Executive Secretary's Summary of Decisions
2026 Post-Season Meeting
January 12-15, 2026

The Pacific Salmon Commission held its 2026 Post-Season meeting in Portland, Oregon and online, and discussed a number of topics (see attached agenda).

The Commission AGREED:

1. The minutes from October 2025 are approved as circulated by the Secretariat.
2. The Executive Secretary will prepare a draft amendment for the PSC bylaws that incorporates the Code of Conduct adopted in October 2025.
3. The draft 2025 post-season reports from the Parties are accepted.
4. The sections will confirm September and November 2026 extraordinary meeting dates, and respective delegation sizes, during the February 2026 meeting.
5. The Commission accepted the report of the Chinook Interface Group (CIG), including its primary recommendations:
    a. Adding an in-person R&D meeting in July 2026 to the CTC workplan.
    b. Updating the existing Gantt chart of regular and extraordinary meetings, incorporating outcomes from the October 2025 CIG meeting and associated notations, to ensure a shared and up-to-date schedule for future planning.
    c. Adding a CIG agenda item for February 2026 to discuss a communications strategy for the SCA Model.
    d. Convening a small work group to consider other tools for management of the Salish Sea fisheries and stocks.
    e. Continuing CIG deliberations in February 2026 regarding the Snohomish River pending CTC response to paragraph 7(c)(ii), summaries of Canadian management options for 2026, and Canadian responses to U.S. follow up questions

ATTENDANCE

PACIFIC SALMON COMMISSION
POST-SEASON MEETING
JANUARY 12-15, 2026
HYATT REGENCY PORTLAND
PORTLAND, OREGON/ONLINE

COMMISSIONERS

UNITED STATES	CANADA
P. Anderson (Chair)	A. Classen (Vice-Chair)
W.R. Allen	J. McCulloch
J. Quan	M. Ned
D. Vincent-Lang	S. Farlinger
W. Auger	K. Connors
R. Klumph	R. Jones
M. Oatman	B. Riddell
D. Varmazis (attended virtually)	A. Thomson

Draft Agenda
2026 Post-Season Meeting
January 12-16, 2026
Portland, OR and via webinar

Cultural Welcome (Tribal leaders to be confirmed)

1. Adoption of agenda (and announcement of public observers)
2. Approval of minutes: 2025 Fall Meeting
3. Executive Secretary's report
4. Presentation of post-season reports
    a. Preliminary 2025 data
    b. National reports on 2025 Chinook fisheries
5. Update from CSC Liaison Group
6. Response from Canada regarding Snohomish ISBM fishery management
7. Updates on the status of the process to update Annex IV
8. CIG report (topics TBC)
9. Public comment

Annotated agenda

January 2026 Post-Season Meeting

(Executive Secretary's annotations in *italics*)

1. Adoption of Agenda
   - ***Action****: Consistent with PSC bylaws, an agenda shall be adopted by the Commission at the start of each meeting.*
   - *The Commission shall not ordinarily take a decision on any item that has not been included in the draft agenda for the meeting. Where circumstances warrant, supplementary decision items may be added to the agenda with the concurrence of each National Section.*
2. Approval of minutes
   - *The Parties received draft minutes from the October 2025 Fall Meeting ahead of the present meeting.*
   - ***Action****: consider minutes for adoption*
3. Executive Secretary's Report
   - *The Executive Secretary will provide a verbal report on items for the current meeting and other issues needing attention. This will include a status report on the Commissioners'/Parties' deliverables under amended Annex IV, a draft Code of Conduct for delegates, updates on 40th anniversary planning, and identifying any public observers.*
4. Presentation of post-season reports
   - Preliminary 2025 data: *Since January 2018, the Parties have agreed to review preliminary post-season reports each January with final reports/final data accepted the following October.*
   - National reports on 2025 Chinook fisheries*: Since October 2018, the Commission has agreed the Parties will present summaries of their Treaty-area Chinook fisheries at each January Post-Season meeting.*
5. Update from CSC Liaison Group (Commissioners Auger, Farlinger, Klumph, Thomson and CSC members)
   - *Effective February 2020, a CSC Liaison Group (up to four Commissioners) has engaged with the CSC on work planning. The present meeting will allow the participants to update the Commissioners on the CSC's work plan priorities.*

6. Response from Canada regarding Snohomish ISBM fishery management
    - *Canada received Commission correspondence on Nov. 3, 2025 regarding Chapter 3, paragraph 7c(i) triggers in its ISBM fishery.*
    - *That correspondence invited Canada to provide proposals at the present meeting regarding CYER reductions on the Snohomish Chinook stock.*
    - ***Action**: Commissioners are invited to review Canada's proposals and make recommendations as appropriate.*
7. Updates on the status of the process to update Annex IV
    - *The Commission is invited to provide national views on logistics and timing for any future updates to Annex IV chapters, as appropriate.*
8. CIG report
    - *The Chinook Interface Group (CIG) will meet during the Post-Season Meeting and provide a report on topics to be confirmed via the CIG leadership.*
    - ***Action**: The Commission is invited to consider and adopt the CIG report as appropriate.*
9. Public comments
    - *When appropriate, and with the concurrence of the Vice-Chair, the chair may provide time for public visitors to speak during the meeting.*

Executive Secretary's Report

Post-Season Meeting

January 2026

Topics

- Status of Annex IV deliverables for Commission/Parties
- Secretariat internship
- 40th anniversary update
- Code of Conduct and PSC bylaws

Secretariat internship – Spring 2026

- **Sept. 2025**: Secretariat approached by University of British Columbia for interest in the ANCHOR program (Advancing Networks and Careers in Hands-On Research)
  - Offered undergraduate/graduate student for no-cost short-term work at Secretariat.
  - Mentored, paid internship program offered to government, NGO, industry groups.
  - No matching funds from PSC required

Secretariat internship – Spring 2026

- **Fall 2025**: Secretariat agreed to engage, ID'd three-month project comparing video & observer counts of salmon passing Hell's Gate
- **January 2026**: UBC provided three candidates, Secretariat considering these for start date c. Feb. 1, 2026.
- **April 2026**: Project concludes, offers insights on utility of replacing human observers with video as part of mandated Hell's Gate passage enumeration.

Annex IV deliverables for Commissioners

- Executive Secretary provides regular updates on chapter provisions that apply to Commissioners or the Parties
  - Tasks/deliverables assigned to panels/committees = updates via October work plans each year
  - Table in briefing book
- January 2026: Commissioners are on time with all deliverables to date.

40th anniversary celebration

- Secretariat has engaged with sections to finalize participants
  - Three keynote speakers named (Phil Anderson, Brian Riddell, Gord Sterritt)
- Evening event slated for Feb. 11, 2026
  - Draft agenda in briefing book
  - 6-8 p.m. at Hyatt Regency Downtown Vancouver
- Preceded by First Nations/Tribal commemoration Feb. 10
  - Invitations circulating to PSC Community

Code of Conduct and PSC bylaws

- Code of Conduct for all delegates adopted in October 2025
- PSC bylaws contain other codes:
  - Guidelines for technical committee member conduct (Chapter VI)
  - Secretariat conduct (Chapter X)
- Interest in including new Code of Conduct in bylaws for consistency and archival purposes
- This is achievable by amending the bylaws, e.g., including the Code of Conduct as an appendix. Future changes would be made by amending the bylaws/appendix as needed.

2019-2028 Pacific Salmon Commission and Party tasks identified in amended Annex IV:

Chapters 1, 2, 3, 5, and 6[1] in chronological order

Prepared by the Executive Secretary and national representatives (updated 1/6/26)

Deadline	**Chapter/para**	**Task (emphasis added)**	**Status**
January 2019 - December 2028	Chapter 3, paragraph 2(c)	**[The Parties shall] implement through their respective domestic management authorities, a 10-year Chinook salmon CWT&R program that begins in 2019 that provides timely data to implement this Chapter via improvements and studies designed to achieve CTC and CWT work group data standards and guidelines.** The purpose of the CWT&R program shall be to: (i) maintain and improve the precision and accuracy of critical CWT- based statistics used by the CTC and Selective Fisheries Evaluation Committee (SFEC) in support of this Chapter, (ii) accelerate the processing of CWT data to provide CWT data for the pre-season planning process, (iii) increase the number of exploitation rate indicator stocks to represent Chinook production and fishery exploitation rates for escapement indicator stocks, (iv) examine the representativeness of exploitation rate indicator stocks for escapement indicator stocks and CWT model stocks, and (v) develop analytical tools that involve the analysis of CWT data in the implementation of this Chapter;	Ongoing: Addressed through TOR for CEII-CWT/R working group
January 2019 - December 2028	Chapter 3, paragraph 2(d)	**[The Parties shall] implement through their respective domestic management authorities, a 10-year Chinook salmon CEII program that begins in 2019 that provides timely data to implement this Chapter via objective and repeatable methodologies in data limited situations and in others via improvements and studies designed to achieve CTC data standards, guidelines, and analysis schedules.** The purpose of the CEII program includes the development of analytical tools that involve catch and escapement data in the implementation of this Chapter.	Ongoing: Addressed through TOR for CEII-CWT/R working group

[1] This table summarizes new tasks identified for the Parties or the Commission under amended chapters 1, 2, 3, 5, and 6 in Annex IV. It does not include tasks that are conditional (e.g., if a fishery's limit is exceeded, then the Commission reviews and recommends remedial action), nor does it include routine management actions (e.g., pre-season run forecast delivery, sample collection schedules, means to achieve quota share, etc.). This summary does not address tasks assigned to Panels and Committees, which will be addressed through implementation plans developed by the relevant Panels/Committees and due to the Commission at the January 2019 Post-Season meeting.

Deadline	Chapter/para	Task (emphasis added)	Status
February 2019	Chapter 1, Paragraph 3(a)(iii).	Increase CWT tag rates for Stikine River Chinook salmon to achieve CTC indicator stock standards.	Addressed in TBR Panel implementation plan
February 2019	Chapter 1, Paragraph 3(b)(iii).	Increase CWT tag rates for Taku River Chinook salmon to achieve CTC indicator stock standards.	Addressed in TBR Panel implementation plan
February 2019	Chapter 3, Appendix A, paragraph 14	**The Commission shall receive the model improvements from Phase 2 and make a decision about their implementation.**	Completed January 16, 2020 with adoption of revised Tables 1-2 and Appendix C
October 2019	Chapter 3, paragraph 5(b)	**The Parties agree that for the Chapter Period:** **b) the Commission shall establish a work group to explore issues related to Okanagan Chinook, including the establishment of management objectives, enhancement and the possible use of Okanagan Chinook as an indicator stock. The work group shall report to the Commission by October 2019.**	Work group formally created October 2019; final report and recommendations provided Oct. 2023.
December 2019	Chapter 3, paragraph 2(e)	**[The Parties shall] create and maintain a work group to discuss the programs initiated in sub-paragraphs (c) and (d)[2] by 2020**. The work group shall: (i) create opportunities for the exchange of project results and conclusions, advancements in knowledge, and discussion of the direction of these programs between the Parties, management entities, and knowledgeable individuals; (ii) review project results and conclusions from these programs and provide these reviews to the project proponents and the Commission; and (iii) identify, for the Commission, changes to projects or suggest new projects to fill gaps in knowledge.	Ongoing: Addressed through TOR for CEII-CWT/R working group
c. February 2020	Chapter 1, paragraph 3(b)(i)(B)	**The Parties shall develop a joint technical report and submit it through the Parties' respective review mechanisms with the aim of establishing a bilaterally approved maximum sustainable yield (MSY) goal for Taku River sockeye salmon prior to the 2020 fishing season.[3]**	Completed May 21, 2020; confirmed by PSC July 2020

[2] The CWT&R and CEII programs.

[3] It is not specified if the Parties will be acting through the TBR Panel or otherwise.

Deadline	Chapter/para	Task (emphasis added)	Status
c. February 2020	Chapter 1, paragraph 3(b)(i)(C)	The Taku River sockeye salmon assessment program will be reviewed by two experts (one selected by each Party) in mark-recovery estimation techniques. **The Parties[4] shall instruct these experts to make a joint recommendation to the Parties concerning improvements to the existing program including how to address inherent mark-recovery assumptions with an aim to minimize potential bias prior to the 2020 fishing season.**	Completed May 21, 2020; confirmed by PSC July 2020
February 2020	Chapter 3, paragraph 4(c)(i)	**The CTC shall recommend standards for the desired level of precision and accuracy of data required to estimate incidental fishing mortality** by February 2020. The Commission will consider the recommendation of the CTC regarding standards for the desired level of precision and accuracy of data required to estimate incidental fishing mortality.	Ongoing. IM standards report published in March 2022. The CTC is awaiting further direction from the CIG on whether additional work is needed and the CIG placed this issue on its forward agenda as of Oct. 2022.
January 2022	Chapter 2, introduction	**By the Commission post season meeting in January 2022, the Parties will have completed a review of the performance of the provisions in this Chapter.** The review will identify management actions taken to support conservation of Nass River and Skeena River sockeye, evaluate the consistency of those actions with Chapter 2 obligations and outline, where feasible, the benefit of those actions for those populations.	Completed Feb. 2023: Commission accepted joint N. Panel report including areas for further work
January 2022	Chapter 3, paragraph 2(a) footnote #9	The model configuration from March 2018 (CLB1804) shall be used to establish a baseline run. **The Parties shall document specific concerns or inconsistencies between that configuration and the management regime in 2018. The Parties agree that in order to complete this documentation, the Commission shall direct the CIG to work with the CTC to develop a draft outline on how to document specific concerns or inconsistencies between that configuration and the management regime in 2018. The Commission will review this draft outline and direct the CTC how to prepare the report.**	Completed Feb. 2022 via Commission acceptance of CIG report and recommended change in footnote 9.

[4] It is not specified if the Parties will be acting through the TBR Panel or otherwise.

Deadline	Chapter/para	Task (emphasis added)	Status
Unspecified	Chapter 5, paragraph 11(b)	Each Party may: request additional reductions in ERs to meet critical conservation concerns not adequately addressed by the ER caps. The Southern Panel shall develop bilateral guidance to indicate how this could be implemented in a responsible and timely manner during a Party's domestic preseason planning. **The guidance shall also include steps and timelines for communication with Commissioners. This process will require Commission approval before implementation**	Completed Feb. 2023 via acceptance of S. Panel work plan progress report and its proposed guidance on para. 11.
Unspecified	Chapter 5, paragraph 11(c)	Any party may request increases in the MU-specific ER caps determined under paragraphs 9(b) to (d) if the Party can demonstrate that the ER caps prevent it from accessing its own stocks to meet its fishery management objectives or from harvesting other allocations provided under this Treaty. The Southern Panel shall develop bilateral guidance to indicate how this could be implemented in a responsible and timely manner during a Party's domestic preseason planning. **The guidance shall also include steps and timelines for communication with Commissioners. This process will require Commission approval before implementation**	Completed Feb. 2023 via acceptance of S. Panel work plan progress report and its proposed guidance on para. 11.
January 2022, 2025, 2028	Chapter 5, paragraph 12	**The Parties shall review this Plan no later than three years after this Chapter enters into force and every three years after that date, unless otherwise specified by the Southern Panel**. The review shall include an assessment of the effectiveness of this Plan in achieving the management objectives of the Parties and any other issues either Party wants to raise, including, but not limited to: (a) whether the ER caps established under paragraphs 9(b) to (d) have prevented either Party from accessing its own stocks to meet its fishery management objectives or from harvesting other allocations that are provided under this Treaty; and (b) issues associated with the procedures and methods employed to estimate and account for total coho mortalities, including those incurred in mark-selective fisheries. **The Parties shall modify this Plan, if necessary, based on the review and the need to incorporate results of bilateral technical developments** (e.g., to establish criteria to define MUs and to biologically determine allowable ERs, to develop a common methodology for measuring ERs in Canadian and U.S. fisheries, development of bilateral management planning tools, etc.).	Completed; review document circulated from Exec Secretary via email on Sept. 19, 2025

Deadline	Chapter/para	Task (emphasis added)	Status
January 2022	Chapter 2, paragraph 12	The U.S. agrees to complete a harvest pattern analysis of the pink salmon fishery in District 104 salmon that shall be peer-reviewed by an independent contractor and then submitted to the Committee and the Northern Panel for further review.	Complete: N. Panel agreed bilaterally; published as PSC Tech Report June 2021
c. December 2022	Chapter 3, paragraph 5(e)	**The Commission shall use the Calendar Year Exploitation Rate (CYER) metric to monitor the total mortality in ISBM fisheries and shall review the CYER metric during the year 2022 to make a decision on its continued application or the use of an alternative metric**. In the absence of a Commission decision to use an alternative metric, the use of the CYER metric continues.	Commission agreed in Feb. 2022 that no alternative metrics are available for review, but could be reviewed in the future if necessary.
c. January 2023, c. January 2026	Chapter 3, paragraphs 7(d-e)	**(d) [The Parties agree] to conduct up to two reviews of the CPUE-based approach to decide whether to continue to use this method to determine the catch limit for the SEAK AABM fishery, to return back to use of the Commission Chinook model, or to adopt an alternative method as determined by the Parties, to determine pre-season estimates of the aggregate AI of Chinook stocks available to the SEAK troll fishery and the relationship between the catch and AIs specified in Table 1.** The first review shall occur as soon as practical after the 2022 first post-season AI is calculated and the second review shall occur as soon as practical after the 2025 first post-season AI is calculated. The Commission decision shall be based on the outcome of: (i) a comparison of cumulative actual catch and the cumulative post- season catch limit from the Commission Chinook model, (ii) a comparison of the cumulative performance of the CPUE-based catch limit and the pre-season catch limit from the Commission Chinook model to predict the catch limit estimated from the first post-season calibration of the Commission Chinook model (model error), and a comparison of the abundance tier selected by use of the CPUE method and the abundance tier that is selected by use of the pre-season calibration of the Commission Chinook model with the abundance tier selected from the first post-season calibration derived from the Commission Chinook model; **(e) to consider the results of reviews described in sub-paragraph (d), immediately, and decide whether to continue to use the CPUE method for the SEAK AABM fishery**. Unless the Commission decides to continue to use the CPUE-based approach or adopt an alternative method, the Commission Chinook model estimate of the AI and Table 1 shall be used to determine the annual pre-season and post-season catch limits;	CPUE method review completed, discussed by CIG and Commission in Oct. 2023. Commission agreed to suspend use of the CPUE-based approach after the 2022 season. New multi-variate model 4.3 used to set SEAK catch limits for 2023 season. In Jan. 2024, Parties did not reach agreement on an alternative methodology for setting the SEAK AABM catch limit. It was instead agreed that pursuant to paragraph 7(d) and 7(e), the Commission returns to the use of the Commission Chinook Model and Table 1 for SEAK AABM fisheries, and approved the application of the 10% exceedance rule that defines the triggers for 7(b)(i) and (ii).

Deadline	Chapter/para	Task (emphasis added)	Status
January 2023	Chapter 3, paragraph 7(h) and Appendix A paragraph 14	**The Commission will consider the draft outline of the five-year review provided by the CTC and will provide direction on how to proceed with preparing the report.**	Report completed in January 2026.
December 2023	Chapter 1, paragraph 3(a)(ii)	The Parties shall develop and implement an abundance-based approach to managing coho salmon on the Stikine River. Assessment programs need to be further developed before a biologically based escapement goal can be established. **By 2024, the Parties shall review the progress on this obligation**.	Underway via the TBR Panel with updates in annual work plans
c. December 2023	Chapter 1, para 5	**The Parties shall review midway through the Chapter Period, or other time mutually decided by the Parties, the current Chapter and determine if they want to renew this Chapter for an additional period of time.**[5]	TBR Panel recommends no changes to Chapter 1: to be reflected in Chapter 1 implementation plan.
By December 2024	Chapter 1, paragraph 3(a)(i)(c). Appendix to Annex IV, Chapter 1	**Expand and initiate new bilateral sockeye salmon enhancement programs in the Canadian portion of the Stikine River watershed.**	TBR Panel reported in October 2024 that initial exploratory evaluation activities are underway, limited progress to date.
January 2025	Chapter 3, paragraph 7(h)	In January 2025, **the Commission shall review the report [from the CTC on its 5-year review] to identify any appropriate modifications to this Chapter to improve its implementation.**	Report completed in January 2026 for review (as per

[5] Chapter does not specify how this review will be conducted, including the respective roles of the Commission and TBR Panel.

Deadline	Chapter/para	Task (emphasis added)	Status
			Commission-postponed deadline)
December 2026	Chapter 2, paragraph 5	**The Parties agree to review[6] Annex IV, Chapter 2, a minimum of two years prior to its expiration with a view to renewing it**. If such renewal is not successfully concluded prior to the expiration date, then overages and underages must be carried forward to the next Chapter period.	
Unspecified	Chapter 1, paragraph 7	the Parties[7] shall consult with a view to developing, for the transboundary sections of the Columbia River, a more practicable arrangement for consultation and setting escapement targets than those specified in Article VII, paragraphs 2 and 3.	Ongoing since October 2019 through establishment of the Okanagan Work Group
Unspecified	Chapter 3, Appendix A, paragraph 14	**The Commission shall receive the model improvements from Phase 3 and make a decision about their implementation.**	Commission agreed in February 2022 a) these will not be available in January 2023, b) they remain a high priority; and c) they will be delayed due to higher priority tasks. CTC has not developed work group for Phase 3 improvements.

[6] Chapter does not specify how this review will be conducted, including the respective roles of the Commission and the Northern Panel.
[7] It is not specified how this consultation will be conducted, including the respective roles of the Commission and TBR Panel.

Deadline	Chapter/para	Task (emphasis added)	Status
Ongoing	Chapter 3, paragraph 4(a-d)	The Parties agree: (a) **to monitor and manage incidental fishing mortality in AABM fisheries** with the intent of not exceeding levels as specified in paragraph 4(f) during the Chapter Period; (b) that landed catch and incidental mortalities in ISBM fisheries are limited according to paragraph 5; (c) **to provide estimates of incidental mortality of Chinook salmon in all ISBM and AABM fisheries**. ISBM fisheries have total mortality constraints (catch plus associated incidental mortality) while AABM fisheries have catch limits. The CTC shall recommend standards for the desired level of precision and accuracy of data required to estimate incidental fishing mortality by February 2020 [see Commission task above]; (d) **to provide estimates of encounters of Chinook released in fisheries that, when multiplied by assumed gear-specific mortality rates, provide estimates of incidental mortality that are used in sub-paragraph (c).** These estimates: (i) shall be developed by the Parties annually from direct observation of fisheries, or shall be calculated from a predictable relationship between encounters and landed catch based on a time series of direct observations of fisheries reviewed by the CTC;	Paras c and d estimates presented in TCCHINOOK 21-05 and 21-04. IM standards report discussed by CIG in Feb. 2022. Further review pending via CIG forward agenda.
Ongoing	Chapter 3, paragraph 4(g)(v)	…subject to the availability of funds, the U.S. shall establish a Mark Selective Fishery Fund (Fund). **The Fund shall be administered by the Commission** to assist fishery management agencies with equipment and operations, as needed, to mass-mark hatchery produced Chinook salmon, to estimate incidental mortality, and to maintain and improve the ability to estimate exploitation rates on Chinook salmon indicator stocks that are encountered in MSF, including improvements and development of bilateral analytical tools. **The Commission shall adopt procedures to solicit proposals** from U.S. and Canadian management entities for the use of the Fund, be advised on the merits of proposals by specialists as it determines appropriate, and make funding decisions.	MSF Fund and committee established Oct. 2020

Deadline	Chapter/para	Task (emphasis added)	Status
Ongoing	Attachment E, paragraph 2	The Parties request the Commission to: (a) maintain a page on its web site that documents citations, references, or links to publicly accessible information published by the Parties, management entities, or others related to the habitat protection and restoration projects and programs that are important to Pacific salmon stocks subject to this Treaty; and, (b) periodically review and discuss information on the habitat of naturally spawning stocks subject to this Treaty that cannot be restored through harvest controls alone, any non-fishing factors that affect the safe passage or survival of salmon, options for addressing non-fishing constraints and restoring optimum production, and progress of the Parties' efforts to achieve the objectives for the stocks under this Treaty.	Website update complete

Draft Schedule
PSC 40th Anniversary Celebration
February 11, 2026
6-8 p.m.
Hyatt Regency Hotel, Vancouver, BC

6:00-6:30pm: Arrival & Reception

- Guest arrival
- Appetizers, beverages provided (no-host bar)
- Background slideshow of PSC over the years and/or *In Memoriam* slide show
- Self-guided PSC trivia quiz (optional, via mobile devices)

6:30-7:30: Main program

- Welcome from Secretariat (John Field, Executive Secretary)
- Opening remarks from Canada (Anna Classen, PSC Vice-Chair)
- Phil Anderson, PSC Chair, USA (topic TBC)
- Dr. Brian Riddell, Commissioner: History of the PSC
- U.S. Tribal representative (speaker, topic TBC)
- Gord Sterritt, First Nation representative (topic TBC)
- John Field, closing comments

7:30 -8:00: Social

- Food/beverages
- Informal conversations & photos
- Continue background slideshow

POST-SEASON REPORT FOR THE 2025 CANADIAN TREATY LIMIT FISHERIES

TABLE OF CONTENTS

1 INTRODUCTION

The chapters in Annex IV of the Pacific Salmon Treaty (PST) outline the joint conservation and harvest sharing arrangements between Canada and the United States of America (U.S.) for key stocks and fisheries subject to the Treaty. In August 2018, the Pacific Salmon Commission (PSC) recommended amendments, under Annex IV of the PST, to the Governments of Canada and the U.S. for review and ratification. Both governments agreed to the provisional application of the new agreements as of January 1, 2019, while the ratification process was completed. Effective May 3, 2019, the Annex IV amendments came fully into force through the exchange of diplomatic notes between Canada and the U.S. and will remain in place for 10 years. Chapter 4 (Fraser River Sockeye and Pink) expired on December 31, 2019. In February 2019, agreement-in-principle was reached, and the proposed amendments were referred to the Governments of Canada and the U.S. for review and ratification. Both governments agreed to the provisional application of the amendments as of January 1, 2020, while the ratification process is completed. The new amendments came into force in Spring 2020 and will remain in place for 9 years, bringing Chapter 4 into alignment with the five other fishing Chapters under the PST.

Annex fisheries are reported in the order of the Chapters of Annex IV. Fishery summaries include expectations and management objectives, spawning escapements (where relevant and available) and catch results by species. The focus of information presented within this report is on Pacific salmon stocks, enhancement projects and fisheries assessed and administered pursuant to requirements set out within the PST. Information on Canadian Pacific salmon fisheries, assessment and enhancement programs beyond the scope of the PST is not included within this report.

Annually, DFO publishes a Salmon Outlook document which is referenced in various sections of this report, which provides an indication of salmon production (using a 4-point rating scale), and associated fishing opportunities by geographic area and species stock groups (referred to as an Outlook Units). Pre-season quantitative forecasts are documented where they are produced.

Fishery catch information within this report is presented as the best information available. Catches are reported on the basis of in-season estimates (hailed statistics); on-grounds counts by DFO, logbooks, dockside tallies, landing slips (First Nation fisheries), fish slip data (commercial troll and net fisheries), recreational creel surveys, and fishery observer reports (recreational and commercial). Appendix 1 summarizes catches from years 2013 to 2024 in Canadian fisheries which have been administered pursuant to requirements set out within the PST. Detailed catch data is provided for commercial, recreational, First Nations, Excess Salmon to Spawning Requirements, and test fisheries in Appendices 2 to 7.

2 TRANSBOUNDARY RIVERS

2.1 STIKINE RIVER

Following the 2025 pre-season meeting of the Transboundary Panel, Canada developed its fishing strategy for Stikine River salmon fisheries based on the catch sharing and management arrangements outlined in PST Annex IV, Chapter 1. Canada's intent was to achieve the following objectives: 1) to harvest its share (42.5%) of the total allowable catch (TAC) of Stikine River Sockeye through the First Nation food, social, and ceremonial fishery; 2) to allow harvesting opportunities for Sockeye that were surplus to spawning requirements; and 3) to harvest up to 5,000 Coho through a directed fishery. The pre-season forecast of 10,000 large Chinook was well below the Chapter 1 fishery forecast run size threshold of 24,500 and did not allow for a directed Canadian Chinook fishery. The 2025 Chinook pre-forecast also resulted in the cancellation of the 2025 assessment fishery. The pre-season forecast of 176,000 Sockeye was sufficient to allow for a directed Canadian commercial fishery in 2025.

The 2025 Canadian lower Stikine River commercial Sockeye fishery opened on June 29 (statistical week 27) and ended on July 30 (statistical week 31) for a combined total of 24 fishing days. Subsequently, the lower Stikine River commercial Coho fishery opened on August 24 (statistical week 35) and ended September 19 (statistical week 38). Commercial fishing gear permitted for the 2025 season was limited to one 135-metre (443 ft.) gill net per licence holder. The maximum mesh size permitted was 204 mm (8"). The lower Stikine Rover commercial fishing zone covered the area from the international (U.S./Canada) border upstream to near the confluence of the Porcupine and Stikine Rivers and included the lower 10 km (6 mi.) reach of the Iskut River.

Openings in the upper Stikine River commercial fishery generally mirror those in the lower Stikine River commercial fishery, but in certain years may lag by one week. The upper Stikine River commercial fishing area is located upstream of the Chutine River to the mouth of the Tuya River and was open for a total of 9 fishing days in 2025.

The Canadian First Nation Food, Social and Ceremonial (FSC) fishery located near the community of Telegraph Creek, British Columbia (B.C.) was active from July 7 to the second week of August. To conserve Chinook, measures were implemented within the First Nation FSC fishery to minimize incidental catch.

Canadian recreational fishery effort for Chinook was low for the majority of the 2025 season due to area, retention, and size restrictions within the Transboundary Rivers. Recreational fishery effort for Coho was low.

2.1.1 CHINOOK SALMON

The pre-season forecast of 10,000 large Chinook salmon developed by the Transboundary Technical Committee (TTC) did not provide for a total allowable catch allocation in 2025. The current, bilaterally recognized, fishery management strategy specifies that a pre-season forecast run size of <24,500 precludes either Party from administering directed Chinook salmon fisheries. As a result, specific fishery management measures were implemented within all Canadian fisheries to minimize the likelihood of interception of Chinook in 2025.

The 2025 total Canadian fishery catch of Chinook salmon was 83 large fish and 217 jacks (all of which occurred within the First Nation FSC fishery and a total of 68 were released). This level of catch well below the

10-year average of 901 large and 534 jack Chinook salmon. No Chinook salmon were harvested within recreational or commercial fisheries as retention was prohibited.

The preliminary post-season terminal run estimate of 15,172 large Chinook salmon exceeded the lower end of the escapement goal range (14,000).

2.1.2 SOCKEYE SALMON

The forecast for Stikine River Sockeye developed by the TTC was for a terminal run size of 176,000 fish, comprised of approximately 135,000 Tahltan Lake origin Sockeye (101,000wild and 33,000 enhanced) and 41,000 non-Tahltan wild Sockeye. The 2025 Stikine River Sockeye terminal run size forecast was above the 10-year average of approximately 121,000 fish.

The Stikine River terminal Sockeye run size estimate is based on the in-river run reconstruction of the Tahltan Lake Sockeye run expanded by run timing; stock identification data from lower river assessment projects; and, estimated harvest of Stikine River Sockeye in U.S. terminal gill net fisheries. The preliminary post-season estimate of the terminal Sockeye run size is 151,000 and is comprised of 121,000 Tahltan Lake-origin fish and 30,000 fish from the non-Tahltan stock group.

A total of 39,983 adult Sockeye returned to Tahltan Lake in 2025. The current Tahltan Lake Sockeye escapement goal range is 11,000 to 25,000 while the most recent 10-year average return is 36,830. A total of 1,774 adult Sockeye were removed from Tahltan Lake for the 2025 Stikine Sockeye Salmon Enhancement Production Plan program. Four hundred Sockeye were removed for stock identification purposes, and it is estimated that 37,809 Sockeye spawned in Tahltan Lake in 2025 exceeding the spawning escapement objective.

The spawning escapement for the non-Tahltan Lake Sockeye stock group is calculated using stock identification, assessment fishery, and in-river commercial catch and effort data. The non-Tahltan Sockeye spawning escapement goal range is 13,000 to 33,000 while the most recent 10-year average return is 35,800. The 2025 preliminary escapement estimate for non-Tahltan Lake Sockeye indicates the spawning escapement objective was exceeded.

Based on in-season run size information, there was an allowable catch allocation of Stikine River Sockeye in 2025, allowing for a normal First Nation and limited directed commercial fisheries (noting that the start of the commercial fishery was delayed to reduce potential incidental catch of Chinook and to confirm Sockeye allowable catch).

The total 2025 Canadian fishery harvest of Stikine River Sockeye was 32,173, slightly above the 10-year fishery harvest average of 30,300 fish. The estimate of enhanced Sockeye harvested in Canadian fisheries will be determined post-season based on results of thermal mark analysis.

2.1.3 COHO SALMON

The total Canadian fishery harvest of Coho during the 2025 directed fishery period between statistical weeks 35 to 38 was 2,902, which was well below the recent 10-year average of 4,760 fish. An assessment fishery was not conducted in 2025, while the catch per unit effort (CPUE) observed in the commercial Coho fishery was below average. Aerial surveys of index spawning sites were completed in 2025.

2.1.4 JOINT SOCKEYE SALMON ENHANCEMENT PROGRAM

In fall 2024, 1.90 million Sockeye eggs were collected from Tahltan Lake. All eggs were hatched and reared at Snettisham Hatchery (Alaska) over the 2024/2025 winter period, and fry were mass-marked via thermally induced otolith marks for identification and assessment purposes. Green egg to released fry survival was approximately 64%. Enhancement programs can experience Infectious Hematopoietic Necrosis virus (IHNv) outbreaks as the disease is naturally occurring in Stikine River Sockeye stocks. Disinfection procedures are used in accordance with the World Health Organisation protocols during egg collections to limit the risk of transmission. Subsequent to the 2024egg collection and rearing at Snettisham Hatchery, no losses to IHNv occurred. On May 23, 2025, approximately 1.2 million emergent Sockeye fry were transported to Tahltan Lake for release.

For 2025, the Stikine River Enhancement Production Plan (SEPP) identified an expected egg collection range of 2.5 to 3.5 million to a maximum of 5.0 million Sockeye eggs from Tahltan Lake. In-season, the 2025 Tahltan Lake Sockeye egg collection target was confirmed at 2.5 million eggs using escapement and smolt assessment information. Persistently poor weather resulted in aircraft egg transportation delays in September 2025.A preliminary total of 2.0 million Sockeye eggs were collected from Tahltan Lake in the fall of 2025 for rearing and release in 2026.

2.2 TAKU RIVER

Following the 2025 pre-season meeting of the Transboundary Panel, Canada developed its fishing strategy for Taku River fisheries based on the catch sharing and management arrangements outlined in Annex IV, Chapter 1 of the PST. Accordingly, the Canadian fishery strategy incorporated specific conservation considerations and contained the following harvest objectives: 1) to harvest 23% of the TAC of Taku River Sockeye (adjusted according to projections of the number of enhanced adult Sockeye returning in 2025), plus harvest of Sockeye in excess of spawning and brood stock needs; 2) to harvest enhanced Taku River Sockeye incidentally to wild Sockeye; and, 3) to harvest 5,000 Coho plus Canada’s share of the TAC and any Coho surplus to spawning needs.

The 2025 commercial fishing season on the Taku River opened on June 25 (statistical week 26) and closed on September 17 (statistical week 38). Fishing gear was limited to one drift gillnet and one set net per licence and incorporated the maximum gill net length of 36.6 metres, established in 2008 for drift gill nets and in 2009 for set gill nets.

The Taku River commercial fishing area in Canada consists of the mainstem of the river from the international border upstream approximately 18 km (11 mi.), to a geological feature known locally as Yellow Bluff. Most of the commercial fishing activity takes place in the lower half of this area, downstream of the confluence of the Tulsequah and Taku Rivers.

The First Nation Taku River FSC fishery is primarily located in the lower Taku River in the same area as the Canadian commercial fishery. Small numbers of fish are also harvested at Inklin Junction, on the lower Nakina River, and at the outlets of Kuthai and King Salmon lakes.

Canadian recreational fishery effort was low in 2025 due to area, retention and size restrictions for the duration of the Chinook season. Angling for Sockeye was permitted on June 15 through September 1 with restrictions implemented within the recreational fishery to prohibit the catch of Chinook. Recreational fishery effort for Coho was low in 2025.

2.2.1 CHINOOK SALMON

The bilateral pre-season forecast was for a terminal run of 40,000 large Chinook, approximately 167% above the previous 10-year average of 15,000 fish. A run size of 40,000 fish was above the management objective of 25,500 fish. Due to persistently low abundance and failure to achieve minimum spawning escapement objectives in recent years, no Canadian directed commercial or recreational Chinook fisheries occurred this season. Canada also implemented measures in fisheries targeting other species to avoid the incidental catch of Chinook. An in-river Chinook assessment fishery was not conducted to facilitate passage of adult Chinook to spawning grounds in 2025.

The preliminary 2025 Taku River large Chinook terminal run estimate is anticipated to be between 19,000 and 40,000 fish. The most recent 10-year average spawning escapement was 13,900 large Chinook.

Harvest of large Chinook in 2025 Canadian fisheries was: 0 in commercial fisheries; 47 in the First Nation FSC fishery; and 0 in recreational fisheries. The total base level and test/assessment fishery harvest of 47 large Chinook was well below the Chapter 1 Canadian fishery allowance of 2,900 fish.

The total Canadian catch of large Chinook was 47, which was well below the 10-year average of approximately 200 fish (excluding test/assessment fisheries).

2.2.2 SOCKEYE SALMON

The Canadian pre-season run outlook for wild Sockeye was 172,000 fish, approximately 1% above the most recent 10-year average total run size of 170,000 fish. In addition, approximately 10,000 adult Tatsamenie Lake origin and 1,000 Trapper Lake origin Sockeye were expected to return from fry outplants from the Taku Sockeye Enhancement Program. The forecasted return of enhanced Tatsamenie Lake origin Sockeye was anticipated to be average.

The final in-season Taku River Sockeye terminal run size estimate was 261,000 wild fish. Subtracting the management objective of 58,000 from the terminal estimate resulted in a TAC of approximately 203,000 wild fish. The 2025 Canadian allowable catch, based on a 25% harvest share (associated with an enhanced Sockeye return range of 15,001 to 25,000 fish), was 51,000 wild fish. The total 2025 Canadian fishery harvest of Sockeye was approximately 27,900 fish. The estimated total spawning escapement of Canadian-origin wild Sockeye was 117,500, which is above both the management objective (58,000) and the upper end of the spawning escapement goal range of 75,000 fish.

To reduce the likelihood of incidental harvest of Chinook, the Canadian commercial Sockeye fishery commenced on June 25 (statistical week 26) which is one week later than the historical start date. Additionally, retention of incidentally caught Chinook in the commercial fishery was prohibited. The maximum permissible mesh size in the first three weeks of the fishery was 140 mm (5.5”), which was intended to reduce likelihood of entanglement of large Chinook and facilitate live release. Fishers were also limited to the use of only one drift net through statistical week 28. Projected estimates of the total wild Sockeye run size, TAC and total escapement were produced weekly throughout the fishing season. Projections were based on the joint mark-recapture program, the estimated catch of Taku River Sockeye in U.S. fisheries, the catch in the Canadian fishery, and information on historical run timing.

The total Canadian fishery catch of Sockeye was 27,899 fish. The proportion of the Canadian harvest associated with enhancement activities associated with the bilateral Taku Enhancement Production Plan will be determined once lab analysis of thermal marks is complete.

2.2.3 COHO SALMON

The 2025 total Canadian fishery catch of 9,079 Coho was slightly below (-0.1%) the 10-year average of 10,100 fish. The catch during the directed commercial Coho fishery (after statistical week 33) was 6,943 fish. The preliminary bilateral estimate of 2025 total Canadian-origin Coho terminal abundance is 71,000 fish. The preliminary 2025 post-season spawning escapement estimate is 47,000 Coho which is below the lower bound of the escapement goal range of 50,000 to 90,000 fish.

2.2.4 JOINT SOCKEYE SALMON ENHANCEMENT PROGRAM

In the fall of 2024, 2.2 million Sockeye eggs were collected from Tatsamenie Lake and 1.0 million eggs were collected from Little Trapper Lake. All eggs were hatched and reared at Snettisham Hatchery (Alaska) over the 2024/2025 winter period, and fry were mass-marked via thermally induced otolith marks for identification and assessment purposes. IHNV was not detected in any Sockeye fry destined for Tatsamenie Lake or Trapper Lake in 2025; however, the Trapper Lake eggs experienced low survival. Of the 1.5 million fry transported to Tatsamenie Lake, approximately 0.3 million fry were released into net pens for rearing as part of an extended rearing evaluation project, while the remaining fry were released directly into the lake. Fry were reared from June 4 until July 9, 2025, and subsequently released into Tatsamenie Lake at approximately 1.3 grams. A sub-sample of Tatsamenie Lake Sockeye smolts out-migrating in 2025 are being assessed to evaluate both enhanced contribution and survival rates.

For 2025, the bilateral Taku River Enhancement Production Plan (TEPP) identified collection of up to 2.5 million Sockeye eggs from Tatsamenie Lake and 0.5 million Sockeye eggs from Little Trapper Lake for transport to Snettisham Hatchery for incubation and thermal marking. Approximately 2.5 million Sockeye eggs were collected from Tatsamenie Lake and approximately 0.6 million eggs were collected from Little Trapper Lake for rearing and release in 2026.

2.3 ALSEK RIVER

Although abundance-based harvest sharing provisions for Alsek River salmon stocks have not yet been established, Annex IV, Chapter 1 of the PST obligates Canada and the U.S. to cooperatively develop and implement abundance-based management plans and programs for Alsek River Chinook and Sockeye. In 2013, biological escapement goals for Alsek River Chinook and Sockeye were adopted (3,500 to 5,300 for Canadian-origin Chinook and 24,000 to 33,500 for Canadian-origin Sockeye). Additionally, escapement goals were revised for Klukshu River Chinook (800 to 1,200) and Klukshu River Sockeye (7,500 to 11,000). Currently, the primary escapement-monitoring tool for Canadian-origin Chinook, Sockeye, and Coho stocks on the Alsek

River is the Klukshu River assessment program, which has been operated jointly by Champagne and Aishihik First Nations and Fisheries and Oceans Canada since 1976.

In 2025, the Parties continued the development and design of basin-wide stock assessment programs to support the implementation of abundance-based management and to more accurately assess annual adult Chinook and Sockeye returns to the watershed. Current abundance assessment and spawning escapement monitoring programs include: the Klukshu River multi-species video enumeration system; the Village Creek multi-species video enumeration; Chinook and Sockeye mark-recapture; and genetic stock identification of samples collected from U.S. terminal fisheries. The long-term comparative escapement index for Alsek River drainage stocks is the Klukshu River counts. Additional Chinook abundance assessment programs continue to be implemented annually on the Blanchard and Takhanne rivers (Year 6 and 8 respectively) to develop an improved understanding of Alsek River Chinook production. Currently, assessment of Alsek River Coho is limited to a partial count at the Kulkshu River assessment program site.

The preliminary total return of Sockeye to the Klukshu River in 2025 was 9,694 while the spawning escapement was estimated to be 9,368fish. Both the return and spawning escapement were below the most recent 10-year average of 13,500 and 13,200 respectively, and below the upper end of the escapement goal range (11,000). The 2025 total Sockeye count at Village Creek was 460 fish, which is below the most recent 10-year average of 490 fish (noting that this most recent 10-year period has experienced several years of very low returns).

The preliminary total return of Chinook to the Klukshu River in 2025 was 2,281 while the spawning escapement was 2,234 fish. Both the return and spawning escapement were above the most recent 10-year average of 1,130 and 1,115 respectively and exceeded the upper end of the spawning escapement goal range of 1,600 fish.

The preliminary (partial) 2025 Klukshu River Coho count was 9,920. Although the annual count does not represent total abundance, when used as a partial indicator of run strength the 2025 count was significantly above the most recent 10-year average of ~3,220.

In response to concerns over low abundance of early migrating Sockeye, the recreational fishery (public angling) for in the Alsek River was delayed until August 7. Post August 7, retention of Chinook in the recreational fishery was permitted (1 per day, 2 in possession) until October 31; retention of Sockeye in the recreational fishery was prohibited for the duration of the 2025 season and retention of Coho was permitted (4 per day, 8 in possession).

3 NORTHERN B.C.

3.1 NORTHERN B.C. CHINOOK AGGREGATE ABUNDANCE-BASED MANAGEMENT (AABM) FISHERIES

3.1.1 OBJECTIVES AND OVERVIEW

Chinook fisheries in Northern B.C. are managed as either AABM or individual stock-based management (ISBM) fisheries. AABM fisheries are managed to an annual total allowable catch (TAC) based on the forecast abundance of the aggregate stocks that contribute to each fishery. Allowable harvest impacts in the AABM areas are determined by provisions in the PST and subject to conservation considerations and allocation priorities. Chinook AABM fisheries in Northern B.C. include the Northern British Columbia troll and Haida Gwaii recreational fisheries.

In Canada, conservation is the first priority in fisheries management. Once conservation obligations are met, priority is provided for First Nations for food, social, ceremonial and treaty commitments. Once those obligations are met, access to Chinook is provided to the recreational fishery, with commercial fisheries last in priority. Management constraints that inform fisheries planning include impacts on stocks of conservation concern and non-target species and minimizing fisheries where Chinook must be released.

Escapements of Northern Chinook have declined in recent years. Reduced survival rates and reduced productivity have been observed across British Columbia and Southeast Alaska. Domestic actions in Northern AABM fisheries are driven by stocks of conservation concern, and to pass other co-migrating Chinook stocks to higher priority fisheries in Southern B.C.

The forecasted pre-season Chinook abundance index was 1.16 of the PST base period; therefore, under Treaty provisions, the maximum allowable catch was 141,700 Chinook for Northern B.C. AABM fisheries.

The pre-season distribution of the Northern B.C. AABM TAC by fishery is shown in Table 3-1 below. The total Chinook catch in the Area F Troll fishery and recreational fishery can be found in Appendix 3.

Table 3-1: Pre-Season Total Allowable Catch Estimate and In-Season Catch for NC AABM Chinook

	Pre-Season	In-season	Catch
NC B.C. Troll AABM and Haida Gwaii Sport Abundance Index	1.16	1.16	-
NC B.C. Troll AABM and Haida Gwaii Sport Chinook TAC	141,700	141,700	
NC B.C. Troll AABM Chinook TAC	107,900	107,900	Actual catch: 68,726
Haida Gwaii Sport Chinook TAC	33,800	33,800	Actual catch 29,627
Total NBC AABM	141,700	141,700	Actual catch: 106,046

3.1.2 RECREATIONAL FISHERIES

The Northern B.C. AABM recreational Chinook fishery takes place in the waters surrounding Haida Gwaii in Areas 1, 2, 101, 102, and 142. In Area 1, the recreational salmon fishery primarily occurs between Masset and Langara Island along the north shore of Graham Island. In Area 2W, the recreational salmon fishery primarily occurs between Englefield Sound and Port Louis. The majority of the fishery occurs between mid-May and mid-September with little effort in the winter.

Recreational fishing effort continues to be lower than in previous years due to reductions in the number of operating lodges on Haida Gwaii. Estimated catches are significantly lower than the pre-season TAC forecast (Table 3-1). While the harvest of Chinook in Area 2E is unknown, based on limited observations of effort it is assumed to be fewer than 500 pieces and a small proportion of the recreational catch in Areas 1 and 2W. Recreational effort (>98%) primarily occurs in Area 1 and 2W.

Domestic Chinook management measures are in place in the AABM areas to protect migrating Chinook of Skeena, Fraser, and WCVI origin. In 2025, the daily and possession limits for Chinook in Areas 1, 2, 142, and that portion of Area 101 West of 131 degrees 40.0 minutes West Longitude were reduced to 1 daily and 2 in possession from May 29 to July 31 to protect passing Skeena and Fraser River Chinook stocks of concern. The annual Chinook limit remained at 10 across the region. A minimum size limit of 45 cm was in effect and barbless hooks are mandatory in the sport fishery. The majority of all sport releases in AABM areas are of legal size.

Estimates of AABM tidal sport catches near the mainland coast of Northern B.C. were obtained from creel surveys and lodge catch reports from lodges operating on Haida Gwaii.

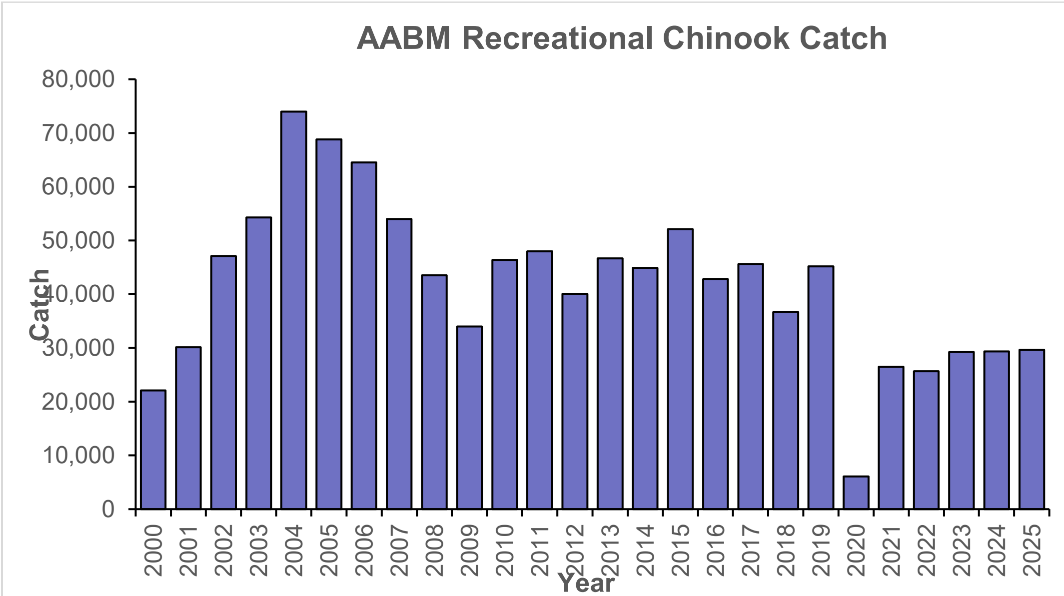


Figure 3-1 Northern B.C. Recreational AABM Catch – Chinook, 2000-2025.

3.1.3 COMMERCIAL FISHERIES

The Northern AABM fishery includes commercial troll (Area F) caught Chinook in Pacific Fishery Management Areas 1 to 5, 101-105 and 142. The North Coast B.C. troll fishery opening for Chinook fishing was from August 16 to September 30 as part of fishery restrictions designed to pass through Fraser Chinook stocks of concern, Fraser Summer 4_1 (South Thompson) Chinook, and WCVI Chinook to Southern B.C. and the Fraser River.

The 2025 Northern B.C. troll fishery was conducted under a system of individual transferable quotas. Northern B.C. Chinook Individual Stock-Based Management (ISBM) Fisheries

3.1.4 OBJECTIVES AND OVERVIEW

Northern B.C. Chinook Individual Stock-Based Management (ISBM) Fisheries include all First Nations fisheries in both marine and fresh waters, all commercial gillnet and seine fisheries, all freshwater recreational fisheries, marine recreational fisheries in Pacific Fishery Management Areas (PFMAs) 3 to 10, 103 to 110 and 130, and troll fisheries in PFMAs 6 to 10, 106 to 110 and 130. The PST obligations in these fisheries are for a general harvest rate reduction (estimated in aggregate across fisheries) for ocean mixed stock fisheries and for stock-specific objectives (i.e., achieving the escapement goal or catch year exploitation rate, Catch Year Exploitation Rate (CYER) objectives where populations are below escapement goals).

Declines in abundance and spawning escapement of Northern B.C. Chinook stocks have resulted in the implementation of management measures intended to reduce overall exploitation. Nass and Skeena Rivers recreational fisheries, and marine Chinook directed commercial fisheries were not implemented in 2025 - with the exception of four commercial gillnet openings in PFMA 8. Fishery management measures in tidal recreational fisheries were continued in 2025 and are described in the section below.

The estimated total landed catch in tidal recreational ISBM fisheries was not available in time for publication. Catch summaries can be found in Appendix 3.

3.1.5 STOCK STATUS

Skeena River Chinook is the escapement indicator stock for Northern B.C., and development of a PST-recognized escapement goal is in-progress. The Kitsumkalum River is a tributary of the Skeena River and is the CWT indicator stock for the Skeena River. High quality Mark Recapture (MR) escapement data have been collected for Kitsumkalum River Chinook annually since 1984. 2025 Kitsumkalum River Chinook abundance was not available in time for this publication.

The estimated aggregate Skeena River Chinook escapement was not available in time for this publication. The escapement is estimated using a genetic based approach using the proportion of Kitsumkalum River fish measured from genetic samples collected at the Tyee test fishery and from Kitsumkalum River Chinook escapement estimates from independent Mark-Recapture programs. The estimated total Nass River Chinook escapement, based on mark-recapture data, was not available in time for this publication.

The Atnarko River supports an exploitation rate indicator program for Central British Columbia region Chinook.

3.1.6 FIRST NATIONS FSC FISHERIES

Chinook Salmon First Nation FSC Fisheries in Northern B.C. in 2025 were administered in accordance with normal management measures and requirements. Preliminary First Nations catch summaries from the Nass, Skeena, and Central Coast can be found in Appendix 3.

3.1.7 RECREATIONAL FISHERIES

3.1.7.1 TIDAL WATERS

Management of ISBM tidal sport fisheries was driven by the decline in northern Chinook abundance and escapement since 2017. Restrictive management measures have been implemented since 2018 in response to this decline, and a precautionary approach was implemented again in 2025 to support the rebuilding of these stocks.

The following measures were implemented in for the tidal waters of Areas 3, 4, and 5:

- April 1, 2025 to May 31, 2025 – Two (2) Chinook per day.
- Effective June 1,2025 to June 22, 2025 – One (1) Chinook per day.
- Effective June 23, 2025 to July 23, 2025 - Zero (0) Chinook per day.
- Effective July 24, 2025 to August 17, 2025 – One (1) Chinook per day.
- Effective August 18, 2025 to March 31, 2026 - Two (2) Chinook per day.

The above reductions were planned pre-season and were designed to address concerns for a weak 2025 forecast for Skeena River Chinook, and to provide for First Nation FSC priority access.

Additionally, in response to concerns over Nass River Chinook, the Nass River was closed to recreational fishing for Chinook for the duration of the 2025 season.

In 2025, tidal sport fisheries were monitored by the Area 3 and 4 Creel Program which collects catch information from the recreational fishery surrounding Prince Rupert and Port Edward on the North Coast of B.C. It is focused in Areas 3 and 4, comprising the waters of Chatham Sound between the mouths of the Nass and Skeena Rivers. The Area 3 & 4 Creel Program operated from May 1, 2025, to August 31, 2025.

Areas 6 to 10 had a daily limit of 2 per day for the 2025 season.

Tidal sport catch from lodges operating in the Smith Inlet, Rivers Inlet, Hakai Pass, and Bella Bella areas were estimated using logbooks.

3.1.7.2 NON-TIDAL WATERS

Domestic management of ISBM non-tidal sport fisheries in 2025 were driven by the low abundance of Nass and Skeena Chinook stocks.

Nass River (Area 3)

The Nass River watershed was closed for recreational fishing for Chinook for the 2025 season.

Skeena River (Area 4)

The entire Skeena River watershed was closed to fishing for Chinook in response to low forecast abundance. The closure affected the entire Skeena River watershed and all rivers and lakes in Region 6 that flow into PFMAs 3 to 6, not including the Kitimat River for the duration of the 2025/2026 fishing season.

3.1.8 COMMERCIAL FISHERIES

<u>*Area C*</u>

Areas 3 to 7,9,10

There were no Area C gill net fisheries with directed harvest or bycatch retention permitted for ISBM Chinook in these areas in 2025.

Area 8

A Chinook targeted gill net fishery opened for 24 hours on June 2, June 9, June 16 and June 23, 2025. In total, there were 4 openings in Area 8, with a total effort of 17 boat days. Additionally, there was a small-scale commercial demonstration fishery conducted on June 27, 2025, by the Nuxalk First Nation under the Commercial Salmon Allocation Framework (CSAF) with a total effort of 4 boats.

Refer to Appendix 3 for Chinook catch totals.

3.2 NORTHERN B.C. PINK SALMON FISHERIES

3.2.1 OBJECTIVES AND OVERVIEW

In 2025, Canada was to manage the Area 3-1 to 3-4 Pink-directed net fisheries within an annual catch share of 2.49% of the annual allowable harvest (AAH) of Alaskan Districts 101, 102, and 103 Pink. Canada was also to manage the Area F (NBC) troll fishery within an annual catch share of 2.57% of the annual allowable harvest (AAH) of Alaskan Districts 101, 102, and 103 Pink.

The total return of Pink to Alaskan District 101, 102, and 103 and the Canadian AAH were not available at the time of publication and will be updated in the final report.

3.2.2 COMMERCIAL FISHERIES

Areas 3-1 to 3-4 Pink Net Catch

In the Canadian Northern Boundary Area 3, the p50 pre-season estimate of TRTC for Nass Pink was 646,000 with a range of 325,000 (75% probability) to 1,285,000 (25% probability) and was projected to return below average (913,000) based on returns from 1994-2024. Actual returns in Area 3 are expected to exceed the escapement target of 225,000. Pink returns to Area 4 were expected to be average to above average. There is no formal escapement target for Area 4 Pink. Actual escapement information was not available at the time of publication.

The Area A seine fishery management is designed to meet stream-specific escapement goals while keeping within the PST annex considerations. Targeted net Pink fisheries are based upon identified surpluses with consideration for stocks of concern. In Area 3, due to ongoing concerns for wild Chum populations, Pink directed fisheries in Area 3 close at the end of July when wild Chum abundance in the fishery area increases.

The Area A catch in 2025 occurred in 14 openings from July 7 to August 5. Catch is summarized in Appendix 3.

Area F (NBC) Pink Troll Catch

The Canadian commercial troll fishery targeting Pink with retention of Coho was open in the northern portion of Area 101 (Dixon Entrance AB Line) from July 1 to August 15. Pink and Coho retention was also permitted during the Chinook directed fishery, in Area 101 and portions of Area 1, 2W and 142, which opened from August 16 to September 30. Total catch in the Area F Troll fishery and recreational fishery can be found in Appendix 3.

3.2.3 EXCESS TO SALMON SPAWNING REQUIREMENTS (ESSR) FISHERIES

Two ESSR fisheries targeting Skeena River Pink occurred in 2025. The Witset Canyon (Bulkley River) fishery occurred from August 13 to 19 and August 20 to 26 with a total catch of 1,659 fish. The Kitwanga River fishery was opened from September 1 to 15, although there was no catch.

3.3 NORTHERN B.C. SOCKEYE SALMON FISHERIES

3.3.1 OBJECTIVES AND OVERVIEW

In Northern B.C. two Sockeye producing systems are relevant under the Pacific Salmon Treaty, Skeena and Nass River Sockeye.

As described in Annex IV, Chapter 2 of the PST, the U.S. shall manage the Alaskan District 104 purse seine fishery prior to statistical week 31 to achieve an annual catch share of Nass and Skeena Sockeye of 2.45% and manage the Alaskan 101 drift gillnet fishery to achieve an annual catch share of Nass Sockeye of 13.8%. Both parties agree that the 50% probability (p50) of the run size forecasts may be used to make management decisions regarding fishing plans for Canada and U.S., respectively.

In the Skeena River, the escapement target is 900,000 Sockeye, below this escapement there are no Canadian commercial marine harvests, and the U.S. undertake measures to reduce impacts in the D104 fishery. For domestic Canadian management, commercial fisheries in the Skeena River do not proceed until escapement past Tyee is forecast to be above 1.05 million Sockeye. The allowable commercial exploitation rate is 0% for returns to Canada less than 1,050,000. The allowable exploitation rate increases linearly from 0% at 1,050,000 to 20% at a run size of 2.0 million, 30% at 3.0 million, and up to a maximum of 40% at a return of 4.0 million or greater. Management plans for the Skeena River Sockeye include considerations for weak and wild stocks as well as bycatch species, including wild Chum and Steelhead.

In the Nass River, the escapement goal is 200,000 Sockeye. Below this escapement, commercial Canadian marine harvests are not permitted, and the U.S. undertake measures to reduce the impact of D101 and D104 fisheries on Nass Sockeye. Domestically in Canada, actual in-season harvest opportunities are dependent on in-season stock assessments. Fisheries that target Nass Sockeye in Canada are managed to meet commitments with the Nisga'a Final Agreement (NFA), First Nations FSC goals, Pacific Salmon Treaty obligations, and to provide ocean commercial and inland commercial fisheries harvest opportunities.

3.3.2 STOCK STATUS

Nass River

Nass River Sockeye returns were forecasted pre-season to be below average, compared to historical returns, with an expected Total Return to Canada (TRTC) from 331,000 (75% probability) to 685,000 (25% probability) and a point estimate of 476,000 (50% probability) based on a sibling-regression model. The actual 2025 TRTC for Nass River Sockeye was not available at the time of publication. The late in-season (September 7) TRTC estimate was 430,000; post-season TRTC and Total Run estimates were not available in time for publication.

In-season decisions are made for Nass River fisheries based on escapement information from the Nisga'a Fishwheel Program conducted at test fishing sites near Gitwinksihlkw on the Nass River, fish counts at the Meziadin fishway, fish counts at Kwinageese weir, and stream inspections.

Skeena River

The Skeena Sockeye Total Return to Canada was forecast to be below average compared to the long-term average of 1.68 million (2009-2024) with a pre-season return forecast from 1.32 million (90% probability) to 5.68 million (10% probability) and a point estimate of 2.74 million (50% probability) based on the sibling model. The late in-season (August 26) TRTC estimate was 1.69 million; post-season TRTC and Total Run estimates were not available in time for publication.

3.3.3 FIRST NATIONS FSC/TREATY FISHERIES

FSC Fisheries targeting Sockeye were not restricted in Northern B.C. in 2025. First Nations catch summaries can be found in Appendix 3.

In the Nass River, the Nisga'a implemented their Treaty harvest and individual sales fisheries in 2025. Catch information can be found in Appendix 3.

3.3.4 RECREATIONAL FISHERIES

3.3.4.1 TIDAL WATERS

Recreational fisheries directed on Nass and Skeena Sockeye occurred in 2025. The marine recreational fishery was opened to Sockeye retention in Skeena and Nass marine waters from July 31, 2025, until March 31, 2026. Recreational salmon fishing occurs in the tidal waters adjacent to the Skeena River, with the peak of the season being from June to August. The daily limit for Sockeye in Areas 3, 4 and 5 is four (4) per day, unless otherwise varied, and opens based on in-season Total Return to Canada forecast. The minimum size limit for Sockeye is 30 cm, in tidal waters and freshwater. Catch information can be found in Appendix 3.

3.3.4.2 NON-TIDAL WATERS

The Nass River mainstem opens from July to September. The minimum size limit is 30 cm, and daily and total possession limits are in effect. To open the Meziadin Lake recreational Sockeye fishery to 2 per day, a trigger of 120,000 Sockeye past the Meziadin Fishway was in place for 2025. The daily limit in Meziadin Lake increases to 2 per day after 160,000 pass the Fishway.

The Skeena River and tributaries are in the Region 6 freshwater fishing area, and there are openings for Skeena Sockeye in Babine River and Lake, Pinkut Creek, Fulton River, and the Skeena mainstem. For the 2025 season, the daily limit for Sockeye was zero (0) per day from the start of the season until the commercial Sockeye fishery opened.

Non-tidal Sockeye directed fisheries took place in the following areas:

- Nass River watershed: Meziadin Lake opened on August 30, 2025 with a daily limit of one (1) Sockeye per day.
- Skeena River watershed: Mainstem waters opened July 16, 2025 with a daily limit of one (1). Increased to two (2) per day on August 1, 2025.
- Babine River and Lake opened on August 1, 2025 with a daily limit of two (2) per day. Daily limit in Babine Lake was increased to four (4) per day on August 29, 2025.

3.3.5 COMMERCIAL FISHERIES

Nass
There were directed fisheries targeting Nass Sockeye in 2025. Two commercial demonstration fisheries were implemented in 2025. The Nisga'a demonstration fishery is implemented within existing Treaty entitlement fisheries and areas, while the Gitanyow demonstration fishery is implemented in the Meziadin River. The Nisga'a fishery occurred from June – August with a preliminary catch of 18,000 fish. The Gitanyow fishery opened on July 27, on the Meziadin River with a total catch of 9,311 pieces.

Area A

For the 2025 fishing season, there were 14 seine openings in Area 3 targeting Nass Pink with Sockeye retention between July 7 and August 5. Chum retention was permitted between July 7 and July 18, with all other opportunities being Chum non-retention to protect weak Canadian origin Chum in Area 3.

Area C

For the 2024 fishing season, there were four, one-day gillnet openings, July 2, 3, 9 and 10. Pink and Chum retention were permitted in these openings.

Skeena:

There were directed fisheries targeting Skeena Sockeye in 2025. Gillnet, seine, and commercial demonstration fisheries were implemented, starting in early July and ending in early August for marine fisheries, with in-river and terminal fisheries ending in late August.

Area A

For the 2025 fishing season there were two ITQ fishery openings in Area 4; one five day opening from July 23 to July 27, and one four day opening August 4 to 7. Pink retention was also permitted in this fishery.

Area C

In the 2025 fishing season, there were 12 one-day openings between July 12 and August 8.

Catch information is included in Appendix 3.

There were both marine and in-river commercial demonstration fisheries targeting Skeena Sockeye in 2025. There were eight marine openings from between July 9 and August 7, with a total of 15 vessels participating. There were five in-river Sockeye directed demonstration fishery openings.

3.3.7 EXCESS SALMON TO SPAWNING REQUIREMENTS (ESSR) FISHERIES

No ESSR fisheries targeting Nass River Sockeye occurred in 2025.

In the Skeena River, the Babine large Sockeye ESSR targeting Fulton River spawning channel fish opened on August 28, 2025 until September 17, 2025. Catch information is available in Appendix 7.

4 SOUTHERN B.C. CHINOOK SALMON

4.1 SOUTHERN B.C. AGGREGATE ABUNDANCE-BASED MANAGEMENT (AABM) CHINOOK

4.1.1 OBJECTIVES AND OVERVIEW

Chinook fisheries are managed by either an aggregate abundance-based management (AABM) or individual stock-based management (ISBM) regime. Allowable harvest impacts in AABM areas are determined by provisions in the PST and subject to domestic considerations, such as conservation and allocation. In Southern B.C., all AABM Chinook fisheries are located off the West Coast Vancouver Island (WCVI), including components of the recreational fishery, First Nations fisheries, and the Area G troll fishery.

For the period of October 2024 through September 2025, the forecast Chinook abundance index was 1.01 of the PST base period; therefore, under Treaty provisions, the maximum allowable catch was 114,500 Chinook for WCVI AABM fisheries.

Domestic considerations for managing Chinook catch in WCVI AABM fisheries are driven by concerns regarding the low status of natural WCVI and Fraser River Chinook, as well as Interior Fraser Coho and Interior Fraser River (IFR) Steelhead populations. Management measures in AABM Chinook fisheries to limit impacts to these domestic stocks of concern are summarized in the fishery subsections.

To protect Fraser Chinook stocks of concern, retention of Chinook was not permitted in the offshore area (seaward of 1 nautical mile outside the surfline) of WCVI between April 1 and July 15 for Five Nations' right-based sale and recreational fisheries. Area G troll fisheries were closed through a portion of the summer and a 27-day rolling window closure was applied in portions of September/October to protect IFR Steelhead. The additional restrictions for Fraser Chinook stocks of concern that were added in 2023 were continued in 2025 and included reducing the recreational daily limits to 1/day from July 15-31 in Areas 121 and 123 and delaying the Area G summer troll opening until August 16.

The pre-season distribution of the total WCVI AABM TAC for planning by fishery is shown in Table 4-1 below. There was also a demonstration fishery for Area G in the inshore areas of the WCVI for the spring period and the Maa-nulth Incremental Community-based Economic Fishery (see section 4.1.4).

AABM Chinook catch and release information from all fisheries can be found in Appendix 4.

Table 4-1 Pre-Season Total Allowable Catch Estimate for October 2024 to September 2025 WCVIAABM Chinook

	2024/2025 Pre-Season TAC	2024/2025 In-Season TAC	2024/2025 Preliminary Catch
WCVI AABM Abundance Index	1.01	N/A	N/A
First Nations (FSC)	10,000[1]	10,000	3,545
Maa-nulth Treaty	3,913	3,913	1,838
Five Nations	17,009	22,151[2]	22,151
AABM Recreational	40,000[1]	40,000	41,477
Maa-nulth ICEF	NA	4,193	481
Area G Troll	43,578	34,243[3]	31,743
Total AABM Chinook	114,500	114,500	101,235

[1] Expected catch
[2] Including overage
[3] Reduce to account for Five Nations overage and Maa-nulth ICEF

4.1.2 FIRST NATIONS DOMESTIC AND FSC FISHERIES

The 2024 WCVI AABM FSC Chinook preliminary reported catch can be found in Appendix 4. Catch from Maa-nulth Nations Treaty domestic fisheries can also be found in Appendix 4.

4.1.3 FIRST NATIONS COMMERCIAL HARVEST

Five Nations Communal Sale Fishery

In 2025, the Department authorized right-based communal sale fishery opportunities for the Five Nations (five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht) that included AABM Chinook. These opportunities were categorized as Offshore Integrated Hook and Line communal sale fisheries.

The AABM Chinook allocation was 17,009. The fishery was carried out in portions of Areas 24, 25, 26, 124, 125, and 126 on the west coast of Vancouver Island from October 17, 2024 to July 10, 2025. Kept and released catch from this fishery can be found in Appendix 4. A 100% independent dockside monitoring program was in place for the entire season. Sale of Chum, Pink, and hatchery-marked Coho caught as bycatch was also permitted.

Total salmon catch from the Five Nations AABM Chinook fishery can be found in Appendix 4.

Maa-nulth Incremental Community-based Economic Fishery (ICEF)

For 2025, the Maa-nulth First Nations (Huu-ay-aht, Ka:'yu:'k't'h' / Che:k'tles7et'h', Toquaht, Yuułuʔiłʔatḥ and Uchucklesaht), were authorized to undertake an incremental community-based economic fishery with an allocation of 4,193 AABM Chinook. This fishery was conducted in portions of PFMAs 123-127 and began on August 16 and ended on September 15 when the Interior Fraser River Steelhead window closures came into effect.

Total salmon catch from the Maa-nulth ICEF AABM Chinook fishery can be found in Appendix 4.

4.1.4 COMMERCIAL FISHERIES

For the 2024/2025 Chinook year (October 1, 2024 to September 30, 2025), fisheries were shaped by conservation concerns for the following domestic stocks: Fraser River Spring 4_2 Chinook, Fraser River Spring 5_2 and Summer 5_2 Chinook, WCVI Chinook, IFR Coho, and IFR Steelhead.

The distribution of the WCVI AABM TAC between fisheries is shown above in Table 4-1.

Area G Troll

The Area G troll annual management plan is designed to maintain exploitation rates (ERs) on domestic stocks of concern within established limits through the use of fishing time and area closures in conjunction with fishing effort limits. The management plan is subject to change when required to address specific conservation concerns. For the 2025 fishing season, the following change was retained from the 2023-2024 seasons:

Additional conservation measures to further protect low returns of Fraser River Chinook were implemented for Area G troll including an additional 15-day closure from August 1 to 15 to conserve Fraser River Summer 5_2 Chinook.

A 27-day rolling window closure starting in September was applied to protect IFR Steelhead.

The Area G catch in 2025 occurred in three openings: one winter opening from December 1, 2024 to March 15, 2025; a second spring opening in inshore areas only (PFMAs 23 to 27) from April 1 to May 13; and a third summer opening from August 16 to September 15. Catch is summarized in Appendix 4.

4.1.5 RECREATIONAL FISHERIES

The WCVI AABM recreational Chinook salmon fishery primarily takes place in offshore Areas 121 to 127 from June to September. Chinook catch from inshore Areas 25 to 27 prior to July and Areas 21 to 24 prior to August are also included in the AABM estimate. Catch and effort are largely driven by abundance and weather, and together both have impacts on annual harvest. Previous sampling has indicated that there is minimal AABM catch and effort outside of this period.

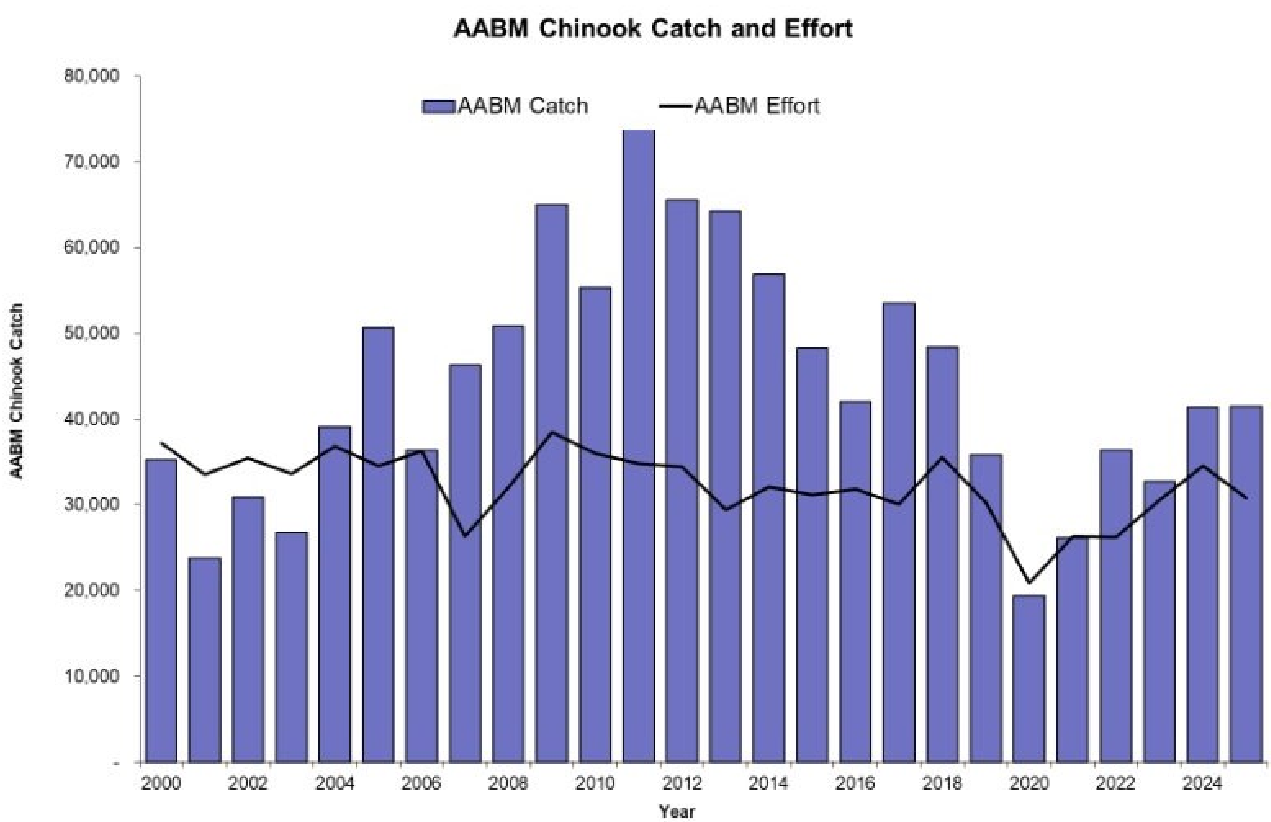
Domestic Chinook management measures are in place in the near-shore AABM areas to protect migrating WCVI-origin Chinook. In 2025, management measures continued to include finfish closures in several areas, increasing terminal Chinook non-retention areas, and focusing recreational opportunities in areas where DNA samples indicated that WCVI Chinook presence is lower.

The domestic management actions that were first implemented in 2019 and increased in 2023 were continued in 2025, designed to further protect Fraser River Chinook populations. This includes a Chinook non-retention area in effect from April 1 to July 14 (inclusive) in Areas 121 to 127 seaward of a 1 nm surfline boundary and a maximum size of 80 cm for Chinook from July 15 to July 31. In addition, from July 15 to July 31 the daily limit in Areas 121 and 123 was reduced to 1 per day.

Chinook catch in the AABM recreational fishery is estimated through several catch monitoring programs, including a creel survey, a logbook program, and DFO's electronic survey information (iREC). The Chinook recreational catch estimate from the creel survey for the 2025 WCVI AABM fishery is provided in Appendix 4.

See Figure 4-1 below which illustrates catch and effort from 2000 through 2025.

Figure 4-1 WCVI Recreational AABM Catch and Effort- Chinook, 2000-2025



4.2 Southern B.C. Chinook Individual Stock Based Management (ISBM) Fisheries

4.2.1 OBJECTIVES AND OVERVIEW

In addition to the objectives agreed to in the PST, Canada implemented management actions to ensure conservation of Canadian-origin Chinook and to meet domestic allocation requirements. Chinook fisheries are managed based on harvest rates caps for individual stock.

Measures were taken in 2025 in First Nations FSC, recreational, and commercial Chinook fisheries to protect West Coast Vancouver Island (WCVI), Southern Strait of Georgia and Fraser River Chinook stocks of concern.

Specific management actions were taken to protect WCVI-origin Chinook in Canadian AABM Chinook fisheries, the harvest of which is managed to an ER of 10%. Most Southern B.C. ISBM fisheries were managed such that impacts on WCVI wild Chinook stocks were minimized, with the exception of more terminal fisheries focussed on enhanced stocks.

A suite of precautionary fishery restrictions intended to provide a high degree of protection to at-risk Fraser Spring 4_2, Spring 5_2, and Summer 5_2 Chinook were continued in 2025. This was expected to reduce overall Canadian fishery mortalities on these populations to low levels. First Nations FSC management actions in the Fraser River included time and area closures and reduced fishing times. Specifically, Fraser River First Nations FSC fisheries were restricted to unplanned events (e.g., funerals) or First Fish ceremonies until July 15, followed by opportunities to target healthy Summer 4_1 Chinook primarily in August.

South Coast FSC fisheries on mixed stocks was permitted in marine areas with the exception of the approaches to the Fraser River (Subareas 29-6, 29-7, 29-9, and 29-10). To improve the collective understanding of stocks of concern, in terms of their migration routes, timing and fisheries impacts, First Nations were encouraged to collaborate with the Department on shaping a catch monitoring and biological sampling plan for fisheries between April 1 and July 15 to provide stock composition information for Chinook. Recreational fisheries in Johnstone Strait, Strait of Georgia, Juan de Fuca Strait, and the approach waters to the Fraser River were managed to Chinook non-retention between April 1 and varying dates between July 14 and August 31, with a maximum size limit of 80 cm in effect where Chinook retention was permitted before August 31. In 2024, commercial fisheries in Area 23 and Area 25 targeted hatchery ISBM Chinook. Chinook non-retention was in place for other Southern B.C. commercial fisheries (excluding AABM Chinook).

ISBM Chinook catch and release information from all fisheries can be found in Appendix 4.

4.2.2 STOCK STATUS

4.2.2.1 WEST COAST VANCOUVER ISLAND CHINOOK

Wild WCVI Chinook are identified as a stock of concern in the Southern British Columbia Salmon Integrated Fisheries Management Plan (IFMP). A rebuilding plan was approved March 2025. A precipitous decline in abundance occurred in the mid-1990s due in part to consecutive El Nino events from 1991–1993 and again 1997–1998. Marine ecosystem changes especially affected early marine survival of these ocean-type Chinook. Two areas on the WCVI are key indicators of wild Chinook status: Kyuquot Sound (Nootka-Kyuquot Conservation Unit) and Clayoquot Sound (SWVI Conservation Unit). Chinook returning to Clayoquot Sound have remained below its lower biological benchmark for aggregate spawner abundance since the early 1990's. In addition, the genetic and demographic diversity of Chinook populations across the WCVI are declining as a result of numerous pressures, such as introgression of hatchery fish into natural populations, size-selective fishing and predation, hatchery mating practices, and global climate change effects on the ocean ecosystem.

In other areas of the WCVI, hatchery production supports terminal fisheries directed at surplus production with management measures in place to reduce impacts on wild origin stocks. These areas include Alberni/Barkley, Nootka, and Nitinat. In these areas, catch is primarily of the hatchery stock; therefore, higher ERs are permitted than in times and areas where wild WCVI Chinook stocks make up more of the catch.

Escapement programs are still ongoing at the time of this report with preliminary information showing abundances ranging from below to well-above average. Strong returns of hatchery Chinook to the Stamp/Somass and Conuma rivers have been observed for 2025.

4.3 STRAIT OF GEORGIA CHINOOK

All Strait of Georgia Chinook programs are still on-going at the time of this report deadline. Data below are preliminary.

Fall Season

Preliminary adult returns of fall-run Chinook to northern Strait of Georgia systems were average to above average in 2025. Puntledge River escapements are trending above average with 7,478 adults returning compared to the 4-year average of 7,620. Big Qualicum River escapement was just above the 4-year average of 13,080 with 15,094 fish. Peak counts in the Little Qualicum River were below the 4-year average of 5,060 at 4,378.

Preliminary Chinook escapements to most southern Strait of Georgia streams were also average to above average in 2025. Nanaimo River abundance is above the four-year average of 5,090 with a peak count of 5,760 adults and jacks. Cowichan River escapement estimates were above the target of 6,500 naturally spawning adults for the tenth year in a row with a fence count of 18,740 adults and 10,494 jacks. An expanded mark-recapture estimate using PIT tags will be conducted post-season as the fence was removed prior to the end of the run. Preliminary data suggest a similar return to recent years. Hatchery brood collection in addition to the fence count was 510 adults. The peak count based on swims in the Englishman River was 116 fish which was lower than the 4-year average of 240.On the mainland side of the northern Strait of Georgia, Sliammon Creek and Lang Creek hatcheries continue to have variable returns; however, preliminary adult Chinook returns to Sliammon Creek in 2025 are 129 fish observed so far compared to the 12-year average of 50. Lang Creek returns are now available in season with 657 fish observed to date compared to the 4-year average of 730. Final returns will be tallied post season.

There are a few small, wild populations in the Theodosia and Skwakwa rivers, and those rivers entering Jervis Inlet, where assessment data are poor or not available. Historically, a large proportion of the Chinook stock aggregate originating from rivers north of Nanaimo migrate into central and Northern B.C. and Alaska. ERs on this stock aggregate have gradually been reduced over the last 15 years. The stable trend in annual returns to rivers over this period suggests a reduction in marine survival. In 2025, 80 Chinook were counted in Theodosia, 6 in Chapman Creek, and 0 in Skwakwa.

Spring/Summer Season

The Puntledge, Nanaimo, Cowichan, and Chemainus systems have identified early runs of Chinook in the Strait of Georgia. The 2025 escapement estimate for Puntledge was 93, similar to 89 last season and less than the four-year average of 300 adults. This was not unexpected due to reduced hatchery releases in contributing brood years. Monitoring of Nanaimo spring/summer Chinook escapement included an ARIS/video system in the lower river and upper river, in addition to a series of swims from April through October. A preliminary review of ARIS and video data produced and estimate of 591 summer run fish which is below the 4-year average of 740. The Chemainus River showed a slight decrease with 6 Chinook during summer swim surveys. Recent counts in this system have been very low but the rockslide in the lower canyon was cleared naturally in winter 2018/2019, restoring access to a significant portion of the system.

