



# Fraser Chinook Summer 5<sub>2</sub> Information Package

This summary was developed with the intent to be used to inform discussions of draft options for 2026 Fraser Chinook fishery management regarding the Summer 5<sub>2</sub> stock management unit. These are summaries from the Fraser Salmon Management Board Joint Technical Committee on the best available information, uncertainties or data deficiencies, and current understanding of important aspects of fishery management.

Fraser Salmon Management Board Joint Technical Committee

Technical Memo 2025-05 v3



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## Executive Summary

This document summarizes some of the available biological and fisheries-related information on Summer 5<sub>2</sub> Chinook Salmon, mainly to guide the development of management objectives and actions for 2026. This document is an updated version from that of 2025. The updates include the addition of 2024 data to each of the time series. Additional updates include:

- The application of genetic stock ID information to the Southern B.C. marine recreational fisheries was updated with the latest FMI analysis, which impact results relative to previous years. JTC reviewed a comparison of the results with the previous and updated application for 2019-2023 and included comments in the FMI section.
- New figures (Figures 4 through 6) were added to show trends in the marine recreational creel survey results.
- Recommendations from research published in 2025 were added to the Release Mortality section.
- Appendix C updated to include creel data from 2009-2013.
- Appendix E was added to present the number of genetic stock identification samples from mark selective fisheries pilots conducted in 2021-2024.

### 1. Escapement data, trends, and conservation status

- All six Designatable Units (DUs) within the Summer 5<sub>2</sub> Stock Management Unit (SMU) have been assessed as Data Deficient, Red, or Amber by Fisheries and Oceans Canada’s (DFO) Wild Salmon Policy and as Threatened or Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) (Table 1).

Table 1. A list of Conservation Units (CUs) within the Fraser Summer 5<sub>2</sub> Chinook Stock Management Unit (SMU) with corresponding Designatable Units (DUs) and statuses from the most recent status assessment processes. Maps showing CU locations and status are in [Appendix A](#). In the CU names, 1.3 = 5<sub>2</sub>. CWT = Coded-Wire Tag. Chilko River CWT indicator is still being developed.

CU name	CWT indicator	CU	DU	WSP Integrated Assessment (2016)	COSEWIC (2018/2020)
Lower Fraser - Upper Pitt SU 1.3	None	CK-05	DU4	DATA DEFICIENT	Endangered
Lower Fraser River SU 1.3	None	CK-06	DU5	DATA DEFICIENT	Threatened
Middle Fraser River-Portage FA 1.3	None	CK-09	DU8	RED	Endangered
Middle Fraser SU 1.3	Chilko River	CK-11	DU10	AMBER	Threatened
South Thompson SU 1.3	None	CK-14	DU13	RED/AMBER	Endangered
North Thompson SU 1.3	None	CK-19	DU17	RED	Endangered



- Based on the July 2025 version of the Fraser Chinook run reconstruction (RR), escapement of the Summer 5<sub>2</sub> SMU generally increased until 2003, then declined rapidly to a minimum abundance of 8,998 in 2018. Since 2018, abundance has increased, reaching 39,158 in 2022 (Figure 1).
- Recent trends in total escapement for Summer 5<sub>2</sub> Chinook SMU cannot be determined at this time due to high variability year to year, but generally escapements are low relative to historic abundance. Variability includes some positive signals but it's not yet possible to infer any directional trends.
- Changes in escapement should not be solely interpreted as changes in productivity, as abundance estimates for the management unit are highly variable from year to year. This variability can be attributed to a combination of complex factors that include the 2019-2024 fishery management changes, shifts in hatchery production, variation in environmental conditions, measurement error (catch and escapement inputs), the limitations of assessment methods (index vs exploitation rate estimates), and fishery impacts.
- Escapements of Summer 5<sub>2</sub> stocks did not trend in a similar fashion across the SMU (Figure 2). For 2019-2024, increases in estimated SMU escapements were driven by four aggregates: Chilko, Chilliwack Summer (hatchery stock), Clearwater, and North Thompson. For the remaining 22 stocks, they either maintained similar escapements or decreased compared to the 2014-2018 base period average (see [Appendix D](#)). The available habitat for each DU can differ immensely, which is reflected in the differences in relative escapement shown in Figure 2.
- 2024 is the first year that returns from the brood year impacted by the 2019 Big Bar landslide were observed, so expectations for the 2024 return were low.
- Future marine conditions are uncertain, and variation in environmental conditions are expected to increase. More extremes in weather conditions are expected. Variations in salmon marine survival are affected by both freshwater and ocean conditions. Some variation is also caused by anthropogenic factors and geological events.
  - For instance, the Chilko River Fraser Summer 5<sub>2</sub> CU was impacted by both the 2019 Big Bar rockslide and the 2024 T̓ilhqox landslide in the Chilcotin River. The Chilcotin River may continue to experience sloughing and slide events until the area stabilizes. The extent and duration of these impacts on Chinook are still being monitored, as are environmental impacts induced by climate changes.

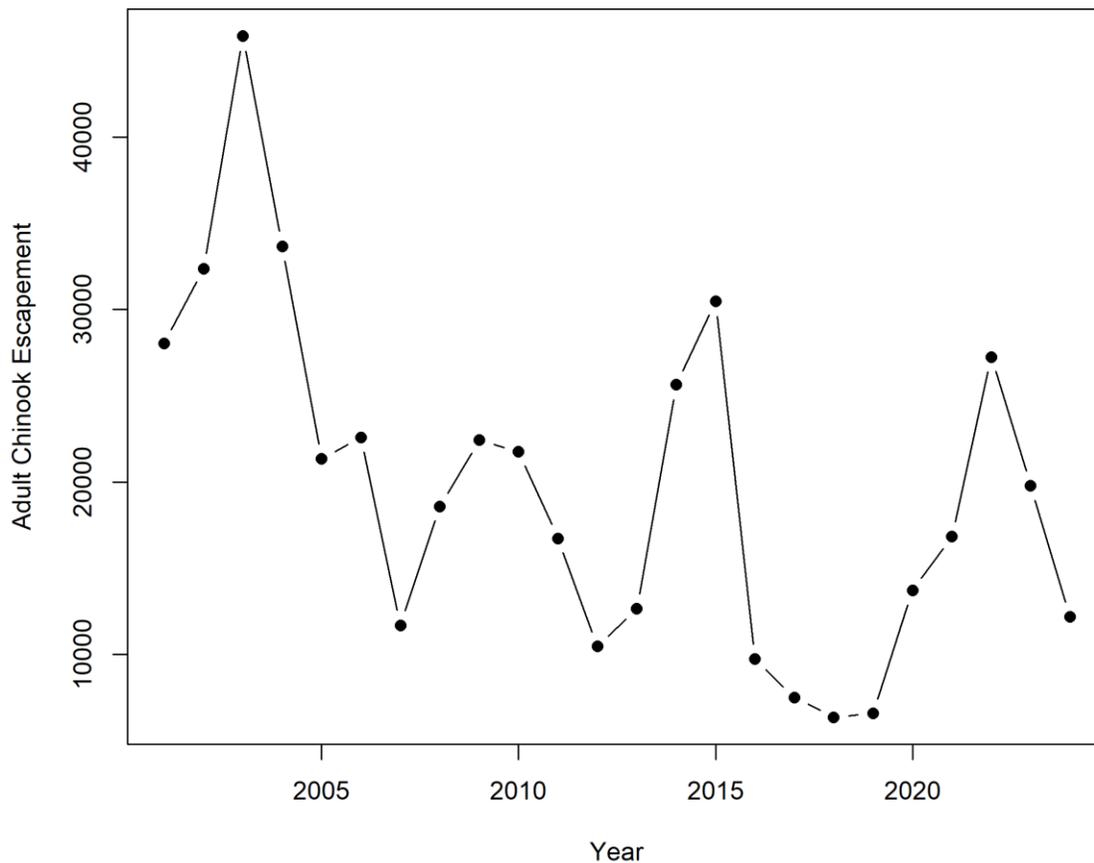


Figure 1. Time series of escapement for Fraser Summer 5<sub>2</sub> Chinook, 1995-2024. Based on Fraser Chinook Run Reconstruction outputs of July 2025. Note that the actual number of salmon spawners does not necessarily equal the escapement estimate, with spawning production also influenced by sex ratios, spawner age, and condition.

- The most recent Recovery Potential Assessments (RPAs) (Doutaz et al. 2021, Dionne et al. 2023) for Fraser Chinook identified survival and recovery targets for each of the Summer 5<sub>2</sub> DUs (Table 2). A DU that reaches survival or recovery targets does not necessarily correspond to a change in COSEWIC or WSP status of the DU. These targets only serve to provide guidance for fisheries management actions. Other factors are also considered as part of recovery (e.g., run size, expansion of distribution, productivity metrics, genetic diversity, and threat mitigation).
  - Additional science and technical advice lead by DFO Science is being reviewed through the Canadian Scientific Advisory Secretariat process that periodically provides updates on Summer 5<sub>2</sub> Chinook stock status. The next report should be finalized in 2026. Terms of reference can be viewed here: [https://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2024/04\\_29-05\\_03d-eng.html](https://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2024/04_29-05_03d-eng.html)



Table 2. Survival and recovery targets for each of the Summer 5<sub>2</sub> Designatable Units (DUs) and recent escapement trends for each.

Designatable Unit	Survival Target (COSEWIC)	Recovery Target (COSEWIC/WSP)	Escapement	
			2019-2024 Average	2024
DU4 (LFR-Upper Pitt)	1,000	1,000	41	15
DU5 (LFR-Summer)	1,000	1,285	46	23
DU8 (MFR-Portage)	1,000	1,358	78	54
DU10 (MFR-Summer)	5,878	25,260	10,791	8,600
DU13 (STh-Stream-Summer)	1,326	5,257	1,363	705
DU17 (NTh-Summer)	1,824	7,773	3,738	2,781
Other Summer 5 <sub>2</sub> stocks (14 stocks)	n/a	n/a	8,658	6,875

- Escapement survey methods for Summer 5<sub>2</sub> rely mostly on mark-recapture operations and visual surveys. From 2010 to 2024, the escapement estimation methods for total abundance consisted of about 35% mark-recapture, 8% high effort visual survey (5+ surveys), 39% moderate effort visual survey (1-4 surveys), 11% infilled or opportunistic spot-checks, and 7% hatchery count. Mark-recapture and high-effort visual survey (fence/fishway) methods provide total population estimates that are considered as being more reliable; however, the uncertainty in various estimates can affect the Run Reconstruction output of total return to the Fraser, but this issue has not yet been investigated.
- Some escapement infilling is conducted for annual stock assessments when stream-specific escapement estimates are unavailable. The amount of infilling varies depending on the year. For Summer 5<sub>2</sub>, from 2002 to 2023 an average of 17% (range 4%-40%) of the streams had escapements infilled, and 15% (range 0.2%-31%) of total escapement was infilled. Some of the initial infilling procedures were documented by English et al. 2007, but not most of those used in recent years.

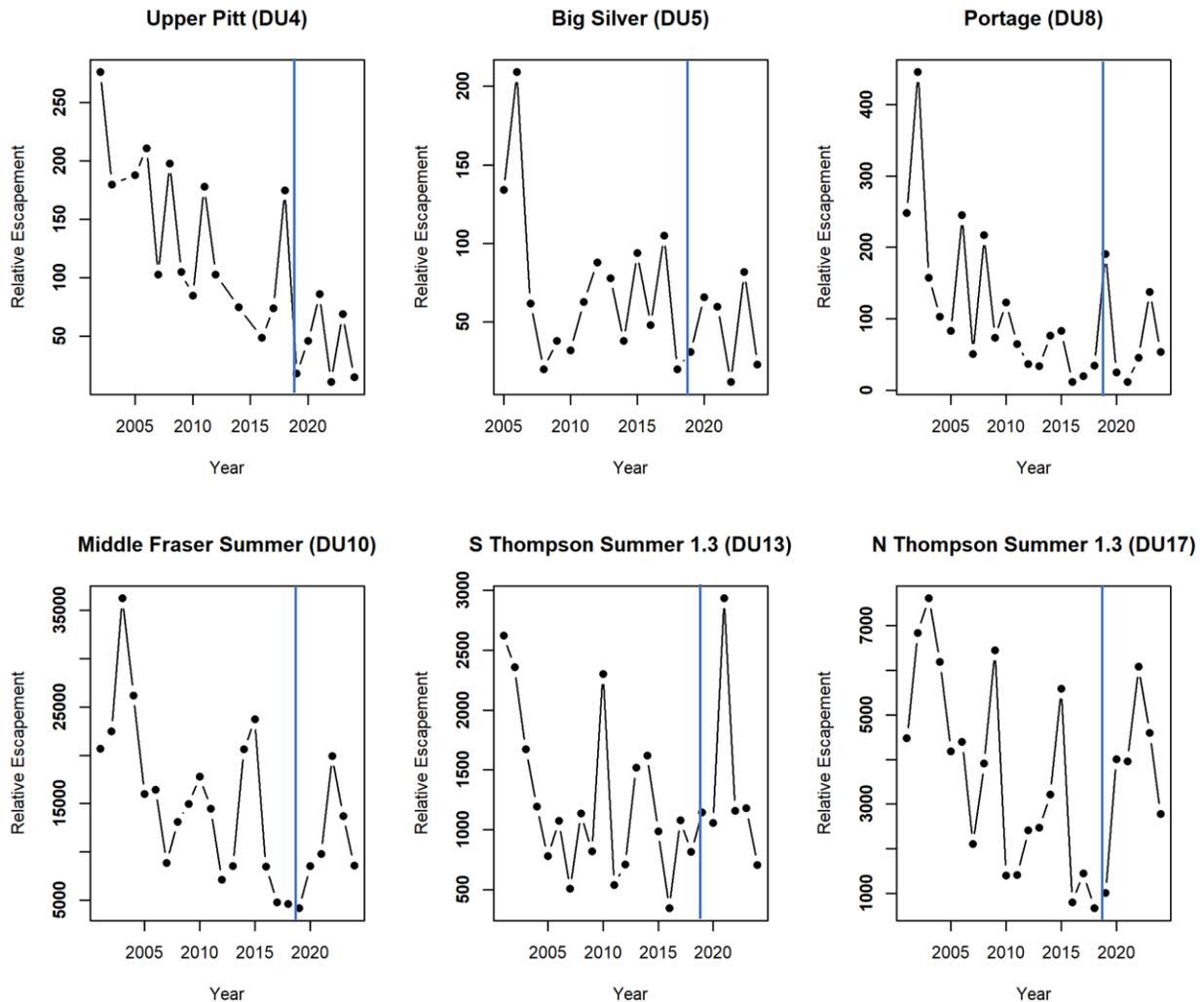


Figure 2. Time series of relative escapement for Fraser Summer 5<sub>2</sub> Chinook Designatable Units (DUs), 2002-2024. Blue lines delineate the two FMI review periods, pre-2018 and 2019-2024. Note the Y-axis scales are different among the DUs to enhance the visual interpretation of trends.

