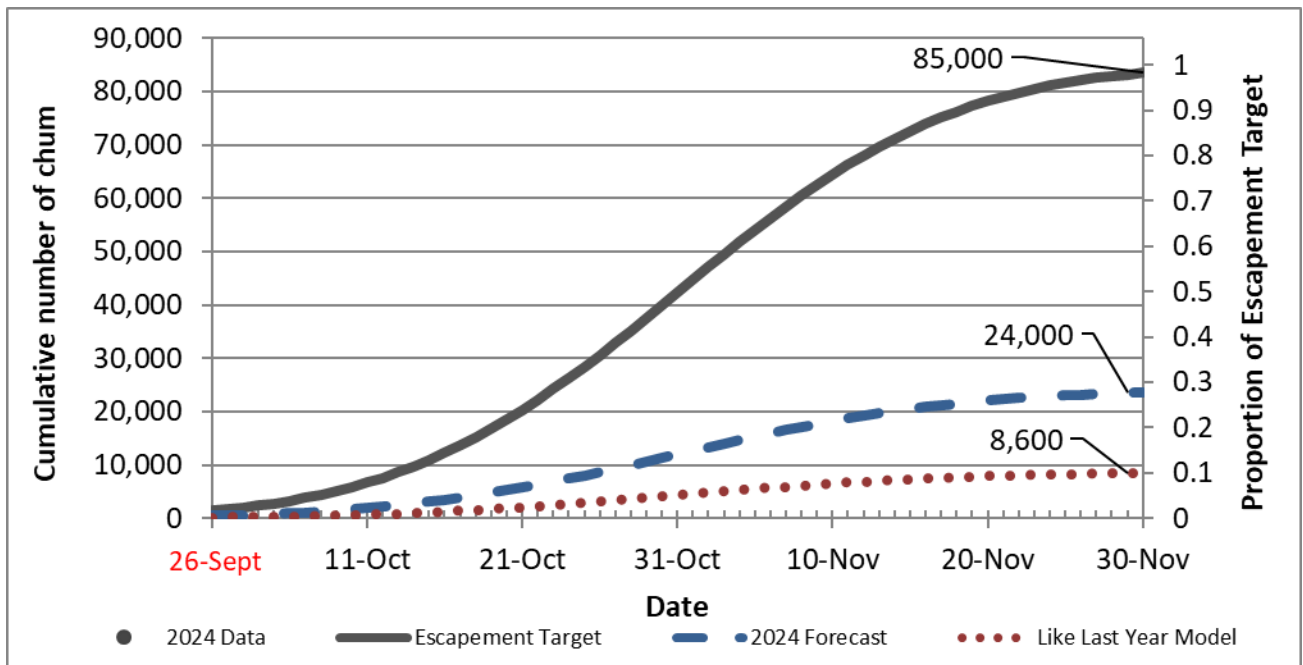


Figure 3. Expected and actual cumulative returns to Little Qualicum River, 2024



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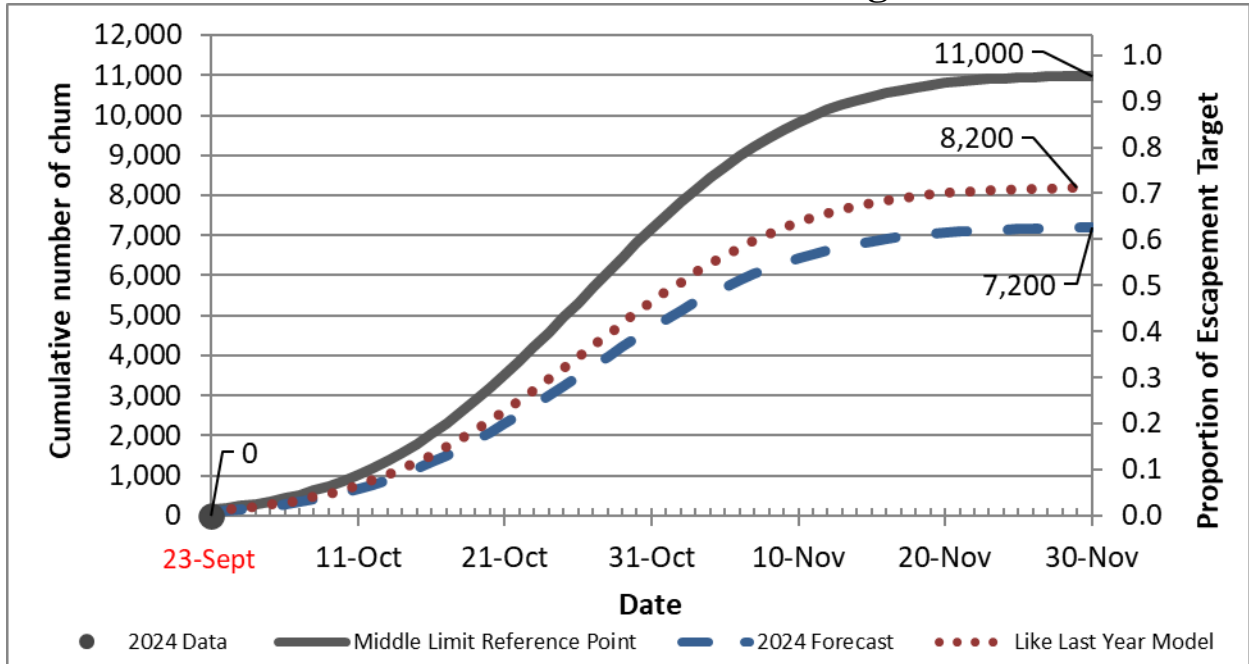