4.3.1.1 JOHNSTONE STRAIT MAINLAND INLET CHINOOK

Currently, Chinook Salmon escapement is consistently monitored in three systems in the North Island/Mainland Inlets region. In Area 12, the Nimpkish River is assessed using standardized swim surveys by hatchery staff. In Area 13, the Campbell/Quinsam and Phillips Rivers are assessed by intensive mark-recapture programs. The Campbell/Quinsam is a long-term Chinook indicator, assessed yearly since 1984. Since 2021, the Department has expanded snorkel survey coverage on the Adam/Eve and Salmon Rivers, established a video counting system on Devereux Creek (Knight Inlet) and an intensive mark-recapture program on the Southgate River (Bute Inlet). Our surveys targeting Pink Salmon in the Mainland Inlets also allow us to monitor Chinook Salmon returning to those systems, as their return timing is similar. Other systems are covered using intermittent visual surveys.

Nimpkish River

In 2025, Chinook Salmon have been observed in the Department's snorkel survey program (peak count >600), but conditions have been difficult due to high water and an extensive watershed area that stores significant amounts of water for long periods of time. Hatchery broodstock targets have not yet been met, but broodstock efforts are ongoing.

Campbell/Quinsam System

A preliminary system estimate is not yet available because the mark recapture program is currently ongoing. A total of 1,420 Chinook were taken for broodstock and none were removed by the recreational freshwater fishery. High levels of bear and seal predation have been reported for both live and dead Chinook, which may affect the escapement estimate.

Phillips River

A preliminary escapement estimate is not yet available because the mark recapture program is currently ongoing. High river temperatures delayed tagging activities during late July and most of August; although tag application levels remained consistent with past years, these were not proportionally applied across the run. A below-average number of carcasses were recovered throughout the system. The 2019 brood was the final enhanced release of Phillips Chinook.

4.3.1.2 FRASER RIVER CHINOOK

Fraser River Chinook are comprised of five stock groups for PSC management under the 2019 PST agreement: Fraser Spring 4_2, Fraser Spring 5_2, Fraser Summer 5_2, Fraser Summer 4_1, and Fraser Fall 4_1.

Within the Fraser, there are four CWT-indicator stocks: Nicola River (Fraser Spring 4_2), Lower Shuswap (Fraser Summer 4_1), Harrison River and Chilliwack River (Fraser Fall 4_1). Two new indicator stocks are under development, Lower Chilcotin River (Fraser Spring 5_2) and Chilko River (Fraser Summer 5_2).

In 2019, the Big Bar landslide on the Fraser Mainstem obstructed the migration of some populations in the Fraser Spring 5_2 and Fraser Summer 5_2 stock groups. For Chinook returning to rivers upstream of the landslide, only 13% of the Spring and 48% of the Summer Chinook were estimated to be able to pass the landslide and return to their spawning grounds in 2019. In 2020 approximately 20% of adult Spring 5_2 Chinook salmon died due to migration challenges at the slide, which were the brood year for the 5-year-old Spring 5_2 Chinook returning in 2025. Preliminary analysis indicates considerable improvement of survival estimates past the slide site in 2021 and 2022, in addition to higher passage thresholds for Chinook. Salmon passage at the Big Bar landslide was not considered an issue for the 2025.

On July 31, 2024, a significant land slide event occurred in the lower Chilcotin River, a major tributary to the Fraser River. The landslide resulted in a complete blockage of the Chilcotin River channel, affecting the migration of the Lower Chilcotin and Chilko stocks (developing indicator stocks for the Spring 5_2 and Summer 5_2 Management Units). En-route mortality caused by the initial blockage and subsequent debris discharge has not been quantified, and resulting effects on future returns is uncertain.

Programs to assess the 2025 Fraser Chinook escapement are currently underway. Final estimates will be included in the final post-season report.

The 2016 to 2021 period saw six consecutive years of low escapements to the three Fraser stock groups with yearling smolt life history (Spring 4_2, Spring 5_2, and Summer 5_2) and also to the Harrison (Fall 4_1). From 2022-2024, improved escapement was observed compared to the past six years, particularly for Harrison, which exceeded its escapement goal for the 4th time in the last 13 years. These four stock groups remain of conservation concern as the generational escapement averages are still low and returning from low brood year escapements. Canadian marine and Fraser River fisheries continued to be restricted in 2025 to address these conservation concerns.

4.3.2 FIRST NATIONS DOMESTIC AND FSC FISHERIES

WCVI FSC Fisheries and Treaty Domestic Fisheries

Somass First Nations (Tseshaht and Hupacasath First Nations) caught Chinook by gill net, rod and reel, and as bycatch during other salmon fisheries in Area 23. Maa-nulth Treaty Nations harvested Chinook through rod and reel, gill net, and troll. Preliminary catch reports for Maa-nulth Treaty harvest and other WCVI Nuu-chah-nulth FSC harvest can be found in Appendices 1 and 4.

Strait of Georgia FSC Fisheries and Treaty Domestic Fisheries

Chinook Salmon FSC and Treaty Domestic fisheries were not restricted in the Strait of Georgia in 2025. Effort was low in the mixed stock areas; effort almost exclusively using hook and line gear. Final data is not yet available for terminal harvests for FSC or ESSR and the Department will be working with the Nations to confirm numbers for the final report. Preliminary Tla'amin Treaty and other First Nations catch reports in the Strait of Georgia can be found in Appendix 4.

Johnstone Strait FSC Fisheries

Chinook Salmon FSC Fisheries were not restricted in Johnstone Strait in 2025. Fisheries in the mixed stock areas were mainly with hook and line gear, seine nets, gill nets, and troll. Preliminary First Nations catch summaries from Johnstone Strait can be found in Appendix 4.

Fraser River FSC Fisheries

Chinook directed FSC fisheries took place in the lower Fraser River between the mouth and Sawmill Creek from April through September 2025. The total number of Chinook harvested from Chinook directed, and Chum directed FSC openings can be found in Appendix 5. Chinook and hatchery marked Coho bycatch retained for an FSC dual fishing pilot during the Chum directed EO fishery is listed in the appendices. Pink, Coho, and Chum bycatch that occurred during Chinook targeted FSC openings is also listed in the appendices. Chinook directed FSC fisheries in the lower Fraser River also occurred in the Sumas and Chilliwack River (July to August), the Chehalis River (July to August), and the Birkenhead River (April to June).

Chinook directed FSC fisheries took place in the Fraser River and tributaries above Sawmill Creek from July through early October 2025. The total number of Chinook harvested, as well as bycatch estimates, can be found in Appendix 5.

4.3.3 FIRST NATIONS COMMERCIAL HARVEST

Somass Economic Opportunity

Agreements were reached with the Hupacasath and Tseshaht First Nations for Economic Opportunity (EO) fisheries for 2025. Robertson Creek hatchery Chinook is a targeted species for these fisheries. These terminal Chinook fisheries occurred in portions of Subareas 23-1 and 23-2, in upper Alberni Inlet, including the tidal portion of the Somass River. Initial pre-season TAC was 7,695 and was revised in-season to 34,503. The total EO Chinook catch can be found in Appendix 4.

Five Nations Communal Sale Fishery

In 2025, the Department provided communal sale fishery opportunities for the Five Nations (five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht and Tla-o-qui-aht) that included ISBM Chinook. These opportunities were categorized as Nearshore Integrated Hook and Line, terminal salmon fisheries, and a Surplus to Escapement Salmon fishery.

The Nearshore Integrated Hook and Line fisheries occurred in Area 25 and targeted Conuma River enhanced Chinook using troll and gillnet gear. Fishery openings for Conuma Chinook occurred between July 1 and September 24. The initial pre-season TAC was 8,246 Chinook. The Conuma Chinook run size estimate increased in-season, increasing the TAC respectively to 10,233. On September 5, fishing occurred in the Conuma River estuary by gillnet. Fishing continued in the same area on the morning of September 6 by beach seine and catch reached the ISBM TAC of 10,233. The TAC limitation was subsequently removed from the ISBM fishery as broodstock, and escapement goals had been met.

The Surplus to Escapement Salmon fishery targeted Conuma River enhanced Chinook in the tidal and non-tidal portions of the Conuma River using beach seine gear to harvest excess salmon to spawning requirements. The fishery occurred from September 8 to 15. Surpluses to escapement were identified in-season based on Conuma Hatchery and stock assessment information indicating that broodstock requirements and escapement needs would be met.

The total ISBM Chinook catch from the Five Nations communal sale, can be found in Appendix 4. Hatchery marked and wild Coho and Chum caught in Nearshore and Terminal Chinook directed fisheries were also permitted to be sold.

Maa-nulth Treaty Communal Sale Fishery

Under a Maa-nulth Treaty Arrangement, the Huu-ay-aht Nations conducted a terminal, mark-selective communal sale fishery on Sarita River Chinook Salmon. The 4-year Arrangement is pursuant to treaty provision 10.5.0 (Stewardship and Enhancement) of the Maa-nulth Final Agreement. The fishery targets hatchery-marked Sarita River Chinook Salmon and takes place in September in the Sarita River using beach seines. Unmarked Chinook may not be retained. Catch can be found in Appendix 4.

Fraser River Economic Opportunity and Inland Demonstration Fisheries

Economic opportunity (EO) or inland demonstration fisheries did not occur in 2025 for ISBM Chinook in either the upper or lower reaches of the Fraser River as part of additional management actions to provide protection for Fraser Chinook stocks.

In 2025 there were EO/demonstration fisheries for Fraser Sockeye in the lower reaches of the Fraser River that allowed retention of Fraser Chinook and hatchery-marked Coho for FSC as part of the dual fishing pilot.

In 2025, no Fraser Chum EO fisheries occurred in the Lower Fraser that allowed retention of Fraser Chinook and hatchery-marked Coho for FSC as part of the dual fishing pilot.

4.3.4 COMMERCIAL FISHERIES

Area B Seine

Due to a moderate pre-season forecast for Robertson Creek Hatchery Chinook, Area B seine fisheries occurred in Area 23. The fisheries occurred in portions of Subarea 23-1 and 23-2, in upper Alberni Inlet, targeting Chinook. The fisheries were operated using a pool system with only designated vessels permitted to fish. Initial pre-season TAC was 3,232 Chinook and was revised in-season to 12,168. The seine Chinook catch can be found in Appendix 4. Due to ‘low’ WCVI Coho forecasted returns, Coho retention was not permitted in any commercial fisheries.

Area D Gill Net

Area D gillnet fisheries occurred in Area 23. The fisheries occurred in portions of Subarea 23-1 and 23-2, in upper Alberni Inlet, targeting Chinook with no retention of Coho permitted. Initial pre-season TAC was 6,463 and was revised in-season to 24,355. The fisheries were opened one night a week in the last week of August and for one night on September 2, 5, 12, and 13. Fisheries were also opened continuously from September 15-19, 20-26, and September 27 to October 5, due to low effort and catch rates. The total gillnet Chinook catch can be found in Appendix 4.

An Area D gillnet fishery occurred in Area 25, in Tlupana Inlet (portions of Subarea 25-4 and 25-5). The fishery targeted enhanced Conuma River Chinook with no retention of Coho or Chum permitted. There were two 9-hour openings in August; the first on August 12-13 and the second on August 13-14. Another opening occurred from September 6 – 10 after surpluses to escapement were identified based on Conuma Hatchery and stock assessment information indicating that broodstock requirements and escapement needs would be met. . Total gillnet Chinook catch can be found in Appendix 4.

Area E Gill Net

There were no Area E gill net fisheries for ISBM Chinook on WCVI in 2025.

Bycatch of Chinook in the Area E gill net commercial Sockeye openings in the Fraser River (Area 29) in 2025 can be found in Appendix 5.

4.3.5 RECREATIONAL FISHERIES

ISBM Chinook catch and release information from all fisheries can be found in Appendix 4.

West Coast Vancouver Island

In 2025, strong returns of hatchery Chinook were observed to the Stamp/Somass and Conuma rivers while Nitinat hatchery were more modest. Full limit recreational opportunities were available in terminal areas targeting these hatchery stocks.

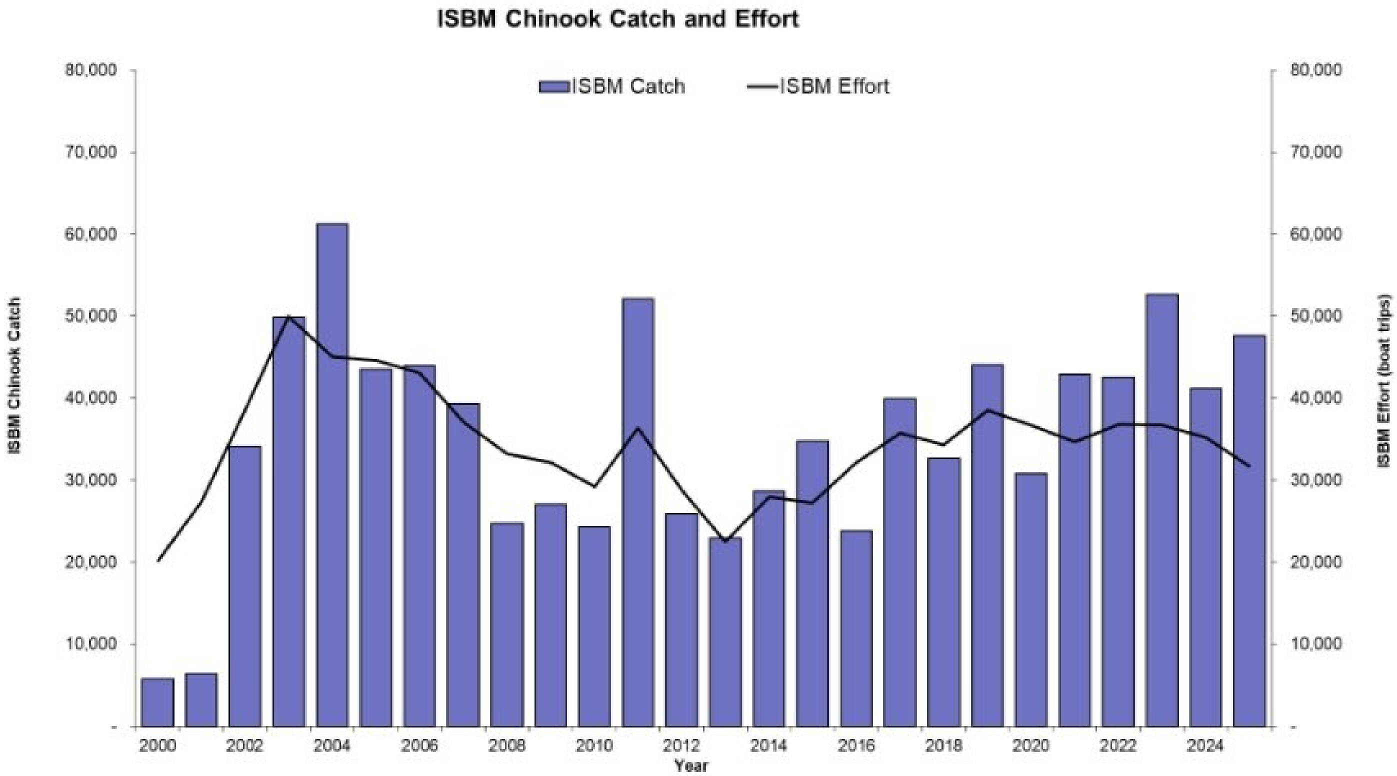


Figure 4-2 Recreational WCVI Chinook ISBM Catch and Effort, 2000 to 2025.

Inside Areas: Johnstone Strait, Strait of Georgia and Juan de Fuca Strait

In 2025 recreational fisheries in the inside Areas of Johnstone Strait, Strait of Georgia, Juan de Fuca Strait, and the approach waters to the Fraser River were managed to Chinook non-retention between April 1 and varying dates between July 14 and August 31. There was a maximum size limit of 80 cm in effect where Chinook retention was permitted before August 31 to minimize impacts on returning Fraser River Chinook stocks of concern. Salmon closures and Chinook non-retention areas were also implemented in portions of the Fraser River approach waters, Southern Gulf Islands and Juan de Fuca Strait to support the recovery of Southern Resident Killer Whales.

The following regulations were in place for the inside areas for 2025:

Queen Charlotte and Johnstone Straits (Subareas 12-1 to 12-13, 12-15 to 12-48):

- January 1 to March 31, two (2) Chinook per day;
- April 1 to July 14, Chinook non-retention;
- July 15 to August 16, one (1) Chinook per day with a maximum size limit of 80 cm;
- August 17 to August 31, one (1) Chinook per day;
- September 1 to December 31, two (2) Chinook per day.

Strait of Georgia - North - Areas 13 to 17, and Subareas 29-1 and 29-2:

- January 1 to March 31, two (2) Chinook per day;
- April 1 to July 14, Chinook non-retention;
- July 15 to August 31, one (1) Chinook per day with a maximum size limit of 80 cm*;
- September 1 to December 31, two (2) Chinook per day.

*Except for Subareas 14-7 to 14-10, 14-15 and portions of 14-4 and 14-5:

- August 5 to August 31, two (2) Chinook per day with a maximum size limit of 80 cm.

Strait of Georgia - South and Juan de Fuca - Areas 18, 19, 28, and Subareas 20-3 to 20-7, 29-3 to 29-5 and 29-8:

- January 1 to March 31, two (2) Chinook per day*;
- April 1 to July 31, Chinook non-retention;
- August 1 to August 31, one (1) Chinook per day with a maximum size limit of 80 cm;
- September 1 to December 31, two (2) Chinook per day.

*Except in Subareas 19-1, 19-3, 19-4 and 20-4 to 20-7:

- March 1 to March 31, two (2) Chinook per day, hatchery-marked only.

Juan de Fuca North - Subareas 20-1 and 20-2:

- January 1 to March 31, two (2) Chinook per day.
- April 1 to July 14, Chinook non-retention;
- July 15 to July 31, one (1) Chinook per day with a maximum size limit of 80 cm;
- August 1 to December 31, two (2) Chinook per day.

Area 111:

- January 1 to July 14, two (2) Chinook per day.
- July 15 to July 31, one (1) Chinook per day with a maximum size limit of 80 cm;
- August 1 to December 31, two (2) Chinook per day.

Area 11 and Subarea 12-14:

- Two Chinook per day, year-round

In 2025, pilot recreational mark-selective fishing opportunities for Chinook were also approved in a time period from April 1 to July 31 in the following areas:

Subareas 12-27, 12-28, 12-35, 12-38, and 12-40 and portions of Subareas 12-26 and 12-39; Subarea 13-21 and portions of Subarea 13-19; portions of Subareas 15-5 and 15-6:

- April 1 to July 14, one (1) Chinook per day, hatchery marked and unmarked Chinook with a maximum size limit of 80 cm on unmarked Chinook.

Subareas 16-6, 16-9, and 16-12 and portions of Subareas 16-7, 16-8, 16-10, 16-11 and 16-13:

- April 1 to July 14, one (1) Chinook per day, hatchery marked only.

Subareas 17-6 and 17-9:

- April 1 to July 14, one (1) Chinook per day, hatchery marked only.

Subareas 18-7; Subareas 19-7 and 19-8:

- April 1 to July 31, one (1) Chinook per day, hatchery marked only.

Subarea 18-6; Subareas 19-1, 19-3, 19-4, 19-5, 19-6

- April 1 to May 31, one (1) Chinook per day, hatchery marked only.

Portions of Subarea 18-6:

- June 1 to July 31, one (1) Chinook per day, hatchery marked only.

Portions of Subarea 20-5:

- April 1 to July 31, one (1) Chinook per day, hatchery-marked only.

Commencing in 2021 and continuing through 2025, changes to the management measures in Area 14 were used in order to provide increased protections for Puntledge Summer Chinook which included:

- Subareas 14-8, 14-9, 14-10, 14-15; and a portion of Subarea 14-13: July 15 to July 31, Chinook non-retention.
- Subarea 14-11; July 15 to August 15, closed to fishing for finfish.

The annual limit of 10 Chinook salmon per year first implemented in 2019 in B.C. tidal waters, including the inside areas listed above and have continued each year since. Chinook management measures also include a minimum size limit of 62 cm in the Johnstone Strait/Queen Charlotte Strait and Strait of Georgia, and Areas south to Cadboro Point (Subarea 19-5). For the Canadian portion of Juan de Fuca Strait and south of Cadboro Point, the minimum size limit is 45 cm.

Salmon fishing closures were also implemented in the following portions of the Southern Gulf Islands and Juan de Fuca to support Southern Resident Killer Whales (SRKW):

- July 16 to November 30: Subareas 18-9 and portions of 18-2, 18-4 and 18-5.
- July 15 to October 31: portions of Subarea 20-1.
- August 1 to October 31: portions of Subarea 20-4 and 20-5.
- August 1 to September 30: portions of Subarea 29-3.

In 2025, marine sport fisheries were monitored by creel surveys in three main areas: 1) Juan de Fuca including Victoria south of Cadboro Point (subareas 19-1 through 19-4 and Juan de Fuca Strait east of Sheringham Point (subareas 20-5 and 20-6); 2) Portions of the Strait of Georgia including Areas 14 through 18, that portion of Area 19 north of Cadboro Point, Areas 28 and 29; and 3) Johnstone Strait including Areas 11 to 13 and 111. Creel survey monitoring of these fisheries includes using an access point (landing site) survey for collecting catch, CPUE, and biological information combined with an aerial survey for effort counts. In addition, logbook programs directed at estimating the sport catch by fishing guides during guided trips, were conducted in the Campbell River and intermittently throughout other areas in the South Coast. The Avid Angler program and the Area 13 remote lodges around Stuart Island typically provide the majority of logbook program data. Electronic survey estimates from the iREC program will also be used to produce catch estimates for those areas where creel surveys did not take place.

The creel survey in Juan de Fuca Strait ran between March and October 2025.

The Strait of Georgia creel survey for Areas 13 and 14 was conducted from April to October, for Area 15 from mid-April to September, for Area 16 from April to September, for Areas 17 and 18 from April to September, and for Areas 19 and the Strait of Georgia portion of Area 20 from March to October.

The Johnstone Strait creel survey for Areas 11 and 12 was conducted from June through August.

Effort, catch and release information from marine fisheries are summarized in Figure 4-1.

Region 1 Vancouver Island Tributaries

Water conditions did not significantly deteriorate due to moderate levels of precipitation throughout the spring, summer, and early fall. In the summer of 2025, all systems in Region 1 that are typically open remained open with the exception of the Cowichan River which closed to all recreational angling on July 4 to August 31 due to poor water quality. Seasonal closures implemented in Regions 1-1 to 1-6 tributaries between July 15 to August 31 due to annually high-water temperatures and low flow conditions remained in 2025. Many Chinook systems on the east and west coasts of Vancouver Island saw strong returns in 2025; particularly enhanced systems. These returns provided early and productive opportunities for recreational freshwater fisheries. The Qualicum River, Little Qualicum River, Puntledge River, Nitinat River, Somass River, and Conuma River all provided some recreational opportunities to harvest Chinook.

Fraser River Mouth (Subareas 29-6, 29-7, 29-9 and 29-10):

January 1 to December 31, fishing for Chinook salmon remained closed in this area.

Hatchery marked Coho opportunities occurred in November and December, Chinook, Pink and Chum could not be retained in this fishery.

Tidal Fraser River:

In the tidal waters of the Fraser River the following regulations were in place for 2025:

January 1 to December 31, fishing for salmon was not permitted, with the exception of Hatchery marked Coho opportunities in November . Chinook, Pink, and Chum could not be retained in this opening. This recreational fishery was not assessed in 2025.

Non-Tidal Fraser River:

Region 2: Bridge at Mission, to the Highway 1 Bridge at Hope, January 1 to December 31, fishing for salmon was not permitted, with the exception of Coho opportunities in November. Chinook, Pink, and Chum could not be retained in these openings. This recreational fishery was not assessed in 2025.

Region 3: January 1 to December 31, fishing for salmon was not permitted on the Fraser River.

Region 5: January 1 to December 31, fishing for Chinook was not permitted on the Fraser River.

Region 7: January 1 to December 31, fishing for Chinook was not permitted on the Fraser River.

Fraser River Tributaries:

<u>*Fraser River Tributaries - Region 2*</u>

There were several tributaries of the Fraser River where Chinook retention was permitted, as follows:

- Alouette River: daily limit of one Chinook from September 1 until November 30;
- Capilano River: daily limit is four Chinook August 1 until November 30, 2025
- Chehalis River: daily limit of one Chinook from June 1 until August 31 and a daily limit of four Chinook with only one over 62 cm from September 1 until December 31;
- Chilliwack/Vedder River: daily limit of one from July 1 until August 31, daily limit of four with two over 62 cm from September 1 to December 31;
- Coquitlam River: fishing for salmon was permitted but Chinook Salmon could not be retained from September 1 to December 31;

The Chilliwack/Vedder River recreational fishery was assessed from September 15 to late November in 2025 Fisheries are currently underway and catch estimates are not yet available. Once completed, catch estimates can be found in Appendix 5. The Alouette River, Chehalis River, and Coquitlam River recreational fisheries were not assessed in 2025.

During 2025, there were limited non-tidal openings for Chinook on the following systems which enter Boundary Bay:

- Little Campbell River: daily limit of one hatchery-marked Chinook per day from August 15 until September 15 and fishing for salmon was permitted but Chinook Salmon could not be retained from September 16 until December 31.
- Nicomekl River: daily limit of one Chinook from September 1 until November 30 and fishing for salmon was permitted but Chinook Salmon could not be retained from December 1 until December 31.
- Serpentine River: daily limit of one Chinook from September 1 until November 30 and fishing for salmon was permitted but Chinook Salmon could not be retained from December 1 until December 31.

The Little Campbell River, Nicomekl River and Serpentine River recreational fisheries were not assessed in 2025.

<u>*Fraser River Tributaries - Region 3*</u>

Thompson River: That portion of the Thompson River from the white triangular fishing boundary (WTFB) signs just downstream of Goldpan Provincial Park to the easterly border of the Skihist Ecological reserve along the Thompson River located at 50°15'N, 121°31'W; this is approximately 5 km northeast of Lytton at Skihist Park.

- August 28 to September 22, daily limit of four Chinook, zero over 50 cm.

Thompson River - from Kamloops Lake outlet downstream to the fishing boundary signs just downstream of Gold Pan Provincial Park, except at Deadman, Juniper, and Ashcroft. Three closures are key First Nations fishing sites.

- No fishing for Chinook.

Kamloops Lake: In the waters of Kamloops Lake upstream of the fishing boundary signs at the outlet of Kamloops Lake.

  - August 28 to September 22, daily limit of four Chinook, only one over 50 cm.

South Thompson River: That portion of the South Thompson River from the green can buoy near outlet of Little River, including Little Shuswap Lake, to the fishing boundary sign approximately 100 m downstream of Campbell Creek.

- August 16 to September 22, daily limit of four Chinook, only two greater than 50 cm. There is a monthly limit of six Chinook over 50cm from the South Thompson River.

Fraser River Tributaries - Region 5A

January 1 to December 31, fishing for Chinook was not permitted in any portion of the Fraser watershed in Region 5A

Fraser River Tributaries - Region 7

January 1 to December 31, fishing for Chinook was not permitted in any portion of the Fraser watershed in Region 7.

Fraser River Tributaries - Region 8

Note: there is a monthly limit of four Chinook in Region 8.

Mabel Lake: That portion of Mabel Lake that is both northerly of a line drawn from a white triangular fishing boundary sign situated at the northern edge of Mabel Lake Provincial Park to the prominent point of land on the western shore; and southerly of a line drawn between two white triangular fishing boundary signs located on opposite shores approximately 1 km from Wap Creek.

- August 16 to September 12, daily limit of four Chinook, only two over 50 cm.

Middle Shuswap River: No fishing for salmon.

Lower Shuswap River: That portion of the Lower Shuswap River upstream from white triangular fishing boundary signs upstream of the Mara Bridge to Mable Lake, except no fishing in those waters 50 metres upstream and downstream of the Trinity Valley Road Bridge.

- August 16 to September 12, daily limit of four Chinook, only two over 50 cm.

4.3.6 EXCESS SALMON TO SPAWNING REQUIREMENTS (ESSR) FISHERIES

The Tseshaht and Hupacasath First Nations were issued a joint Excess Salmon to Spawning Requirements (ESSR) Licence for Chinook at the Robertson Creek Hatchery facility.

The Ditidaht First Nation was issued an ESSR Licence for Chinook at Nitinat Lake and Nitinat hatchery.

In 2025, Chinook Salmon ESSR fisheries are currently ongoing for the Qualicum First Nation at the Big Qualicum Hatchery, and for the K'ómoks First Nation at the Puntledge River Hatchery.

There were ESSR fisheries at the Capilano, Chilliwack, and Chehalis hatcheries in 2025 that harvested Chinook Salmon.

No Johnstone Strait ESSR opportunities on Chinook occurred in 2025.

There were no Interior B.C. ESSR opportunities on Chinook in 2025.

All ESSR harvest information can be found in Appendix 7.

5 FRASER RIVER SOCKEYE AND PINK SALMON

5.1 SOCKEYE SALMON

5.1.1 OBJECTIVES AND OVERVIEW

In 2025, the Fraser River Panel (FRP) adopted the median (p50 probability) run size forecast for all four stock management units (2,947,000 Fraser Sockeye) for pre-season planning purposes. A small Canadian TAC (i.e., Aboriginal Fisheries Exemption [AFE]) was projected to be available on Early Summers and Summers at the median forecast, with international TAC anticipated to be available for sharing at higher run sizes. However, the less-abundant Early Stuart and Late-run stock management units were projected to remain in a Lower Abundance Exploitation Rate (LAER) across the full range of the forecast and were anticipated to pose a substantial constraint on accessing available TAC. Pre-season fishery planning focused on minimizing impacts on less abundant stock groups and other species of concern. Actual in-season harvest opportunities were dependent on in-season stock assessments.

Fishing plans incorporate provisions to meet escapement and conservation objectives for stocks of concern while considering other international and domestic objectives. Fishing plans include the following assumptions and guiding principles in no particular order:

- The FRP operated in accordance with the relevant articles of the PST, noting in particular, Article VI and Annex IV, Chapter 4.
- The U.S. share of the annual Fraser River Sockeye international TAC, harvested in the waters of Washington State, was set at 16.5% of the aggregate Fraser River Sockeye TAC. To the extent practicable, the FRP shall manage U.S. fisheries to implement a fishing plan that concentrates harvest on the most abundant management group or groups.
- It is understood that the U.S. harvest may exceed 16.5% of the international TAC for one or more of the less abundant management units by a small but acceptable amount, despite concentrating harvest in this manner.
- For computing international TAC by stock management units, the AFE of 400,000 Fraser River Sockeye shall be allocated to management groups as follows: the Early Stuart Sockeye exemption shall be up to 20% (maximum 80,000) of the AFE, and the balance of the exemption shall be based on the average proportional distribution of FSC catch for the most recent three Sockeye cycles, modified annually as required to address concerns for Fraser River Sockeye stocks and other species of concern, or as otherwise agreed to by the FRP.
- The four stock management units identified in Annex IV generally contain stocks with similar timing in the marine approach waters.
- It is the responsibility of Canada to establish the Fraser Sockeye escapement plan by stock management unit. The escapement plan is comprised of a harvest control rule (HCR) for each stock management unit. Each HCR has several components: the lower and upper fisheries reference points (LFRP; UFRP), the

total allowable mortality cap (TAM) and the low abundance exploitation rate (LAER). The total allowable catch (TAC) by stock management unit is calculated by applying the HCR to the estimated run size, after accounting for Management Adjustments (changes applied by the Fraser River Panel to account for process and observation error).

- When the run size is below the LFRP, the run size becomes the escapement goal and the objective is to maximize escapement. When the run size is between LFRP and UFRP, the escapement goal is the LFRP and TAM increases with run size. When the run size is above the UFRP, the escapement goal is 1 – TAM. The 2025 harvest control rules are presented in Table 5-3.

- The allowable harvest in a LAER situation is not a target; the objective is to allow as many fish as possible to pass to the spawning grounds. In most circumstances acceptable mortality under a LAER scenario would be incidental harvest or bycatch from fisheries directed on other species. However, some limited, directed harvest in terminal areas may be considered for First Nations with no other fishery access.

- A window closure and other fishing gear restrictions were planned for commercial, recreational, and First Nations fisheries to protect >90% of the Early Stuart return and a significant portion of the early-timed, early Summer stocks. Window closures are defined periods of time where a portion of the migration route is closed to fishing to protect fish as they migrate through the area. In 2025, the measures included a 5-week rolling window closure based on Early Stuart run timing and was intended to provide additional protection to the earlier-timed components of the Early Summers that have had persistent conservation concerns (e.g., Bowron, Taseko).

- Conservation concerns for Sockeye stocks and other species continued to impact the planning of Fraser River Sockeye fisheries in 2025. The stocks and species of concern included: Cultus Lake Sockeye, Nimpkish River Sockeye, Sakinaw Lake Sockeye, Interior Fraser River Coho, Southern B.C. Chinook including Fraser River Chinook, and Interior Fraser River Steelhead.

5.1.2 STOCK STATUS

Please Note: Table 5-2 and Figure 5-4 are adapted from, or courtesy of, the PSC.

5.1.2.1 PRE-SEASON ASSESSMENT

Pre-season expectations (Table 5-1) were for a median run size (p50 level) of 2,947,000 Fraser River Sockeye with a 50% chance the run size would be between 1,404,000 (p25 level) and 6,392,000 (p75 level).

Table 5-1 2025 pre-season run size abundance forecast range by management group for Fraser Sockeye.

Stock Management Group	**Probability that returns will be at/or below specified run size**				
	10%	**25%**	**50%**	**75%**	**90%**
Early Stuart	42,000	72,000	116,000	202,000	319,000
Early Summer	54,000	103,000	220,000	449,000	820,000
Summer	522,000	992,000	2,137,000	4,748,000	10,004,000
Late	118,000	237,000	468,000	993,000	1,997,000
Total	**736,000**	**1,404,00**	**2,947,000**	**6,392,000**	**13,140,000**

The pre-season diversion rate forecast for Fraser River Sockeye through Johnstone Strait was 64%. Predicted Area 20 50% migration timing dates were July 8 for Early Stuart, August 3 for Early Summer, August 15 for Summer, and August 20 for Late-run Sockeye.

Spawning escapement goals are quantified via an abundance-based harvest control rule which is the product of the Fraser River Sockeye Spawning Initiative (FRSSI). In the FRSSI process escapement strategies were designed to balance (1) escapement and production for individual stocks, and (2) accessing the catch-related benefits from productive stock groups. For each stock, the escapement plan attempts to avoid spawning abundances below which there is a high chance the population will collapse or result in low sustained future benefits - ecological, social, or economic.

The 2021 escapement plan took a more conservative approach than previous years by increasing the number of Sockeye salmon that must arrive at the spawning grounds, from all four management units and across the range of forecast run sizes, before directed fishing may occur. Notwithstanding that the escapement targets are relative to the run size, the median run size escapement targets were as follows; 116,000 Early Stuart, 136,000 Early Summer, 1,470,000 Summer, and 346,000 Late-run Sockeye for a total of 2,067,000 (Table 5-2).

Table 5-2. Fraser Sockeye 2025 Pre-season (top) and Final In-season (bottom) Values for Total Allowable Catch (TAC) and Other Management Parameters

Date	Mgmt Group	Total Abundance	SET	TAM	pMA	MA	LAER	Test Fishing	AFE	Total Deductions	TAC	Allowable Harvest (AFE incl.)	Max Allowable Catch (incl. LAER)	50% Migration Date (Area 20)	JST Diversion Rate
June 20 Pre-season	Early Stuart	116,000	116,000	0.00	1.17	135,700	0.10	903	0	116,000	0	0	11,600	8-Jul	
	Early Summer	221,000	136,000	0.38	0.54	73,400	0.10	2,147	9,653	221,000	0	9,453	9,453	3-Aug	
	Summer	2,136,000	1,470,000	0.31	0.28	411,600	0.10	19,413	265,376	2,136,000	0	234,987	234,987	15-Aug	
	Late	468,000	346,500	0.26	1.56	540,500	0.10	3,683	0	468,000	0	0	46,800	20-Aug	
	Fraser Sockeye														64%
Sept 23 Post-season	Early Stuart	736,000	580,000	0.21	1.86	1,078,800	0.10	5,315	0	736,000	0	0	73,600	6-Jul	
	Early Summer	411,000	200,000	0.51	0.54	108,000	0.10	2,300	23,887	334,187	76,813	100,700	100,700	1-Aug	
	Summer	6,915,000	3,500,000	0.49	0.54	1,890,000	0.10	24,000	376,113	5,790,113	1,124,887	1,501,000	1,501,000	11-Aug	
	Late	850,000	575,000	0.32	1.04	598,000	0.10	2,600	0	850,000	0	0	85,000	14-Aug	
	Fraser Sockeye														45%

The targets for each stock management unit are established by applying Canada's spawning escapement plan to the run size. During pre-season planning, the TAC for all management groups was constrained by varying

LAER limits (see Table 5-3). Harvest rules were further constrained by a 20% TAM cap for Early Stuart and a 50% TAM cap for the other three stock management groups (Table 5-3).

At low abundances, the harvest control rule also employs a LAER. As low salmon abundance, fishing mortality should be as low as possible. In an attempt to achieve this and permit fisheries or more abundant co-migrating run timing groups and/or other species, the LAER is an exploitation rate limit that constrains the amount of incidental mortality that is permitted to occur at low abundances. For example, a 10% LAER is intended to protect 90% of the stock management unit while allowing for fisheries on more abundant co-migrating run timing groups and/or other species. As per the escapement plan, Early Stuarts and Late run Sockeye were forecasted to be in an LAER across the entire range.

Table 5-3 Fraser River Sockeye Salmon 2025 Escapement Plan and Application of the Plan to each Stock Management Group across a Range of Forecast Abundances

	Harvest Rule Parameters				
Management Unit	Low Abundance ER (LAER)	TAM Cap	Lower Fishery Reference Point	Upper Fishery Reference Point	Pre-season pMA @p50
Early Stuart	10%	20%	124,200	155,000	1.17
Early Summer (w/o	10%	50%	115,000	230,000	0.59
Summer (w/o misc)	10%	50%	1,437,500	2,875,000	0.09
Late (w/o misc)	10%	50%	345,000	690,000	1.56

Management Unit		Pre-season Forecast Return				
		p10	p25	**p50**	p75	p90
	lower ref. pt. (w misc)	124,200	124,200	**124,200**	124,200	124,200
	upper ref. pt. (w misc)	155,000	155,000	**155,000**	155,000	155,000
Early Stuart	forecast	41,955	72,374	**115,983**	202,430	319,236
	TAM Rule (%)	0%	0%	**0%**	20%	20%
	Escapement Target	41,955	72,374	**115,983**	161,944	255,389
	MA	49,100	84,700	**135,700**	189,500	298,800
	Esc. Target + MA	91,055	157,074	**251,683**	351,444	554,189
	LAER	10%	10%	**10%**	10%	10%
	Available ER at Return	0%	0%	**0%**	0%	0%
	Max. Allowable ER	10%	10%	**10%**	10%	10%
	Max. Allowable Harvest	4,196	7,237	**11,598**	20,243	31,924
	2025 Performance					
	Projected S (after MA)	17,400	30,000	**48,000**	83,800	132,200
	BY Spawners	54,013	54,013	**54,013**	54,013	54,013
	Proj. S as % BY S	32%	56%	**89%**	155%	245%
	cycle avg S	194,632	194,632	**194,632**	194,632	194,632
	Proj. S as % cycle S	9%	15%	**25%**	43%	68%

Management Unit		Pre-season Forecast Return				
		p10	p25	**p50**	p75	p90
Early Summer (w/o RNT)	*lower ref. pt. (w misc)*	135,800	135,800	**135,800**	135,800	135,800
	upper ref. pt. (w misc)	271,600	271,600	**271,600**	271,600	271,600
	forecast (incl. misc)	54,785	103,071	**220,862**	447,905	820,145
	TAM Rule (%)	0%	0%	**39%**	50%	50%
	Escapement Target	54,785	103,071	**135,800**	223,953	410,073
	MA	28,500	53,600	**73,300**	120,900	221,400
	Esc. Target + MA	83,285	156,671	**209,100**	344,853	631,473
	LAER	10%	10%	**10%**	10%	10%
	Available ER at Return	0%	0%	**5%**	23%	23%
	Max. Allowable ER	10%	10%	**10%**	23%	23%
	Max. Allowable Harvest	5,500	10,300	**22,100**	103,100	188,700
	2025 Performance					
	Projected S (after MA)	32,400	60,900	**130,200**	225,600	412,300
	BY Spawners	103,684	103,684	**103,684**	103,684	103,684
	Proj. S as % BY S	31%	59%	**126%**	218%	398%
	cycle avg S	92,563	92,563	**92,563**	92,563	92,563
	Proj. S as % cycle S	35%	66%	**141%**	244%	445%

Management Unit		Pre-season Forecast Return				
		p10	p25	**p50**	p75	p90
Summer	*lower ref. pt. (w misc)*	1,469,800	1,469,800	**1,469,800**	1,469,800	1,469,800
(w. RNT & Har)	*upper ref. pt. (w misc)*	2,939,600	2,939,600	**2,939,600**	2,939,600	2,939,600
	forecast	521,998	991,392	**2,136,089**	4,748,888	10,003,313
	TAM Rule (%)	0%	0%	**31%**	50%	50%
	Escapement Target	521,998	991,392	**1,469,800**	2,374,444	5,001,657
	MA	146,200	277,600	**411,500**	664,800	1,400,500
	Esc. Target + MA	668,198	1,268,992	**1,881,300**	3,039,244	6,402,157
	LAER	10%	10%	**10%**	10%	10%
	Available ER at Return	0%	0%	**12%**	36%	36%
	Max. Allowable ER	10%	10%	**12%**	36%	36%
	Max. Allowable Harvest	52,200	99,139	**254,789**	1,709,644	3,601,157
	2025 Performance					
	Projected S (after MA)	366,100	695,000	**1,465,000**	2,365,800	4,981,800
	BY Spawners	1,580,984	1,580,984	**1,580,984**	1,580,984	1,580,984
	Proj. S as % BY S	23%	44%	**93%**	150%	315%
	cycle avg S	1,568,493	1,568,493	**1,568,493**	1,568,493	1,568,493
	Proj. S as % cycle S	23%	44%	**93%**	151%	318%

Management Unit		Pre-season Forecast Return				
		p10	p25	**p50**	p75	p90
Late	*lower ref. pt. (w misc)*	345,900	345,900	**345,900**	345,900	345,900
(w/o Har)	*upper ref. pt. (w misc)*	691,900	691,900	**691,900**	691,900	691,900
	forecast	117,570	238,069	**467,581**	994,008	1,995,537
	TAM Rule (%)	0%	0%	**26%**	50%	50%
	Escapement Target	117,570	238,069	**345,900**	497,004	997,769
	MA	199,900	388,100	**539,600**	715,700	1,436,800
	Esc. Target + MA	317,470	626,169	**885,500**	1,212,704	2,434,569
	LAER	10%	10%	**10%**	10%	10%
	Available ER at Return	0%	0%	**0%**	0%	0%
	Max. Allowable ER	10%	10%	**10%**	10%	10%
	Max. Allowable Harvest	11,757	23,807	**46,758**	99,401	199,554
	2025 Performance					
	Projected S (after MA)	39,500	80,900	**163,900**	363,400	734,500
	BY Spawners	161,574	161,574	**161,574**	161,574	161,574
	Proj. S as % BY S	24%	50%	**101%**	225%	455%
	cycle avg S	179,737	179,737	**179,737**	179,737	179,737
	Proj. S as % cycle S	22%	45%	**91%**	202%	409%
Allowable Fishing Mortality (TF, US, CA)		73,652	140,484	**335,245**	1,932,388	4,021,334
Max Allowable Harvest (excl. LAER)		-	-	**265,839**	**1,812,744**	**3,789,857**
Total projected spawners		455,400	866,800	**1,807,100**	3,038,600	6,260,800

Pre-season Management Adjustments (MAs) are adjustments to the spawning escapement targets to account for observation and process error (e.g. predicted en route mortality) and increase the likelihood of achieving the targets. The pre-season MAs for the four stock management groups at the p50 were: 135,700 for Early Stuart, 73,300 for Early Summer, 411,500 for Summer, and 539,600 for Late run Sockeye.

Pre-season MAs were derived from historical proportional differences (pDBEs) between in-season estimates at Mission, and spawning ground escapement estimates. A retrospective analysis was completed pre-season to assess the most suitable methods for predicting pre-season pDBEs for each stock management group. Pre-season predictions of pDBE were as follows: Early Stuart -0.54 (all-years [1995-2023] median); Early Summer -0.35 (all-years median); Summer -0.22 (pre-season temperature and discharge model); Lates -0.61 (non-dominant years [1996-2023] median).

Pre-season harvest planning model runs indicated there would be a small Canadian TAC (AFE harvest) for Early Summers and Summers at the median forecast with international TAC available on the same stock management units at higher run sizes. Expected timing indicated that access to one stock group without incidentally impacting another not be feasible given the overlap in run timing (Figure 5-4).

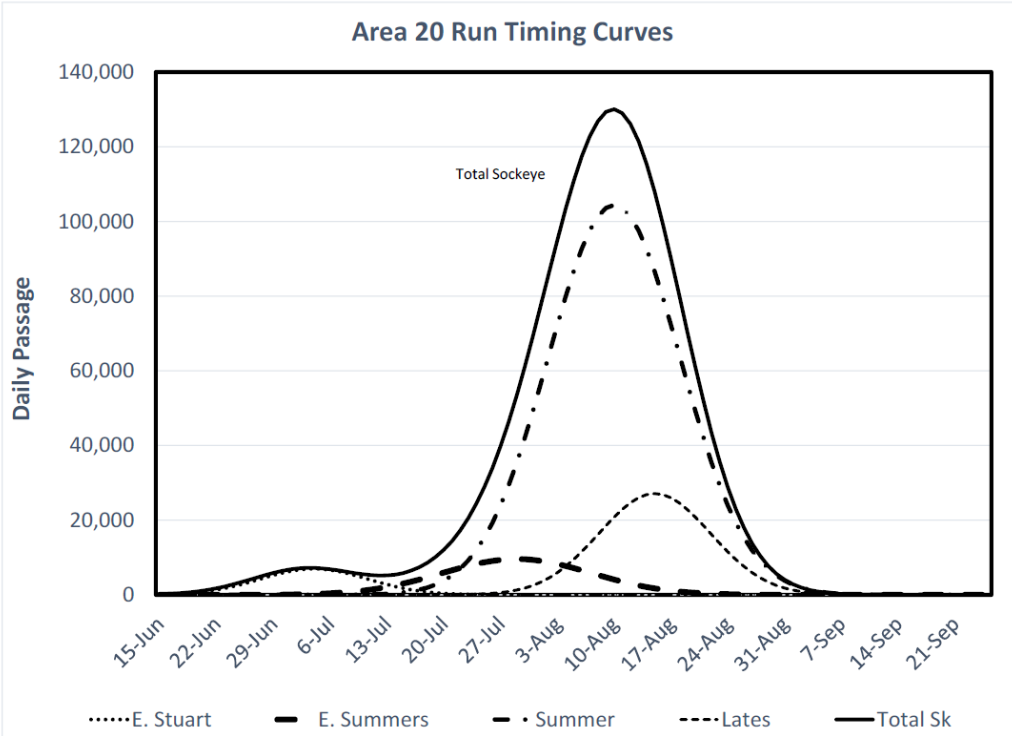


Figure 5-4 Pre-Season Projections of Daily Fraser River Sockeye Salmon Abundance by Management Group

5.1.3 IN-SEASON ASSESSMENT

Overall, marine migration timing (50% passage date at A20) was earlier relative to pre-season timing forecasts, with Early Stuarts and Early Summers returning two days earlier (July 6 in-season vs. July 8 pre-season) and (August 1 vs. August 3), respectively, Summers were four days earlier (August 11 vs. August 15) and Lates were six days earlier (August 14 vs. August 20).

The final in-season Johnston Strait diversion rate was 45%, which was lower than the pre-season forecast of 64%.

As of late September 2025, returns for all stock management groups were above median pre-season forecast levels:

- The return of Early Stuarts was 736,000, which is 534% higher than the p50 forecast of 116,000.
- The return of Early Summers was 411,000, which is 86% higher than the p50 forecast of 221,000.
- The return of Summers was 6,911,000, which is 224% higher than the p50 forecast of 2,136,000.
- The return of Lates was 816,000, which is 74% higher than the p50 forecast of 468,000.

- Note, post-season run size estimates presented above are preliminary and may change as spawning escapement and fisheries data are collected and incorporated.

The Big Bar landslide site was not considered a significant adult salmon passage impediment in 2025. However, the emergency conservation enhancement programs for salmon populations most heavily affected by migration barriers (e.g., Early Stuart and early timed Early Summer run Sockeye) continued in 2025.

On July 31, 2024, a major landslide occurred in the lower reach of the Chilcotin River (upstream of Farwell Canyon Bridge), resulting in a complete blockage of the river. Although no major slide movement occurred in 2025, turbidity and fish passage were monitored and information was shared with the Fraser River Panel for consideration. Fish migration was not significantly impacted by slide activity in 2025.

Record low flows and high-water temperatures persisted throughout the province for most of the 2025 Sockeye migration period. This resulted in increases to the MAs for both Early Stuarts and Summers to support attaining escapement objectives (Table 5-3), which reduced the amount of harvestable surplus. Conversely, the MA for Lates decreased in-season as a result of a higher proportion of Birkenhead and Big Silver group Sockeye relative to the delaying Late run component. Although the MA for Lates was reduced in-season, it did not allow for any directed harvest and therefore Late run Sockeye were managed to the LAER.

5.1.4 POST-SEASON ASSESSMENT

The preliminary (i.e., late September) post-season run size estimate of Fraser Sockeye (8,874,000) is approximately 202% higher than the pre-season median forecast of 2,941,000 (Table 5-2). The 2025 estimate is 261% above the 2021 brood year run size (2.5M) and 10% above the historical cycle-line average (8.1M). The 2025 return was the highest return for this cycle since 1997 stemming from a strong brood return in 2021 combined with above average survival.

Due to a combination of precautionary escapement planning, high en-route loss and poor migration conditions, Early Stuart and Late run MUs remained in a LAER in 2025; this was despite strong returns for both MUs. International TAC was identified for both Early Summers and Summers. However, given the substantial overlap among MUs, fisheries in Canadian waters were heavily constrained and planned after the Early Sockeye window closure but before peak the peak of Late run Sockeye. Sockeye-directed fisheries occurred in all sectors (First Nations FSC and Treaty Domestic, First Nations commercial harvest, commercial, and recreational fisheries). See Sections 5.1.4 to 5.1.8 for details of each fishery type.

Overall, fisheries impacts on Fraser Sockeye were restricted to levels below their respective allowable ER limits, with the exception of Late run Sockeye. The exploitation rate limit was exceeded for Lates because of several factors. There were relatively large bycatch impacts from fisheries directed on Summers, and US fisheries targeting Pink salmon. The run size was also downgraded later in the season, after fisheries occurred.

A fishery decision disagreement occurred at the Fraser River Panel when the US proposed Pink fisheries with Sockeye retention, despite no harvestable surplus for Sockeye remaining, as the US deemed these impacts to be “small but acceptable.” Canada opposed the US fishery proposal on the grounds that the exploitation rate limit (10% LAER) for Late-run sockeye was met, and U.S. fishery mortality already accounted for 38% of all Late-run mortality, despite there being no harvestable surplus for this management unit.

Additional changes to ERs are anticipated once escapement data is finalized later in the year. The total Canadian Fraser Sockeye catch can be found in Appendix 1, 2 and 5. The total post-season ER is estimated to be 14.7% and 15.7% including Fishery-Induced Mortalities (FIMs). See Table 5-5 for projected post-season ERs relative to allowable ERs.

Table 5-5. 2025 Post-Season Exploitation Rate Estimates for All Fraser Sockeye Catch by Management Group

Management Group	Early Stuart	Early Summer	Summer	Late	Total
Preliminary Exploitation Rate	1.7%	13.8%	16.7%	15.8%	14.7%
Preliminary ER including FIM	1.7%	14.0%	17.1%	16.2%	15.7%
Allowable Exploitation Rate*	10%	23%	23%	10%	10-23%
LAER*	Yes	No	No	Yes	N/A

* The Low Abundance Exploitation Rate (LAER) is not a target. All efforts were made to minimize fisheries impacts to Fraser Sockeye managed under an LAER.

5.1.4.1 FIRST NATIONS FSC AND TREATY DOMESTIC FISHERIES

Directed Fraser Sockeye FSC harvest opportunities for Treaty and non-Treaty First Nations were provided in 2025.

Marine Areas

On June 12 a fishery notice was posted as a reminder of Sockeye non-retention in FSC fisheries in effect in Areas 11 to 21, 28, 111, 121, 123 to 127 and Subareas 26-11, 27-4, 27-6, 29-1 to 29-6 to protect Early Stuart and the early-timed stocks within the Early Summer stock management group. Retention of Sockeye was permitted in FSC fisheries from August 1 to August 4 in Areas 11 to 17, 19 to 21, 28, 111, 121, 123 to 127 and Subareas 26-11, 27-4, 27-6 and from August 2 to August 4 in Area 18 and Subareas 29-1 to 29-6 using seine, gill net, troll, and hook and line gear. Retention of Sockeye was permitted again in FSC fisheries from August 6 to August 24 in Areas 11 to 21, 28, 111, 121, 123 to 127, and Subareas 26-11, 27-4, 27-6, 29-1 to 29-6 via short durations extensions. The fishery was extended until August 27 with the exception of Subareas 29-1 to 29-6. Total catch from marine area salmon fisheries is provided in Appendix 5.

Fraser River

In-river FSC Sockeye fisheries below Sawmill Creek (lower Fraser) are typically licensed as individual openings (typically 2-4 days) to individual bands and/or groups of Nations and generally commence shortly after the early Sockeye window closure ends. Licence duration typically increases in the interior as fisheries are small in scale with limited catch. In 2025, in-river First Nations FSC fisheries began on August 4 with lower Fraser treaty nations and small-scale dry rack fisheries in the canyon. Larger communal openings (typically gill net) began on August 9 and ran every weekend (typically 2-3 days in duration) until the Interior Fraser Coho rolling window closure, which limited fishing gear to selective types (e.g., fish wheel, traps etc.). Mid-week FSC fisheries also occurred most weeks until harvest targets were met or until to the onset of the Interior Fraser

Steelhead rolling window closure. The Late run LAER was also a considerable constraint in 2025 which required early closures on some fisheries prior to achievement of harvest targets.

5.1.4.1.1 Fraser Sockeye Stock-Selective Fisheries

In 2025, there was one Fraser Sockeye Stock-Selective FSC fishery (SSFSC; formerly ESSR), approved on the Birkenhead River. Under the SS-FSC framework in Section 13.56 of the IFMP, SS-FSC fisheries for individual stocks may be considered if the projected number of effective spawners is expected to exceed the freshwater productive capacity of the system(s). In a manner consistent with previous SS-FSC fisheries, stock-specific spawning requirements were determined based on Wild Salmon Policy Benchmarks (e.g., S_{msy}), and projected number of effective spawners, which takes into consideration estimates of pDBEs and unsanctioned harvest, similar to aggregate TAC calculations. In addition, given inherent uncertainty in estimates of in-season run sizes, harvest and pDBEs, only a portion of the identified surplus was allotted for harvest. See section 13.5.6.5 of the 2025/26 Southern British Columbia IFMP for further details.

Catch estimates are provided in Appendix 5. Where available, post-season total mortality estimates include any unauthorized catch which was retained.

5.1.4.2 FIRST NATIONS COMMERCIAL HARVEST

Five Nations Communal Sale Fishery

In 2025, the Department provided communal Sockeye sale fishery opportunities for the Five Nations (five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht). These opportunities were categorized as Offshore Integrated Hook and Line Communal Sale fisheries.

The initial Five Nations Fraser Sockeye allocation of 2,073 was revised in season to a maximum of 12,242 due to the adoption of higher run sizes by the Fraser Panel. The fishery concluded with the final allocation of 3,726 on September 23 due to subsequent run size changes.

Retention of Sockeye for sale was permitted from August 6 to August 27 in portions of Areas 124, 125, and 126 using hook and line. The majority of Sockeye effort occurred in Area 124. A total of 24 Sockeye were caught and sold. Independent dockside monitoring was in place for the entire season. Sale of Chum, Pink, and hatchery-marked Coho caught as bycatch in Sockeye-directed fisheries was authorized. The retention of Sockeye for sale was prohibited effective August 27 due to accumulated impacts to Late run Sockeye. Total salmon catch from the Five Nations Salmon fisheries is provided in Appendix 5.

In-river Fraser First Nations Commercial Fisheries

In 2025, there were in-river economic opportunity (EO) and demonstration fisheries targeting Summer run Fraser Sockeye. EO fisheries in the lower Fraser River began in mid to late August once a commercial TAC was identified. However, due to reductions in Summer run commercial TAC, and the Late run LAER, EO fisheries were constrained to one to two days per licence.

Small-scall demonstration fisheries occurred on Fraser Lake in the B.C. Interior between September 12, 2025, and September 29, 2025. These fisheries typically target a few stocks in terminal systems where commercial TAC is available on those stocks. Total salmon caught from the Upper Fraser Indigenous Sustainable Harvesters (UFISH) Commercial Fishing Enterprise is provided in Appendix 5.

5.1.4.3 COMMERCIAL FISHERIES

There were directed commercial fisheries on Fraser River Sockeye in Canada in 2025. In Canada, commercial fisheries primarily targeting Summer run Fraser Sockeye were open:

- Daily from August 14 to August 19 in Areas 12 and 13 for Area B seine
- August 14 to August 19 in Areas 12 and 13 for Area H troll
- August 15 to August 17 in Areas 12 and 13 for Area D gill net
- Daily from August 19 to August 20 in Subareas 29-11 to 29-17 for Area E gill net

A troll assessment fishery was open from August 16 to August 23 in Subareas 29-3, 29-4 and 29-6 to determine the Sockeye to Pink ratio.

It was not possible to harvest the full commercial TAC due to the Late run LAER constraint and the considerable run timing overlap between the Summer run and the Late run management units. Catch estimates are provided in Appendix 5.

5.1.4.4 RECREATIONAL FISHERIES

In 2025, recreational fisheries directed on Fraser River Sockeye occurred in marine waters and non-tidal waters of the Fraser River

Marine Recreational Fisheries

Retention of Fraser River Sockeye was permitted from August 16 to August 24 in Areas 11 to 15, 16-1, 16-19 to 16-21, 17 to 20, 28-1, 28-2, 28-7, 111, 121, and 123 to 127. Marine portions of Area 29 remained closed to Sockeye retention to limit impacts on Late run Sockeye which were holding in this area during this time.

Tidal waters of the Fraser (29-11 - 29-17) occurred from August 22 to September 2

Non-Tidal Recreational Fisheries

Recreational Sockeye fisheries took place in the following areas of Fraser watershed:

- August 22 to September 1 in that portion of the Fraser River between the CPR Bridge at Mission upstream to the Alexandra Bridge and to September 2 from the CPR Bridge at Mission downstream to the mouth of the Fraser.

- August 22 to September 2 in that portion of the Harrison River between the outlet of Harrison Lake and the confluence with the Harrison River.

- August 22 (one hour before sunrise) to September 23 (one hour after sunset) in that portion of the Fraser River between the confluence with the Seton River downstream to the approximately 4 km downstream of the town of Lillooet.
- August 22 (one hour before sunrise) to September 15 (one hour after sunset) in portions of the Quesnel River and Quesnel Lake (known as Horsefly Bay).
- August 22 (one hour before sunrise) to September 21 (one hour after sunset) in that portion of the Nechako River from the Foothills Bridge to the confluence with the Fraser River.

Detailed catch estimates are provided in Appendix 5.

5.2 PINK SALMON

5.2.1 OBJECTIVES AND OVERVIEW

In 2025, the Fraser River Panel (FRP) adopted the median (p50 probability) run size forecast for Fraser River Pink (29,965,000 Pink salmon) for pre-season planning purposes. Given the harvest control rule for Pink, TAC for international sharing was available at all run sizes and was taken into consideration during development of pre-season harvest plans. As with Sockeye fisheries planning, the Late run LAER was a considerable constraint to Pink fisheries and achievement of full Pink TAC was unlikely. Fishery planning focused on minimizing impacts on Late run Sockeye. Fishing plans also incorporate provisions to meet escapement objectives and conservation objectives for stocks of conservation concern while considering international and domestic objectives. Fishing plans include the following assumptions and guiding principles (in no particular order):

- The FRP operated in accordance with the relevant articles of the PST, noting in particular, Article VI and Annex IV, Chapter 4.
- The escapement plan is developed by Canada with escapement requirements that varied with run size.
- The escapement target varies with run size with a maximum exploitation rate cap of 70% (at run size >20 million).
- The U.S. share of the annual Fraser River Pink TAC, harvested in the waters of Washington State shall not exceed 25.7% of the TAC.
- To the extent practical, the FPR should minimize the impacts on overlapping Sockeye stock management groups with little or no TAC. It is understood that the overlapping of Sockeye and Pink salmon migrations may result in a small but acceptable rate of incidental harvest on one or more overlapping Sockeye stock management groups that have little or no TAC.

Harvest of Fraser River Pink may be constrained by management objectives for Fraser River Sockeye and other species/stocks of concern, particularly Interior Fraser River Coho and Interior Fraser River Steelhead. Due to conservation concerns for other species, alternative fishing gear and fishing strategies may be employed to access Fraser River Pink TAC. Alternative gears used in the past have included beach seines, shallow seines, and fish wheels in the Fraser River. In marine areas, varying fishing strategies and gear are considered such as allowing purse seines with independent observer coverage to access areas at the mouth of the river and possibly within the river, when possible.

Further, when Pink TAC is available, and there are bycatch constraints for other species (e.g., Fraser River Sockeye), the Department may consider decision rules similar to recent years where the total Sockeye mortalities associated with a gear-specific Pink fishery must be 1% or less for Sockeye. This calculation takes into account the release mortality rate of the gear being used to harvest Pink as well as the estimated proportion of Sockeye expected to be encountered in the fishery relative to Sockeye mortality constraints (e.g., LAER).

5.2.2 STOCK STATUS

Please Note: Figure 5-7 and Table 5-5 are adapted from, or courtesy of, the Pacific Salmon Commission.

5.2.2.1 PRE-SEASON ASSESSMENT

Pre-season expectations were for a median run size (p50 level) of 29.9M Fraser River Pink with a 50% chance that the run size would be between 17.7M (p25) and 39.2M (p75). The pre-season forecasted diversion rate for Fraser River Pink through Johnstone Strait was 36% and the expected Area 20 50% migration timing date was August 21st. At the median forecast and assuming full TAC could be achieved, the pre-season spawning escapement target was 8M (Table 5-4).

Harvest constraints were established by applying Canada's Fraser Pink escapement plan to the forecasted pre-season run size distribution. The harvest rate for Fraser Pinks varies with abundance and was constrained by a 70% exploitation rate as well as co-migrating stocks of concern (e.g., Late run Sockeye). The pre-season Fraser River Pink TAC for international sharing based on the median forecasted abundance and bilaterally agreed upon deductions was 18.9M, of which 25.7% were allocated to the U.S.

Table 5-4 2025 Fraser Pink Escapement Plan and Application across a Range of 2025 Forecast Abundances

2025 Fraser Pink Escapement Plan

Run Size	**Escapement Plan**
Less than 7.059M	Exploitation rate increases linearly from 0% at run size =0 to 15% at run size = 7.059M
Between 7.059M-20M	Fixed Escapement. Escapement goal = 6,000,000
Greater than 20M	Exploitation Rate Cap = 70%

	2025 Pre-season Forecast Return				
	p10	p25	**p50**	p75	p90
forecast	12,585,000	17,738,000	**26,964,000**	39,168,000	57,854,000
escapement target	6,000,000	6,000,000	**8,089,000**	11,750,000	17,356,000
allowable ER	52%	66%	**70%**	70%	70%
Available Harvest (TF, US, CDN)	6,585,000	11,738,000	**18,875,000**	27,418,000	40,498,000

5.2.2.2 IN-SEASON ASSESSMENT

Overall, marine migration timing (50% passage date at A20) was earlier relative to pre-season timing forecasts; the marine migration timing of August 13 was eight days earlier than pre-season expectations of August 21. The peak of Pink return timing through Area 20 of August 13 was the earliest recorded. Based on the marine test fishery information, the Pink return experienced a protracted travel time of eight days from Area 20 to Mission.

This earlier run timing also increased the run timing overlap with Sockeye returns and constrained, Pink-directed fisheries.

The final in-season Johnston Strait diversion rate was 12%, which was lower than the pre-season forecast of 36%.

The adopted, end-of-season (September 23) estimated Pink return (18.7M) was 37% lower than the median pre-season forecast (26.9M). The TAC of Fraser Pink for international sharing based on the adopted run size was 12.9M Pink, of which 25.7% (3.M) was allocated to the U.S., and the remainder to Canada (9.6M).

Table 5-5 2025 Pre-season (top) and End-of-season (bottom) Values for TAC and Other Management Parameters

Date	Mgmt Group	Total Abundance	SET	Test Fishing	Total Deductions	TAC	ER Cap	Total Catch to Date	End-of-Season ER	50% Migration Date (Area 20)	JST Diversion Rate
June 20 Pre-season	Fraser Pink	26,965,000	8,089,500	90,000	8,179,500	18,785,500	70%	0	NA	21-Aug	73%
Sept 23 Post-season	Fraser Pink	19,000,000	6,000,000	90,000	6,090,000	12,910,000	68%	1,250,240	6.6%	13-Aug	12%

Fraser River discharge was well below the long-term (1991-2020) mean for the entire migration period. In addition, Fraser River daily water temperatures were above the historical mean for most of the season. Although Fraser River discharge and water temperatures can significantly affect Sockeye migration survival, they generally do not impact Pink to the same degree, given the later timing (cooler water temperatures) and shorter migration (reduced exposure) for Pink. Either the Big Bar landslide nor the Chilcotin River landslide were expected to impact Pink migration or mortality in 2025.

In 2025, Pink fisheries occurred in all sectors in both Canada and the US but were heavily constrained by the Late Sockeye LAER. In season fisheries planning evaluated impacts of Pink fisheries on Late run Sockeye with the degree of constraint and attainable harvest amounts varying by sector.

5.2.2.3 POST-SEASON ASSESSMENT

The 2025 end-of-season Fraser Pink return (19M) was 31% lower than the median forecast (26.9M) but 75% above the brood year return (10.5M) and 62% above the historical average (11.3M).

Fraser River Pink catch numbers are available in Appendix 5. Total Canadian catch was largely attributed to First Nations (FSC, EO, and demonstration), recreational, and commercial (caught as bycatch) fisheries. U.S. commercial Pink fisheries (Treaty Tribal and All Citizen) were the only directed Pink commercial catch in 2025. The post-season total exploitation rate (U.S. and Canada) was 6.6%, which is well below the preliminary post-season maximum allowable exploitation rate of 68% (Table 5-5).

DFO spawning escapement enumeration programs have not been conducted on Fraser Pink since 2001. Spawner abundance is estimated indirectly by subtracting the total catch from the estimated run size generated at Mission.

TAC calculated for Fraser Pink was based on the calculation method set out in Annex IV, Chapter 4 of the Pacific Salmon Treaty and the July 7, 2017 Commission Guidance. In these calculations, TAC is fixed on the date that Panel control of the last U.S. Panel Area was relinquished (September 7 for Areas 4B, 5, and 6C; September 11 for Area 6, 7, and 7A excluding the Apex; October 4 for remaining areas).

5.2.3 FIRST NATIONS FSC AND TREATY DOMESTIC FISHERIES

Marine areas were open for First Nations directed FSC harvest on Fraser Pink, with Sockeye non-retention provisions in place after August 24 in 29-1 to 29-6 and after August 27 in other marine areas. First Nations were encouraged to work with the Department to plan fisheries using selective harvest gear and to fish in areas that would have reduced impacts on co-migrating Late run Sockeye.

Pink bycatch retention was permitted in Sockeye and Chinook directed FSC fisheries in both Marine and Fraser River areas. There were also Pink-directed FSC harvest opportunities in the Fraser River, after the Interior Fraser Coho window closure, where only selective gear was permitted (e.g., modified shallow seines, fish wheels, trap nets etc.); however, there was limited effort in Pink-directed FSC fisheries as most Nations focussed on other species.

See Appendix 5 for detailed catch estimates.

5.2.4 FIRST NATIONS COMMERCIAL HARVEST

Commercial Pink Fisheries including First Nations commercial harvest (EO and Demonstration) were heavily constrained by the Late run Sockeye LAER. All Nations and Sectors prioritized Sockeye fisheries where available and due to the considerable overlap in Pink and Late run Sockeye run timing and fluctuating Late Sockeye run size, many commercial opportunities were not permitted.

Five Nations Communal Sale Fishery

The Department authorized allocations consistent with the 2025/2026 Five Nations Multi Species Fishery Management Plan for the Five Nations (five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht and Tla-o-qui-aht) for Fraser River Pink Salmon.

The initial Five Nations Fraser Pink allocation of 20,948 was revised in season due to the adopted run sizes changes by the Fraser Panel. The fishery concluded with the final allocation of 6,530 on September 15.

Retention of Pink for sale was permitted from August 1 to September 15 in portions of Areas 124, 125, and 126 using hook and line. The majority of Pink effort occurred in Area 124. A 100% independent dockside monitoring program was in place for the entire season and sale of Chum, and hatchery-marked Coho caught as bycatch on Pink-directed trips was also permitted. See Appendix 5 for catch estimates.

Fraser River First Nations Commercial Fisheries

The Department provided Pink harvest opportunities consistent with treaty obligations for Fraser River First Nations beginning in late August. See Appendix 5 for detailed catch estimates.

5.2.5 COMMERCIAL FISHERIES

Although Fraser Pink Commercial TAC was identified in-season, directed commercial Pink fisheries were not authorized in Canada due to Late run Sockeye LAER constraints. Some Pink were retained as bycatch during Sockeye-directed commercial fisheries. See Appendix 5 for detailed catch estimates.

5.2.6 RECREATIONAL FISHERIES

5.2.6.1 TIDAL RECREATIONAL FISHERIES

Fraser Pink harvest opportunities were available in marine waters with a daily limit of four (4) Pink Salmon.

In the tidal waters of the Fraser River, the retention of Pink was permitted from August 18 to September 18, with a daily limit of four (4). From September 26 through November 1, a window closure to protect Interior Fraser Steelhead was in place, and fishing for all species of salmon was closed. The Lower Fraser River recreational fishery was assessed via creel surveys from August 22 to September 1. See Appendix 5 for detailed catch estimates.

5.2.6.2 NON-TIDAL RECREATIONAL FISHERIES

In 2025, some limited-duration Pink-directed fisheries took place in the following non-tidal areas; detailed time-area descriptions are available in the fishery notices:

Region 2: August 22 to September 21 on the Fraser River: That portion of the Fraser River between the CPR Bridge at Mission to the Highway 1 Bridge in Hope, and to Sept 25 between the Highway 1 Bridge in Hope to the Alexandra Bridge.

- Region 2: August 22 to September 30 in Portions of the Harrison, Chilliwack and Stave Rivers.
- Region 3: August 28 to September 22 daily in portions of the Thompson River and Kamloops Lake.

Region 3: August 28 to September 22 daily on Portions of the South Thompson River near the outlet of Little River, including Little Shuswap Lake.

- Region 3: August 22 to September 23 daily on the Fraser River in that portion of the Fraser River between the confluence with the Seton River downstream near the town of Lillooet.
- Region 5A: August 22 to September 15 in portions of the Quesnel River.
- Region 7: August 22 to September 21 in portions of the Nechako River.

5.2.7 EXCESS SALMON-TO-SPAWNING REQUIREMENTS (ESSR) FISHERIES

No Pink ESSR fisheries took place in 2025.Catch estimates can be found in Appendix 7.

6 SOUTHERN B.C. COHO

6.1 OBJECTIVES AND OVERVIEW

Management of Southern B.C. Coho stocks is subject to Abundance Based Management provisions outlined in Chapter 5 of the Pacific Salmon Treaty, which defines allowable exploitation rates (ERs) for Canada and the U.S. based on the status of Coho Management Units (MUs). There are three Canadian Coho MUs identified within the Southern Coho Management Plan section of Chapter 5. These are Interior Fraser River Coho, Lower Fraser River Coho, and Strait of Georgia Coho.

Given the limited stock assessment data available for Strait of Georgia and Lower Fraser River Coho MUs, Canada's management approach is currently driven by the status of the Interior Fraser River (IFR) Coho MU. Progress is being made on estimating survival and abundance data for the Lower Fraser MU, but results are considered preliminary at this time. Assessment of the Strait of Georgia MU continues to be constrained by the mainland inlets. IFR Coho status determination is based on an integration of marine survival rates and spawner abundance. Under this approach, bilateral ER caps are set at 20%, 30%, and 45% for Low, Moderate, and Abundant status. The Canadian ER caps are 10%, 18%, and 30% for those same status levels. Canada is required to confirm the status of the Interior Fraser River Coho MU to the U.S. in March of each year.

IFR Coho have been in a low productivity regime since the mid-1990s and were assessed to be within the Low status level in 2024, which limited the Canadian ER on IFR Coho to 10%. However, given the ongoing low productivity of this MU, Canada has opted to manage domestic fisheries to an exploitation rate cap of 3% to 5% for this MU in recent years.

While Chapter 5 includes three Canadian MUs under the provisions of the PST, domestically, Southern B.C. Coho management includes two additional MUs: Johnstone Strait and West Coast Vancouver Island (WCVI). For completeness in reporting and understanding of Canadian Coho fisheries management and stock status, details for these additional MUs are contained within this report.

6.2 STOCK STATUS

6.2.1 STOCK STATUS - INTERIOR FRASER RIVER

The 2025 escapement estimate for IFR Coho is not yet available. The pre-fishery abundance forecast for IFR Coho was 107,000 with an 80% forecast range of 85,500 - 138,000. The preliminary 3-year geometric mean spawner abundance for 2022-2024 exceeded the long-term conservation objective of 40,000 IFR Coho. In relation to the Pacific Salmon Treaty reference points for IFR Coho, the moderate aggregate MU escapement goal was met in each of 2018-2024. The 2025 estimate of IFR Coho smolt-to-adult survival is not yet available. Survival was estimated at approximately 3.0% in 2024.

6.2.2 STOCK STATUS – LOWER FRASER RIVER

Currently, there is no whole system escapement estimate available for Lower Fraser River Coho. A pilot mark-recapture program was initiated in 2020 to provide an escapement estimate for this system, funded in part by the

PST. A hatchery Coho indicator stock at Inch Creek hatchery, along with catch monitoring and escapement work, provides estimated rates of survival and exploitation on marked LFR Coho. This program will provide annual escapement estimates for LFR Coho in the near future, although published estimates are not expected in the pilot years. Further details of the LFR Coho escapement program can be obtained through the PST Coho Technical Committee. The pilot project continued in 2025.

6.2.3 STOCK STATUS - STRAIT OF GEORGIA

All Strait of Georgia Coho assessment programs are on-going at the time of this draft report. Data below are preliminary, and subject to review and update

Coho production within the Strait of Georgia has declined dramatically since the early 1990s. Marine survivals have been fluctuating in the 1 to 4% range, which has constrained productivity. 2025 in-season escapement estimates are average to above average, while forecasts based on recent returns and ocean conditions throughout the Strait of Georgia were conservative in some systems.

Hatchery stocks

Preliminary Coho returns to most hatchery supported systems north of Nanaimo were variable in 2025, although assessments are ongoing in most systems. Escapement to the Puntledge River is below the 12-year average at 6,216. The Big Qualicum River so far is above average with 21,401 fish compared to the 12-year average of 13,860. Swim surveys of the Little Qualicum River are ongoing but abundance for this system appears to be average with an estimate of 2,217. Nanaimo River returns are currently below average with a snorkel-based estimate of 2,700 fish compared to the 12-year average of 1,660.

Wild stocks

Preliminary counts on the Englishman River are 2,975 this season, which is above average peak count of 2,040 in the last 4 years. Preliminary counts in the Colquitz River (near Victoria) were unavailable at this time to compare to the 12-year average of 490 fish. Returns to Craigflower Creek were unavailable at this time to compare to the 4-year average of 520 and Millstream Creek is also unavailable to compare to the 12-year average of 220. Shawnigan Creek so far has had 4,312 fish moved above the falls to date.

New Coho escapement and survival indicators are currently under development in several systems with PST funding. A camera and PIT tag system has been in operation at the Sakinaw Lake fence since 2019 with a preliminary return of 226 fish to the lake. A camera has been operated in the Skutz Falls fishway at Cowichan River since 2019 in conjunction with a PIT tag antenna system. The PIT tag program is used to expand fishway counts for a Peterson mark-recapture population estimate relative to the detection array at the Chinook counting fence. Fishway video counts have just started and are not able to be reliably expanded at this time. The adult return rate for smolts tagged in the lower river has averaged 6.4% over the last three ocean entry years and was estimated at 8.0% for the 2024 return. Similar methodology produced an escapement estimate of 26,593 adults in 2024 suggesting improved returns which is consistent with the higher survival estimate. Over 2,000 smolts were PIT tagged in the lower river in spring 2025 which should contribute to tag returns in fall 2026.

Black Creek is the primary wild stock indicator in the Strait of Georgia. The 2025 enumeration program at the counting fence is still ongoing. The parental brood year (2022) estimate was 3840 adults. Smolt production in 2024 was below average for Black Creek (>39,593 smolts).

6.2.4 STOCK STATUS - WEST COAST VANCOUVER ISLAND

The outlook for WCVI Coho in 2025 is based on forecasted marine survival of Robertson Creek Hatchery (RBT) Coho and of Carnation Creek wild Coho. The best-performing marine survival model for RBT (brood 2022, ocean-entry year 2024, returning in 2025) is forecasting 5.5%, a slight increase relative to the 2024 return and slightly below the 2024 forecast. The marine survival for the wild indicator at Carnation Creek is forecast to be 0.9% matching the 2024 return and a decrease from last year's forecast.

The RBT indicator was forecasting "Low" marine survival status while the wild Carnation Creek indicator was forecasting a "Critical" marine survival status. For management purposes in 2025, DFO used a "Low" status to guide the management regime of WCVI inshore fisheries.

At the time of this report, the 2025 aggregate WCVI escapement for key indicator populations was not available as escapement programs are still ongoing. Preliminary observations indicate a moderate-to-low Coho return to the Robertson Creek Hatchery/Stamp Falls system of approximately 20,000 adults but an above average return of wild Coho to the Sproat River.

6.2.5 STOCK STATUS - JOHNSTONE STRAIT AND MAINLAND INLETS

The Keogh River plays an important role as the wild Coho indicator stock for the upper Johnstone Strait area. Historically, the Keogh River adult Coho return has averaged 2,700 (range: 230 to 9,465), while the juvenile abundance has averaged 62,213 (range 26,940 to 129,200). Following a peak in adult abundance in 2014 (9,465), annual escapement decreased to reach its lowest level in 2016 (230). Returns have since increased, but the Coho migration is currently ongoing, so the estimate is not yet available for 2025 Coho tend to be extremely productive at low abundance, and individual productivity has increased dramatically in recent years, peaking with the 2016 brood year at 270 smolts per spawner (average 38 smolts per spawner, brood years 1998 to 2015).

Quinsam River Coho are the marine survival indicator for Area 13. The Coho migration is currently ongoing, so the estimate is not yet available for 2025. The creel program covered the extent of the recreational Coho fishery opening in October on the Campbell and Quinsam rivers, although a preliminarily estimate is not yet available.

In 2025, Village Bay Creek on Quadra Island continued the video monitoring program for returning Coho. Migration through the fence is currently ongoing, so the count for 2025 is not yet available.

6.3 FIRST NATIONS DOMESTIC AND FSC FISHERIES

WCVI FSC and Treaty Fisheries

First Nations Coho catch reports are preliminary at this time. Estimates based on catch reports from Maa-nulth Treaty harvest and Nuu-chah-nulth FSC harvest can be found in Appendix 4.

Lower Fraser FSC Fisheries

There were no Coho directed fisheries in the Lower Fraser in 2025. Hatchery marked Coho were authorized to be retained in Chinook, Pink, and Sockeye directed FSC fisheries before the Interior Fraser River Coho window closure started. hatchery marked and wild Coho were authorized to be retained in Chum directed FSC fisheries that took place after the Interior Fraser River Coho window closure lifted. The total hatchery marked and wild Coho harvested and released during Chinook and Chum FSC fisheries can be found in Appendix 5.

Interior Fraser FSC Fisheries

Most FSC fisheries in the area target Sockeye or Chinook.

Directed opportunities on Coho are permitted in some terminal areas subject to abundance. In 2025, small fisheries were licenced in the following streams Dunn Creek, Deadman River, Louis Creek, Salmon River, Lemieux Creek, Eagle River, Lyon Creek, Tranquille Creek, Upper Adams River, Sinmax Creek, Bonaparte, Harbour Creek, and McKinley Creek. The total Coho catch in First Nations fisheries can be found in Appendix 5.

Strait of Georgia FSC Fisheries and Treaty Domestic Fisheries

In 2025, Coho FSC fisheries of limited effort were conducted in the Strait of Georgia from June through early September, primarily using rod & reel. Coho were harvested terminally in the Puntledge and Qualicum Rivers. Tla'amin Treaty harvest and non-treaty First Nations harvest can be found in Appendix 4.

Johnstone Strait FSC Fisheries

Coho were harvested in Johnstone Strait by troll, rod and reel, and net gear in 2025. Estimates for the Johnstone Strait are found in Appendix 4.

6.4 First Nations Commercial Harvest

WCVI Economic Opportunity Fisheries

In 2025, Economic Opportunity agreements were in place with Hupacasath and Tseshaht First Nations; however, Coho abundance did not permit an EO opportunity.

Five Nations Communal Sale Fishery

In 2025, communal sale fishery opportunities for the Five Nations (five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht and Tla-o-qui-aht) included Southern B.C. Coho. These opportunities are categorized as: offshore integrated hook-and-line communal sale fisheries; nearshore integrated hook-and-line communal sale fisheries; and terminal communal sale fisheries. Hatchery marked Coho were permitted for sale as bycatch in Chinook and groundfish directed fisheries. After September 15, a Coho directed fishery was authorized with a TAC of 2,000 hatchery marked and unmarked Coho to be retained for sale in offshore waters. Additionally, hatchery marked and unmarked Coho were permitted for sale in the Nearshore hook and line fishery targeting Conuma Chinook. The nearshore Coho allocation in Area 25 was 2,000 including both hatchery marked and unmarked Coho. Total Coho catch in these fisheries can be found in Appendix 4.

Lower Fraser First Nations Commercial Fisheries

There were no directed Coho fisheries in the Lower Fraser in 2025.

Interior Fraser First Nations Commercial Fisheries

There were no EO or demonstration fisheries in the B.C. Interior (Fraser River above Sawmill Creek) targeting Coho in 2025.

6.5 COMMERCIAL FISHERIES

Southern B.C. commercial fisheries are regulated so that impacts on Coho, in particular Interior Fraser River Coho stocks, are minimized. Retention of Coho bycatch was not permitted in most of these fisheries, including the Fraser River. Some limited opportunities for Coho retention occurred in terminal fisheries targeting Chinook and Sockeye in areas where IFR Coho were not present.

WCVI Offshore Area Commercial Coho Fisheries

Coho retention was not permitted in the 2025 Area G WCVI AABM Chinook troll fishery.