## 2. Fishery Mortality Index outputs and trends

- The Fishery Mortality Index combines data from the Fraser River Run Reconstruction with catch estimates by stock grouping based on genetic analyses of catch bio-samples from marine mixed-stock fisheries. The basis of the FMI method was described by Dobson et al. (2020). It provides crude estimates of some fishery impacts that differ from those of the Chinook Technical Committee’s Exploitation Rate Analysis (CTC ERA) based on coded-wire tag (CWT) recoveries. The FMI is used because most Summer 5<sub>2</sub> stocks are not CWTaged.
  - One CWT indicator stock program in place for Fraser Summer 5<sub>2</sub> Chinook is still in development (i.e., Chilko River), though preliminary estimates are expected in 2026. Additional indicator stocks may also be needed for different DUs. At this stage, the



annual data available that accounts for a portion of domestic fishery impacts is the FMI.

- Data inputs to the analysis include escapement estimates (some infilled), kept catch, legal-size released catch mortalities (in Southern BC recreational fisheries), and GSI analyses of catch bio-samples. Fishery catch data not currently included in the analysis are from US fisheries, North and Central Coast Individual Stock Based Management (ISBM) fisheries and bycatch in groundfish trawl fisheries.
  - Further details on the methodology and uncertainties are provided in DFO (2025).
  - NEW for 2024: the application of genetic stock ID information to the Southern B.C. marine recreational fisheries was updated. In general, the new procedure consolidates biodata from different sources and provides slightly lower FMI figures for the Summer 5<sub>2</sub> SMU. The largest differences between estimates are for southern BC marine recreational fisheries. Overall trends in the run size, mortalities, and proportion of impact among fisheries are still similar to those obtained previously.
  - Full details of the FMI methodology will be documented in a Technical Report expected to be available during 2026.
- The Fishery Mortality Index appears to be lower during 2019-2024 compared to the base period 2014-2018, though the 2024 FMI (14.7%) was higher than during the previous 4 years (Table 3) and exceeded the 2024 FSMB objective to be within the 10-14% range.
- The average run size during 2014-2018 was 28,707, and 28,150 for 2019-2024, but 2024 run size was well below
- Large variation in escapement and run sizes occurred during the past 3 cycles (Figure 3). The 2015 and 2022 run sizes were relatively large compared to those in 2012-2013, 2016-2019 and 2024.
- Based on the RPA recovery targets and the escapement and run size estimates of many Summer 5<sub>2</sub> SMU tocks, the JTC recommends maintaining the fishery management objectives that prioritize conservation and recovery.



Table 3. Summary Fishery Mortality Indices (FMIs) for the Summer 5<sub>2</sub> Chinook SMU. Refer to Known Uncertainties section of the Fraser Chinook Fishery Mortality Index Summary, 2014-2024 memo (DFO 2025), which details sources of uncertainty and analysis assumptions that affect mortality estimates.

	<b>AVERAGE 2014-2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>AVERAGE 2019-2024</b>
<b>RECREATIONAL</b>								
In-river	2.5%	1.7%	2.3%	1.5%	1.3%	1.6%	1.5%	1.6%
Marine	8.6%	6.0%	2.1%	3.7%	2.9%	3.8%	7.9%	4.1%
<b>Total</b>	<b>11.1%</b>	<b>7.7%</b>	<b>4.4%</b>	<b>5.2%</b>	<b>4.2%</b>	<b>5.4%</b>	<b>9.4%</b>	<b>5.7%</b>
<b>COMMERCIAL/EO</b>								
In-river	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Marine	4.2%	0.7%	0.1%	0.4%	0.3%	0.3%	0.6%	0.4%
<b>Total</b>	<b>4.6%</b>	<b>0.7%</b>	<b>0.1%</b>	<b>0.4%</b>	<b>0.3%</b>	<b>0.3%</b>	<b>0.6%</b>	<b>0.4%</b>
<b>TEST</b>								
In-river	1.0%	0.9%	1.2%	1.4%	0.9%	1.0%	0.7%	1.0%
Marine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>1.0%</b>	<b>0.9%</b>	<b>1.2%</b>	<b>1.4%</b>	<b>0.9%</b>	<b>1.1%</b>	<b>0.7%</b>	<b>1.0%</b>
<b>FIRST NATIONS</b>								
In-river	7.3%	6.4%	7.0%	5.0%	4.8%	2.1%	3.3%	4.6%
Marine	0.7%	0.4%	0.2%	0.9%	0.3%	0.6%	0.6%	0.5%
<b>Total</b>	<b>7.9%</b>	<b>6.8%</b>	<b>7.2%</b>	<b>5.9%</b>	<b>5.1%</b>	<b>2.8%</b>	<b>4.0%</b>	<b>5.1%</b>
<b>Total CDN Fishing Mortality Index</b>	<b>24.7%</b>	<b>16.1%</b>	<b>12.9%</b>	<b>13.0%</b>	<b>10.4%</b>	<b>9.5%</b>	<b>14.7%</b>	<b>12.2%</b>
<b>Run Size Index</b>	28,707	17,702	25,273	27,116	43,715	32,750	22,344	28,150

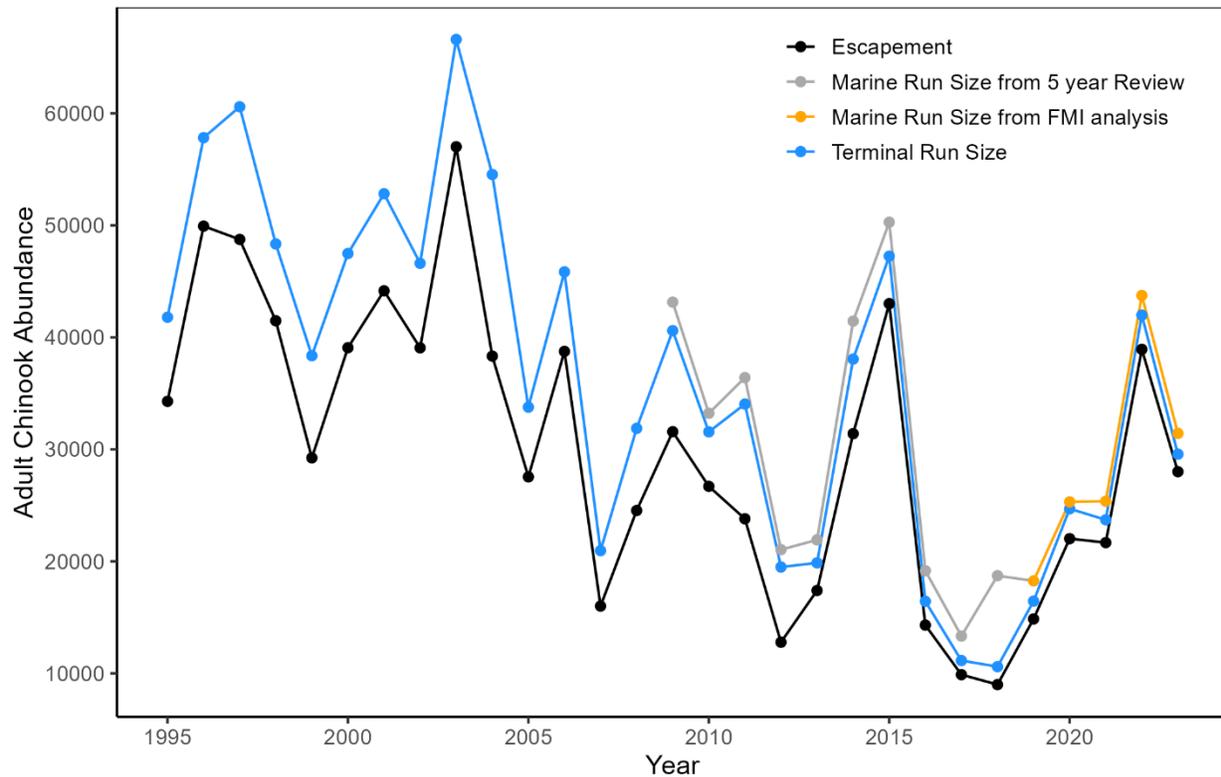


Figure 3. Escapement and run size (escapement plus fishery removals) of Summer 5<sub>2</sub> Chinook from 1995-2024. Based on Fraser Chinook Run Reconstruction outputs from July 2025 (escapement and terminal run size at the Fraser River mouth), back calculated from exploitation rate indices (marine run size 2008-2018, Dobson et al. 2020), and Fishery Mortality Index analysis run size estimates (marine run size 2019-2024). Note that the actual number of salmon that successfully spawn does not necessarily equal the escapement estimate.

## 2.1 First Nations Fisheries (FSC)

- FMI in First Nations FSC fisheries averaged 7.9% from 2014-2018 and 5.1% (range 2.8% - 7.2%) from 2019-2024, for a reduction of the average between periods of 2.8% (35% of the base period).
- The proportion of all mortality on Summer 5<sub>2</sub> varied annually, averaging 32% from 2014-2018 and 42% (range 29% - 56%) from 2019-2024.
- Marine catch information has been included where available, but data for some fisheries are unavailable. Without biological samples from marine First Nations fisheries, there is uncertainty introduced when using approximations (i.e., proxies) from neighboring fisheries.
- First Nations catch monitoring records serve as inputs for in-river FSC catch in the FMI methods. Stock composition assumptions of First Nations catch in-river are based on aggregated assumed run timings, some of which are based on genetic analysis of Chinook bio-samples from the Albion test fishery.
- The Five Nations rights-based sale fishery is included in this section; Canada's Privacy Act prohibits sharing information from individual First Nations groups without explicit consent.



## 2.2 Recreational Fisheries

- FMI in recreational fisheries averaged 11.1% during 2014-2018 and 5.7% (range 4.2% - 9.4%) during 2019-2024, for a reduction of the averages between periods of 5.4% (49% of the base period).
    - In-river recreational FMI for 2019-2024 is from tributary fisheries in the Chehalis and Chilliwack rivers; no other in-river recreational fisheries were licenced that would impact Summer 5<sub>2</sub> SMU stocks during that period; more details on the Chilliwack fishery inputs are provided in Section 4.
  - The proportion of all mortality on Summer 5<sub>2</sub> due to recreational fishing varies annually and averaged 45% during 2014-2018 and 47% (range 34% - 64%) during 2019-2024.
  - On average during 2019-2024, 85% of the estimated impacts in the Southern BC recreational fisheries were attributed to kept legal-sized catch. There is a noticeable difference compared to the base period 2014-2018 (96%), and overall, legal-sized mortalities also appear to have decreased
    - Sub-legal sized salmon typically make up a large proportion of the released Chinook. During 2019-2023, over 60% of released Chinook were sub-legal sized fish: 2021 (79%), 2022 (77%), and 2023 (66%).
    - It should be emphasized that the FMI does not account for mortalities of sub-legal sized salmon released because of unresolved issues in attributing mortality compared to legal-sized fish.
    - It's important to note that in some PFMA/Month strata, kept to released ratios of all Chinook catch are high. For example,
      - In June 2024 in nwGST (13,14) the kept to release ratio (legals and sub-legals) was 1:47
      - In July 2025 in JDFeast (19cde,20cd) the kept to release ratio was 1:10
      - In June 2024 and 2025 the neGST (15,16) the kept to release ratio was 1:6
- In some cases, a large portion of these releases are not accounted for in the FMI because they are sub-legal sized and not bio-sampled prior to release.