Figure 4. Expected and actual cumulative returns to Sliammon Creek, 2024.

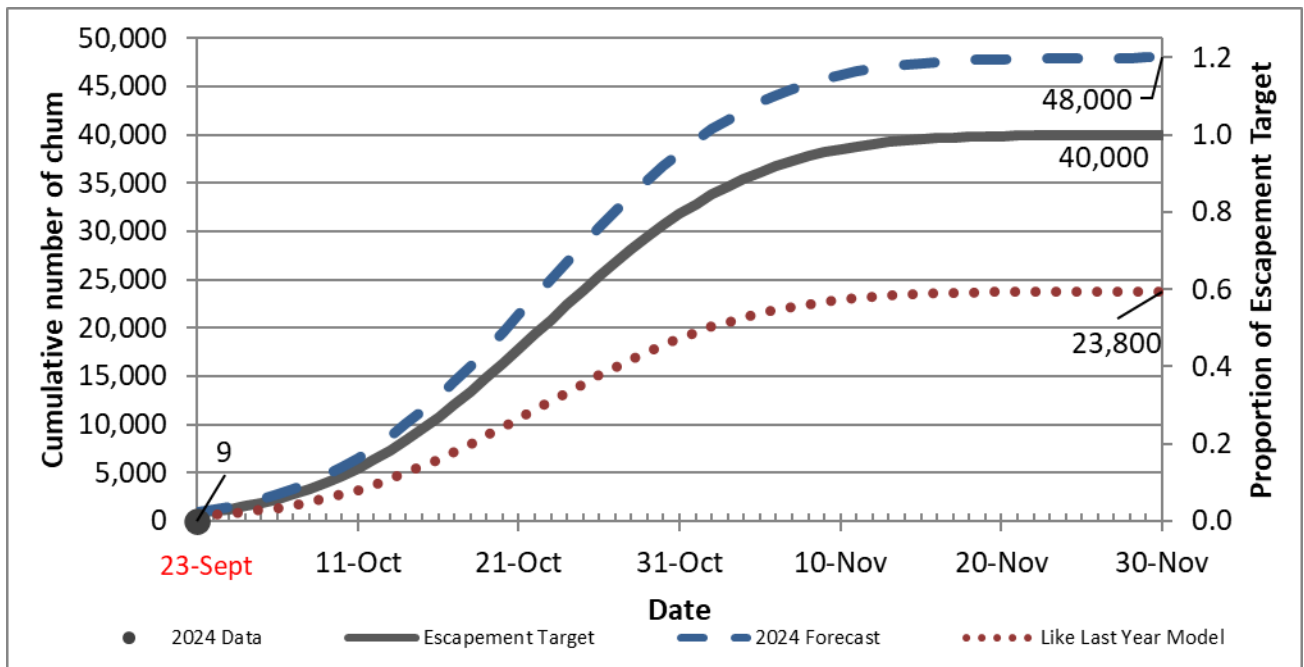


Figure 5. Expected and actual cumulative returns to Nanaimo River, 2024.