WCVI Terminal Area Commercial Coho Fisheries

In 2025, hatchery Chinook-targeted commercial gill net and seine fisheries occurred in Area 23 (Alberni Inlet) and gill net fishery in Area 25 (Tlupana Inlet). Retention of Coho was not permitted. The total WCVI Coho bycatch in commercial terminal fisheries can be found in Appendix 4.

6.6 RECREATIONAL FISHERIES

6.6.1 TIDAL RECREATIONAL FISHERIES

Tidal recreational fisheries can be categorized as occurring in either mixed-stock areas, where multiple stocks are found concurrently, or in terminal areas where local stocks dominate the catch. Areas where mixed stocks occur typically have more restrictive management measures in place that are designed to protect Interior Fraser River Coho stocks. In terminal areas, opportunities may be permitted based on expectations of wild abundance and production from local Coho enhancement programs. The table below outlines the mixed-stock fishing areas in Southern B.C. and the general Coho regulations pertaining to them.

Table 6-1 General Southern B.C. Coho Fishery Regulations for mixed-stock areas in 2025

Mixed stock fishing area*	Daily limit (marked or unmarked)	Minimum size limit (cm)	Coho Season
Johnstone Strait	2, 1 may be unmarked	30	June 1 – July 31

Johnstone Strait	2 marked	30	Aug 1 – Dec 31
Strait of Georgia - north	2 marked	30	June 1 – Dec 31
Strait of Georgia - south	2 marked	30	June 1 – Dec 31
Strait of Georgia (19)	2, 1 may be unmarked	30	Oct 1 – Dec 31
Juan de Fuca Strait	2 marked	30	June 1 – Sept 30
Juan de Fuca Strait	4, 1 may be unmarked	30	Oct 1 – Dec 31
WCVI – Inshore	2, 1 may be unmarked**	30	June 1 – Dec 31
WCVI- Offshore	2 marked	30	June 1 – Dec 31

*for in-season management measures in specific areas refer to the information provided in the Fishery Notices

**some terminal portions of Areas 23 and 25 had higher daily limits of Coho (4 per day, 1 of which can be unmarked) from August 1 – Dec 31 (portions of Area 23) and from July 15 – Dec 31 (portions of Area 25).

In 2025, the Department continued an assessment fishery initiated in 2021, which permitted the retention of unmarked Coho in Area 13, 14 and 15 (excluding Subarea 15-1) from September 1 to September 30. The purpose was to collect samples to improve understanding of the status of Georgia Basin Coho.

Catch and release information for Coho from these fishing areas can be found in Appendix 4.

WCVI – Inshore Recreational Fisheries

In 2025, Coho retention was limited to two per day, one of which may be unmarked in Areas 23 to 27. Some terminal areas in portions of Area 23 (23-1 to 23-3) and 25 (25-4 to 25-5) had daily limits of four per day, with unmarked retention remaining at one to target hatchery stocks.

Fraser River – Tidal Water Recreational Fisheries

The retention of two hatchery-marked Coho per day was permitted in the Fraser River mouth (29-6, 29-7, 29-9, and 29-10) from early November (November 4) until December 31, and in the tidal waters of the Fraser River (29-11 to 29-17 from early November (November 4) until November 30.

The Fraser River Coho recreational fishery was not assessed in 2025.

6.6.2 NON-TIDAL RECREATIONAL FISHERIES

Vancouver Island Tributary Recreational Fisheries

Non-tidal recreational fisheries for Coho occur in many Vancouver Island Tributaries. Retention opportunities primarily exist where there is hatchery Coho production. However, some limited retention opportunities exist in rivers with high natural production.

Northern Vancouver Island Tributary Recreational Fisheries

Non-tidal openings for Coho were available on:

- Campbell/Quinsam River from October 1 to December 31 for four (4) hatchery-marked only per day, only two (2) of which could be marked over 40 cm;
- Cayeghle River (including the Colonial River) from April 1 to March 31 for one (1) per day;
- Cluxewe River from April 1 to March 31 for two (2) per day, hatchery-marked only;
- Nahwitti River from April 1 to March 31 for one (1) per day; and
- Quatse River from June 15 to March 31 for two (2) per day, hatchery-marked only.

Anglers were restricted to the use of single barbless hooks. Catch is estimated on the Quinsam and Campbell rivers through a creel survey program.

Strait of Georgia Tributary Recreational Fisheries

In 2025, Coho openings were provided on:

- Courtenay River from September 1 to October 14 for four (4) per day of which only two (2) may be greater than 40 cm, hatchery-marked only; Courtenay River from October 15 to December 31 for four (4) per day, hatchery-marked only. Little Qualicum River from October 1 to November 30 for one (1) per day, hatchery-marked;
- Nanaimo River and its tributaries from October 15 to March 31 for one (1) per day, maximum size limit of 35 cm; Nanaimo River from November 1 to December 31 for two (2) hatchery-marked per day;
- Puntledge River from September 1 to October 14 for four (4) per day of which only two (2) may be greater than 40 cm, hatchery-marked only; Puntledge River from October 15 to December 31 for four (4) per day, hatchery-marked only Chemainus River from October 15 to March 31 for one (1) per day, maximum size limit of 35 cm.
- Qualicum River from September 15 to October 9 for four (4) per day, hatchery-marked only ; Qualicum River from October 10 to December 31 for four (4) per day
- Cowichan River from November 1 to December 31 one (1) Coho per day.
- Koksilah River from April 1 to March 31 for one (1) per day, maximum size limit of 35 cm.

Catch is estimated on the Puntledge River through a creel survey program.

WCVI Tributary Recreational Fisheries

Typical non-tidal openings for Coho were available on:

- Somass/Stamp River from August 25 to December 31 the daily limit was two, hatchery-marked only, but on September 27 a portion of the Somass River increased to 2/day of which one may be unmarked, and this was expanded to additional portions of the Stamp and Somass rivers on Oct 4 based on in-season escapement counts. A single, barbless hook restriction is in effect all year and there was a bait restriction in the Upper Somass and Stamp rivers from May 1 to October 31.

- Nitinat River from August 25 to December 31 the daily limit for Coho was two, hatchery-marked only. A two-week closure occurred between October 1 and October 14 to protect Chinook during their peak spawning period. The area above Parker Creek is closed to fishing. A single barbless hook restriction and bait restriction is in effect all year.

- Conuma River from August 25 to December 31 with a daily limit of two Coho, hatchery-marked only.

- Washlawlis River and Waukwass River and other west coast rivers are open year-round with a daily limit of one Coho, hatchery-marked or unmarked. Barbless hooks are required. No creel survey information is collected. Other rivers receiving some directed catch and release effort for Coho stocks are the Wakeman, Artlish, Zeballos, Tahsis, Burman, Ash, Taylor, Pacheena, Toquart and Leiner. The quota for all west coast streams, unless identified above, is zero (0).

Catch is not estimated in these freshwater fisheries, and based on limited observations of effort harvest is expected to be low.

Fraser River and Tributaries – Non-tidal Recreational Fisheries

Region 2: The retention of two hatchery-marked Coho per day was permitted following the Interior Fraser Coho and Interior Fraser Steelhead window closure dates in the following area:

From the CPR Bridge at Mission, B.C. upstream to the Highway #1 Bridge at Hope - Early November (November 4) until November 30.

There are no directed Coho openings in the Fraser River or tributaries upstream of the Highway #1 Bridge at Hope, B.C. This includes all of Regions 3, 5, 7, and 8.

The following tributaries to the Fraser River in Region 2 were open during the dates stated below:

- Alouette River and tributaries from October 1 to December 31 for one hatchery-marked Coho per day Capilano from April 1 – June 30 for two hatchery marked Coho per day and then to 4 per day to March 31.
- Chehalis River from September 1 to December 31 for four hatchery-marked Coho per day.
- Chilliwack River/Vedder from September 1 to December 31 for four hatchery-marked Coho per day.
- Coquitlam River from September 1 to December 31 for one hatchery-marked Coho per day.
- Harrison River from September 1 to December 31 for four hatchery-marked Coho per day.
- Kanaka Creek from November 1 to November 30 for one hatchery-marked Coho per day.
- Nicomen Slough, Norrish Creek and the Stave River from September 1 to December 31, for four hatchery-marked Coho per day, with only two over 35 cm.

In 2025, the Chilliwack/Vedder recreational fishery was assessed from September 15 to late November and the Nicomen/Norrish fishery was assessed from October 1 to December 15. Fisheries are currently underway and catch estimates are not yet available. No assessments were conducted on the recreational fisheries occurring on the remaining rivers listed above.

During 2025, there were limited non-tidal openings for hatchery-marked Coho on the following systems that enter Boundary Bay:

- Little Campbell River for one hatchery-marked Coho per day from September 16 to December 31.
- Nicomekl River and the Serpentine River for one hatchery-marked Coho per day from September 1 to December 31.

These recreational fisheries were not assessed in 2025.

6.7 Excess Salmon-to-Spawning Requirements (ESSR) Fisheries

WCVI ESSR Fisheries

The Somass First Nations were issued an ESSR licence at the Robertson Creek Hatchery in 2025 that included Coho.

The Ditidaht First Nation was issued an ESSR Licence for Nitinat hatchery Coho.

All ESSR harvest information can be found in Appendix 7.

Lower Fraser ESSR Fisheries

In 2025, ESSR fisheries were licenced for the harvest of hatchery-marked Coho at the Chilliwack, Inch Creek, Chehalis and Capilano hatcheries. Preliminary ESSR harvest information can be found in Appendix 7.

Strait of Georgia ESSR Fisheries

A Coho ESSR fishery took place for the Qualicum First Nation at Big Qualicum Hatchery and for K'ómoks First Nation at Puntledge Hatchery in 2025.

All ESSR harvest information can be found in Appendix 7.

Johnstone Strait ESSR Fisheries

For 2025, there were no ESSR opportunities on Coho in Johnstone Strait.

7 SOUTHERN B.C. CHUM

7.1 JOHNSTONE STRAIT CHUM

7.1.1 OBJECTIVES AND OVERVIEW

The Johnstone Strait Chum fishery targets Southern B.C. Chum that spawn primarily in the Fraser River and in tributaries of Johnstone Strait and the Strait of Georgia. This fishery also intercepts a small proportion of Puget Sound Chum. Since 2002, the Johnstone Strait Chum fishery has been managed using a 20% fixed ER strategy. This approach has provided predictable harvest opportunities for the commercial sector and has increased the probability of meeting escapement goals across the many populations contributing to this fishery. Of the 20% ER, 15% is allocated to commercial fisheries and the remaining 5% is set aside for test fisheries, First Nations FSC, sport harvesters and to also provide a buffer to commercial exploitation. Since the implementation of this management strategy, annual fisheries have been planned well in advance of the Chum return.

On July 11, 2019, the Government of Canada and the Province of British Columbia announced a joint Steelhead Action Plan identifying new conservation measures for Thompson and Chilcotin Steelhead Trout (two population components of the Interior Fraser River (IFR) Steelhead aggregate). Based on our current understanding, there is considerable overlap in the timing and location of the return migration of IFR Steelhead and several South Coast salmon fisheries. The timing of this stock of concern is particularly overlapped with that of Fraser River Chum. Given the potential for salmon fisheries to incidentally harvest co-migrating IFR Steelhead, the Department of Fisheries and Oceans implemented a series of window closures for fisheries occurring in times and areas that overlap with the IFR Steelhead migration, in both marine and freshwater fishing areas.

The announcement of these closures precipitated significant changes to the 20% fixed ER strategy for the Johnstone Strait Chum fishery. Continuing for 2025, the pre-season commercial fishing plan was modified to maintain opportunity in Johnstone Strait, while ensuring that fishing did not occur within the outlined IFR Steelhead closure times and areas. With the window closures reducing access to the earlier timed components of the Inside Southern Chum (ISC) run, fisheries were planned at a reduced ER (below the typical 20% ER).

As outlined in Chapter 6 of the PST, commercial Chum fisheries in Johnstone Strait do not proceed when abundance is estimated to be less than 1 million Chum migrating through Johnstone Strait. In 2025, the test fishery initially indicated that the 1 million critical threshold would not be met; however, abundance began to improve on October 8. Test fisheries continued, and on October 15 it was determined that the 1 million threshold would likely be achieved. Notification was provided to the US on October 15th, and fisheries proceeded. Johnstone Strait mixed stock commercial Chum fisheries proceeded in 2025.

7.1.2 STOCK STATUS

Johnstone Strait In-season Assessment

The Johnstone Strait test Fishery provided timing and abundance information for the 2025 return, allowing Canada to assess the likelihood of exceeding the 1.0 million Critical Threshold where fisheries in Canada and treaty fisheries in the United States can occur. Chum migrating through this corridor are returning to the Fraser, Strait of Georgia, Southern Mainland Inlets, and Puget Sound. The age structure of these populations typically reflects dominance of four-year-old fish, with lesser contributions of three and five-year-olds. Expectations for Chum in 2025 were mixed; Chum have experienced low productivity since 2017, but progeny of the brood years contributing to the 2025 return experienced improved ocean conditions. Below average returns were expected, but with improvements against the contributing brood years.

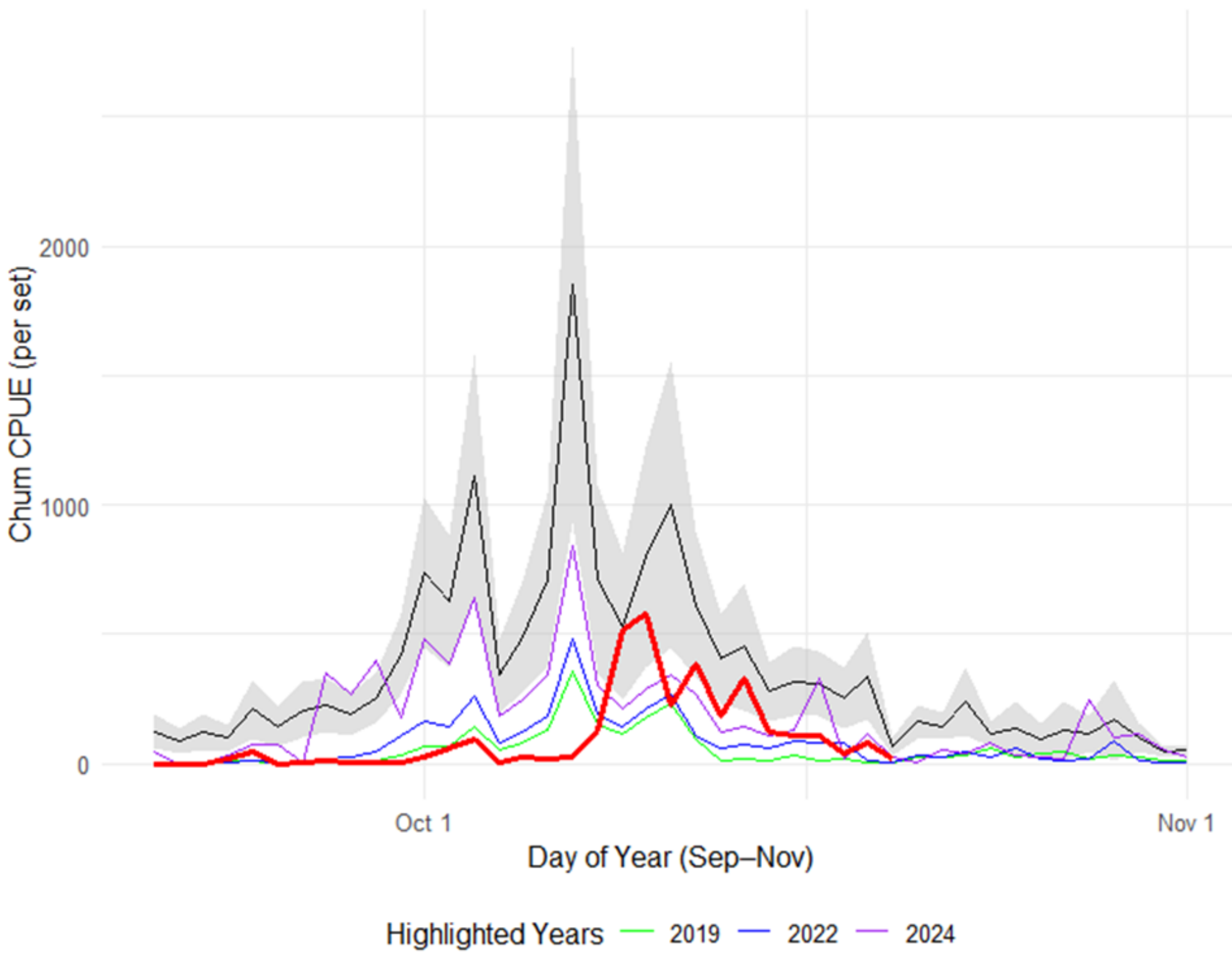


Figure 7-1 2025 Johnstone Strait Chum test fishery CPUE compared to 2019 (lowest return), 2022 and 2024.

7.1.3 FIRST NATIONS DOMESTIC AND FSC FISHERIES

Johnstone Strait First Nations fisheries for Chum were not subject to IFR Steelhead restrictions in 2025. Chum harvests took place using seine nets, gill nets, and rod and reel in Johnstone Strait in 2025. The total preliminary Chum catch in the Johnstone Strait FSC fishery can be found in Appendix 4.

7.1.4 FIRST NATIONS COMMERCIAL HARVEST

There was no First Nations commercial harvest of Johnstone Strait Chum in 2025.

7.1.5 COMMERCIAL FISHERIES

Johnstone Strait commercial Chum fisheries in 2025 were planned as per Chapter 6 of the PST. A modified approach has been taken to maintain opportunity in the Johnstone Strait mixed stock area while aligning with the intent of the Interior Fraser Steelhead rolling window closure. Fisheries historically have been scheduled to achieve a 20% fixed ER on ISC stocks passing through Johnstone Strait with 15% ER for commercial and 5% ER for test, FSC, recreational, and a commercial buffer. Shares of the 15% commercial ER are usually shared among the Area B seine (11.56%), Area D gill net (2.54%) and Area H troll fleets (0.90%). In 2025, Area D participation in the Johnstone Strait commercial fishery continues to be closed under the IFMP as a longer-term closures. With the Steelhead window closure reducing access to a portion of the ISC aggregate and the longer-term closure of the Area D fishery, the 2025 fisheries were planned pre-season to a reduced commercial ER of 6.66%, shared between the Area B seine (2.60%), Area D gill net (0.00%) and Area H troll (0.90%) fleets.

In 2025, commercial Chum fisheries in the Johnstone Strait mixed stock area proceeded. However, due to uncertainty with the in-season assessment data, the actual fishing plans varied from the pre-season fishery plans.

Area B Seine Fisheries

In 2025, the Area B Seine fishery opened on October 22 and October 24.

Area D Gill Net Fisheries

The longer-term closure continued for the Area D gill net fishery in Johnstone Strait. This fishery did not proceed in 2025.

Area H Troll Fisheries

In 2025, the Area H Troll Individual Transferable Effort (ITE) demonstration fishery operated during a single fishing period from October 16 to 31. The fishery was temporarily closed on October 22 to accommodate the first day of the Area B Seine fishery. A total of 140 boat days were modelled for the fleet, with each licence allocated nine transferable boat days. These could be used at any time during the fishing period or transferred between licences.

7.1.6 RECREATIONAL FISHERIES

7.1.6.1 TIDAL RECREATIONAL FISHERIES

In 2025, given the expectations presented in the Preliminary 2025 Salmon Outlook the Department started the 2025 recreational salmon fisheries with a limit of two (2) per day. On October 17, 2025, the recreational daily limit for Chum was increased to four (4) per day due to the 1 million critical threshold being achieved and commercial fisheries proceeding. These measures applied to PFMAs 111, 121, 123 to 127, 11 to 21, 28 and Subareas 29-1 to 29-5 and 29-8.

The Strait of Georgia creel survey for Areas 13 and 14 was conducted from April to October. Recreational catches were reported as low. The majority of the recreational Chum fishing effort occurs in Area 13, which is included in the Strait of Georgia catch estimate.

7.1.6.2 NON-TIDAL RECREATIONAL FISHERIES

There are no Chum-retention fisheries in non-tidal waters in the Johnstone Strait area.

7.1.7 EXCESS SALMON-TO-SPAWNING REQUIREMENTS (ESSR) FISHERIES.

There were no ESSR opportunities for Johnstone Strait Chum in 2025.

7.2 FRASER RIVER CHUM

7.2.1 OBJECTIVES AND OVERVIEW

Chum return to the Fraser River from September through December, with the typical peak of migration through the lower River occurring in mid- to late October. Spawning locations are predominately located in the Fraser Valley downstream of Hope, B.C., with major populations spawning within the Harrison River (including Weaver Creek and Chehalis River), the Stave River, and the Chilliwack River. No spawning locations have been identified upstream of Hells Gate.

The escapement objective for Fraser River Chum is 800,000. Since 2001, this objective has been achieved in all but eight years; escapement to spawning grounds in 2009, 2010, 2017 through 2021, and 2023 did not meet the escapement goal.

Fraser River Chum are typically harvested in Johnstone Strait, the Strait of Georgia, U.S. waters of Area 7 and 7A, and in the Fraser River.

Within the Fraser River, Chum-directed fisheries include First Nations FSC, recreational, and commercial fisheries. In recent years, significant conservation measures have been implemented in-river during the Fraser River Chum migration period to protect co-migrating stocks of concern (including IFR Coho and IFR Steelhead). Depending on the fishery, these measures have included both time and area closures and gear restrictions. These conservation measures have restricted Fraser River Chum fishing opportunities in recent years.

New for 2025, a harmonized approach was implemented in Area 29 to maintain fishing opportunity in the Strait of Georgia while aligning with the intent of the IFR Steelhead rolling window closure. This harmonized approach combines PFMAs 29-3, 29-4, 29-6 and portions of 29-7, 29-9 and 29-10 for commercial fisheries with adjusted closure dates that allow for a fishery on the front end of the harmonized window closure, while applying the closure on the latter end of other fisheries (i.e., Fraser Sockeye/Pink fisheries at the start of the window closure, and Fraser Chum fisheries at the end of the closure). A rolling window closure, 42 days in duration, was put in place for commercial gill net and seine fisheries located along the migratory route of IFR Steelhead, including Southern B.C. marine waters and the Fraser River downstream of Thompson and Chilcotin River Steelhead spawning areas. This 42-day rolling window closure also applied to recreational salmon fisheries within the Fraser River (including areas immediately off the Fraser River mouth). Commercial troll fisheries in the marine area and First Nations' FSC salmon fisheries occurring within the Fraser River downstream of Thompson and Chilcotin River Steelhead spawning areas were subjected to a 27-day moving window closure. As of 2020, following the closure window, set gill net gear was further restricted to operate during daylight hours only, while attended by a harvester.

7.2.2 STOCK STATUS

The number of adult Chum arriving at the mouth of the Fraser River each fall (terminal return) is estimated in-season with a Bayesian model based on Albion test fishery catch.

In 2025, the Fraser River Chum test fishery at Albion operated every other day from September 1 until October 21, alternating days with the Albion Chinook test fishery. From October 22 until November 9, the Chum net fished every day and then every other day from November 11 until November 23. Chum catches for the Albion test fishery can be found in Appendix 6.

DFO provided a preliminary in-season terminal return estimate on October 16 of 600,000 Fraser Chum. The estimated 50% migration date of the run was October 21. A subsequent estimate of the Fraser River Chum terminal return was provided on October 22. The estimated terminal return on that date was 388,000 with a 50% migration date through the lower River of October 18. A revised in-season estimate was then released on Oct 27th due to later than normal migration timing observed this year. The Fraser River Chum terminal return on that date was 616,000 (80% probability that the run is between 457,000 to 833,000), with a 50% migration date of October 21. It was estimated that there was a 13% chance the run would exceed the escapement goal of 800,000 natural origin (i.e., non-hatchery) spawners.

Fraser River Chum return to numerous spawning locations in the Lower Fraser River and its tributaries. Spawning escapement for Fraser River Chum is currently assessed for five of the largest Chum-producing systems, as well as for several smaller tributaries.

7.2.3 FIRST NATIONS DOMESTIC AND FSC FISHERIES

First Nations Food, Social and Ceremonial (FSC) Chum directed gill net fisheries commenced October 23 (below Port Mann Bridge), October 25 between Port Mann Bridge and Mission Bridge, and October 26 between Mission Bridge and Hope Bridge, following closures to protect co-migrating IFR Coho and IFR Steelhead.

The total Fraser River Chum catch (either directed or bycatch) in First Nations FSC fisheries can be found in Appendix 5.

7.2.4 FIRST NATIONS COMMERCIAL HARVEST

In 2025, Chum EO fisheries did not occur in the Lower Fraser river.

7.2.5 COMMERCIAL FISHERIES

Area B Seine Fisheries

In 2025, there were no Area B seine fisheries directed on Fraser Chum in Area 29.

Area E Gill Net Fisheries

Commercial Area E gill net fisheries in the Lower Fraser River (below Mission) targeting Fraser Chum remained closed in 2025 as part of the 2021 decision to implement long-term closures in areas where stocks of conservation concern may be intercepted while targeting other stocks or as bycatch.

Area H Troll Fisheries

In 2025, there were no Area H troll fisheries directed on Fraser Chum in Area 29.

7.2.6 RECREATIONAL FISHERIES

7.2.6.1 TIDAL RECREATIONAL FISHERIES

Fraser River – Tidal Recreational Fisheries

In the tidal waters of the Fraser River downstream of the Port Mann Bridge (29-11 to 29-14, and 29-17), no Chum-directed fisheries were authorized in 2025.

In the waters from Mission Bridge downstream to the Port Mann Bridge (29-15 and 29-16), no Chum-directed fisheries were authorized in 2025.

7.2.6.2 NON-TIDAL RECREATIONAL FISHERIES

Non-tidal recreational fisheries targeting Chum in the Fraser River in Region 2 between Mission and Hope, B.C. did not occur in 2025. This decision was based on the Fraser Chum in-season update, which indicated an insufficient run size of returning Fraser Chum to allow for recreational opportunities in the Fraser River mainstem. Fraser River Chum are not known to migrate into Regions 3, 5, 7, or 8.

Fraser River – Non-Tidal Recreational Fisheries

Region 2: The retention of Chum was not permitted all year...

The following tributaries to the Fraser River in Region 2 were open from October 31 to November 30 for non-retention of Chum: t

- Alouette River and tributaries
- Chehalis River
- Chilliwack River/Vedder
- Harrison River
- Nicomen Slough
- Stave River

There are no directed Chum openings in the Fraser River or tributaries upstream of the Highway #1 Bridge at Hope, B.C. This includes all of Regions 3, 5, 7, and 8.

In 2025, the Chilliwack/Vedder recreational fishery was assessed from September 15 to late November and the Nicomen/Norrish fishery was assessed from October 1 to December 15. Fisheries are currently underway and catch estimates are not yet available. No assessments were conducted on the recreational fisheries occurring on the remaining rivers listed above.

During 2025, there were limited non-tidal openings for Chum on the following systems which enter Boundary Bay:

Serpentine River from October 31 to November 30 for non retention of Chum.

This recreational fishery was not assessed in 2025.

7.2.7 EXCESS-TO-SPAWNING REQUIREMENT (ESSR) FISHERIES

ESSR fisheries in 2025 may harvest Chum at Chilliwack, Inch Creek, and Chehalis River hatcheries and at Weaver Spawning Channel.

Preliminary ESSR harvest information can be found in Appendix 7.

7.3 STRAIT OF GEORGIA CHUM

7.3.1 OBJECTIVES AND OVERVIEW

Strait of Georgia Chum fisheries consist of terminal opportunities for Chum returning to their natal spawning streams. Many of the terminal fishing areas have enhancement facilities and/or spawning channels associated with adjacent river systems. Terminal fishery strategies consist of monitoring and assessing stocks (escapement and returning abundance), with the objective of ensuring adequate escapement and providing harvest opportunities where possible. Stock assessments may include test fisheries, escapement enumeration including swim surveys, stream walks, channel entry counts, fence counts, sonar (DIDSON/ARIS) counts and over flights. In some areas where stocks receive considerable enhancement or where stocks have above average productivity, limited fishing may occur prior to escapement objectives being reached.

7.3.2 STOCK STATUS

Results of the Strait of Georgia Chum assessment programs are not available at the time of this draft report.

In 2025, escapement was forecast to be above target in Nanaimo and Goldstream, and below target in Puntledge, Big Qualicum, Little Qualicum, and Cowichan (Table 7-1). However, the adjusted "Like Last Year" forecast model estimated returns to be below both the normal forecast and target escapement given poor survival in recent years. Nanaimo River is the escapement target of 40,000.Chum

Mid-Vancouver Island rivers, which include Puntledge, Big Qualicum, and Little Qualicum with a combined escapement target of 230,000 had a low-range forecast of 41,600 for 2025.

Table 7-1: Preliminary 2025 escapements of Chum in Strait of Georgia Rivers along with the low and high forecast values for 2025, the like last year model forecast for 2025, the 2024 escapement and the 2025 escapement targets.

Forecast Area	2025 Forecast		2025 Like Last Year Forecast	2024 Escapement	2025 Escapement Target	2025 Escapement PRELIM
	Low	High				
Mid-Vancouver Island	41,600	62,400	79,700	96,852	230,000	
Puntledge	17,900	26,900	29,300	35,567	60,000	
Big Qualicum	11,500	17,300	51,100	45,453	85,000	
Little Qualicum	12,800	19,200	10,600	15,832	85,000	
Jervis/Narrows Inlets	6,400	9,600	41,900	130,014	85,000	
Nanaimo River	32,600	49,000	44,700	52,631	40,000	
Cowichan River	46,700	70,100	93,900	214,719	160,000	
Goldstream River	14,700	22,100	24,500	24,509	15,000	
Sliammon Creek	7,700	11,500	42,800	32,076	11,000	
Theodosia River	5,800	8,600	35,000	85,633	21,000	
Okeover Creek	500	800	1,600	5,596	6,000	
Lang Creek	1,900	2,900	12,800	8,561	2,500	

7.3.3 FIRST NATIONS DOMESTIC AND FSC FISHERIES

Strait of Georgia First Nations FSC fisheries for Chum were not restricted in 2025. Chum harvests took place using gill nets and rod and reel. Chum catch summaries from Tla'amin Treaty and non-Treaty First Nations FSC fisheries in the Strait of Georgia can be found in Appendix 4.

7.3.4 FIRST NATIONS COMMERCIAL HARVEST

Area 14 First Nations Commercial Fisheries

At the time of this preliminary report, the K'ómoks First Nation Area 14 Chum demonstration fishery has not occurred.

Area 15 First Nations Commercial Fisheries

At the time of this report, the Tla'amin Nation led CSAF fishery on toqʷanən (Theodosia) Chum has not occurred.

Area 17 First Nations Commercial Fisheries

. On October 28, 2025, with escapement of 23,835 (as of October 26) Chum into the Nanaimo River system, the decision was made to begin the demonstration fishery by Snuneymuxw First Nation. The total catch from this fishery will be found in the final report in Appendix 4.

Area 18 First Nations Commercial Fisheries

the Cowichan system is not on track to meet the escapement target.

Area 19 First Nations Commercial Fisheries

The Goldstream River is not on track to meet the escapement target.

7.3.5 COMMERCIAL FISHERIES

Area 14 Commercial Fisheries

Chum returning to this area have been enhanced since the late 1960s and terminal fisheries have occurred in October and November since the 1970s. The returning Area 14 Chum abundance is forecasted pre-season using brood escapement, average survival and age composition. In-season run size is assessed by escapement counts to the three major river systems and DFO hatcheries contributing to the stock aggregate.

The Area 14 Chum fishery is directed at the enhanced stocks of three systems: Puntledge, Qualicum, and Little Qualicum Rivers. The Qualicum River is often referred to as the 'Big' Qualicum River, to better distinguish it from the Little Qualicum River. The escapement goals for the three river systems are 60,000 for Puntledge River, 85,000 for Little Qualicum River, and 85,000 for Qualicum River, adding up to an overall interim escapement goal of 230,000 Chum, not including enhancement facility requirements (about 10,000 Chum, bringing the total escapement goal to 240,000).

Area 14 commercial Chum fisheries are managed based on forecasted abundance. In-season, the management strategy for considering fishery openings falls under one of two categories depending on whether the pre-season forecast is greater than or less than 340,000 Chum. When the pre-season forecast is greater than 340,000, early Chum openings can target up to 65% of the anticipated surplus above 340,000. When the pre-season forecast is less than 340,000, river-specific escapement levels for the three major river systems must be almost achieved (70% of Puntledge, and 75% of Little Qualicum and of Big Qualicum) in order to consider fisheries. An early-timed limited effort gill net assessment fishery may be used to augment in-season escapement information and evaluate the mid-Vancouver Island (MVI) aggregate abundance. The gill net assessment fishery did not proceed in 2025.

Area 16 Commercial Fisheries

There were no commercial fisheries in Area 16 in 2025.

Area 17 Commercial Fisheries

This fishery is a terminal fishery targeting Nanaimo River stocks. The Nanaimo River Chum stocks are supplemented by the Nanaimo River hatchery. Hatchery supplementation occurs on a sliding scale, where increased enhancement occurs during poor escapement years.

Area 18 Commercial Fisheries

This fishery is directed at Cowichan River stocks, with some incidental harvest of Goldstream-bound Chum anticipated to occur. To minimize impacts on the Goldstream stocks, fishery openings in early to mid-November are limited to the western portion of Satellite Channel. Chemainus River stocks may also be impacted if fisheries occur earlier in November, but likely to a lesser extent.

Area 19 Commercial Fisheries

This fishery is directed primarily at Goldstream River stocks, although some Cowichan River Chum are also harvested. To minimize impacts on the Cowichan stocks, fishery openings are limited to the southern portion of PFMA Area 19-8 and south into Saanich Inlet. The overall escapement goal for the Goldstream River is currently 15,000 Chum counted in the bi-weekly stream walks conducted by Goldstream Hatchery staff. Enumeration via stream walks began October 17, 2025.

7.3.6 RECREATIONAL FISHERIES

7.3.6.1 TIDAL RECREATIONAL FISHERIES

Most of the recreational effort directed at Chum in the Strait of Georgia occurs in the upper portions of Discovery Passage between Seymour Narrows and Chatham Point, not far from Campbell River. Marine recreational Chum fisheries also occur in the approach waters of the Puntledge, Qualicum, Little Qualicum, Nanaimo, and Cowichan Rivers on Vancouver Island, as well as in Howe Sound, with effort increasing with Chum abundance. In 2025, given the expectations presented in the Preliminary 2025 Salmon Outlook and expectation that commercial harvest would occur, the Department started the 2025 recreational salmon fisheries with a limit of two (2) per day. On October 17, 2025, the recreational daily limit for Chum was increased to four (4) per day due to the 1 million critical threshold being achieved and commercial fisheries proceeding. These measures applied to PFMAs 111, 121, 123 to 127, 11 to 21, 28 and Subareas 29-1 to 29-5 and 29-8. Catch estimates for Chum in the marine recreational fisheries can be found in Appendix 4.

7.3.6.2 NON-TIDAL RECREATIONAL FISHERIES

Recreational retention opportunities in freshwater are based on escapement estimates from hatchery operations, and where escapement goals are expected to be met, opportunities are provided.

Non-tidal Chum retention opportunities:

Nanaimo River from November 1 to December 31, two (2) per day;

7.3.7 EXCESS SALMON-TO-SPAWNING REQUIREMENTS (ESSR) FISHERIES

At the time of this report Chum migration is still ongoing, and ESSR fisheries have not occurred.

All ESSR harvest information can be found in Appendix 7.

7.4 WEST COAST VANCOUVER ISLAND CHUM

7.4.1 OBJECTIVES AND OVERVIEW

Commercial Chum fisheries normally occur on the West Coast Vancouver Island (WCVI) from late September to early November in years of Chum abundance. Targeted Chum fisheries on WCVI typically occurred targeting stocks at Nitinat Lake (Area 21), Barkley Sound (Area 23), Clayoquot Sound (Area 24), Nootka Sound and Esperanza Inlet (Area 25) and Kyuquot Sound (Area 26).

Commercial fisheries for WCVI Chum employ a two-tiered strategy for managing harvest; either a constant harvest rate strategy or a surplus-to-escapement goal strategy.

Fixed Harvest Rate Strategy (fisheries targeting natural origin stocks, hatchery stocks at low abundance):

For those fisheries where a significant component of the target stock is from naturally spawning populations, a constant harvest rate strategy of 10 to 20% is implemented. The maximum harvest rate is set at a precautionary level relative to stock-recruit derived optimal ER for WCVI Chum; which are in the order of 30 to 40%. This approach allows limited harvest while protecting the biodiversity of Chum stocks and permitting rebuilding when the population is low. In areas of low-quality data or only naturally spawning stocks, including Barkley (Area 23), Clayoquot Sound (Area 24), Esperanza Inlet (Area 25) and Kyuquot Sound (Area 26), the maximum allowable harvest rate is 10 to 15%. In Nootka Sound, up to 20% harvest is permitted given the prevalence of hatchery production in the area. The harvest rate is controlled by limiting effort (i.e. number and duration of openings and, in some areas, the number of permitted vessels) and limiting fishing areas to approach areas only (i.e. to those areas where fish are migrating not holding).

7.4.2 STOCK STATUS

The recent stock status of wild WCVI Chum has generally been poor relative to historic levels, with spawning abundance for wild indicator stocks frequently below Lower Fishery Reference Points (LRPs) despite the implementation of a precautionary harvest regime (fixed harvest rate). The 2024 escapements exceeded recent returns and was well above the brood year abundance. The 2025 forecast for WCVI Chum was significantly lower than the 2024 return but still exceeded the Lower Fishery Reference Points in PFMA 21/22, Tlupana Inlet, and Kyuquot Sound. Migration conditions were mostly favourable for September and October throughout the WCVI region, and Chum migrations have not been hampered. There were some low water events early to mid Oct, but the late Oct rains increased water levels before a lot of Chum showed up. Escapement programs are still ongoing at the time of this report.

7.4.3 FIRST NATIONS FSC AND TREATY FISHERIES

The preliminary Chum reported catch can be found in Appendix 4, which includes fish retained for food, social and ceremonial purposes from Nuu-chah-nulth First Nations and Treaty harvests from Maa-nulth Nations.

7.4.4 FIRST NATIONS COMMERCIAL HARVEST

WCVI Economic Opportunity Fisheries

In 2025, EO agreements were in place with Hupacasath and Tseshaht First Nations during the Chum season; however, abundance did not permit a targeted opportunity.

Five Nations Communal Sale Fishery

In 2025, there was a Chum fishery for the Five Nations (five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht and Tla-o-qui-aht) in Area 25. This fishery targeted Tlupana Inlet Chum which are an aggregate of hatchery supported Chum returning to Conuma River, Canton Creek, Sucwoa River, and Tlupana River. The combined pre-season forecast for Tlupana Chum was 43,708. Total catch for this fishery can be found in Appendix 4.

7.4.5 COMMERCIAL FISHERIES

Nitinat (Area 21/121) Commercial Fisheries

In 2025, commercial fisheries targeting Nitinat Chum remained closed

Nootka Sound (Area 25) Commercial Fisheries

Based on the pre-season forecast being below the lower fishery reference point, no fisheries were planned on wild Chum in the approach waters of Nootka Sound

Tlupana Inlet (Area 25) Commercial Fisheries

This fishery targets Tlupana Inlet Chum which are an aggregate of hatchery supported Chum returning to Conuma River, Canton Creek, Sucwoa River, and Tlupana River. Based on a combined pre-season forecast of 43,708, a limited effort fishery occurred in Tlupana Inlet. Two vessels fished for 3 daylight openings over 3 weeks starting on September 23, 20254. Total gillnet Chum catch can be found in Appendix 4.

Esperanza Inlet (Area 25) Commercial Fisheries

Based on the pre-season forecast being below the lower fishery reference point, no fisheries were planned in Esperanza Inlet.

Kyuquot Sound (Area 26) Commercial Fisheries

Based on the pre-season forecast of 42,091 being above the lower fishery reference point, a limited effort fishery occurred in Kyuquot Sound. Four vessels fished for 1.5 days per week for 3 weeks starting on September 29, 2025. Total gillnet Chum catch can be found in Appendix 4.

7.4.6 RECREATIONAL FISHERIES

7.4.6.1 TIDAL RECREATIONAL FISHERIES

Daily limits of Chum in the WCVI recreational fishery are dependent on pre-season abundance forecasts relative to biologically based targets. In 2025, areas where the forecast was generally below lower fishery reference points (Area 23 – Barkley, Area 24 - Clayoquot, Area 25 - Nootka, and Area 25 - Esperanza,), the daily limit was set to zero (0). Most areas above the lower fishery reference point (Area 26), or in terminal areas with Chum hatcheries (Tlupana Inlet – A25, Nitinat Lake – A22), the daily limit was four (4), with the exception of Barkley Sound – A23, which remained at zero (0).

Offshore WCVI was set at a daily limit of 2 based on moderate pre-season forecasts for Fraser and Strait of Georgia Chum but increased to 4/day on October 17 based on in-season abundance information.

7.4.7 EXCESS SALMON TO SPAWNING REQUIREMENTS (ESSR) FISHERIES

The Ditidaht First Nation was issued an ESSR Licence for Nitinat hatchery Chum.

The total Chum ESSR catch can be found in Appendix 7

8 APPENDICES

APPENDIX 1: CATCHES IN CANADIAN TREATY LIMIT FISHERIES, 2013 TO 2024

Fisheries/Stocks	Species	2025	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Stikine River (all gears)	Sockeye	23,523	30,617	17,288	11,802	4,705	11,576	16,213	16,915	41,749	86,729	60,046	42,800
	Coho	2,902	2,682	4,841	5,081	4,521	5,103	5,228	3,685	5,502	5,346	5,619	4,992
	Chinook-lg	-	49	69	386	515	389	570	-	593	2,731	4,157	3,308
	Chinook-jk	-	-	-	-	-	-	-	-	788	794	1,537	759
Taku River (commercial gill net)	Sockeye	27,729	19,350	16,753	28,028	18,569	11,793	21,500	17,948	30,209	37,624	19,747	17,872
	Coho	8,811	12,043	11,034	7,765	10,880	7,036	12,252	9,503	7,726	9,513	7,886	14,568
	Chinook-lg	-	-	-	57	341	94	10	-	246	1,021	868	2,472
	Chinook-jk	-	-	-	-	-	-	-	-	88	205	-	657
Alsek River (all gear)	Sockeye	653	668	880	1,700	1,519	218	653	-	644	815	1,084	1,140
	Coho	11	-	31	-	6	6	10	-	-	-	-	-
	Chinook	94	40	22	14	42	22	37	-	74	10	87	39
Areas 3 (1-4)* (commercial net)	Pink	1,550,175	1,089,905	728,631	623,772	165,688	1,816	-	101,267	704,450	430,435	80,266	450,671
Area 1 (commercial troll)	Pink	35,760	87,541	168,401	99,915	91,777	136,890	60,003	266	38,763	32,343	41,551	31,775
North Coast (troll + sport)	Chinook	98,353	106,046	87,822	121,440	115,696	38,104	88,001	106,976	143,330	190,180	158,903	221,001
		68,726 + 29,627	76,717 + 29,329	51,785 + 36,037	70,243 + 51,197	76,565 + 39,131	30,096+ 8,008	42,801+ 45,200	70,276 + 36,700	97,730 + 45,600	147,381+ 42,800	106,703 + 52,200	172,001 + 49,000
West Coast Vancouver Island (troll + sport + FN)**	Chinook	97,209	84,102	83,713	218,672	220,103	80,385	67,635	76,958	103,260	93,294	113,293	178,558
		53,984 + 41,477 + 1,838	41,421 + 39,175 + 3,506	39,868 + 31,012 + 12,833	26,962 + 175,979 + 15,731	26,692 + 178,855 + 14,556	11,350+ 56,539+ 12,676	23,195+ 35,867+ 8,573	28,840 + 45,233 + 2,885	54,411 + 46,707 + 2,143	55,168 + 37,809 + 317	60,572 + 48,775 + 3,946	127,177 + 48,365 + 3,655
Fraser River Canadian Commercial Catch	Sockeye	158,308	-	203	229,484	-	-	-	3,682,561	-	-	-	7,945,474
	Pink	59,032	-	522,407	299	33,480	-	-	91,337	-	-	452	-
Fraser River U.S. Commercial Catch	Sockeye	297,224	-	0	307,545	-		-	989,459	-	-	44,100	691,000
	Pink	1,116,355	-	572,353	-	192,047		232,904	-	105,930	-	334,700	-
West Coast Vancouver Island (commercial troll)	Coho	2,372	680	221	3,875	15,172	5	-	-	331	774	18,126	32,992
Johnstone Strait (commercial catch)	Chum	57,919	269,775	-	63,319	-	149,199	-	52,139	401,957	1,333,478	492,841	318,984

*ALL PINK CATCHES FOR YEARS 1995-2012 IN AREAS 3(1-4) AND AREA 1 HAVE BEEN UPDATED TO REFLECT FINAL ESTIMATES.

**FIVE NATIONS CATCH INCLUDED AS COMMERCIAL CATCH.

NOTE 1: CATCHES FOR YEARS 2020 TO 2021 HAVE BEEN UPDATED TO MAINTAIN CONSISTENCY IN CATCH REPORTING WITH PREVIOUS YEARS. THIS DATA MAY BE SUBJECT TO FINAL REVIEW.

APPENDIX 2: TRANSBOUNDARY CATCH TABLE

Licence Group	Fishing Area	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook Kept	Chinook Released
First Nations FSC and Treaty											
	Stikine	8,631	-	-	-	-	-	-	-	300	68
	Taku	170	1	268	-	15	7	2	2	56	-
	Alsek	653	-	-	-	-	-	-	-	94	-
Total First Nations FSC Catch		**9,454**	**1**	**268**	**-**	**15**	**7**	**2**	**2**	**450**	**68**
Commercial											
	Stikine	23,523	16	2,902	-	152	67	277	130	-	913
	Taku	27,729	-	8,811	-	-	5,601	-	300	-	952
Total Commercial Catch		**51,252**	**16**	**11,713**	**-**	**152**	**5,668**	**277**	**430**	**-**	**1,865**
Recreational											
Total Recreational Catch		**-**	**7**	**11**	**18**	**-**	**-**	**-**	**-**	**-**	**3**
TOTALS		**60,706**	**24**	**11,992**	**18**	**167**	**5,675**	**279**	**432**	**450**	**1,936**

APPENDIX 3: NORTHERN B.C. CATCH TABLE

Licence Group	Fishing Area	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook Kept	Chinook Released
First Nations FSC and Treaty											
	Skeena	23,305	-	221	-	10,366	10,300	54	7	2,769	6
	Nass*	99,326	-	7,200	-	27,038	-	432	-	4,948	-
	Central Coast	157	-	0	N/A	1	-	268	-	1359	-
Total First Nations FSC Catch		**122,788**	**-**	**7,421**	**-**	**37,405**	**10,300**	**754**	**7**	**9,076**	**6**
Commercial											
Area A Seine	Nass	66,882	-	-	3,550	1,397,241	-	317,761	65,707	-	756
Area A Seine	Skeena	22,391	-	-	851	225,517	-	-	916	15	318
Area C Gillnet	Central Coast	-	-	-	-	-	-	-	203	165	-
Area C Gillnet	Skeena	142,121	-	-	1,277	118,484	59,292	-	6,826	-	693
Area F Troll	Haida Gwaii AABM	-	820	16,131	56	965	567	-	1,334	68,726	8,405
Area F Troll	Haida Gwaii Pink/Coho	373	24	36,257	39	34,799	236	-	365	-	6,854
Total Commercial (including Demo) Catch		**231,767**	**844**	**52,388**	**5,773**	**1,777,006**	**60,095**	**317,761**	**75,351**	**68,906**	**17,026**
Recreational											
	Skeena/Nass	92	46	39,027	2,670	14,660	11,494	147	142	17,915	11,465
	Central Coast	-	-	12,464	-	903	-	161	-	7,024	-
	Haida Gwaii	185	-	25,265	5,639	510	-	516	-	29,627	34,858
Total Recreational Catch		**277**	**46**	**76,756**	**8,309**	**16,073**	**11,494**	**824**	**142**	**54,566**	**46,323**
TOTALS		**354,832**	**890**	**136,565**	**14,082**	**1,830,484**	**81,889**	**319,339**	**75,500**	**132,548**	**63,355**

* Includes Nisga'a sale harvests

APPENDIX 4: SOUTHERN B.C. CATCH TABLE

Licence Group	Fishing Area	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook Kept	Chinook Released
First Nations FSC and Treaty											
	WCVI - Inshore ISBM	-	-	337	-	-	-	862	-	1,603	-
	WCVI - Offshore AABM	-	-	2,711	-	-	-	-	-	1,838	-
	Strait of Georgia	20,605	-	1,583	8	-	-	518	-	1,560	-
	Johnstone Strait	226,451	1	754	627	-	-	1,165	-	1,739	33
Total First Nations FSC Catch		**247,056**	**1**	**5,385**	**635**	**-**	**-**	**2,545**	**-**	**6,740**	**33**
First Nations Commercial											
EO	WCVI - Inshore ISBM	-	-	-	-	-	-	-	-	26,891	-
Communal Sale	WCVI - Offshore/Terminal	-	-	-	779	2	44	-	2	1,487	213
Total First Nations Commercial Catch		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**26,891**	**-**
Five Nations											
	WCVI - Offshore AABM	-	-	2,237	1,207	-	-	-	-	22,151	126
	WCVI - Inshore ISBM	-	-	135	-	-	-	779	-	26,663	-
Total Five Nations Catch		**-**	**-**	**2,372**	**1,207**	**-**	**-**	**779**	**-**	**48,814**	**126**
Commercial											
Area B		-	671	10	5,133	-	29	53,379	34	11,566	195
Area D		-	35	122	917	-	-	3,986	232	24,149	2
Area E		-	-	-	16	-	-	11,144	-	-	-
Area G		-	30	-	7,497	2	173	1	7	31,743	1,735
Area H		-	-	-	-	-	-	4,540	-	-	29
Total Commercial Catch		**-**	**736**	**132**	**13,563**	**2**	**202**	**68,510**	**273**	**67,458**	**1,961**
Recreational											
	Johnstone Strait*	550	146	3,479	4,856	4,574	5,482	26	-	9,938	7,249
	Strait of Georgia*	10,079	2,983	100,195	219,325	28,503	41,666	435	82	56,787	168,051
	Juan de Fuca*	852	1,120	10,556	35,470	40,474	38,814	-	38	19,849	64,570
	WCVI - Inshore ISBM	-	-	28,911	20,565	1,093	3,022	10	-	56,828	42,369
	WCVI - Inshore AABM	-	-	3,941	2,222	2	-	-	-	18,271	27,233
	WCVI - Offshore AABM*	25	59	11,588	25,862	1,403	4,002	19	-	23,206	13,192
Total Recreational Catch		**11,506**	**4,308**	**158,670**	**308,300**	**76,049**	**92,986**	**490**	**120**	**184,879**	**322,664**
TOTALS		**258,562**	**5,045**	**166,559**	**323,705**	**76,051**	**93,188**	**72,324**	**393**	**334,782**	**324,784**

* Assumed Fraser Sockeye

APPENDIX 5: FRASER RIVER CATCH TABLE

Licence Group	Fishing Area	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook Kept	Chinook Released
First Nations FSC and Treaty											
	Fraser	418,908	3,689	87	7	86,725	74,730	1	-	3,516	81
Total First Nations FSC Catch		**418,908**	**3,689**	**87**	**7**	**86,725**	**74,730**	**1**	**-**	**3,516**	**81**
First Nations Commercial											
	Fraser	65,210	33	-	5	46,390	1,682	-	1	1,128	-
Total First Nations Commercial Catch		**65,210**	**33**	**-**	**5**	**46,390**	**1,682**	**-**	**1**	**1,128**	**-**
Five Nations											
	Fraser	24	3	-	-	37	23	-	-	-	-
Total Five Nations Catch		24	3	-	-	37	23	-	-	-	-
Commercial											
	Fraser	158,308	356	49	751	59,032	2,512	338	712	10	545
Total Commercial Catch*		**158,308**	**356**	**49**	**751**	**59,032**	**2,512**	**338**	**712**	**10**	**545**
Recreational											
	Fraser	37,571	1,962	-	-	13,004	17,703	-	-	-	-
Total Recreational Catch*		**37,571**	**1,962**	**-**	**-**	**13,004**	**17,703**	**-**	**-**	**-**	**-**
Other Catch											
	Fraser	13,711	109	121	1	65	8	-	-	537	13
Total Other Catch**		**13,711**	**109**	**121**	**1**	**65**	**8**	**-**	**-**	**537**	**13**
TOTALS		**693,732**	**6,152**	**257**	**764**	**205,253**	**96,658**	**339**	**713**	**5,191**	**639**

*100% of catch is Fraser Sockeye

**May include unauthorized directed retention or unauthorized bycatch retention in fisheries directed at other species

APPENDIX 6: TEST FISHING CATCH TABLE

Test-Fisheries	Start Date	End Date	Boat Days	Sockeye kept	Sockeye released	Coho kept	Coho released	Pink kept	Pink released	Chum kept	Chum released	Chinook kept	Chinook released	GRAND TOTAL
Albion Chinook Gillnet	20-Apr-25	20-Oct-25	159	725	0	8	0	610	0	324	0	1036	0	**2,703**
Area 23 Sockeye Seine	2-Jun-25	29-Jul-25	18	9,285	6,601						2		105	**15,993**
Area 23 Chinook Seine	11-Aug-25	9-Sep-25	10	0	945		901				35	1328	254	**3,463**
Skeena Tyee	10-Jun-25	26-Sep-25	108	3,559	27	209	4	6,142	102	57	94	706	9	**10,909**
Round Island Sockeye Gillnet	8-Jul-25	3-Aug-25	27	813		28	266	446		1	17	14	87	**1,672**
Round Island Sockeye Gillnet AT 90 Mesh Net Study*														**0**
Whonnock Gillnet	25-Jun-25	10-Oct-25	104	5,427	37	97	30	4594	56	329	8	682	111	**11,371**
San Juan Sockeye Gillnet				3,458	1	326	175	941	5	43		238	146	**5,333**
Cottonwood Gillnet*														**0**
Brownsville Bar Gillnet	10-Jul-25	7-Sep-25	57	10,153	3	19	9	4019	0	3	2	167	148	**14,523**
San Juan Sockeye Seine	25-Jul-25	1-Sep-25	20	3,785	106,706	80	1807	10075	238532	5	48	58	2169	**363,265**
Gulf Troll Sockeye*														**0**
Blinkhorn Sockeye Seine	22-Jul-25	31-Aug-25	38	3,344	177,774		285	1113	125140	3	1210	2	762	**309,633**
Area 13 Sockeye Seine*														**0**
Albion Chum Gillnet	1-Sep-25	23-Nov-25	49	45	0	84	0	1105	0	2053	0	248	0	**3,535**
Area 12 Chum Seine	22-Sep-25	21-Oct-25	68		2		88	1	6	36458	213		2	**36,770**
Juan de Fuca Chum Seine*														**0**
Qualark Gillnet	2-Jul-25	29-Sep-25	90	5,571	1	0	55	543	377	0	0	378	3	**6,928**
LFFA Lower Fraser CO Assessment	4-Sep-25	16-Oct-25	18	0	108	106	261	0	1180	0	0	5	122	**1,782**
WCVI Juvenile Salmon Seine	28-May-24	19-Sep-24	18											**0**
Mquqwin / Brooks Chinook Troll*														**0**
Naka Creek Sockeye Gillnet*														**0**
GST Troll Coho Sampling*														**0**
Grand Total				**46,165**	**292,205**	**957**	**3,881**	**29,589**	**365,398**	**39,276**	**1,629**	**4,862**	**3,918**	**787,880**

Notes

All test fish catches include assessment and non-assessment sets

* Did not operate in 2025

Note: Jacks & Juveniles are included in the above test fishing catches, if encountered

APPENDIX 7: ESSR CATCH TABLE

Hatcheries	Sockeye kept	Sockeye released	Coho kept	Coho released	Pink kept	Pink released	Chum kept	Chum released	Chinook kept	Chinook released	GRAND TOTAL
Babine Jack Sockeye*											**-**
Babine Large Sockeye	171,885	-	-	-	-	-	-	-	-	-	**171,885**
Meziadin Lake Sockeye*											**-**
Moricetown Canyon	-	-	-	-	1,659	-	-	-	-	-	**1,659**
Robertson Creek			3,905						25,861		**29,766**
Quinsam	-	-	-	-	37,604	-	-	-	-	-	**37,604**
Puntledge	-	-	1,233	-	-	-	-	-	1,964	-	**3,197**
Big Qualicum	-	-	20,363	-	30,492	-	-	-	7,660	-	**58,515**
Little Qualicum*	-	-	-	-	-	-	-	-	-	-	**-**
Nanaimo	-	-			-	-		-	-	-	**-**
Cowichan											**-**
Weaver Spawning Ch.											**-**
Chehalis Hatchery											**-**
Inch Hatchery											**-**
Inch Sockeye Satellite											**-**
Chilliwack Hatchery*									17,253		**17,253**
Capilano Hatchery									460		**460**
Tenderfoot Hatchery*											**-**
Gates Creek*											**-**
Nitinat			358				13,522		5,193		**19,073**
	171,885	**-**	**25,859**	**-**	**69,755**	**-**	**13,522**	**-**	**58,391**	**-**	**319,200**

* Did not fish in 2025

PRELIMINARY 2025 POST-SEASON REPORT UNITED STATES SALMON FISHERIES OF RELEVANCE TO THE PACIFIC SALMON TREATY

Report Submitted to the Pacific Salmon Commission
By the United States Section

December 2025

Table of Contents

I. PRELIMINARY 2025 SOUTHEAST ALASKA FISHERIES

INTRODUCTION

This report describes the conduct of Alaska fisheries of interest to the Pacific Salmon Commission (PSC) that occurred during 2025 in the area south and east of Cape Suckling, Alaska and north of the U.S./Canada border. These fisheries were conducted under preseason management plans that were consistent with Annex IV of the 2019 Pacific Salmon Treaty (PST) Agreement, including obligations defined within Chapter 3 for Chinook salmon aggregate abundance-based management regimes (AABM). Harvests of sockeye salmon in Alaska will be below annual allowable harvests in the District 101 drift gillnet, District 104 purse seine, Stikine River, and Taku River fisheries. The U.S. allowable catch (AC) of above border Taku River coho salmon in District 111 fisheries will likely be exceeded with the preliminary spawning escapement estimate below the escapement goal range (EGR). For Chinook salmon, all fisheries were managed conservatively and monitored closely in-season to avoid exceeding the preseason catch limit. The 2025 all-gear Treaty harvest of 128,608 was below the catch limit of 133,500 based on the pre-season abundance index (AI) from the PSC Chinook Model and the allowable catch limit (ACL) specified in Table 1 of Chapter 3.

NORTHERN BOUNDARY AREA FISHERIES

<u>District 104 Purse Seine Fishery</u>

The 2019 PST Agreement calls for abundance-based management of the District 104 purse seine fishery. The Agreement allows the District 104 purse seine fishery to harvest 2.45 percent of the Annual Allowable Harvest (AAH) of Nass and Skeena sockeye salmon prior to ADF&G statistical week 31 (referred to as the Treaty period). The AAH is calculated as the total combined run of Nass and Skeena sockeye salmon minus either the escapement requirement of 1.1 million (200,000 Nass River and 900,000 Skeena River) or the actual in-river escapement, whichever is less. The preliminary annual allowable harvest in the District 104 purse seine fishery for 2025 was approximately 55,000 fish.

The District 104 purse seine fishery opens by regulation on the first Sunday in July. In 2025, the first potential opening was July 6 (week 28). The pre-week 31 fishing plan for District 104 was based on preseason Department of Fisheries and Oceans, Canada (DFO) forecast runs of approximately 3.18 million Nass and Skeena sockeye salmon. In the 2025 Treaty period (Alaska statistical weeks 28–30), 14,404 sockeye salmon were harvested during 12-hour and 8-hour openings in both weeks 28 and 29, and two 15-hour openings in week 30 (Table 1). A total of 92 purse seine vessels fished at some point in the district during the Treaty period. The preliminary total return to the Nass and Skeena Rivers was lower than forecast at 2.3 million fish, which decreased the allowable harvest in District 104 to 29,000 fish. In past years 60% to 80% of Treaty-period sockeye salmon have been of Nass and Skeena origin; therefore, we would anticipate between 8,600 and 11,500 Nass and Skeena sockeye salmon may have been harvested in the District 104 purse seine fishery during the 2025 Treaty period. The final estimate of the number of Nass and Skeena sockeye salmon harvested during the Treaty period in District 104 will not be available until harvest, escapement, and stock composition estimates are finalized for the year.

In 2025, a total of 3,961,810 pink, 143,144 sockeye, 240,217 chum, 48,309 coho, and 1,340 Chinook salmon were harvested in the District 104 purse seine fishery (**Error! Reference source not found.**). The number of days that the fishery was open was below average, and the number of boats fishing was 44% of the 1985–2024 average (Figure 1 and 2). A total of 1,340 Chinook salmon were harvested in week 31 when retention was permitted (Figure 3). Sockeye salmon harvests were well below average in all weeks (Figure 4). The Treaty period (week 28–30) harvest of 14,404 fish was 17% of the long-term average (1985–2024). The total sockeye salmon harvest of 143,144 fish was 33% of the long-term average of 431,500 fish. Harvests of coho salmon were below average in all weeks except 31, when the harvest was just above average (Figure 5). The overall harvest of 48,309 fish was 46% of average. The overall pink salmon harvest of 3,961,810 fish was 53% of average (Figure 6). Finally, the chum salmon harvest of 240,217 fish was 84% of average (Figure 7).

Since the PST was signed in 1985, the number of hours open, boats fished, and boat-days fished in the pre-week 31 Treaty period in District 104 are down 57%, 65% and 86% respectively compared to averages in the pre-Treaty 1980–1984 period (**Error! Reference source not found.**). The total pre-week 31 Treaty-period sockeye salmon harvest is also down 54%. The purse seine fleet moves freely between districts as various species are harvested, so seining opportunities elsewhere affect the effort and harvest in District 104.

Table 1. Weekly salmon harvest and fishing effort in the Alaska District 104 purse seine fishery, 2025.

Week/ Opening	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
28	6-Jul	0	6,535	1,834	23,432	23,159	16	12
28B	10-Jul	0	330	97	1,246	1,385	7	8
29	13-Jul	0	2,856	1,077	19,921	10,054	12	12
29B	17-Jul	0	602	65	1,851	965	4	8
30	20-Jul	0	1,506	561	45,622	7,330	9	15
30B	24-Jul	0	2,575	1,131	53,510	8,923	11	15
31	27-Jul	1,236	13,139	4,360	207,255	25,029	17	15
31B	31-Jul	104	59,017	19,298	1,441,207	86,908	71	39
32	4-Aug	0	28,491	11,167	1,275,574	43,431	68	39
32B	8-Aug	0	17,713	4,785	501,183	16,624	40	39
33	12-Aug	0	4,865	2,325	204,430	8,044	22	15
33B	16-Aug	0	3,634	909	123,458	5,007	16	39
34	21-Aug	0	1,881	700	63,121	3,358	15	15
							Permits Fished	
Weeks 28-30		0	14,404	4,765	145,582	51,816	29	70
Weeks 31-34		1,340	128,740	43,544	3,816,228	188,401	88	201
Total		1,340	143,144	48,309	3,961,810	240,217	94	271

Table 2. Fishing opportunity, effort, and sockeye salmon harvest prior to week 31 in the Alaska District 104 purse seine fishery.

Year	Hours Fished	Individual Permits Fished	Days Fished (1d=15hrs)	Approximate Boat-Days	Sockeye Harvest	Sockeye Catch per Boat-Day
2025	70	29	4.7	67	14,404	215
Avg. 80–84	139	225	9	1,487	187,647	136
Avg. 85–24	60	78	4	207	87,211	480
% Change	-57%	-65%	-57%	-86%	-54%	254%

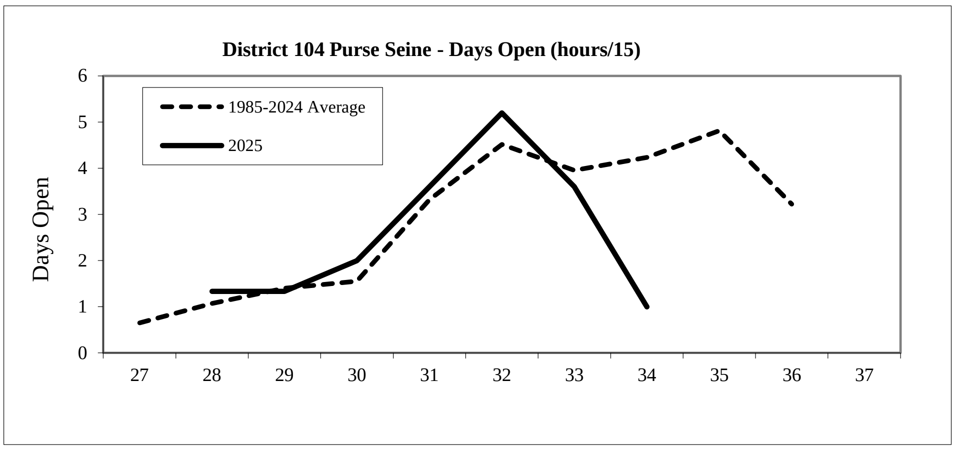


Figure 1. Days open by week in the District 104 purse seine fishery, 2025.

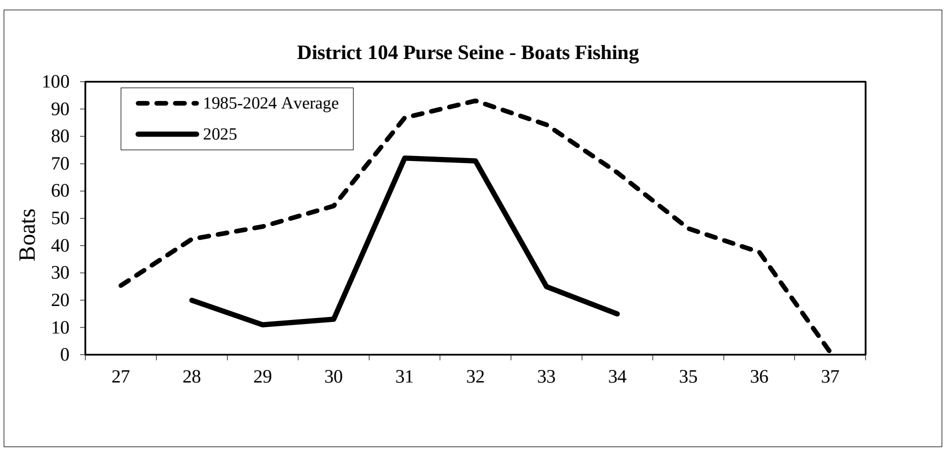


Figure 2. Number of boats fishing by week in the District 104 purse seine fishery, 2025.

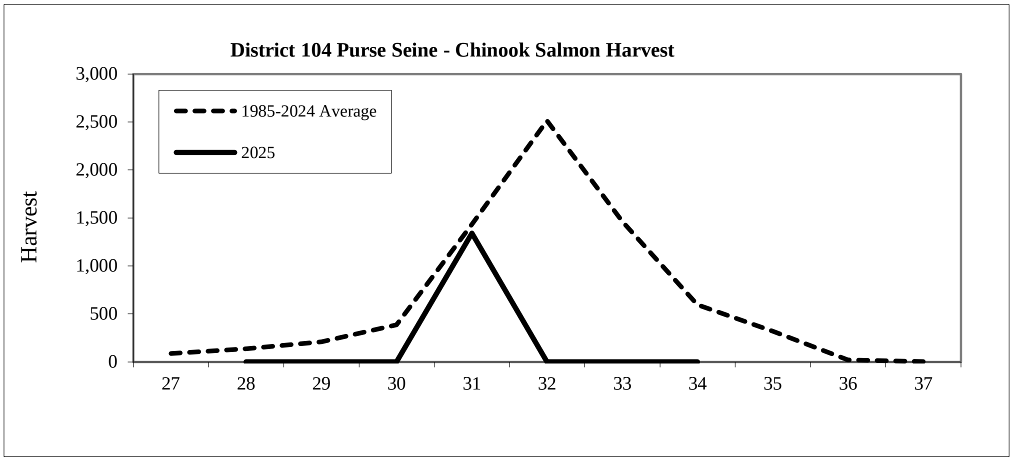


Figure 3. Chinook salmon harvest by week in the District 104 purse seine fishery, 2025.

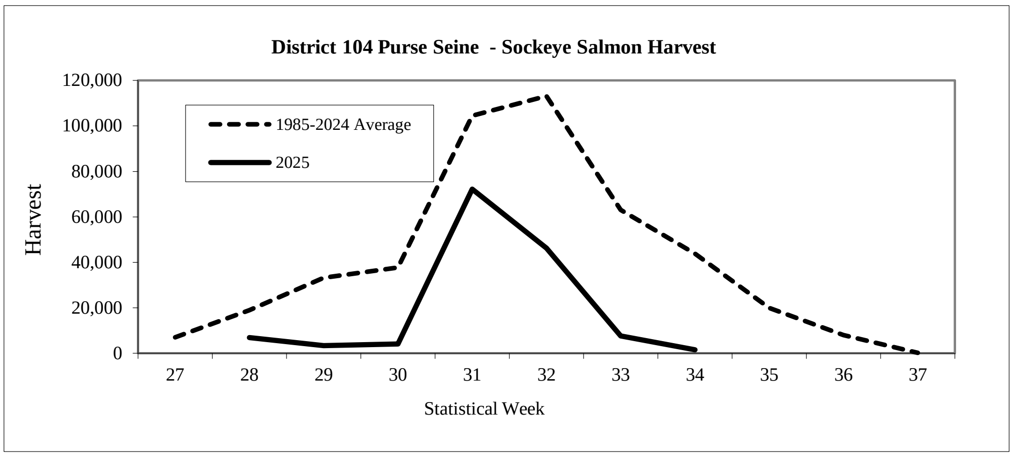


Figure 4. Sockeye salmon harvest by week in the District 104 purse seine fishery, 2025.

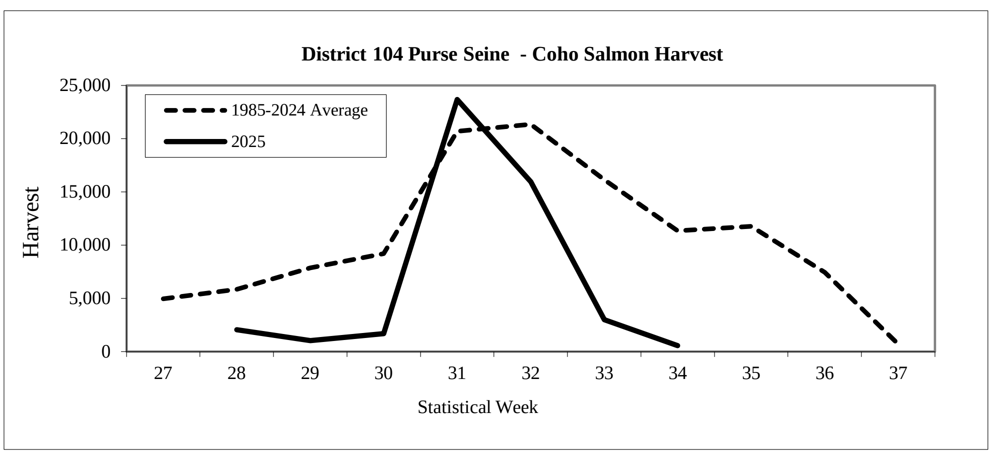


Figure 5. Coho salmon harvest by week in the District 104 purse seine fishery, 2025.

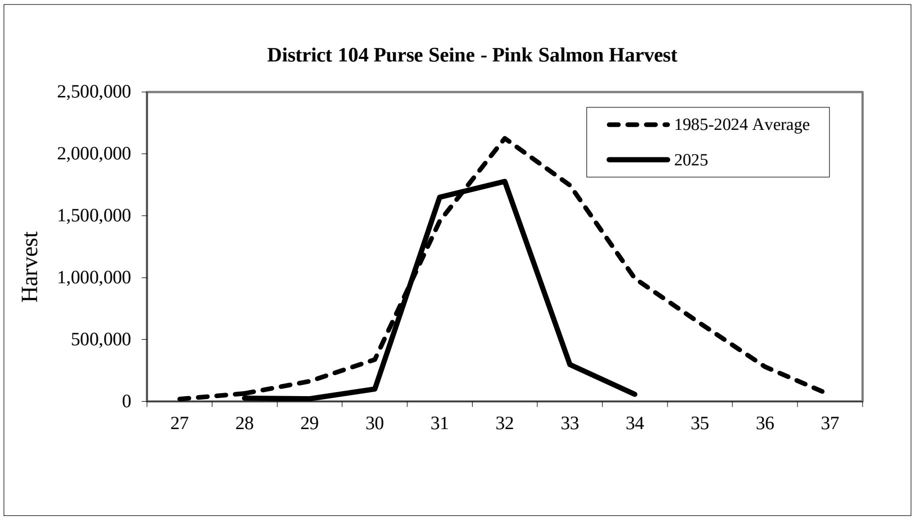


Figure 6. Pink salmon harvest by week in the District 104 purse seine fishery, 2025.

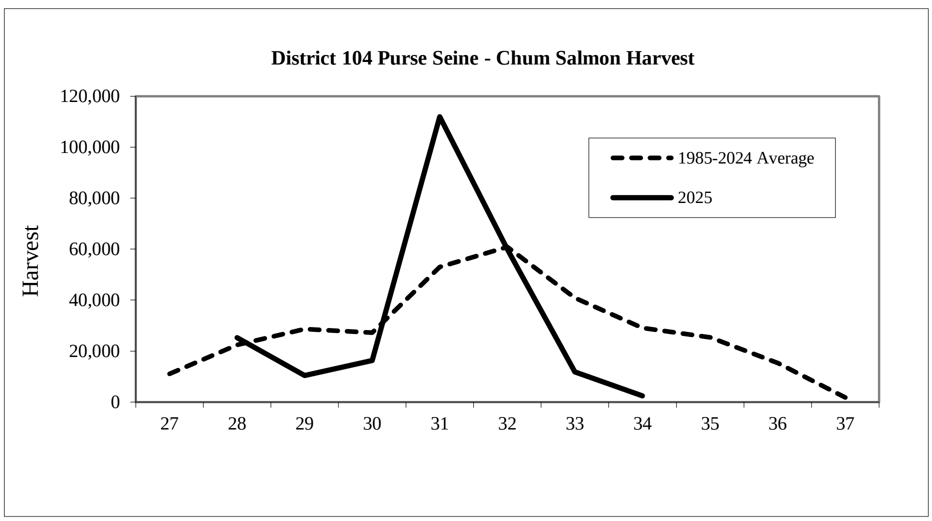


Figure 7. Chum salmon harvest by week in the District 104 purse seine fishery, 2025.

District 101 Drift Gillnet Fishery

The 2019 PST Agreement calls for abundance-based management of the District 101 (Tree Point) drift gillnet fishery. The agreement specifies that the U.S. manage for a harvest of 13.8% of the AAH of the Nass River sockeye salmon run. The AAH is calculated as the total run of Nass River sockeye salmon minus either the escapement requirement of 200,000 fish or the actual in-river escapement, whichever is less. The run of Nass River sockeye salmon was forecasted at 597,000 fish in 2025 which, minus an escapement goal of 200,000 fish, would result in an AAH of approximately 397,000 fish. Using this forecast, the 2025, the allowable harvest in the District 101 drift gillnet fishery was approximately 55,000 Nass River sockeye salmon.

The District 101 drift gillnet fishery opens by regulation on the third Sunday in June, which was June 15 (week 25) in 2025. During the early weeks of the fishery, management is based on the run strength of Alaska wild stock chum and sockeye salmon and on the run strength of Nass River sockeye salmon. Beginning in the third week of July, when pink salmon stocks begin to enter the fishery in large numbers, management emphasis shifts by regulation to that species. By regulation, the *District 101 Pink Salmon Management Plan* (PSMP) begins the third Sunday in July and sets drift gillnet fishing time in this district in relation to the District 101 purse seine fishing time. Beginning in week 36 (August 31) management was based on the strength of wild stock coho salmon.

The number of days the fishery opened was near average most of the season (Figure 8), but the number of boats fishing during weekly openings was well below average throughout the season (Figure 9). The total number of individual boats fishing during the season was 47, which was approximately 48% of the long-term (1985–2024) average of 97 boats. A total of 12,051 sockeye salmon were harvested, which was just 12% of the 1985–2024 average of 98,123 fish (Table 3). Harvests of sockeye salmon were well below average throughout the season (Figure 10). The cumulative sockeye salmon harvest prior to the initiation of the PSMP in week 30 was 4,966 fish, or about 41% of the season's total sockeye salmon harvest. The preliminary estimate of the number of Nass River sockeye salmon harvested at Tree Point will not be available until catch, escapement, and stock composition estimates are finalized for the 2025 season. In past years approximately 65% of the District 101 drift gillnet sockeye salmon harvest has been of Nass River origin, therefore we would anticipate that approximately 7,800 Nass River sockeye salmon may have been harvested in the District 101 drift gillnet fishery in 2025.

Coho salmon harvests were below average throughout the season and the total harvest of 10,269 fish was the lowest since 1985 (

; Figure 11). Pink salmon harvests were well below average throughout most of the season, and the total harvest of 102,193 fish was 23% of average (Figure 12). Chum salmon harvests were well above average through week 30 and then dropped below average for the rest of the season. The total harvest of 318,219 fish was 108% of average (Figure 13). Chinook salmon harvests were below average throughout the season (Figure 14).

Table 3. Weekly salmon harvest and fishing effort in the Alaska District 101 commercial drift gillnet fishery, 2025.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
25	6/15	269	413	17	57	16,268	21	96
26	6/22	370	1,190	136	689	30,837	32	96
27	6/29	181	1,496	231	11,166	72,215	31	96
28	7/6	51	595	60	9,816	44,258	35	96
29	7/13	63	1,272	225	22,889	50,734	38	96
30	7/20	50	1,581	108	21,257	44,030	39	96
31	7/27	10	1,906	175	8,781	21,265	27	96
32	8/3	4	1,168	412	9,176	16,127	20	96
33	8/10	1	1,227	1,125	8,864	11,798	27	120
34	8/17	5	919	1,018	6,968	5,214	25	96
35	8/24	1	176	822	1,368	1,496	21	96
36	8/31	0	105	3,200	1,113	2,731	24	96
37	9/7	1	3	1,561	49	956	23	96
38-39	9/14	0	0	1,179	0	290	7	192
Total		1,006	12,051	10,269	102,193	318,219	47	1,464
1985-2024 Avg.		1,487	98,123	46,107	445,572	294,518	99	1,389

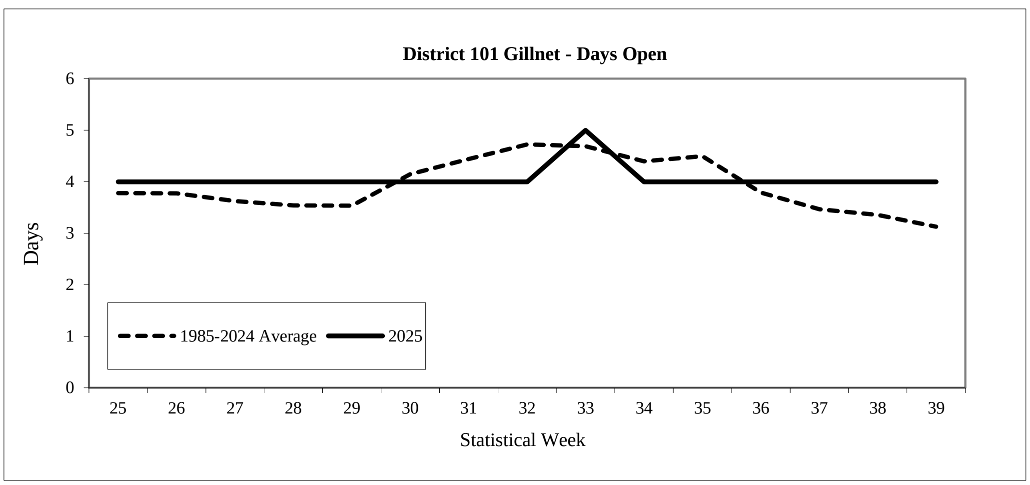


Figure 8. Days open by week in the District 101 drift gillnet fishery, 2025.

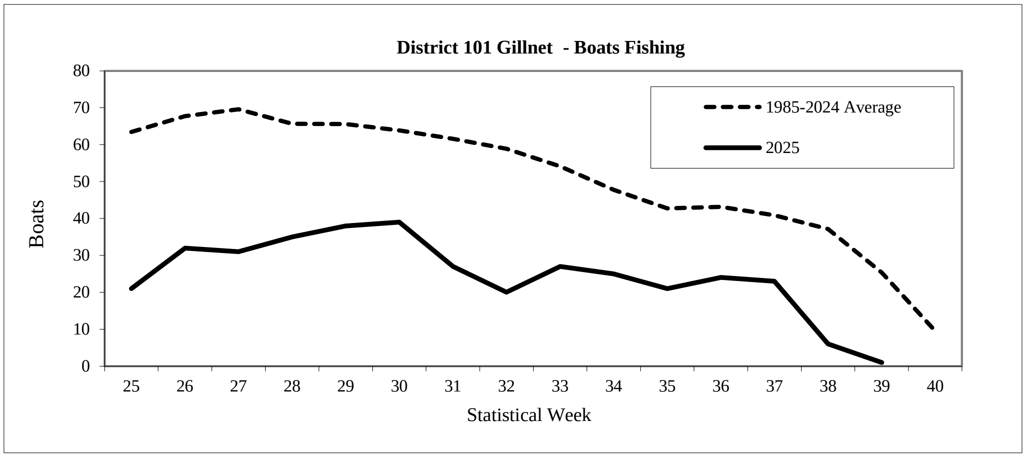


Figure 9. Number of boats fishing by week in the District 101 drift gillnet fishery, 2025.

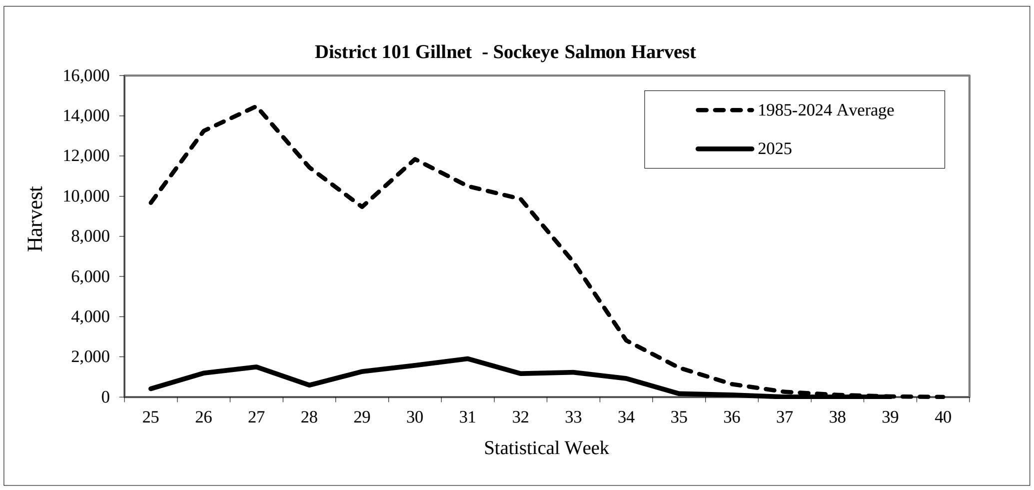


Figure 10. Sockeye salmon harvest by week in the District 101 drift gillnet fishery, 2025.