## 2.3 Commercial Fisheries

- Since 2019, commercial fisheries impacts decreased substantially.
- FMI in commercial fisheries averaged 4.6% during 2014-2018 and 0.4% (range 0.1% - 0.7%) during 2019-2024, for a reduction of the average between periods of 4.2% (92% of the base period).
- The proportion of all mortality on Summer 5<sub>2</sub> has remained low since 2019, averaging 19% during 2014-2018 and 3% (range 0% - 4%) during 2019-2024.
- The Area G springtime (April/May) inshore demonstration fishery (which extended to 1 nautical mile beyond the surf line) began in 2023. The previous springtime fishery was closed from 2019 to 2022 as part of the fishery restrictions aimed at reducing impacts to Fraser Chinook stocks of concern. Previously, the fishery occurred mostly offshore, but the new demo for 2023 was designed to occur only inshore in PFMA 23 to 27. Results from the stock composition sampling program in 2023 (DFO 2024) and 2024 (DFO 2025c) identified traces of Summer 5<sub>2</sub> Chinook (<1 encounter, uncertainty in GSI results). The sampling rate was 40% in 2023 and 21% in 2024; further work is needed to determine sampling rates needed to detect Fraser stocks of



concern with confidence to estimate their proportion of the catch. Nearly the full demo allocation of 3,000 pieces) as caught in 2024 (2,859), unlike the 2023 fishery (1,363 pieces).

## 2.4 Test Fisheries

- Test fisheries accounted for 0.7% to 1.4% of the total FMI percentage points annually. The average FMI from the test fisheries was 1.0% during 2014-2024. No changes were implemented to the test fishery programs as part of the 2019 Chinook management changes.
- The majority of these impacts occur in the Albion test fishery within the Fraser River, which is targeting Chinook, with the remaining impact coming from Fraser Panel Sockeye test fisheries in the Fraser River (Whonnock, Cottonwood and Brownsville Bar gillnet test fisheries) and a very small amount (<10 fish annually) from Johnstone Strait and Strait of Juan de Fuca test fisheries.
- Data collected from test fisheries provide consistent time series that can support technical processes to inform fishery management if alternative management plans are needed. Additional benefits include being an important collection source for CWT data and bio-samples for GSI analyses that serve to estimate escapement in terminal systems and calibrate the RR procedure. At this time, based on the multitude of data collected, we do not recommend prioritizing changes to test fisheries to meet management objectives.

## 3. Reference fishery and marine GSI results

- The Reference Fishery program initiated in 2023 (Rechisky et al. 2024) is a survey using recreational fishing gear to sample all Chinook caught to provide independent verification of at-sea releases. The independent catch data was compared against the reported kept and released data collected from DFO's creel and iREC programs.
- In 2023, the reference fishery conducted 153 boat days of fishing across four areas where MSF pilots occurred. The Reference Fishery sampled a total of 1,084 Chinook (318 legal size and 766 sub-legal size). Three legal and six sub-legal samples were identified to the Fraser Summer 5<sub>2</sub> SMU in three MSF areas.
- In 2024, the Reference Fishery was expanded to include all existing Chinook-directed MSFs except one (Area 12), and two areas without current MSFs in Howe Sound and Nootka/Esperanza Inlet (Rechisky et al. 2025).
- Sampling in 2024 was also expanded temporally to sample most opening periods, with a total of 316 boat days across eight areas. A total of 2,582 Chinook was sampled (1,306 legal size and 1,276 sub-legal size). One legal and three sub-legal samples were identified to the Fraser Summer 5<sub>2</sub> SMU in four areas where MSF pilots occurred. This includes Bute and Toba Inlets, that hadn't been previously sampled. Two additional sub-legal sized Summer 5<sub>2</sub> samples were identified in Howe Sound and Nootka Sound in April and August, respectively. Marine GSI samples from the recreational fishery have been routinely obtained by DFO's creel survey program, DFO's Head Depots, the DFO scientific programs conducted by non-government organizations (e.g., University of BC), citizen scientists (including Avid Angler program), and lodge operators and guides. The stock composition estimates derived from analyzing these samples are used as inputs for the FMI process.
- Commercial fishery GSI samples used in the FMI analysis are collected as part of the routine catch monitoring program (primarily dockside).



- The 2023 and 2024 reference fishery (Rechisky et al. 2024, Rechisky et al. 2025) and GSI samples from marine fisheries (recreational and commercial) indicate widespread presence of Fraser Summer 5<sub>2</sub> in most/all marine Chinook-directed salmon fisheries. Trends in stock proportion between regions or areas are hard to identify with the available data (due to sample size and relative abundances), but there does appear to be a greater proportion of Summer 5<sub>2</sub> in marine areas in Southern BC than Northern BC.
- Due to their greater presence in Southern BC, there will likely be some impacts in most marine Chinook fisheries operating during the Summer 5<sub>2</sub> migratory period (and potentially outside the migratory period). Fishery management changes should prioritize actions on fisheries with the largest impacts, including those with relatively large releases of sub-legal sized salmon.

#### 4. Chilliwack Summer Hatchery Influence

- Chilliwack Summer 5<sub>2</sub> Chinook is a component of the Summer 5<sub>2</sub> SMU and primarily hatchery-origin salmon, although some natural production has been identified. The Summer run component of the hatchery enhancement began in 1985 for recreational fishery access and is ongoing. Broodstock was taken from Upper Fraser stocks (from component stocks in the Spring 5<sub>2</sub> and Summer 5<sub>2</sub> SMU) to seed this hatchery production, and they continue to be used.
- The recreational catch attributed to the Chilliwack River fishery stems from an old harvest rate analysis (Schubert 1992). Since then, a fixed 11.99% exploitation rate (ER) has been used in the Fraser Chinook Run Reconstruction model. This implies (wrongly) a strong correlation between hatchery escapement (the only metric used to monitor Summer 5<sub>2</sub> Chilliwack Chinook) and the recreational fishery ER.
- There are no systematic escapement monitoring programs in the Vedder/Chilliwack system, and estimated returns to the hatchery consist largely of salmon used for broodstock takes. There is also no systematic catch monitoring program in place to monitor the recreational fishery on the Chilliwack River for Summer 5<sub>2</sub> Chinook.
  - Catch reported by Schubert (1992) from the 1992 interviews was 15 Chinook. Estimated catch was expanded to 117 Chinook for the entire Summer Chilliwack Chinook fishery in the study period.
- The proportion of Chilliwack Summer 5<sub>2</sub> Chinook comprising the total Summer 5<sub>2</sub> FMI in the marine fisheries cannot be determined at this time. For the FMI analysis, it has been assumed that Chilliwack Summer 5<sub>2</sub> Chinook cannot be genetically distinguished from Upper Fraser wild Chinook because Upper Fraser broodstock were originally used to establish the Chilliwack hatchery stock; however, updated information suggests this may not be the case. This issue is being investigated further and may be resolved eventually through improved genetic techniques, Parental-Based Tagging, and/or new CWT programs.
- It should also be noted that DFO's SNP baseline for Summer 5<sub>2</sub> is incomplete for naturally spawning Summer 5<sub>2</sub> stocks. This precludes rigorous tests from being conducted to determine if Chilliwack hatchery Chinook are indeed undistinguishable from other Mid- and Upper Fraser stocks. Ideally, each naturally spawning population should be represented by 100-200 bio-samples to have a clearly distinguishable genetic signature, and currently there are 24 populations in the baseline that either do not meet this requirement or are outdated collections.
- Given the uncertainty in the available data and many instances of missing information, we currently do not have the information to distinguish the Chilliwack Summer 5<sub>2</sub> component of impacts from the total impacts to the Summer 5<sub>2</sub> SMU in the FMI analysis.



- FMI on the other five CUs that comprise Summer 5<sub>2</sub> wild stocks are unlikely impacted by the tributary fisheries but may be impacted by fisheries before reaching the Vedder/Chilliwack confluence.
- Other hatcheries (i.e., Chehalis River) produce Summer 5<sub>2</sub> Chinook and have directed fisheries in tributary access streams. This further compounds issues identified with the FMI method and the Chilliwack hatchery production of Summer 5<sub>2</sub>.

## 5. Mark-Selective Fishery (MSF) information

- Preliminary post-season data summaries for Chinook MSFs for 2021-2024 were provided by DFO South Coast Stock Assessment; published technical reports are forthcoming. It is difficult to fully assess the impacts of the MSF implementation on Summer 5<sub>2</sub> for 2021-2024. See [Appendix E](#). Summaries of genetic stock identification (GSI) samples obtained in mark selective fisheries (MSF) in 2021-2024. for a summary of 2021-2024 GSI samples from different MSFs.
  - 765 GSI samples were taken in 2021. Areas 13 and 15 (n = 689), Area 16 (n = 59), Area 20 (n = 10) and Area 12 (n = 7).
  - 502 GSI samples were taken in 2022. Areas 13 and 15 (n = 448), Area 16 (n = 40), Area 20 (n = 14) and Area 12 (n = 0).
  - 1,540 GSI samples were taken in 2023. Area 13 and 15 (n = 714), Area 16 (n = 100), Area 17-19 (n = 513), Area 19 (n = 199) and Area 20-5 (n = 14).
  - 1,895 GSI samples were taken in 2024. Areas 13 and 15 (n = 639), Area 16 (n = 206), Area 17-19 (n = 536), Area 19 (n = 413), and Area 20-5 (n = 101).
  - Summer 5<sub>2</sub> SMU samples were detected in the 2021-2024 MSF catch monitoring program.
  - Concerns with fishery monitoring and robust catch sampling of the MSF resulted in the development of the Reference Fishery program, which was implemented in 2023-2025.
- The MSFs in PFMA 12 (Broughton Archipelago), 13 (Bute Inlet/Ramsay Arm), 15 (Homfray Channel/Toba Inlet), 16 (Sechelt/Jervis inlets), 17 to 19 (Gulf Islands/Saanich Inlet), 19 (Haro Strait), and 20-5 (Beecher Bay), are new fisheries since the 2019 Chinook management actions were implemented. Reference fishery results from these areas (except PFMA 12 – where no sampling was conducted; 2021 Area 12 samples were from the creel survey) indicate the presence of Summer 5<sub>2</sub> SMU.
- The MSF results for 2021-2022 show Fraser Chinook stocks of concern (SoC) are present in the fisheries in PFMA 13, 15, and 20-5 (21 Spring 4<sub>2</sub> and 13 Summer 5<sub>2</sub> mortalities estimated across these areas).
- The MSF results for 2023-2024 show Fraser Chinook SoC are present in the fisheries in PFMA 13 & 15, 16, 19, and 20-5 (7 Spring 4<sub>2</sub>, 7 Spring 5<sub>2</sub>, and 89 Summer 5<sub>2</sub> mortalities estimated across these areas).
- Given the low abundance of Fraser SoC (including Summer 5<sub>2</sub>) compared to the other stocks in the fishery and high uncertainty in estimated impacts on Summer 5<sub>2</sub>, even more precautionary management actions should be considered in all fishing areas where SoC are encountered.
- Rationale for approving some of the MSFs included the assumption that the fishing areas were off the main migratory route of Fraser Chinook SoC, though it has not been verified whether stock composition in those areas is different than in assumed migratory route areas. It is well-



known that Chinook don't follow a consistent migratory path and may hold or travel through other peripheral areas before reaching the Fraser River.

## 6. Creel survey trends

- From the months of May to September, during periods of Summer 5<sub>2</sub> migration, the total number of Chinook kept in Southern BC recreational fisheries in recent years was lower than pre-2019 levels until 2023. However, since 2024, the number of Chinook kept in Southern BC recreational fisheries has been increasing, with recent estimates of kept Chinook exceeding the recent 5-year averages (DFO 2025a, DFO 2025b).
- 2025 preliminary estimates indicate that the number of Chinook released in Southern BC recreational fisheries also exceeds the recent 5-year average (DFO 2025b).
- With a hypothesized 20% mortality applied to released fish, the total mortalities exceeded pre-2019 levels. See [Appendix C](#) for a summary of 2014-2024 South Coast Creel survey Chinook catch results.
- A finer look at Summer 5<sub>2</sub> Chinook FMI in Southern BC recreational fisheries by Pacific Fishery Management Area (PFMA) groupings (Table 6) shows that the greatest impacts occur in northern Strait of Georgia (nGST) PFMA 13 to 16 and eastern Strait of Juan de Fuca (JDFeast) PFMA 19 to 20. These impacts primarily occurred in July and August, though the magnitude of the impacts appears to have decreased since the base period.
- According to creel survey results presented in [Appendix C](#) and summarized in Table 5 below, the average total number of Chinook kept in June through August in nGST PFMA 13 to 16 and Juan de Fuca East (PFMA 19cde, 20cd) declined slightly from 2019-2025 compared to the base period (2014-2018), although there is strong interannual variation in estimates.
- While the estimated number of Chinook kept may have declined slightly, the total Chinook released (both legal and sub-legal) in these areas increased substantially from 2019-2025 compared to the base period (Table 5, Figures 5 and 6). Sub-legal sized releases are not included in FMI calculations and emerging research results indicate that sub-legal sized fish (<62 cm) experience higher post-release mortality compared to larger fish (Hinch et al. 2024, Zinn et al. 2025).

Table 4. BC Recreational Fishery Mortality Index for Summer 5<sub>2</sub> Chinook by broad coastal fishing area, 2014-2024. Central Coast recreational fisheries are assumed terminal, meaning they are assumed to not impact Fraser Chinook. PFMA = Pacific Fishery Management Area.