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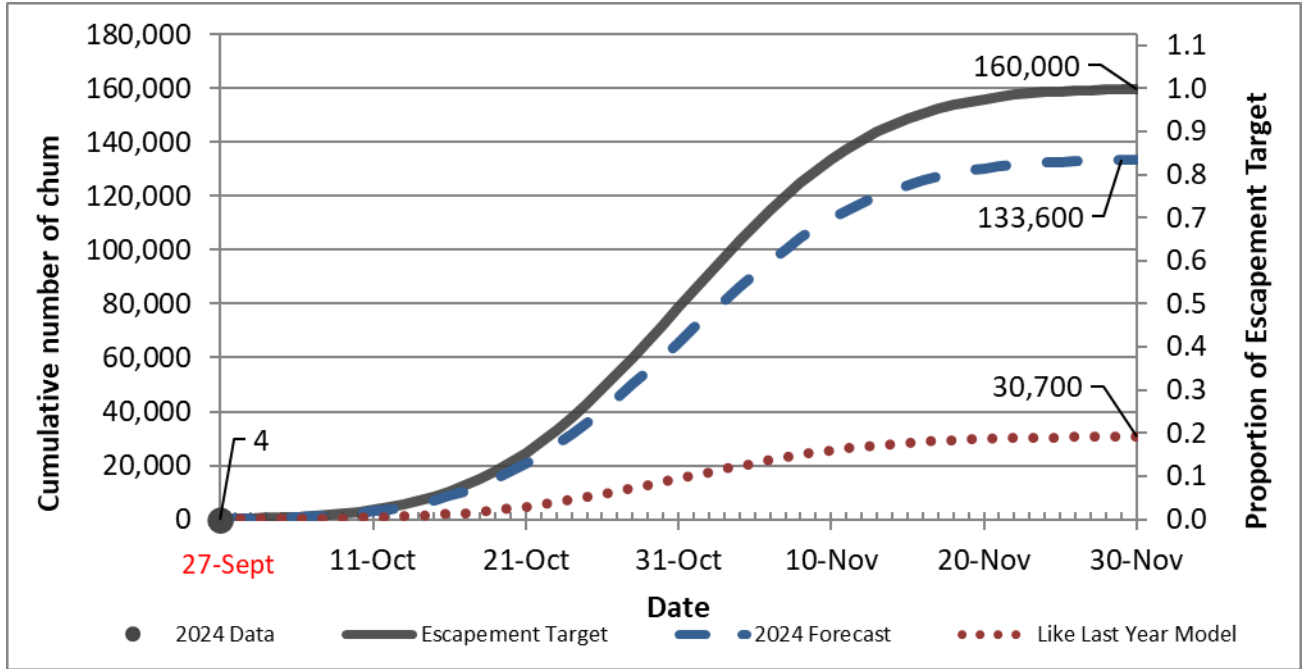


Figure 6. Expected and actual cumulative returns to Cowichan River, 2024.

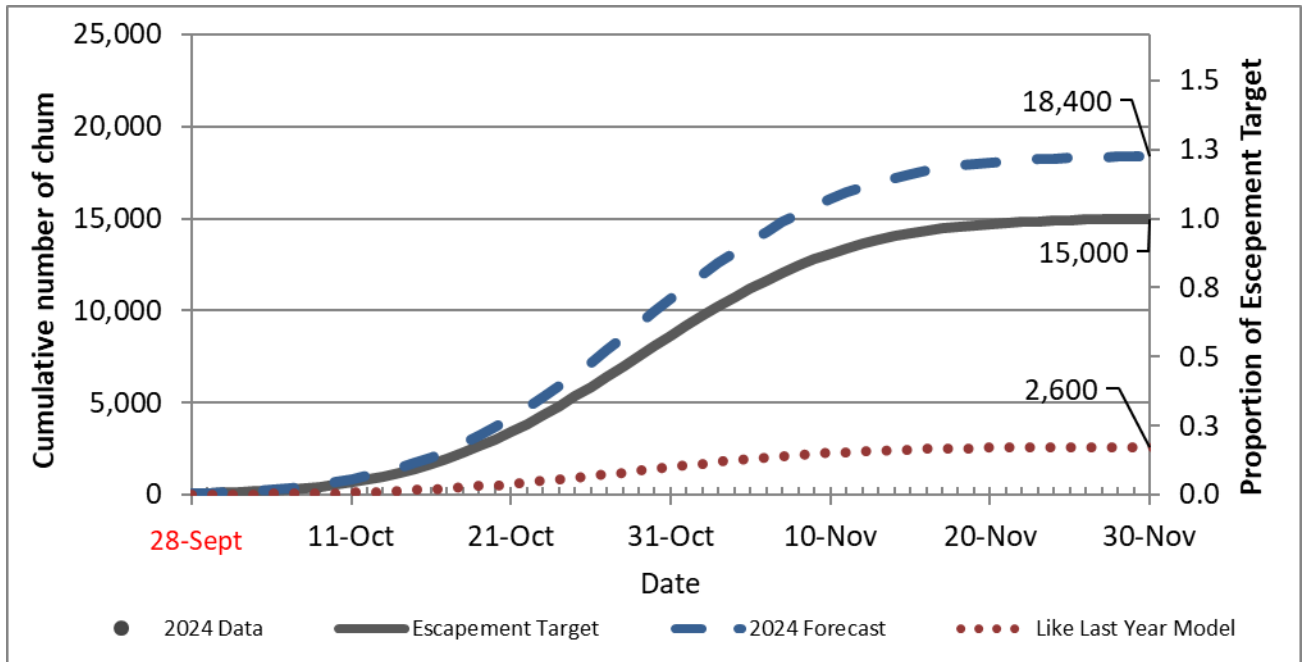


Figure 7. Expected and actual cumulative returns to Goldstream River, 2024.