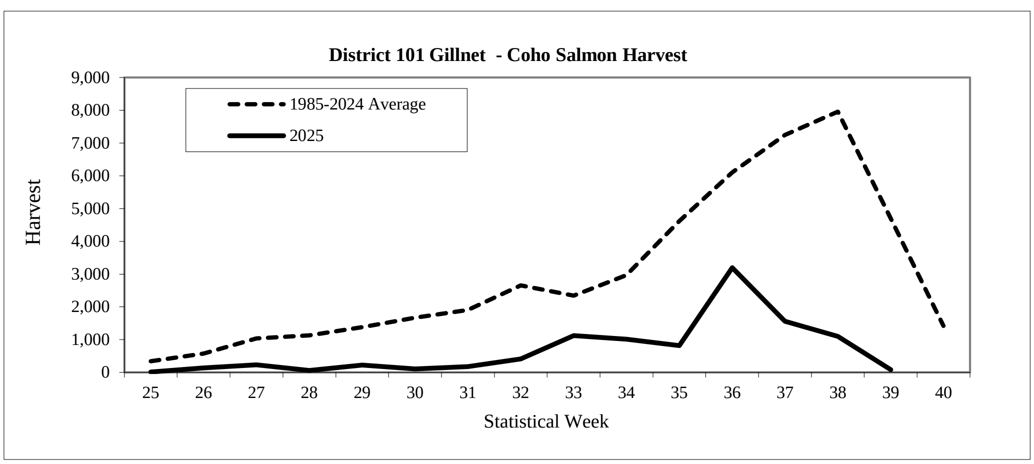


Figure 11. Coho salmon harvest by week in the District 101 drift gillnet fishery, 2025.

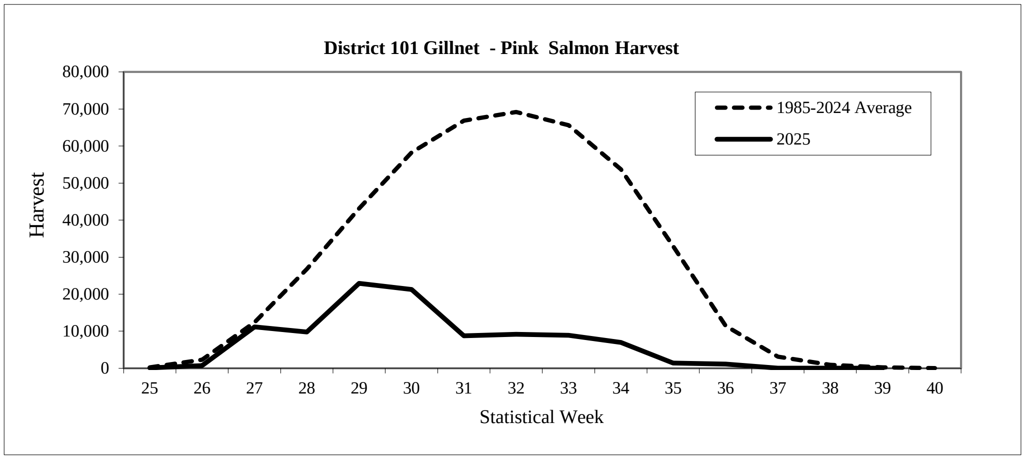


Figure 12. Pink salmon harvest by week in the District 101 drift gillnet fishery, 2025.

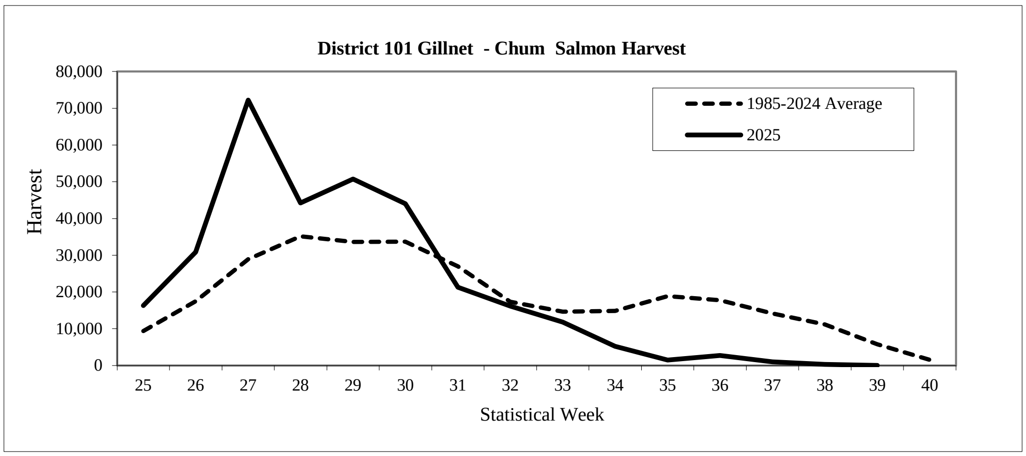


Figure 13. Chum salmon harvest by week in the District 101 drift gillnet fishery, 2025.

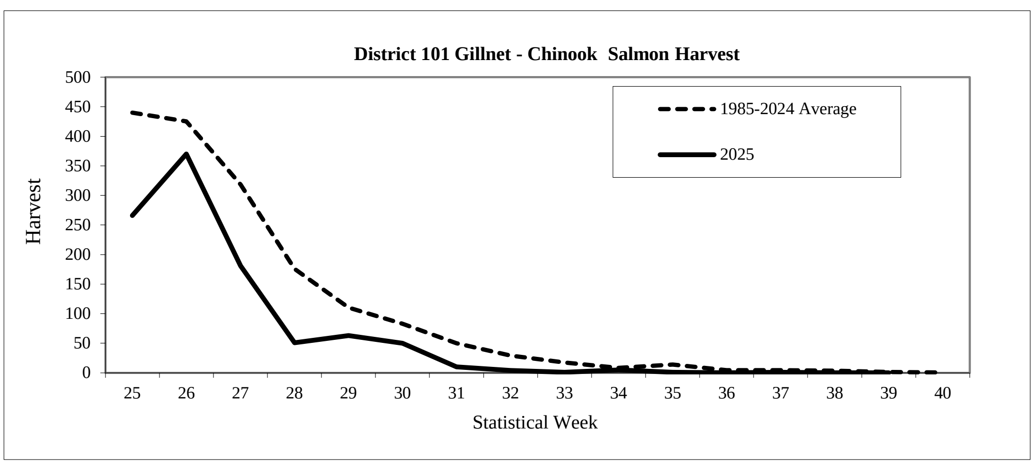


Figure 14. Chinook salmon harvest by week in the District 101 drift gillnet fishery, 2025.

Pink, Sockeye, and Chum Salmon Escapements

The total 2025 Southeast Alaska pink salmon escapement index of 14.14 million ranked 17th since 1960. Escapements of pink salmon were generally average to strong in the Southern Southeast and Northern Southeast Outside Subregions and below average in the Northern Southeast Inside Subregion. Biological escapement goals, however, were met or exceeded in all three subregions (**Error! Reference source not found.**). On a finer scale, escapements were within or above management targets for 14 of 15 districts in the region and for 42 of the 46 pink salmon stock groups in SEAK. The Southern Southeast Subregion includes all of the area from Sumner Strait south to Dixon Entrance (Districts 101–108). The escapement index value of 7.24 million was near the upper bound of the escapement goal range of 3.0 to 8.0 million index fish.

Table 4. Southeast Alaska 2025 pink salmon escapement indices and biological escapement goals by subregion (in millions).

Subregion	2025 Pink Salmon Index	Biological Escapement Goal Lower Bound	Biological Escapement Goal Upper Bound
Southern Southeast	7.24	3.00	8.00
Northern Southeast Inside	3.76	2.50	6.00
Northern Southeast Outside	3.14	0.75	2.50
Total	14.14		

Sockeye salmon escapement levels throughout SEAK generally met goals in 2025, and lower bounds of escapement goal ranges were achieved for 11 of the 12 sockeye salmon systems with formal escapement goals. The Hugh Smith Lake adult sockeye salmon escapement was 9,450 fish, which was within the optimal escapement goal range of 8,000 to 18,000 adult sockeye salmon. Based on a mark-recapture estimate, the escapement of sockeye salmon into McDonald Lake was 71,157 fish, which was within the sustainable escapement goal range of 55,000 to 120,000 fish.

Chum salmon populations in SEAK are divided into two runs based on migration timing: summer-run fish peak during the period mid-July to mid-August and fall-run fish peak in September or later. For summer-run chum salmon, lower bound sustainable escapement goals were achieved for only one of the three subregions in SEAK. The Southern Southeast summer-run chum salmon stock group is composed of an aggregate of 15 summer-run chum salmon streams on the inner islands and mainland of southern SEAK, from Sumner Strait south to Dixon Entrance, with a sustainable escapement goal of 62,000 index spawners (based on the aggregate peak survey to all 15 streams). Summer chum salmon escapements were above average at many index streams in southern SEAK, and the index of 97,000 fish was well above the sustainable escapement goal (Figure 15).

Cholmondeley Sound is the only area in southern SEAK with a formal escapement goal for fall chum salmon. Fall chum salmon runs are monitored in Cholmondeley Sound through aerial surveys at Disappearance and Lagoon creeks. The escapement index of 49,500 fish was just above the sustainable escapement goal range of 30,000 to 48,000 index spawners (based on the aggregate peak survey to both streams; Figure 16).

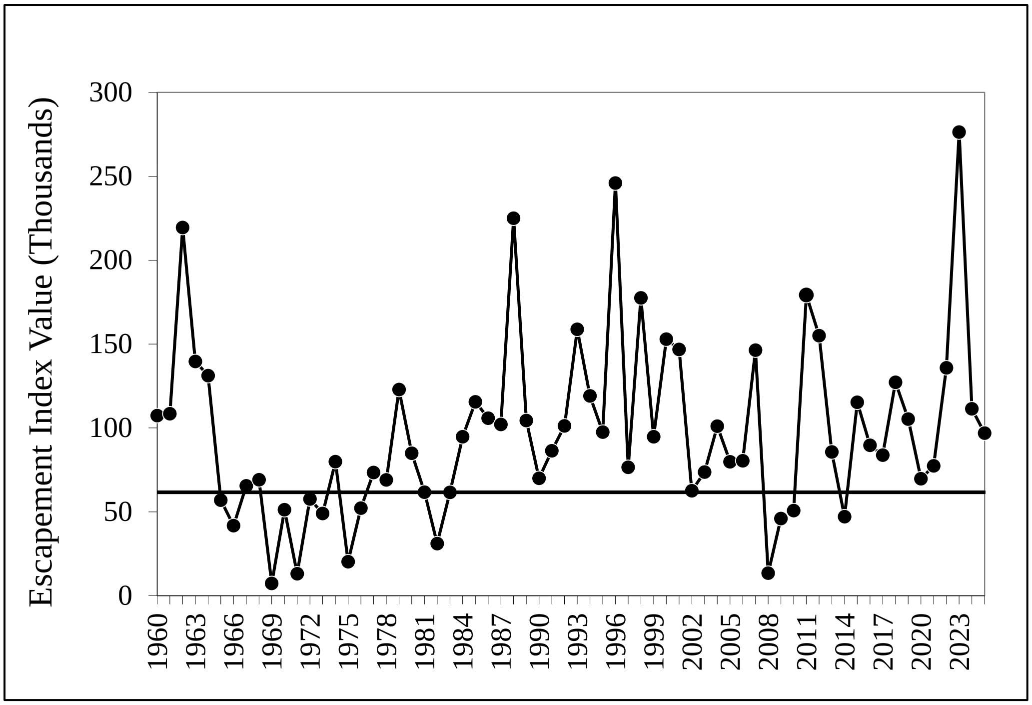


Figure 15. Observed escapement index value by year (solid circles) and the sustainable escapement goal threshold of 62,000 index spawners (horizontal line) for wild summer-run chum salmon in the Southern Southeast Subregion, 1960–2025.

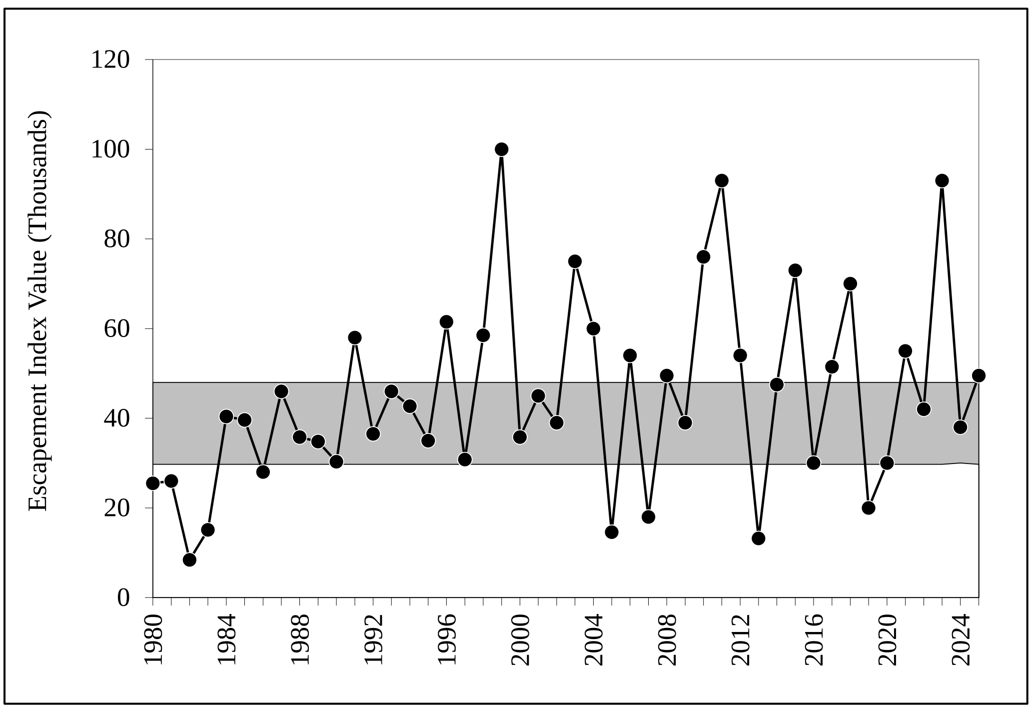


Figure 16. Observed escapement index value by year (solid circles) and the sustainable escapement goal range of 30,000 to 48,000 index spawners (shaded area) for Cholmondeley Sound fall-run chum salmon, 1980–2025.

TRANSBOUNDARY AREA FISHERIES

Stikine River Area Fisheries

The 2025 preseason forecast for large Chinook salmon (≥660 mm mid eye to tail fork length) returning to the Stikine River was approximately 10,000 fish, which did not allow for directed Chinook salmon fisheries in District 108. The preliminary escapement estimate of Stikine River large Chinook salmon was 15,159 fish.

The 2025 preseason forecast for sockeye salmon returning to the Stikine River was 176,000 fish, which was above the 2015–2024 average of approximately 121,000 fish. The 2025 forecast included approximately 101,000 wild Tahltan (57%), 33,000 enhanced Tahltan (19%), and 41,000 mainstem (23%) sockeye salmon. During the first half of the sockeye salmon management period, fishing periods in District 108, and to a lesser extent in District 106, were determined by the in-season abundance estimate of the Tahltan Lake stock. During the latter half of the sockeye salmon fishery, management actions in District 108 focused on the mainstem Stikine River stock, while efforts in District 106 centered on returns to local area systems. Typically, Tahltan Lake sockeye salmon exhibit peak run timing in District 106 fisheries during week 26 (June 22–28) and District 108 fisheries during week 27 (June 29–July 5). During an average Tahltan Lake run, significant numbers of sockeye salmon could be present as early as week 24 (June 8–14) and as late as week 33 (August 10–16). The 2025 runs of local area sockeye salmon stocks were generally good.

Due to the poor performance of SEAK Chinook salmon stocks, restrictions were implemented in the Districts 106 and 108 fisheries. In District 106, the initial opening of the drift gillnet fishery was delayed by one week until week 25 (June 15) and a 6-inch maximum mesh restriction was in place through week 29 (July 19). The initial opening in District 108 drift gillnet fishery was delayed until week 26 (June 22) and the District 108 spring troll hatchery access fishery was closed for 2025. Commercial trolling remained closed to Chinook salmon retention in District 108 until the second opening of the summer troll fishery (August 8). The District 108 sport fishery was closed to retention of Chinook salmon between April 1 and July 14. A small area within District 108 was open to sport harvest within the City Creek release site, where Alaska hatchery-produced Chinook salmon would be returning, between June 15 and July 14. The preliminary District 108 sport harvest estimate using CWT methods was 255 Stikine River large Chinook salmon. Final sport harvest estimates will be derived from GSI methods and were not available at the time of publication. The U.S. preliminary harvest estimate of Stikine River large Chinook salmon in all District 108 fisheries was not available at the time of this report.

The District 106 drift gillnet fishery opened Sunday, June 15 (week 25) and the District 108 drift gillnet fishery opened Sunday, June 22 (week 26). Given the forecast predicted a Tahltan Lake sockeye salmon run above the escapement goal range, managers focused on in-season indicators to assess how the run was progressing relative to the forecast. In week 25, District 106 was opened for three days with effort in the district below the 2015–2024 average (29 vs 36 permits). Harvest was approximately 895 sockeye salmon, or about half the 2015–2024 average of approximately 1,700 fish. In week 26, both districts were opened for three days, with District 108 being restricted to subdistricts 108-30 and 108-60. Surveys of fishermen on the grounds indicated average catch rates from below average participation, particularly in District 108 (12 vs 30 permits). With sockeye salmon run strength indicators below expectations for the second week, no additional time occurred. Effort increased slightly in both districts for the next few weeks but remained well below average for the remainder of the year. Sockeye salmon CPUE improved to average in week 27 for both districts but fluctuated between average and below average for the remainder of the sockeye salmon season. A gear shift in the gillnet fleet to larger mesh-sized nets to target hatchery chum salmon negatively impacted sockeye salmon harvest rates in both districts starting in week 28. However, sockeye salmon harvests were the strongest in the major migration route for Stikine River sockeye salmon. Similarly, good numbers of sockeye salmon were intercepted in the Kakwan assessment fishery. With indicators pointing towards an average Stikine River sockeye salmon run, below-average effort, and in-season genetics showing a well above average Tahltan sockeye proportion in the 106-41 drift gillnet fishery, both districts were extended in week 27 for a total of four days and then again in week 28 for a total of six days. Open time in District 106 was limited to two days per week in weeks 29 through 31 for McDonald Lake sockeye salmon conservation (Table 5 and Table 6). While time was limited in District 106 during this period, time was extended in District 108 to a total of five days in week 29 and four days in weeks 30 and 31. These District 108 extensions occurred in the form of mid-week openings. Mesh restrictions were in place through week 29 in District 106 and through week 30 in District 108. Area restrictions continued to be in place for District 108 until week 32, when the open area was expanded to include the lower portion of Frederick Sound (108-50), Chichagof Strait (108-10), and the upper portion of Stikine Strait (108-20). The post-season assessment for Stikine River sockeye salmon was not available at the time of this report. Districts 106 and 108 were managed based on pink salmon abundance during the month of August, and in late August, management focus switched to coho salmon.

A total of 90 boats participated in the District 106 drift gillnet fishery in 2025 for a total harvest of 79,018 pink salmon, 23,602 sockeye salmon, 154,647 chum salmon, 16,573 coho salmon, and 564 Chinook salmon (Table 5). The number of boats participating was well below average throughout the season (Figure 18) at 72% of the 2015–2024 average (Table 5). Chinook salmon harvests were below average throughout the season (Figure 19). The harvest of Alaska hatchery origin fish was not available at the time of this report. Sockeye salmon weekly harvests were near average through early July and below average through the rest of the season (Figure 20). The total sockeye salmon harvest of 23,602 fish was 46% of the 2015–2024 average, and the number estimated to be of Stikine River origin was not available at the time of this report. Harvests of coho salmon were below average in most weeks of the season, and the overall harvest of 16,573 coho salmon was 23% of the 2015–2024 average. (Figure 21). Pink salmon harvests were above average in weeks 27 and 28 before dropping below average for the remainder of the season (Figure 22), and the overall harvest of 79,018 fish was 36% of average. Chum salmon harvests were well above average through early July and then dropped below average through the end of the season. The overall chum salmon harvest of 154,647 fish was 94% of average (Figure 23).

A total of 80 boats participated in the District 108 drift gillnet fishery in 2025 for a total harvest of 14,348 pink salmon, 9,105 sockeye salmon, 92,950 chum salmon, 9,159 coho salmon, and 613 Chinook salmon were harvested (Table 6). The number of boats participating was below average throughout the season (Figure 25) at 85% of the 2015–2024 average (Table 5). Due to the late start of the fishery, few Chinook salmon were harvested (Figure 26). The estimated number of Stikine River large Chinook salmon harvested in District 108 by commercial drift gillnet, subsistence, and sport fisheries was not available at the time of this report. Sockeye salmon harvests were below average throughout the season, and the total harvest of 9,105 fish was 60% of the 2015–2024 average (Table 6, Figure 27). The number of sockeye salmon estimated to be of Stikine River origin was not available at the time of this report. The overall coho salmon harvest of 9,159 fish was 57% of average (Table 6, Figure 28). The pink salmon harvest of 14,348 fish was 69% of average (Table 6, Figure 29), and the chum salmon harvest of 92,950 fish was 85% of the 2015–2024 average (Table 6, Figure 30).

Table 5. Weekly salmon harvest and fishing effort in the Alaskan District 106 commercial drift gillnet fisheries, 2025.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	15-Jun	64	895	25	312	8,608	29	3	87
26	22-Jun	120	2,688	204	612	9,274	29	3	87
27	29-Jun	118	5,525	447	11,074	32,081	38	4	152
28	6-Jul	123	6,913	450	17,519	46,911	43	6	258
29	13-Jul	28	1,428	168	6,311	16,957	36	2	72
30	20-Jul	18	2,092	179	7,251	12,844	26	2	52
31	27-Jul	4	947	365	4,317	4,056	20	2	40
32	3-Aug	15	1,419	1,590	11,022	9,209	28	4	112
33	10-Aug	6	871	1,674	8,644	4,109	22	4	88
34	17-Aug	5	529	1,133	8,481	2,820	29	4	116
35	24-Aug	14	142	956	2,313	1,190	22	4	88
36	31-Aug	23	48	2,676	944	2,626	27	3	81
37	7-Sep	25	104	5,043	166	3,017	38	3	114
38	14-Sep	1	1	1,616	2	895	21	3	63
39	21-Sep	0	0	47	0	50	3	3	9
Total		564	23,602	16,573	79,018	154,647	90	50	1,413
2015-2024 Average		1,547	51,417	72,488	216,971	164,396	127	45	2,281
2025 as % of Average		37%	46%	23%	36%	94%	72%	111%	62%

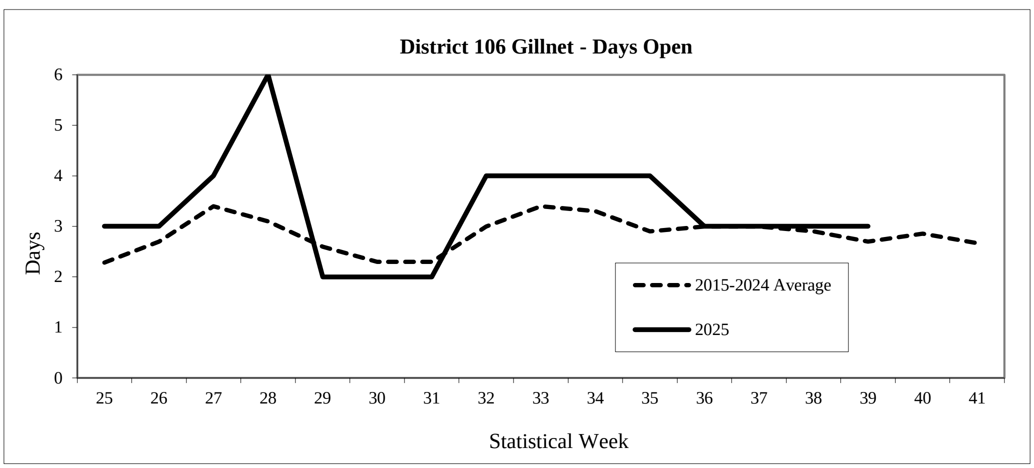


Figure 17. Days open by week in the District 106 drift gillnet fishery, 2025.

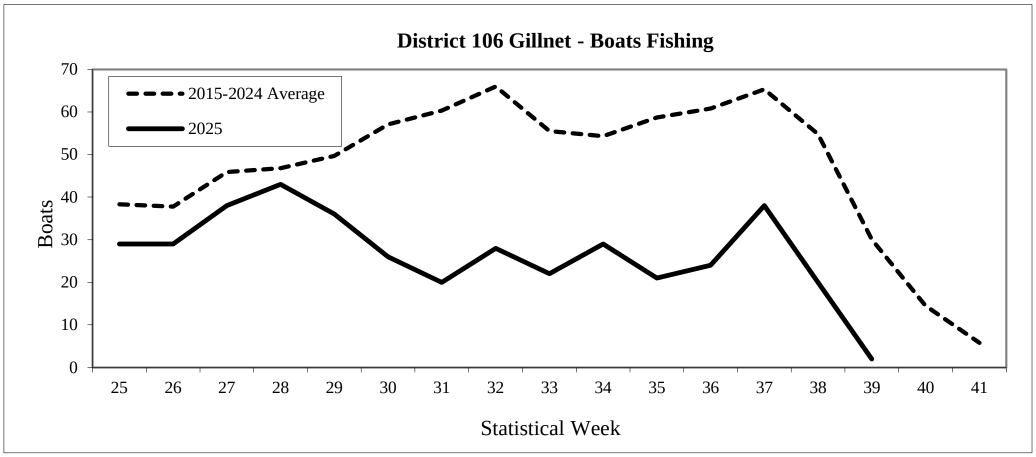


Figure 18. Number of boats fishing by week in the District 106 drift gillnet fishery, 2025.

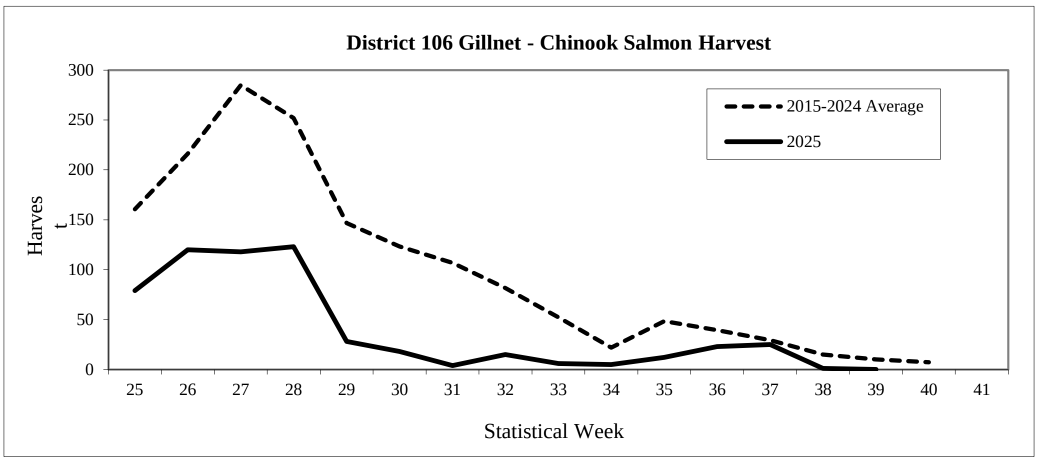


Figure 19. Chinook salmon harvest by week in the District 106 drift gillnet fishery, 2025.

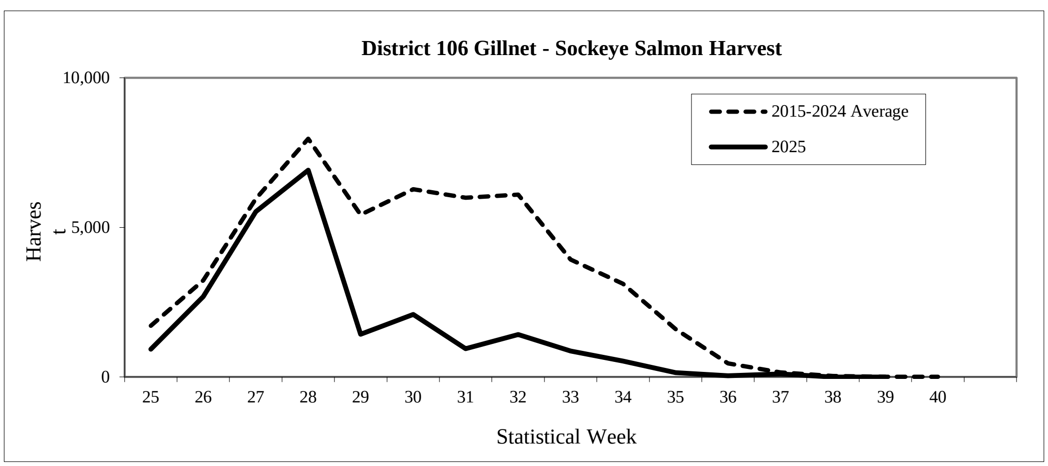


Figure 20. Sockeye salmon harvest by week in the District 106 drift gillnet fishery, 2025.

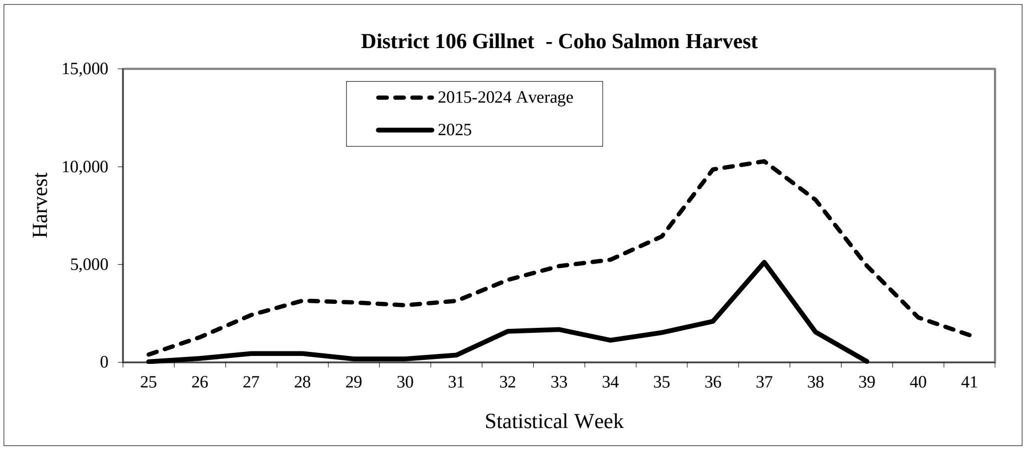


Figure 21. Coho salmon harvest by week in the District 106 drift gillnet fishery, 2025.

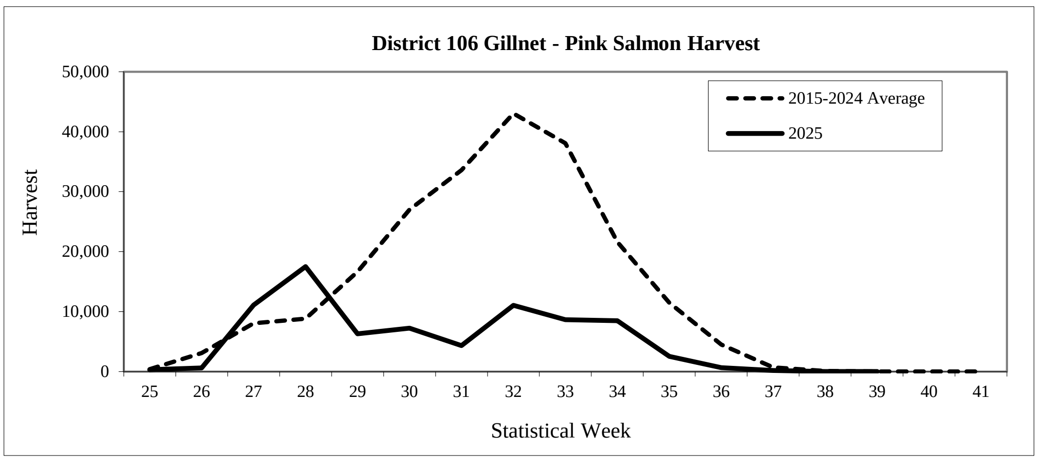


Figure 22. Pink salmon harvest by week in the District 106 drift gillnet fishery, 2025.

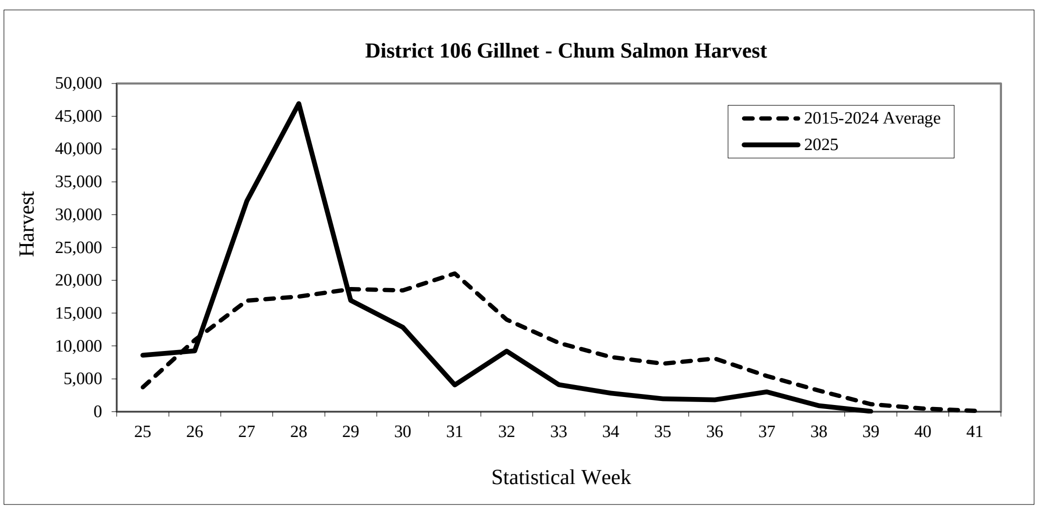


Figure 23. Chum salmon harvest by week in the District 106 drift gillnet fishery, 2025.

Table 6. Weekly salmon harvest and fishing effort in the Alaskan District 108 commercial drift gillnet fishery, 2025.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
26	22-Jun	90	628	4	24	247	12	3	36
27	29-Jun	70	1,445	3	69	1,191	8	4	32
28	6-Jul	43	2,620	24	1,097	6,137	13	6	78
29	13-Jul	97	1,774	71	3,915	17,970	31	5	155
30	20-Jul	91	1,127	64	2,725	14,272	33	3	99
31	27-Jul	107	660	222	2,717	23,764	38	3	114
32	3-Aug	60	608	586	2,246	19,246	25	4	100
33	10-Aug	23	116	617	1,262	7,002	21	4	84
34	17-Aug	5	101	1,282	219	1,868	22	4	88
35	24-Aug	6	12	1,229	66	735	15	4	60
36	31-Aug	14	7	1,437	8	197	16	3	48
37	7-Sep	3	7	2,079	0	187	20	3	60
38	14-Sep	4	0	1,132	0	101	17	3	51
39	21-Sep	0	0	409	0	33	4	3	12
Total		613	9,105	9,159	14,348	92,950	80	52	1,017
2015-2024 Average		3,896	15,098	16,194	20,842	109,832	94	42	1,256
2025 as % of Average		16%	60%	57%	69%	85%	85%	124%	81%

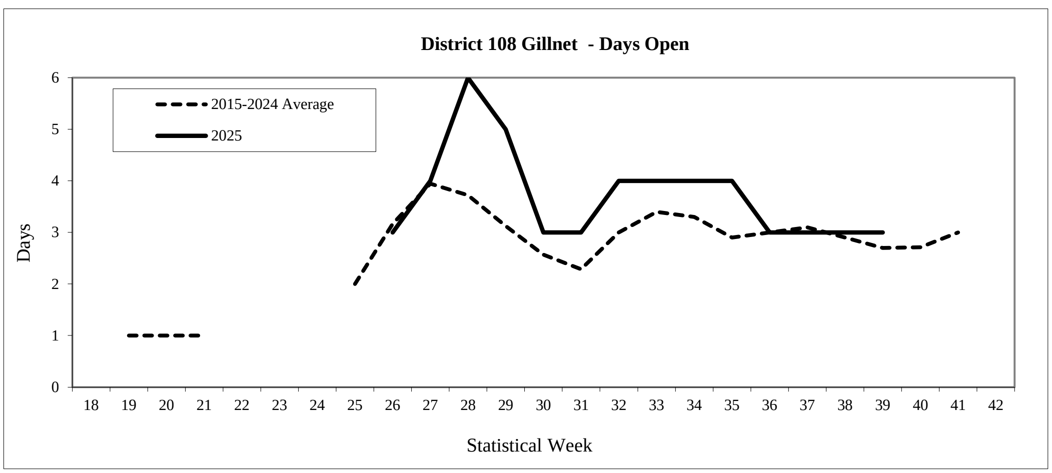


Figure 24. Days open by week in the District 108 drift gillnet fishery, 2025.

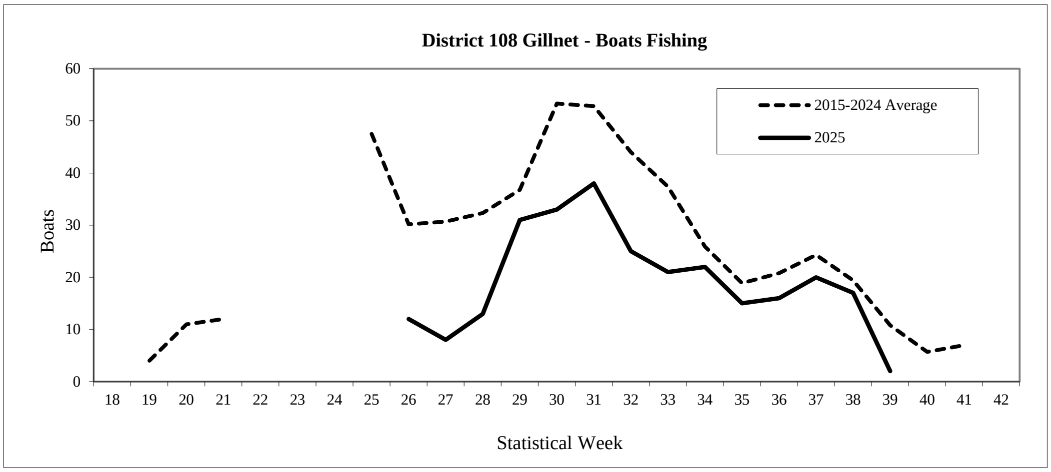


Figure 25. Number of boats fishing by week in the District 108 drift gillnet fishery, 2025.

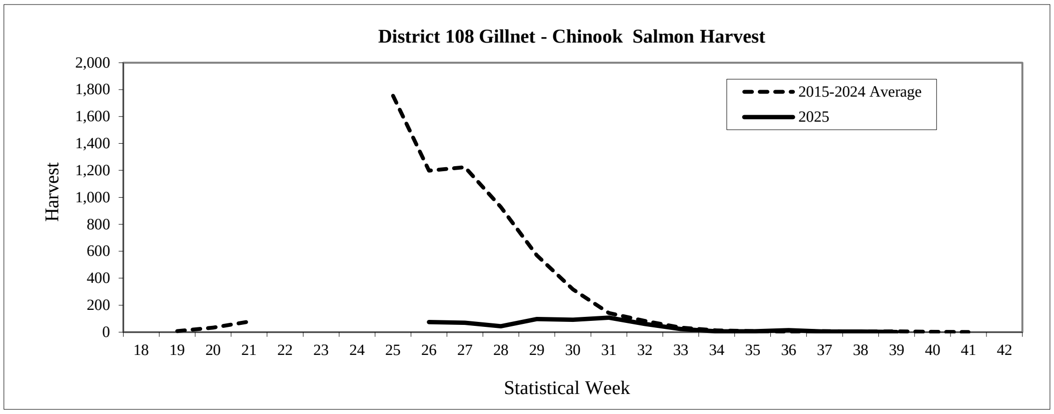


Figure 26. Chinook salmon harvest by week in the District 108 drift gillnet fishery, 2025.

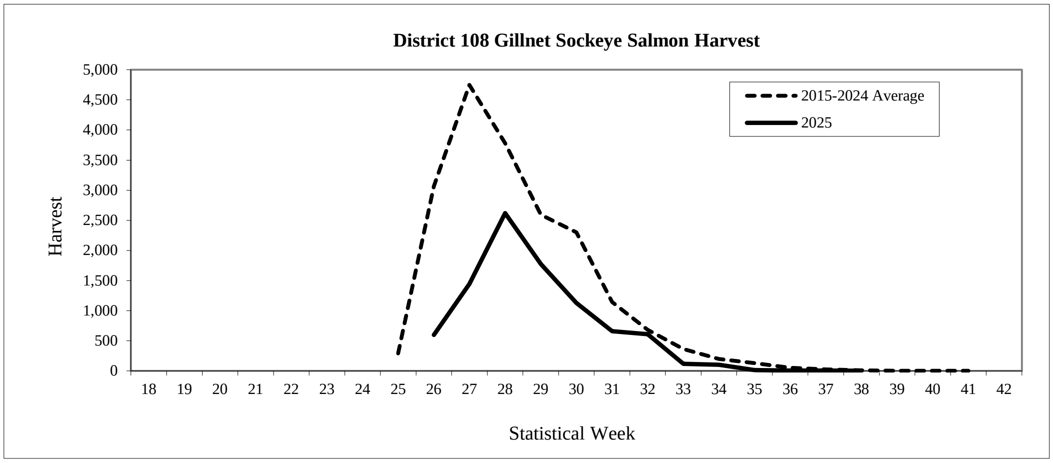


Figure 27. Sockeye salmon harvest by week in the District 108 drift gillnet fishery, 2025.

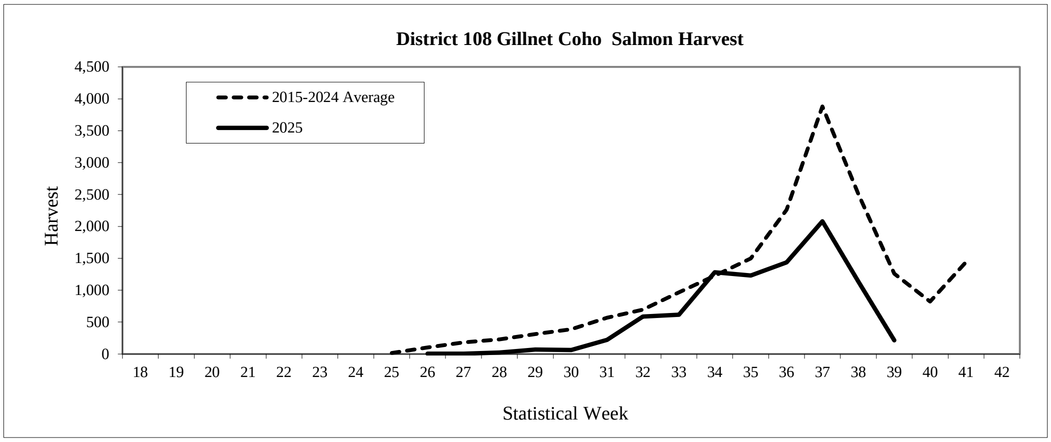


Figure 28. Coho salmon harvest by week in the District 108 drift gillnet fishery, 2025.

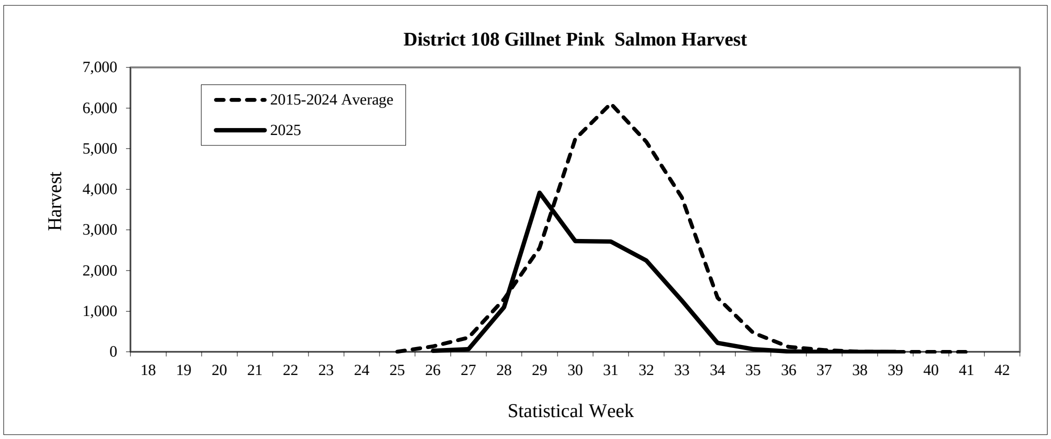


Figure 29. Pink salmon harvest by week in the District 108 drift gillnet fishery, 2025.

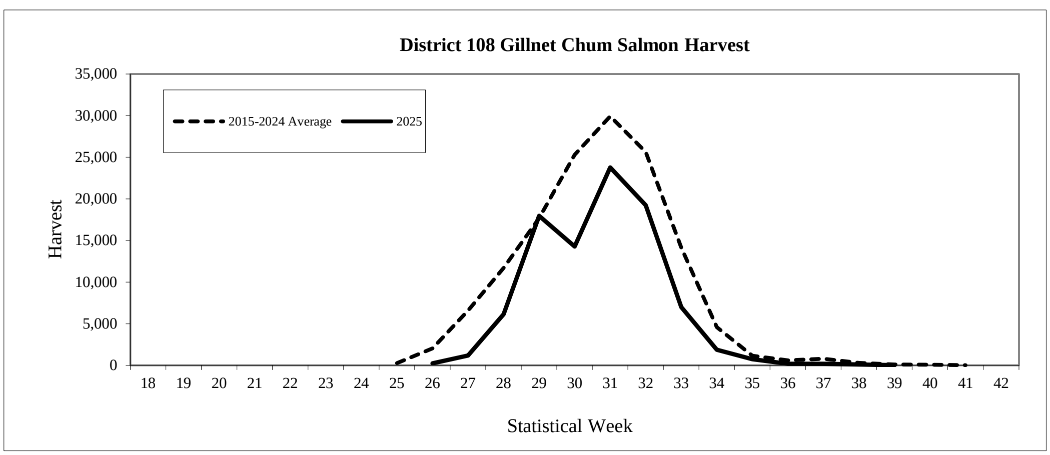


Figure 30. Chum salmon harvest by week in the District 108 drift gillnet fishery, 2025.

Taku River Area Fisheries

The traditional drift gillnet fishery in District 111 targets salmon stocks bound for the transboundary Taku River. This fishery is managed for Chinook salmon from weeks 18 through 24. From weeks 25 through 33 the fishery is managed for Taku River sockeye salmon, and from weeks 34 through 42 for Taku River coho salmon. Also harvested in this fishery are salmon bound for Stephens Passage and Port Snettisham streams as well as enhanced Chinook, sockeye, coho, and chum salmon from Douglas Island Pink and Chum, Inc. (DIPAC) hatchery releases. The traditional fishery does not include harvests from the Speel Arm Terminal Harvest Area (THA) inside Port Snettisham. The traditional drift gillnet fishery in District 111 began on Sunday, June 15, 2025 (week 25). Effort in the District 111 drift gillnet fishery was near average throughout the season, with a peak of 91 boats fishing in week 30 (Figure 32).

The EGR for Taku River large Chinook salmon is 19,000 to 36,000 fish with a management objective of 25,500 fish. In years of high abundance, directed Chinook salmon fisheries can be implemented to harvest fish in excess of escapement needs. Although the 2025 preseason terminal run forecast of 40,000 Taku River large Chinook salmon allowed for directed and assessment Chinook salmon fisheries in the U.S. and Canada, based on spawning escapements being below the EGR in 8 of the 9 most recent years, these fisheries did not occur and restrictions in time, area, and gear were implemented in the first two District 111 drift gillnet directed sockeye salmon openings (weeks 25–26) to minimize Chinook salmon harvest. The total seasonal Chinook salmon harvest of 2,278 fish was 255% of average (Figure 33).

Several Chinook salmon stocks contribute to the Juneau area sport fishery, including those from the Taku, Chilkat, and King Salmon Rivers, and local hatchery stocks, but the major contributor of mature wild fish in the spring is often the Taku River. Non-retention of Chinook salmon in Districts 110, 111, 112, 113, 114 and 115, was implemented in the sport fishery from April 1 through June 14. A limited area near Juneau was open to sport harvest between June 1 and August 31, where Alaska hatchery-produced king salmon would be returning. These non-retention periods resulted in minimal harvest of wild fish in the sport fishery. Genetic stock identification (GSI) based harvest estimates for Taku River large Chinook salmon in the terminal District 111 drift gillnet and sport fishery are not available at the time of this report. An estimated 10 large Chinook salmon were harvested in the in-river personal use fishery. No effort was recorded for the second consecutive season in the in-river federal subsistence fishery. It is anticipated that the terminal harvest of Taku River large Chinook salmon will be well below the U.S. base level catch of 3,500 fish. The post-season escapement estimate of Taku River large Chinook salmon is 42,970 fish, which is above the EGR of 19,000 to 36,000 fish.

A bilaterally agreed to maximum sustainable yield (MSY) EGR of 40,000 to 75,000 Taku River sockeye salmon with a management objective of 58,000 wild fish was adopted for the current Annex period. In-season run size estimates were calculated using data from an ongoing mark-recapture project and included tag dropout rates established by recent radiotelemetry studies, as well as size selectivity in the mark (Canyon Island fish wheels) and recapture (Canada commercial setnet and drift gillnet) gear. The 2025 Taku River wild sockeye salmon terminal run forecast of 172,000 fish, based on a combination of models used to forecast each major age class (0.2, 0.3, 1.2, and 1.3), was above the 2015–2024 average of 169,900 wild fish. DIPAC forecasted 114,000 enhanced sockeye salmon returning through District 111 waters to Snettisham Hatchery.

Peak harvests of sockeye salmon occurred in weeks 29 through 31 (mid-July to early August; Figure 34). The total harvest of 104,625 fish was 125% of average (Table 7; Figure 34). Snettisham Hatchery sockeye salmon returns were below forecast and the Speel Arm THA initially opened in week 33 for common property fishing with good escapement of wild fish into Speel Lake. A 6-inch minimum mesh size restriction was utilized south of the latitude of Circle Point in weeks 29–

32 to reduce harvest of Port Snettisham wild sockeye salmon. The escapement of 6,780 sockeye salmon through the Speel Lake weir was within the sustainable EGR of 4,000 to 9,000 fish. DIPAC sockeye salmon returning to the Snettisham Hatchery contributed a minimum of 11,000 fish to the traditional District 111 drift gillnet fishery harvest. The post-season harvest and escapement estimates of Taku River sockeye salmon are not available at the time of this report.

An EGR of 50,000 to 90,000 Taku River coho salmon with a management objective of 70,000 fish was adopted in early 2015. New harvest sharing provisions between the U.S. District 111 drift gillnet fishery and the Canadian in-river fisheries are in place, specified in the 2019 PST agreement, and the U.S. management intent in 2025 was to achieve the U.S. AC and management objective. The 2025 pre-season Taku River forecast was for an above average terminal run of 121,000 coho salmon, and DIPAC forecast a run of 49,000 enhanced coho salmon from releases in Gastineau Channel. DIPAC forecasted runs totaling 1.0 million enhanced chum salmon returning to Gastineau Channel and Limestone Inlet, which was above the recent average.

The 2025 traditional District 111 coho salmon harvest of 25,883 fish was 109% of average and the peak weekly harvest of 9,197 fish occurred in week 36 (Figure 35). Approximately 90% of the coho salmon were harvested in Taku Inlet, which was above the 10-year average of 81%, and 10% were harvested from Stephens Passage. Coho salmon stocks harvested in District 111 include returns to the Taku River, Port Snettisham, Stephens Passage, and local Juneau area streams as well as Alaska hatcheries. Alaska hatchery (predominantly DIPAC) coho salmon first appeared in the District 111 drift gillnet harvest in week 28 and comprised substantial proportions of the harvest in weeks 35 through 38. DIPAC coho salmon contributed 40% of the 2025 District 111 traditional drift gillnet harvest. The post-season harvest and escapement estimates of Taku River coho salmon are not available at the time of this report.

Weekly chum salmon harvests were well above average through early August, and approximately 963,804 fish were harvested from mid-June to mid-August (Figure 37). The vast majority of the summer-run chum salmon harvest in District 111 consists of DIPAC hatchery fish returning to release sites in Gastineau Channel and Limestone Inlet. The 2025 District 111 traditional fishery chum salmon harvest of 964,494 fish was 208% of average and comprised almost entirely of summer run fish (Figure 37). The summer chum salmon run continues through mid-August (week 33) and is mostly comprised of domestic hatchery fish and small numbers of wild stocks. Chum salmon returning to DIPAC release sites in Gastineau Channel and Limestone Inlet contributed a major portion of the harvest, but quantitative contribution estimates are not available. Approximately 69% of the District 111 chum harvest was taken in Taku Inlet, and 31% in Stephens Passage. The harvest of 690 chum salmon caught after week 33 was 44% of the 2015 to 2024 average. Many of these chum salmon are probably fall-run wild fish of Taku and Whiting Rivers origin, but late summer-run fish can also contribute significantly, especially in years with large returns.

Weekly pink salmon harvests were below average throughout the fishery, and the harvest of 60,274 fish was 58% of average (Figure 36). Pink salmon escapements were within the Northern Southeast Inside subregion escapement goal range, but the District 111 escapement index was below the lower end of the management target range.

Table 7. Weekly salmon harvest and fishing effort in the Alaskan District 111 traditional commercial drift gillnet fishery, 2025.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	15-Jun	396	369	4	0	3,338	19	2	38
26	22-Jun	374	1,833	2	0	21,677	28	3	84
27	29-Jun	346	3,008	25	387	59,113	50	3	150
28	6-Jul	510	8,073	281	6,873	181,439	68	4	272
29	13-Jul	192	21,202	543	20,467	251,996	77	4	308
30	20-Jul	192	25,819	1,197	15,625	290,449	91	5	455
31	27-Jul	96	21,699	1,493	9,884	126,793	85	5	425
32	3-Aug	156	16,258	3,139	5,089	26,614	52	6	286
33	11-Aug	10	4,935	1,152	1,736	2,385	30	5	150
34	17-Aug	6	1,220	1,457	172	280	21	3	63
35	24-Aug	0	173	3,845	19	207	19	4	76
36	31-Aug	0	34	9,197	21	136	19	4	76
37	7-Sep	0	2	2,146	1	51	17	3	51
38	14-Sep	0	0	1,333	0	16	9	3	27
39	21-Sep	0	0	69	0	0	5	2	10
Total		2,278	104,625	25,883	60,274	964,494	118	56	2,471
2015–2024 Average		895	83,697	23,785	104,742	463,048	154	52	2,302
2025 as % of Average		255%	125%	109%	58%	208%	77%	107%	107%

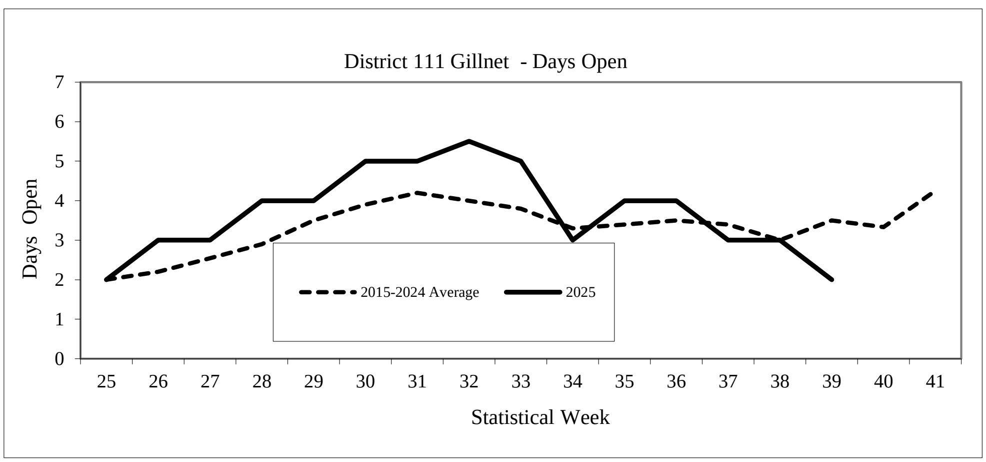


Figure 31. Days open by week in the District 111 drift gillnet fishery, 2025.

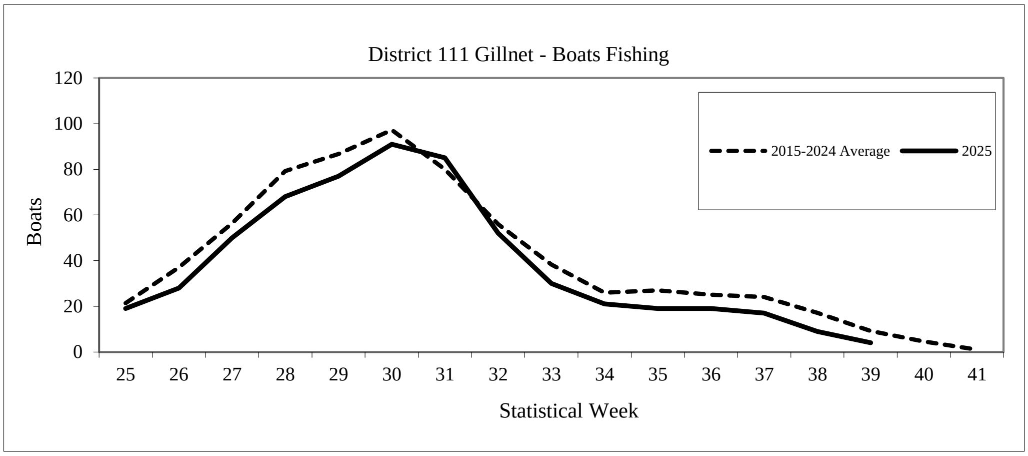


Figure 32. Number of boats fishing by week in the District 111 drift gillnet fishery, 2025.

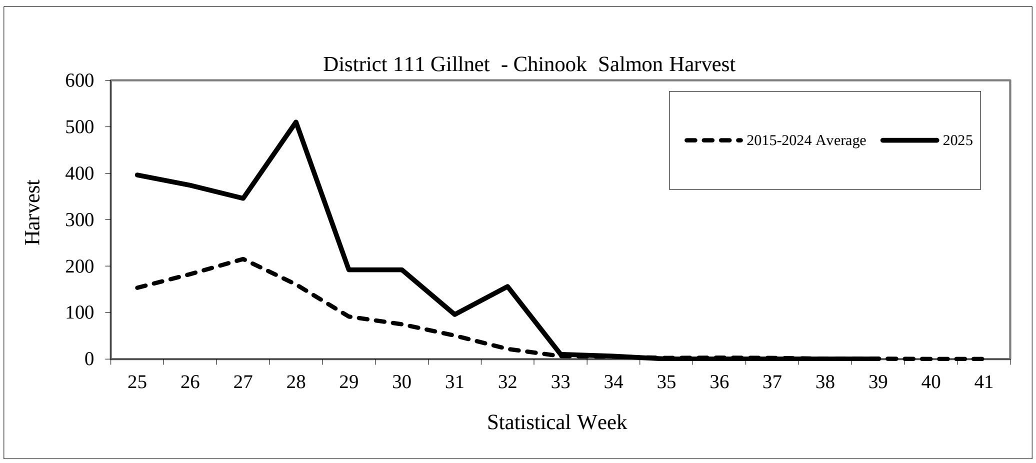


Figure 33. Chinook salmon harvest by week in the District 111 drift gillnet fishery, 2025.

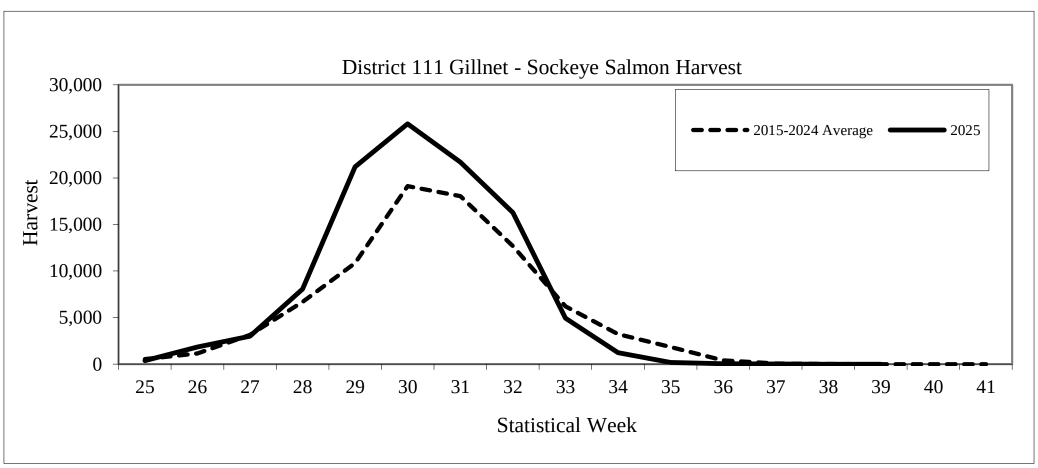


Figure 34. Sockeye salmon harvest by week in the District 111 drift gillnet fishery, 2025.

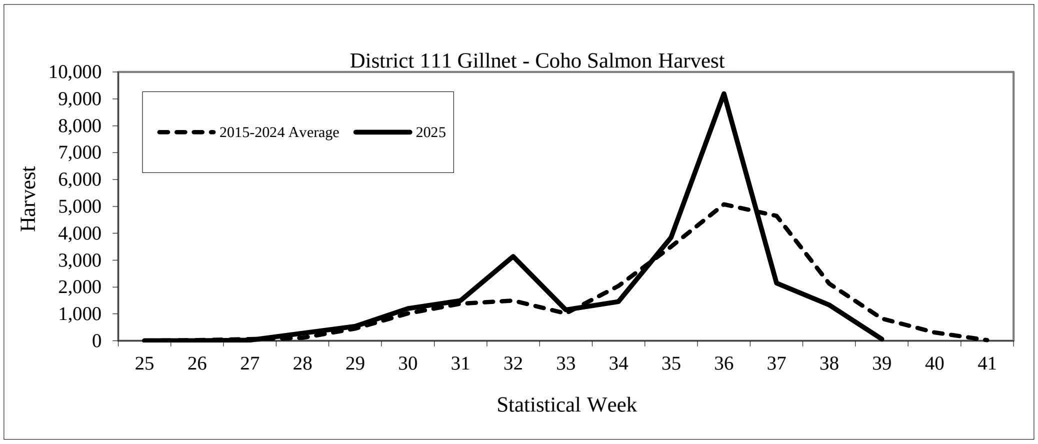


Figure 35. Coho salmon harvest by week in the District 111 drift gillnet fishery, 2025.

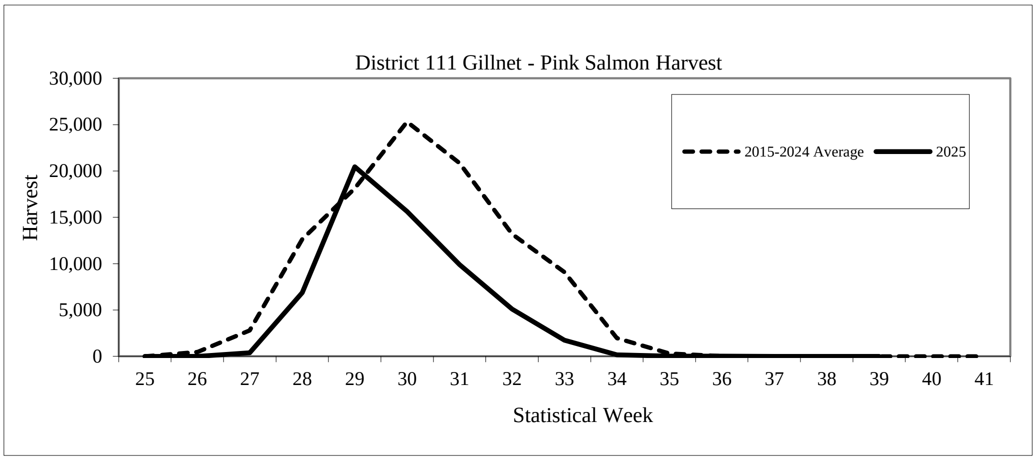


Figure 36. Pink salmon harvest by week in the District 111 drift gillnet fishery, 2025.

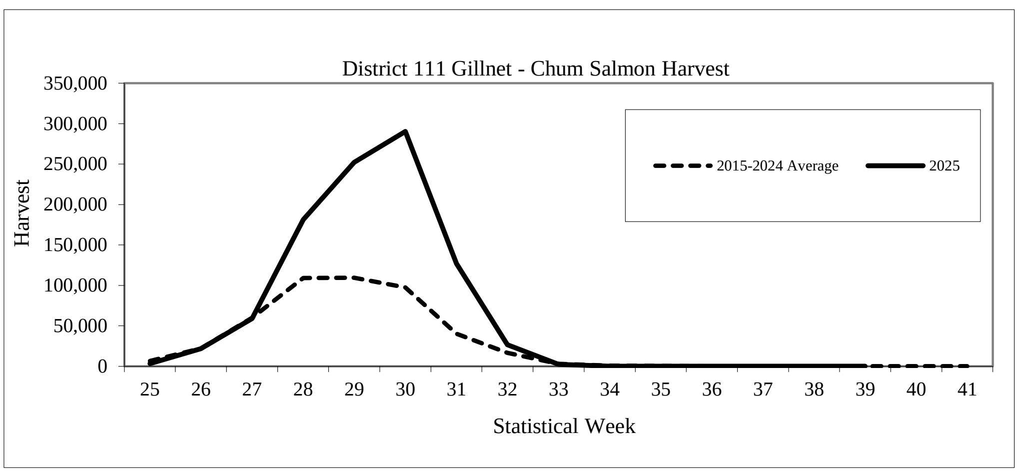


Figure 37. Chum salmon harvest by week in the District 111 drift gillnet fishery, 2025.

Transboundary River Joint Enhancement

The transport of sockeye salmon fry from the Snettisham Hatchery facility back to Canadian lakes was completed on May 23, 2025. Approximately 3.17 million fry were released in Tahltan, Tatsamenie, and Trapper Lakes in Canada. The overall green egg to fry survival for brood year (BY) 2024 releases was 62% (**Error! Reference source not found.**). After transporting BY24 fry back to their respective lakes, all TBR modules, incubators, and short-term fry rearing containers were broken down, cleaned, and disinfected prior to receiving green eggs from BY25 egg takes.

Brood year 2025 egg takes began on August 31 at Trapper Lake, September 16 at Tahltan Lake, and September 19 at Tatsamenie Lake. An estimated total of 5.1 million green eggs were collected from the three donor lakes. Tahltan Lake egg takes were completed on September 22 after collecting an estimated 2.0 million eggs in 4 lots. Trapper Lake egg takes were completed on September 6 after collecting 0.5 million eggs in 2 lots. Tatsamenie Lake egg takes were completed on October 6 after collecting 2.5 million eggs in 6 lots. DFO contractors collected adult sockeye salmon tissue samples on the spawning grounds and shipped them to the ADF&G Juneau Fish Pathology laboratory via Snettisham Hatchery per the 2019 PST Agreement.

Table 8. Summary of numbers and survival rates of brood year 2024 sockeye salmon fry released May 2025.

Brood stock	Release site	Number of trips	Survival rate to eyed stage	Survival rate to release	Number released
Tahltan	Tahltan Lk	2	83.0%	63.6%	1,208,854
Tatsamenie	Upper Tatsamenie Lk	3	71.4%	63.5%	1,152,509
Tatsamenie	Extended Rearing	2	86.6%	78.6%	328,064
Trapper	Trapper Lake	1	56.2%	47.5%	476,653
	Average/Totals	8	72.0%	61.7%	3,166,080

During the 2025 season, the ADF&G Thermal Mark Lab processed 12,118 sockeye salmon otoliths collected by ADF&G and DFO staff as part of the U.S./Canada fry-planting evaluation program. These collections came from commercial fisheries in both U.S. and Canadian waters in front of and on the Taku and Stikine Rivers over a 13-week period. The laboratory provided estimates on hatchery contributions for 63 distinct sample collections. Estimates of the percentage contribution of hatchery fish to commercial catches were provided to ADF&G and DFO fishery managers 24 to 48 hours after samples arrived at the lab.

Alsek River Area Fisheries

Although harvest sharing arrangements of Alsek River salmon stocks between Canada and the U.S. have not been specified, the 2019 PST Agreement calls for the development and implementation of cooperative abundance-based management plans and programs for Alsek River Chinook and sockeye salmon. Escapement goals are in place for Alsek River Chinook and sockeye salmon spawning at the Klukshu River, a tributary that flows into the Tatshenshini River, approximately 80 km northeast of its junction with the Alsek River. The principal escapement-monitoring tool for Chinook, sockeye, and coho salmon on the Alsek River is the Klukshu River weir, operated by DFO in cooperation with the Champagne-Aishihik First Nation since 1976. In 2013, the U.S. and Canada adopted a biological EGR of 7,500 to 11,000 sockeye salmon through the Klukshu River weir. The current biological EGR for Alsek River Chinook salmon, adopted in January 2018, is a range of 3,500 to 5,300 fish.

ADF&G manages the Alsek River commercial set gillnet fishery to achieve the agreed upon EGRs. Openings are adjusted using time and area by monitoring fishery performance data and comparing it to historical CPUE. The duration of weekly fishing periods is based on fishery performance data (i.e. CPUE). Historically, gillnets have often been restricted to a maximum mesh size of 6 inches through July 1 to minimize Chinook salmon harvest. The U.S. commercial set gillnet sockeye salmon fishery commenced on June 1 with a 48-hour opener and a 6-inch maximum mesh restriction was in effect through July 9 as a Chinook salmon conservation measure.

Pre-season expectations were for above average Chinook and sockeye salmon runs in 2025. The overall Alsek River drainage sockeye salmon run was expected to be approximately 72,400 fish, which was below the 2015–2024 average run size of approximately 79,100 sockeye salmon. The pre-season outlook for 2025 was based on a predicted run of 19,000 Klukshu River sockeye salmon derived from a Klukshu River stock-recruitment model and an assumed Klukshu River contribution rate of 23% to the total run (based on mark–recapture results from 2000–2004 and run size estimates using genetic stock identification (GSI) from 2005–2006 and 2011–2014). Principal contributing brood years for the 2025 run were 2020 and 2021. The Klukshu River escapements in 2020 and 2021 were 4,287 and 25,691 sockeye salmon respectively, compared to the 2015–2024 average of 8,774 fish.

The 2025 Alsek River set gillnet fishery opened on Sunday, June 1 (week 23). The total number of individual permits fished during the season was 8, which was below the 2015–2024 average of 12 permits. The commercial fishery was opened for a total of 56 days, which was above the 10-year average of 47 days. The overall effort in boat-days was 111% of average but there was no effort after early August (**Error! Reference source not found.**). Weekly harvests of Chinook salmon in June were near average. Weekly harvests of sockeye salmon were above average from late June through July, and the total harvest of 8,030 fish was 130% of the 2015–2024 average of 6,157 fish (**Error! Reference source not found.**). There was no effort after early August. In the past several years there has been reduced fishing effort during the coho salmon season due to economic struggles and lack of pilots to transport fish to town. In 2025, no coho salmon were harvested (**Error! Reference source not found.**).

The Klukshu River weir escapement count of 9,675 sockeye salmon was within the 7,500 to 11,000 fish escapement goal range. The Alsek River drainage escapement estimate of Chinook salmon was not available at the time of the report.

Table 9. Weekly salmon harvest and fishing effort for the Alaska Alsek River commercial set gillnet fishery, 2025.

Statistical Week	Start Date	Catch Chinook	Sockeye	Coho	Pink	Chum	Effort Boats	Days	Boat Days
23	1-Jun	19	40	0	0	0	3	2	6
24	8-Jun	37	74	0	0	0	3	2	6
25	15-Jun	89	521	0	0	0	8	2	16
26	22-Jun	39	431	0	0	0	7	2	14
27	29-Jun	9	1,780	0	0	0	6	3	18
28	6-Jul	0	2,269	0	0	0	7	3	21
29	13-Jul	1	1,899	0	0	0	5	3	15
30	22-Jun	0	642	0	0	0	3	3	9
31-41	30-Jun	0	374	0	0	0	3	36	9
Total		194	8,030	0	0	0	8	56	114
2015-2024 Avg.		166	6,157	78	0	0	12	47	103
2025 as % of Avg.		117%	130%	0%	NA	NA	67%	119%	111%

SOUTHEAST ALASKA CHINOOK SALMON FISHERY

All Gear Harvest

The SEAK Chinook salmon fishery is managed to stay within the annual all-gear PST pre-season ACL and to meet escapement goals for 6 SEAK and TBR stocks. For the 2025 season, the limit was determined from Table 1 of Chapter 3 of the Treaty, using the pre-season AI. Management of the 2025 SEAK Chinook salmon fishery was configured based on the pre-season AI of 1.10, which translated into an all-gear PST ACL of 133,500 Treaty Chinook salmon. Management plans established by the Alaska Board of Fisheries allocate the Treaty catch limit among gear types and prescribe management measures for both commercial and sport fisheries [5AAC 29.060(b) and 47.055].

Under provisions of domestic regulatory action plans to conserve SEAK and TBR wild Chinook salmon stocks, ADF&G was given direction by the 2025 Alaska Board of Fisheries, through emergency order authority, to take management actions necessary that provide conservation for SEAK and TBR wild Chinook salmon stocks while continuing to identify harvest opportunities that maintain conservation of these stocks. The conservation measures for all gear types that were implemented during 2018–2024 continued for the 2025 season, apart from the late winter troll fishery. All inside waters of the winter troll fishery closed early on March 15 but select outer coastal areas in state waters remained open from March 16–April 15. Spring troll fisheries were restricted to near terminal areas or areas on the outside coast, and summer troll fishery primary corridors and waters directly adjacent to the terminus of the Unuk, Chilkat, and Stikine rivers were closed to the retention of Chinook salmon. Retention of Chinook salmon in the purse seine fishery outside designated terminal harvest areas was delayed until July 27 and opened for a total of 3 days, with the final Chinook retention period occurring August 20–21. The initial Chinook retention period that occurred on July 27, occurred in select districts, with the southern southeast inside districts (Districts 1, 2, 6, and 7) remaining closed to Chinook retention. Drift gillnet fisheries in Districts 106 and 108 (near the mouth of the Stikine River) were delayed to the latter part of June. The drift gillnet fishery in District 111 (near the mouth of the Taku River) was subject to time, area, and/or gear restrictions through early July while the District 115 (near the mouth of the Chilkat River) drift gillnet fishery had restrictions through mid-July. Openings in terminal harvest areas were delayed until June. Similarly, retention of Chinook salmon in sport fisheries throughout the inside waters of Southeast Alaska was delayed until mid-June with longer periods of non-retention in terminal areas of the Unuk, Chilkat, and Stikine Rivers. In addition to these conservation measures, all fisheries were managed conservatively and monitored closely in-season to avoid exceeding the all-gear catch limit associated with the Table 1 allowable catches.

The total Chinook salmon harvest by all SEAK commercial fisheries was 132,767 fish and the sport fish harvest was 35,412 fish, for a total all-gear harvest of 168,178 fish (**Error! Reference source not found.** and

Gear	Total Harvest	AK Hatchery Harvest	Wild Terminal Exclusion	Alaska Hatchery Addon	Treaty Harvest
Troll	104,710	13,866	0	10,661	94,049
Sport	35,412	10,131	0	8,191	27,221
Purse Seine	16,557	12,537	0	12,282	4,275
Drift Gillnet	11,249	9,013	0	8,436	2,813
Set Gillnet	251	0	0	0	251
Total Net	28,056	21,551	0	20,718	7,339
Total All Gear	***168,178***	***45,847***	***0***	***39,570***	***128,608***

Note: Annette Island Metlakatla Indian Community tribal harvest of 2,228 Chinook salmon are included of which 1,389 were Treaty fish. This includes a total harvest of 254 troll, 946 drift gillnet, and 1,028 purse seine fish, of which 254 troll,438 drift gillnet, and 697 purse seine were Treaty fish.

Note: Terminal area harvests are included.

). This includes an all-gear harvest of 2,228 in the Annette Island Metlakatla Indian Community tribal fishery that is not managed by the State of Alaska. The all-gear harvest of Treaty Chinook salmon was 128,608 fish including 1,389 fish from the Annette Island Metlakatla Indian Community tribal fishery. The 2025 all-gear Treaty harvest of 128,608 fish was below the pre-season ACL of 133,500 fish.

Chapter 3, Paragraph 4(f) of the 2019 PST Agreement establishes a limit for the level of Treaty incidental mortality (IM) in the SEAK AABM fishery of 59,400 Chinook salmon. The 2025 Treaty IM for the SEAK AABM fishery was not available at the time of this report.

Table 10. Estimated all-gear Chinook salmon catch in 2025.

Gear	Total Harvest	AK Hatchery Harvest	Wild Terminal Exclusion	Alaska Hatchery Addon	Treaty Harvest
Troll	104,710	13,866	0	10,661	94,049
Sport	35,412	10,131	0	8,191	27,221
Purse Seine	16,557	12,537	0	12,282	4,275
Drift Gillnet	11,249	9,013	0	8,436	2,813
Set Gillnet	251	0	0	0	251
Total Net	28,056	21,551	0	20,718	7,339
Total All Gear	***168,178***	***45,847***	***0***	***39,570***	***128,608***

Note: Annette Island Metlakatla Indian Community tribal harvest of 2,228 Chinook salmon are included of which 1,389 were Treaty fish. This includes a total harvest of 254 troll, 946 drift gillnet, and 1,028 purse seine fish, of which 254 troll,438 drift gillnet, and 697 purse seine were Treaty fish.

Note: Terminal area harvests are included.

Table 11. Southeast Alaska Chinook salmon landed catch for aggregate abundance-based management fisheries of interest to the Pacific Salmon Commission (2016–2025). Values are in thousands of fish.

Year	Total Catch	Add-on and Exclusion Catch	Treaty Catch Limit[1]	Treaty Catch	Treaty Incidental Mortality	Treaty Total Mortality
2016	387.0	36.1	355.6	350.9	51.0	401.9
2017	207.1	31.6	209.7	175.4	46.6	222.0
2018	164.7	37.0	144.5	127.8	31.2	159.0
2019	175.1	34.8	140.3	140.3	56.7	197.0
2020	234.8	30.2	205.2	204.6	39.1	243.7
2021	236.2	34.1	205.2	202.1	55.5	257.6
2022	275.8	37.2	266.6	238.6	43.4	282.1
2023	235.2	32.4	206.0	202.7	45.1	247.8
2024	236.1	28.3	211.4	207.8	40.5	248.3
2025	168.2	39.6	133.5	128.6	NA	NA

[1] 2009–2018 Treaty Catch Limit determined by pre-season PSC Chinook Model AI
2019–2022 Treaty Catch Limit determined by CPUE Model
2023 Treaty Catch Limit determined by multivariate PSC Chinook/CPUE Model
2024–25 Treaty Catch Limited determined by pre-season PSC Chinook Model AI

Troll Fishery

The accounting of Chinook salmon harvested by trollers begins with the winter fishery in October and ends with the summer fishery in September. The winter troll fishery is managed for a guideline harvest level (GHL) of 45,000 non-Alaska hatchery-produced Chinook salmon, with a guideline harvest range of 43,000−47,000 non-Alaska hatchery-produced fish, plus the number of Alaska hatchery-produced Chinook salmon harvested during the winter fishery. The 2024–2025 winter troll fishery was open from October 11, 2024, through March 15 in all waters of the region, but was extended through April 15, 2025, in select outer coastal waters. The extension of the late winter fishery in select outer coastal areas provided additional harvest opportunities as compared to the 2018–2021 seasons but maintained conservation actions for SEAK and TBR wild Chinook salmon stocks. A total of 31,514 Chinook salmon were harvested. Of these, 3,476 fish (11%) were of Alaska hatchery origin, of which 2,598 fish counted toward the Alaska hatchery add-on, resulting in a Treaty harvest of 28,916 fish (Table 12).

The spring troll fisheries target Alaska hatchery-produced Chinook salmon and are conducted along migration routes for hatchery fish or close to hatchery release sites. Terminal area fisheries, which begin during the spring, occur directly in front of hatcheries or at remote release sites. While there is no ceiling on the number of Chinook salmon harvested in the spring fisheries, the take of Treaty Chinook salmon is limited according to the percentage of the Alaska hatchery fish taken in the fishery. Non-Alaska hatchery fish are counted towards the annual Treaty catch limit of Chinook salmon, while most of the Alaska hatchery (add-on) fish are not.

In 2025, spring troll fisheries occurred between May 1 and June 30. To help reduce encounters of wild SEAK and TBR Chinook salmon during May and June, spring troll fisheries located in known wild Chinook salmon migration corridors did not open. A total of 13 spring troll Chinook salmon fisheries opened, which is a 62% reduction from the number of areas opened prior to 2018 (when SEAK and TBR conservation measures began). The combined harvest for spring troll fisheries was 17,216 Chinook salmon, of which 8,829 fish (51%) were of Alaska hatchery origin and 6,673 fish counted toward the Alaska hatchery add-on, resulting in a Treaty harvest of 10,543 fish.

The 2025 summer troll fishery included a single competitive Chinook salmon retention period, from July 1–4. Following the 4-day traditional summer retention period, 3 separate allocated non-competitive limited harvest fisheries (LHF) were conducted from August 8–17, August 24–September 2, and September 11–20. These LHF were opened during the second summer coho-directed fishery to harvest the remaining portion of the troll and the annual all-gear Treaty Chinook salmon allocations. A maximum of 17, 18, and 15 Chinook salmon per permit could be retained over the 10-day LHF periods, respectively. Trollers harvested a total of 10,966 fish during the 3 LHF periods. A total of 55,717 Chinook salmon were harvested during the summer fishery, of which 1,860 fish (3%) were of Alaska hatchery origin and 1,390 fish counted toward the Alaska hatchery add-on. The resulting Treaty Chinook salmon harvest was 54,327 fish.

The total harvest for all troll fisheries in the 2025 accounting year was 104,710 Chinook salmon, of which 94,049 fish were Treaty Chinook salmon. This includes a total harvest of 254 fish in the Annette Island Metlakatla Indian Community tribal troll fishery, of which all were Treaty Chinook salmon.

Table 12. Troll fishery Chinook salmon harvest by season, 2025.