Fishing Area	PFMA	2014-2018	2019	2020	2021	2022	2023	2024
North Coast	1 to 5	1.1%	2.4%	0.0%	1.5%	1.5%	1.0%	1.8%
Central Coast	6 to 10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Coast	11 to 29, 111, 121 to 127	7.6%	3.6%	2.1%	2.2%	1.3%	2.8%	6.1%
<b>Total</b>		<b>8.7%</b>	<b>6.0%</b>	<b>2.1%</b>	<b>3.7%</b>	<b>2.8%</b>	<b>3.8%</b>	<b>7.9%</b>



Table 5. Summary of creel survey data presented in [Appendix C](#) for Fishing Areas with the highest impact only (nGST PFMA 13 to 16 and JDF east PFMA 19cde, 20cd), as measured with FMI.

Fishing Area	PFMA/creel subareas	Disposition	Average 2014-2018 (June, July, August)	Average 2019-2025 (June, July, August)
Northern Strait of Georgia	13 to 16	Kept Legal	33,325	31,564
		Released (legal & sub-legal)	35,088	88,539
Juan de Fuca East	19cde, 20cd	Kept Legal	14,976	11,180
		Released (legal & sub-legal)	16,781	33,218
Total combined		Kept Legal	48,301	42,744
		Released (legal & sub-legal)	51,869	121,757

Table 6. Southern BC Recreational Fishery Mortality Index for Summer 5<sub>2</sub> Chinook by Pacific Fishery Management Area (PFMA) grouping, 2014-2024. A detailed breakdown by month is available in [Appendix B](#).

Fishery Area (PFMA)	2014-2018	2019	2020	2021	2022	2023	2024
upperQCS(11,111)	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%
nJST(12)	0.7%	0.4%	0.2%	0.2%	0.1%	0.1%	0.0%
nGST(13,14,15,16)	2.3%	1.0%	0.6%	0.6%	0.5%	0.4%	1.3%
sGST(17,18,19ab,28,29)	0.3%	0.3%	0.3%	0.1%	0.1%	0.1%	1.0%
JDFeast(19cde,20cd)	2.4%	0.5%	0.3%	0.5%	0.3%	1.3%	2.0%
JDFwest(Renfrew 20abe)	0.8%	0.4%	0.0%	0.0%	0.0%	0.0%	0.2%
Inshore NWVI	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%
Inshore SWVI	0.1%	0.4%	0.3%	0.2%	0.2%	0.0%	0.8%
NWVI >1nm offshore(125-127)	0.5%	0.2%	0.0%	0.1%	0.0%	0.5%	0.0%
SWVI >1nm offshore(121-124)	0.3%	0.0%	0.1%	0.4%	0.1%	0.2%	0.5%
<b>Grand Total</b>	<b>7.6%</b>	<b>3.5%</b>	<b>2.0%</b>	<b>2.1%</b>	<b>1.3%</b>	<b>2.7%</b>	<b>6.0%</b>

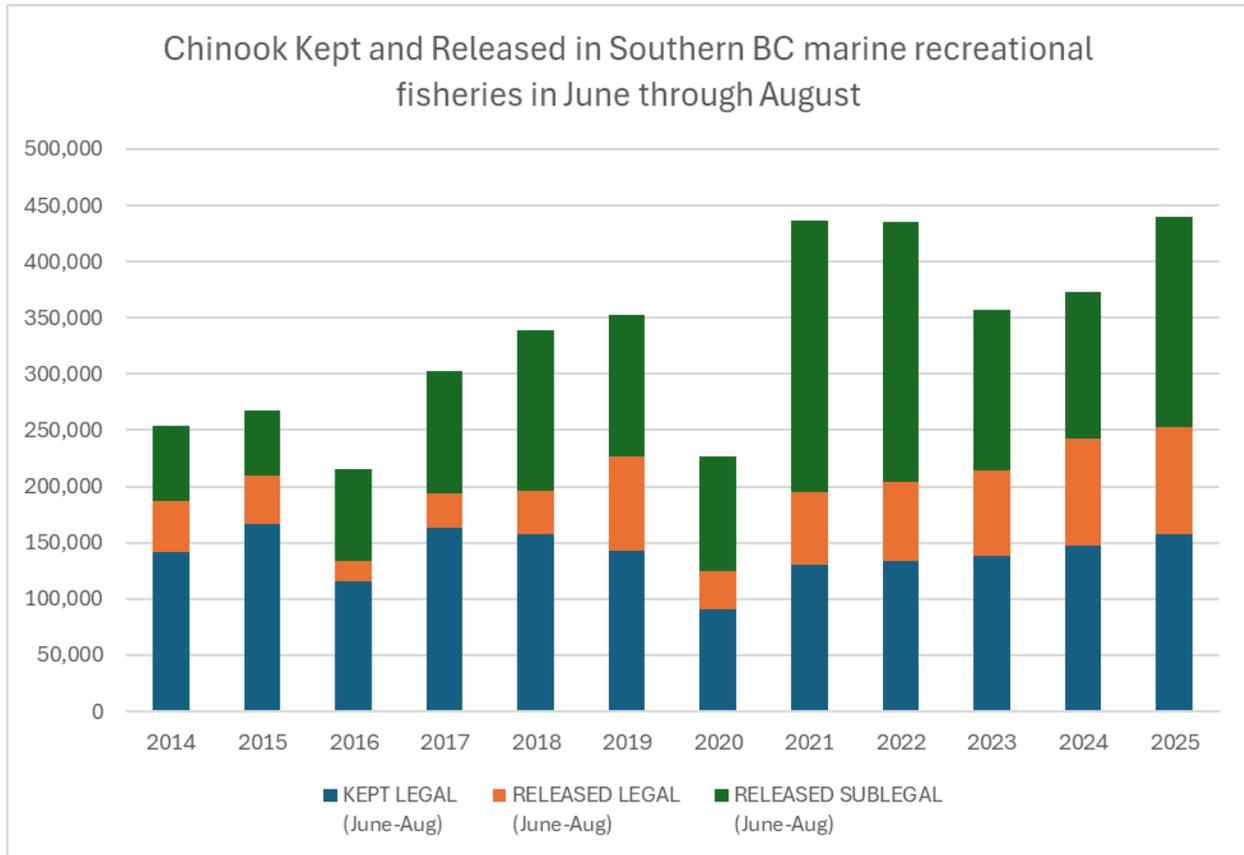


Figure 4. Annual creel estimates of Chinook kept and released (legal and sub-legal) in southern BC marine recreational fisheries (PFMAS 111, 11-19, 20, 28, 29) during the predominant marine migration period of Summer 5<sub>2</sub> (June-August).

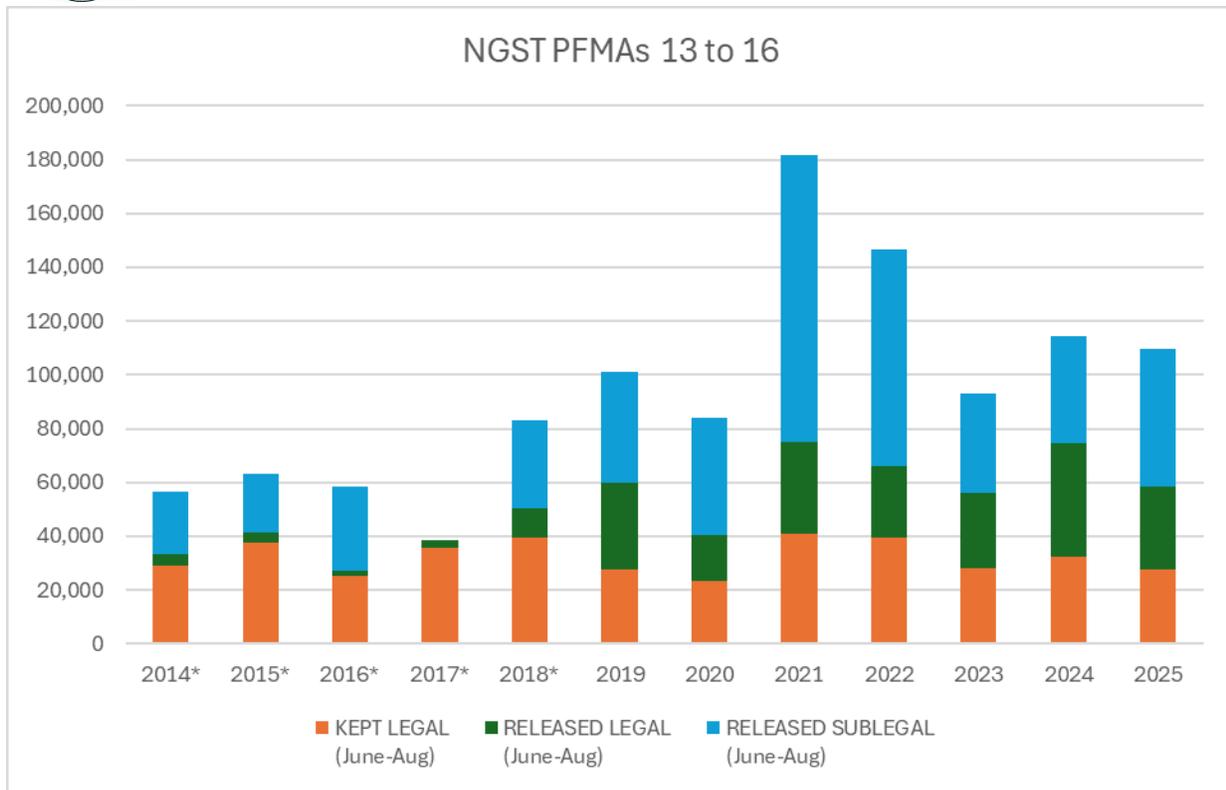


Figure 5. Annual creel estimates of Chinook kept and released (legal and sub-legal) in northern Georgia Strait (PFMAs 13 to 16) marine recreational fisheries June through August, where the greatest impacts on Summer 5<sub>2</sub> occur. \* indicates years where sub-legal release estimates were missing or incomplete.

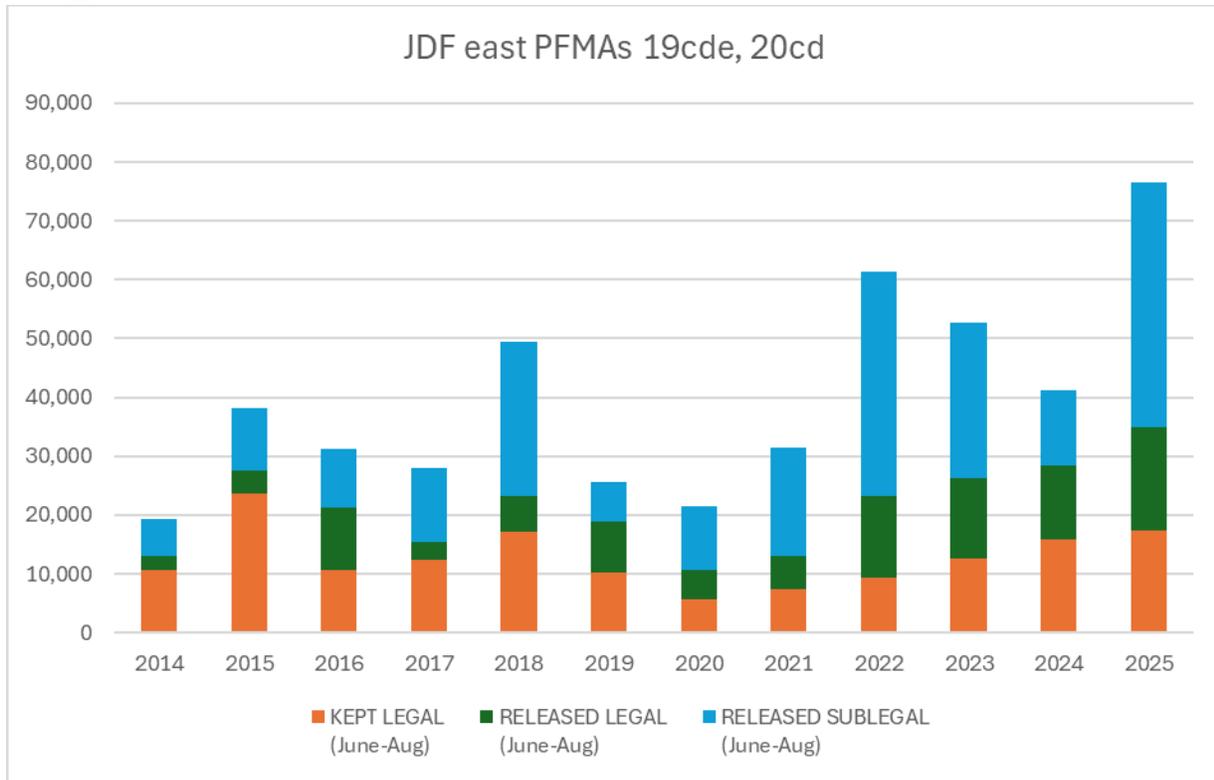


Figure 6. Annual creel estimates of Chinook kept and released (legal and sub-legal) in eastern Juan de Fuca Strait (PFMA 19cde, 20cd) marine recreational fisheries June through August, where the greatest impacts on Summer 5<sub>2</sub> occur. \* indicates years where sub-legal release estimates were missing or incomplete.

## 7. Release Mortality

- In general, the Chinook Technical Committee (CTC) of the Pacific Salmon Commission (PSC) applies total mortality rates between 29.2% to 39.1% for Chinook encountered in southern B.C. sport fisheries (CTC 2022). These mortality rates are comprised of two components: a) Incidental Mortality (IM) rate and b) Drop-Off Mortality (DOM) rate.
  - The CTC applies different Incidental Mortality (IM) rates for recreational fisheries based on fish size: 12.3% for Chinook  $\geq 33$  cm and 32.2% for Chinook less than 33 cm. Typically, the CTC uses the rate for larger sized fish in its calculations, because they are the most common age class encountered in PSC recreational fisheries. However, when smaller size salmon make up  $>1\%$  of encounters, the CTC weights the rates accordingly (CTC 2022). For example, the CTC applies the 12.3% IM rate for Strait of Georgia sport fisheries, and 32.2% for B.C. Juan de Fuca sport fisheries.
  - In addition to the IM rates, the CTC also applies an additional 6.9% Drop-off Mortality rate for southern BC recreational hook-and-line fisheries. This is meant to capture all sources of mortality for salmon that contact fishing gear, but are not “landed” (e.g., from predation).



- Fishery Related Incidental Mortality (FRIM) is not included universally in the FMI analysis. Only the Southern BC recreational fisheries include a FRIM component for post-season analysis. For SBC hook-and-line sport fisheries, 20% is the current FRIM rate used for the FMI analysis.
- This FRIM rate is at the lower end of the range of mortality rates estimated in the available literature (15-40%) (Hinch et al. 2024, Cox-Rogers et al. 1999). Depending on type and extent of injury and other factors (e.g., fish size, water temperature, handling, air exposure, etc.), FRIM rates estimated in recent studies using recreational gear can exceed the DFO applied rate of 15%-20% (reviewed in Patterson et al. 2017, Hinch et al. 2024). There are discrepancies between recently published rates, the PSC CTC applied rates, and those currently used in the FMI. This should be taken into account when formulating more precautionary management measures for domestic fisheries.
- Understanding the influence of underestimating FRIM rates in the context of the FMI analysis is critical to inform decision-making about fisheries management.
  - Preliminary sensitivity analysis results from changing FRIM rates (e.g., 20% to 40%) for recreational fisheries has been shown to affect the FMI outputs, including potentially increasing the marine recreational FMI and subsequently shifting the distribution of mortalities.
- Some recommendations for reducing FRIM rates include effort restrictions, gear restrictions (maximum hook size, bait restrictions, banning flashers/downriggers/electronics), and better landing/handling/releasing practices. We cannot quantify the combined impacts of these restrictions on the FMI. Other management actions to address kept catch may result in meaningful reductions in FMI, a shift in the distribution of impacts, and potentially more salmon reaching their spawning grounds.



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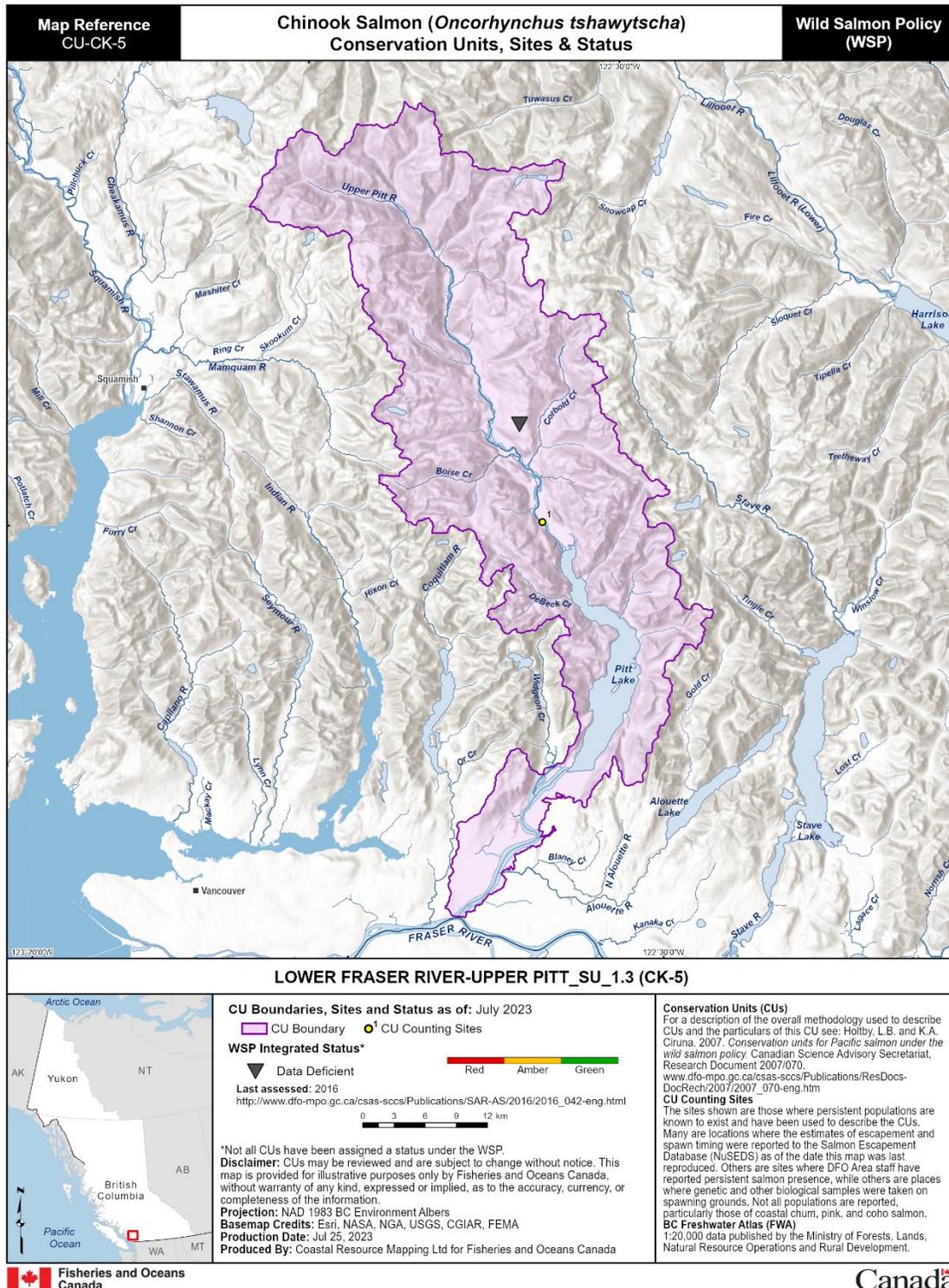
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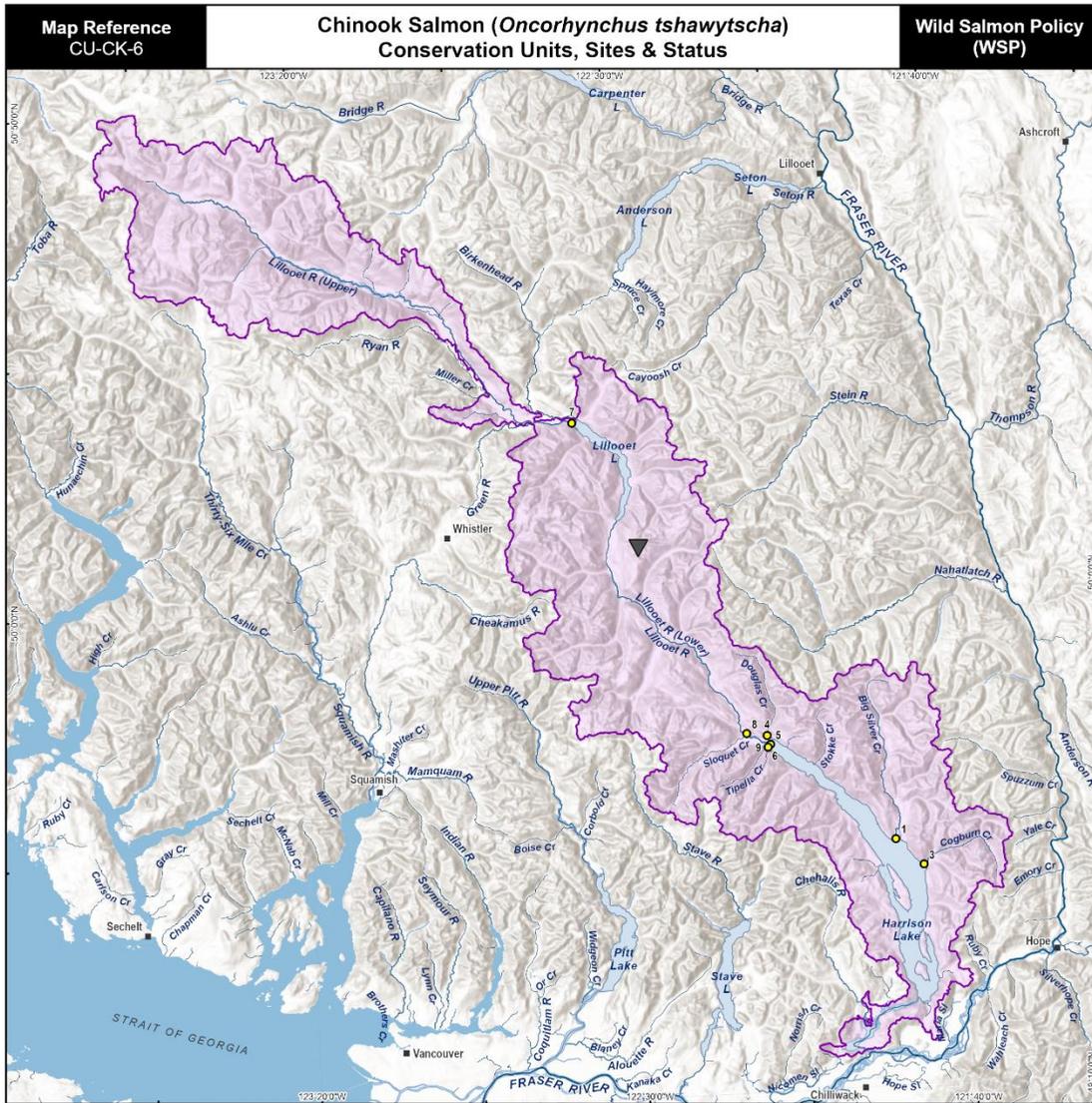


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## Appendix A. Maps of each Conservation Unit included in the Summer 5<sub>2</sub> Chinook Stock Management Unit.





LOWER FRASER RIVER\_SU\_1.3 (CK-6)



CU Boundaries, Sites and Status as of: July 2023

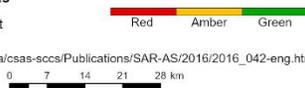
CU Boundary ●<sup>1</sup> CU Counting Sites

WSP Integrated Status\*

▼ Data Deficient

Last assessed: 2016

[http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016\\_042-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016_042-eng.html)



\*Not all CUs have been assigned a status under the WSP.  
**Disclaimer:** CUs may be reviewed and are subject to change without notice. This map is provided for illustrative purposes only by Fisheries and Oceans Canada, without warranty of any kind, expressed or implied, as to the accuracy, currency, or completeness of the information.