Gear/Fishery	Total Harvest	Alaska Hatchery Harvest	Alaska Hatchery Add-on	Terminal Exclusion Harvest	Total Term. Exclusion/ Alaska Hatchery Add-on	Treaty Harvest
Winter Troll	31,514	3,476	2,598	0	2,598	28,916
Spring Troll	17,216	8,829	6,673	0	6,673	10,543
Summer Troll						
First Period	44,751	1,549	1,157	0	1,157	43,594
LHF-1[a]	4,828	312	233	0	233	4,595
LHF-2[a]	4,837	0	0	0	0	4,837
LHF-3[a]	1,301	0	0	0	0	1,301
Total Summer	55,717	1,860	1,390	0	1,390	54,327
Total Traditional Troll	104,447	14,165	10,661	0	10,661	93,786
Annette Is. Troll	254	0	0	0	0	254
Confiscated	9	0	0	0	0	9
Total Troll Harvest	**104,710**	**14,165**	**10,661**	**0**	**10,661**	**94,049**

[a] The limited harvest fisheries (LHF) occurred during the second Chinook Non-Retention coho-directed fishery.

Net Fisheries

A total of 11,249 Chinook salmon were harvested in the drift gillnet fisheries in 2025, of which 9,013 fish (80%) were of Alaska hatchery origin and 8,436 fish counted toward the Alaska hatchery add-on, resulting in a Treaty harvest of 2,813 fish (Table 10). This includes a harvest of 946 fish in the Annette Island Metlakatla Indian Community tribal drift gillnet fishery of which 438 fish were Treaty Chinook salmon. A total of 16,557 Chinook salmon were harvested in the purse seine fisheries, of which 12,537 fish (76%) were of Alaska hatchery origin and 12,282 fish counted toward the Alaska hatchery add-on, resulting in a Treaty harvest of 4,275 fish. This includes a harvest of 1,028 fish in the Metlakatla Indian Community tribal purse seine fishery; of which 697 fish were Treaty Chinook salmon. A total of 251 Chinook salmon were harvested in the set gillnet fisheries, none of which were of Alaska hatchery origin, resulting in a Treaty harvest of 251 fish (Table 10).

With the exception of directed gillnet harvests of Chinook salmon in SEAK terminal area regulatory Districts 108 and 111, when those fisheries occur, as provided in the Transboundary Rivers chapter of the PST (Chapter 1), harvests of Chinook salmon in net fisheries are primarily incidental to the harvest of other species, and in 2025 only constituted a small fraction (<1.0%) of the total net harvest of all species.

Sport Fishery

The SEAK Chinook salmon sport fishery is managed under the directives of the *Southeast Alaska King Salmon Management Plan* [5 AAC 47.055]. This plan directs the management of the sport fishery based upon the domestic allocation available to the sport fishery.

Outside of the times and areas where the retention of Chinook was prohibited in the sport fishery for conservation measures, the following regulations applied throughout Southeast Alaska marine fisheries during 2025. All sport anglers had a bag and possession limit of one Chinook salmon, 28 inches or greater in length. In addition, nonresidents of Alaska had an annual limit of one Chinook salmon. Retention of Chinook salmon was prohibited for nonresident anglers between July 7 and August 3. In the Exclusive Economic Zone (3-200 miles from the shoreline within US waters) all sport anglers were subject to the regulations applied to nonresident anglers including periods of non-retention and the one fish annual limit.

The sport fishery was monitored closely throughout the 2025 season and managers were provided with weekly projections of harvest. The retention of Chinook salmon in sport fisheries throughout the inside waters of Southeast Alaska was delayed until mid-June with longer periods of non-retention in terminal areas of the Unuk, Chilkat, and Stikine Rivers. Increased harvest opportunity was provided in select areas and times where Alaska hatchery-produced salmon were returning to terminal areas.

The contribution of Alaska hatchery-produced Chinook was estimated as approximately 29% of the total harvest, an increase over the 15% estimated for 2024. The 2025 sport fishery had an estimated total harvest of 35,412 Chinook salmon, of which 27,221 fish counted as Treaty harvest (Table 10).

SOUTHEAST ALASKA COHO SALMON FISHERIES

Attachment B of the 1999 PST specifies provisions for in-season conservation and information sharing for northern boundary coho salmon. In 2025, following a bilateral review of the SEAK Troll Area 6 (Southern Inside) coho salmon CPUE data for SW 27–29, which indicated a SEAK CPUE of 19, it was determined there was an insufficient number of landings sampled to provide an adequate indicator of abundance from the SEAK troll CPUE. Alternatively, the incidental coho salmon CPUE in the Northern British Columbia (NBC) A-B Line troll pink salmon fishery was considered in the determination of the necessity of a boundary area closure. In 2025, the SW 27–29 A-B line troll fishery coho salmon CPUE of 57 was similar to CPUE in 2021 and 2023 (50 and 56, respectively) when conservation concerns were minimal and no closure of the boundary area waters was implemented. Additionally, bilateral researchers considered the SW 28–29 coho salmon harvest rates in the waters of SEAK southern District 3, directly adjacent to the Dixon Entrance boundary assessment area. With no effort in the SEAK Troll Area 6 during SW 29, CPUE from the bordering District 3 Lower Cordova Bay area was also reviewed. The 2025 SW 28–29 CPUE from southern District 3 of 89 was above 2024, the 5-year average, and 10-year average (60, 37, and 43 coho salmon per day, respectively) for the same time period. Further consideration was also given to the reduced harvest of stocks transiting Dixon Entrance during the assessment period due to the closure of the NBC directed troll coho salmon fishery in 2025. Similar to 2024, the Department of Fisheries and Oceans announced preseason that the directed troll coho salmon fishery in NBC would be closed for the season in 2025.

Considering the coho salmon CPUEs in the A-B line fishery and SEAK lower District 3, the reduced harvest of stocks transiting Dixon Entrance during the assessment period due to reduced SEAK effort, and the closure of the NBC directed troll coho salmon fishery, both parties agreed that additional boundary area restrictions, beyond the existing closure of the NBC directed troll coho salmon fishery, were not warranted.

The 2025 regionwide summer troll coho salmon fishery began by regulation on June 1 and continued in all waters of SEAK through September 20. The 2025 all-gear catch of coho salmon totaled 1.73 million fish, of which 1.35 million fish (78%) were taken in commercial fisheries (Table 13). The troll harvest of 961,619 coho salmon was 11% below the 2015–2024 average of 1.08 million fish and accounted for 71% of the commercial catch. Power troll wild coho salmon CPUEs were above the 2005–2024 average for the majority of the summer season. The overall wild stock abundance (wild troll catch divided by an index of the troll harvest rate) was estimated at 2.9 million fish, 21% below the recent 20-year average (3.8 million). The purse seine coho salmon harvest of 195,854 fish was 14% below the 2015–2024 average and accounted for 15% of the commercial catch. The drift gillnet harvest of 105,566 fish was 50% below the 2015–2024 average and accounted for 8% of the commercial catch. The set gillnet harvest of 86,790 fish in the Yakutat area was 15% below the 2015–2024 average, with 75% of the catch taken in the Situk-Ahrnklin Lagoon. The preliminary estimate of the SEAK sport catch (383,766 fish) is approximately 46% above the 2015–2024 average (263,531 fish).

Wild production accounted for 1.02 fish (76%) in the commercial catch compared with a recent 2015–2024 average of 1.24 million fish (average: 76% wild). The hatchery percentage of the commercial catch was 24%. Of the estimated hatchery contribution of 327,522 fish, over 99% originated from facilities in SEAK, with facilities located within inside waters accounting for an estimated 57% of the harvest, while hatchery runs on or near the outer coast contributed to the remaining 43%.

Preliminary all-fishery coho salmon harvest rate estimates are 32% for Auke Creek, 38% for Berners River, and 54% for Hugh Smith Lake. The all-fishery harvest rates for the Berners River and Hugh Smith Lake stocks were below the 25-year (2000–2024) average of 42% and 57% respectively. The harvest rate for Auke Creek coho salmon was the same as the 25-year average of 32%. The troll fishery harvest rate on the Hugh Smith Lake stock of 22% was below the 25-year (2000–2024) average of 25%. Troll fishery harvest rates for Auke Creek were also below average though increased from recent years. The troll harvest rate was estimated at 11% for Auke Creek compared with 25-year averages of 19%. The troll harvest rate for the Berners River stock was above average at 21% compared to the 25-year (2000–2024) average of 19%. Drift gillnet fisheries accounted for an estimated 16% of the Auke Creek return (25-year average: 9%), 13% of the Berners River return (25-year average: 20%), and 2% of the Hugh Smith Lake return (25-year average: 11%).

Estimates of coho salmon escapement were generally low to average across the region. The total escapement of 731 adult coho salmon to Hugh Smith Lake was within the biological escapement goal of 500–1,600 spawners. Coho salmon escapement on the Berners River was 3,273, below the escapement goal range of 3,600–8,100 spawners. Coho salmon escapements were within or above the respective goal ranges for four other northern Southeast Alaska stocks (Peterson Creek, Auke Creek, Tsiu River, Situk River); surveys were not able to be completed on the Tahwah River and the Chilkat River. Coho salmon escapements were below the goal range for Berners River, Montana Creek and Taku River. The combined peak count of spawners in five streams in the Sitka area of 1,755 spawners was above the escapement goal of 400–800 spawners. Similarly, the combined peak count of 19,633 coho salmon in the 14 surveyed streams in the Ketchikan area was above the escapement goal of 4,250–8,500 spawners.

Total adult production varied among the coho salmon indicator stocks monitored for CWTs. For example, at Hugh Smith Lake the estimated total run size of 1,571 adults was below the 25-year average (3,349). The total estimated adult coho salmon run size in Berners River was 6,416, which is below the 25-year average (19,672) and the second lowest total run size on record. The total coho salmon run in Auke Creek was 920, above the 25-year average (836).

Coho salmon marine survival was below average for both northern and southern indicator stocks. The preliminary southern stock Hugh Smith Lake coho salmon marine survival rate (3%) is below the 25-year average (11%) and is the lowest on record. Similarly, the marine survival for the northern stocks of Berners River (5%) and Auke Creek (10%) stocks were both lower than the 25-year mean survival rates (12% and 16%, respectively).

Table 13. Coho salmon harvest in Southeast Alaska by gear type (preliminary), 2025.

Gear Type	Harvest
Troll	961,619
Purse Seine	195,854
Drift Gillnet	105,566
Set Gillnet	86,790
Sport (marine and freshwater)	383,766
Total	1,733,595

II. PRELIMINARY 2025 CHINOOK AND COHO SALMON FISHERIES IN WASHINGTON AND OREGON

INTRODUCTION

This report describes the conduct of U.S. fisheries of interest to the PSC that occurred during 2025 in the area north of Cape Falcon, Oregon and south of the U.S./Canada border. These fisheries were conducted under pre-season management plans that were consistent with Annex IV of the Pacific Salmon Treaty (PST 2019) including obligations defined within Chapter 3 for Chinook individual stock based management regimes (ISBM) and Chapter 5 for Southern Coho Management.

An overview of the Chinook (*Oncorhynchus tshawytscha*) and Coho (*Oncorhynchus kisutch*) salmon conservation challenges facing managers during the 2025 pre-season planning process in this region is provided in the following section. The conduct of major fisheries is described, and estimates of landed catch, where available, are compared to pre-season catch limits or expectations for Chinook (Table 27) and Coho (Table 28). For perspective, landed catches for those fisheries since 2015 are also presented. Information on the occurrence of 2025 mark-selective fisheries (MSF) is presented in Table 29. Where available, preliminary estimates of the number of Chinook or Coho salmon released by anglers in 2025 MSFs are presented within some sections of this report, by area and fishery. All estimates for the 2025 fisheries are preliminary and subject to change. Estimates of spawning escapements and abundance of Coho and Chinook stocks during 2025 are not available at this time.

PRE-SEASON PLANNING

Pre-season planning for Southern U.S. (i.e., excluding Alaska) fisheries of interest to the PSC is a coordinated activity involving Tribal, State and Federal management entities, with the involvement of conservation and fishing interests. The Pacific Fishery Management Council (PFMC) conducted a series of public meetings to consider options for ocean fishery season structures while the Tribes and States conducted government-to-government meetings and State agencies conducted open public meetings throughout the region to develop and analyze alternative season structures for fisheries in the inside waters of the Columbia River, coastal Washington and Puget Sound. Participants in these various planning sessions evaluated the biological and socio-economic consequences of the alternative season structures for the outside (ocean) and inside (marine and freshwater) fisheries (Figure 38) including the anticipated impacts on U.S. southern origin stocks in fisheries conducted under the PST in Canada and Southeast Alaska. Agreement was reached on season structures expected to achieve conservation goals, domestic fishery objectives, and legal obligations, including the PST, assuming fisheries are conducted as planned and pre-season abundance estimates are accurate.

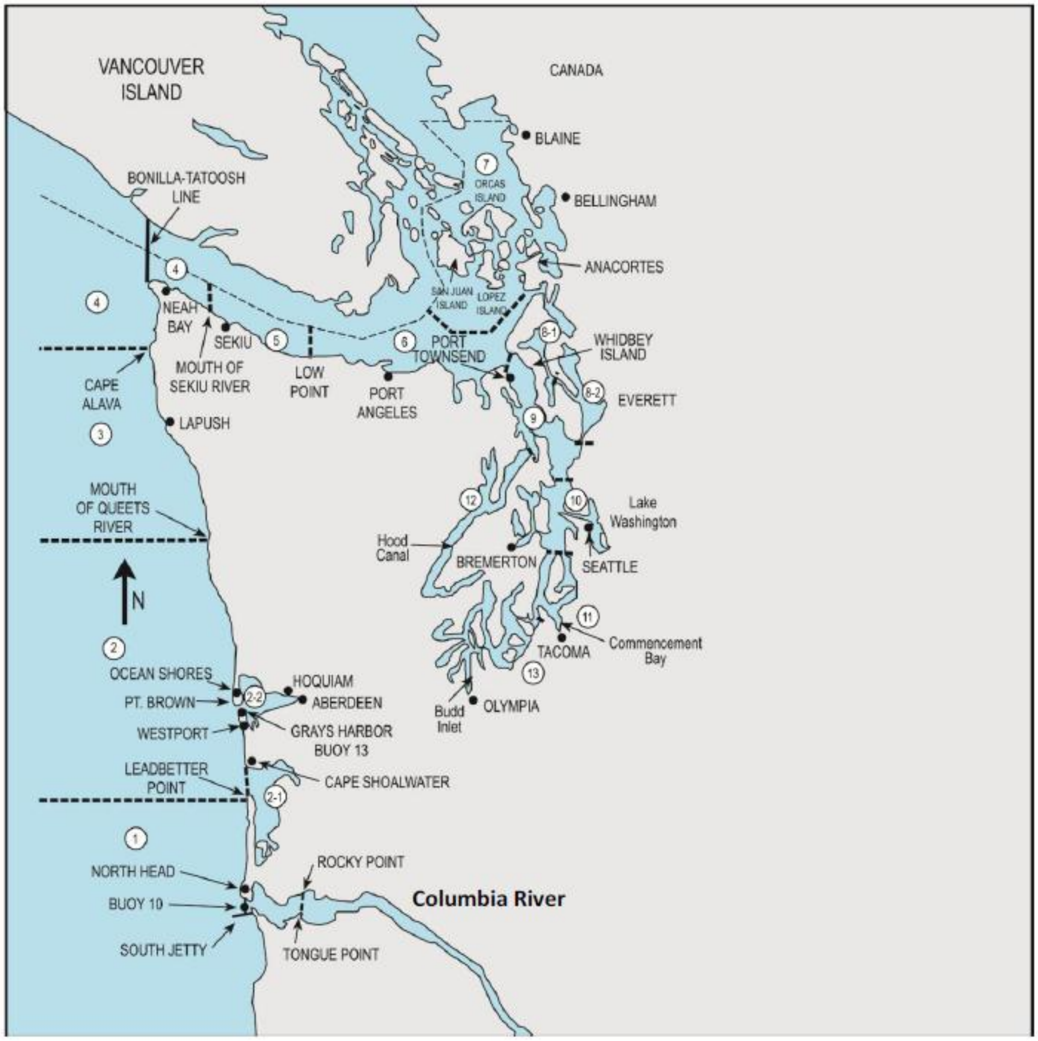


Figure 38. Map of Western Washington marine catch areas of the Washington coast (Areas 1 through 4) and Puget Sound (Areas 5 through 13) (WAC 220-22-030). Inside (Columbia River) fisheries reported in this document extend beyond the scope of this map.

<u>Chinook Salmon Management</u>

Under the 2019 Pacific Salmon Treaty Agreement, Southern U.S. fisheries are subject to the ISBM provisions of Annex IV, Chapter 3. These provisions require that Southern U.S. fisheries on Chinook stocks shall be managed to limit the total adult equivalent mortality to the limits listed in Attachment I of Chapter 3.

Conservation obligations associated with the U.S. Endangered Species Act (ESA) for threatened and endangered Chinook salmon stocks originating from Puget Sound and the Columbia River have been more constraining to Southern U.S. fisheries than PST obligations. Catch quotas for the 2025 U.S. ocean fisheries in the area north of Cape Falcon, Oregon, were defined by the impact limits on ESA-listed lower Columbia River natural tule fall Chinook stocks, ESA-listed Puget Sound Chinook stocks, and the abundance of other healthy, harvestable Chinook salmon stocks contributing to fisheries in this area. Puget Sound fishing seasons were structured to provide fishing opportunity on healthy salmon species or stocks within the impact limits defined for ESA-listed Puget Sound Chinook.

Coho Salmon Management

During the pre-season fishery planning process of 2025, Canadian fishery managers informed the U.S. that the Interior Fraser management unit was again expected to be in the *low* categorical abundance status, and U.S. fisheries were constrained to ensure that the exploitation rate on this management unit did not exceed 10.0% as defined by the PST Southern Coho Management Plan. Of the U.S. natural spawning Coho management units (MUs) managed under the PST, no stocks were forecasted to be in *low* status, however, the Queets, Snohomish, Hood Canal, and Strait of Juan de Fuca MUs were predicted to be in *moderate* status, while the Grays Harbor, Hoh, Quillayute, Skagit, and Stillaguamish MUs were forecasted to be in *abundant* status.

The impacts of planned southern U.S. fisheries on natural Coho stocks, seasons, and catch limits were predicted using the Fishery Regulation Assessment Model (FRAM; https://framverse.github.io/fram_doc/index.html). The total exploitation rate on the Interior Fraser Coho management unit was predicted to be 9.89% in Southern U.S. fisheries. Seasons and Coho quota levels for U.S. ocean fisheries were constrained by the management objective of ESA-listed lower Columbia River natural Coho. Limits to fisheries in marine areas within northern Puget Sound and the Strait of Juan de Fuca were likewise constrained by management objectives reflecting rebuilding plans for some Puget Sound natural Coho stocks.

NORTH OF CAPE FALCON OCEAN FISHERIES

Details regarding North of Cape Falcon ocean salmon fishing plans were reported in Preseason Report III, published by the PFMC in April 2025 at:
https://www.pcouncil.org/documents/2025/04/2025-preseason-report-iii.pdf/.

Fisheries in this area are managed to meet conservation objectives for ESA-listed stocks, natural stocks and brood stock goals for hatchery stocks. Within these stock management objectives, ocean fishing seasons are defined that meet legal requirements of Tribal treaties and allocations between Non-Tribal troll and sport fisheries. Ocean fishery seasons are also constructed to ensure a balance of opportunity for harvest with the inside fisheries. Lower Columbia River hatchery Coho and Columbia River fall Chinook have historically been the major stocks contributing to catches of ocean fisheries in the North of Cape Falcon area.

Chinook and Coho salmon catch quotas were established for the 2025 ocean Tribal, Non-Tribal troll, and sport fisheries. Ocean fishery quotas for Chinook salmon were defined by exploitation rate limits on several ESA-listed Puget Sound Chinook stocks as well as the total exploitation rate limit of 41% on ESA-listed lower Columbia River natural tule fall Chinook stocks in all fisheries.

Non-Tribal Troll Fishery

Pre-season quota levels for the Non-Tribal troll fisheries were 61,250 Chinook and 8,280 Coho with a clipped adipose fin, hereinafter referred to as marked. The preliminary estimate of Non-Tribal harvest in the 2025 North of Falcon troll fishery is 60,700 Chinook (99% of the pre-season coast-wide quota) and 8,200 Coho (99% of the pre-season coast-wide quota). Fishers harvested 36,500 Chinook in the May 1 – June 29 spring fishery, and the remaining 24,200 Chinook were harvested in the summer all-species fishery between July 1 and September 11, when the fishery was closed by in-season action. All Coho were harvested during the summer all-species fishery, which was conducted as Coho mark-selective on all open days.

Tribal Troll Fishery

The Makah, Quinault, Quileute, and Hoh Tribes opened their May-June Chinook Tribal Troll fisheries on May 1. The May 1 through June 30 Chinook Treaty Troll fishery harvested 9,608 Chinook salmon, or 42.7% of the 22,500 Chinook sub-quota. There were 266 landings during the May-June portion of the fishery.

The Makah, Quinault, Quileute and Hoh Tribes opened their all-species Tribal Troll fisheries on July 1. The all-species portion of the fishery ran from July 1 through September 30.
The fishery harvested 22,983 Chinook and 36,916 Coho, or 64.9% of the 35,392 Chinook sub-quota and 98.4% of the 37,500 Coho quota. The summer Chinook sub-quota was 35,392, which included the original sub-quota (22,500 Chinook) plus the remaining spring quota which was rolled over on an impact-neutral basis (12,892 Chinook). There were 374 landings during the all-species portion of the fishery.

Overall, the 2025 Treaty Troll fishery harvested 72.4% of the 45,000 Chinook quota and 98.4% of the 37,500 Coho quota. The total ocean salmon harvest for the 2025 Treaty Troll fishery was 32,591 Chinook and 36,916 Coho across 640 total landings. The majority of the Treaty Troll catch was taken in Area 4, with smaller amounts taken in Areas 4b, 3, and 2. Coho landings were highest in August accounting for 43.8% of the overall catch, followed by September at 35.8%. Chinook effort was highest in July, which accounted for approximately 50.6% of the overall Chinook catch.

Ocean Sport Fisheries

Pre-season quotas for the Washington coastal sport fishery (Ocean Areas 1 through 4) were 53,750 Chinook and 99,720 marked Coho. Preliminary total catch estimates for the ocean sport fisheries north of Cape Falcon were 32,200 Chinook (60% of the pre-season coast-wide quota) and 94,300 Coho (95% of the pre-season coast-wide quota). A description of the season structure and catches by management area follows.

Columbia River Area (including Oregon)

Salmon sport fishing in Ocean Area 1 (Columbia River Area) opened for all species on June 25. A pre-season quota of 49,860 marked Coho and a guideline of 16,600 Chinook were in place. The season opened with a limit of no more than one Chinook and a two-fish daily limit. A Coho sport MSF was conducted in Area 1 on all open days (June 25 – August 18 and August 30) in 2025. Preliminary estimates of Coho encounters (retained and released) and mark rate in the Area 1 Coho MSF are shown in the table below. The fishery closed initially after August 18, prior to the scheduled closing date of September 30, upon projected attainment of the marked Coho quota; sufficient marked Coho quota remained for the fishery to reopen for a single day on August 30. The catch estimates for Area 1 were 7,400 Chinook (45% of the guideline) and 47,800 Coho (96% of the pre-season quota). The Chinook minimum size limit was 22 inches, and the Coho minimum size limit was 16 inches with a sub-area closure in the Columbia Control Zone. A preliminary overall legal-sized Coho mark rate of 68% was calculated from bias corrected in-season data collected in this area.

Table 14. Preliminary estimates of Coho encounters (retained and released) and mark rate in the Area 1 Coho sport MSF, June 25 – August 30, 2025.

Coho retained	Coho released	Total encounters	Mark rate
47,800	22,500	70,300	68%

Westport, Washington

Salmon sport fishing in Ocean Area 2 (Westport, WA) opened for an all-species-except-coho season June 21-28 and then for all species on June 29. A pre-season quota of 36,900 marked Coho and a guideline of 22,270 Chinook were in place. The all-species-except-coho season opened with a limit of one salmon while the all-species season included a limit of no more than one Chinook and a two-fish daily limit. A Coho sport MSF was conducted in Area 2 on all open days of the all-species season (June 29 – September 15) in 2025. Preliminary estimates of Coho encounters (retained and released) and mark rate in the Area 2 Coho MSF are shown in the table below. The catch estimates for Area 2 were 14,000 Chinook (63% of the pre-season guideline) and 33,700 Coho (91% of the pre-season quota). The Chinook minimum size limit was 22 inches, and the Coho minimum size limit was 16 inches. A preliminary overall legal-sized Coho mark rate of 53% was calculated from bias corrected in-season data collected in this area.

Table 15. Preliminary estimates of Coho encounters (retained and released) and mark rate in the Area 2 Coho sport MSF, June 29 – September 15, 2025.

Coho retained	Coho released	Total encounters	Mark rate
33,700	29,900	63,600	53%

La Push, Washington

Salmon sport fishing in Ocean Area 3 (La Push, WA) opened for an all-species-except-Coho season June 21 – July 3 and then for all species on July 4. A pre-season quota of 2,590 marked Coho and a guideline of 2,280 Chinook were in place. The all-species-except-Coho season opened with a limit of one salmon while the all-species season included a two-fish daily limit.

A Coho sport MSF was conducted in Area 3 on all open days of the all-species season (July 4 – September 1) in 2025. Preliminary estimates of Coho encounters (retained and released) and mark rate in the Area 3 Coho MSF are shown in the table below. The fishery closed after September 1, prior to the scheduled closing date of September 15, upon projected attainment of the marked Coho quota. The catch estimates for Area 3 were 1,200 Chinook (55% of the overall guideline) and 2,600 Coho (100% of the pre-season quota). The Chinook minimum size limit was 24 inches, and the Coho minimum size limit was 16 inches. A preliminary overall legal-sized Coho mark rate of 48% was calculated from bias corrected in-season data collected in this area.

Table 16. Preliminary estimates of Coho encounters (retained and released) and mark rate in the Area 3 Coho sport MSF, July 4 – September 1, 2025.

Coho retained	Coho released	Total encounters	Mark rate
2,600	2,800	5,400	48%

Neah Bay, Washington

Salmon sport fishing in Ocean Area 4 (Neah Bay, WA) opened for an all-species-except-Coho season June 21 – July 3 and then for all species on July 4. A pre-season quota of 10,370 marked Coho and a guideline of 12,600 Chinook were in place. The all-species-except-Coho season opened with a limit of one salmon while the all-species season included a two-fish daily limit.

A Coho sport MSF was conducted in Area 4 on all open days of the all-species season (July 4 – September 6 in 2025). Preliminary estimates of Coho encounters (retained and released) and mark rate in the Area 4 Coho MSF are shown in the table below. The fishery closed after September 6, prior to the scheduled closing date of September 15, upon projected attainment of the marked Coho quota. The catch estimates for Area 4 were 9,500 Chinook (75% of the guideline) and 10,100 Coho (98% of the pre-season quota). The Chinook minimum size limit was 24 inches, and the Coho minimum size limit was 16 inches. A preliminary overall legal-sized Coho mark rate of 52% was calculated from bias corrected in-season data collected in this area.

Table 17. Preliminary estimates of Coho encounters (retained and released), in the Area 4 Coho sport MSF, July 4 – September 6, 2025.

Coho retained	Coho released	Total encounters	Mark rate
10,100	9,300	19,400	52%

NORTH OF CAPE FALCON INSIDE FISHERIES

WASHINGTON COASTAL RIVER FISHERIES

<u>North Washington Coastal Rivers</u>

Net and sport fisheries directed at salmon in this region were implemented based upon pre-season, Tribal-State agreements and were subject to in-season adjustments. Tribal, primarily net, harvest includes non-selective catch from the Tsoo-Yess, Quillayute, Hoh, Queets, and Quinault Rivers. The 2025 Tribal net fisheries in north coastal rivers harvested an estimated 11,828 Chinook salmon and 26,251 Coho salmon through mid-November 2025.

The Quileute Tribal In-River Gillnet Fishery was closed weeks 13 and 14 (3/24/2025 through 4/6/2025). August 4th through October 5th, due to low flows, gear restrictions were implemented. From October 20th through November 23rd, fishing days were reduced to one day per week. Due to observed low-flow conditions in the fall and associated fishery concerns, an emergency regulation reduced net fishery days on the Quinault River by 50% from October 12 through October 29.

Pre-season planning of recreational salmon fisheries in the Hoh River included open salmon fishing from September 16 through November 30, with a daily limit of 3 (only 2 adult), of which only one could be a Chinook, and open December 1 through December 15 with a daily limit of 1 Coho.

The Tsoo-Yess River was open for 3 days per week starting October 3 through October 5, for 6 days per week starting October 7 through November 14, and closed on November 14.

Recreational fisheries conducted during 2025 in the Quillayute River systems included mark-selective fisheries targeting hatchery Chinook and Coho. On the Quillayute and Sol Duc rivers, pre-season plans established open recreational salmon fishing from February 1 through March 31, with a daily limit of 4 (only 2 adults), requiring the release of wild adult Chinook, wild adult Coho, and Sockeye. Salmon fishing from May 1 through August 31 allowed a daily limit of 2 requiring the release of wild adult Chinook, wild adult Coho and Sockeye. Salmon fishing from September 1 through December 15 allowed a daily limit of 4 with up to 3 adults allowed but no more than 1 may be either a wild adult Chinook or wild adult Coho, release Sockeye, and from September 1 through September 15 all wild adult Coho must be released. Recreational fishing on the Quillayute River was closed September 1-2, 8-9, and 15, 22, 29, and October 6 and 13 to avoid gear conflict with treaty fishing.

For the Bogachiel, Calawah, and Dickey rivers, pre-season planning set open recreational salmon fishing from July 1 through August 31 with a daily limit of 2 requiring the release of wild adult Chinook and wild adult Coho. Salmon fishing was planned from September 1 through December 15 with a daily limit of 3 fish but only 2 could be adults and no more than 1 could be a wild salmon, and required the release of all Sockeye. From September 1 through September 15, all wild Coho were required to be released.

Pre-season plans for recreational salmon fisheries in the Quillayute basin were modified by an emergency regulation for steelhead conservation that closed the Quillayute River system to all fishing April 1 through April 30, including the salmon fishery on the Quillayute and Sol Duc rivers.

Pre-season planning set non-treaty recreational salmon fisheries in the Queets River system to open September 1 through September 30 with a daily limit of 3, of which only 2 could be adults, release all Chinook and wild Coho. Sport salmon fisheries in the upper Quinault River were scheduled for July 1 through November 30, allowing harvest of 2 adults. Harvest or impact estimates for these fisheries are not available at the time of this report.

Grays Harbor, Washington

Harvest numbers reported for Grays Harbor include catch from both the Humptulips and Chehalis rivers through mid-November 2025. The non-selective Tribal net fisheries in Grays Harbor harvested an estimated 692 Chinook salmon and 12,467 Coho salmon.

The Non-Tribal commercial fishery in the northern portion of Grays Harbor near the Humptulips River (Area 2C) was not open in 2025. In the Non-Tribal commercial gillnet fishery in Areas 2A and 2D, there was 1 marked Chinook salmon (mark-selective fishery), 639 Coho, and 7,110 Chum harvested.

Sport salmon fisheries in the marine waters of Grays Harbor, catch area 2-2, were scheduled in the North Bay from August 1 to September 15 with a daily limit of one salmon and required the release of wild Chinook and wild Coho. Recreational salmon fisheries were scheduled in the East Bay area from September 16 through November 30 with a two fish limit and required the release of all Chinook.

Sport salmon fisheries in the Humptulips River were scheduled from September 1 through December 31, allowing the retention of one adult salmon and required the release of wild Chinook and wild Coho for the duration of the fishery. Beginning October 25, all Chinook were required to be released.

Sport salmon fisheries opened on September 16 in the lower Chehalis River mainstem and on October 1 in tributaries and the upper river. These fisheries were scheduled to be open through December 31, allowing two adults to be retained but required the release of adult Chinook through October. Beginning on November 1, the daily limit was reduced to one adult and required the release of all Chinook. Estimates of total recreational catch in these fisheries are not available at the time of this report.

COLUMBIA RIVER FISHERIES

Tribal and Non-Tribal net and sport salmon fisheries were implemented in the winter/spring (January-June 15), summer (June 16-July) and fall (August-December) management periods. All fisheries were constrained by impacts on ESA-listed stocks. Winter/spring fisheries were primarily constrained by impacts on ESA-listed upper Columbia River spring Chinook and Snake River spring/summer Chinook. Summer season fisheries were constrained by harvest limits on upper Columbia summer Chinook and impacts to ESA-listed Sockeye. Fall fisheries were constrained by harvest limits on Upriver Bright fall Chinook and impacts to ESA-listed lower Columbia River tule fall Chinook, Snake River fall Chinook, and upriver summer Steelhead.

Columbia River salmon fisheries are developed and regulated to meet conservation standards. Fisheries are actively managed to operate within the impact limits set for ESA-listed stocks, meet the objectives for healthy Columbia River natural stocks, and ensure broodstock needs are met for hatchery salmon. Mainstem Columbia River fisheries are also developed and managed to remain within the requirements of the 2018–2027 *US v. Oregon* Management Agreement (MA), which includes Treaty Tribal/Non-Treaty sharing agreements. All data reported here are preliminary and subject to change. The following section includes harvest estimates from Columbia River fisheries that are considered to be of interest to PSC; therefore, the data may not match other reports that include total harvest.

Winter-Spring Fisheries

Non-Tribal Net

The mainstem winter/spring commercial fishery operated under MSF regulations during 2002-2016, 2022, and 2024. As a result of guidance provided by the Oregon and Washington Fish and Wildlife commissions, winter/spring non-tribal commercial salmon fisheries did not occur in the mainstem Columbia River from 2017-2021, 2023, and 2025. Commercial non-MSF during the winter/spring timeframe did occur in off-channel areas (Select Areas) in the Columbia River estuary but are not reported in this document.

Sport

Mainstem recreational MSFs for spring Chinook began in 2001. In 2025, areas downstream of Bonneville Dam were open from January 1-April 6, April 11-13, April 15-17, and May 9-June 15 for hatchery Chinook retention. Catch estimates for this area totaled 10,086 hatchery adult spring Chinook kept and 1,576 non-adipose fin clipped Chinook released (86% of the handled Chinook were kept). From Bonneville Dam upstream to the Washington-Oregon state line, Chinook retention was open April 1-26, May 10-13, and May 22-June 15, with 913 hatchery adult spring Chinook kept and 403 non-adipose fin clipped Chinook released (69% of handled Chinook were kept). The initial Snake River fishery structure (Washington waters of the lower Snake River) included one specific catch area open on a days-per-week rotation from May 6-16. The fishery was extended May 20-23 and June 3-6 with open days split between two areas on a days-per-week rotation. Catch in the Snake River fishery totaled 768 hatchery adult spring Chinook kept

(82% of handled Chinook kept) and 167 released (164 non-adipose fin-clipped and 3 adipose fin-clipped released). Fisheries also occurred in tributaries but are not reported in this document.

Tribal

Tribal mainstem winter/spring fisheries typically occur from January 1 through June 15. Tribal mainstem fisheries are not mark-selective. Tribal fisheries are primarily conducted in the mainstem Columbia River from Bonneville Dam upstream to McNary Dam (Zone 6). Some additional harvest occurs just downstream of Bonneville Dam in platform and hook-and-line fisheries. Spring season fisheries may include three fishery sectors, a ceremonial permit gillnet fishery, a platform and hook-and-line fishery. In some years a commercial gillnet fishery has been implemented if abundances make it feasible (during winter and periodically in the spring, after ceremonial needs have been met).

During 2025, the platform and hook-and-line fishery was open for subsistence fishing in the winter/spring period through June 15. Commercial sales of platform and hook-and-line caught fish were not authorized in 2025. There was no commercial gillnet fishing in the spring management period. Preliminary harvest estimates from the combined spring season fisheries totaled 10,169 upriver spring Chinook (includes a small number of fish harvested downstream of Bonneville Dam). Tribal harvest in tributaries is not included in this report.

Summer Fisheries

Non-Tribal Net

As a result of direction from the Oregon and Washington Fish and Wildlife commissions, non-Treaty commercial fisheries did not occur in the summer management timeframe. Commercial non-MSF during the summer timeframe did occur in off-channel areas (Select Areas) in the Columbia River estuary but are not reported in this document.

Sport

The summer recreational Chinook MSF was closed June 16 – July 11 but opened July 12 – July 19 from the Astoria/Megler Br. upstream to Bonneville Dam with 461 fin-clipped hatchery adult Chinook kept and 730 non-adipose fin clipped Chinook released (39% of handled Chinook were kept). The summer recreational Chinook MSF from Bonneville Dam to the Snake River was open July 12-19 and from the Snake River to Priest Rapids Dam was open June 16-30 (seven days-per-week) and from July 16-31 on a days-per-week rotation with a combined estimate of zero Chinook kept and 184 released. The MSF above Priest Rapids Dam (including sub-area closures) was open July 16 – August 31 on a days-per-week rotation with 1,101 hatchery adult Chinook kept, 400 adult Chinoook released (73% of handled Chinook were kept). In-river allocation in Washington policy dictate that a substantial share of the non-treaty harvestable catch be provided to fisheries upstream of Priest Rapids Dam.

Tribal

Summer season Tribal fisheries occurred from June 16 through July 31. Tribal mainstem fisheries are not mark-selective. Tribal fisheries are primarily conducted in the mainstem Columbia River from Bonneville Dam upstream to McNary Dam (Zone 6). Some additional harvest occurs just downstream of Bonneville Dam in platform and hook-and-line fisheries. There were seven weekly commercial gillnet fishing periods conducted from June 17 – July 31. Platform and hook-and-line fisheries also occurred throughout the season. Fish were allowed to be sold commercially during the entire summer season. Tribal fisheries within the mainstem harvested a total of 7,964 upper Columbia summer Chinook.

Fall Fisheries

Non-Tribal Net

Fall season mainstem fisheries are typically categorized into early- and late-fall seasons. The early-fall season encompasses the month of August and in some years, early September, whereas the late-fall season generally begins in mid-September and may continue through October. Time, area, and gear restrictions were in place for fall season commercial gillnet fisheries. Fall gillnet fisheries are not mark-selective for Chinook.

Limited MSFs using seines (beach and purse) and pound nets targeting Chinook and Coho were conducted using Individual Fishery Quotas (IFQs) and were limited to six participants. A mark-selective Coho tangle net fishery (non-MSF for Chinook) also occurred in 2025.

The early fall season consisted of ten nine-hour gillnet fishing periods between August 6-29 in commercial Zones 4-5 (Warrior Rock to Beacon Rock) and resulted in 24,537 Chinook and 904 Coho harvested. The late-fall season gillnet fishery consisted of three fishing periods 10 hours in duration from September 7-24 in the same area and resulted in 12,733 Chinook and 2,192 Coho harvested. The MSF seine and pound net fisheries were open to fishing from August 4 – October 24 on limited weekdays in commercial Zones 1-3 and resulted in 309 kept adult hatchery Chinook, 173 released non-adipose clipped Chinook, 453 kept hatchery Coho, and 432 released non-adipose clipped Coho (64% and 51% of handled Chinook and Coho, respectively, were kept). The tangle net fishery (Coho MSF) occurred September 16 – October 31 in commercial Zones 1-3 that consisted of 34 periods and resulted in 1,752 Chinook kept, 6,115 hatchery Coho kept, and 3,862 non-adipose Coho released (resulted in 61% of handled Coho being kept). Commercial non-MSF during the fall timeframe did occur in off-channel areas (Select Areas) in the Columbia River estuary but are not reported in this document.

Sport

Fall season recreational fisheries are mark-selective for Coho downstream of the Hood River Bridge and occasionally include some mark-selective periods for Chinook in the Buoy 10 area primarily and less frequently in the 69-mile stretch of the lower Columbia River between the Buoy 10 fishery and Warrior Rock, (near the mouth of the Lewis River). The only MSF for Chinook in the mainstem Columbia River during 2025 occurred in the Buoy 10 fishery from August 7-25.

The Buoy 10 fishery was open August 1 – December 31. Chinook retention was allowed August 1 – September 6 and September 18 – 21 and the Coho MSF remained open throughout the entire fall season. The Buoy 10 fishery included the area from Rocky Point/Tongue Point upstream to the west Puget Island line for the purpose of Chinook harvest management. Additional regulations for the Buoy 10 fishery included minimum size limits for Chinook (>24-inches) and Coho (≥16-inches) August through September. Released Chinook typically consist of fish that did not meet the minimum size requirement, unmarked fish released during MSF period, and any voluntary releases of legal Chinook throughout the season. Buoy 10 catches during the Chinook MSF included 17,086 hatchery Chinook (15,841 released Chinook) and resulted in 52% of handled

Chinook being kept; the remaining season included 15,532 Chinook kept and 4,485 released Chinook. The Buoy 10 catches during the Coho MSF included 43,045 hatchery Coho kept (28,276 released Coho) and resulted in 60% of Coho handled being kept.

The lower Columbia River (LCR) mainstem sport fishery from the west Puget Island line upstream to Warrior Rock was open August 1 – September 6, September 18-21 for Chinook and Coho retention, and October 1 – December 31 coho retention only. The LCR fishery from Warrior Rock upstream to Bonneville Dam was open August 1 – September 21, for Chinook and Coho retention, and October 1 – December 31 coho retention only. The LCR fisheries were mark-selective for Coho but not mark-selective for Chinook. The LCR sport fishery included 20,932 kept adult Chinook (3,113 released) and 3,446 kept hatchery Coho (1,209 released); this resulted in 74% of Coho handled being kept.

The mainstem sport fishery from Bonneville Dam to the Highway 395 Bridge (near Pasco, Washington) was open August 1 – December 31 and included MSF regulations for Coho downstream of the Hood River Bridge. Chinook retention was allowed August 1 through September 21 with non-mark selective regulations. Adult catch estimates for Bonneville Dam to Highway 395 Bridge totaled 9,752 fall Chinook (3,039 released) and 4,277 Coho (789 released); this resulted in 84% of Coho handled being kept. Additional fisheries occurred on the Columbia River, including tributaries, Hanford Reach area (downstream of Priest Rapids Dam), and in the Snake River, but are not reported in this document.

Tribal

Fall season Tribal fisheries occur from August 1 through December 31. Tribal fisheries are not mark-selective. Tribal fisheries are primarily conducted in the mainstem Columbia River from Bonneville Dam upstream to McNary Dam (Zone 6). Platform and hook-and-line fisheries will remain open through December 31.

The Tribal commercial gillnet fishery consisted of ten weekly fishing periods from August 18 through October 25 (44 days). Commercial sales of platform and hook and line caught fish were allowed throughout the fall management period. Preliminary harvest estimates for all fall season fisheries total 117,590 adult fall Chinook and 8,019 adult Coho; however, some additional fish may be landed in the ongoing platform fisheries. Harvest estimates reported herein do not include catch from tributary fisheries.

PUGET SOUND FISHERIES

Puget Sound marine fisheries of interest to the Pacific Salmon Commission were regulated to meet conservation and allocation objectives for Chinook, Coho, Chum, and Sockeye salmon stocks, per Tribal-State agreement. For Puget Sound Chinook listed under the ESA, fisheries were managed according to the Puget Sound Chinook Harvest Management Plan (PSIT and WDFW 2010). This management plan defines limits to total exploitation rates for natural stocks and was determined by the National Marine Fisheries Service (NMFS) to be consistent with requirements specified under the ESA 4(d) Rule.

Release requirements were applied to many sport and net fisheries for Chinook, Coho, and Chum salmon -- the latter to protect ESA-listed Hood Canal and Strait of Juan de Fuca summer Chum.

Puget Sound marine fisheries were constrained by the need to meet management objectives for ESA-listed Puget Sound Chinook and Interior Fraser Coho. The primary constraining Puget Sound Chinook stocks during 2025 pre-season planning included Nooksack Spring, Skagit Summer/Fall, Stillaguamish, Snohomish, and Skokomish Chinook. Hood Canal and Interior Fraser were the primary Coho management units of concern for developing fisheries in the Strait of Juan de Fuca, San Juan Islands, and Puget Sound.

<u>Strait of Juan de Fuca Sport</u>

Marked Chinook retention was allowed for sport fishing in marine salmon management Area 5 in the winter/spring season from April 14 through April 30, 2025. Sport fishing regulations allowed retention of marked Chinook in Area 5 in the summer season daily from July 1 through August 12, 2025. Sport fishing regulations allowed retention of marked Chinook from July 1 through August 10 in Area 6. Marked Coho retention was also permitted from July 1 through September 26 in Area 5 and Area 6. Unmarked Coho retention was permitted in Area 5 from September 27 – October 9 and in Area 6 from September 27 – October 15. Dungeness Bay was open for marked Coho retention during the month of October. Preliminary estimates of Chinook and Coho encounters (retained and released fish) and the legal-size mark rate in the Area 5 and Area 6 sport MSF are presented in the following tables.

Table 18. Preliminary estimates of **<u>Chinook</u>** retained, released (legal and sub-legal size), and the legal-size mark rate in the **<u>Area 5</u>** sport **MSF**, July 1 – August 12, 2025.

Chinook retained	Chinook released	Total encounters	Mark % (legal size)
4,040	16,404	20,444	59%

Table 19. Preliminary estimates of **<u>Coho</u>** retained, released (legal and sub-legal size), and the legal-size mark rate in the **<u>Area 5</u>** sport **MSF**, July 1 – September 26, 2025.

Coho retained	Coho released	Total encounters	Mark % (legal size)
18,287	29,623	47,910	41%

Table 20. Preliminary estimates of **<u>Chinook</u>** retained, released (legal and sub-legal size), and the legal-size mark rate in the **<u>Area 6</u>** sport **MSF**, July 1 – August 10, 2025.

Chinook retained	Chinook released	Total encounters	Mark % (legal size)
4,119	12,119	16,238	68%

Table 21. Preliminary estimates of **<u>Coho</u>** retained, released (legal and sub-legal size), and the legal-size mark rate in the **<u>Area 6</u>** sport **MSF**, July 1 – August 10 and August 16 – September 26, 2025.

Coho retained	Coho released	Total encounters	Mark % (legal size)
3,457	4,204	7,661	51%

There were approximately 6,900 Coho retained during the September 27 – October 9 Area 5 and September 27 – October 15 Area 6 non-selective Coho fishery. A detailed report of this summer period sport fishery, including estimated catch, effort and other results of the sampling and monitoring programs, will be available from the Washington Department of Fish and Wildlife in early 2026.

Strait of Juan de Fuca Tribal Troll (Area 4B, 5, 6, and 6C)

During the winter Tribal troll fishery in Areas 4B, 5, 6, and 6C (November 1, 2024 – April 15, 2025), 6,900 Chinook and zero Coho were caught. In the summer Tribal troll fishery in Areas 5, 6, and 6C (June 1 – September 30, 2025), 1,200 Chinook and 300 Coho were caught. The Tribal catch estimates from this area do not include catch from Area 4B during the May-September PFMC management period, which have been included in the North of Cape Falcon Tribal ocean troll summary.

Strait of Juan de Fuca Tribal Net

Preliminary estimates of the 2025 catch in the Strait of Juan de Fuca Tribal net fisheries are 800 Chinook and 1,300 Coho salmon. There were no Non-Tribal net fisheries in the Strait of Juan de Fuca in 2025.

San Juan Islands Net (Areas 6, 7, and 7A)

Preliminary estimates of the 2025 catch in the San Juan Island net fishery directed at Sockeye salmon totaled 28 Chinook and 1,707 (marked and unmarked combined) Coho salmon in the Non-Tribal fishery. Tribal fishery landings from this area for all gear types totaled 6,000 Chinook and 4,300 Coho.

San Juan Islands (Area 7) Sport

Marked Chinook retention was allowed in Area 7 during the summer season. The summer fishery was originally scheduled for one Thursday - Saturday opening, but was extended based on in-season management for two additional days over the next three weeks, running July 17 - 19, July 25, and August 1. The southern Rosario Strait and eastern portions of Area 7 were closed for the season to protect Puget Sound Chinook salmon. Additional sub-area closures are described in the 2025-26 Washington State Sport Fishing Rules Pamphlet. The tables below present estimated Chinook and Coho encounters (retained and released) of legal-size fish in the Area 7 sport mark-selective fishery. The Coho MSF started on August 1 and continued through September 6, 2025. This fishery transitioned to non-selective September 7-30. Preliminary catch estimates for the non-selective portion of the fishery are 10,146 landed Coho.

Table 22. Preliminary estimates of **Chinook** retained, released (legal and sub-legal size) and the legal-size mark rate in the **Area 7** sport **MSF**, July 17-19, July 15, and August 1, 2025.

Chinook retained	Chinook released	Total encounters	Mark % (legal size)
1,773	2,810	4,581	75%

Table 23. Preliminary estimates of **Coho** retained, released (legal and sub-legal size) and the legal-size mark rate in the **Area 7** sport **MSF**, July 17-19, July 15, and August 1-September 6, 2025.

Coho retained	Coho released	Total encounters	Mark % (legal size)
1,611	2,599	4,206	39%

Puget Sound Marine Sport (Areas 8-13)

Mark-selective sport Chinook fisheries were conducted in Area 10 (Seattle-Bremerton), Area 11 (Tacoma-Vashon Island), and Area 13 (South Puget Sound) during the winter (October 1, 2024 – April 30, 2025). Additionally, Chinook MSFs occurred during the summer season Area 9

(Admiralty Inlet), Area 10, Area, Area 12, and Area 13. Specific dates of these winter and summer MSF seasons, by area, are shown in the table below.

Table 24. Puget Sound Chinook sport MSF conducted in marine areas during 2025.

Areas	Season
9	Summer: July 17 –19; July 25, 2025.
10	Winter: April 2 – April 6, 2025. Summer: July 17 – 19; July 24 – 26; July 31 – August 2; August 9; August 16; August 23, 2025. Sinclair Inlet: July 16 – September 30, 2025.
11	Winter: April 2 – April 25, 2025. Wednesday through Saturdays. Summer: June 4 – 7; June 11 - 14; June 18 – 30; July 17 – 19; July 24 – 31; August 1 – August 24, 2025.
12	Summer: July 1 – September 30, 2025 (South of Ayock Point).
13	Year round: January 1 – December 31. Closed May 16 – 19, 2025.

Post-season reports detailing results of these Chinook MSFs, including estimates of retained and released encounters, effort and mark rates from sampling and monitoring programs, will be available from the Washington Department of Fish and Wildlife in the Spring of 2026.

Mark-selective sport fisheries directed at marked Coho were conducted in the following marine areas during 2025: Areas 5 from July 1 – September 26; Area 6 from July 1 – August 1 and August 10 – September 26; Area 7 from July 18 – 19, July 25, and August 1 - September 6; Area 9 from July 17 – 19, July 25, and August 1 – September 30; Area 12, South of Ayock from July 1 – September 30, North of Ayock from July 11 – September 30, 2025; and in Area 13 from January 1 – May 15, and May 20 - December 31. Marked and unmarked Coho retention was permitted in Area 5 from September 27 - October 9; Area 6 from September 27 – October 15; Area 7 from September 7 – 30; Area 8-1 from August 16 – October 12; Area 8-2 from August 1 – September 24; Tulalip Bay from May 24 – September 23 (on Fridays through noon on Mondays only); in Area 10 from June 1 – November 15; and in Area 11 from June 4 – 21 (Wednesdays through Saturdays), June 22 – 30, July 17 – 19, July 24 - 31, August 1 – September 30.

<u>Puget Sound Marine Net (Areas 8-13 & 7B-D)</u>
To achieve conservation objectives for natural Puget Sound Chinook, limited marine net fishing opportunities directed at returns of hatchery Chinook and both hatchery and natural Coho were planned for 2025. Chinook and Coho were also intercepted in fisheries directed at Chum salmon.

A total of 68,700 Chinook and 130,200 Coho were landed in Tribal net fisheries in marine terminal areas of Puget Sound (Areas 8-13 & 7B-D). Non-Tribal net fishery landings from these areas totaled 15,360 Chinook and 8,994 Coho. Chinook landings in the Non-Tribal net fishery occurred during Chinook-directed fisheries in Areas 7B, 7C, and 12/12B/12C, with 58 Chinook reported as landed in during the Area 10 Chum fishery.

<u>Puget Sound Rivers Fisheries</u>
Tribal net and Non-Tribal sport fisheries were implemented in freshwater systems based upon pre-season Tribal-State agreements and subject, in part, to in-season adjustment. Harvest of Chinook and Coho in the Tribal in-river net fisheries (includes catch from river systems in the Strait of Juan de Fuca, Hood Canal, and Puget Sound) totaled 29,500 Chinook and 142,400 Coho

during 2025. A Non-Tribal Coho-directed skiff gill net fishery was implemented in Area 6D, Dungeness Bay in 2025. There were 1,101 Coho caught and no Chinook. Although this is not an in-river fishery, based on the proximity of Area 6D to the Dungeness River, catch is reported in this section.

Also, recreational fisheries targeting Chinook salmon were conducted in nine Puget Sound Rivers that have PSC Chinook coded wire tag (CWT) exploitation rate indicator stocks or double index tag (DIT) groups, as listed in the table below. Of these, six rivers had mark-selective fisheries, and three rivers had non-selective fisheries, as follows:

Table 25. Chinook sport MSF conducted in Puget Sound rivers during 2025.

River	Season
Nooksack River	August 1 – September 30 mainstem from Lummi Indian Reservation boundary to the yellow marker at the FFA high school barn in Deming; October 8 – October 14 North Fork from Hwy 9 to the confluence with Maple Creek; October 1 – 14 South Fork from the mouth to Skookum Creek.
Cascade River	July 1 – 15 from mouth to Rockport-Cascade Rd. Bridge.
Skagit River	April 24 – May 15 and May 20 – May 31 from the Highway 536 bridge to Gilligan Creek, May 28 – July 15 from Highway 530 Bridge to Cascade River Road (Marblemount Bridge).
Skykomish River	June 10 – July 10 from mouth to confluence with Wallace River.
Carbon River	September 1 – October 31**,** from mouth to the confluence with Voights Creek.
Puyallup River	August 16 – October 31 from 11th St Bridge to the confluence with Carbon River. August 16 – September 30 closed Sunday, Monday, and Tuesday from 11th St Bridge to East Main Bridge.
Nisqually River	July 1 – November 22 from the mouth to the confluence with Clear Creek, August 3 – September 30 closed Sundays through Tuesdays, October 1 – November 22 closed Sundays and Mondays. October 26 – November 22 from the confluence with Clear Creek to the confluence with Kalama Creek, closed Sundays and Mondays.

Table 26. Chinook non-selective sport fisheries conducted in Puget Sound rivers during 2025.

River	Season
Samish River	August 1 – September 30 from the mouth to Thomas Rd. Bridge. Between the mouth and the yellow marker open on September 6 for juvenile anglers only and September 14th to veterans only.
Green River	August 20 – December 31 from Tukwila International Blvd./Old Hwy. 99 to South 212 St. Bridge.
Nooksack River	October 1 – December 31 from yellow marker at the FFA high school barn in Deming to the confluence of the North and South forks. October 15 – November 30 North Fork from Hwy 9 to the confluence with Maple Creek. October 15 – December 31 South Fork from mouth to the confluence Skookum Creek.

During the 2025 season there were sport MSF targeting hatchery Coho in the rivers of Puget Sound that have PSC Coho CWT exploitation rate indicator stocks or DIT groups. A MSF was open on the Samish River from August 1 - September 30, on the Dungeness River from October 23 through November 30, on the Nisqually River from July 1 – November 22. Recreational non-selective Coho fisheries were conducted on the Skagit River, Nooksack River, Snohomish River, Stillaguamish River, Snoqualmie River, Cascade River, Green River, Carbon River, Wallace River, Puyallup River, and Quilcene River.

REFERENCES

Pacific Salmon Treaty (PST) Act of 1985. 2019 Agreement. U.S.-Canada. Public Law 99-5, 16 U.S.C. 3631.

Puget Sound Indian Tribes and Washington Department of Fish & Wildlife (PSIT and WDFW). 2010. Comprehensive Management Plan for Puget Sound Chinook: Harvest Management Component. Northwest Indian Fisheries Commission, Olympia, Washington. 237 p.

Table 27. Preliminary 2025 Landed Chinook Catch for Washington and Oregon Fisheries of Interest to the Pacific Salmon Commission, compared to landed Chinook values from previous years. Values are presented in number of fish rounded to the nearest 100. [9/]

Fisheries	2025 Pre-season [5/] Total Mortality [1/]	2025 Pre-season [5/] Landed [2/]	2025 Preliminary Landed	Landed 2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
OCEAN FISHERIES													
Commercial Troll													
Neah Bay and La Push (areas 3,4,4B) [3/]	71,700	62,900	41,600	25,700	38,200	31,600	12,000	7,600	39,100	33,700	35,200	28,100	73,600
Columbia Ocean Area and Westport (area 1,2) [4/]	61,600	43,300	51,700	32,000	32,600	22,500	15,500	6,800	3,400	13,900	24,700	14,200	50,900
Sport (see text for quota information)													
Neah Bay (area 4)	14,900	13,200	9,500	6,100	5,500	4,900	4,400	2,000	3,900	3,000	7,300	3,300	8,500
La Push (area 3)	1,900	1,700	1,200	700	1,100	900	300	20	600	400	500	300	2,400
Westport (area 2)	24,500	22,300	14,000	11,000	13,900	11,300	7,100	4,800	2,400	4,900	6,600	8,400	19,100
Columbia Ocean Area (area 1)[13/]	18,900	16,600	7,400	6,700	9,800	7,800	6,000	800	4,000	2,300	7,600	6,000	12,200
INSIDE FISHERIES													
Sport [10/]													
Strait of Juan de Fuca (area 5,6)	15,700	7,800	8,200	9100	10,300	19,700	18,400	6,600	11,300	14,300	9,900	9,700	11,800
San Juan Islands (area 7)	3,900	2,200	1,800	2200	2,100	4,100	3,300	3,400	7,100	7,300	11,300	6,200	8,600
Puget Sound Marine (area 8-13)	33,900	20,200	-	15000	16,400	23,900	29,200	11,200	20,500	29,900	22,800	14,400	8,800
Puget Sound Rivers [12/]	20,700	20,100	-	16,200	22,300	16,800	17,700	11,300	9,900	13,300	18,500	8,600	11,100
North WA Coastal Rivers	-	-	-	1,000	1,000	1,000	1,200	1,400	1,500	1,600	1,500	600	2,200
Grays Harbor [7/]	-	-	-	1,700	800	900	1,400	1,500	1,700	3,700	2,700	2,800	3,400

	2025			Landed									
	Pre-season [5/]												
Fisheries	Total Mortality [1/]	Landed [2/]	Preliminary Landed	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
Columbia River (Spring) [6/]	-	-	11,000	7,200	5,800	13,900	5,700	2,000	2,000	8,100	9,100	14,100	21,300
Columbia River (Summer) [6/]	-	-	500	900	2,100	3,500	2,200	1,300	-	1,100	3,800	3,600	5,000
Columbia River (Fall) (incl. Buoy 10) [6/]	-	-	63,300	61,700	62,000	48,000	45,800	40,800	22,000	22,400	60,400	48,700	91,300
Commercial[11/]													
Strait of Juan de Fuca net and troll (area 4B,5,6C)	6,800	5,000	8,900	7,300	5,200	6,900	1,800	900	1,700	3,600	1,900	700	5,900
San Juan Islands (area 6, 7, 7A)	8,600	8,500	6,000	*300*	14,900	4,700	2,000	-	3,600	3,400	2,600	100	4,800
Puget Sound Marine (8-13, 7B-D)	43,300	42,600	83,900	55,600	70,000	70,600	49,100	35,500	72,200	70,600	90,500	55,800	33,100
Puget Sound Rivers[12/]	42,200	41,900	29,500	26,000	23,100	25,300	34,200	19,100	38,300	41,700	53,700	23,300	21,200
North WA Coastal Rivers	-	-	11,800	6,300	13,100	13,000	11,300	16,700	12,200	11,400	14,400	9,400	17,200
Grays Harbor (area 2A-2D) [7/]	1,200	1,100	700	1,000	400	1,500	2,400	3,600	2,400	2,700	3,700	2,100	10,500
Columbia River Net (Winter/Spring) [8/]	-	-	10,200	6,800	12,200	16,300	4,400	4,400	4,700	10,900	8,100	20,700	38,400
Columbia River Net (Summer) [8/]	-	-	8,000	7,100	11,100	16,200	11,200	8,400	5,600	9,500	16,300	23,500	41,700
Columbia River Net (Fall) [8/]	-	-	156,600	146,200	149,400	208,300	91,400	136,600	81,100	64,200	140,400	189,600	371,100

Table 27 Footnotes:

[1/] Estimates of total mortality (not adjusted for adult equivalents) include non-retention mortality. Total mortality is estimated by Fishery Regulation Assessment Model (FRAM) as catch + incidental mortality, where incidental mortality = drop off + non-retention mortality (PFMC 2008).

[2/] For the ocean fisheries, this column shows the Chinook troll and recreational quotas used for 2025 pre-season fishery planning as distributed by ocean area (Landing Quotas = Landed). See text for any in-season adjustments.

[3/] Includes Area 4B catch during the PFMC management period (May 1 – September 15); Area 4B Treaty troll catch outside PFMC period included under Strait of Juan de Fuca net and troll (October-April).

[4/] Includes Oregon troll catch in Area 1.

[5/] FRAM modeled pre-season fishery impacts cover the current fishery planning year, for Chinook defined as May 1 through April 30.

Table 27 Footnotes:

[6/] Mainstem retained adult sport catch only (upstream to McNary Dam for spring, Priest Rapids Dam for summer and to Hwy 395 for fall). See tables 5, 8, 24-25 in the current Joint Staff Report regarding spring and summer Chinook and tables 25-27 in the annual fall report; available online at: https://wdfw.wa.gov/fishing/management/columbia-river/compact/other-information.

[7/] Includes Grays Harbor catch, as well as catch from the Chehalis and Humptulips Rivers and their tributaries for sport and Chehalis and Humptulips Rivers for net estimates.

[8/] Mainstem retained catch only. Includes Tribal C&S and Commercial from all gear types and Non-Tribal (Columbia River mouth upstream to McNary Dam). Excludes Non-treaty Select Area commercial catches. Fall season does not include seine catch. Catch data from annual Joint Staff Reports. Winter and spring catch Tables 5 (Tribal) and 17 (Non-Tribal). Summer catch is in Table 8 and 18. Fall catch from annual fall report Tables 21, 22, 23 and 29; available online at: https://wdfw.wa.gov/fishing/management/columbia-river/compact/other-information.

[9/] Includes catch from mark-selective fisheries as shown in Table 17, this report.

[10/] Sport data for the most recent two years are preliminary. All data subject to change.

[11/] Includes Non-Tribal & Tribal commercial, as well as Tribal C&S for all gear types.

[12/] Chinook fisheries in Puget Sound Rivers are modeled using the Terminal Area Management Module (TAMM), based upon FRAM output of terminal run sizes. Total Mortality is estimated in TAMM as catch + non-retention mortality (PFMC 2008).

[13/] Includes Oregon sport catch in Area 1.

Table 28. Preliminary 2025 Landed Coho Catch for Washington and Oregon Fisheries of Interest to the Pacific Salmon Commission, compared to landed Coho values from previous years. Values are presented in number of fish rounded to the nearest 100. [6/]

	2025			Landed									
	Pre-season [9/]												
Fisheries	Total Mortality [1/]	Landed [2/]	Preliminary Landed	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
OCEAN FISHERIES													
Commercial Troll													
Neah Bay and La Push (area 3,4,4B) [3/]	30,400	26,900	29,800	40,900	31,000	34,800	25,400	14,300	55,100	11,400	13,300	-	4,100
Columbia Ocean Area and Westport (area 1,2) [10/]	15,600	8,500	15,300	13,100	9,500	11,800	4,500	800	5,900	1,300	1,800	-	4,800
Sport (see text for quota information)													
Neah Bay (area 4)	13,100	10,400	10,100	7,400	5,700	2,600	2,600	3,100	6,200	4,900	3,500	100	7,800
La Push (area 3)	3,200	2,600	2,600	2,000	1,600	2,200	1,300	200	1,800	1,000	1,750	-	600
Westport (area 2)	45,500	36,900	33,700	28,800	20,900	32,500	20,700	7,900	20,200	15,400	15,750	-	30,700
Columbia Ocean Area (area 1)[12/]	61,400	49,900	47,800	38,900	31,500	44,000	39,500	12,800	53,500	20,600	21,600	18,600	44,600
INSIDE FISHERIES													
Sport [10/]													
Strait of Juan de Fuca (area 5,6)	32,600	28,300	28,600	32,500	23,900	33,600	37,100	42,100	15,800	19,400	4,800	100	62,000
San Juan Islands (area 7)	8,900	8,300	11,800	19,600	1,900	2,400	500	10,800	5,800	4,800	100	100	3,800
Puget Sound Marine (area 8-13)	70,500	65,300	-	108,600	79,500	62,700	65,600	44,400	43,000	50,100	31,400	4,900	76,900
Puget Sound Rivers	100,800	98,900	-	33,200	29,400	19,100	39,100	21,300	25,100	19,600	16,700	11,400	18,700
North WA Coastal Rivers	5,000	4,800	-	1,300	3,300	2,500	2,500	2,700	3,900	2,000	4,900	1,600	3,600
Grays Harbor [5/]	20,600	19,600	-	21,000	16,900	16,000	4,700	4,400	13,500	4,000	9,200	3,700	8,200
Columbia River Buoy 10[4/,11/]	37,100	30,000	41,800	35,500	10,100	9,000	37,000	7,100	22,800	6,800	18,800	9,200	36,900
Commercial[11/]													

	2025			Landed									
	Pre-season [9]												
Fisheries	Total Mortality [1]	Landed [2]	Preliminary Landed	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
Strait of Juan de Fuca net and troll (area 4B,5,6C)	14,700	14,000	1,600	2,300	500	3,100	2,500	1,700	600	5,000	1,200	700	1,700
San Juan Islands (area 6,7,7A)	16,700	12,300	5,900	6,800	4,600	16,400	9,000	5,200	1,900	3,900	3,400	4,100	4,000
Puget Sound Marine (area 8-13,7B-D)	140,300	137,500	138,800	319,000	150,500	92,100	162,700	120,600	47,400	124,100	131,100	210,900	28,800
Puget Sound Rivers	32,900	30,900	143,500	106,900	53,800	125,000	141,200	76,300	43,200	117,100	65,500	65,400	17,800
North WA Coastal Rivers	31,400	30,800	26,300	9,700	16,500	41,200	22,700	30,800	13,400	22,300	63,700	57,800	18,400
Grays Harbor (area 2A-2D) [5]	31,400	30,800	13,100	14,900	7,100	25,600	13,300	6,500	10,200	9,800	12,700	3,200	14,700

Table 28 Footnotes:

[1] Estimates of total mortality include non-retention mortality. Total Mortality is estimated by Fishery Regulation Assessment Model (FRAM) as catch + incidental mortality, where incidental mortality = drop off + non-retention mortality (PFMC 2008).

[2] For ocean fisheries this column shows the Coho troll and recreational quotas used for 2025 pre-season fishery planning as distributed by ocean area (Landing Quotas = Landed). See text for any in-season adjustments.

[3] Includes area 4B catch during the PFMC management period (May 1 – September 15); area 4B Treaty troll catch outside the PFMC period included under Strait Juan de Fuca net and troll (October-April).

[4] Retained catch only. See table 26 in the current fall Joint Staff report available online at https://wdfw.wa.gov/fishing/management/columbia-river/compact/other-information.

[5] Includes Grays Harbor catch, as well as catch from the Chehalis and Humptulips Rivers; their tributaries are included in sport estimates only.

[6] Includes catch from mark-selective fisheries where estimates are available.

[7] Sport data for the most recent two years are preliminary. All data subject to change.

[8] Includes Non-Tribal and Tribal commercial and take-home fish, as well as Tribal ceremonial and subsistence (C&S) for all gear types. Starting in 2012, the Copalis, Moclips, and Ozette Rivers have been removed from landed catch.

[9] FRAM modeled pre-season fishery impacts cover the current fishery planning year, for Coho defined as January 1 through December 31.

[10] Includes Oregon troll catch in Area 1.

[11] For Buoy 10, see tables 25 in the annual fall report. Numbers do not include Coho catch from Rocky Point/Tongue Point upstream to the west Puget Island line.

[12] Includes Oregon sport catch in Area 1.

Table 29. Mark-Selective Chinook and Coho Fisheries by Area and Year. “Yes” denotes that a MSF occurred, even if it only occurred in a subset of the fishing area, season, gear type, or user group.

Selective Coho	2025	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Ocean Troll															
Cape Flattery & Quillayute (Areas 3/4)	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes
Columbia R & Grays Harbor (Areas 1 & 2)	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes
Ocean Sport															
Neah Bay (Area 4)	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes
LaPush (Area 3)	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes
Grays Harbor (Area 2)	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes
Col. R. (Leadbetter Pt. to Cape Falcon)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Sport															
Juan de Fuca (Areas 5 & 6)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
San Juan Islands (7)	yes	yes	yes	yes	yes	no	no	no	no	no	yes	yes	yes	yes	yes
Puget Sound Sport (Areas 8-13 all year)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Rivers	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
North WA Coastal Rivers	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Grays Harbor (Areas 2-2)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
Willapa Bay (Area 2-1)	yes	yes	no	no	yes	no	no	no	yes	no	yes	no	no	no	no
Columbia River Buoy 10	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Commercial															
North WA Coastal Rivers	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Grays Harbor (Areas 2A-2D)	no	no	no	no	no	no	no	no	no	no	no	no	no	no	yes
Willapa Bay (Area 2-1)	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Columbia River Net/ - Fall	yes	yes	yes	yes	yes	yes	yes	no	no	no	yes	yes	yes	no	no
Strait of Juan de Fuca (Areas 4B/5/6C) Net & Troll	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
San Juan Islands (Areas 6, 7 & 7A)	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Marine (Areas 8 - 13)	no	no	no	no	no	no	no	no	no	yes	no	no	no	no	no
Puget Sound Rivers	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Selective Chinook	**2025**	**2024**	**2023**	**2022**	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**
Ocean Troll															
Cape Flattery & Quillayute (Areas 3/4/4B)	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Columbia. R & Grays Harbor (Areas 1&2)	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Ocean Sport															
Neah Bay (Area 4)	no	no	no	no	no	no	no	no	no	no	yes	yes	yes	yes	yes
La Push (Area 3)	no	no	no	no	no	no	no	no	no	no	yes	yes	yes	yes	yes
Grays Harbor/Westport (Area 2)	no	no	no	no	no	no	no	no	no	yes	yes	yes	yes	yes	yes
Col. R./Ilwaco (Leadbetter Pt. to Cape Falcon)	no	no	no	no	no	no	no	no	no	no	yes	yes	yes	yes	yes

Sport															
Juan de Fuca (Area 5&6)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
San Juan Islands (Area 7)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Sport (Areas 8-13)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Rivers	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
North WA Coastal Rivers	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Grays Harbor (Areas 2-2)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
Columbia River Sport - Winter/Spring	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Columbia River Sport - Summer	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Columbia River Sport - Fall	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	no
Willapa Bay (Area 2-1)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Commercial															
North WA Coastal Rivers	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Grays Harbor (Areas 2A-2D)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
Willapa Bay (Area 2-1)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Columbia River Net-Winter/Spring	no	yes	no	yes	no	no	no	no	no	yes	yes	yes	yes	yes	yes
Columbia River Net - Summer	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Columbia River Net - Fall	yes	yes	no	no	no	no	no	no	no	yes	yes	yes	yes	no	no
Strait of Juan de Fuca(4B/5/6C) Net & Troll	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
San Juan Islands (Areas 6, 7 & 7A)	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Marine (Areas 7B-D,8 - 13)	yes	yes	yes	yes	yes	no	no	no	no	no	yes	no	no	no	yes
Puget Sound Rivers	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes

III. PRELIMINARY REVIEW OF THE 2025 WASHINGTON CHUM SALMON FISHERIES OF INTEREST TO THE PACIFIC SALMON COMMISSION

This summary report provides a preliminary review of the 2025 U.S. Chum salmon (*Oncorhynchus keta*) fisheries conducted by Puget Sound salmon co-managers (Puget Sound Treaty fishing tribes and the State of Washington) in the Strait of Juan de Fuca (Salmon Management and Catch Reporting Areas 4B, 5 and 6C), the San Juan Islands and the Point Roberts area (Areas 7 and 7A) (Figure 39), conducted in compliance with provisions of Chapter 6 of Annex IV of the Pacific Salmon Treaty (PST 2019). The harvest and abundance information provided are based on preliminary data reported through November 16, 2025. These preliminary data are subject to correction and revision as additional information becomes available.

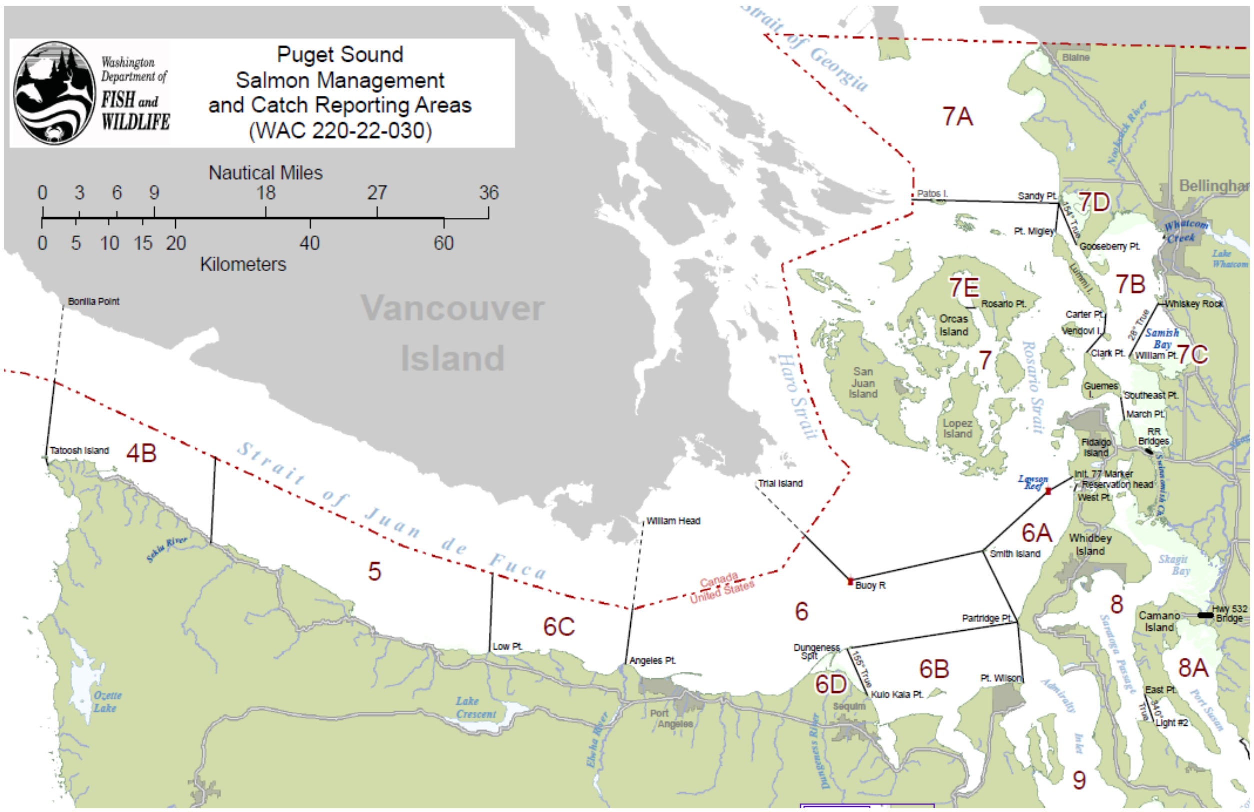


Figure 39. Puget Sound Salmon Management and Catch Reporting Areas with Chum salmon fisheries of interest to the Pacific Salmon Commission.

MIXED STOCK FISHERIES

Areas 4B, 5 and 6C

As in recent years, the 2025 Chum salmon fishery in Areas 4B, 5 and 6C experienced very limited effort by Tribal fishers using gillnets. The fall Chum-directed salmon fishery opened the week of October 12, with a schedule of six days per week and continued through November 15. A total of

81 Chum salmon were harvested during this period (Table 30). During the fall Chum fisheries in Areas 4B, 5, and 6C, there was reported by-catch of 482 Coho, and zero Chinook or Steelhead.

Table 30. Preliminary 2025 Chum salmon harvest report for Washington Salmon Catch Reporting, **Areas 4B, 5 and 6C** (Tribal Gill Net only).

Time Periods	Gill Net
July 1 – Sept 15	0
Sept 16 - Oct 11	0
Oct 12 – Oct 18	0
Oct 19 – Oct 25	0
Oct 26 – Nov 1	81
Nov 2 – Nov 8	0
Nov 9 – Nov 15	0
Total	**81**

<u>Areas 7 and 7A</u>

Chum salmon fisheries in Areas 7 and 7A are regulated to comply with a base harvest ceiling of 125,000 Chum salmon, unless Canada estimates Chum stocks migrating through Johnstone Strait (“Inside Southern Chum salmon”) are below the critical threshold of 1.0 million (PST 2019). Chapter 6 of Annex IV specifies that U.S. commercial fisheries for Chum salmon in Areas 7 and 7A will not occur prior to October 10. For Inside Southern Chum run sizes below the critical threshold, Paragraph 10 (b) states the U.S. catch of Chum salmon in Areas 7 and 7A will be limited to those taken incidentally to other species and in other minor fisheries and shall not exceed 20,000.

On October 7, 2025, Canada notified the U.S. that the Inside Southern Chum aggregate was estimated to be below the critical threshold of 1.0 million. Following this notification, the U.S. cancelled commercial Chum fisheries planned to begin on October 10 in Areas 7 and 7A. Chum fisheries in Areas 7 and 7A remained closed through October 15, at which time Canada notified the U.S. that the in-season assessment of Inside Southern Chum had been revised upward and was now estimated to be above the critical threshold. The U.S. Area 7 and 7A catch ceiling was therefore 125,000 Chum and U.S. Chum fisheries in Areas 7 and 7A were opened on October 16.

Paragraph 9 (d) states that Canada will provide an in-season estimate of Fraser River Chum salmon run size no later than October 22. If that estimate is below 1,050,000, then the U.S. will limit its fishery in Areas 7 and 7A to not exceed a catch of 20,000 additional Chum salmon from the day following notification. If the Fraser River Chum run size estimate is between 1,050,000 and 1,600,000, the U.S catch ceiling remains at 125,000. If the Fraser River run size estimate is above 1,600,000, the U.S. catch ceiling is revised to 160,000.

On October 16, 2025, Canada notified the U.S. that the Fraser River Chum run size was estimated to be 600,000 fish, below the 1.05 million threshold identified in the Treaty. Therefore, U.S. Chum fisheries in Area 7 and 7A were managed to not exceed a catch of 20,000 additional Chum salmon from the day following this notification. These fisheries were closed on October 18 and remained closed to commercial Chum fisheries through the remainder of the Chum management period.

Non-Tribal reef net fisheries targeting Coho salmon were conducted following the end of Fraser Panel control, with Chum and unmarked Chinook retention prohibited prior to October 1. Retention of unmarked Coho prior to October 1 was capped at 1,000 fish, per the co-managers' List of Agreed to Fisheries.

The total 2025 Chum salmon catch by all gears in Areas 6, 7, and 7A (reported through November 16) was 18,804 Chum (Table 31). There were 590 Chum caught in Area 7 during Non-Tribal reef net gear targeting other species (Table 31). Bycatch in Chum salmon-directed fisheries in Areas 6, 7, and 7A totaled 1,699 Coho, 8 Chinook, and zero Steelhead. Bycatch numbers include both landed and estimated non-landed fish.

Table 31. Preliminary 2025 Chum salmon harvest report for Puget Sound Salmon Catch Reporting Areas 6, 7 and 7A, by management week and gear type.

	Area 6	**Area 7**				**Area 7A**			**Area 6,7,7A Total**
Time Periods	**Gill Net**	**Purse Seine**	**Gill Net**	**Reef Net**	**Area 7 Total**	**Purse Seine**	**Gill Net**	**Area 7A Total**	
July 1 - Sept 15		33	8		41	45		45	86
Sept 16 - Oct 9				590	590			0	590
Oct 10					0			0	0
Oct 11					0			0	0
Oct 12					0			0	0
Oct 13					0			0	0
Oct 14					0			0	0
Oct 15[1/]	1				0			0	1
Oct 16[2/]	1	2,341			2,341		16	16	2,358
Oct 17		6,543			6,543		848	848	7,391
Oct 18		3,318			3,318		1,220	1,220	4,538
Oct 19		3,829			3,829			0	3,829
Oct 20 - Nov 15	11				0			0	11
Total through Oct 16	2	2,374	8	590	2,972	45	16	61	3,035
Total after Oct 16	11	13,690	0	0	13,690	0	2,068	2,068	15,769
Total	13	16,064	8	590	16,662	45	2,084	2,129	18,804

[1/]Official notification from Canada that Inside Southern Chum assessment was above the critical threshold.

[2/]Official notification from Canada that Fraser Chum assessment was below the critical threshold.

Acknowledging the imprecision inherent in fisheries management, Paragraph 9 (h) of the Treaty defines the U.S. harvest levels in Catch Areas 7 and 7A that would constitute a catch overage at each catch ceiling, and 9 (i) prescribes the mechanism for payback in subsequent years. When the U.S. chum catch ceiling is 125,000, as in 2025, a U.S. catch in Areas 7 and 7A of up to 135,000 chum salmon does not result in an overage calculation, whereas catch exceeding 135,000 shall result in an overage, to be calculated by subtracting 125,000 from the total Area 7/7A U.S. chum catch. Payback of overages occurs by reducing the U.S. annual catch ceilings in up to two subsequent non-critical Inside Southern chum salmon years.

In 2024, the total U.S. catch of Chum salmon exceeded the 125,000-catch ceiling and created an overage which requires payback through reduction of the U.S. annual catch ceilings during up to two subsequent non-critical Inside Southern Chum salmon years as specified by Chapter 6. Implications of the 2025 return year run size determinations for Inside Southern Chum on payback requirements for the 2024 overage will require Southern Panel discussion during the 2026 meeting cycle.

PUGET SOUND TERMINAL AREA FISHERIES AND RUN STRENGTH

Pre-season forecasts for Chum salmon returns to Puget Sound in 2025 predicted a fall Chum run size totaling approximately 1,358,144 fish of which 513,677 Chum predicted to return to Hood Canal and 730,267 predicted to return to South Puget Sound. As of the date of this report (November 2025), in-season estimates indicate that overall, Chum returns to South Puget Sound are well above forecast, with a final agreed to in-season ISU of 950,000. In-season run size estimates indicate that South Puget Sound fall Chum are expected to return at least 130% of the pre-season forecast, while Hood Canal fall Chum are currently expected to return at the pre-season forecasted abundance.

Terminal fisheries in mixed-stock marine areas were pursued in 2025 both in South Puget Sound and in Hood Canal. As of the date of this report, spawning escapement surveys are in progress for most Puget Sound stocks and therefore escapement estimates are not yet available. Early indications from these surveys suggest that many natural fall Chum stocks in South Puget Sound are exceeding escapement objectives. North Puget Sound Chum stocks also saw higher returns than have been observed in recent years. Hood Canal chum stocks appear to be delayed or lower compared to historical peak dates at this time.

REFERENCES

Pacific Salmon Treaty (PST) Act of 1985. 2019 Agreement. U.S.-Canada. Public Law 99-5, 16 U.S.C. 3631.