Projection: NAD 1983 BC Environment Albers

Basemap Credits: Esri, NASA, NGA, USGS, CGIAR, FEMA

Production Date: Jul 25, 2023

Produced By: Coastal Resource Mapping Ltd for Fisheries and Oceans Canada

**Conservation Units (CUs)**

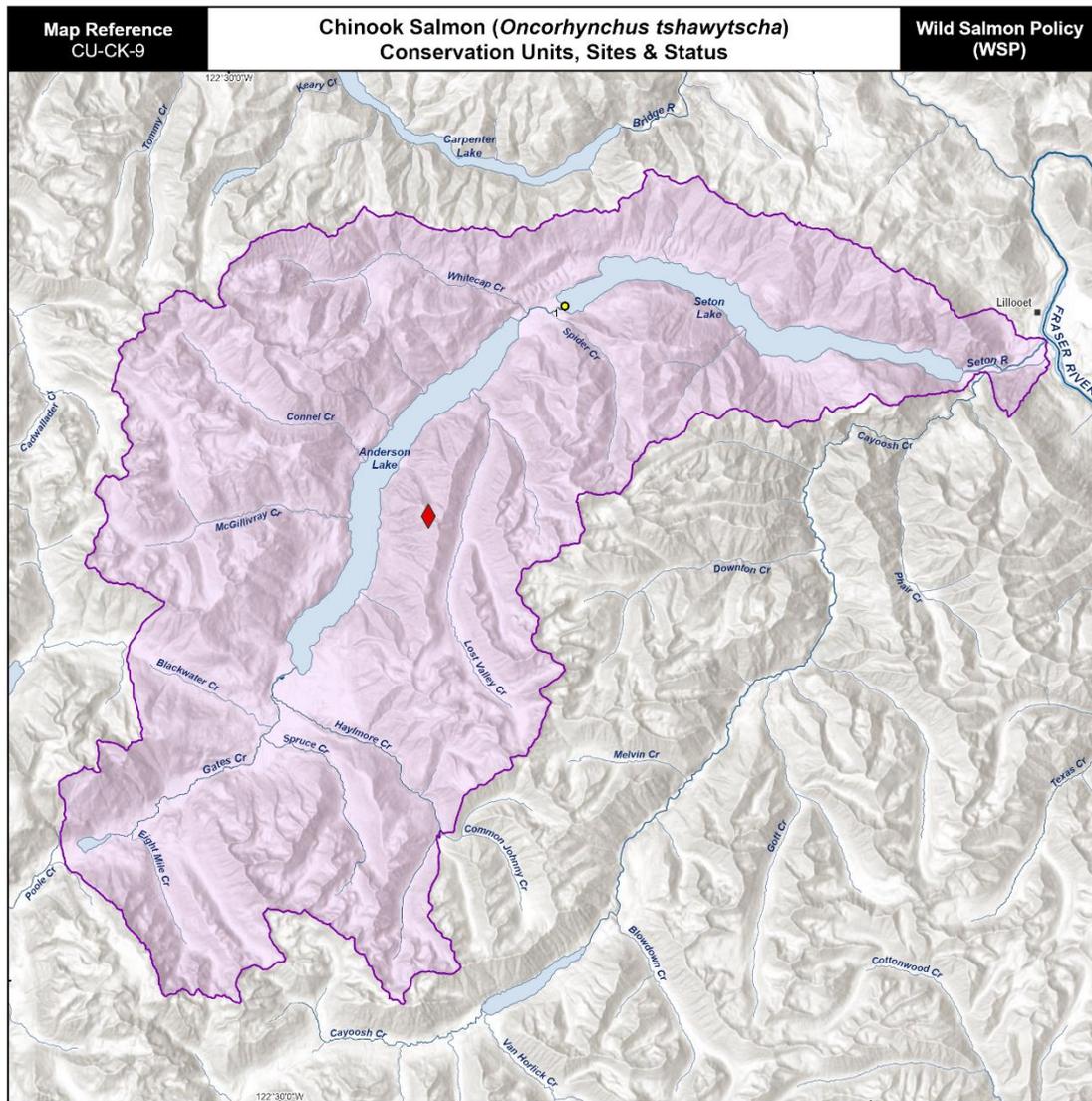
For a description of the overall methodology used to describe CUs and the particulars of this CU see: Holby, L.B. and K.A. Ciruna. 2007. *Conservation units for Pacific salmon under the wild salmon policy*. Canadian Science Advisory Secretariat, Research Document 2007/070.  
[www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2007/2007\\_070-eng.htm](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2007/2007_070-eng.htm)

**CU Counting Sites**

The sites shown are those where persistent populations are known to exist and have been used to describe the CUs. Many are locations where the estimates of escapement and spawn timing were reported to the Salmon Escapement Database (NuSEDS) as of the date this map was last reproduced. Others are sites where DFO Area staff have reported persistent salmon presence, while others are places where genetic and other biological samples were taken on spawning grounds. Not all populations are reported, particularly those of coastal chum, pink, and coho salmon.

**BC Freshwater Atlas (FWA)**

1:20,000 data published by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development.



MIDDLE FRASER RIVER-PORTAGE\_FA\_1.3 (CK-9)



CU Boundaries, Sites and Status as of: July 2023

CU Boundary ●<sup>1</sup> CU Counting Sites

WSP Integrated Status\*

Red  
Last assessed: 2016  
[http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016/2016\\_042-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016/2016_042-eng.html)



\*Not all CUs have been assigned a status under the WSP.  
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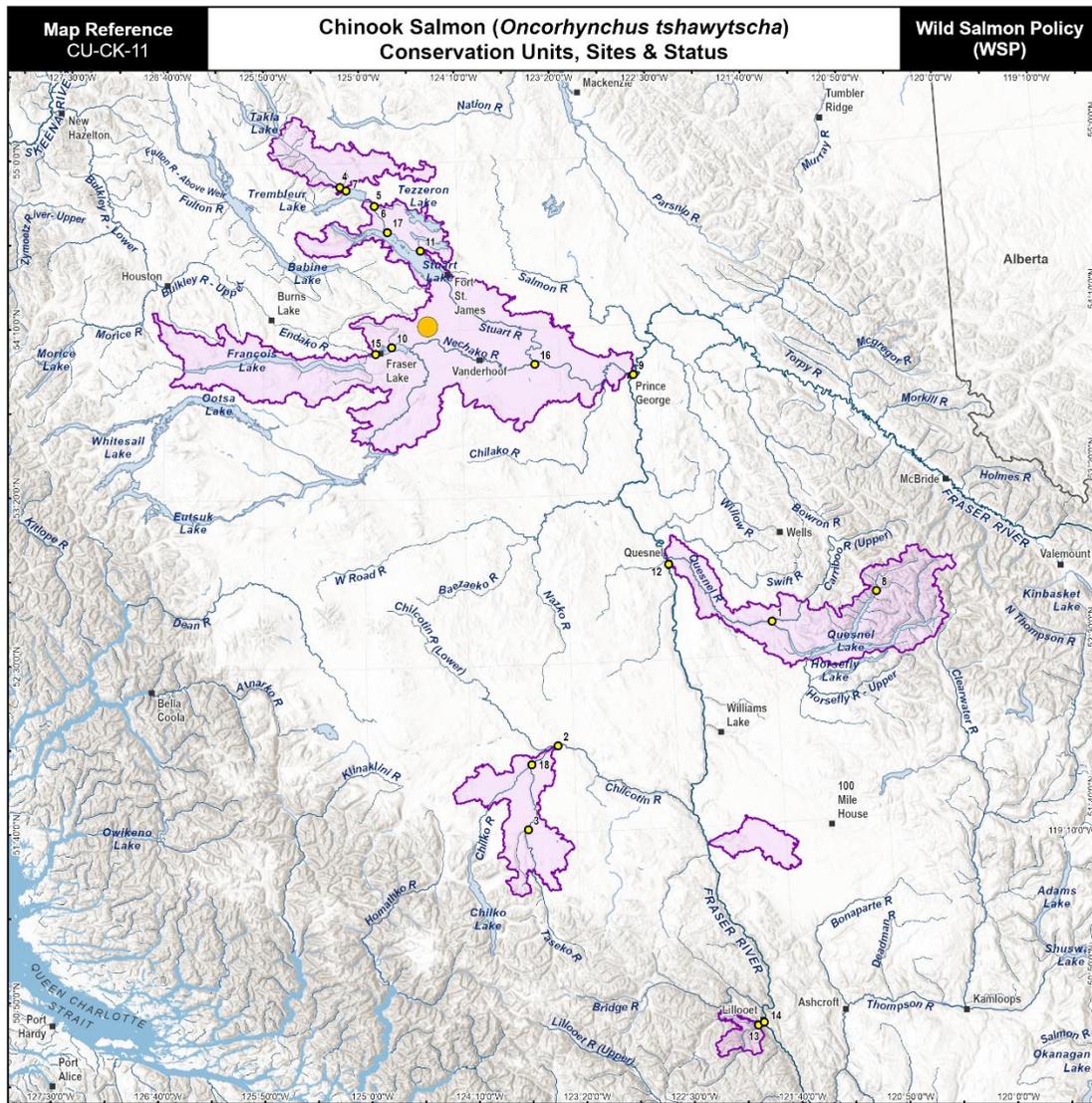
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Basemap Credits: Esri, NASA, NGA, USGS, CGIAR, FEMA  
Production Date: Jul 25, 2023  
Produced By: Coastal Resource Mapping Ltd for Fisheries and Oceans Canada

**Conservation Units (CUs)**

For a description of the overall methodology used to describe CUs and the particulars of this CU see: Holtby, L.B. and K.A. Ciruna. 2007. *Conservation units for Pacific salmon under the wild salmon policy*. Canadian Science Advisory Secretariat, Research Document 2007/070.  
[www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2007/2007\\_070-eng.htm](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2007/2007_070-eng.htm)

**CU Counting Sites**

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**BC Freshwater Atlas (FWA)**  
1:20,000 data published by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development.



**MIDDLE FRASER RIVER\_SU\_1.3 (CK-11)**

**CU Boundaries, Sites and Status as of: July 2023**

CU Boundary    CU Counting Sites

**WSP Integrated Status\***

Amber

Last assessed: 2016  
[http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016/2016\\_042-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016/2016_042-eng.html)

0 20 40 60 80 km

\*Not all CUs have been assigned a status under the WSP.  
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 Production Date: Jul 25, 2023  
 Produced By: Coastal Resource Mapping Ltd for Fisheries and Oceans Canada

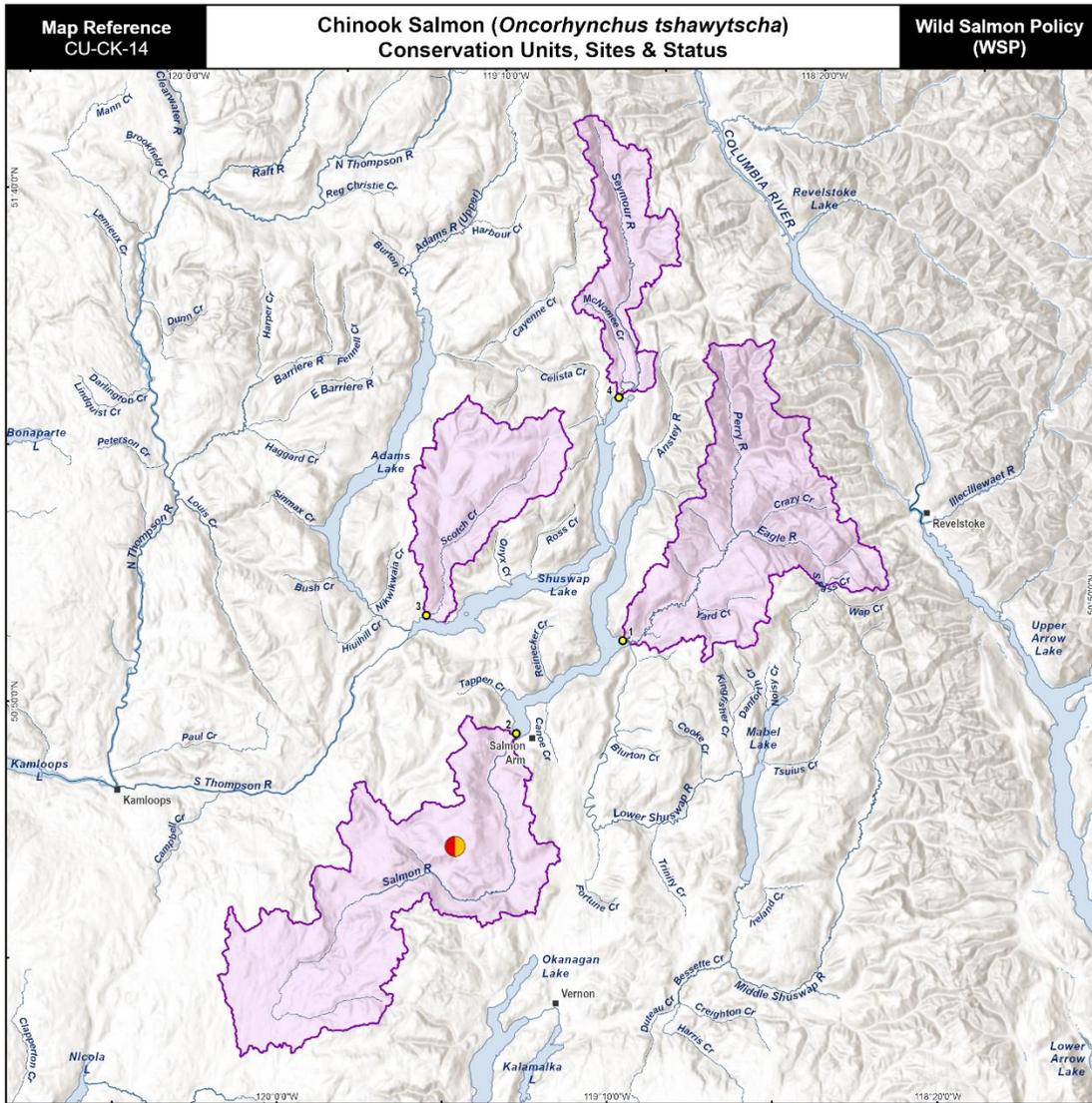
**Conservation Units (CUs)**

For a description of the overall methodology used to describe CUs and the particulars of this CU see: Holtby, L.B. and K.A. Ciruna. 2007. *Conservation units for Pacific salmon under the wild salmon policy*. Canadian Science Advisory Secretariat, Research Document 2007/070.  
[www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2007/2007\\_070-eng.htm](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2007/2007_070-eng.htm)

**CU Counting Sites**

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**BC Freshwater Atlas (FWA)**  
 1:20,000 data published by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development.