IV. Preliminary Review of 2025 United States Fraser River Sockeye and Pink Fisheries

INTRODUCTION

The 2025 Fraser River Panel fishing season was implemented under Annex IV of the Pacific Salmon Treaty (PST), and guidelines provided by the Pacific Salmon Commission to the Fraser River Panel. The treaty establishes a bilateral (U.S. and Canada) Fraser River Panel (Panel) that develops a pre-season management plan and approves in-season fisheries within Panel Area waters directed at sockeye and pink salmon bound for the Fraser River (Figure 40). In partial fulfillment of Article IV, paragraph 1 of the PST, this document provides a season review of the 2025 U.S. Fraser River salmon fisheries as authorized by the Panel. Catch and abundance information presented is considered preliminary.

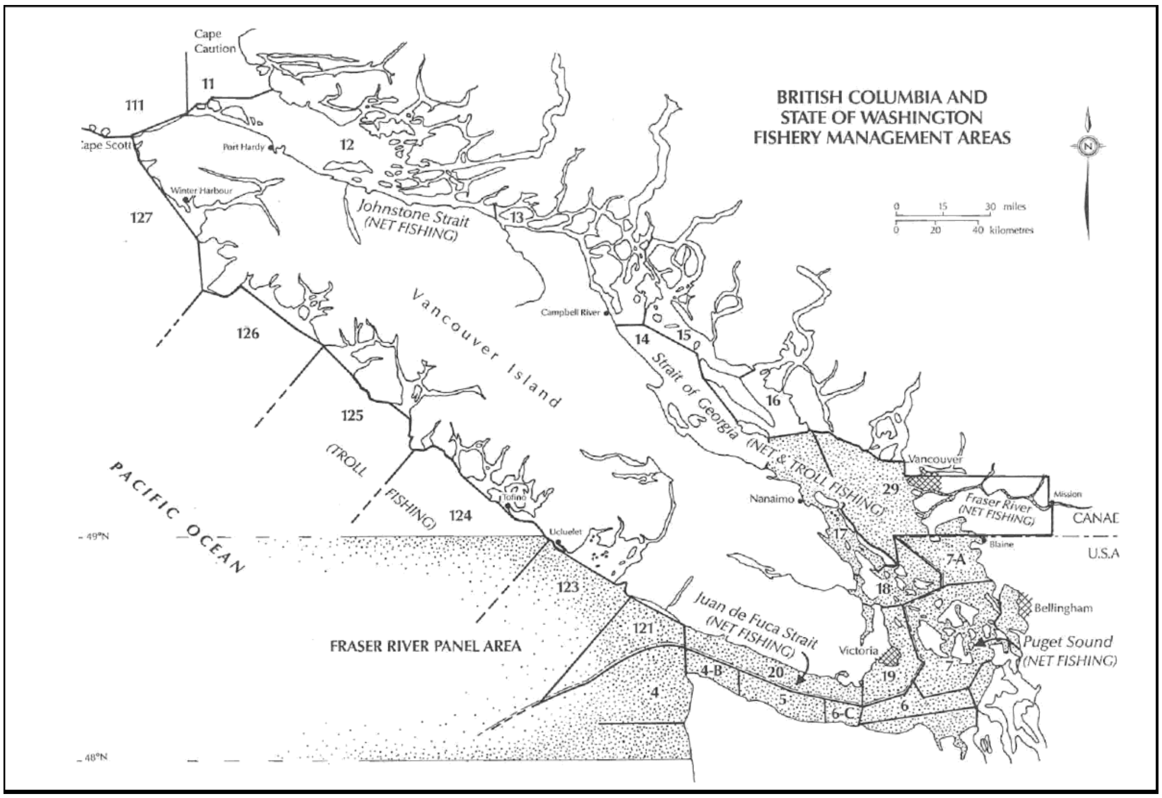


Figure 40. British Columbia and State of Washington Fishery Management Areas, 2025. The shaded area in the figure represents the marine waters managed by the Fraser River Panel.

PRE-SEASON EXPECTATIONS AND PLANS

Forecasts and Escapement Goals

Pre-season run size forecasts and escapement goals by run-timing group (run) at various probability levels were provided to the Panel by DFO. Table 32 shows the 2025 pre-season sockeye forecasts based on the 50 percent probability level, which represent the mid-point of the range of forecast run sizes. Table 32 also provides the escapement goals for the sockeye run-timing groups based on the pre-season forecast of abundance. The escapement goals for all runs can change in-season as the run size estimates are updated.

Fraser River pink salmon returns were projected pre-season at 26,965,000 fish, with an escapement goal of 8,090,000.

Table 32. 2025 pre-season Fraser River sockeye forecasts and escapement goals by run-timing group.

	Early Stuart	**Early Summer**	**Summer**	**Late**	**Total**
Forecast of Abundance	116,000	221,000	2,136,000	468,000	2,941,000
Escapement Goal	116,000	136,000	1,470,000	346,000	2,068,000

Northern Diversion Rate

Northern diversion rate is defined as the percentage of Fraser sockeye migrating through Johnstone Strait (rather than the Strait of Juan de Fuca) in their approach to the Fraser River. The annual diversion rate has been highly variable over the recent two decades. The pre-season sockeye diversion rate forecast was 64%. A pre-season northern diversion rate of 73% was adopted for pink salmon.

Management Adjustment (MA) and Environmental Conditions

Management adjustments (MA) for sockeye salmon reflect the anticipated difference between escapement estimates at Mission (minus catch above Mission) and actual spawning escapements. Adjustments adopted by the Panel are added to the gross escapement goal, effectively increasing the spawner escapement goal for that run-timing group. MAs are modeled using forecasts of environmental conditions and return timing or median historical differences between estimates. Table 33 provides the pre-season projected MAs that were used for planning fisheries in 2025. In-season MAs are informed by Difference between Estimates (DBEs) models that are based on both measured and forecasted temperatures and discharges or, for Late-run sockeye, stock proportions and upstream migration timing.

Table 33. 2025 pre-season proportional management adjustment (pMA) and corresponding proportional difference between estimates (pDBE1) for each run-timing group.

Early Stuart		Early Summer		Summer		Late	
pMA	pDBE	pMA	pDBE	pMA	pDBE	pMA	pDBE
1.17	-54%	0.54	-35%	0.52	-34%	1.56	-61%

[1] Early Stuart pDBE = "all years" historical median (1995-2022); Early Summer pDBE = "all years" historical median; Summer pDBE = "pre-season T&Q" model median; Late pDBE = "all years" historical median (1996-2022, excl. Dominant Cycle years).

Run Timing

Run timing is temporal information about the presence of a salmon stock in a specific time and area. Run timing is an important variable when planning fisheries and updating run sizes in-season. The following Area 20 50% dates (the dates when 50% of the run is forecast to have passed through Area 20) were predicted pre-season for the major Fraser River sockeye run groups.

Table 34. 2025 Area 20 median 50% run-timing dates and updated pre-season timing forecasts in June as well as final in-season estimates.

Run-Timing Group	**Area 20 50% Run-Timing Median Date**	**Area 20 50% Run Timing (June)**
Early Stuart	July 4	July 7
Early Summer	July 28	July 19
Summer	August 7	July 30
Late	August 17	August 7
Pink Salmon	August 24	August 21

U.S. Total Allowable Catch (TAC)

Following Annex IV of the PST, U.S. TAC is calculated as 16.5% of the TAC for international sharing for sockeye salmon and 25.7% for pink salmon. Pre-season, the U.S. TAC was established at zero sockeye at the p50 modelled run size. The TAC available by sockeye run-timing group is shown in Table 35.

Table 35. 2025 U.S. total allowable catch (TAC) by run-timing group[1].

Run Timing Group	**Pre-season U.S. TAC**
Early Stuart	0
Early Summer	0
Summer	0
Late	0
Total	0
Pink Salmon	4,828,000

[1] Based on Panel-approved final pre-season model run.

Pre-season Management Plans

During the pre-season planning process the Panel evaluates and adopts management approaches for Fraser sockeye that address conservation and harvest objectives for each major run-timing group. The Panel develops fishing plans and in-season decision rules with the objective of meeting management goals. Managing Fraser River sockeye salmon involves a trade-off between catching abundant runs while meeting escapement objectives for less abundant run-timing groups.

Given the constraints imposed by low returns to all Fraser sockeye management groups and the potential for adverse Fraser River conditions, pre-season plans were developed which indicated that both Canada and the United States were unlikely to have harvest opportunities at the median forecast for sockeye salmon but have harvest opportunities at the median forecast for pink salmon. Specifically, based on pre-season forecasts, no Fraser sockeye salmon run-timing groups had pre-season U.S. TAC (Table 35). Therefore, the U.S. did not plan to prosecute Fraser origin sockeye salmon directed fisheries unless an in-season adopted run-size created available TAC based on pre-season modeled management scenarios. The Fraser River sockeye management objectives based on the pre-season forecasts placed high priority on achieving Fraser sockeye escapement goals. In the adopted p50 base case pre-season planning model, the U.S. treaty tribes modeled some retention of sockeye in limited pink directed fisheries timed to minimize sockeye encounters. However, Canada noted that any decisions of retention of sockeye during pink directed fisheries would have to be made with in-season information.

IN-SEASON MANAGEMENT

In-season, the Pacific Salmon Commission staff analyzes a variety of information to produce best estimates of northern diversion, management adjustments, timing, abundance, and harvest by run-timing group. Stock identification information (both genetic data and scales), age data, test fishing data, escapement counts past Mission, harvest data, and environmental information are all used to provide in-season estimates that are critical to the Fraser Panel for making management decisions.

Run Assessment

The final in-season total sockeye abundance estimated by the Fraser River Panel in 2025 was 8,912,000 (Table 36), which was about 203% above the pre-season forecast. The 2025 sockeye return was substantially above (261%) the 2021 brood year return (2.5M), and 18% below the historical cycle-line median (10.8M). The return of Summer-run sockeye, the group with the largest pre-season forecast, was approximately 224% above the pre-season forecast. The 2025 Pink return was less than the pre-season forecast with a final Fraser River Panel adopted a run size of 18,690,000.

The 2025 Fraser sockeye run timing varied but was earlier than predicted in all run-timing groups. The Early Stuart run was two days earlier than the pre-season forecast, and the Early Summer run also two days earlier than expected. Summer-run sockeye arrived four days earlier than expected, while Late-run sockeye were six days earlier than expected (Table 37).

Table 36. Comparison of 2025 pre-season to final adopted in-season abundance estimates for Fraser River sockeye salmon, by run-timing group.

Run Timing Group	**Pre-Season 50% Probability Forecast**	**In-Season Run Size Estimate[1]**	**Comparison: In-Season / Pre-Season**
Early Stuart	116,000	736,000	NA
Early Summer	221,000	411,000	+86%
Summer	2,136,000	6,915,000	+224%
Late	468,000	850,000	+82%
Total Sockeye	2,941,000	8,912,000	+203%
Pink Salmon	26,965,000	19,000,000	-30%

[1] In-season estimates adopted by the Fraser River Panel and provided in the PSC Secretariat run status update on September 23, 2025.

Table 37. Comparison of 2025 preliminary 50% run-timing dates through Area 20 to in-season estimates.

Run-Timing Group	**Pre-season 50% Run-Timing Date**	**In-season 50% Run-Timing Date**
Early Stuart	July 8	July 6
Early Summer	August 3	August 1
Summer	August 15	August 11
Late	August 20	August 14
Pink Salmon	August 21	August 13

Season Description

The Fraser Panel held 21 regular meetings either in-person or by conference call from July 11 through September 23 (on Tuesdays and Fridays) to receive updates from PSC staff on the abundance and timing of the sockeye and pink salmon returns and to review migration conditions in the Fraser River watershed. During the 2025 season, high water temperature and low flow conditions were a major factor affecting management decisions because of the perception that there would be high en-route mortality within the Fraser River and poor spawning success. The last Fraser Panel in-season meeting was held on September 23. Table 38 summarizes changes to run sizes made by the Fraser Panel during the 2025 season and the effect on U.S. TAC.

The following summarizes the major decisions related to U.S. fishing during the 2025 season. Based on the in-season updates prior to September 23rd there was a U.S. TAC of 208,100 Fraser sockeye and 1,666,650 Fraser pink salmon.

Week ending August 9, 2025

Areas 4B, 5, and 6C opened for Treaty Tribal drift gillnet fishing from noon August 7 through noon August 9 and then extended to noon August 13. Areas 6, 7, and 7A opened to Treaty Tribal net fishing on August 10 from 5am to 9pm August 11. The panel adopted a run size of 390,000 Early Summer-run sockeye, and 4,800,000 Summer-run sockeye.

Week ending August 16, 2025

Areas 4B, 5, 6C extended the Treaty Tribal drift gillnet fishing from August 13 through August 16 and extended to August 20. Areas 6, 7, and 7A opened to Treaty Tribal net fishing from 5am to 9pm August 17 to August 19. Areas 7 and 7A opened for All Citizen purse seine, reef net and gillnet fisheries August 15 and August 19. The panel adopted a run size of 7,500,000 Summer-run sockeye, and 700,000 updated to 1,000,000 Late-run sockeye.

Week ending August 23, 2025

The panel adopted a run size of 7,750,000 updated to 6,900,000 for Summer run sockeye, and 1,050,000 for Late run sockeye.

Week ending August 30, 2025

Areas 4B, 5, 6C extended the Treaty Tribal drift gillnet fishing from August 27 through August 30 with sockeye to be retained for ceremonial and subsistence purposes only. Areas 6, 7, and 7A excluding the Iwersen dock line closure opened to Treaty Tribal net fishing from August 27 to August 28 with sockeye to be retained for ceremonial and subsistence purposes only. Areas 7 and 7A excluding the Iwersen dock line closure opened for All Citizen purse seine, reef net and gillnet fisheries August 28 with sockeye to be released. The panel adopted a run size of 7,000,000 for Summer run sockeye, 1,150,000 for Late run sockeye 12,500,00 for Fraser pink salmon.

Week ending September 6, 2025

Areas 4B, 5, 6C extended the Treaty Tribal drift gillnet fishing from September 3 to September 6 with sockeye to be retained for ceremonial and subsistence purposes only. Areas 6, 7, and 7A excluding the Iwersen dock line closure opened to Treaty Tribal net fishing from September 3 to September 5 with sockeye to be retained for ceremonial and subsistence purposes only. Areas 7 and 7A opened for All Citizen purse seine, reef net, and gillnet fisheries from September 3 to September 4 with sockeye to be released.

The Fraser Panel relinquished control of U.S. fishery Areas as follows:

- Areas 4B, 5, and 6C at 11:59 p.m. September 7, 2025
- 6, 7, and 7A, including the Apex, at 11:59 p.m. September 11, 2025

Table 38. Summary of changes to Fraser River sockeye and pink run sizes adopted by the Fraser Panel during the 2025 season and U.S. TAC.

Meeting Date	Run-Timing Group	Change Made	U.S. Sockeye TAC	U.S. Pink TAC
Pre-season			0	4,828,000
July 18, 2025	Early Stuart	Increased to 725,000	0	4,828,000
August 1, 2025	Early Summer	Increased to 300,000	0	4,828,000
August 5, 2025	Summer	Increased to 4,000,000	175,000	4,828,000
August 8, 2025	Early Summer Summer	Increased to 390,000 Increased to 4,800,000	179,000	4,828,000
August 12, 2025	Late	Increased to 700,000	179,000	4,828,000
August 15, 2025	Early Summer Summer Late	Increased to 400,000 Increased to 7,500,000 Increased to 1,000,000	393,000	4,828,000
August 19, 2025	Summer Late	Increased to 7,750,000 Increased to 1,300,000	402,000	4,828,000
August 22, 2025	Summer Late	Decreased to 6,900,000 Decreased to 1,050,000	203,000	4,828,000
August 26, 2025	Pink	Decreased to 12,5000,000	203,000	1,647,000
August 29, 2025	Summer Late	Increased to 7,000,000 Increased to 1,150,000	207,000	1,647,000
September 23, 2025	Early Stuart Early Summer Summer Late Pink	Increased to 736,000 Increased to 411,000 Decreased to 6,915,000 Decreased to 850,000	NA	1,647,000

Harvest

Given the cycle line and the p50 pre-season forecasts, which resulted in a pre-season U.S. TAC of zero sockeye, the U.S. did not anticipate sockeye harvest opportunities. At the p50 pre-season forecasted run size, the U.S. had a pre-season TAC of 4,828,000 pink salmon. Throughout in-season assessments, sockeye and pink appeared to be outperforming pre-season forecasts, and the returns did achieve a run size suitable for directed sockeye fisheries.

Treaty Tribes' commercial fisheries were open for 22 days in Areas 4B, 5, 6C and 10 days in Areas 6, 7, 7A. All Citizens fisheries were open for 8 days for purse seines, reef nets and gill nets in Areas 7/7A.

Table 39. Preliminary summary of 2025 U.S. catches of Fraser River sockeye salmon in Panel area waters.

	Treaty Tribes	**All Citizens**
Ceremonial and Subsistence (all Areas)	5,100	
Commercial Catch in Areas 4B/5/6C	1,631	0
Commercial Catch in Areas 6/7/7A	190,200	79,289
Total Catch	196,900	79,289
% of U.S. Catch	71.3%	28.7%

Table 40. Preliminary summary of 2025 U.S. catches of Fraser River pink salmon in Panel area waters.

	Treaty Indian	**All Citizens**
Ceremonial and Subsistence (all Areas)	1,034	
Commercial Catch in Areas 4B/5/6C	5,500	0
Commercial Catch in Areas 6/7/7A	690,000	511,397
Total Catch	696,000	511,397
% of U.S. Catch	57.7%	42.3%

The 2025 Fraser sockeye and pink salmon season presented some management challenges:

1. Fraser sockeye were not anticipated to have any harvestable surplus in pre-season, but the return in-season was strong and resulted in U.S. sockeye directed fisheries.
2. Sockeye run sizes were downgraded and pink fisheries had to be designed to minimize sockeye impacts while accessing some of the TAC.

3. Extremely low discharge and associated high temperatures gave concern that en-route mortality and spawning success would be poor. However, fish condition was good and there was no direct evidence of losses.
4. There was continued disagreement on “small but acceptable” sockeye mortality in U.S. pink directed fisheries.

2025 Southeast Alaska Chinook Management

Pacific Salmon Commission
Postseason Meeting
January 2026

SEAK AABM Fishery
Primary Treaty Obligations

1. Manage to preseason catch limit [6 (f)]
2. Manage to achieve escapement goals for 6 SEAK and TBR stocks [6 (b)(iv)]
3. Pay back any overages the following year [6 (h)(i)]
4. Manage incidental mortality to not exceed 59,400 [4 (a) and (f)]

2025 Catch Limit & Allocation

Allocation By Gear

Abundance Index = 1.1

Catch Limit = 133,500

Fishery	Allocation
Purse seine (4.3%)	5,741
Drift gillnet (2.9%)	3,872
Set gillnet (1,000)	1,000
Troll (77% remainder)	94,624
Sport (23% remainder)	28,264
Total all-gear catch limit	133,500

***Lowest catch limit on record

2025 ADF&G Preseason Management Directives

1. Monitor closely inseason to avoid exceeding 2025 ACL and IM limits & payback provision in 2026.
2. Manage fisheries based on production concerns for SEAK and TBR stocks.

2025 Treaty Catch by Gear

Fishery	Allocation	Actual	Difference
Set gillnet	1,000	251	-749
Purse seine	5,741	4,275	-1,465
Drift gillnet	3,872	2,813	-1,059
Sport	28,264	27,221	-1,043
Troll	94,624	94,049	-575
Total all-gear ACL	**133,500**	**128,608**	**-4,892**

* Includes Annette Island Reserve catch of 254 troll, 697 seine, and 438 gillnet

2025 Postseason Performance

- Chinook Model AI of 1.1 → Table 1 catch limit of 133,500
- How did we do? → All-gear treaty catch of 128,608
- Catch limit – actual treaty catch = 4,892
- Alaska hatchery addon = 39,570
- Terminal Exclusion = 0
- Total catch = 168,178

* Includes Annette Island Reserve treaty catch of 2,228

Management Actions to Conserve SEAK & TBR Stocks

COMMERCIAL FISHERIES:

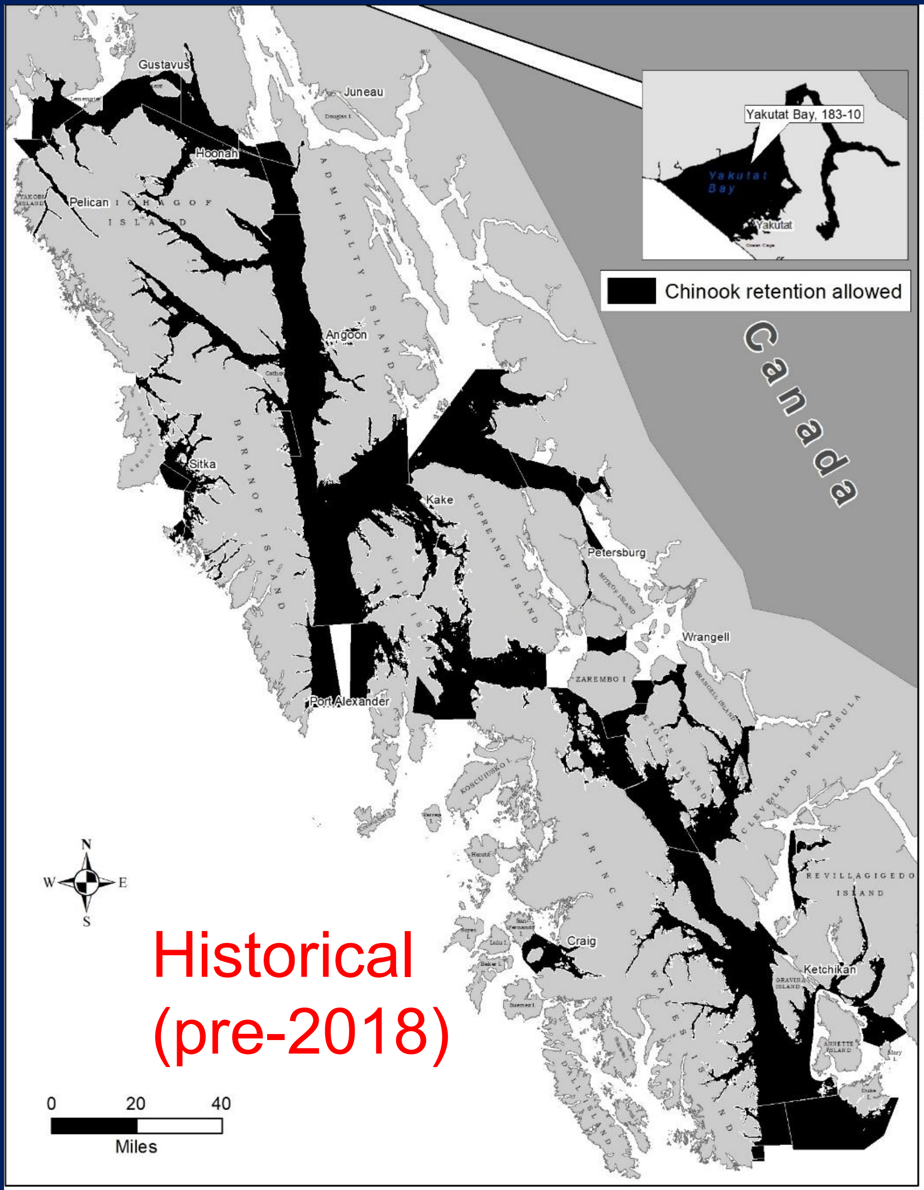
- ✓ TBR: No directed fisheries; additional actions in all traditional base level fisheries.
- ✓ Winter troll: closed in all inside waters of SEAK on March 16, with the fishery limited to select outer coastal areas through April 15.
- ✓ Spring troll: May & June restricted to outer coast and/or near hatchery release sites; all inside waters outside terminal harvest areas closed.
- ✓ Delayed initial openings of Chinook terminal harvest areas.
- ✓ Portions of Section 15-A (Chilkat River) closed to trolling July 1 - Dec 31.
- ✓ Summer troll: All waters of District 8 (Stikine River) and select areas of District 1 (Unuk River) closed to retention during 1st summer Chinook opening, July 1-4.
- ✓ Purse seine: delayed Chinook retention outside terminal harvest areas until July 27.
- ✓ Drift gillnet: delayed openings, reduced area, and mesh restrictions were implemented.

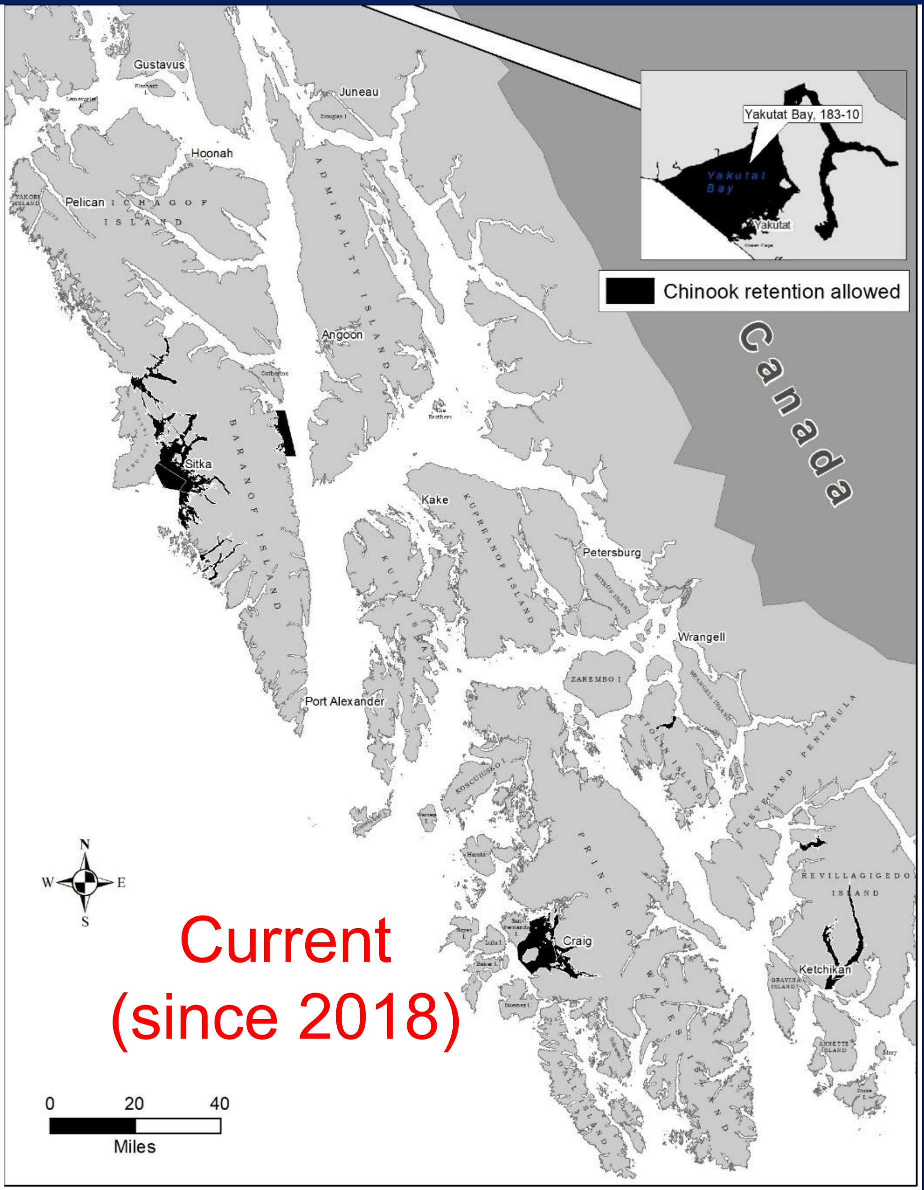
Management Actions to Conserve SEAK & TBR Stocks

- **SPORT FISHERIES:**
  - ✓ Retention of Chinook was prohibited in inside waters, excluding designated hatchery areas, from April 1–June 14, extending through June 30 in the Juneau area, July 14 in the Petersburg/Wrangell area, August 14 in the Ketchikan area, and through Dec. 31 in the Upper Lynn Canal area.

- **SUBSISTENCE AND PERSONAL USE FISHERIES:**
  - ✓ Chilkat River & Inlet: reduced time and area.
  - ✓ Taku River: personal use fishery delayed until July 15 to achieve bilateral agreement on a federal Taku subsistence fishery.
  - ✓ Stikine River: directed Chinook subsistence fishery closed; sockeye subsistence fishery delayed until June 21.

Spring Troll Fishing Areas

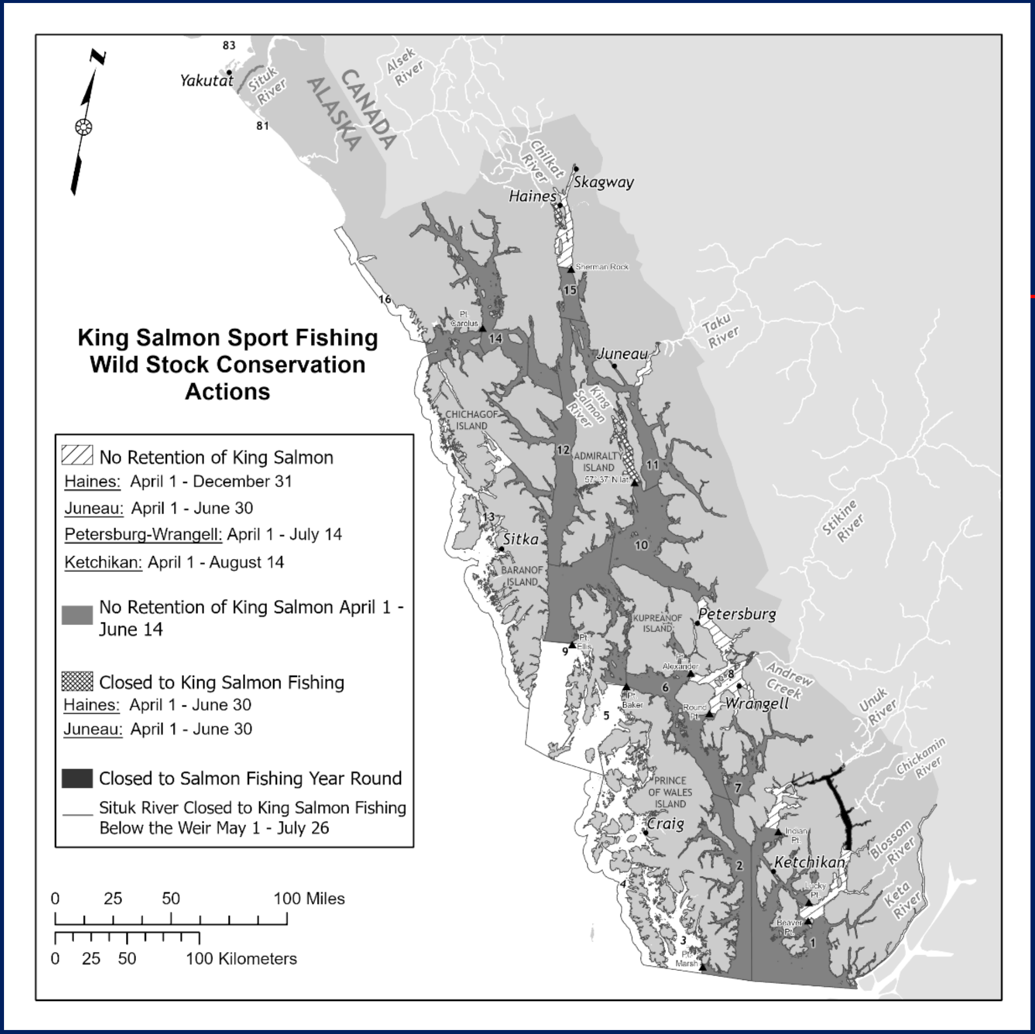




Summer Troll Management

- Traditionally, summer Chinook fishery limited to two openings to provide opportunity to harvest remaining annual troll allocation.
  - 1st summer retention period open for 4 days, July 1-4.
  - 2nd competitive retention period did not open in 2025, insufficient allocation remaining after 1st opening.

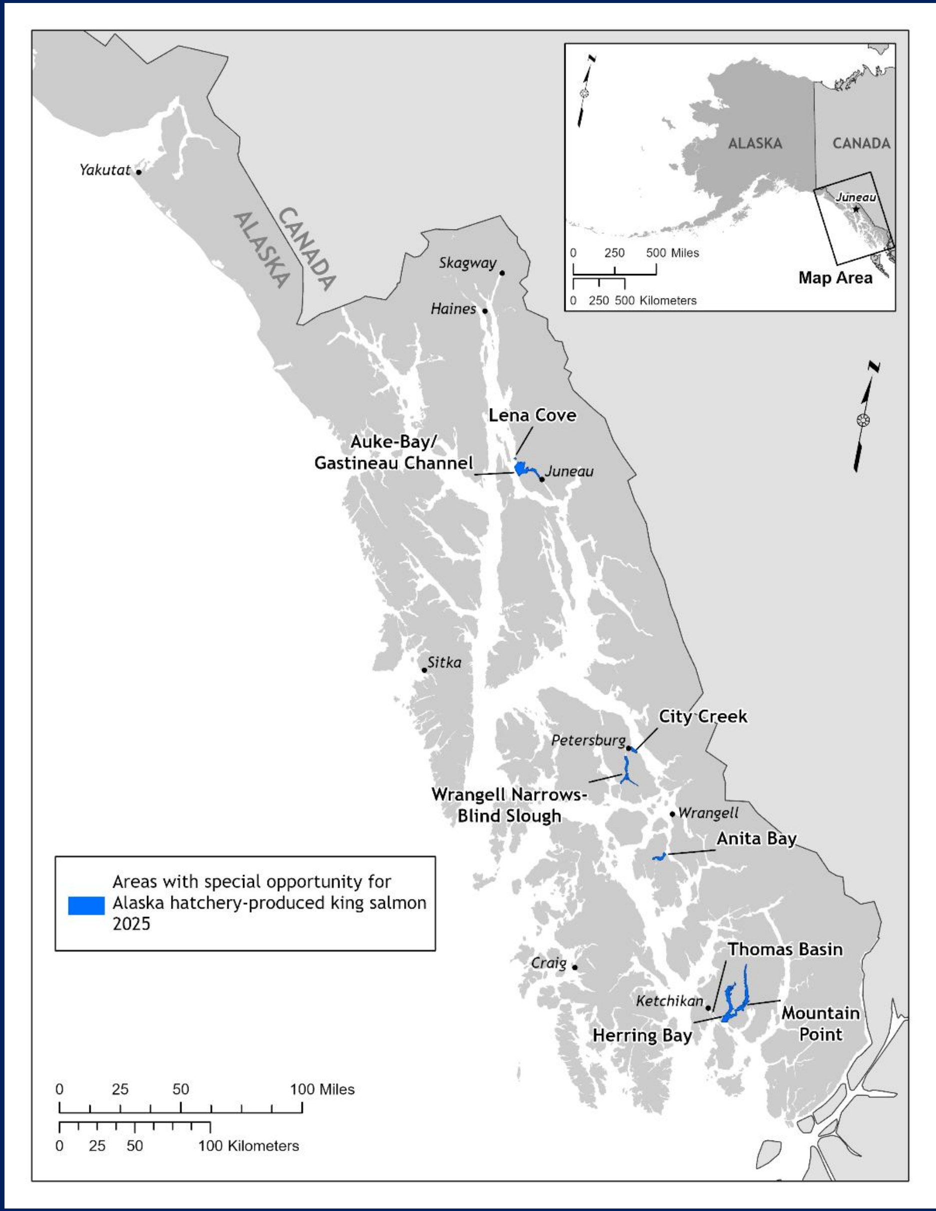
- Limited Harvest Fisheries
  - 3 separate 10-day allocated retention periods in August and September with 15-18 Chinook/permit.



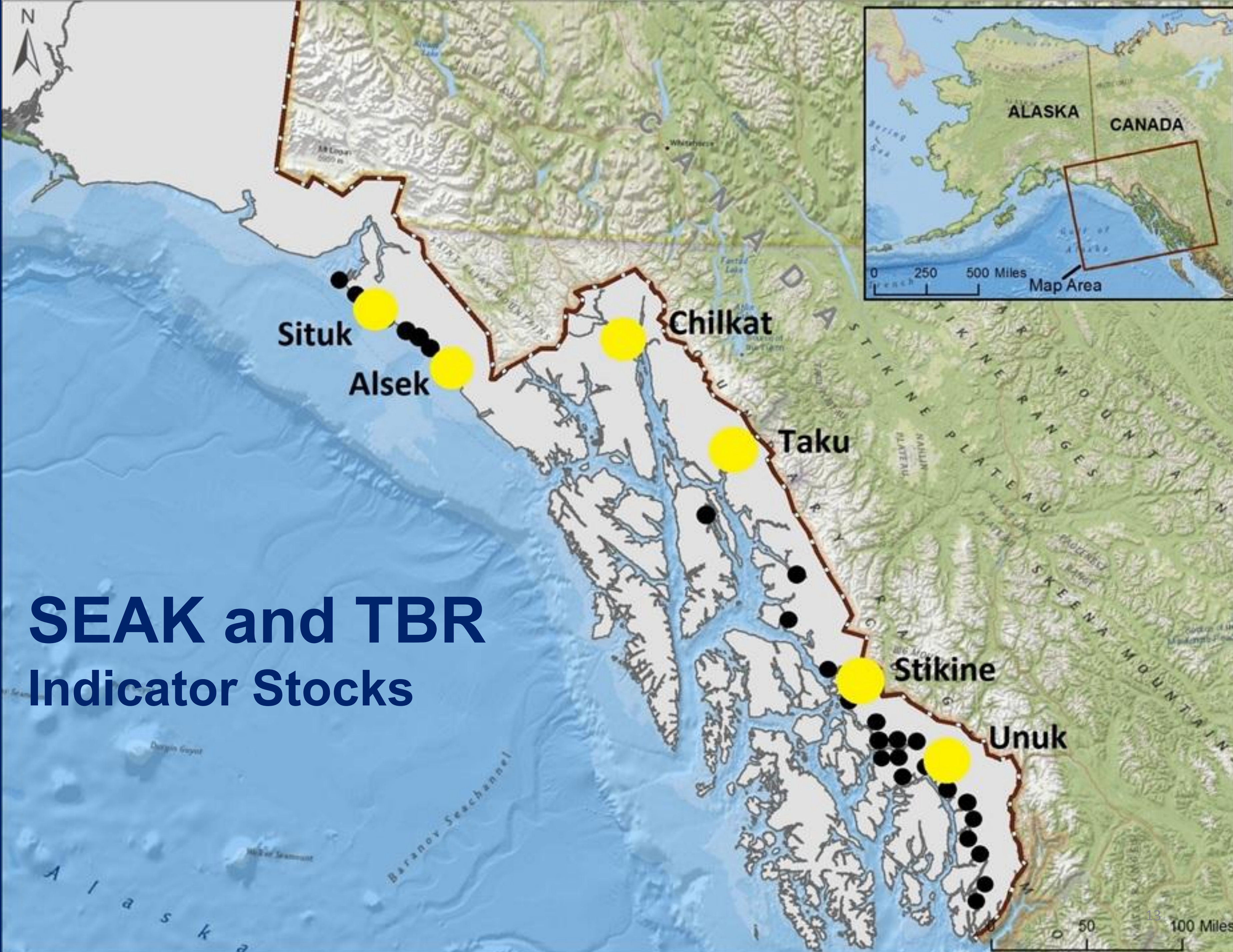
2025 Sport Fishery Management Actions:

- Regional bag, possession, & annual limits applied during areas and times outside of wild stock conservation actions and designated hatchery areas.
- Sport fishery was closed to retention for nonresidents beginning July 7 - August 3.

2025 Designated Hatchery Sport Harvest Areas:



- Special regulations to allow harvest opportunity within areas and times when Alaska hatchery produced Chinook are available.
- Open periods were unique to each location and ranged June 1 – August 31.



SEAK and TBR
Indicator Stocks

SEAK & TBR Escapement 2019-2025

Stock	2019	2020	2021	2022	2023	2024	2025
Situk	620	1,197	1,134	890	144	517	1,353
Alsek	6,319	5,330	5,562	3,351	4,185	4,185	6,135
Chilkat	2,028	3,180	2,038	1,582	2,234	2,070	4,054
Taku	11,558	15,593	11,341	12,722	14,755	24,518	42,972
Stikine	13,817	9,753	8,376	9,090	12,795	9,835	15,076
Unuk	3,115	1,135	2,666	1,304	2,072	1,980	1,381

- Poor production since 2012
- Performance uptick in 2025 for northern SEAK and TBR stocks

SEAK AABM Fishery
Primary Treaty Obligations

1. Manage to preseason catch limit

   Actual Treaty catch was 4,892 below the limit

2. Manage to achieve escapement goals for 6 SEAK and TBR stocks

   With restrictive management actions 5 of 6 escapement goals met

3. Payback any overages the following year

   No overage in 2025 = no payback in 2026

4. Manage incidental mortality to not exceed 59,400

   Below limit in 2024; do not anticipate exceeding in 2025 (TBD = March)

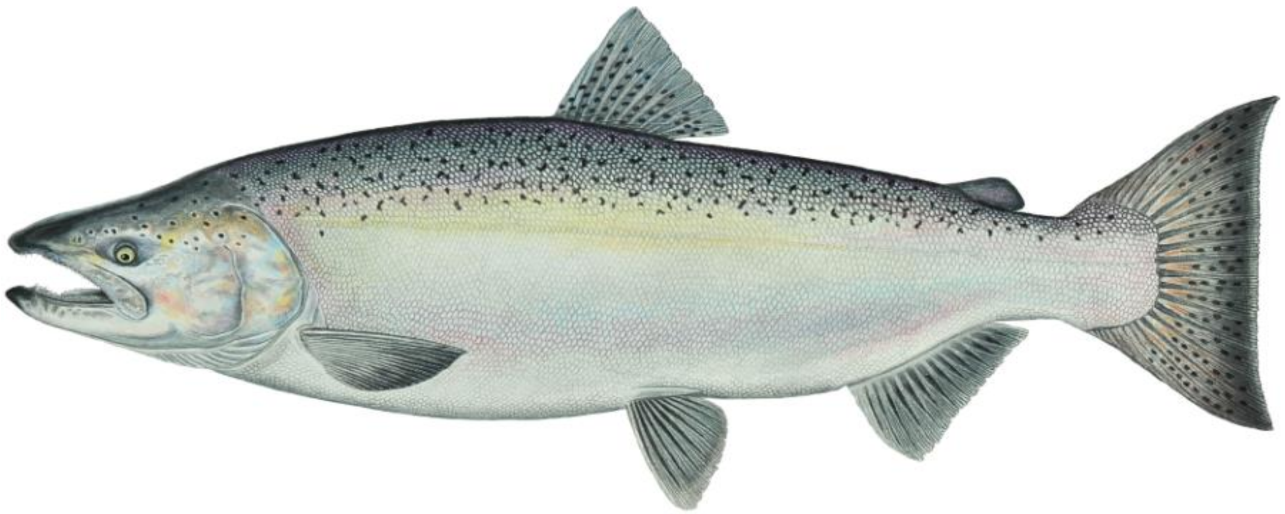
Questions?

Fisheries and Oceans Canada / Pêches et Océans Canada

2025 – Canadian Chinook Fishery Post-season Review

Fisheries and Oceans Canada

January 12, 2026



Canada

Objectives

Key drivers for management of Canadian fisheries in 2025:

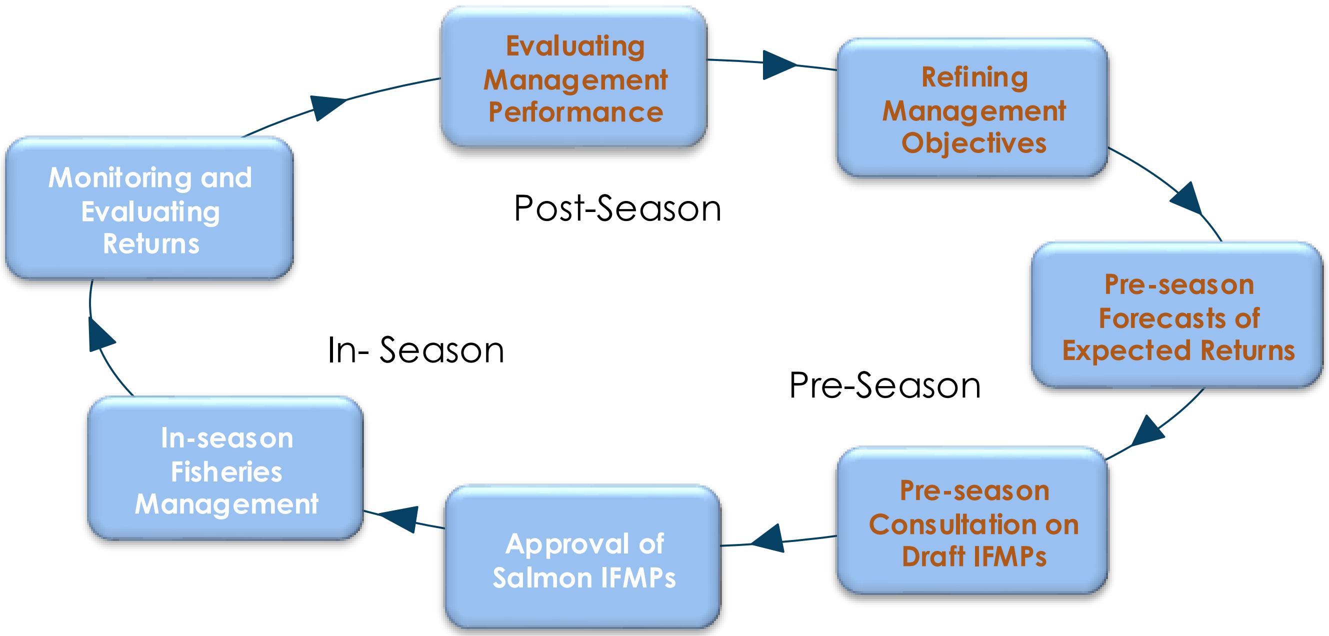
- Treaty obligations PSC CYER limits and Escapement Goals
- Conservation measures for Fraser stream-type Chinook
- Conservation measures for WCVI and Skeena Chinook
- Prey availability measures for SRKW
- Priority access for FSC
- Recreational and commercial fisheries

Management Process for Pacific Salmon Fisheries

There are four Pacific Salmon IFMPs:

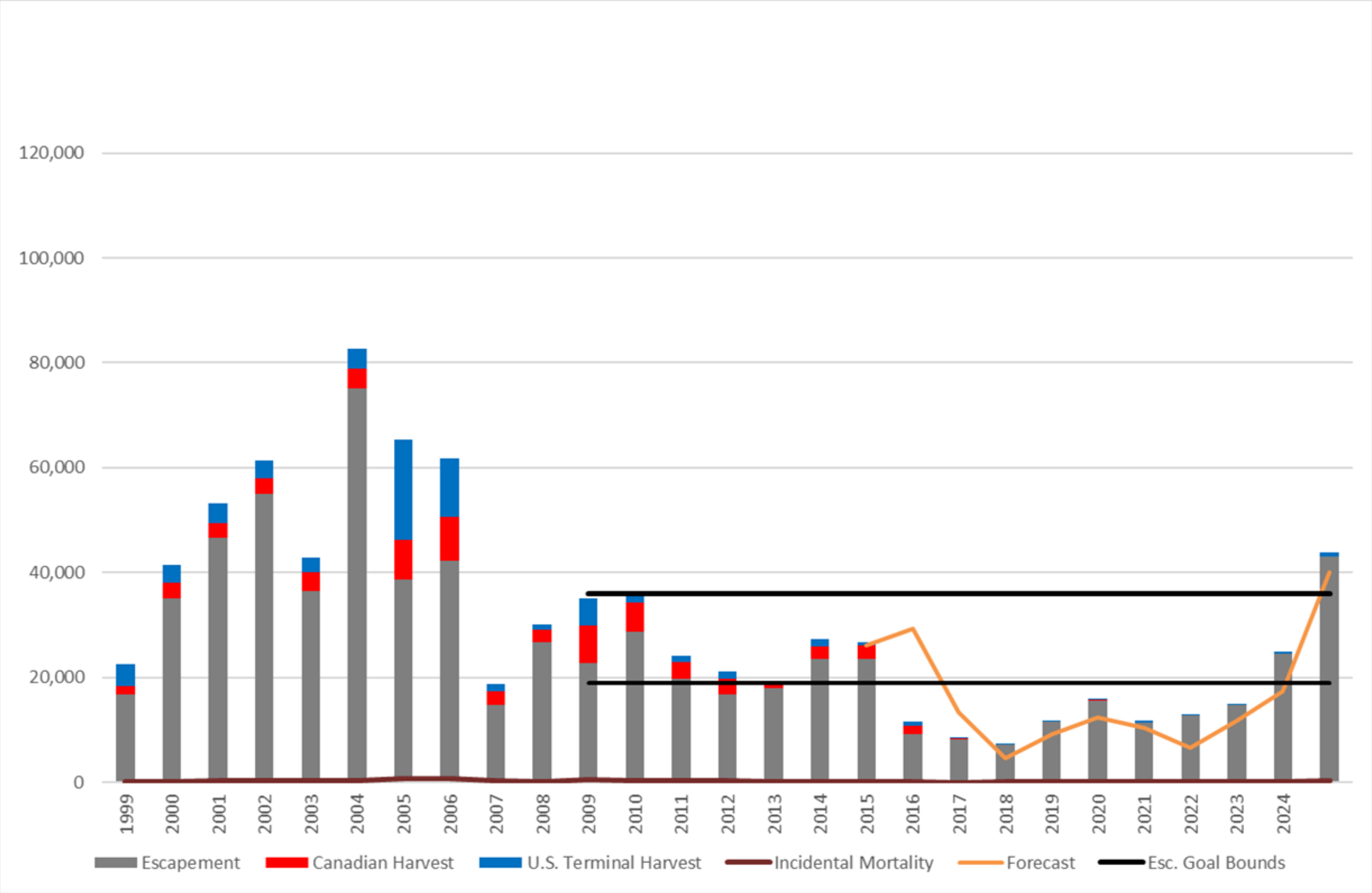
- Transboundary Rivers (effective April 1 – March 31),
- Southern British Columbia (July 1 – June 30),
- Northern British Columbia (July 1 – June 30),
- Yukon River (July 1 – June 30)

Management Process for Pacific Salmon Fisheries

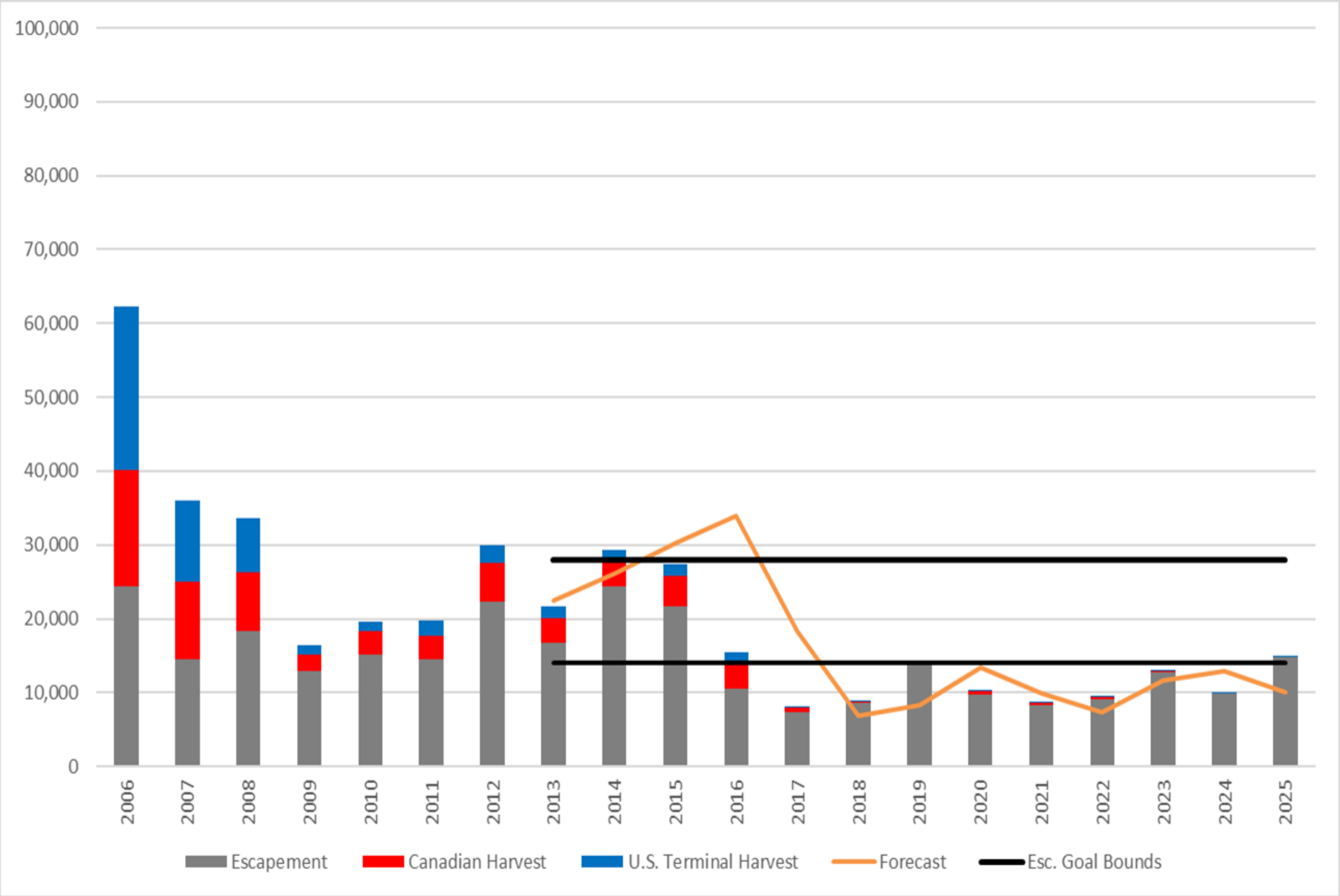


- Pre-season planning: December through April; Review fisheries performance and treaty obligations, develop fishery options if needed to meet objectives
- Consultation with First Nations, commercial fleets, and the recreational sector. Overlaps with PST meetings. Draft Northern and Southern IFMPs are released as part of the consultation process
- In-season management: Fisheries occur throughout the year; high intensity management period is June through October
- Post-season: Late fall/winter; review of spawner abundances and catches; performance relative to management objectives

Taku River Chinook Salmon Escapement Estimates



Stikine River Chinook Salmon Escapement Estimates

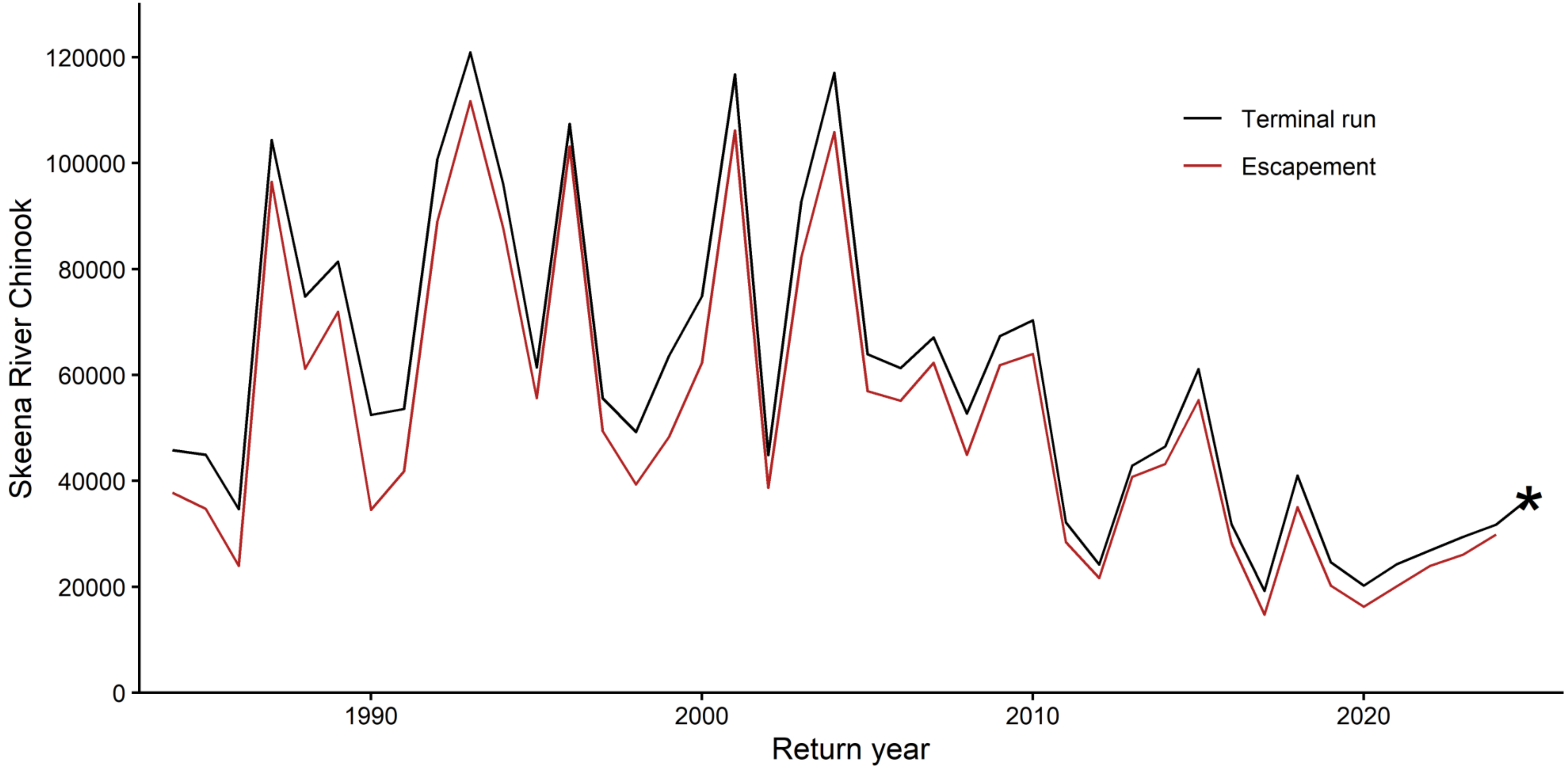


Nass Chinook TRTC

2025 Total Return to Canada = 27,400
2025 Escapement = ~23,000

15,000 is the current escapement goal for Nass Chinook
Data courtesy of Nisga'a Fisheries and Wildlife Department

Skeena Preliminary Terminal Run Estimate



2025 Terminal Run = ~ 36,700

Notes: All values based on Kitsumkalum River POPAN estimate. 2025 value subject to change based on genetic analysis excluding jacks.

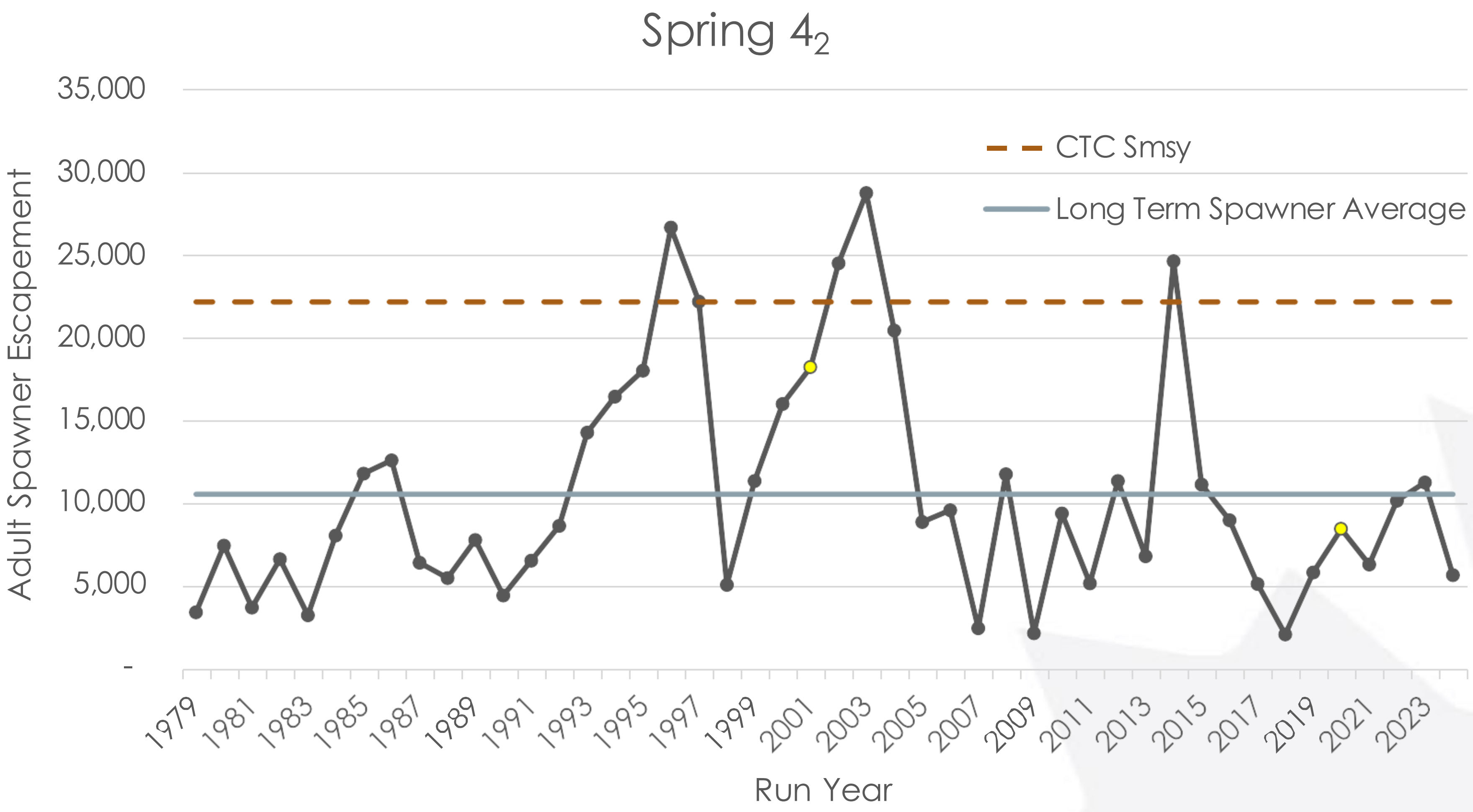
Canadian Chinook Indicators w/ Defined Objectives

Country	CWT Indicator	Escapement Indicator	Preliminary 2025 Escapement	Management Objective
CAN	ATN	Atnarko	~20,000[a]	5,009[b]
CAN	COW	Cowichan	28,689	6,500
CAN	SHU	Lower Shuswap	29,891	12,339
CAN	HAR	Harrison	114,069	75,100

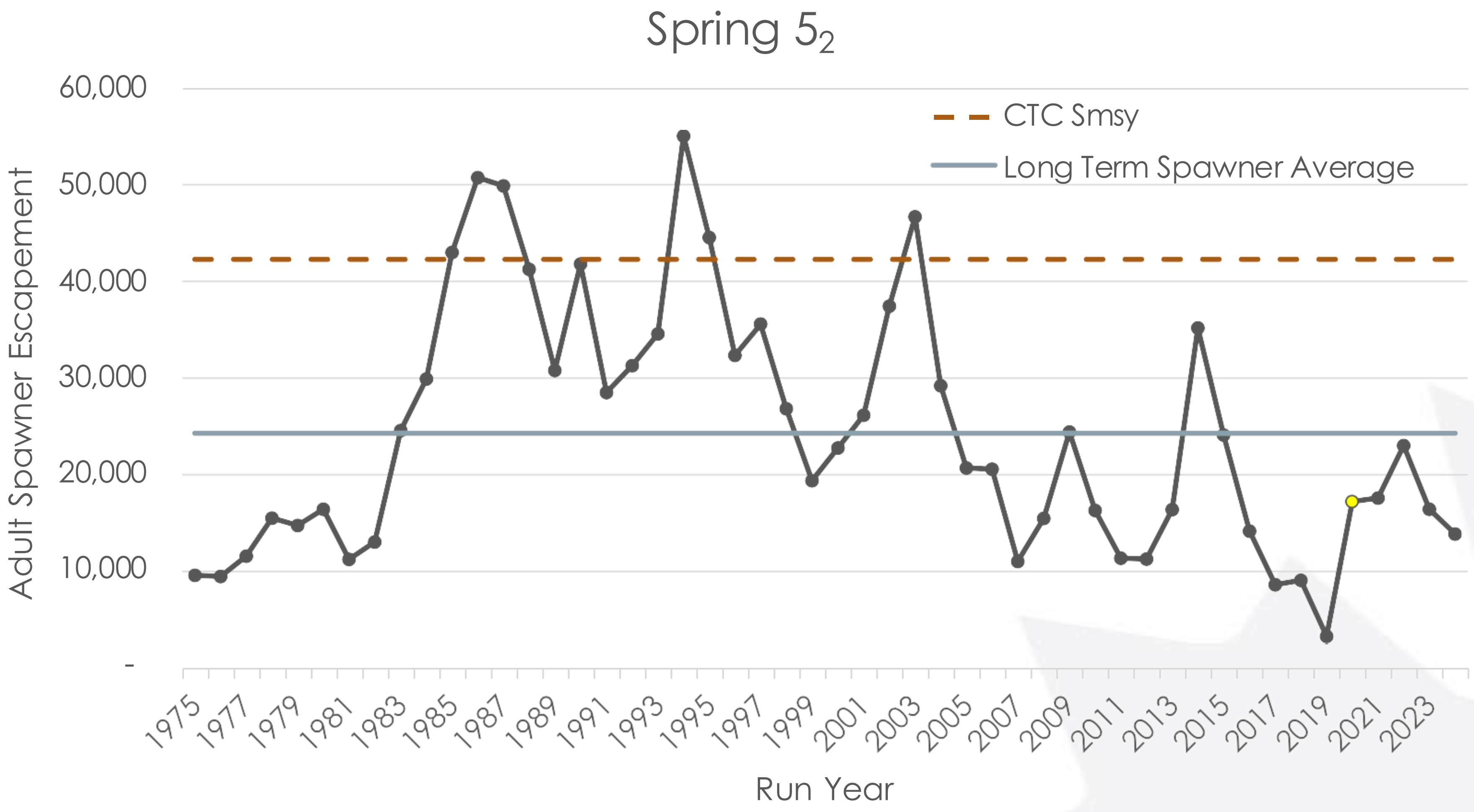
a. Petersen estimate including hatchery origin spawners; it will be replaced with a POPAN estimate for natural origin spawners

b. Atnarko – Management Objective is 5,009 natural origin spawners

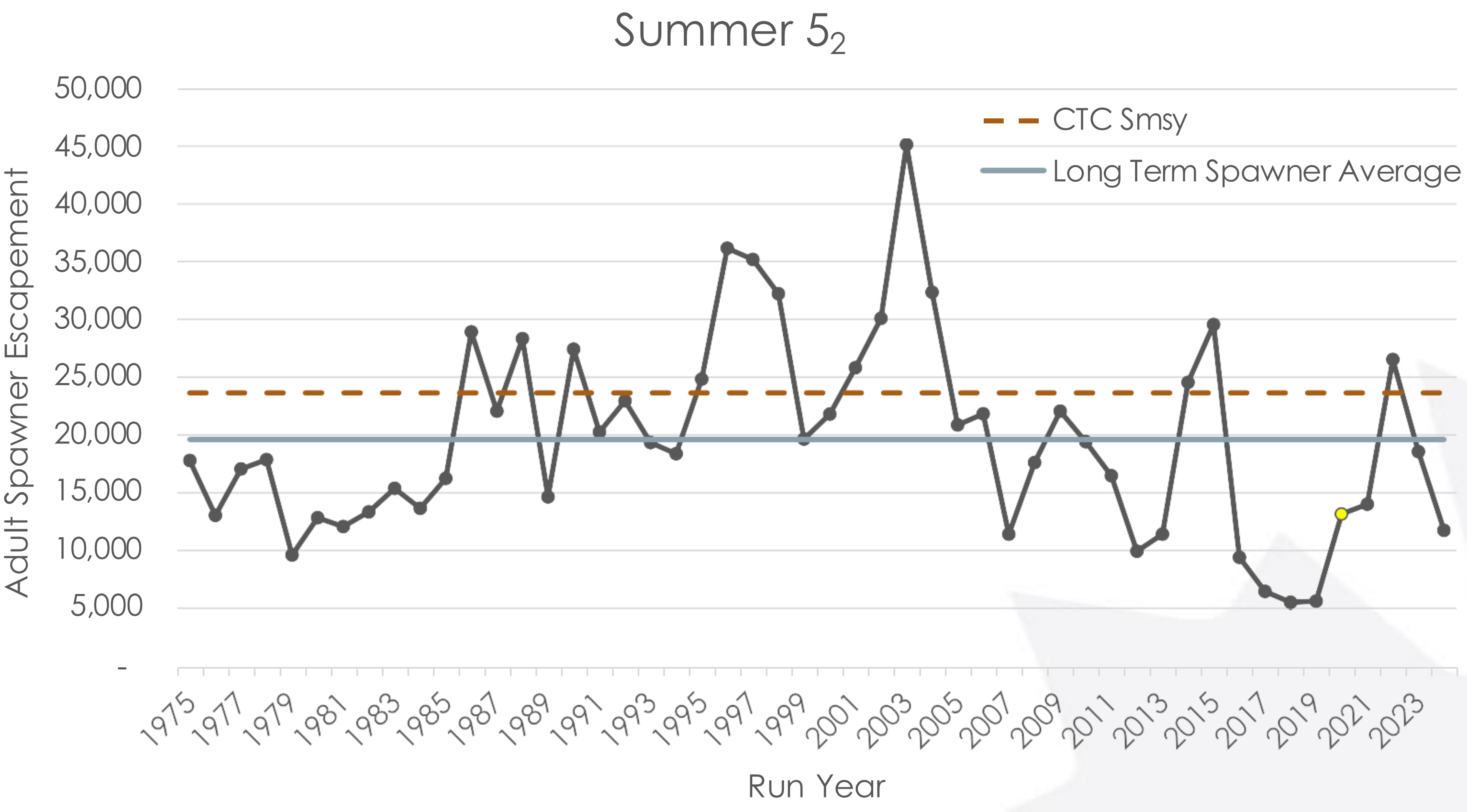
Escapement - Fraser Spring 4_2 Chinook



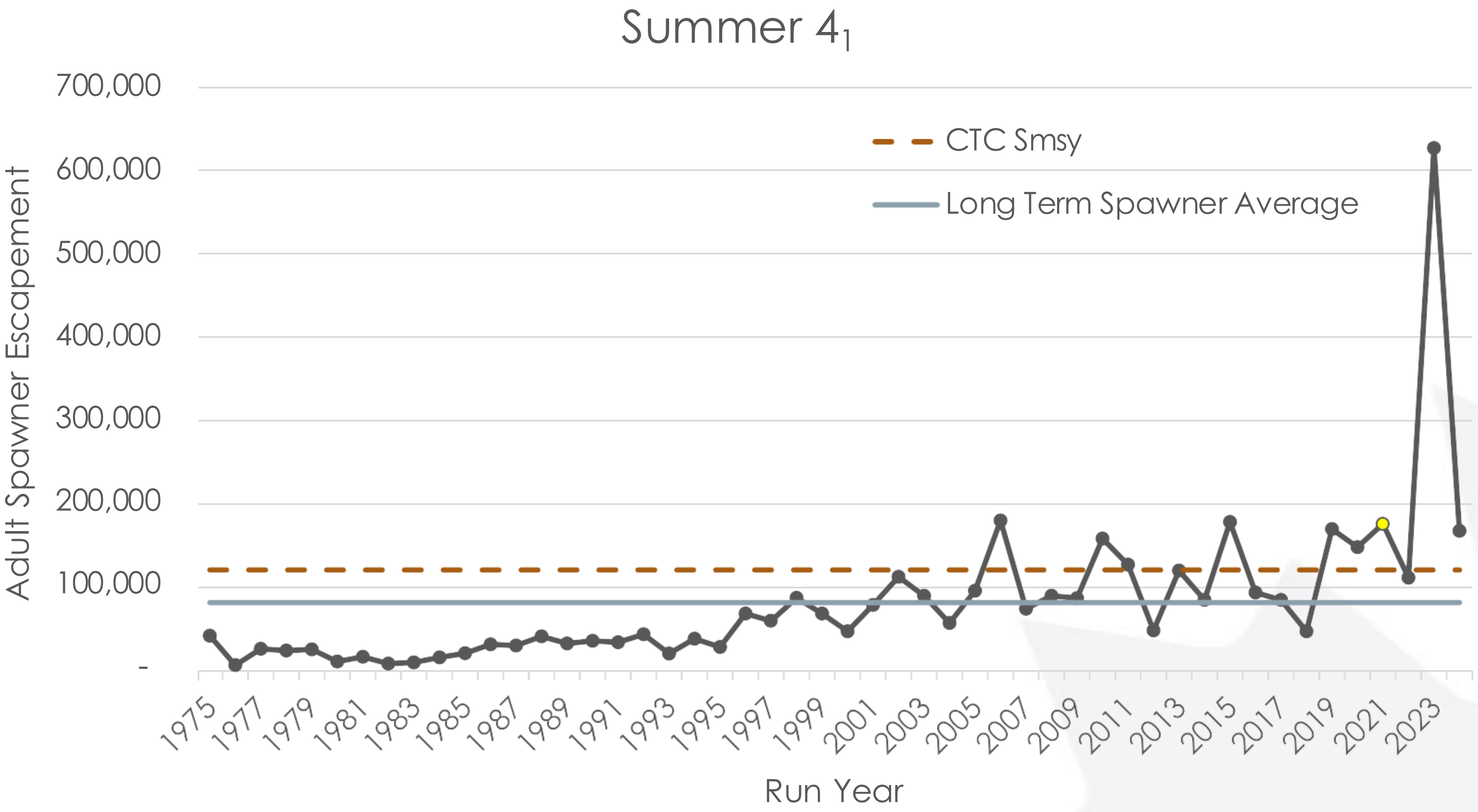
Escapement - Fraser Spring 5_2 Chinook



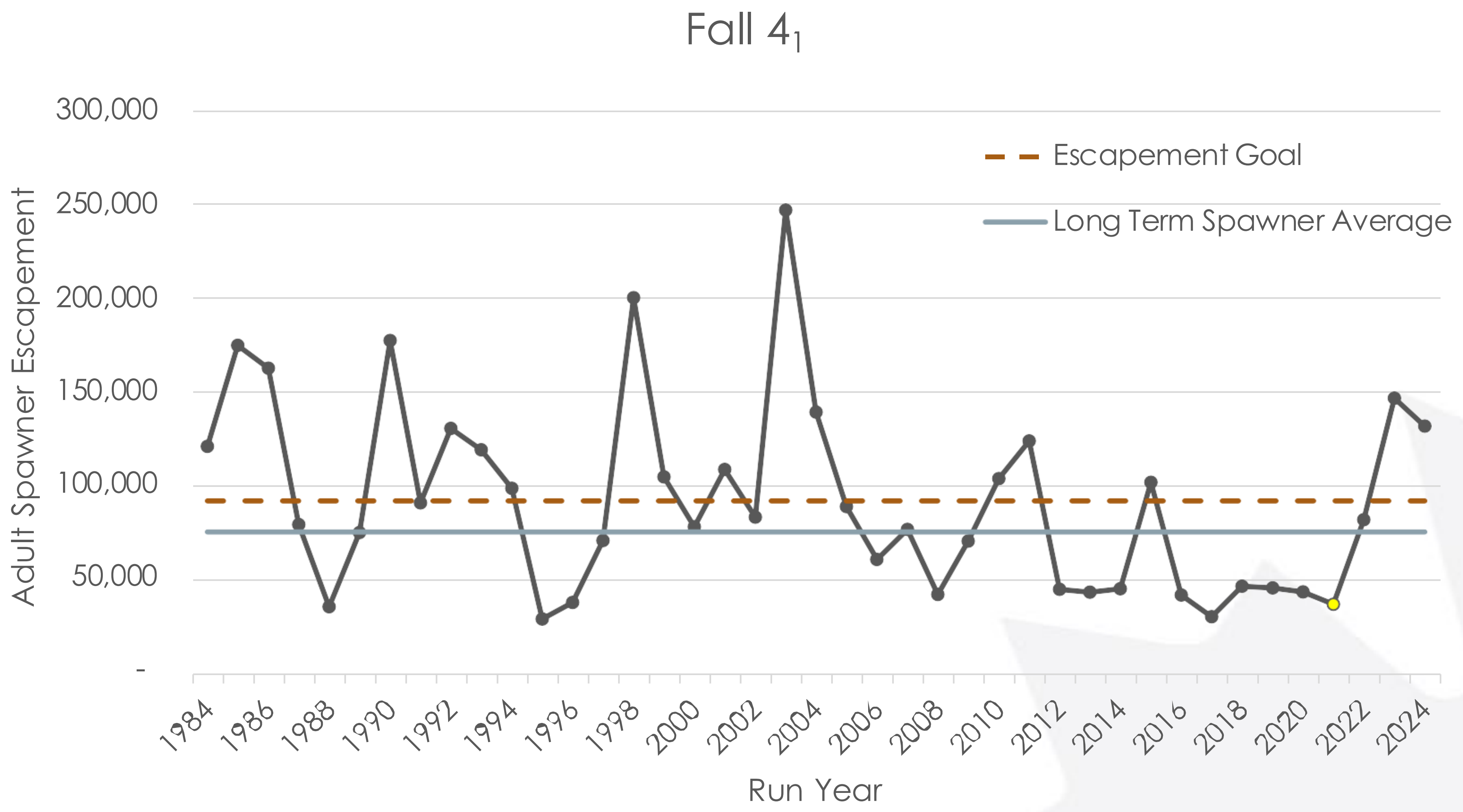
Escapement - Fraser Summer 5_2 Chinook



Escapement - Fraser Spring 4_1 Chinook



Escapement - Fraser Fall 4_1 Chinook



Initial Field-season update 2025 Fraser Chinook

- The following 2025 estimates will change and should only be viewed as an initial update from the field season. They should not be used in any analysis or comparison

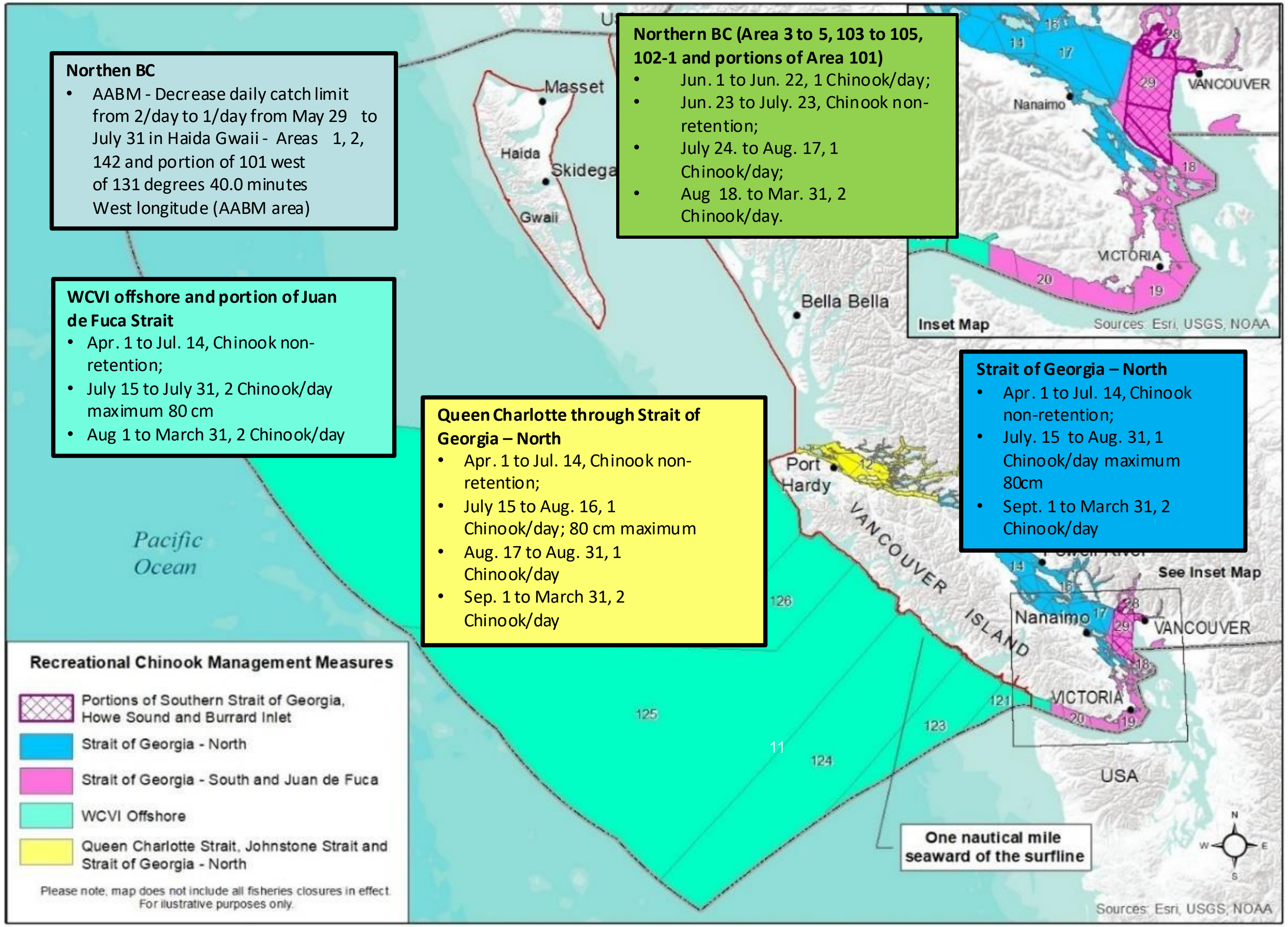
- Caveats include missing estimates from some systems, verification, infilling and mark-recapture estimation are all incomplete.

SMU	2025 Field Escapement Estimate
Spring 4_2	5,536
Spring 5_2	26,686
Summer 5_2	21,139
Summer 4_1	220,754
Fall 4_1	173,069

2025 Chinook Management

- Constraining fisheries to stay within treaty limits in AABM and ISBM fisheries, reduce impact son stocks of concern
- Provision of priority access for First Nations FSC harvests in South Coast and Fraser River.
  - South Coast FSC fisheries opportunities on mixed stocks were permitted in marine areas with the exception of the approaches to Fraser River (Subareas 29-6, 29-7, 29-9 and 29-10).
  - Very limited Fraser River FSC fisheries opportunities were permitted in June and July to limit impacts on at-risk Fraser Chinook, with opportunities to target healthy Summer 41 Chinook in August.
- Commercial troll fisheries delayed into August to avoid Fraser Chinook encounters.
  - Area F (Northern BC) – Chinook non-retention until August 16 (directed fishery also Closed)
  - Area G (WCVI) – Delayed start until August 16
- Recreational measures are summarized on following slides
- In addition, a small number of pilot opportunities were provided in areas away from main Fraser Chinook migratory corridors/rearing areas with additional FN consultation and catch monitoring/sampling to address potential concerns

2025 Recreational Chinook Management Measures



Northen BC

- AABM - Decrease daily catch limit from 2/day to 1/day from May 29 to July 31 in Haida Gwaii - Areas 1, 2, 142 and portion of 101 west of 131 degrees 40.0 minutes West longitude (AABM area)

Northern BC (Area 3 to 5, 103 to 105, 102-1 and portions of Area 101)

- Jun. 1 to Jun. 22, 1 Chinook/day;
- Jun. 23 to July. 23, Chinook non-retention;
- July 24. to Aug. 17, 1 Chinook/day;
- Aug 18. to Mar. 31, 2 Chinook/day.