**SOUTH THOMPSON\_SU\_1.3 (CK-14)**

**CU Boundaries, Sites and Status as of: July 2023**

CU Boundary    CU Counting Sites

**WSP Integrated Status\***

Red/Amber

Last assessed: 2016  
[http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016/2016\\_042-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016/2016_042-eng.html)

0 6.5 13 19.5 26 km

\*Not all CUs have been assigned a status under the WSP.  
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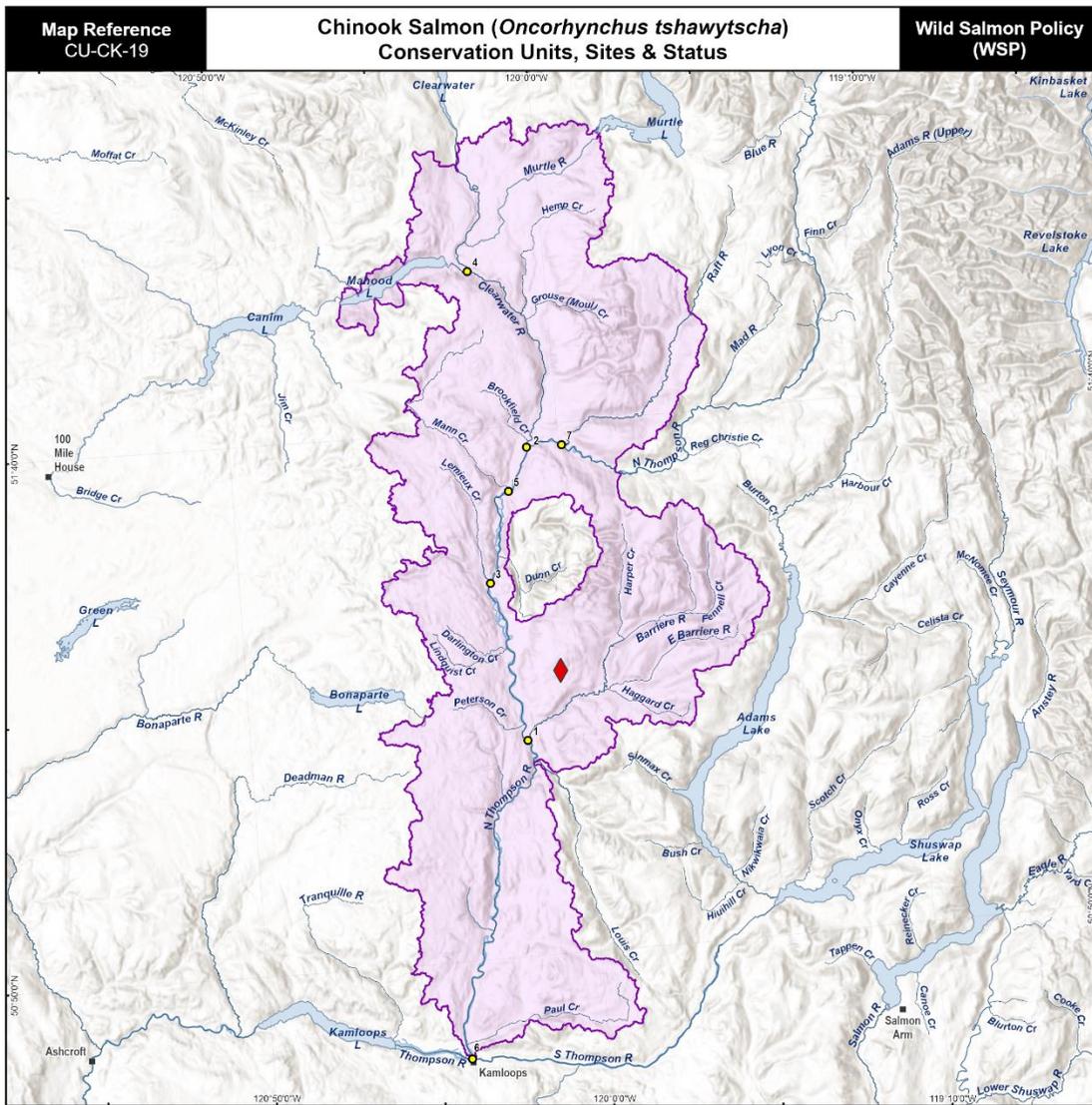
**Conservation Units (CUs)**

For a description of the overall methodology used to describe CUs and the particulars of this CU see: Holtby, L.B. and K.A. Ciruna. 2007. *Conservation units for Pacific salmon under the wild salmon policy*. Canadian Science Advisory Secretariat, Research Document 2007/070.  
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**CU Counting Sites**

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**BC Freshwater Atlas (FWA)**  
1:20,000 data published by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development.



**NORTH THOMPSON\_SU\_1.3 (CK-19)**



CU Boundaries, Sites and Status as of: July 2023

CU Boundary ●<sup>1</sup> CU Counting Sites

WSP Integrated Status\*

Red  
Last assessed: 2016  
[http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016\\_042-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016_042-eng.html)



\*Not all CUs have been assigned a status under the WSP.  
Disclaimer: CUs may be reviewed and are subject to change without notice. This map is provided for illustrative purposes only by Fisheries and Oceans Canada, without warranty of any kind, expressed or implied, as to the accuracy, currency, or completeness of the information.

Projection: NAD 1983 BC Environment Albers  
Basemap Credits: Esri, NASA, NGA, USGS, CGIAR, FEMA  
Production Date: Jul 25, 2023  
Produced By: Coastal Resource Mapping Ltd for Fisheries and Oceans Canada

**Conservation Units (CUs)**

For a description of the overall methodology used to describe CUs and the particulars of this CU see: Holby, L.B. and K.A. Ciruna. 2007. *Conservation units for Pacific salmon under the wild salmon policy*. Canadian Science Advisory Secretariat, Research Document 2007/070.  
[www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2007/2007\\_070-eng.htm](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2007/2007_070-eng.htm)

**CU Counting Sites**

The sites shown are those where persistent populations are known to exist and have been used to describe the CUs. Many are locations where the estimates of escapement and spawn timing were reported to the Salmon Escapement Database (NuSEDS) as of the date this map was last reproduced. Others are sites where DFO Area staff have reported persistent salmon presence, while others are places where genetic and other biological samples were taken on spawning grounds. Not all populations are reported, particularly those of coastal chum, pink, and coho salmon.

**BC Freshwater Atlas (FWA)**

1:20,000 data published by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development.



Appendix B. Southern BC Recreational Fishery Mortality Index for Summer 5<sub>2</sub> Chinook by Pacific Fishery Management Area (PFMA) grouping and by month (May to September), 2014-2024.

**2014-2018**

Fishery Area	May	Jun	Jul	Aug	Sep	TOTAL
upperQCS(11,111)	0.0%	0.1%	0.0%	0.0%	ns	0.1%
nJST(12)	0.0%	0.2%	0.4%	0.1%	ns	0.7%
nGST(13,14,15,16)	0.0%	0.4%	1.1%	0.7%	0.1%	2.3%
sGST(17,18,19ab,28,29)	0.0%	0.0%	0.0%	0.2%	0.1%	0.3%
JDFeast(19cde,20cd)	0.0%	0.4%	1.1%	0.9%	0.1%	2.4%
JDFwest(Renfrew 20abe)	ns	0.1%	0.4%	0.3%	0.0%	0.8%
Inshore NWVI	ns	0.0%	0.0%	0.0%	0.0%	0.1%
Inshore SWVI	ns	0.0%	0.1%	0.0%	0.0%	0.1%
NWVI >1nm offshore(125-127)	ns	0.3%	0.2%	0.0%	0.0%	0.5%
SWVI >1nm offshore(121-124)	0.0%	0.0%	0.2%	0.1%	0.0%	0.3%
<b>Grand Total</b>	<b>0.0%</b>	<b>1.5%</b>	<b>3.6%</b>	<b>2.3%</b>	<b>0.2%</b>	<b>7.6%</b>

**2019**

Fishery Area	May	Jun	Jul	Aug	Sep	TOTAL
upperQCS(11,111)	ns	0.1%	0.0%	0.0%	ns	0.1%
nJST(12)	ns	ns	0.2%	0.2%	0.0%	0.4%
nGST(13,14,15,16)	0.0%	0.2%	0.6%	0.2%	0.0%	1.0%
sGST(17,18,19ab,28,29)	0.0%	0.0%	0.0%	0.3%	0.0%	0.3%
JDFeast(19cde,20cd)	ns	ns	ns	0.5%	0.0%	0.5%
JDFwest(Renfrew 20abe)	ns	ns	0.3%	0.2%	0.0%	0.4%
Inshore NWVI	ns	0.0%	0.1%	0.0%	0.0%	0.1%
Inshore SWVI	ns	0.0%	0.3%	0.0%	0.0%	0.4%
NWVI >1nm offshore(125-127)	ns	0.0%	0.0%	0.2%	ns	0.2%
SWVI >1nm offshore(121-124)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Grand Total</b>	<b>0.0%</b>	<b>0.4%</b>	<b>1.5%</b>	<b>1.6%</b>	<b>0.0%</b>	<b>3.5%</b>

**2020**

Fishery Area	May	Jun	Jul	Aug	Sep	TOTAL
upperQCS(11,111)	0.0%	0.0%	0.0%	0.0%	ns	0.1%
nJST(12)	ns	0.0%	0.1%	0.1%	ns	0.2%
nGST(13,14,15,16)	0.0%	0.0%	0.2%	0.3%	0.1%	0.6%
sGST(17,18,19ab,28,29)	0.0%	0.0%	0.2%	0.1%	0.0%	0.3%
JDFeast(19cde,20cd)	ns	0.0%	0.0%	0.3%	0.0%	0.3%
JDFwest(Renfrew 20abe)	ns	ns	0.0%	0.0%	0.0%	0.0%
Inshore NWVI	ns	0.0%	0.1%	0.0%	ns	0.1%
Inshore SWVI	ns	0.1%	0.2%	0.0%	0.0%	0.3%
NWVI >1nm offshore(125-127)	ns	0.0%	0.0%	0.0%	ns	0.0%
SWVI >1nm offshore(121-124)	ns	0.0%	0.1%	0.0%	0.0%	0.1%
<b>Grand Total</b>	<b>0.0%</b>	<b>0.1%</b>	<b>1.0%</b>	<b>0.8%</b>	<b>0.1%</b>	<b>2.0%</b>



**2021**

Fishery Area	May	Jun	Jul	Aug	Sep	TOTAL
upperQCS(11,111)	ns	0.1%	0.0%	0.0%	ns	0.1%
nJST(12)	ns	0.0%	0.1%	0.0%	ns	0.2%
nGST(13,14,15,16)	0.0%	0.1%	0.3%	0.1%	0.1%	0.6%
sGST(17,18,19ab,28,29)	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
JDFeast(19cde,20cd)	ns	ns	0.0%	0.5%	0.0%	0.5%
JDFwest(Renfrew 20abe)	ns	ns	0.0%	0.0%	0.0%	0.0%
Inshore NWVI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Inshore SWVI	0.0%	0.1%	0.0%	0.1%	0.0%	0.2%
NWVI >1nm offshore(125-127)	ns	0.1%	0.0%	0.0%	ns	0.1%
SWVI >1nm offshore(121-124)	ns	0.0%	0.3%	0.1%	0.0%	0.4%
<b>Grand Total</b>	<b>0.0%</b>	<b>0.4%</b>	<b>0.8%</b>	<b>0.8%</b>	<b>0.1%</b>	<b>2.1%</b>

**2022**

Fishery Area	May	Jun	Jul	Aug	Sep	TOTAL
upperQCS(11,111)	ns	0.0%	0.0%	0.0%	ns	0.0%
nJST(12)	ns	0.0%	0.1%	0.0%	ns	0.1%
nGST(13,14,15,16)	0.0%	0.0%	0.1%	0.2%	0.1%	0.5%
sGST(17,18,19ab,28,29)	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
JDFeast(19cde,20cd)	ns	0.0%	0.0%	0.3%	0.1%	0.3%
JDFwest(Renfrew 20abe)	ns	ns	0.0%	0.0%	0.0%	0.0%
Inshore NWVI	ns	0.0%	0.0%	0.0%	0.0%	0.0%
Inshore SWVI	0.0%	0.0%	0.1%	0.1%	0.0%	0.2%
NWVI >1nm offshore(125-127)	ns	0.0%	0.0%	0.0%	ns	0.0%
SWVI >1nm offshore(121-124)	ns	0.0%	0.0%	0.1%	0.0%	0.1%
<b>Grand Total</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.4%</b>	<b>0.6%</b>	<b>0.2%</b>	<b>1.3%</b>

**2023**

Fishery Area	May	Jun	Jul	Aug	Sep	TOTAL
upperQCS(11,111)	ns	0.1%	0.0%	0.0%	ns	0.1%
nJST(12)	ns	0.0%	0.1%	0.0%	ns	0.1%
nGST(13,14,15,16)	0.0%	0.1%	0.1%	0.2%	0.0%	0.4%
sGST(17,18,19ab,28,29)	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
JDFeast(19cde,20cd)	0.0%	0.0%	0.2%	1.0%	0.2%	1.3%
JDFwest(Renfrew 20abe)	ns	ns	0.0%	0.0%	0.0%	0.0%
Inshore NWVI	ns	0.0%	0.1%	0.0%	ns	0.1%
Inshore SWVI	ns	0.0%	0.0%	0.0%	0.0%	0.0%
NWVI >1nm offshore(125-127)	ns	0.0%	0.3%	0.1%	ns	0.5%
SWVI >1nm offshore(121-124)	ns	0.0%	0.2%	0.0%	0.0%	0.2%
<b>Grand Total</b>	<b>0.0%</b>	<b>0.2%</b>	<b>1.0%</b>	<b>1.3%</b>	<b>0.2%</b>	<b>2.7%</b>



**2024**

<b>Fishery Area</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>TOTAL</b>
upperQCS(11,111)	ns	0.0%	0.0%	0.0%	ns	0.0%
nJST(12)	ns	0.0%	0.0%	0.0%	ns	0.0%
nGST(13,14,15,16)	0.0%	0.1%	1.0%	0.3%	0.0%	1.3%
sGST(17,18,19ab,28,29)	0.0%	0.0%	0.1%	0.0%	0.9%	1.0%
JDFeast(19cde,20cd)	0.0%	0.0%	0.1%	1.8%	0.0%	2.0%
JDFwest(Renfrew 20abe)	ns	ns	0.1%	0.2%	0.0%	0.2%
Inshore NWVI	ns	0.0%	0.0%	0.0%	ns	0.0%
Inshore SWVI	ns	0.3%	0.5%	0.0%	0.0%	0.8%
NWVI >1nm offshore(125-127)	ns	0.0%	0.0%	0.0%	ns	0.0%
SWVI >1nm offshore(121-124)	ns	0.0%	0.3%	0.3%	0.0%	0.5%
<b>Grand Total</b>	<b>0.0%</b>	<b>0.4%</b>	<b>2.1%</b>	<b>2.6%</b>	<b>0.9%</b>	<b>6.0%</b>



Appendix C. South Coast Creel survey Chinook results summary for June to August, 2009 to 2025. Catch numbers reported through dockside observers and guide lodge logbook program by month. These do not include expansions or infilling. Note that some months for 2009-2018 may be missing reports due to lack of creel surveys at that time. Catch numbers presented are the average across years. These data were obtained from the South Coast Stock Assessment unit on December 15, 2025 and are preliminary.