Portions of Southern Strait of Georgia, Howe Sound and Burrard Inlet (hatched area)

- April 1 to August 31: No fishing for Chinook
- September 1 to March 31: 2 Chinook per day.

WCVI offshore and portion of Juan de Fuca Strait

- Apr. 1 to Jul. 14, Chinook non-retention;
- July 15 to July 31, 2 Chinook/day maximum 80 cm
- Aug 1 to March 31, 2 Chinook/day

Strait of Georgia – North

- Apr. 1 to Jul. 14, Chinook non-retention;
- July. 15 to Aug. 31, 1 Chinook/day maximum 80cm
- Sept. 1 to March 31, 2 Chinook/day

Queen Charlotte through Strait of Georgia – North

- Apr. 1 to Jul. 14, Chinook non-retention;
- July 15 to Aug. 16, 1 Chinook/day; 80 cm maximum
- Aug. 17 to Aug. 31, 1 Chinook/day
- Sep. 1 to March 31, 2 Chinook/day

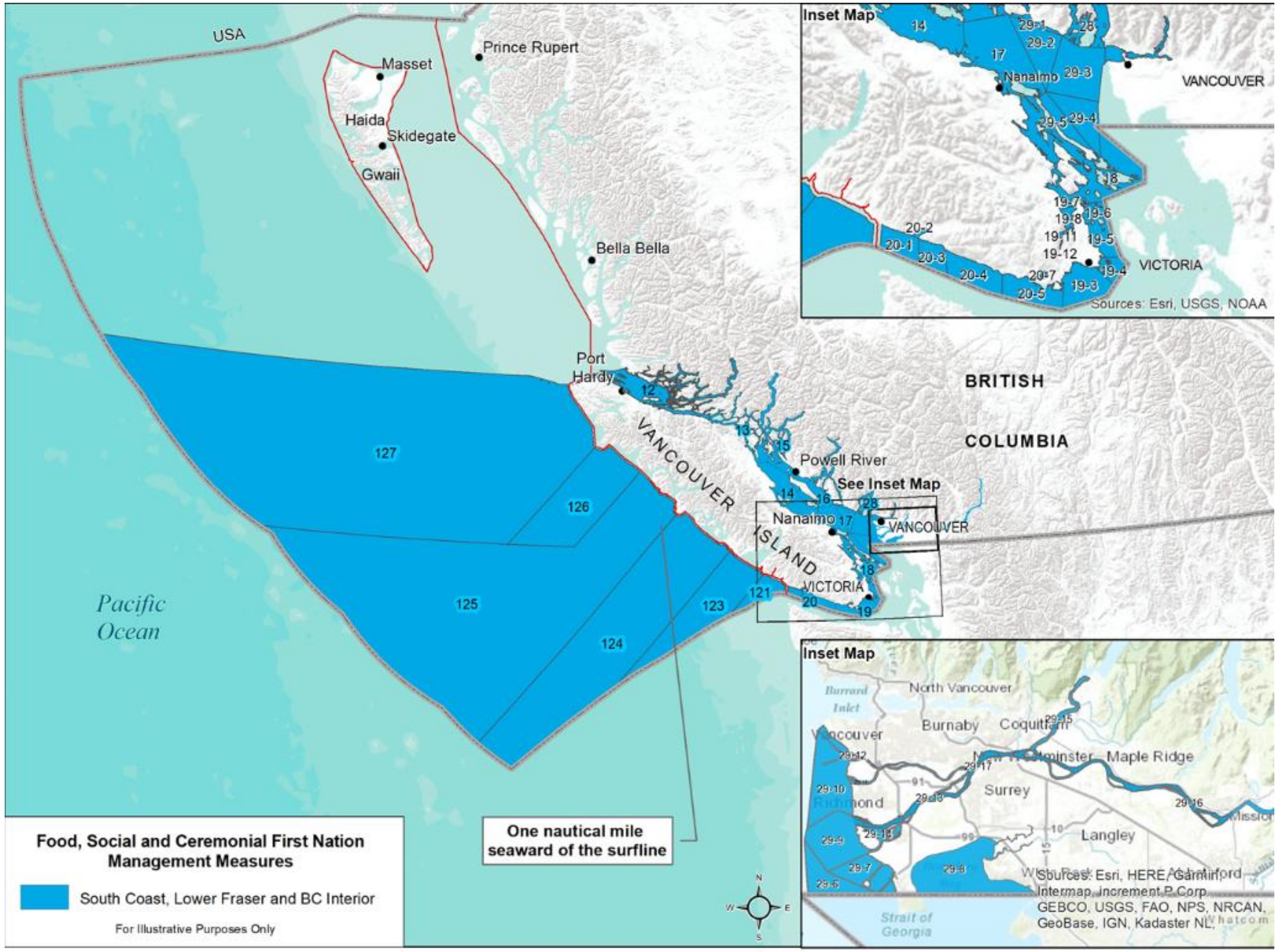
- Southwest Vancouver Island - Subareas 20-1 and 20-2
- Portions of offshore WCVI - Areas 121 and 123
- Northern Vancouver Island - Area 111
- July 15 to July 31, 1 Chinook/day maximum 80cm

2025 Recreational Management Measures – Fraser River

- **Approaches to Fraser River - Subareas 29-6, 29-7, 29-9 to 29-17 and the non-tidal waters of the Fraser River from Mission Bridge to the confluence with Sawmill Creek:**
  - January 1 to November 1: No fishing for salmon
  - (Fishing opportunities for specific salmon stocks were considered)

- **Freshwater Regions 3,5,7 & 8: Year-round:**
  - Closed to fishing for salmon
  - (Fishing opportunities for specific salmon stocks may be considered)

2025 First Nations Food, Social and Ceremonial



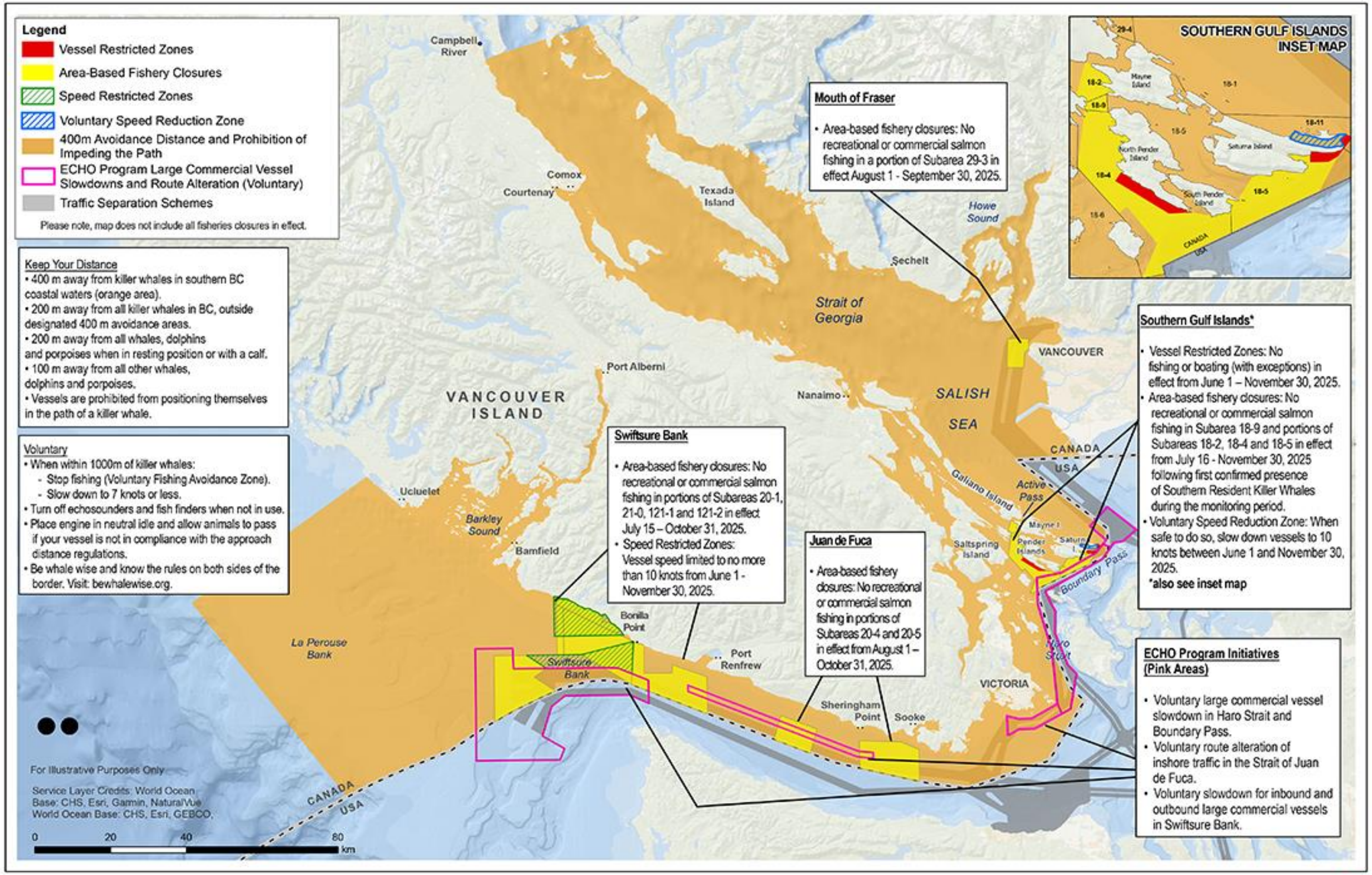
Southern BC marine waters:

- Chinook directed opportunities were not restricted in 2025

Lower Fraser and BC Interior:

- Chinook directed fisheries occurred from April through September including:
  - Sumas and Chilliwack River (July to August)
  - Chehalis River (July to August)
  - Birkenhead River (April to June)
- Fisheries also occurred above Sawmill Creek from July through early October

2025 SRKW Management Measures



Overview of 2025 management measures to protect Southern Resident Killer Whales

Canada

Northern BC AABM Catch Summary

Licence Group	Pre-season TAC	In-Season TAC	Preliminary Catch
NC BC Troll AABM and Haida Gwaii Sport Abundance Index	1.16	1.16	N/A
Area F Troll	107,900	107,900	68,726
Recreational - Haida Gwaii (Areas 1+2)	39,788	33,800[a]	29,627
Total AABM Chinook	**147,688**	**141,700**	**98,353**

a. Forecast reduced by 15% to account for reduced lodge capacity and bag limits.

Summary ISBM Catch – Northern BC

Licence Group	Preliminary Catch
First Nations FSC & Treaty	9,076
Commercial	180
Recreational*	24,939
Total	**34,195**

a. Total includes Nisga'a sale harvests

WCVI AABM Catch Summary

Pre-Season TAC's & Preliminary Catch Estimates Oct 2024-Sept 2025

	Pre-Season TAC	In-Season TAC	Preliminary Catch
WCVI AABM AI	1.01	N/A	N/A
First Nations (FSC)	10,000 a	10,000 a	3,545 b
Maa-nulth Treaty	3,913	3,913	1,838 b
Five Nations	17,009	22,151 c	22,151 c
AABM Recreational	40,000 a	40,000	43,103 b
Maa-nulth ICEF	n/a	4,193 d	479
Area G Troll	43,578	34,243 e	31,743
Total AABM Chinook	**114,500**	**114,500**	**102,859**

a. Expected catch
b. Preliminary
c. Including overage
d. 10.91% share of commercial TAC (reduced by overage from c)
e. Reduced by overage from c, and allocation for d

Summary of ISBM Catch – Southern BC

Licence Group	Preliminary Catch
First Nations FSC & Treaty	4,902
First Nations Commercial*	26,891
Five Nations – WCVI*	26,663
ISBM Recreational*	143,402
Commercial *	35,715
Total ISBM Chinook	**237,573**

*mix of terminal catches in inlets on WCVI and ISBM fisheries in other areas

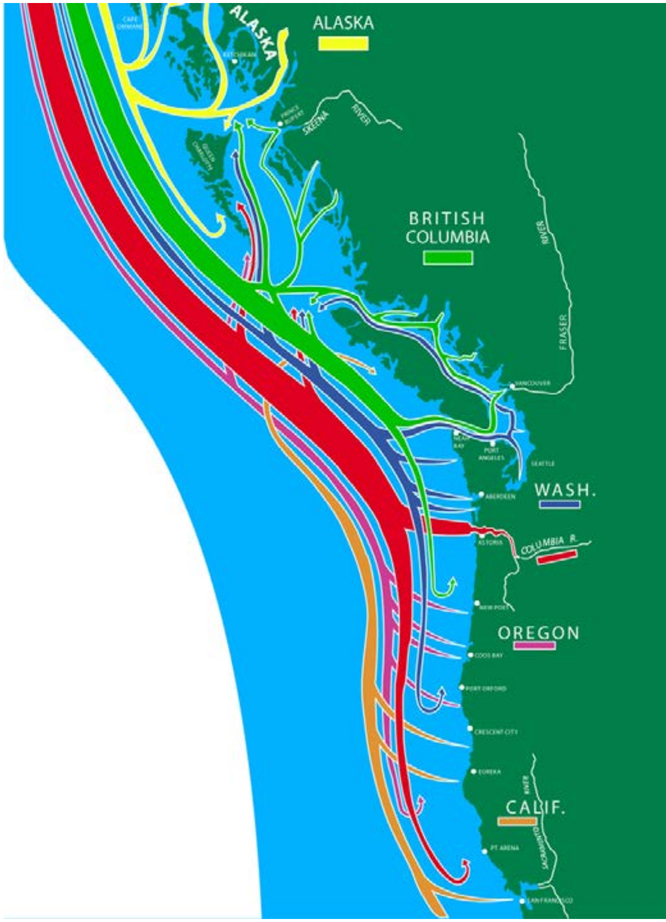
Summary of Transboundary Rivers Terminal Catch – Northwestern BC

Licence Group	Alsek Preliminary Catch	Taku Preliminary Catch	Stikine Preliminary Catch
First Nations FSC	94	56	300
Recreational	0	0	0
Commercial	0	0	0
Total TBR (Alsek, Stikine and Taku Rivers) Chinook			**450**

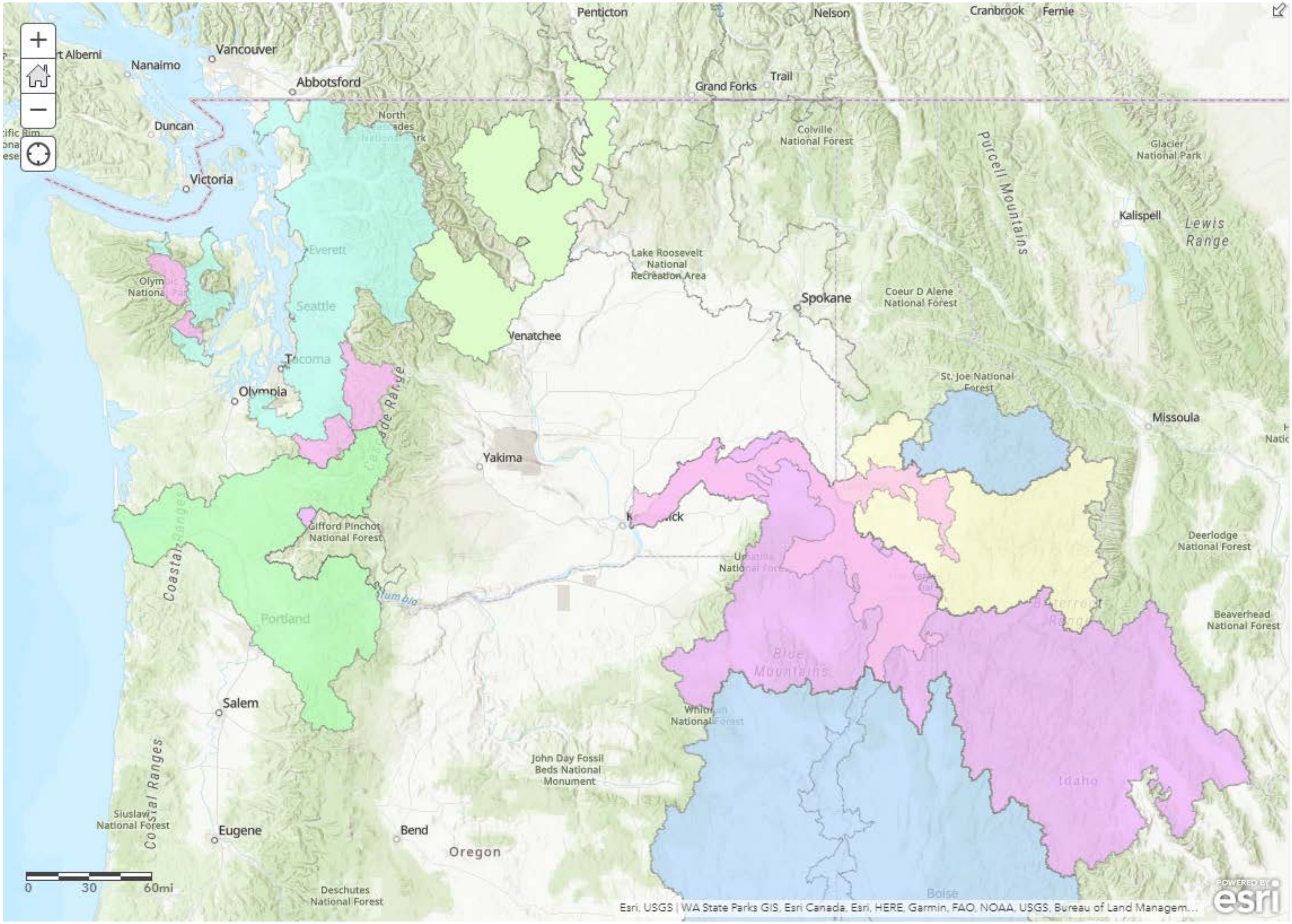

2025 Southern U.S.
Chinook Management

Management Along the Migration

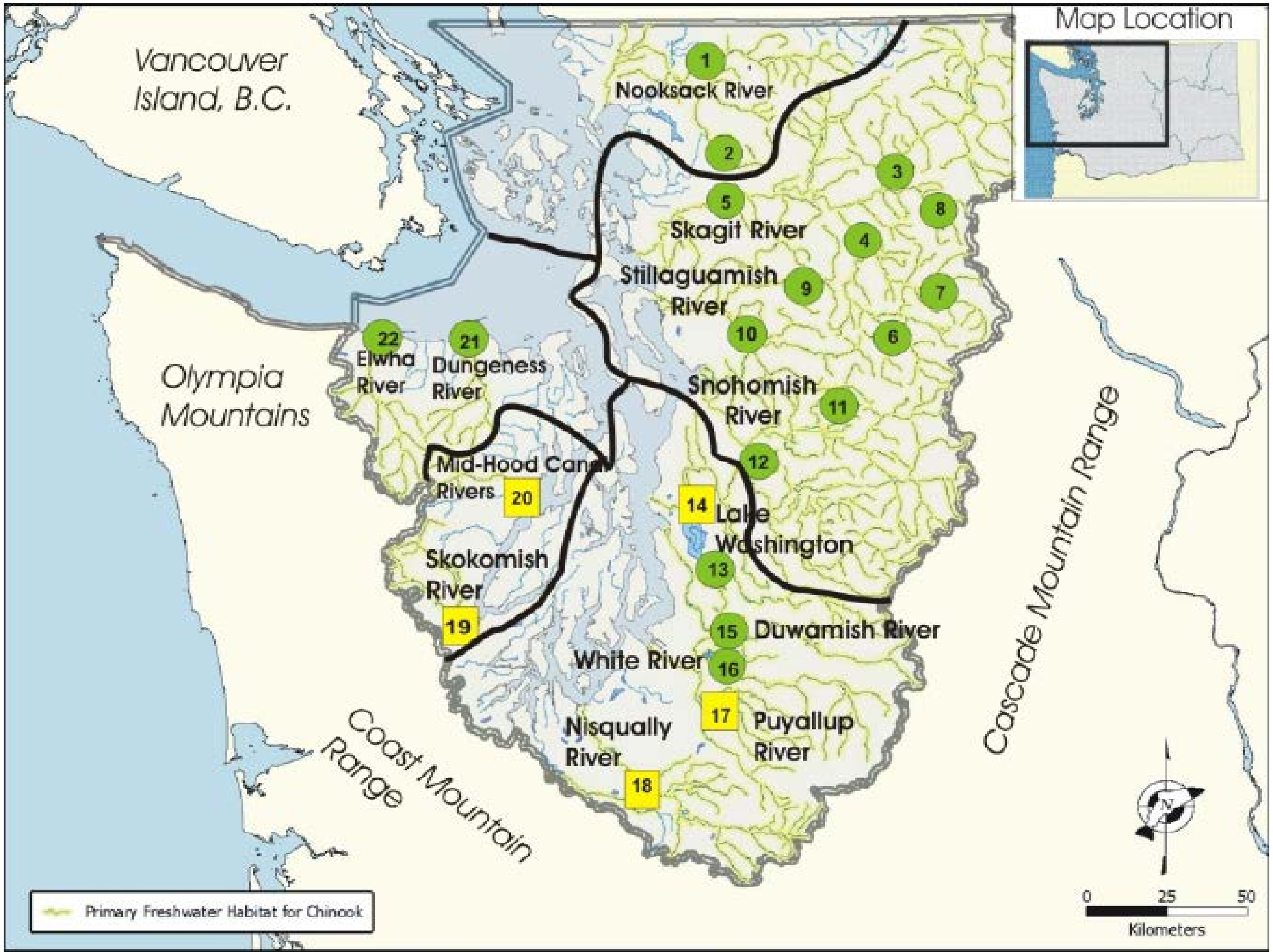
- ESA-Impact Limits on Puget Sound and Columbia River Chinook stocks continue to severely constrain southern U.S. fisheries
- Mixed stock fisheries limited by incidental impacts on constraining stocks
- Intensive Management – Pre-season & In-season



Endangered Species Act-listed Chinook



Puget Sound Chinook Management Units & Populations



Puget Sound Wild Chinook Forecasts: 2024 vs. 2025

Management Unit	2024	2025	Comparison
Nooskack spring	411	527	1.28
Skagit spring	1,630	1,713	1.05
Skagit S/F	10449	9652	0.92
Stillaguamish	503	632	1.26
Snohomish	2655	2899	1.09
Lake Washington	765	852	1.11
Green	2,707	4,566	1.69
White spring	1557	742	0.48
Puyallup	2,615	1,992	0.76
Nisqually	1,186	1,118	0.94
Skokomish	606	699	1.15
Mid Hood Canal	14	7	0.50
Dungeness spring	240	349	1.45
Elwha	143	178	1.24
Hoko	2,030	1,212	0.60
Total	27,511	27,138	0.99

2025 Limiting Chinook Stocks

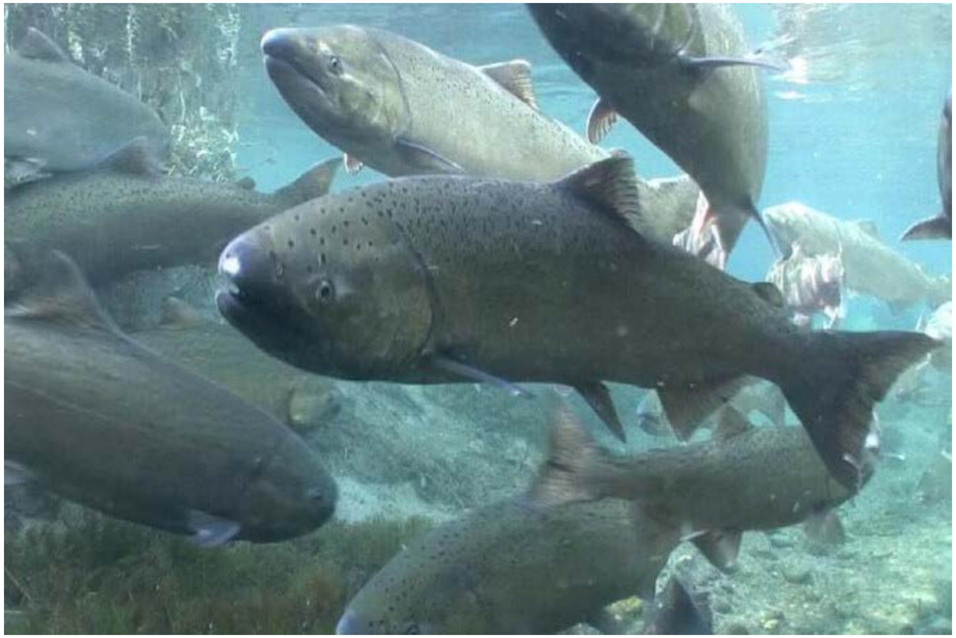
LAT = Low Abundance Threshold

Below LAT

- Nooksack Spring
- Skagit S/F (Sauk)
- Snohomish
- Mid Hood Canal

Other key ESA/constraining stocks

- Lower Columbia River Tules
- Stillaguamish



Stock-Specific Limits

Stock	Management Criteria			Model Prediction			
	Abundance Tier	ER Ceiling	ER Type	Escapement	Total ER	SUS ER	PT-SUS ER
Spring/Early:							
Nooksack - Total		10.9%	SUS		49.2%	**10.9%**	5.1%
North/Middle Fork	< LAT			31			
South Fork	> LAT			429			
Skagit - Total	> LAT	36.0%	Total	1,452	**28.7%**	**15.5%**	3.0%
Upper Sauk	> LAT			898			
Upper Cascade	> LAT			180			
Suiattle	> LAT			374			
White	> UMT	22.0%	SUS	1,344	23.0%	**17.4%**	5.6%
Dungeness	> UMT	10.0%	SUS	1,450	19.3%	**3.4%**	3.4%
Summer/Fall:							
Skagit - Total	> LAT	17.0%	SUS	8,308	39.6%	**17.0%**	4.3%
Upper Skagit	> LAT			6,230			
Sauk	< LAT			346			
Lower Skagit	> LAT			1,308			
Stillaguamish							
Unmarked ER	> LAT	9.0%	UM SUS	1,135	29.7%	**9.0%**	5.3%
Marked ER		14.0%	M SUS		35.9%	**12.7%**	9.2%
Snohomish - Total	< LAT	20.0%	Total	2,852	18.8%	**8.0%**	6.8%
Skykomish		8.3%	SUS	2,051			
Snoqualmie				801			
Lake WA (Cedar R.)	> UMT	14.0%	PT-SUS	796	35.7%	23.7%	**13.3%**
Green	> UMT	14.0%	PT-SUS	3,388	58.1%	46.0%	**13.3%**
				5,899			
Puyallup	> UB	14.0%	PT-SUS	3,251	56.0%	43.9%	**13.3%**
				6,197			
Nisqually	> LAT	47%	Total	7,069	**46.1%**	39.1%	16.4%
Western Strait-Hoko	> UMT	11%	SUS	1,614	19.7%	**2.1%**	2.1%
Elwha	> LAT	10%	SUS	3,750	19.6%	**3.7%**	3.6%
Mid-Hood Canal	< LAT	NA	ESC Change	6	26.5%	16.7%	15.8%
Skokomish	NA	50%	Total	3,527	**49.7%**	40.0%	16.5%
				16,462			

Model Run: SLC-Chin2225_300_Fraser_Sockeye_b
Run Date & Time: 05/02/25 13:16

SRFI =	**54.3%**	**(70% Ceiling)**
Lower Col Nat Tule ER =	**41.0%**	**(41% Ceiling)**

Chapter 3 ISBM Obligations for SUS stocks

Stock Region	Escapement Indicator Stock	Canadian ISBM CYER Limit	US ISBM CYER Limit	Management Objective
WA/OR/ID	Nooksack Spring (NSF)	87.5% avg 09-15	100% avg 09-15	TBD
	Skagit Spring (SKF)	87.5% avg 09-15	95% avg 09-15	690
	Skagit Summer/Fall (SSF)	87.5% avg 09-15	95% avg 09-15	9,202
	Stillaguamish (STL)	87.5% avg 09-16	100% avg 09-15	TBD
	Snohomish (SKY)	87.5% avg 09-17	100% avg 09-15	TBD
	Hoko (HOK)	NA	10% CYER	TBD
	Grays Harbor Fall (QUE adj)	NA	85% avg 09-15	13,326
	Queets Fall (QUE)	NA	85% avg 09-15	2,500
	Quillayute Fall (QUE adj)	NA	85% avg 09-15	3,000
	Hoh Fall (QUE adj)	NA	85% avg 09-15	1,200
	Upriver Brights (HAN, URB)	NA	85% avg 09-15	40,000
	Lewis (LRW)	NA	85% avg 09-15	5,700
	Coweeman (CWF)	NA	100% avg 09-15	TBD
	Mid-Columbia Summers (SUM)	NA	85% avg 09-15	12,143
	Nehalem (SRH adj)	NA	85% avg 09-15	6,989
	Siletz (SRH adj)	NA	85% avg 09-15	2,944
	Siuslaw (SRH adj)	NA	85% avg 09-15	12,925
	South Umpqua (ELK adj)	NA	85% avg 09-15	TBD
	Coquille (ELK adj)	NA	85% avg 09-15	TBD

2025 – Preseason Overview

- Continued restrictive fishery measures in place due to Puget Sound Chinook stocks below their Low Abundance Thresholds

- Terminal area fisheries limited to meet conservation objectives, particularly in areas with stocks below low abundance thresholds and/or with low allowable exploitation rates due to poor stock status

- Puget Sound Recreational Fishery
  - Winter MSF fisheries closed in most areas in PS
  - Summer fisheries opportunities limited, varied by area

2025 – Preseason Overview

- North of Falcon Ocean Chinook quotas highest since large Columbia River runs in 2014 and 2015 due to strong forecasts for key hatchery stocks
  - 2024 = 124,500
  - 2025 = 160,000
- Coho quota similar to 2024, most North of Falcon ocean fisheries were limited in-season by available coho quota
  - 2024 = 137,500
  - 2025 = 145,500

Washington Ocean Chinook & Coho Quotas

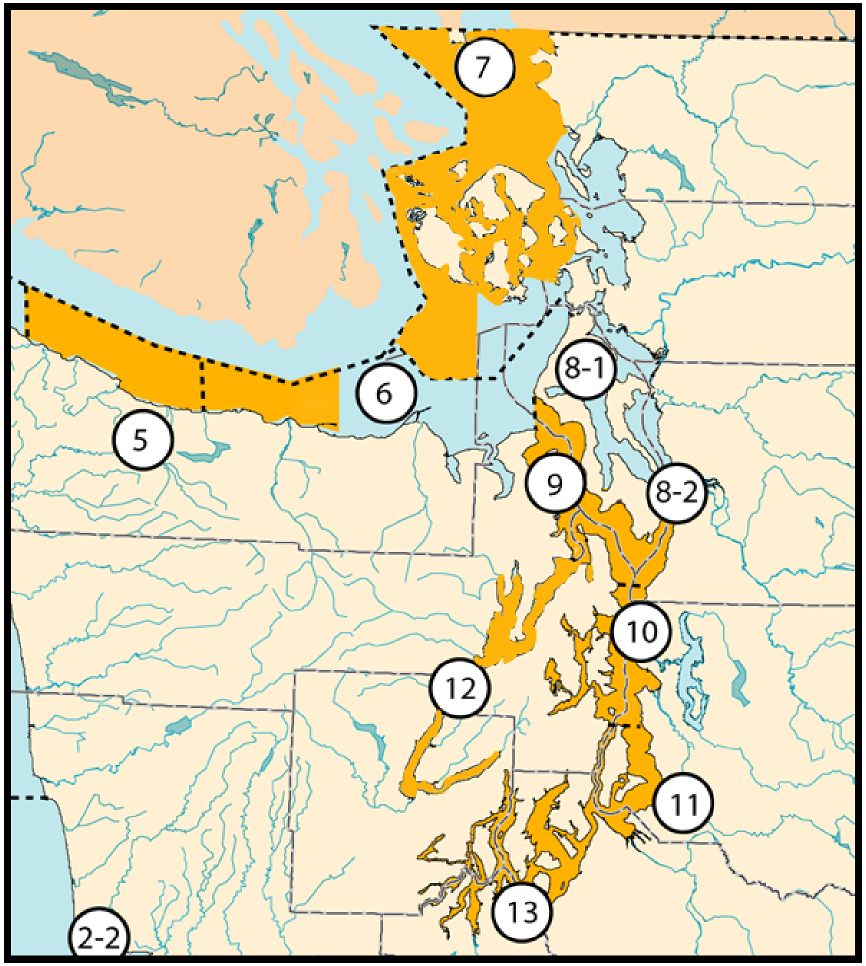
Examples of In-season Actions

- North of Falcon Tribal and Non-tribal ocean troll fisheries managed in-season using commercial landing data. Small weekly landing limits and closures were implemented in non-tribal fishery to ensure quota was not exceeded.

- In the North of Falcon recreational fishery, three of the four subareas were closed early in 2025 due to attainment of their coho quota, while Chinook quota still remained available.

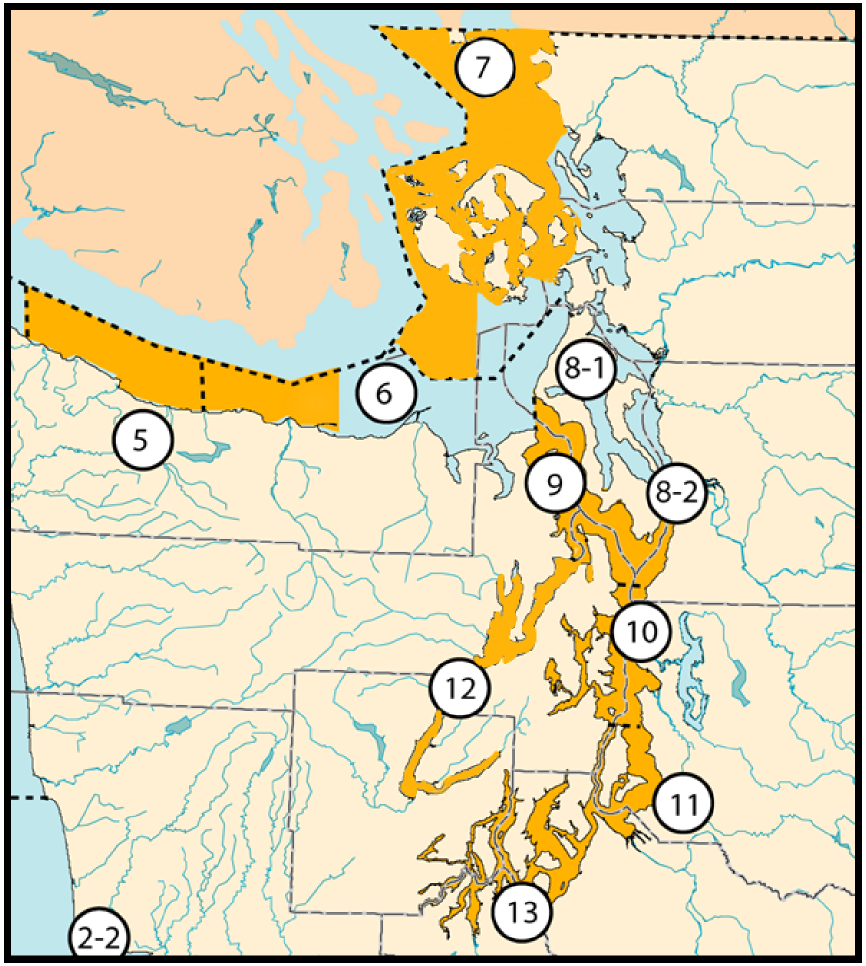
2025 Puget Sound Management

- <u>Puget Sound Recreational:</u>
  - Area 5 Chinook summer MSF
    - Chinook retention planned July 1 through August 15
    - Chinook retention closed on August 12 due to limit on legal size encounters being reached
  - Area 6 Chinook summer MSF
    - Eastern half closed to Chinook
    - Western half Chinook retention planned July 1 through August 15
    - Chinook retention closed August 10 due to limit on legal size encounters being reached

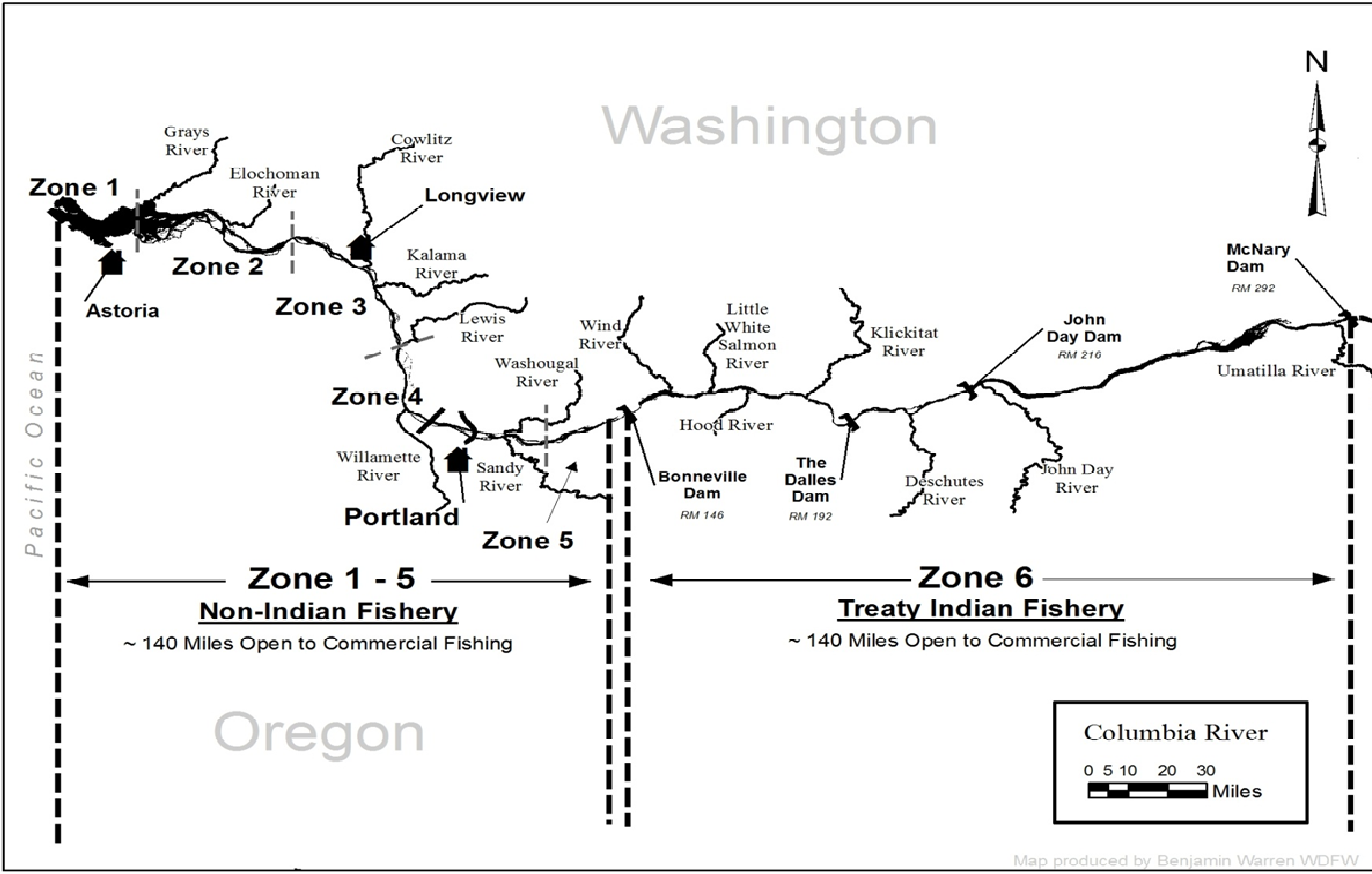


2025 Puget Sound Management

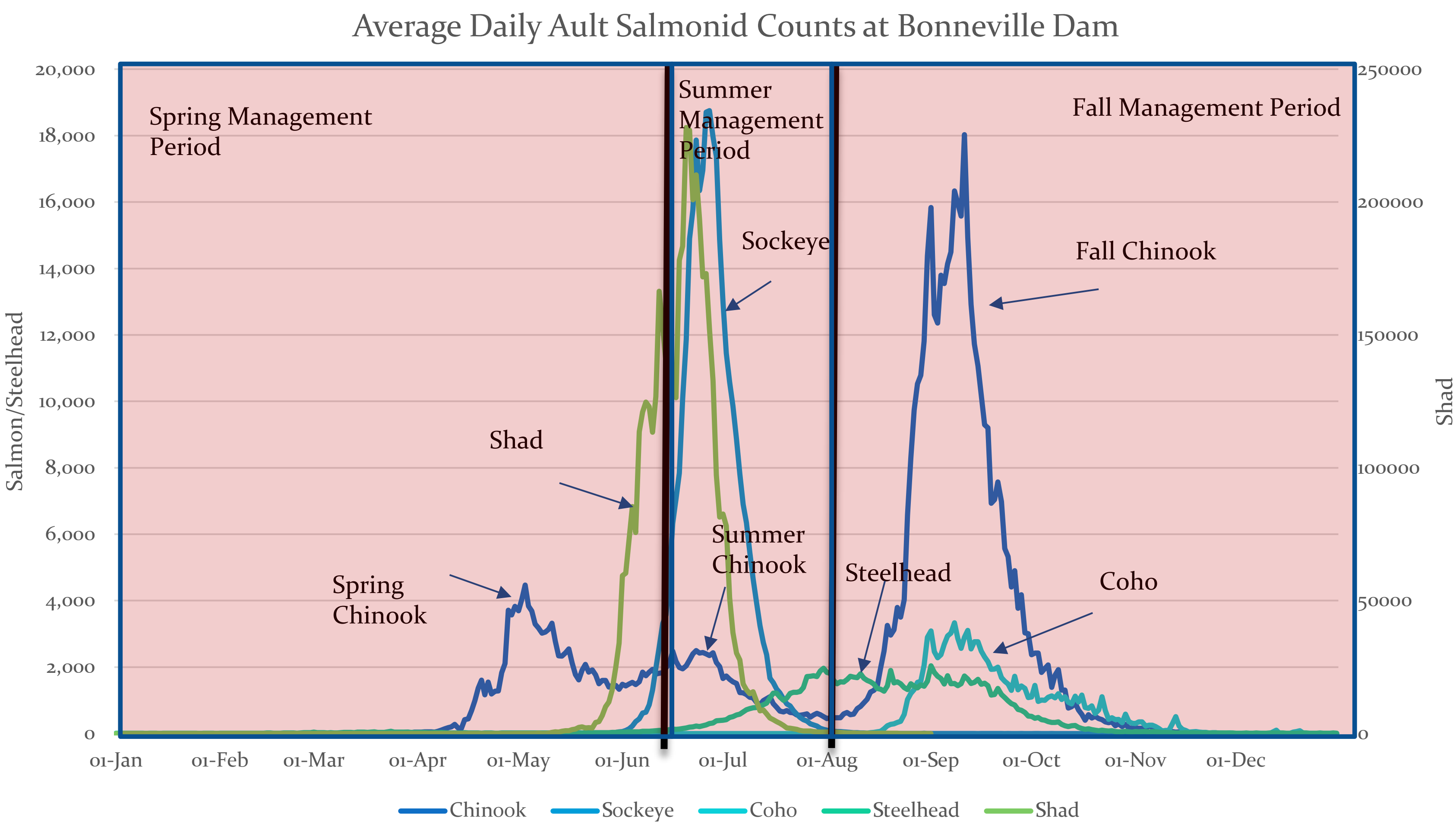
- <u>Puget Sound Recreational:</u>
  - Area 7 Chinook summer MSF
    - Chinook fishery planned for 3 days July 17-19
    - Area 7 initial 3-day opening planned to be concurrent with openings in Areas 9, 10 and 11 to spread effort across multiple areas
    - Based on in-season monitoring, area was re-opened for Chinook retention on July 25 and August 1



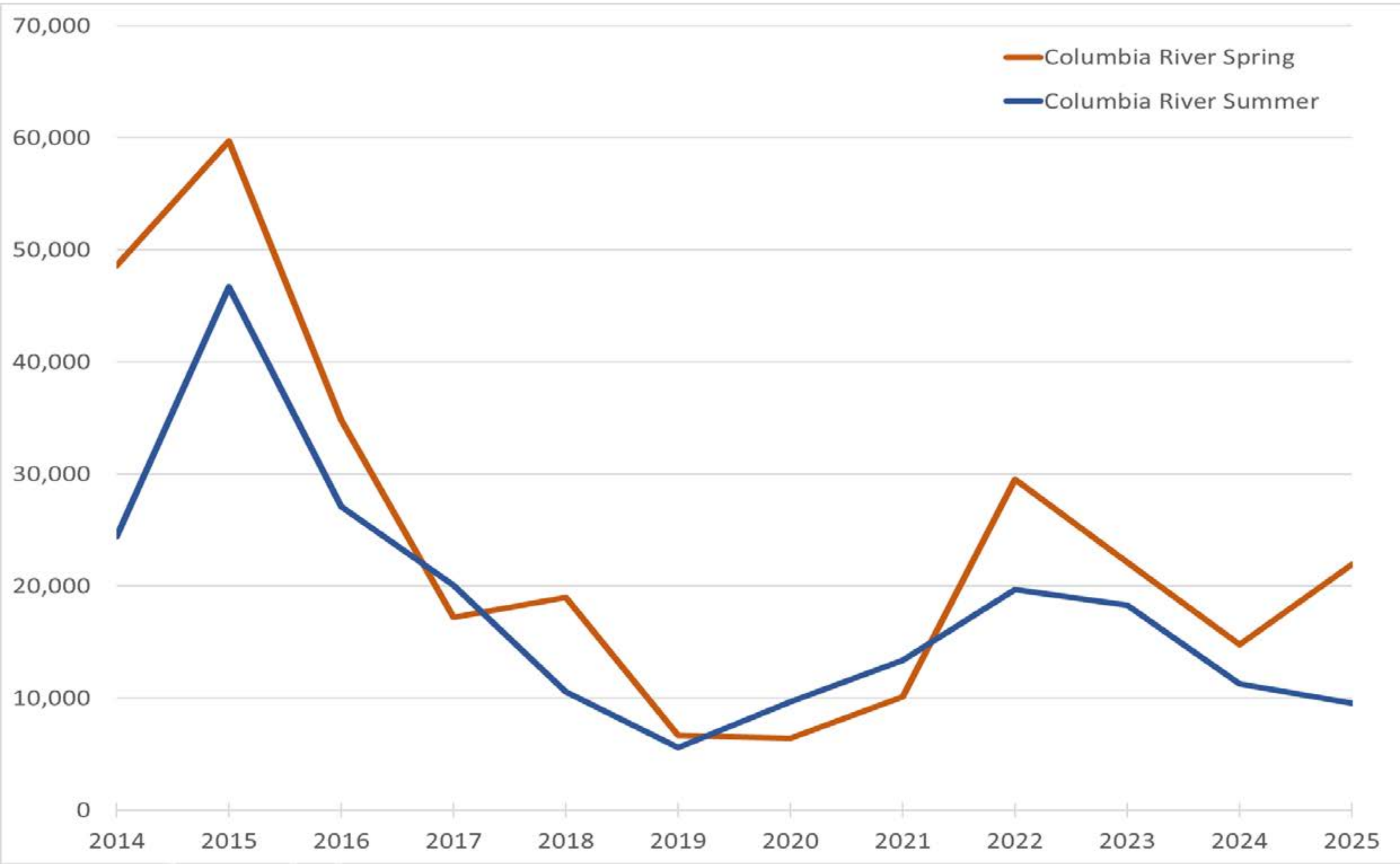
Columbia River Fisheries



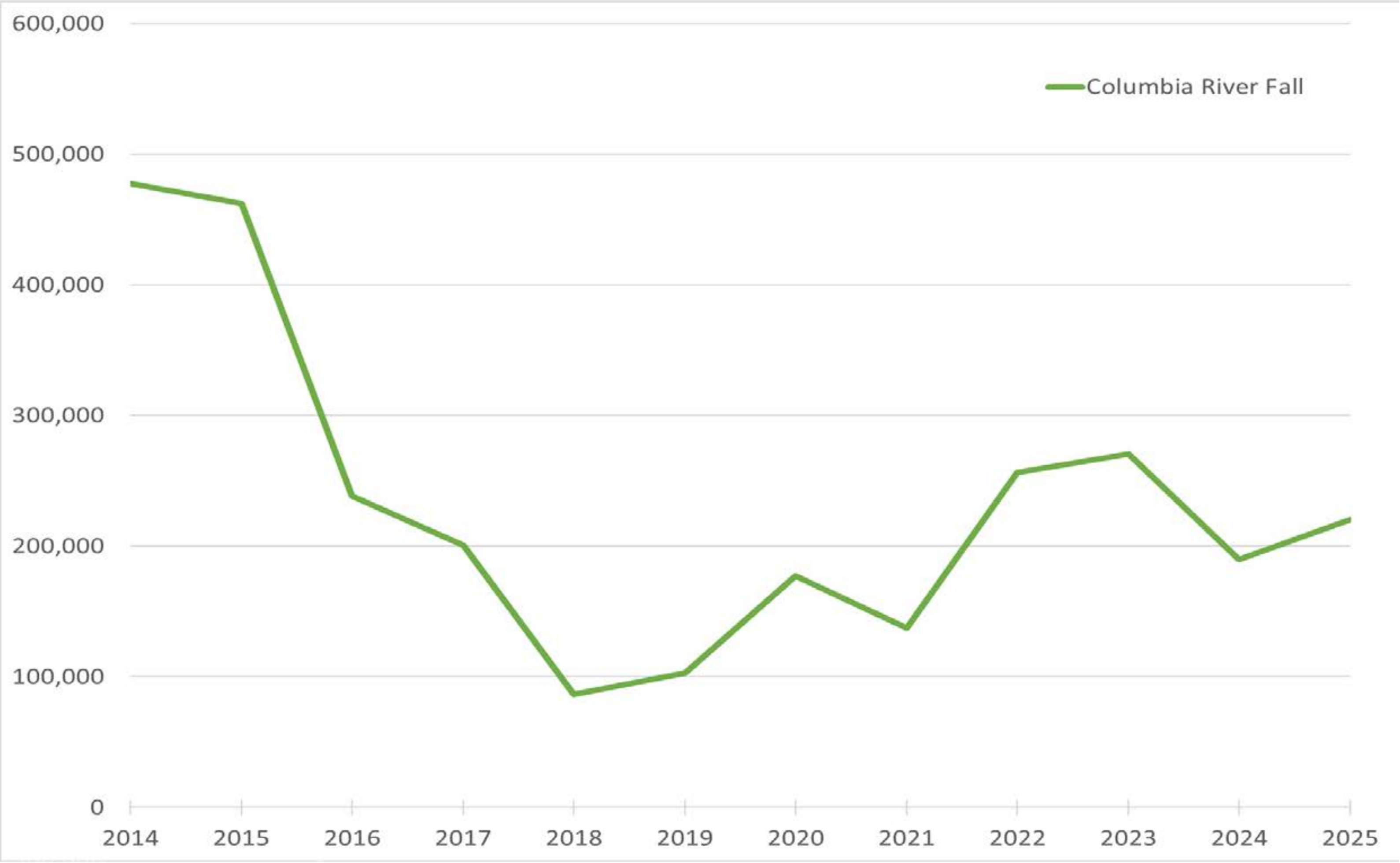
2015-2024 Ave Daily BON Counts



2014-25 Harvest:
Spring & Summer Fisheries



2014-25 Harvest: Fall Fisheries



2025 South of Falcon Ocean Fisheries

- South of Falcon troll salmon fisheries off Oregon had more open days when compared to 2024. The recreational fishery in this area had fewer open days than 2024. Both fisheries were still constrained to protect fall Chinook returning to the Klamath and Sacramento rivers

- California ocean troll salmon fisheries were closed again in 2025, and the recreational fishery was constrained to two short openings.

2025 South of Falcon Recreational Ocean Fisheries

Cape Falcon to Humbug Mountain

- Directed Chinook fishery open March 15 – July 15 (one fish per day June 7 – July 15); and September 1 – October 31, without quota. Oct.1-31 directed take within 40 fathom management line (one fish per day). Total landings of 2,659 Chinook salmon

- Mark-selective coho fishery June 7 - August 24 or 44,000 fin-clipped coho quota (quota Falcon – OR/CA border).Total landings of 34,199 coho salmon for combined area (77.7% of quota) (33,794 Falcon to Humbug)

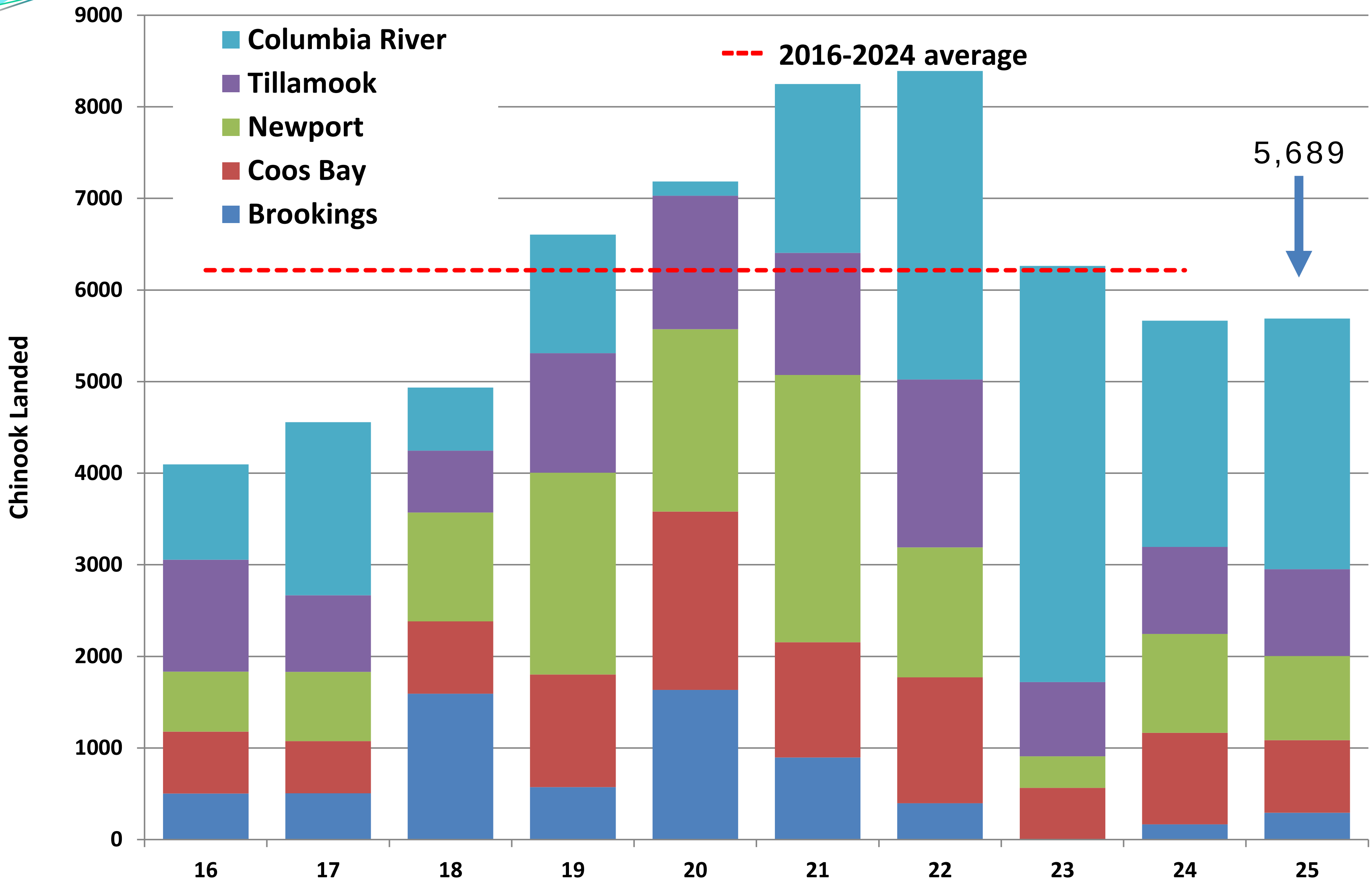
- Non-mark selective coho fishery scheduled for September 1-30 or 30,000 coho. Quota adjusted to 33,930. Total catch 19,325 coho (57% of quota)

2025 South of Falcon Recreational Ocean Fisheries

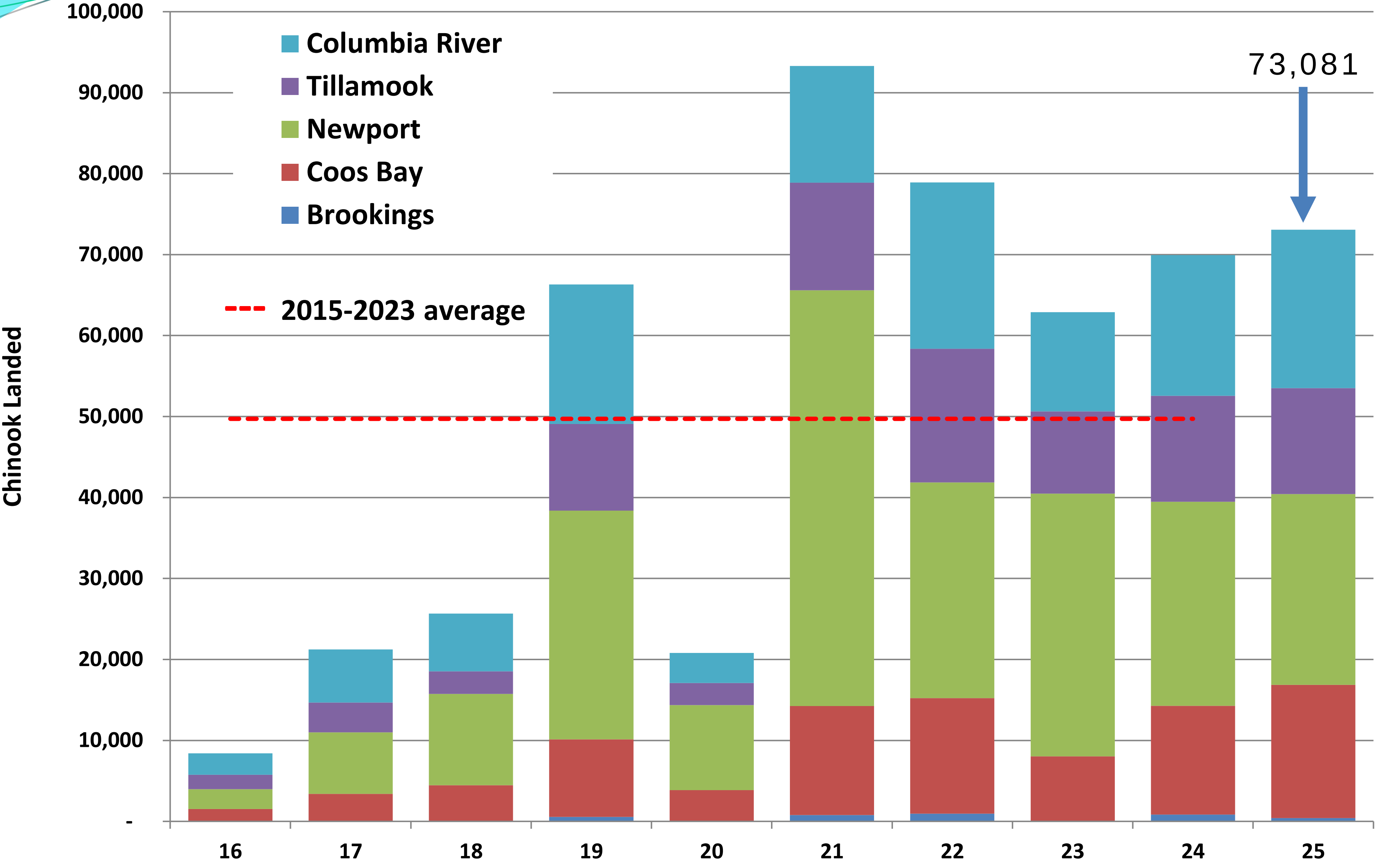
Humbug Mountain to OR/CA Border

- Directed Chinook fishery open May 16 - June 6 (2 salmon), June 30 – July 15 (2 salmon but no more than once Chinook). Total landings of 294 Chinook salmon
- Mark-selective coho fishery June 7 - August 24 or 44,000 fin-clipped coho quota (quota Falcon – OR/CA border).Total landings of 34,199 coho salmon for combined area (405 Humbug to OR/CA border)

Oregon Ocean Sport Chinook Landings By Area 2016 – 2025



Oregon Ocean Sport Coho Landings By Area 2016 – 2025



2025 South of Falcon Commercial Troll Ocean Fisheries

Cape Falcon to Humbug Mountain

- Directed Chinook salmon fishery April 10-May 31; June 9-30; July 16-31; and Sep.1-Oct. 31. Sept 1 -Oct. 31, 75 Chinook landing and possession limit per week
- Combined landings of 24,232 Chinook salmon
- Non-mark selective coho fishery September 1-30 or 7,500 coho. 75 coho per vessel per landing week limit
- Total landings of 3,326 coho salmon

2025 South of Falcon Commercial Troll Ocean Fisheries

Humbug Mountain to OR/CA Border

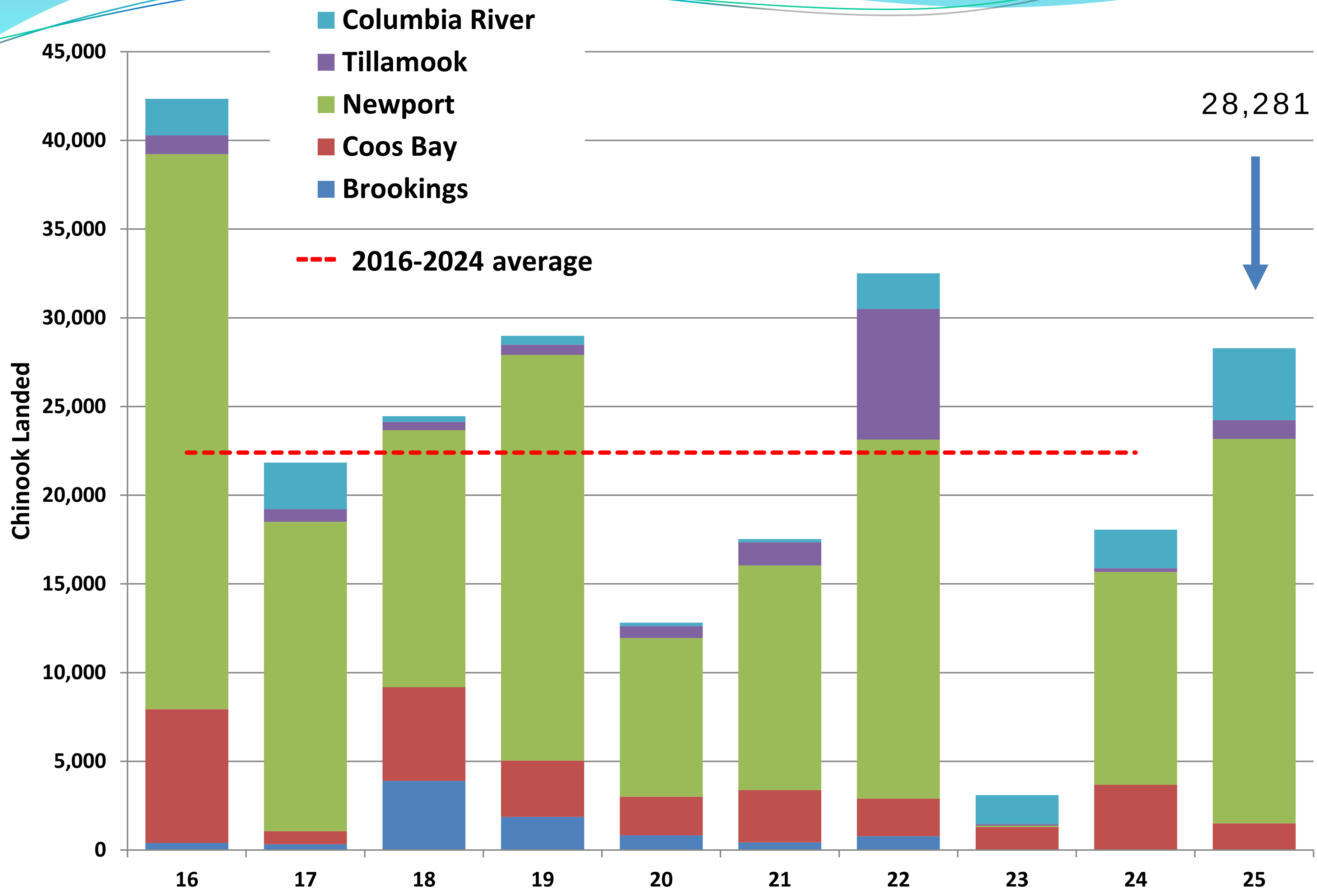
- Open April 15-30, with no Chinook landed.

Oregon State Waters Terminal Fisheries

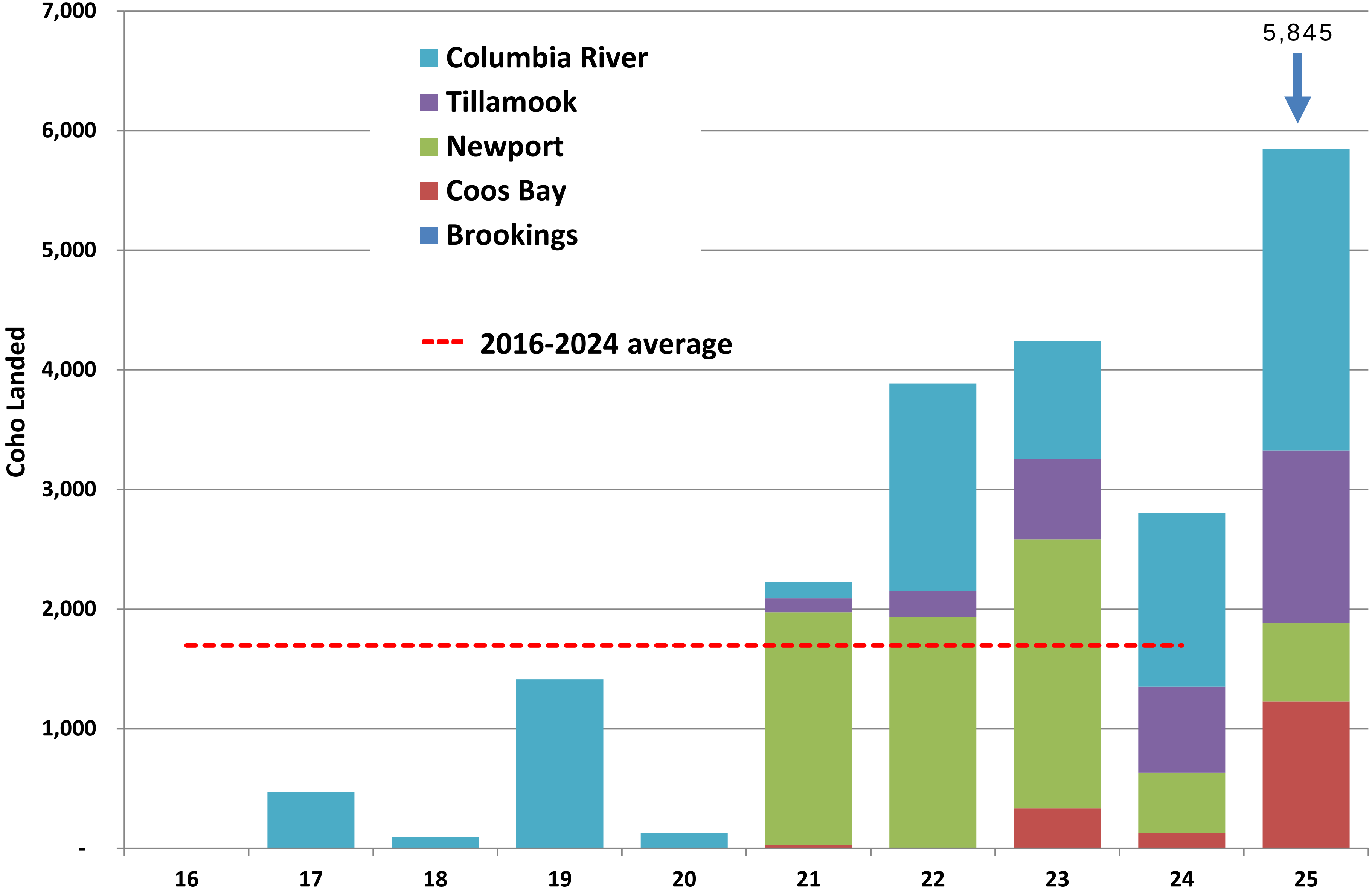
- There were no recreational or commercial terminal state waters fisheries held in 2025

9th lowest Chinook landings SOF since 1979

Oregon Troll Chinook Landings By Area 2016 – 2025



Oregon Troll Coho Landings By Area 2016 – 2025



Conclusions

- SUS fisheries limited by conservation for weak stocks
- SUS fishery harvest remains at low levels compared to historic fisheries across Ocean, Columbia River and Puget Sound
- Sampling and management are intensive to be as precise as possible to allow for fishing opportunity in the face of:
  - Freshwater habitat loss
  - Climate change and diminished/more erratic marine survival
  - Continued critical status of ESA-listed stocks

Fisheries and Oceans Canada | Pêches et Océans Canada

Pacific Region | Région Pacifique

Regional Director General | Directrice générale régionale

Our File:
2025-501-00061

John Field
Executive Secretary
Pacific Salmon Commission
field@psc.org

Dear Mr. Field:

Please find attached Canada's response regarding your November 3, 2025 letter requesting information on the management of Snohomish Chinook fisheries affected by the Pacific Salmon Treaty (PST). This letter provides information related to our management approach for Canadian Individual Stock Based Management (ISBM) fisheries to address objectives for Snohomish Chinook.

Canada remains committed to its obligations under the Treaty and continues to carefully monitor our management approaches for consistency with our obligations for Chinook stocks of concern pursuant to PST Annex IV, Chapter 3, paragraph 7(c)(i). The table below highlights Snohomish Chinook calendar year exploitation rate (CYER) values relative to limits for the 2019 to 2023 Chinook calendar years. While we acknowledge that Canadian fisheries have exceeded the limit for Snohomish Chinook (Table 1), we have previously documented in our January 10, 2025 letter some of our concerns with the 2021 estimate which appears to be an outlier, and also concerns with the CYER estimates for this stock more generally. Substantial changes to both the Snohomish Chinook coded wire tag indicator and kept and released catch estimates have caused overestimation of CYER impacts (CYER Method Standardization Memo, in preparation). Given changes to the assessment programs and the extremely high estimate in 2021, the overall CYER average since 2019 is higher than the target and the 10 per cent buffer and will remain higher than the target until the 2021 data point is no longer part of the average.

Table 1: Recent CYER values (recall the annual limit is 0.148 and the treaty obligation is to be within 10 per cent of the limit averaged over three years)

Calendar Year	Canadian ISBM CYER
2019	0.197
2020	0.173
2021	0.314
2022	0.133
2023	0.15

Canada has reviewed the times and areas where this stock is encountered in Canadian ISBM fisheries and notes that the stock is widely distributed at low rates in southern British Columbia (B.C.). As a result, there is considerable uncertainty about how fishery management actions will affect CYER outcomes.

Regardless, Canada has implemented management actions that have reduced impacts on Snohomish Chinook in 2022 and 2023 and we will continue to take actions to meet our PST obligations. Since 2019, Canada has implemented Chinook fishery non-retention or closures over a broad area of southern B.C. from April 1 to July 15 or July 31 depending on statistical area. Since these measures were first implemented in the 2019 season, Canada has also implemented additional restrictions and the management actions for the 2022 and 2023 seasons. As the most recent Snohomish CYER estimates for 2022 and 2023 show, recent management measures are bringing the CYER in line with the annual limit for Snohomish Chinook. With the completion of the 2026 and 2027 Exploitation Rate Analysis (ERA) reports, Canada will better understand the impacts of management measures taken in 2024 and 2025.

In 2024 and in 2025, Canada maintained prior restrictions introduced in 2022 and 2023 and added the following measures in ISBM fisheries which are expected to further reduce impacts on Snohomish Chinook:

1. Closed previously open portions of Pacific Fishery Management Area (PFMA) 20-5 to recreational and commercial fishing from August 1-October 31 (increased the area of no salmon fishing 26 per cent, or a 53 square kilometre spatial increase from the 2023 measures).
2. Changed a spring recreational mark-selective fishery in Juan de Fuca from mixed-bag (some wild retention permitted) to pure mark selective fishery (no wild retention) from March 1- March 31 (PFMA 19-1,19-3, 19-4, and 20-4 to 20-7).

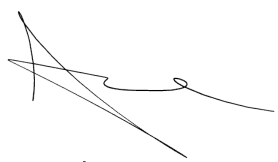
Canada’s consultation with First Nations and harvest sectors on management measures for the 2026 season begins in January and continues through April with decisions communicated publicly when our management plans are released in July 2026. We anticipate continued implementation of a precautionary management approach for Chinook

ISBM fisheries in 2026 and will be consulting on incremental changes that may be considered to meet our PST obligations for Snohomish Chinook and domestic planning considerations.

Details of specific fishing plans including any new changes being consulted on in 2026 will be provided in February 2026 after the development of the Draft Integrated Fisheries Management Plan (IFMP). While projecting the impacts of these actions on Snohomish Chinook remains challenging given the uncertainties in the data and limited tools, we will continue to assess the impact any proposed actions may have on Snohomish Chinook.

Canada remains interested in advancing work to develop new fishery planning tools that can be used to forecast ISBM fishery impacts based on available information. The Research and Development group of the Chinook Technical committee is engaged in an ambitious project to modernize the Chinook Model; our expectation is that when properly developed this model could support more timely advice and allow for improved ability to assess the impacts of current and future fisheries.

Yours sincerely,



Anna Classen
Vice-Chair, Pacific Salmon Commission
Lead Commissioner for Canada

c.c.: Cara Fogliato, Canadian National Correspondent, DFO
DFO.PSCNC-CNCSP.MPO@dfo-mpo.gc.ca

Chinook Interface Group
12-13 JAN 2026

Meeting Summary: Chinook Interface Group

2026 Pacific Salmon Commission Post-Season Meeting

The Chinook Interface Group (CIG) met twice during this week, on January 12, 2026, from 2:30 – 4:00 pm PST and on January 13, 2026, from 1:30 pm – 3:00 pm PST. The following report includes the CIG's recommendations for the Commission's consideration.

CIG Members in Attendance: Phil Anderson, Russ Jones, John McCulloch, McCoy Oatman, Andrew Thomson, Doug Vincent-Lang

Chinook Technical Committee (CTC) Members in Attendance: Milo Adkison, Jon Carey, Sabrina Crowley, Tim Dalton, Dani Evenson, Elisabeth Fox, Tommy Garrison, Lauren Gill, Mike Hawkshaw, Nicholas Komick, Jake Kvistad, David Leonard, Scott Marshall, Elinor McGrath, Jeff Nichols, Tommy Pontbriand, Anne Reynolds-Manney, Mark Sorel, Antonio Velez-Espino, Charlie Waters, Erika Watkins, Catarina Wor

Pacific Salmon Commission (PSC) Secretariat Staff in Attendance: Dejan Brkic, John Field, Merran Hague, Aimee Liu, Serena Wong, Angela Xu

Observers in Attendance: Dean Allan, Bill Auger, Kirk Blaine, Joshua Bragg, Susan Bishop, Kadi Bizyayeva, Craig Bowhay, Tyson Carswell, Katrina Connors, James Dixon, Sue Farlinger, Grace Ferrara, Cara Fogliato, Rob Jones, Rick Klumph, Judy Lum, Deborah Lyons, Christine Mallette, Mike Matylewich, Jacob Miller, Gordon Moore, Jamal Moss, Anjum Mutakabbir, Murray Ned, Chuck Parken, Nate Pamplin, Brian Riddell, Scott Rumsey, Jim Scott, Ole Shelton, Bill Templin

1. **Adoption of the agenda**
    - The agenda was adopted with no changes.
2. **Review of the CTC's 5-Year Review Report**
    - The CTC Co-chairs – Jon Carey, David Leonard, Mike Hawkshaw, and Nicholas Komick – provided an overview of the CTC's 5-Year Review report (**Attachment 1**) to the CIG. They noted that the report was the result of a significant collaborative effort, and highlighted contributions from Dani Evenson, Laura Tessier, and Jake Kvistad. The report is organized into four chapters: Stock Performance, Fishery Performance, Model Performance, and Challenges to Implementing Chapter 3. Each chapter includes a series of recommendations.
    - Commissioner Doug Vincent-Lang requested clarification on the definition of "composite error". Mr. Carey explained that composite error reflects the comparison between the catch estimate and the post-season catch limit. Management error refers to the comparison between catch, and the pre-season catch limit. Dr. Hawkshaw noted that it may be helpful to further workshop and clarify the various error terms in future discussions.
    - Commissioner Vincent-Lang asked for clarification regarding the role of PSC Secretariat staff in the analytical work. Mr. Carey noted that Secretariat staff,

specifically Ms. Merran Hague, have provided critical support for R-based work. Mr. Leonard added that Secretariat staff have been instrumental in developing analytical tools to support the CTC, rather than conducting the analyses themselves. Mr. Komick further noted that Secretariat staff assist by providing support to the CTC, while decision-making authority remains with the CTC.

- Commissioner Andrew Thomson asked about the specific tasking for the 5-Year Review and the next steps for advancing the report to the Commission agenda. Commissioner Phil Anderson indicated that he did not have a precise recollection of Commission direction but understood that the CIG was expected to receive the report and convey any recommendations it may have. It was noted that this process may extend through the February 2026 CIG meeting. Potential outcomes include a recommendation that the Commission accept the report as fulfilling the requirements of paragraph 7(h), or the inclusion of any specific CIG recommendations alongside the report.
- The CIG agreed to revisit this report in more detail in February 2026 providing opportunity to ask additional questions of the CTC and also a clarification on next steps on how to fulfill this task at the Commission level.

3. R&D Work Group Update

- **R&D Report Out on Additional Resource Requirements**
- Ms. Hague and Dr. Shelton provided an update on Research and Development (R&D) Work Group activities, noting extensive bilateral support from outside CTC members. Access to Shared Services Canada supercomputing resources has significantly increased computational capacity, reducing model run times by approximately 50–100 times and enabling substantially expanded simulation work. Comparative analyses between the existing Chinook Model and the Statistical Catch at Age (SCA) framework have been underway since October.
- The presenters noted that the SCA framework requires some additional data relative to the Chinook Model. Data compilation is underway with support from the Analytical Work Group (AWG), including genetic stock identification and stock- and fishery-specific information. This work remains on track to support simulations in advance of upcoming Treaty updates.
- Commissioner Vincent-Lang asked for clarification regarding the concept of “robustness” as it relates to Abundance Indices (AIs) and other Chinook Model variables. Dr. Shelton explained that robustness refers to evaluating how well model outputs perform when underlying assumptions or inputs are incorrect, such as errors in natural mortality estimates. Commissioner Vincent-Lang further asked about model sensitivity to forecasts. Ms. Hague and Dr. Shelton explained that the SCA framework allows uncertainty to be explicitly incorporated into forecasts and other inputs, reducing reliance on point estimates and improving understanding of how uncertainty propagates through results.
- Discussion also addressed the potential incorporation of Genetic Stock Identification (GSI) data. Ms. Hague noted that GSI integration is anticipated in later phases and that the simulation-based framework allows exploration of

appropriate spatial and fishery resolution, including performance under limited data scenarios. Dr. Shelton added that additional testing is needed to fully characterize model sensitivity across alternative data formats and assumptions. Commissioner Vincent-Lang stated the need to address and agree on standards for incorporation of GSI data prior to its incorporation into the new model.

- In response to a question from Commissioner Oatman regarding artificial intelligence and supercomputing, Ms. Hague clarified that AI is not currently part of the modeling work. Supercomputing was described as providing increased computational speed rather than new artificial intelligence, enabling faster turnaround and expanded scenario testing.
- The R&D Work Group identified a need for additional in-person collaboration, particularly for tool development. It was noted that while remote meetings are often sufficient for routine work, face-to-face discussions are more effective when developing new analytical approaches. The group proposed one additional in-person R&D session in early summer 2026, potentially in July, and recommended continued allocation of dedicated R&D time during CTC meetings. These proposed meetings will be reflected in the workplan.
- Commissioner Thomson acknowledged the rapid pace of model development and emphasized the importance of a communication strategy to ensure broader understanding and build trust with other PSC Commissioners and the Parties, especially with considering adoption of a new model. Commissioner Anderson and Commissioner Vincent-Lang acknowledged the concern and supported development of a communication strategy, noting that it was not the responsibility of the R&D Workgroup and identifying the need to consider timing and outreach once the CIG is comfortable with the technical progress.
- Ms. Hague noted that documentation and internal review are current priorities, with Commission engagement identified as a longer-term objective. She emphasized the importance of demonstrating model performance relative to existing tools through comparable analyses. Commissioner Anderson emphasized the need for buy-in from domestic management entities, including tribes and state agencies, given their reliance on model outputs. Commissioner Anderson proposed initiating a scoping discussion on communications and outreach at the February CIG meeting, which was supported by Commissioner Thomson.
- Ms. Hague clarified that references to supercomputer compatibility indicate the ability to run scenarios on Shared Services Canada computing infrastructure but does not limit Parties' ability to conduct analyses independently. Commissioner Vincent-Lang expressed support for the progress made.
- The CIG discussed the proposed additional in-person R&D meeting in July 2026 and noted that meeting scheduling details will be reflected in the updated workplan for consideration.
- <u>CIG recommends that the Commission support the addition of an in-person R&D meeting in July 2026 to the CTC workplan.</u>

4. **Discuss PSC letter of November 3, 2025, to Canada regarding Snohomish Chinook**

- The CIG discussed the PSC letter of November 3, 2025, to Canada regarding Snohomish Chinook, Canada's response letter of January 8, 2026, and whether a report from the CTC on measures to address CYER overages was expected.
- **7(c)(ii) Report from the CTC**
- Commissioner Anderson noted that there may have been some confusion regarding expectations for such a report from the CTC. He indicated that, within the U.S. Section, there was an expectation that this work would occur pursuant to paragraph 7(c)(ii) of the Treaty and suggested a brief engagement with the CTC to clarify the scope and timing for receiving a report.
- Mr. Carey noted that a significant amount of CTC effort had been dedicated to completion of the 5-Year Review Report, and that additional time would be required to prepare a 7(c)(ii) response. He apologized that such a report was not available for this meeting. Dr. Hawkshaw noted that additional clarity regarding their purpose and expectations would be helpful. He further noted that there is no bilateral predictive tool for CYER, and while the CTC is willing to provide information, previous efforts required substantial effort. Mr. Leonard added that past reports largely reiterated management considerations already familiar to agencies.
- Commissioner Vincent-Lang stated that the language in paragraph 7(c)(ii) of the Treaty appears clear and asked what additional clarity the CTC was seeking. Commissioner Anderson clarified that the intent was to identify measures that could be taken to avoid exceeding CYER limits, including a higher-level assessment of how fisheries are being managed. Commissioner Thomson suggested reviewing prior CTC responses from early 2025 to determine whether those approaches remain useful.
- Mr. Carey noted that the CTC could revisit and improve existing analytical tools, such as heat maps, or explore potential refinements to the CYER metric itself as part of its response.
- The CIG requested that the CTC provide a response pursuant to paragraph 7(c)(ii) for the February 2026 Annual meeting.