Fishery Area	Disposition	Size	2009-2013			2014-2018			2019-2022			2023-2025		
			June	July	August									
QCS(11, 111)	Kept	Legal	544	1,557	865	1,475	1,581	770	1,703	1,904	944	2,506	2,487	1,406
QCS(11, 111)	Released	Legal	90	261	121	296	208	64	336	331	92	542	969	333
QCS(11, 111)	Released	Sublegal	61	257	121	252	198	185	154	406	251	140	263	231
nJST(12)	Kept	Legal	554	3,227	2,985	1,638	3,104	2,819	181	1,121	1,537	194	1,470	1,637
nJST(12)	Released	Legal	117	580	365	250	490	313	237	728	521	375	1,194	680
nJST(12)	Released	Sublegal	604	3,462	2,929	2,408	3,328	2,745	284	4,297	3,260	129	2,572	2,038
nwGST(13,14)	Kept	Legal	3,553	4,558	4,986	7,741	8,668	11,706	247	11,749	14,003	1,011	11,575	11,227
nwGST(13,14)	Released	Legal	413	169	206	1,381	1,410	1,265	7,532	12,661	3,833	6,804	13,004	3,951
nwGST(13,14)	Released	Sublegal	3,884	4,655	6,991	7,760	8,352	13,654	6,637	18,685	26,672	4,098	13,397	14,317
neGST(15,16)	Kept	Legal	88	327	225	1,341	2,084	1,785	1,300	3,719	2,085	1,840	2,526	1,240
neGST(15,16)	Released	Legal	8	44	133	128	312	259	1,243	2,282	137	3,220	5,857	776
neGST(15,16)	Released	Sublegal	405	976	358	565	NA	NA	3,717	7,050	7,817	5,007	3,759	2,081
sGST(17,18,19ab,28,29)	Kept	Legal	1,452	660	1,003	1,514	1,306	3,218	15	1,543	3,497	167	2,284	3,654
sGST(17,18,19ab,28,29)	Released	Legal	432	172	129	418	452	382	3,727	4,064	1,536	5,258	3,077	1,241
sGST(17,18,19ab,28,29)	Released	Sublegal	4,084	1,666	4,321	1,709	1,878	2,344	2,677	10,991	11,544	5,174	12,878	10,449
JDFeast(19cde,20cd)	Kept	Legal	2,738	3,045	6,199	2,406	4,444	8,126	69	189	7,895	426	815	13,976
JDFeast(19cde,20cd)	Released	Legal	491	456	768	821	1,042	1,804	1,383	3,953	2,960	1,755	4,695	8,230
JDFeast(19cde,20cd)	Released	Sublegal	788	1,361	4,929	698	5,871	6,544	312	2,211	16,061	981	5,338	20,559
JDFwest(20abe)	Kept	Legal	493	2,244	3,976	480	1,571	4,418	4	860	4,903	0	677	6,830
JDFwest(20abe)	Released	Legal	266	600	674	185	477	699	227	417	455	75	724	1,597
JDFwest(20abe)	Released	Sublegal	142	460	396	398	738	1,133	147	1,021	1,833	48	759	4,075
Inshore NWVI	Kept	Legal	420	8,434	6,997	1,655	7,719	8,250	2,988	7,947	7,209	4,357	9,059	8,859
Inshore NWVI	Released	Legal	152	2,038	1,720	287	1,910	2,574	969	1,461	1,137	2,127	2,250	2,305
Inshore NWVI	Released	Sublegal	89	2,961	3,292	199	3,956	2,596	2,365	6,276	5,377	1,083	2,644	2,212
Inshore SWVI	Kept	Legal	2,385	4,358	11,191	2,816	2,574	8,437	3,878	4,597	14,721	5,246	5,156	16,638
Inshore SWVI	Released	Legal	393	985	1,241	1,194	712	937	2,603	1,967	2,211	2,290	2,093	5,304
Inshore SWVI	Released	Sublegal	1,049	3,480	2,215	3,421	6,612	4,302	7,621	13,536	8,782	9,739	10,067	12,338
NWVI offshore	Kept	Legal	1,266	6,757	8,344	1,820	6,339	4,058	708	2,683	1,281	2,023	3,756	4,059
NWVI offshore	Released	Legal	1,283	3,511	3,146	280	1,918	1,338	644	531	134	799	752	1,020
NWVI offshore	Released	Sublegal	147	1,316	1,065	59	1,018	637	1,871	1,145	353	907	453	133
SWVI offshore	Kept	Legal	6,070	16,495	17,531	5,471	15,953	11,800	685	7,480	11,022	890	7,402	12,342
SWVI offshore	Released	Legal	2,583	7,641	8,202	2,461	5,417	3,231	244	1,554	2,257	164	2,358	2,988
SWVI offshore	Released	Sublegal	1,675	4,840	3,356	1,219	3,979	3,602	478	4,655	3,393	390	2,340	3,097
<b>TOTAL</b>	<b>Kept</b>	<b>Legal</b>	<b>19,563</b>	<b>51,661</b>	<b>64,300</b>	<b>28,357</b>	<b>55,344</b>	<b>65,387</b>	<b>11,777</b>	<b>43,791</b>	<b>69,094</b>	<b>18,661</b>	<b>47,207</b>	<b>81,870</b>
	<b>Released</b>	<b>Legal</b>	<b>6,227</b>	<b>16,456</b>	<b>16,705</b>	<b>7,702</b>	<b>14,349</b>	<b>12,867</b>	<b>19,145</b>	<b>29,948</b>	<b>15,271</b>	<b>23,410</b>	<b>36,974</b>	<b>28,423</b>
	<b>Released</b>	<b>Sublegal</b>	<b>12,927</b>	<b>25,435</b>	<b>29,974</b>	<b>18,687</b>	<b>35,931</b>	<b>37,742</b>	<b>26,262</b>	<b>70,273</b>	<b>85,343</b>	<b>27,696</b>	<b>54,470</b>	<b>71,530</b>



Appendix D. Escapement estimates for Summer 5<sub>2</sub> Chinook from the Fraser River Run Reconstruction. Green columns indicate populations that are included in the Conservation Units/Designatable Units shown in Table 1. Values in the 2014-2018 row are the average escapement for those years. Escapement estimates for all Fraser Chinook Management Units are available in the Fraser River Run Reconstruction files.

Year	Stuart	Nechako	Stellako	Quesnel	Cariboo	Chilko	Elkin	Taseko	Portage	Seton	Mahood	Clearwater	Raft
	DU-10	DU-10	DU-10	DU-10	DU-9/10	DU-10	n/a	n/a	DU-8	DU-10	DU-17	DU-17	DU-17
2014-2018	2,548	3,759	6	1,555	251	6,890	385	711	45	17	34	2,116	99
2019	2,159	2,900	0	342	58	5,086	290	530	229	18	26	783	106
2020	2,595	1,800	0	289	245	6,322	485	1,376	42	29	17	3,532	122
2021	2,782	2,770	2	1,560	201	5,473	118	786	28	31	35	3,780	106
2022	4,617	4,063	2	1,637	745	13,695	402	882	70	0	18	5,580	146
2023	3,493	4,385	2	1,343	949	7,266	449	720	176	39	22	4,419	83
2024	2,119	2,982	3	598	399	4,794	217	445	91	24	0	2,526	149

Year	Barriere	North Thompson	Lemieux	Big Silver	Chilliwack Summer	Douglas	Kazchek	Kuzkwa	Pinchi	Sloquet	Tipella	Chehalis	Total
	DU-17	DU-17	DU-17	DU-5	DU-5	n/a	DU-10	DU-10	n/a	DU-5	DU-5	n/a	
2014-2018	83	1,192	15	61	1,077	11	1	61	5	44	0	642	<b>21,611</b>
2019	89	211	11	31	1,443	0	0	22	4	12	0	501	<b>14,850</b>
2020	329	1,307	2	66	2,439	34	0	25	9	22	0	923	<b>22,010</b>
2021	29	2,879	11	60	2,353	9	2	51	9	38	0	479	<b>23,591</b>
2022	309	2,946	23	12	3,265	14	0	28	0	63	0	641	<b>39,158</b>
2023	40	2,804	29	82	2,309	3	4	18	16	52	0	925	<b>29,629</b>
2024	106	1,429	0	23	1,890	7	0	9	2	29	0	1,212	<b>19,053</b>



Appendix E. Summaries of genetic stock identification (GSI) samples obtained in mark selective fisheries (MSF) in 2021-2024. MSFs in PFMA 17 to 19 did not occur in 2021 and 2022. Catch was estimated at the creel sub-area level and rolled up to PFMA. As some management measures were applied to partial months, estimates were partitioned where feasible. Data are preliminary and subject to change.

Table E.1. Total Chinook catch in mark selective fisheries (MSFs) in PFMA 12, 13 & 15, 16, 17 to 19, 19, 20.

PFMA	Total Chinook Catch											
	2021			2022			2023			2024		
	Kept	Released Legal	Released Sub-legal	Kept	Released Legal	Released Sub-legal	Kept	Released Legal	Released Sub-legal	Kept	Released Legal	Released Sub-legal
<b>12</b>	2	2	1	1	1	1	0	0	0	0	0	0
<b>13 &amp; 15</b>	2,418	490	8,011	2,638	718	6,811	4,585	2,824	3,618	2,640	4,011	3,430
<b>16</b>	1,339	574	1,500	833	398	1,607	12	469	531	174	2,691	2,366
<b>17 to 19</b>	n/a	n/a	n/a	n/a	n/a	n/a	67	417	2,923	328	2,000	4,230
<b>19</b>	n/a	n/a	n/a	n/a	n/a	n/a	224	312	*	542	1,334	*
<b>20</b>	168	313	82	250	795	57	560	830	1,749	736	683	959
<b>Total</b>	3,927	1,379	9,594	3,722	1,912	8,476	5,448	4,852	8,821	4,420	10,719	10,958

\*Included in 17-19 row

Table E.2. Number of genetic stock identification (GSI) samples from mark selective fisheries (MSFs) in PFMA 12, 13 & 15, 16, 17-19, 19, 20.

PFMA	Number of GSI samples			
	2021	2022	2023	2024
<b>12</b>	7	0	0	0
<b>13 &amp; 15</b>	689	448	714	639
<b>16</b>	59	40	100	206
<b>17-19</b>	n/a	n/a	513	536
<b>19</b>	n/a	n/a	199	413
<b>20</b>	10	14	14	101
<b>Total</b>	765	502	1,540	1,895



Table E.3. Total number of Summer 5<sub>2</sub> mortalities in the MSFs, including both kept catch and legal-sized released mortalities (released catch x 20% release mortality rate).

PFMA	Summer 5 <sub>2</sub> mortalities			
	2021	2022	2023	2024
<b>12</b>	0	0	0	0
<b>13 &amp; 15</b>	12	0	45	30
<b>16</b>	0	0	2	8
<b>17-19</b>	n/a	n/a	0	0
<b>19</b>	n/a	n/a	0	0
<b>20</b>	0	0	2	2
<b>Total</b>	12	0	49	40

Table E.4. Total number of Spring 4<sub>2</sub> mortalities in the MSFs, including both kept catch and legal-sized released mortalities (released catch x 20% release mortality rate).

PFMA	Spring 4 <sub>2</sub> mortalities			
	2021	2022	2023	2024
<b>12</b>	0	0	0	0
<b>13 &amp; 15</b>	0	0	0	0
<b>16</b>	0	0	0	0
<b>17-19</b>	n/a	n/a	0	0
<b>19</b>	n/a	n/a	0	0
<b>20</b>	0	21	4	3
<b>Total</b>	0	21	4	3

Table E.5. Total number of Spring 5<sub>2</sub> mortalities in the MSFs, including both kept catch and legal-sized released mortalities (released catch x 20% release mortality rate).

PFMA	Spring 5 <sub>2</sub> mortalities			
	2021	2022	2023	2024
<b>12</b>	0	0	0	0
<b>13 &amp; 15</b>	0	0	0	0
<b>16</b>	0	0	0	0
<b>17-19</b>	n/a	n/a	0	0
<b>19</b>	n/a	n/a	1	2
<b>20</b>	0	0	2	2
<b>Total</b>	0	0	3	4