Discuss PSC letter of November 3, 2025, and next steps

- Commissioner Anderson provided context regarding U.S. concerns related to Puget Sound Chinook, which have been listed under the Endangered Species Act since 1998 and are subject to complex domestic management requirements, including defined exploitation rate ceilings. He noted that impacts from northern fisheries directly affect management actions in southern U.S. fisheries. He explained that the U.S. was encouraged by the 2019 agreement that resulted in a 12.5 percent reduction in the CYERs in Canada's ISBM fisheries relative to 2009-2015. In the 2024 CTC Commissioner's summary report, the Snohomish Chinook CYER limit was 0.092 in Canada ISBM fisheries and 0.108 for U.S. ISBM fisheries. Subsequent updates to Canadian recreational catch and release estimates resulted, for example, in the estimated catches in the Strait of Georgia recreational fishery increasing by 48% relative to 2009–2015. With the Canadian updates in catch and incidental mortality came an increase in the Snohomish CYER limit to 0.148, leading to higher northern exploitation rates than anticipated. He suggested that what has transpired is not what we expected and that increases in catch and releases were observed beyond the 2009–2015 period. The incidental mortality in Canada's ISBM fisheries has increased by 67% relative to 2009-2018, and catches have increased by 15%, while also noting the decreases in AABM catches. Returning to Snohomish Chinook, Mr. Anderson noted that the number of Snohomish spawners in 2023 was the second lowest in the last 10 years. Commissioner Anderson emphasized that implementation of the 2019 update has not played out as we had anticipated and hoped it explained why the U.S. was seeking greater certainty that ISBM obligations would be consistently achieved in Canadian ISBM fisheries. He expressed interest in collaborating with Canada on the development or refinement of pre-season planning tools (perhaps with capabilities similar to FRAM) to support more granular estimates of Puget Sound Chinook impacts, acknowledging Canada's recent management actions and noting that 2021 has been characterized as an outlier, though exploitation rates remained above limits when age-2 fish were considered. Commissioner Anderson noted that we are in this together for *all* of our stocks. The treaty is the most important tool to work together to manage stocks together. Commissioner Anderson thanked the CIG for indulging him and allowing him to talk through this. The update to the catches and CYER limits based on updates provided by the iREC have had significant impacts to the CYER limits in SUS and other PS stocks.

- Commissioner Thomson agreed that context is important and emphasized the shared objective of ensuring the Treaty functions effectively for both Parties and the resource. He expressed interest in exploring opportunities to improve tools, transparency, and confidence in Treaty implementation.
- Commissioner Thomson summarized Canada's January 8 response (**Attachment 3**) to the PSC letter of November 3, 2025 (**Attachment 2**), noting recent DFO management actions, including time and area closures and modifications to mark-selective fisheries, which are expected to reduce interceptions of Snohomish Chinook. He noted that planning and consultations for 2026 management measures are underway.
- Commissioner Anderson noted that the U.S. Section will provide follow-up questions in writing and requested that information on 2026 management changes referenced in Canada's letter be provided at the February 2026 CIG meeting. Commissioner Thomson indicated that a draft Integrated Fisheries Management Plan could be provided by that time.

5. **Receive from Canada the suite of tools currently used to manage Chinook fisheries with a focus on tools relevant to south Coast stocks (this is consistent with Commissioner Thomson's indication at a previous CIG meeting to provide this in January 2026)**
    - Consistent with prior CIG discussions, Dr. Hawkshaw provided an overview of the suite of tools currently used to manage Chinook fisheries, with a focus on tools relevant to South Coast stocks. Dr. Hawkshaw emphasized that the discussion was not focused on new tools, but rather on how existing information is used to identify where Snohomish Chinook are intercepted and to implement management measures to reduce catches and releases. Dr. Hawkshaw noted that heat maps previously shared with the CIG remain in use and are expected to be updated by the CTC.
    - Commissioner Anderson noted U.S. interest in exploring the potential development of additional analytical tools and emphasized that this was not intended to prescribe management approaches. He suggested that convening technical experts from both Parties for initial brainstorming could help advance more refined and effective approaches to managing mixed-stock fisheries in the Salish Sea.
    - Commissioner Thomson indicated that Canada is open to bilateral discussions to improve management capabilities and expressed willingness to participate in efforts to advance such work.
    - Commissioner Vincent-Lang asked whether Canada had considered improvements to the coded-wire tag (CWT) recovery program to strengthen interception estimates. Commissioner Thomson responded that this is one of several aspects under consideration, referencing the gap analyses report of the Coded Wire Tag and Recovery and Catch and Escapement Indicator Work Group.
    - Dr. Hawkshaw added that Canada maintains both traditional and iRec programs and an angler-based citizen science program that includes genetic sampling of retained and released fish.
    - Commissioner Thomson highlighted ongoing and potential future initiatives to improve catch monitoring, including the use of artificial intelligence, data gap analyses, and efforts to improve data timeliness, noting that more timely data would support faster management responses. Commissioner Anderson noted that data timeliness challenges exist for U.S. recreational fisheries, as identified through prior gap analyses.

6. **Discuss of Upcoming Chapter 3 Updates**
    - Commissioner Anderson recapped during the February 2025 CIG meeting the U.S. provided a list of seven priorities for upcoming Chapter 3 updates. This was the last and only document exchanged so far. He suggested having further dialogue in the February CIG meeting when there is more time to do so.

- Commissioner Thomson responded that it would be wise to put that on the February agenda. Commissioner Thomson noted that many of the priorities outlined by the U.S. are shared by Canada and that many align with the recommendations from the CTC 5-Year Review report as well.
- CIG recommends that the Secretariat update the existing Gantt chart of regular and extraordinary meetings, incorporating outcomes from the October 2025 CIG meeting and associated notations, to ensure a shared and up-to-date schedule for future planning.

7. Consistent with Canada's letter of January 10, 2025, status of Canada providing the CIG with a technical report documenting the methods for the updated catch and release estimates in their recreational fisheries.

- Consistent with Canada's letter of January 10, 2025 (**Attachment 4**), Mr. Komick provided an update on the status of Canada's technical report documenting the methods used to develop updated catch and release estimates for recreational fisheries. He noted that the report is well advanced, with a small number of refinements still to be incorporated. Once a complete draft is finalized, the report will undergo an internal review process prior to release.
- Commissioner Vincent-Lang asked about the anticipated timeline for completion of the report and whether the additional refinements referenced have resulted in further changes to the estimates. Mr. Komick responded that some refinements have resulted in improvements to the estimates, although he was unable to provide specific details at this time. He indicated that the report remains several months from completion and is expected to be published as a report in the series of Canadian Technical Report of Fisheries and Aquatic Sciences Barring major issues arising during review, completion is anticipated by September 2026. He further noted that most of the refinements represent relatively minor adjustments, with maybe a 20 percent change.

8. Discuss Chinook Interface Group (CIG) forward agenda

- Review of progress towards achieving workplan objectives from the CTC, C2 work group, and OWG
- CTC report on paragraph 7(c)(ii) CYER overages in Canadian ISBM fisheries for the Snohomish River
- Discussion of Chapter 3 updates, including consideration of additional meetings between February and October 2026.
- R&D Update and discussion of a proposed communications plan
- Next steps for the 5-Year Review and follow-up questions from the CIG

9. Summary of Action Items

- CIG recommends that the Commission support the addition of an in-person R&D meeting in July 2026 to the CTC workplan.

- CIG recommends that the Secretariat update the existing Gantt chart of regular and extraordinary meetings, incorporating outcomes from the October 2025 CIG meeting and associated notations, to ensure a shared and up-to-date schedule for future planning.
- CIG recommends adding an agenda item for February to discuss a communications strategy for the SCA Model.
- CIG recommends convening a small work group to consider other tools for management of the Salish Sea fisheries and stocks.
- CIG intends to continue its deliberations in February regarding the Snohomish River pending CTC response to paragraph 7(c)(ii), summaries of Canadian management options for 2026, and Canadian responses to U.S. follow up questions.

PACIFIC SALMON COMMISSION
JOINT CHINOOK TECHNICAL COMMITTEE REPORT

5-YEAR PERFORMANCE EVALUATION REPORT
TCCHINOOK (26)-01

January 2026

MEMBERSHIP OF THE CHINOOK TECHNICAL COMMITTEE

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LIST OF ACRONYMS AND ABBREVIATIONS

AABM	Aggregate Abundance Based Management
ACL	Annual Catch Limit
ACME	Automated Chinook Model Evaluation
ADF&G	Alaska Department of Fish and Game
AEQ	Adult Equivalent
Agreement	PST Annex and the Related Agreement
AI	Abundance Index
AUC	Area-Under-the-Curve
AWG	Analytical Work Group of the Chinook Technical Committee
BC	British Columbia
BPC	Base Period Calibration
BY	Brood Year
BYER	Brood Year Exploitation Rate
CAMP	Chinook Analytical and Modelling Platform
CAS	Cohort Analysis System
CBC	Central British Columbia (Kitimat to Cape Caution)
CDFO	Canadian Department of Fisheries and Oceans
CETL	Chinook Extract Transform and Load Executable Program
CI	Confidence Interval
CIG	Chinook Interface Group
CIOOS	Canadian Integrated Ocean Observing System
CoShak	Cohort Analysis with Shakers
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CPUE	Catch per unit effort
CR	Columbia River
CRITFC	Columbia River Intertribal Fish Commission
CSAS	Canadian Science Advisory Secretariat
CTC	Joint Chinook Technical Committee
CV	Coefficient of Variation
CWT	Coded Wire Tag
CY	Calendar Year
CYER	Calendar Year Exploitation Rate
C2	Catch and Escapement Indicator and Coded-Wire Tag and Recovery programs
EEZ	Exclusive Economic Zone
EIS	Escapement Indicator Stock
ELS	Electronic Licensing System
ER	Exploitation Rate
ERA	Exploitation Rate Analysis
ESA	U.S. *Endangered Species Act*
EVIN	East Vancouver Island North
FI	Fishery Index
FP	Fishery Policy/Process Scalar
FN	First Nations
FNC	First Nations Caucus
FR	Fraser River
FSC	Food, Social & Ceremonial
GMR	Genetic Mark-Recapture
GSI	Genetic Stock Identification
HRJ	Harvest Rate Jim
IM	Incidental Mortality
iREC	Internet Recreational Effort and Catch Reporting Program
ISBM	Individual Stock Based Management
JDF	Juan De Fuca
KLM	Kitsumkalum River
KLY	Kitsumkalum Yearling
LC	Landed Catch
LGS	Lower Strait of Georgia
LIM	Legal Incidental Mortality
LOA	Letter of Agreement
MA	Management Agreement
MAPE	Mean Absolute Percent Error
METF	Mid-Eye-To-Fork Length
MOC	Mid-Oregon Coast
MPE	Mean Percent Error
MR	Mark-Recapture
MRR	Marked Release Rate
MRE	Mature-Run Equivalent
MREER	Mature-Run Equivalent Exploitation Rates
MSF	Mark-Selective Fisheries
MSFF	Mark-Selective Fisheries Fund
MSY	Maximum Sustainable Yield
NBC	Northern British Columbia (Dixon Entrance to Kitimat including Queen Charlotte Islands)
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOC	North Oregon Coast
NWIFC	Northwest Indian Fisheries Commission
NWVI	Northwest Vancouver Island
ODFW	Oregon Department of Fish and Wildlife
ORC	Oregon Coast
OWG	Okanagan Work Group

PBT	Parental-Based Tagging
PIT	Passive Integrated Transponder
PS	Puget Sound
PSC	Pacific Salmon Commission
PSF	Puget Sound Fingerling
PST	Pacific Salmon Treaty
QA/QC	Quality Assurance/Quality Control
QCCAMP	Quality Control Reporting
QCI	Haida Gwaii (Queen Charlotte Islands)
RAD	Report Automation Database
REAM	R Exploitation Analysis Module
ROM	Ration of Means
R&D	Research and Development work group
SACE	Stock Aggregate Cohort Evaluations
SARA	Species at Risk Act
SE	Standard Error
SEAK	Southeast Alaska Cape Suckling to Dixon Entrance
SMSY	Escapement producing MSY
SOF	Stock of Concern
SPFI	Stratified Proportional Fishery Index
SSP	Sentinel Stocks Program
SUS	Southern United States
SWVI	Southwest Vancouver Island
TAC	Technical Advisory Committee
TAM	Terminal Adjustment Method
TBR	Transboundary Rivers (Alsek, Taku, Stikine)
TBD	To Be Determined
tGMR	Transgenerational Mark-Recapture
THA	Terminal Harvest Area
TM	Total Mortality
TotMRE	Total Mature-Run Equivalent
TTC	Transboundary Technical Committee
UAF	University of Alaska Fairbanks
UGS	Upper Strait of Georgia
UKR	Unmarked Kept Rate
UMT	Upper Management Threshold
UMSY	Exploitation Rate at MSY
U.S.	United States
WAC	Washington Coast
WCVI	West Coast Vancouver Island excluding Area 20
WDFW	Washington Department of Fish and Wildlife
WG	Work Group
3YA	3-Year Average

List of Stock Acronyms

ALS	Alsek	**NSA**	Northern Southeast Alaska
ATN	Atnarko	**NSF**	Nooksack Spring Fingerling
BON	Bonneville Hatchery	**PHI**	Phillips
BQR	Big Qualicum Hatchery	**PPS**	Puntledge
CBC	Central British Columbia	**PSF**	Puget Sound Hatchery Fingerling
CHI	Chilliwack Hatchery	**PSN**	Puget Sound Natural Fingerling
CHK	Chilkat	**PSY**	Puget Sound Hatchery Yearling
CKO	Chilko	**QUE**	Queets Fall Fingerling
COW	Cowichan Hatchery	**QUI**	Quinsam Hatchery
CWF	Cowlitz Hatchery Fall Tule	**RBT**	Robertson Creek Hatchery
CWS	Spring Cowlitz Hatchery	**SAM**	Samish Fall Fingerling
ELK	Elk River Hatchery	**SHU**	Lower Shuswap
ELW	Elwha Fall Fingerling	**SKF**	Skagit Spring Fingerling
FCF	Fraser Chilliwack Fall Hatchery	**SKG**	Skagit Summer/Fall
FHF	Fraser Harrison Fall	**SKY**	Skykomish/Snohomish Summer Fingerling
FSO	Fraser Summer Ocean – Type 0.3	**SMK**	Similkameen Summer Yearling
FSS	Fraser Summer Stream – Type 1.3	**SNO**	Snohomish
FS2	Fraser Spring 1.2	**SOO**	Tsoo-Yess Fall Fingerling
FS3	Fraser Spring 1.3	**SPR**	Spring Creek National Fish Hatchery
GAD	George Adams Hatchery Fall Fingerling	**SPS**	SPS Fall Fingerling
GRN	Green River Fingerling	**SPY**	SPS Fall Yearling
HAN	Hanford Wild	**SRH**	Salmon River Hatchery
HAR	Harrison	**SSA**	Southern Southeast Alaska
HOK	Hoko Fall Fingerling	**SSF**	Skagit Summer Fingerling
KLM	Kitsumkalum	**STI**	Stikine
LCT	Lower Chilcotin	**STL**	Stillaguamish Fall Fingerling
LGS	Lower Strait of Georgia	**SUM**	Columbia River Summers
LRH	Lower River Hatchery	**TAK**	Taku
LRW	Lewis River Wild	**TST**	Taku and Stikine
LYF	Lyons Ferry Yearling	**UGS**	Upper Strait of Georgia
MCB	Mid-Columbia Brights	**UNU**	Unuk
MGS	Middle Strait of Georgia	**URB**	Columbia Upriver Brights
MOC	Mid-Oregon Coast	**WCH**	WA Coastal Hatchery
MSH	Middle Shuswap	**WCN**	WA Coastal Wild
NAN	Nanaimo	**WRY**	White River Hatchery Spring Yearling
NBC	Northern British Columbia	**WSH**	Willamette Spring
NIC	Nicola	**WSH**	Willamette River Hatchery
NIS	Nisqually Fall Fingerling	**WVH**	West Coast Vancouver Island Hatchery
NKF	Nooksack Fall	**WVN**	West Coast Vancouver Island Natural
NKS	Nooksack Spring	**YAK**	Yakutat Forelands
NOC	North Oregon Coast		

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EXECUTIVE SUMMARY

Paragraph 7(h) of Chapter 3 of the 2019 Pacific Salmon Treaty (PST) Agreement tasks the Chinook Technical Committee (CTC) with developing an outline for a five-year review of the effectiveness of the Chinook Chapter:

> *"By January 2023, the CTC shall develop a draft outline for a five-year review to evaluate the effectiveness of harvest reduction measures that are taken for AABM and ISBM fisheries. The draft outline shall include stock status (including spawners, productivity, and abundance indices) and fishery performance (including catches, incidental mortality, and fishery indices such as fishery harvest rates) and seek Commission direction to proceed with preparing a report. In January 2025, the Commission shall review the report to identify any appropriate modifications to this Chapter to improve its implementation*."

Intentions by both Parties to achieve production and harvest-sharing goals for Chinook are stated in Chapter 3 (i.e., the Chinook chapter) of the PST Agreement. It outlines a coastwide approach to Chinook management designed to protect and utilize Chinook salmon stocks and fisheries, imparting long-term sustainable benefits to both Parties. The management approach outlined in Chapter 3 implements an abundance-based fishery regime informed by biologically-based escapement (e.g., spawners at maximum sustainable yield [MSY]) and/or harvest rate objectives. The chapter covers stocks originating from Cape Suckling, AK to Cape Blanco, OR, managed under aggregate abundance-based management (AABM) and/or individual stock-based management (ISBM) fishery regimes, and identifies individual stocks or stock groups with specific management and monitoring requirements and describes associated measures. It also outlines the core duties and assignments of the CTC . The management regime described within Chapter 3 is data intensive, requiring significant resources to properly implement.

This report summarizes the performance of stocks, fisheries, and the suite of models used to set and evaluate catch limits and exploitation rates. **Section 1** of this report evaluates the performance of Chinook stocks listed in Chapter 3, Attachment I by examining escapements, stock-specific fishery impacts, and total run production. Average escapements during the 2009 and 2019 Agreements, changes between these periods, and performance relative to Pacific Salmon Commission (PSC)-agreed management objectives (or in a few cases, agency objectives) are provided for the Attachment I Chinook stocks (or stock groups) in Table 1-1. Eleven escapement indicator stocks had a mean escapement during 2019–2024 that decreased by at least 15% relative to the 2009–2018 mean, 12 stocks increased by at least 15%, and 13 stocks varied by less than 15%. All six Southeast Alaska (SEAK) and Transboundary River (TBR) stocks have PSC-agreed management objectives, while 4 of the 11 Canadian stocks and 12 of 19 southern U.S. stocks have PSC-agreed management objectives.

> ***Recommendation 1.1. Develop and/or review Attachment I management objectives.*** With the exception of the two Skagit updates, Attachment I management objectives are unchanged and, in many cases, outdated. Of 37 remaining Attachment I stocks, 22 have PSC-agreed objectives, and none were added during this annex, despite notable shifts in stock productivity, fishery regimes, and monitoring over the past two decades.

> ***Recommendation 1.2. Review Attachment I coded-wire tag indicator stocks.*** Use of CWT indicators assumes they accurately represent fishery impacts on their corresponding escapement indicator stocks. The CWT Expert Panel (2005) and the CYER WG (2021, 2023, 2024) have recommended further review and testing of the correspondence between exploitation patterns and rates for tagged hatchery indicator stocks and their untagged natural counterparts.

Statistics concerning annual rate of change in escapements and in mature-run equivalent total exploitation rates (MREER) are presented in Figure 1-1 and Figure 1-2, respectively. Long-term (1999–2024) escapement trend estimates varied considerably across stocks, with three stocks exhibiting a trend significantly ($\alpha = 0.2$) different from zero; Skeena and Stillaguamish exhibited negative trends in escapement, while Skagit spring showed a positive trend. Long-term (1999–2024) MREER trends, expressed as instantaneous annual rates of change, did not significantly differ ($\alpha = 0.2$) from zero for most stocks, indicative of no change in average annual exploitation over time; however, a significantly negative trend ($\alpha = 0.2$) was observed for two stocks (Kitsumkalum and Chilkat) while a positive trend was observed in four stocks (Queets fall, Quillayute fall, Grays Harbor fall, and Skagit spring). Average percent mortality, expressed as calendar year exploitation rates (CYER), increased in nine stocks in AABM fisheries as compared to four stocks in ISBM (Table 1-3). For most stocks, however, total mortality attributed to fisheries has either declined or remained steady between annexes.

Total run production of regional stock groups showed variable trends across regions (Figure 1-3; Figure 1-4; Figure 1-5). Both Transboundary and SEAK stock production have deviated below their respective historic averages since the early 2010s. Canadian stock production has been more mixed, with some stocks currently in a period of above-average production (e.g., S. Georgia Strait, SWVI, and NWVI), while others are currently experiencing a period of below-average production—notably the Fraser stocks and NBC. Southern U.S. regional stock group production also displayed a mix of trends. North Oregon Coast and Mid-Oregon Coast stocks have experienced largely below-average production in recent years, while Upper Columbia stocks are currently experiencing a period of above-average production. Washington Coast and Puget Sound stock production has been more variable, oscillating between above- and below-average production in shorter periods than was typical of other regions. Several regional stock groups are currently experiencing a negative five-year rolling average of standardized deviations in total run production (Table 1-4). Notably, the Nicola, Harrison, NBC, SEAK, and Transboundary stock groups have each had a negative five-year rolling average in total run production for more than ten consecutive years. In contrast, other stock groups, such as Upper Columbia and SWVI, have experienced multiple consecutive years (21 and 11 years, respectively) of above-average total run production based on a 5-year rolling average.

Four stocks were classified as “concerning stocks” as defined in subparagraph 7(a)(iv) for falling below 85% of their management objective across three consecutive years. These are Taku, Stikine, Harrison, and Siuslaw. One additional stock, Coquille, was also identified as concerning based on a precipitous decline in escapement since 2018, linked to predation by introduced species. The Coquille does not have a PSC-agreed management objective. Additional information on these five concerning stocks is provided in Appendix A.

Recommendation 1.3. Consider action for Siuslaw and Coquille. Escapements to the Siuslaw and Coquille have declined sharply during the current Agreement and recovery is uncertain. While ISBM provisions have been met, escapement objectives have not. The Coquille Indian Tribe, in partnership with ODFW and local community groups, is leading restoration and recovery efforts. Examples of recovery efforts undertaken to date include a removal program targeted at introduced smallmouth bass, a hatchery rehabilitation program with high broodstock takes and stream-channel reconnection and restoration projects. However, with the exception of bag-limit restrictions and a 2022 closure for the terminal fishery, there are no similar recovery efforts directed at the Siuslaw Chinook population.

Section 2 of this report reviews the performance of AABM and ISBM fisheries, including estimates of landed catch, incidental mortality, and total catch in PST fisheries. Total landed catch in PST fisheries averaged 1,587,782 under the 2009 Agreement, compared to 1,195,598 so far under the 2019 Agreement (2019–2024) (Figure 2-1). Average U.S. ISBM landed catch under the current Treaty Agreement has decreased by 31% (about 236,000 Chinook) while Canadian ISBM landed catch has increased by 41,000 fish (15%) on average. Landed catch estimates in AABM fisheries have decreased by roughly 61,000 (-24%) in U.S. AABM fisheries and by about 136,000 (-45%) in Canadian AABM fisheries. During the 2009 Agreement, percentages of the total annual PST catch averaged 48% U.S. ISBM, 17% Canadian ISBM, 16% U.S. AABM and 19% Canadian AABM. By comparison, during the first six years of the 2019 Agreement, percentages of total PST landed catch averaged 43% U.S. ISBM, 26% Canadian ISBM, 17% U.S. AABM and 14% Canadian AABM. Incidental mortality in both U.S. and Canadian AABM fisheries have remained below the IM limits specified in paragraph 4(f) of the PST.

Average annual IM in U.S. AABM fisheries have remained practically unchanged between the last Treaty Agreement and today, with IM estimates averaging 45,910 Chinook annually in the 2009 annex compared to 46,702 Chinook so far during the 2019 annex (a 2% increase; Table 2-1). Incidental mortality in Canadian AABM fisheries and in U.S. ISBM fisheries have both decreased between annexes so far by 33%. A 67% (nominal fish: 39,396 Chinook/year) increase in average annual IM estimates was observed in Canadian ISBM fisheries, primarily the result of extended Chinook non-retention periods and size limit changes in the Strait of Georgia sport fishery beginning in 2019. Average annual total mortality estimates in both Parties' AABM fisheries and in the U.S. ISBM fisheries have declined compared to the 2009 Treaty Agreement, whereas a 24% increase was observed in Canadian ISBM fisheries.

Performance in ISBM fisheries is evaluated annually based on a combination of PSC-agreed management objects (e.g., biologically-based escapement goals) and/or CYER limits relative to a base period (2009–2015). During the current Treaty Agreement, both Parties have generally met annual ISBM performance obligations for most stocks covered in Attachment I; however, certain stocks have warranted concern based on repeated failures to achieve annual ISBM performance obligations (Table 2-2; Table 2-3). Multi-year ISBM performance based on a running three-year average pursuant to subparagraph 7(c) is evaluated in Table 2-4 and Table 2-5. As of the 2025 ERA, the three-year average did not exceed CYER limits for any stock intercepted in U.S. ISBM fisheries; however, Canadian ISBM limits on the Snohomish stock have been exceeded in multiple evaluations during the current Treaty Agreement.

The CYER was introduced with the 2019 Treaty Agreement as a metric to be used in ISBM evaluation. But while the metric has been fully implemented in CTC ISBM evaluation procedures, several concerns remain regarding reliance on the metric in fisheries performance evaluation. For example, use of a universal base period with CYER has been questioned, and recent discovery of sensitivity to changes in hatchery release sizes has prompted considerations for refinement. As the CTC continues to work on ways to improve the robustness of the CYER metric, alternative metrics may offer complementary insight for fisheries managers.

The MREER is a potential candidate metric for expanded use in CTC evaluations. Like CYER, it can be calculated from catch data on incomplete cohorts, enabling an estimate to be produced as soon as new CWT data become available. Further, like CYER, it is additive across stock and fishery components, allowing information to be presented for any desired variety of comparisons (e.g., by Party or between specific fisheries). Long-term MREER trends for stocks are displayed in Figure 2-9 through Figure 2-14.

Performance of AABM fisheries is quantified by three principal metrics: management error (first postseason catch estimate – preseason annual catch limit [ACL]), model error (preseason ACL – postseason ACL) and composite error (first postseason catch estimate – postseason ACL). During the current Treaty annex (2019–2024), model error comprised the largest error component in the SEAK AABM fishery, particularly from 2020–2023. Management error averaged -2.6% (range: 0% to -10.5%) in the SEAK AABM fishery so far during the 2019 Agreement while model error averaged 28.4% (range: -23.0% to 90.0%). Composite error for the SEAK AABM fishery averaged 24.2% (range: -24.2 to 70.1%). From 2019–2024, the SEAK AABM fishery first postseason catch estimate exceeded the postseason ACL in four years with a cumulative overage of about 177,300 Chinook; however, the SEAK AABM fishery has not exceeded the preseason ACL in any year during the 2019 Agreement. Both the NBC AABM fishery and WCVI AABM fishery first postseason catch estimates have consistently measured below their respective preseason ACLs during the 2019 Agreement. Average management error was -45.0% (range: -72.9% to -29.5%) in the NBC AABM during the current annex while model error averaged -1.1% (range: 38.1% to 23.7%). In the WCVI AABM fishery, management error averaged -18.6% and ranged from -49.9% to -5.4% while model error averaged 2.1% and ranged from -10.4% to 10.8%. Since 2019, the NBC AABM fishery first postseason catch estimate has not exceeded the postseason allowable catch limit, resulting in a cumulative underage of roughly 434,754 Chinook. Similarly, the WCVI AABM fishery first postseason catch estimate has not exceeded the postseason allowable catch limit during the current Treaty Agreement, resulting in a cumulative underage of an estimated 99,694 Chinook. Canadian domestic management efforts to reduce impacts on WCVI Chinook have resulted in consistently negative management and composite errors in both Canadian AABM fisheries during the current Treaty Agreement.

The current AABM base period (1979–1982) is nearly 50 years old. The distribution of stock and fishery patterns have undoubtedly deviated from base period assumptions, leaving the Chinook Model vulnerable to model misalignment. It is possible, indeed likely, that some of the model error seen in current AABM performance evaluations partially results from use of an outdated base period. While there are methods the CTC uses to correct for deviations from the base period in certain situations, these are not considered permanent solutions, and they involve additional unquantified uncertainty. Furthermore, the composition of stocks represented in the base period is not the same as the current stock composition included in the model. An update, or alternative, to the Chinook Model base period used for AABM fisheries is necessary for Chinook Model forecasts to be as accurate as possible.

> ***Recommendation 2.1. Consider base period evaluation and update for AABM fisheries.*** As long as AABM management relies on an AI or similar metric, the reference to a base period will be necessary. Current explorations of alternative models (the SCA) will reduce but not eliminate the reliance on a base period. The choice to continue utilizing the current Chinook Model would be accompanied by a concurrent suggestion to re-evaluate and perhaps recast that time period from which future AIs are calculated.

Section 3 of this report assesses the performance of various models and analytic tools used to set catch limits, estimate exploitation rates, and produce model inputs. We also summarize improvements made to critical programs and supporting software and databases during the 2019 Annex. Since transitioning to the Phase II Chinook Model in 2020, average Chinook Model forecasts have displayed high precision and a slight positive bias in comparison to agency-produced forecasts. Chinook Model forecast error and comparisons between agency-produced forecasts and actual returns are summarized in Figure 3-1 and Figure 3-2.

The Chinook Model is sensitive to the accuracy of the various agency-produced forecasts supplied as model inputs. Stocks with the largest absolute error between agency forecasts and actual returns included several stocks contributing more than 3% of the aggregate abundance in at least one AABM fishery. These include Puget Sound Fingerlings, Columbia Upriver Brights, Spring Creek Hatchery, and Fraser Summer Ocean.

Model error (i.e., the difference between Chinook Model preseason forecasts and the first postseason AI estimates for the three AABM fisheries) has varied considerably in all three AABM fisheries since 1999 (Figure 3-3). Deviations between pre- and postseason calibrations after transition to the Phase II model in the current Annex have persisted for SEAK and NBC at magnitudes similar to those observed previously. By contrast, deviations for the WCVI fishery have reduced substantially relative to historic patterns. The SEAK AABM preseason ACL from 2019–2023 was set using a catch-per-unit-effort (CPUE) model (2019–2022) and a multivariate model (2023) and thus was uniquely buffered from misalignment due to model error (at least to the extent that preseason was derived from these two models) during this period. Several notable improvements have been made to the Chinook Model and associated programs including finer stock and fishery stratifications and an updated base period calibration.

Improvements were also made to the CTC cohort reconstruction model (i.e., the Exploitation Rate Analysis [ERA]) during the 2019 Annex. Most significantly, the ERA now incorporates mark-selective fishery algorithms with a mixed fishery adjustment. This advancement allows exploitation rates to be calculated by mark status. However, mark-selective fisheries are still not accounted for in the Chinook Model.

The current Chinook Model used for AABM stock and fishery assessments is limited by constraints on the data and computational abilities available in the 1980s when the model was originally constructed. The Chinook Model was originally intended to model stock rebuilding scenarios but is now used to set the ACLs for the three AABM fisheries. For these and other reasons, the CTC formed the Research and Development work group (R&D WG) in 2022 to explore alternative approaches to Chinook management strategies and supporting analytical tools. The R&D WG has made significant progress towards developing alternative modeling strategies and a simulation evaluation framework, but continued support of the R&D WG and PSC Secretariat staff involvement is required to have a viable solution is ready in time for the next annex.

> ***Recommendation 3.1. Continue support for PSC Secretariat staff so they may assist with further CTC analytic and process improvements.*** The PSC Secretariat staff have been instrumental in helping the CTC to modernize its analytical tools and procedures for the implementation of Chapter 3. In addition, the contributions by PSC Secretariat staff to update and maintain the various software programs and databases used by the CTC to accomplish annual work plan tasks has been invaluable. Finally, administrative support provided by the PSC Secretariat is vital to the CTC's ability to maintain progress towards completing annual work plan tasks.

> ***Recommendation 3.2. Continue support for the CTC R&D work group.*** The CTC recognizes there is a pressing need to update its analytical processes to be more responsive to changes in environmental conditions, fishery regimes, and productivity. Therefore, the CTC recommends continued support for the R&D work group.

Section 4 of this report discusses the successes and challenges associated with implementing the 2019 Agreement. The Chapter 3 management regime is data intensive and requires substantial and coordinated investment across jurisdictions to provide data on catches, incidental mortality, and escapements, as well as maintenance of robust CWT infrastructure supporting coastwide recovery and stock-specific impact estimation. During negotiations, the Parties recognized that the fiscal resources required for implementing Chapter 3 were greater than those available at the time. The Parties also recognized that improvements to data quality and timeliness for the CWT and escapement indicator stock programs would be required to fully implement the 2019 Agreement. In response, the Parties included three additional funding programs: 1) a Mark Selective Fishery Fund to support collection of data required to evaluate MSFs, 2) a Coded-Wire Tag and Recovery program, and 3) a Catch and Escapement Indicator Improvement program. The latter two programs were intended to support work that improves timeliness and quality of CWT recovery, catch, and escapement data, but no funding was specified in the Treaty for them. The Parties combined these two programs under a single workgroup, referred to as C2, to discuss the programs initiated in subparagraphs 2(c) and 2(d) and to share project results.

The availability and quality of data used for the coastwide Chinook indicator stock program is evaluated in Section 4.2 (Data Quality and Availability). The CTC defined nine attributes of the indicator stock program and three data quality levels for each of these attributes during the current annex period (Table 4-1). The CTC scored these attributes for each indicator stock against data quality criteria as a means of evaluating the efficacy of indicator stocks used to monitor stock status of Chinook (Table 4-2). Additionally, the CTC defined six fishery data attributes with corresponding data quality scores and assessed each fishery similarly to how stock attributes were assessed (Table 4-3, Table 4-4). The stock and fishery attributes assessment highlights areas where high quality data are available annually in a timely manner but also reveals areas where high quality data is lacking. For example, almost all Attachment I indicator stocks scored poorly on forecast data standards (<7.5% MAPE and SE < 30%). Escapement assessments for several Puget Sound and most Washington Coast stocks also scored poorly, mainly because many escapement sampling programs rely on expanded counts and cannot quantify uncertainty needed to calculate a coefficient of variation. Fishery data attributes generally scored high for most stocks and fisheries, but several areas were flagged as needing improvement. Most notably, the CWT sampling rate for Fraser ISBM sport and Canadian Transboundary terminal sport both scored poorly because their CWT sampling rates are ≤10%. In addition, the Washington Coast ISBM sport fisheries lack quality mark-selective fishery (MSF) data; however, this may be less critical than other issues since there is relatively little MSF impact on the Washington Coast Attachment I stocks. Regional summaries of the attribute assessments offer specific details for the individual stocks and fisheries.

The CTC documented numerous gaps and weaknesses in data quality and availability during the development of this report. The application of incomplete or poor quality data in stock and fishery assessments results in poorer quality estimates used to inform the abundance-based management regime. Increased funding is necessary to provide high quality data for the implementation of Chapter 3. The CTC recommends that the Parties fully fund the stock and fishery data collection programs necessary for implementing the abundance-based management regime. Without adequate and timely stock assessments from management agencies, the PSC cannot achieve its goal to provide healthy and productive Chinook populations to support sustainable fisheries.

> ***Recommendation 4.1. Provide sufficient funding to support the PST management framework, including stock assessment and fishery monitoring.*** The CTC's work is undergirded by agency stock and fishery monitoring programs which provide the necessary data to complete annual technical analyses. These data form the foundation of Chinook fishery management under Chapter 3 of the PST; it is therefore imperative that agency-led monitoring programs are sufficiently funded.
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> ***Recommendation 4.2. Address delayed availability of escapement, catch, and CWT recovery estimates.*** Reporting delays in critical fishery data constrain the CTC's ability to provide timely management advice. The two-year lag in CWT expansion estimates for SUS sport fisheries represents the most urgent priority. This delay stems from the time-intensive process of manually handling paper catch-record cards, among other things. Addressing this delay will enable more responsive fishery management.
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> ***Recommendation 4.3. Address critical deficiencies in CWT sampling (e.g., Fraser Terminal ISBM and Canadian TBR fisheries).*** Missing or inadequate CWT sampling in fisheries or escapement may result in inaccurate and biased CYER estimates. It is recommended that agencies devote adequate resources towards providing full coverage CWT sampling in all fisheries where Attachment I indicator stocks are encountered, as well as in escapement.
>
> ***Recommendation 4.4. Encourage agencies to improve or develop alternative stock forecasting methods in order to achieve CTC standards (e.g., <7.5% MAPE and SE < 30%).*** The accuracy and precision of individual stock forecasts provided to the Chinook

Model is of critical concern to the CTC. Nearly all stocks monitored under Attachment I fail to consistently meet the CTC data standards for forecasts and, since agency-supplied forecasts are crucial inputs to the Chinook Model, the error in individual stock forecasts propagates through to the estimation of abundance indices. Considerable effort by each agency should be directed towards updating stock forecasting methods to achieve CTC standards. Exploration of more sophisticated modeling techniques for generating stock forecasts (e.g., individual population models, life-cycle models, Bayesian hierarchical models) should be encouraged.

Recommendation 4.5. Improve catch monitoring and reporting systems to provide accurate estimates of catch and fishery-related mortalities. Chinook Technical Committee analyses rely on accurate and unbiased accounting of total fishery mortality. Therefore, efforts to estimate catch and incidental mortality should be made using direct methods wherever possible; use of indirect estimates should be well-documented and use unbiased methods.

The CTC maintained continuity of core operations throughout the COVID-19 pandemic; annual data collection, assessment modeling, and reporting proceeded largely uninterrupted. Critical functions including CWT sampling, catch accounting, and escapement estimation remained stable. The most significant impact occurred in 2020 marking and tagging programs, particularly in British Columbia, where the majority of exploitation rate indicator stocks were released without marks or tags. The CTC implemented strategies to mitigate for this challenge while preserving assessment data reliability, as detailed in a September 30, 2020 report to PSC Commissioners. In the wake of the pandemic, virtual and hybrid meetings have offered alternatives for participation in CTC meetings. However, overreliance on virtual (especially fully virtual) meetings can hinder CTC progress towards certain workplan tasks. Maintaining funding to support travel, especially related to critical projects, should be a top priority.

Recommendation 4.6. Maintain funding for an adequate number of in-person CTC meetings. The CTC carefully considers the number of in-person, hybrid, and virtual meetings each year during annual review of its work plan. Funding constraints, delays in reimbursements, and evolving travel policy have disrupted the CTC's ability to maintain consistent meeting schedules and complete work plan tasks on time. Strategizing ways to insulate planned meetings and travel schedules from these forces would help the CTC maintain progress towards work plan goals.

The CYER metric was introduced with the 2019 Agreement for ISBM evaluation, and several challenges were encountered in its implementation. Concerns persist over timeliness of CWT reporting, particularly in SUS ISBM fisheries where CWT data lags one year behind Alaska and Canada. The use of a universal base period for all Attachment I stocks continues to cause concern with respect to how much current CYER limits relate to biologically-based management objectives for each stock. Investigation of an outlier CYER estimate in 2021 on Snohomish in Canadian ISBM fisheries unveiled a sensitivity in the metric to abrupt changes in the size of the CWT release group. The CTC provides several specific recommendations related to CYERs that would improve implementation of Chapter 3:

Recommendation 4.7. Explore the use of alternative base periods. Potential misalignment between the CYER base period (2009–2015) and current stock/fishery management practices warrants exploration. The current base period may be arbitrary for many stocks under current distribution and composition of stocks and fisheries, undermining their utility as a reference point for management. Potentially updating to stock- or fishery- specific base periods, or exploring alternative strategies altogether, could result in more accurate assessment of ISBM fisheries.

Recommendation 4.8. Consider methods to correct for interactions between CYERs and CWT release group size. Abrupt changes in CWT release size can result in short-term destabilization in the estimation of CYER. Although no technical solution has yet been agreed to, several potential correction procedures have been investigated. Implementing such a correction could improve the robustness of the current CYER metric.

Recommendation 4.9. Clarity needed for application of subparagraph 7(c)(ii). With the temporal misalignment of information provided to the CTC and the current lack of bilateral preseason or in-season management tools, the responsibility of preseason and in-season assessment are wholly within the purview of the management agencies. Because of this, it is unclear what role the CTC can play in assessing or making recommendations aimed at reducing deviations between CYERs and CYER limits to a maximum level of 10% when limits apply. The CTC requests further clarity on our role in the application of 7(c)(ii) for the remainder of the current annex and the next agreement.

Incidental mortality rates currently used in CTC analyses are static, historic values based on recommendations presented over 25 years ago. The CTC conducted an IM literature review in 2022 at which time no changes were generally recommended (CTC, 2022); however, since that time, recognition has increased among the CTC that incidental mortality rates may need to be updated in some situations to better reflect contemporary fisheries. For example, following subparagraph 7(c) response on Nooksack spring Chinook from the 2023 ERA, the CTC now applies a 36.3% release mortality rate (as opposed to 90%) to the Lummi freshwater tanglenet fishery on to account for operational differences from a conventional gill net fishery (CWG, 2024). Changes in environmental conditions or fishery gear and practices can influence mortality rates, so finer-scale incidental mortality estimates across stocks and/or fisheries could improve total mortality accounting.

Recommendation 4.10. Continue seeking improvements in estimation of mortality rates, numbers of fish kept and released, and how IM is accounted for in Chinook fisheries. Incidental mortality comprises a non-trivial component of total mortality in fisheries. Continuously improving IM estimates and documentation of current IM estimation practices across agencies will ensure use of the best possible estimates in CTC analyses.

Recommendation 4.11. ***Update IM rate assumptions and values as necessary based on new studies.*** Increasing evidence suggests a misalignment between current CTC IM assumptions and the distribution of true IM rates across stocks and fisheries. Stock-and/or fishery-specific IM rates, informed by high quality studies, could be applied to more accurately estimate fishery-related mortalities, in turn resulting in more accurate CYER estimates.

The CTC uses a deterministic modeling paradigm that precludes any quantification of uncertainty associated with the key metrics used for implementing the abundance-based management regime. Escapement goals and fishery indices are based on assumptions of stability and do not consider extrinsic factors which may violate such assumptions. Increasing environmental variance and broad climate impacts may result in model misalignment, leading to poorer quality estimates.

Recommendation 4.12. Continue to steer technical analyses towards a paradigm that incorporates uncertainty. Rapidly changing environmental conditions and key data gaps have eroded key assumptions underpinning the CTC's primary technical analyses. Adapting to dynamics beyond our current models and incorporating uncertainty into CTC methods is essential to achieving the conservation and management goals outlined in Chapter 3.

Recommendation 4.13. Revisit assumptions about maturation rates, natural mortality rates, and intrinsic productivity across stocks. Environmental variability has been linked to changes in size-at-age, fecundity, freshwater and ocean survival, and maturity rates in salmonids coastwide. A reassessment of current CTC modeling assumptions is warranted given the dynamic and pervasive nature of the expected changes in both freshwater and marine ecosystems.

Chapter 3 of the 2019 PST Agreement improved upon the 2009 Agreement, yet old challenges persist, and several new ones were encountered. When new challenges arise, it is productive to address these through regular communication and guidance from the Chinook Interface Group (CIG)—especially when matters relate to policy. Timely and regular communication with the CIG in resolving policy-related issues is essential for implementing Chapter 3 effectively.

Recommendation 4.14. Strive for effective and timely communication and collaboration between the PSC Commissioners, the CIG, and the CTC during regular annual tasks and the upcoming negotiation cycle. Issues periodically arise which require decisions from the CIG. Without a structure in place to facilitate effective communication between the CTC and CIG on such matters, projects can become delayed and compromise competing priorities if unresolved for an extended period. A more intentional system of communication between the CTC and the CIG on urgent matters, such as regular meetings or check-ins on priority issues (e.g., AABM fishery performance), would help provide more expedient resolution on such matters.

1. Stock Performance

Paragraph 1(b) provides the first indication of the Parties' intent for conservation in the 2019 Agreement:

> "*fishery management measures that are implemented under this Treaty are intended to be appropriate for recovering, sustaining, and protecting Chinook salmon stocks in Canada and the U.S. and are responsive to changes in productivity of Chinook salmon stocks associated with environmental conditions*"

Paragraph 2(a) establishes a comprehensive and coordinated Chinook salmon fishery management program and provides a further understanding of production objectives, with consideration for the status of stocks that may be below escapement levels associated with maximum sustainable yield (MSY):

> *"(iii) uses harvest regimes based on annual indices of abundance that are responsive to changes in production, that take into account all fishery induced mortalities, and that are designed to meet maximum sustainable yield (MSY) or other agreed biologically-based numeric escapement or exploitation rate objectives, including those set out in Attachment I*
>
> *(iv) contributes to the improvement in trends in spawning escapements of depressed Chinook salmon stocks and is consistent with improved Chinook salmon production*"

Stock status performance is an important measure of AABM and ISBM fishery evaluations. These fisheries harvest a broad mixture of stocks. Negotiated catch levels for AABM fisheries are based on stepped harvest rate indices applied to the overall aggregate abundance according to the specific AABM fishery regime relationship. Since these harvest rate indices are set on the basis of the aggregate abundance, they are more sensitive to the status of abundant stocks relative to that of less abundant ones. To manage the entire Chinook resource effectively among AABM and ISBM fisheries, a relevant and timely stock status evaluation is critical.

Attachment I of Chapter 3 lists 38 indicator stocks, of which the CTC reports annual escapements for 36 stocks.[1] This section of the report evaluates the performance of Attachment I stocks by examining stock-specific escapements, fishery impacts, and production. Summaries of status and trends for each indicator stock are provided on a regional basis.

As the Parties enter the 27th year of the abundance-based management regime for coast-wide Chinook salmon, 22 of 38 (58%) stocks of Chinook salmon specifically listed in Attachment I to Chapter 3 have PSC-agreed management objectives. Nine of 13 (69%) Canadian stocks and 7 of 22 (32%) U.S. stocks lack stock specific PSC-agreed objectives; all 3 TBR stocks have PSC-agreed objectives. Missing objectives limit the ability to assess stock status relative to MSY-based management objectives.

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[1] Attachment I lists East Vancouver Island North as TBD and Canadian Okanagan as pending a review and a Commission decision.

1.1 Escapement Evaluation

1.1.1 Status of Escapement Indicator Stocks Listed in Attachment I

The CTC provides an annual evaluation of estimated spawning escapements for 36 of the 38 Chinook salmon indicator stocks listed in Attachment I of Chapter 3 of the 2019 PST Agreement. Table 1-1 summarizes escapement information for these stocks by providing averages during the 2009 Agreement, the 2019 Agreement, and a record of individual year performance relative to management objectives for stocks that have them. For stocks with PSC-agreed escapement objectives (22 of the 38 unique Attachment I stocks or stock groups) in these averages are divided by the point value or the lower end of the range and presented as percentages. Percentages of PSC-agreed escapement objectives are colored blue if the average percentage is greater than 200% for point value or above the upper end of the range, green if the average percentages are 100–200% of a point value or within the range, yellow if the average percentages are 85–100% of the escapement objective, and red if less than 85% of the escapement objective. The upper limit of the red zone (85%) is specifically identified in Chapter 3 paragraph 7(a)(iv) as the benchmark level below an escapement objective for assessment of whether a stock warrants additional management actions. For stocks without escapement objectives, average spawning escapements during the 2009 Agreement and the 2019 Agreement were compared; if average escapements increased by more than 15%, the escapement trends were labeled as increasing (depicted by arrows), if average escapements decreased by more than 15%, the escapement trends were labeled as decreasing, and if within 15% between the two time periods, labeled as unchanged. Escapements may include hatchery- and natural-origin fish.

Table 1-1—Status of PST Escapement Indicator stocks under the 2009 and 2019 Agreements. All escapement percentages are calculated as a percent of either the point goal or the lower end of the escapement goal range.

Legend	
Esc Goal Ranges	Esc Point Goals
Above Range	>200%
Within Range	100-200%
85-100% Lower End	85-100%
< 85% Lower End	< 85%

Escapement Indicator	Management Objective	Average Escapements					Annual Escapements																% Years Met
		2009-2018		2019-2024		Change	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
Situk[1]	500-1,000	103%	516	148%	739	43%																	50%
Chilkat[1]	1,750-3,500	113%	1,973	125%	2,189	11%																	56%
Unuk[1]	1,800-3,800	118%	2,123	114%	2,045	-4%																	56%
Alsek[1,2]	3,500-5,300	138%	4,829	141%	4,920	2%																	69%
Taku[1,2]	19,000-36,000	94%	17,768	79%	15,051	-15%																	38%
Stikine[1,2]	14,000-28,000	110%	15,421	76%	10,611	-31%																	38%
Skeena	TBD		39,318		22,864	-42%																	
Atnarko[3,4]	5,009		7,673	139%	6,954	-9%																	67%
EVIN (TBD)	TBD																						
NWVI Natural[5]	TBD		1,642		2,132	30%																	
SWVI Natural[5]	TBD		593		438	-26%																	
Nicola	TBD		3,514		4,300	22%																	
Chilcotin	TBD		2,401		2,284	-5%																	
Chilko	TBD		6,809		6,547	-4%																	
Lower Shuswap[3]	12,300		26,881	284%	34,927	30%																	100%
Harrison	75,100	86%	64,819	108%	80,736	25%																	38%
Cowichan	6,500	86%	5,567	250%	16,226	191%																	56%
Phillips	TBD		1,771		2,927	65%																	

~continued~

Table 1-1—Continued.

Escapement Indicator	Management Objective	Average Escapements					Annual Escapements																% Years Met
		2009-2018		2019-2024		Change	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
Nooksack Spring	TBD		1,948		2,834	45%																	
Skagit Spring	1,024		1,855	181%	1,855	0%																	100%
Skagit Sum/Fall	8,201		11,153	143%	11,725	5%																	100%
Stillaguamish	TBD		1,071		1,277	19%																	
Snohomish	TBD		4,011		3,941	-2%																	
Hoko	TBD		1,016		2,159	112%																	
Quillayute Fall	3,000	122%	3,656	236%	7,072	93%																	94%
Hoh Fall	1,200	167%	2,002	178%	2,132	6%																	100%
Queets Fall	2,500	138%	3,438	113%	2,820	-18%																	81%
Grays Harbor Fall	13,326	118%	15,664	110%	14,664	-6%																	63%
CAN Okanagan[6]	TBD																						
Mid-Col Summers	12,143	492%	59,752	438%	53,145	-11%																	100%
Upriver Brights	40,000	484%	193,662	266%	106,236	-45%																	100%
Lewis	5,700	189%	10,792	226%	12,884	19%																	94%
Coweeman	TBD		818		548	-33%																	
Nehalem	6,989	131%	9,125	130%	9,076	-1%																	63%
Siletz	2,944	200%	5,874	167%	4,920	-16%																	94%
Siuslaw	12,925	170%	21,929	67%	8,621	-61%																	56%
South Umpqua	TBD		7,767		2,629	-66%																	
Coquille	TBD		11,856		565	-95%																	

[1] Identified for management of SEAK fisheries in paragraph 6(b)(iv).

[2] Stock-specific harvest limits specified in Chapter 1 of this Treaty.

[3] Agency escapement goal has the same status as PSC-agreed escapement goal for implementation of this Chapter. I

[4] Natural origin spawners.

[5] To be determined after CTC review specified in paragraph 2(b)(iv) of this Chapter.

[6.] Pending the review specified in paragraph 5(b) of this Chapter and a subsequent Commission decision.

Between the current and previous treaty annex, average escapements have increased in 12 stocks, decreased in 11 stocks, and remained unchanged in 13 stocks (Table 1-1). Out of 22 stocks with PSC-agreed management objectives, 19 met or exceeded their escapement targets at least 50% of the time since the beginning of the 2009 annex or when their management objective went into place. Three stocks, Taku, Stikine, and Harrison, only met their escapement goals 38% of the time since 2009; however, Harrison has met its goal every year since 2022. On the North Oregon Coast, Siuslaw has only met its escapement goal once under the current annex. Of the 14 escapement indicator stocks without a PSC-agreed management objective, compared to the 2009 annex, average escapement increased for six stocks, remained the same for three stocks, and decreased for five stocks. Skeena, SWVI Natural, and Coweeman have experienced declines in average escapement exceeding 25%, while South Umpqua and Coquille have experienced >50% declines. Some stocks, including Hoko and Philips, have experienced sharp increases (>50%) in average escapement between annexes. Nooksack Spring, NWVI Natural, and Nicola have all increased average escapements by 20% or more between annexes.

Escapements in Alaska and Transboundary Rivers (n=6) were variable across stocks with percent changes in average escapement ranging from 43% (Situk) to -31% (Stikine). Several stocks did not meaningfully increase or decrease their average escapements between annexes and generally met their escapement goals with some exceptions (e.g., Unuk in 2020 and 2022). For TBR stocks, a prolonged period of poor productivity beginning with the 2012 brood year has precluded Taku and Stikine from meeting their escapement goals in almost every year since 2016 (Taku met its escapement goal in 2024). Chilkat and Alsek have consistently met their escapement goals in the current annex (2022 excepted). Similarly, the Situk has consistently met its goal in the current annex (2023 excepted). All six Alaskan escapement indicator stocks have PSC-agreed management objectives.

In Canada, average escapements across all stocks (n=11) have increased by 22% between annexes, largely driven by major increases in the Cowichan (191%) and Phillips (65%) escapement averages (Table 1-1). Cowichan was failing to meet its escapement goal in the 2009 annex, but since 2015 it has consistently met its escapement goal. The steepest declines in average escapement for Canadian stocks were seen in SWVI Natural (-26%) and Skeena (-42%). The Harrison stock failed to meet its escapement goal in seven of ten years of the 2009 annex and has already missed its escapement goal three years in the current annex; however, it has recently met its escapement goal in each year since 2022. Currently, four Canadian escapement indicator stocks listed in Attachment I have PSC-agreed management objectives, but two Canadian stocks (Okanagan and EVIN) are still under development as escapement indicators. The development of Skeena escapement goals is also in progress and should be ready for CTC review after Canadian Science Advisory Secretariat (CSAS) review in 2026.

Among SUS stocks (n=19), nearly two-thirds of stocks (12 of 19) either maintained or increased their escapement averages between annexes, while the remaining one-third (7 of 19) decreased. Notable increases (≥15%) in average escapements were observed for the Hoko, Quillayute, Nooksack, Stillaguamish, and Lewis stocks. For SUS stocks with PSC-agreed management objectives (12 out 19), escapement goals have generally been met with several exceptions. Siuslaw last met its escapement goal in 2020, and before that in 2016. Nehalem has met its escapement goal 63% of the time since 2009 but missed its goal in 2022 and 2024. Grays

Harbor fall escapement has achieved its goal in seven of the 11 years (64%) since the current escapement goal went into place in 2014. While Queets fall only missed its escapement goal once in the previous annex (2018), it has missed its goal in two consecutive years (2022 and 2023) in the current annex. Seven stocks have declined in average escapements by more than 15% between annexes with the largest decreases seen in the Coquille (-95%), South Umpqua (-66%), and Siuslaw (-61%). These three escapement indicator stocks constitute the far Southern edge of North migrating stocks which are managed under PST. Average escapements for Upriver Brights have decreased by 45%, yet the escapement goal has been met 100% of the time for this stock, which it typically exceeds by 200%-500%.

1.1.2 Escapement Trend Analysis

Chinook salmon escapement trends from 1999 to 2024 were estimated using a state-space exponential growth model (Dennis et al., 2006) parameterized through restricted maximum likelihood (Humbert et al., 2009). Escapement trends were characterized by the long-term mean rate of change (μ) and corresponding 80% confidence intervals, where μ = 0 indicates equilibrium (i.e., escapement is stable). Statistical significance was determined if the upper and lower 80% confidence bounds did not contain zero (e.g., $0 \notin [CI_{lower}, CI_{upper}]$), corresponding to a Type I error rate of 20% (α = 0.2). The confidence intervals represent the inter-annual variability in annual rate of change. Annual rates of change that are significantly different from zero, as defined by the confidence interval test, are considered trends. Point estimates whose confidence intervals contain zero are either considered stable (i.e., no change in annual rate of change) or otherwise too variable to discern any long-term trends. Because μ is estimated in the logarithmic scale, finite rates of change are computed as e^{μ} and percent changes as $e^{\mu} - 1$. Trends computed from the state-space model include escapements of both hatchery and natural origin fish.

There were 36 escapement indicator stocks included in the analysis, of which 22 stocks had PSC-agreed management objectives (e.g., escapement goals) (Figure 1-1). Of those 36 stocks, the point estimate of the instantaneous rate of change from 1999–2024 was positive for 16 stocks (44%) and negative for 20 stocks (56%). Point estimates for the instantaneous rate of change ranged from -13.02% (Coquille) to 11.65% (Phillips); however, only three stocks (Skeena, Skagit Spring, and Stillaguamish) showed statistically significant point estimates, indicating possible long-term directional trends in escapement. Skeena and Stillaguamish exhibited negative trends in escapement, while Skagit spring showed a positive trend. The top ten stocks, in order, with the greatest inter-annual variance in their instantaneous rate of change estimates were Coquille, South Umpqua, Siletz, Lewis, Siuslaw, Philips, Chilko, Lower Chilcotin, and Alsek.

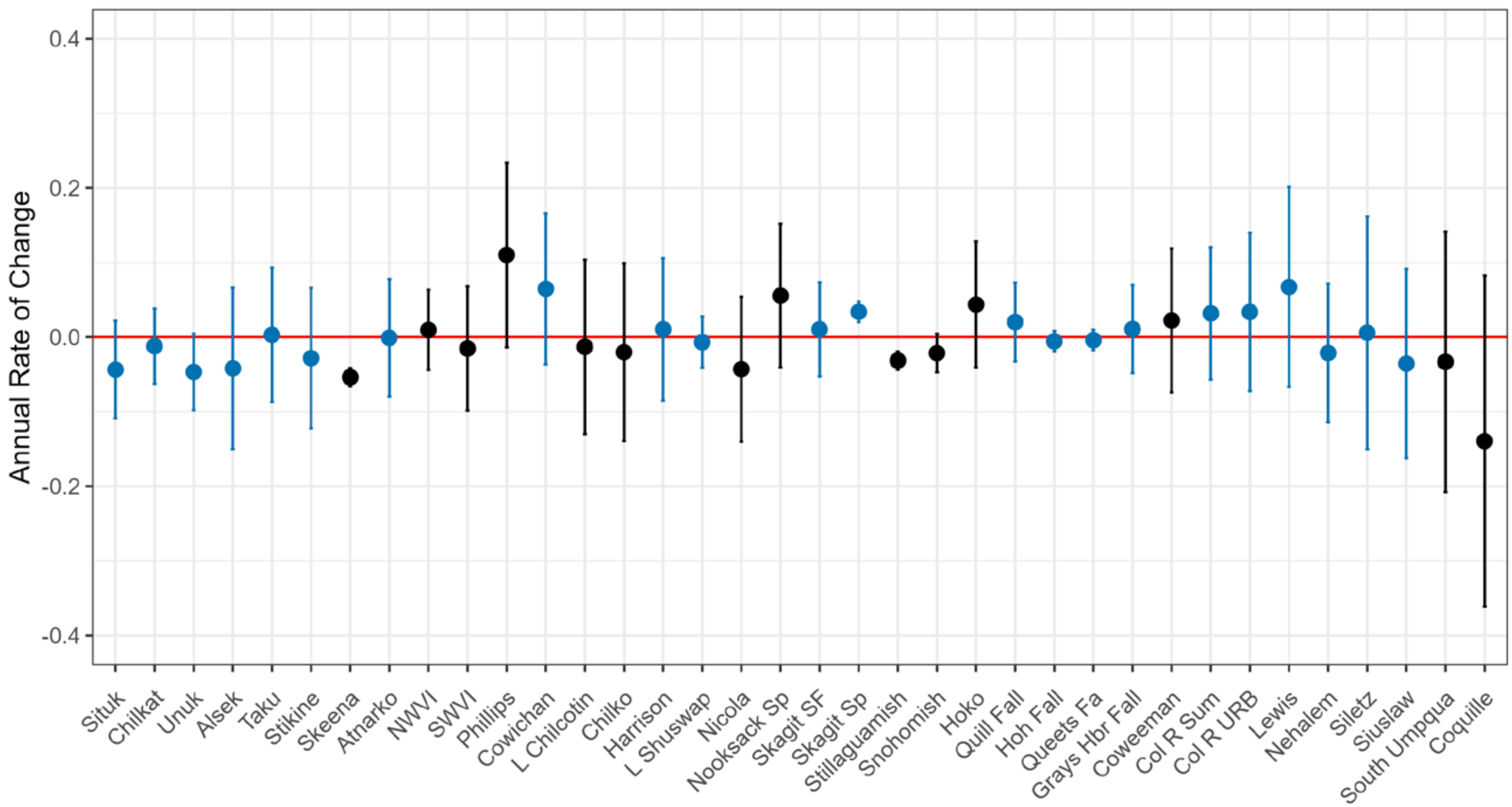

Figure 1-1—Annual rate of change for escapement for Chinook salmon indicator stocks, 1999–2024.

Circles represent mean rates of change (μ) and bars represent 80% confidence intervals. Stocks are ordered from north to south with those that have PSC-agreed escapement goals highlighted in blue. The red line at zero represents equilibrium (i.e., no change).

1.2 Stock-Specific Fishery Impacts

1.2.1 Exploitation Rate Analysis Summary Statistics and Stock-Specific Mortality Distribution

The CTC annually reports statistics for Attachment I escapement indicator stocks, including total mortality (catch plus incidental mortality), brood year exploitation rate (BYER), cohort survival rate to age 2 (or age 3 for yearling stocks), calendar year exploitation rate (CYER), and the percent of mortality in a calendar year distributed to escapement. Results are summarized in Table 1-2 and Table 1-3. Estimates are provided for 35 indicator stocks—33 with CWT-based exploitation rate indicators and two additional stocks (Situk, Alsek) where equivalent estimates are derived from run reconstructions using catch accounting and escapement data.

Table 1-2 presents BYER, survival, and escapement distribution values as heat maps. BYERs represent total mortality (catch plus incidental mortality), increasing from green to red, and display the long-term mean across all complete brood years for each stock compared with the BYER from the most recent complete brood. Point changes represent the absolute difference in percentage points between the mean and the most recent brood. Survival rates increase from red to green and display the long-term median across all complete brood years for each stock compared with the survival rate from the most recent complete brood. Percent change represents the relative difference between the most recent brood and the long-term median. Lastly, the escapement columns display the mean percent of total mortality that occurs in escapement for each calendar year across the 2009 and 2019 Agreement periods, in addition to the most recent calendar year, increasing from red to green. Point changes represent the absolute difference in percentage points between the two agreement periods.

For BYERs, all fisheries with complete brood data under the 2019 PST agreement, and for most stocks (26 of 34), estimates in the most recent year at or below their long-term means. Long-term early marine survival rates were variable across stocks (Table 1-2), ranging from 7.5% (Chilkat) to as low as 0.4% (Coweeman). The average long-term median survival across all stocks was 3.0%, compared to the last complete brood (BY 2019–2023) average (across all stocks) of 3.5%; however, increases in average survival were influenced by certain stocks which have seen major increases in age-2 and age-3 survivals in the last complete brood (e.g., Chilkat [+241%] and Nicola [+164%]). Roughly half (17 of 33) stocks for which early marine survival rate estimates are available experienced lower survival in the most recent brood compared to their long-term medians. Calendar year percent escapements increased between the 2009 and 2019 Agreements for 30 of 36 stocks. For a more detailed review of the summary statistics presented in Table 1-2, see the regional stock performance reviews in Section 1.4. Table 1-3 compares CYERs from the 2009–2018 and 2019–2024 annex periods, separated by fishery and escapement.

During the 2019 Agreement, annual fishery CYERs ranged from 1% to 75%. For AABM fisheries, average CYERs decreased or remained the same for 25 stocks and increased for 10. For ISBM fisheries, average CYERs decreased or remained the same for 28 stocks and increased for 7.

Table 1-2—Summary of statistics generated for unmarked Chinook by the 2025 exploitation rate analysis. Statistics include total mortality (catch plus incidental mortality) brood year exploitation rate (BYER), cohort survival rate to age 2 (age 3 for yearling stocks), and calendar year (CY) percent distribution of the total mortality in escapement.

Escapement Indicator Stock	Expl. Rate Ind.	BYER			Age 2 or 3 Survival Rate			CY % Escapement			
		Long Term Mean	Last Full Brood[1]	Points Change	Long Term Median	Last Full Brood[1]	% Change	Mean % 2009-18	Mean % 2019-Last	Last % to Esc[2]	Points Change
Situk (external)[3]	(TBD)							74%	99%	100%	24
Alsek (external)[3]	(TBD)							88%	96%	97%	8
Taku	TAK	17%	7%	-9	7.2%	8.8%	23%	79%	95%	98%	16
Chilkat	CHK	17%	6%	-11	7.5%	25.6%	241%	80%	96%	97%	16
Stikine	STI	33%	17%	-15	3.7%	3.9%	7%	72%	86%	91%	14
Unuk	UNU	30%	28%	-1	6.7%	6.6%	-3%	62%	76%	83%	14
Skeena	KLM	44%	25%	-19	0.7%	0.8%	26%	59%	72%	76%	13
Atnarko	ATN	40%	33%	-7	1.9%	1.1%	-43%	55%	69%	70%	14
NWVI Natural Aggregate[4]	RBT adj	45%	32%	-13	4.1%	5.4%	31%	62%	69%	68%	7
SWVI Natural Aggregate[4]	RBT adj	45%	32%	-13	4.1%	5.4%	31%	62%	69%	68%	7
EVIN[4]	QUI adj	54%	49%	-5	1.2%	1.0%	-16%	54%	50%	38%	-4
Phillips	PHI	32%	30%	-2	3.6%	3.2%	-12%	64%	71%	63%	7
Cowichan	COW	69%	43%	-25	1.5%	0.5%	-65%	28%	55%	73%	27
Nicola	NIC	26%	3%	-23	2.0%	5.1%	164%	77%	91%	91%	14
Chilcotin (in development)											
Chilko (in development)	CKO										
Lower Shuswap	SHU	51%	27%	-24	3.0%	1.9%	-37%	52%	72%	59%	20
Harrison	HAR	46%	19%	-27	2.3%	3.9%	75%	68%	76%	85%	8
Canadian Okanagan	SUM adj										

~continued~

Table 1-2—Continued.

Escapement Indicator Stock	Expl. Rate Ind.	BYER			Age 2 or 3 Survival Rate			CY % Escapement			
		Long Term Mean	Last Full Brood[1]	Points Change	Long Term Median	Last Full Brood[1]	% Change	Mean % 2009-18	Mean % 2019-Last	Last % to Esc[2]	Points Change
Nooksack Spring[5]	NSF adj	44%	37%	-7	1.3%	0.4%	-69%	51%	65%	50%	14
Skagit Spring[5]	SKF	31%	26%	-5	1.4%	2.4%	64%	53%	46%	35%	-7
Skagit Summer/Fall[5]	SSF	36%	25%	-11	1.3%	1.5%	16%	45%	68%	60%	23
Stillaguamish[5]	STL	48%	31%	-17	1.7%	1.8%	4%	50%	59%	48%	9
Snohomish[5]	SKY	36%	35%	-1	1.0%	1.6%	57%	66%	65%	70%	-1
Hoko	HOK	31%	11%	-21	1.3%	0.3%	-80%	72%	70%	80%	-2
Grays Harbor Fall[4]	QUE adj	63%	63%	0	2.6%	2.7%	2%	36%	37%	38%	1
Queets Fall	QUE	61%	75%	14	2.6%	1.8%	-33%	37%	25%	27%	-12
Quillayute Fall[4]	QUE adj	61%	64%	3	2.6%	2.7%	2%	29%	35%	31%	6
Hoh Fall[4]	QUE adj	61%	68%	8	2.6%	2.7%	2%	38%	30%	29%	-8
Upriver Brights	URB	54%	41%	-13	1.9%	1.9%	1%	49%	61%	69%	12
	HAN	56%	35%	-21	0.8%	0.4%	-47%	39%	55%	51%	16
Lewis	LRW	44%	57%	13	1.5%	0.7%	-51%	47%	52%	37%	5
Coweeman[5]	CWF	35%	19%	-17	0.4%	0.2%	-64%	67%	75%	78%	8
Mid-Columbia Summers	SUM	52%	43%	-9	1.8%	2.5%	39%	46%	64%	67%	18
Nehalem[4]	SRH adj	48%	55%	7	5.2%	4.2%	-20%	54%	55%	52%	1
Siletz[4]	SRH adj	49%	53%	4	5.2%	4.2%	-20%	49%	51%	51%	2
Siuslaw[4]	SRH adj	54%	49%	-5	5.2%	4.2%	-20%	45%	50%	48%	5
South Umpqua[4]	ELK adj	39%	47%	8	6.1%	5.1%	-15%	55%	55%	60%	0
Coquille[4]	ELK adj	37%	39%	1	5.2%	4.0%	-22%	44%	55%	57%	11

[1] For 2025, the most recent brood is 2019 for subyearling stocks in Canada, and 2018 for yearling stocks in Alaska and Canada (KLM, NIC) and all stocks in the southern US, except LYY, SMK, and WSH yearlings (2017).

[2] Last calendar year is 2024 for Alaskan and Canadian stocks and 2023 for southern U.S. stocks.

[3] Partial data for Situk and Alsek are from external sources.

[4] Terminal adjustments to BYER/CYER applied because fishing mortality on hatchery fish does not represent fishing mortality on wild fish.

[5] BYERs presented are for ocean fisheries only because terminal fishery impacts on the CWT indicator are not representative of those on the associated wild stocks.

Table 1-3—Average unmarked Chinook mortality distributions during 2019–2024 and % change from 2009–2018 average, based on results from the 2025 exploitation rate analysis[1].

Escapement Indicator Stock	Expl. Rate Ind.	AABM						ISBM				ESC + Stray	
		SEAK		NBC		WCVI		US		CAN			
		% Mort	% Chg	% Mort	% Chg	% Mort	% Chg	% Mort	% Chg	% Mort	% Chg	% Esc	% Chg
Situk (external)[2]	(TBD)	1%	-24%	0%	0%	0%	0%	0%	0%	0%	0%	99%	24%
Alsek (external)[2]	(TBD)	4%	-6%	0%	0%	0%	0%	0%	0%	0%	-2%	96%	8%
Taku (external)	TAK	5%	-9%	0%	0%	0%	0%	0%	0%	0%	-9%	95%	18%
Chilkat	CHK	4%	-16%	0%	0%	0%	0%	0%	0%	0%	0%	96%	16%
Stikine (external)	STI	11%	-4%	0%	0%	0%	0%	0%	0%	2%	-10%	87%	15%
Unuk	UNU	22%	-14%	1%	0%	0%	0%	0%	0%	1%	0%	76%	14%
Skeena	KLM	17%	-1%	5%	-3%	0%	0%	0%	0%	6%	-8%	72%	13%
Atnarko	ATN	6%	-2%	3%	-3%	0%	0%	0%	0%	21%	-9%	69%	14%
NWVI Natural Aggregate	RBT adj	13%	-4%	5%	-1%	4%	1%	0%	0%	8%	-3%	70%	8%
SWVI Natural Aggregate	RBT adj	13%	-4%	5%	-1%	4%	1%	0%	0%	8%	-3%	70%	8%
EVIN	QUI adj	23%	4%	3%	0%	0%	0%	0%	0%	23%	-2%	50%	-3%
Phillips	PHI	18%	2%	0%	-2%	0%	0%	0%	0%	10%	-8%	71%	7%
Cowichan	COW	0%	0%	0%	0%	2%	-4%	2%	-4%	40%	-18%	55%	25%
Nicola	NIC	0%	0%	0%	-1%	0%	-1%	1%	-2%	8%	-10%	91%	14%
Chilcotin (in development)													
Chilko (in development)	CKO												
Lower Shuswap	SHU	5%	-5%	2%	-8%	1%	-2%	0%	-1%	18%	-5%	73%	20%
Harrison	HAR	0%	0%	0%	0%	1%	-4%	3%	-3%	19%	-2%	76%	8%
Canadian Okanagan	SUM adj												

~continued~

Table 1-3—Continued.

Escapement Indicator Stock	Expl. Rate Ind.	AABM						ISBM				ESC + Stray	
		SEAK		NBC		WCVI		US		CAN			
		% Mort	% Chg	% Mort	% Chg	% Mort	% Chg	% Mort	% Chg	% Mort	% Chg	% Esc	% Chg
Nooksack Spring	NSF adj	4%	1%	1%	1%	6%	-10%	8%	2%	14%	-8%	68%	14%
Skagit Spring	SKF	1%	0%	0%	0%	5%	-2%	30%	6%	18%	4%	46%	-7%
Skagit Summer/Fall	SSF	5%	-5%	0%	-1%	8%	-5%	8%	-4%	9%	-7%	70%	22%
Stillaguamish	STL	4%	2%	1%	0%	6%	-6%	10%	0%	13%	-9%	66%	12%
Snohomish	SKY	1%	0%	0%	0%	6%	-1%	7%	-2%	19%	2%	66%	1%
Hoko	HOK	9%	-2%	4%	-4%	4%	2%	3%	1%	6%	3%	73%	0%
Grays Harbor Fall	QUE adj	33%	3%	20%	4%	1%	0%	8%	-9%	1%	0%	37%	1%
Queets Fall	QUE	33%	3%	20%	4%	1%	0%	20%	4%	1%	0%	25%	-12%
Quillayute Fall	QUE adj	33%	3%	20%	4%	1%	0%	10%	-14%	1%	0%	35%	6%
Hoh Fall	QUE adj	33%	3%	20%	4%	1%	0%	15%	0%	1%	0%	30%	-9%
Upriver Brights	URB	12%	-1%	6%	0%	2%	-1%	19%	-10%	0%	-1%	61%	12%
	HAN	14%	-4%	8%	0%	1%	-2%	20%	-12%	1%	0%	56%	18%
Lewis	LRW	26%	16%	11%	2%	1%	-7%	9%	-16%	0%	-1%	54%	6%
Coweeman	CWF	8%	4%	3%	1%	1%	-2%	11%	-9%	1%	-1%	75%	7%
Mid-Columbia Summers	SUM	13%	1%	2%	-1%	1%	-6%	20%	-12%	1%	0%	64%	18%
Nehalem	SRH adj	14%	-1%	10%	-4%	3%	2%	16%	2%	0%	0%	56%	2%
Siletz	SRH adj	14%	-1%	10%	-4%	3%	2%	19%	0%	0%	0%	53%	3%
Siuslaw	SRH adj	14%	-1%	10%	-4%	3%	2%	20%	-4%	0%	0%	52%	7%
South Umpqua	ELK adj	10%	4%	5%	0%	4%	1%	27%	-3%	0%	0%	55%	-1%
Coquille	ELK adj	10%	4%	5%	0%	4%	1%	16%	-12%	0%	0%	65%	8%

[1] *Results for Alaskan and Canadian stocks are based on data from 2009–2024. For southern U.S. stocks, results from 2024 were not yet available.*

[2] *Data are based on landed catch accounting program and run reconstruction.*

1.2.2 Exploitation Rate Trend Analysis

The methodology used to estimate rates of change in mature-run-equivalent exploitation rates (MREERs) was identical to that applied in the analysis of escapement trends, described in Section 1.1.2. In this framework, a mature-run-equivalent represents the probability that a fish of a given age would have survived to spawn in a particular year in the absence of fishing, whereas the MREER represents the proportion of potential spawners removed in a given year due to fishing. Because it is expressed on a mature-run equivalent basis, the MREER is an annual statistic that integrates annual information across multiple brood years contributing to escapement. A positive trend indicates increasing exploitation, and a negative trend indicates decreasing exploitation. Point estimates whose confidence intervals include zero are interpreted as stable (no consistent long-term change) or too imprecise to infer direction, whereas estimates with confidence intervals excluding zero are considered statistically significant. Trends were evaluated using a Type I error rate (i.e., probability of a false positive) of 20%, so statistically significant results should be interpreted within this context.

Thirty-four CWT indicator stocks were evaluated for temporal trends in MREERs (Figure 1-2). Although the CTC assesses additional indicators annually, this analysis was limited to the CWT indicators listed in Attachment I. Some indicators are partially duplicative, reflecting stocks with multiple indicators or stocks that share the same CWT indicator (e.g., Queets fall is also the CWT indicator stock for Grays Harbor fall, Quillayute, and Hoh).

From the start of the AABM and ISBM management regimes in 1999 to the most recent available year for each stock, trends in MREERs were broadly balanced. Of the 34 stocks, 18 exhibited positive mean annual percent change and 16 exhibited negative change. Six stocks showed statistically significant changes. Two showed significant decreases: Kitsumkalum Summer (-2.2%) and Chilkat (-10.0%). Four showed significant increases: Grays Harbor (+1.7%), Quillayute (+1.8%), Skagit Spring Fingerling (+3.5%), and Queets Fall Fingerling (+3.8%). For Chilkat, the negative trend reflects management actions beginning in the mid-2010s in response to low escapements, which have reduced exploitation and therefore lowered MREERs. The increased trend on Skagit Spring is unsurprising given its corresponding increasing trend in escapement and recent track record meeting or exceeding its escapement goal. Queets Fall, Grays Harbor, and Quillayute all share the same CWT indicator (Queets Fall); consequently, their exploitation rate trends are correlated.

Stocks with the largest interannual variability in rates of change, as indicated by the width of their confidence intervals, included the Taku, Stikine, Hoko Fall Fingerling, and Phillips River Fall. The presence of the highest positive trend (Phillips River Fall) alongside two of the lowest trends (Taku, Stikine) suggests that larger estimated rates of change are often accompanied by greater uncertainty. For the Taku and Stikine, management shifted markedly over 1999 to the present: high productivity in the early 2000s supported directed fisheries with annual MREERs exceeding 50%, whereas recent years have been characterized by restrictive measures as productivity declined. Phillips River Fall differs in that the series is short (nine data years, 2014–2022) and highly variable (e.g., 46.9% in 2018 vs. 19.6% in 2019), contributing to wide intervals around the trend. In contrast, variability in the Hoko series is unlikely to be driven by limited duration (25 years, 1999–2023) and instead reflects irregular but large swings in annual values (range: 10.9%–58.7%).

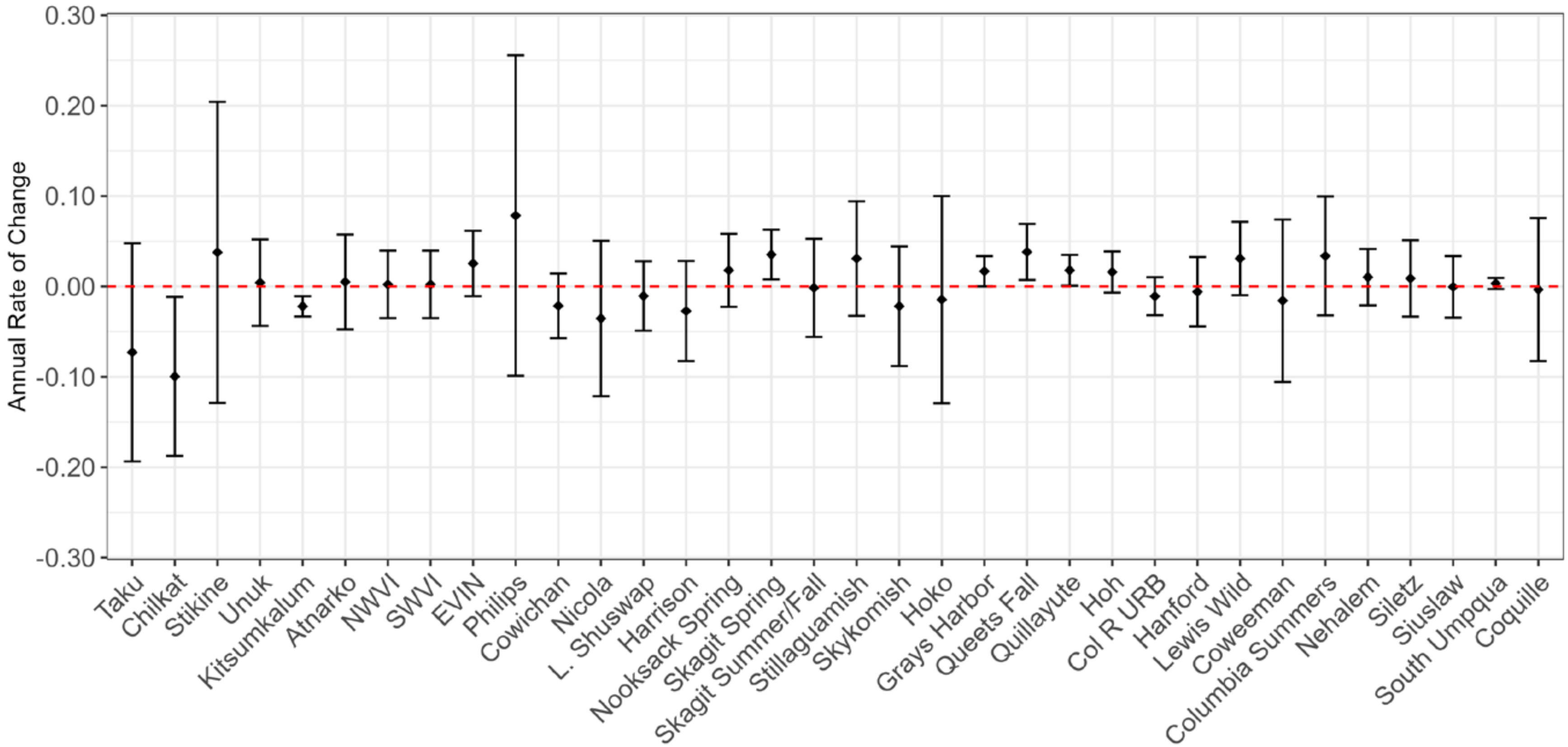

Figure 1-2—Annual rate of change for mature run equivalent exploitation rates, 1999–present.

Points represent mean rates of change (μ); bars show 80% confidence intervals. Stocks are ordered from north to south. The red line at zero indicates equilibrium (no change).

1.3 TOTAL RUN PRODUCTION

Deviations in total run production, relative to the time series average, were calculated for regional stock aggregates. We calculated total run production (x) by stock (i) and calendar year (k) by combining observed escapement with estimated harvest. Using harvest rates (H), we estimated the fraction of the potential escapement (E) lost to harvest and added this back to the observed escapement to produce an estimate of the total run size (Equation 1-1). Total mature run equivalent exploitation rates (MREER) were used as the harvest rate estimate in Equation 1-1; however, for some Puget Sound (Nooksack Springs, Skagit Springs, and Snohomish) and Columbia River (Upriver Brights, Mid-Columbia Summers, and Lewis) stocks, differential impacts on marked and unmarked stocks in the terminal areas may bias harvest rate estimates. Therefore, for those stocks we substituted ocean MREERs (and terminal run size) to adjust for terminal harvest and mortality impacts (e.g., mark-selective fishing and inter-dam loss). Because the calculation for MREER accounts for natural and incidental mortalities, estimates of total production can be considered complete in the sense that all sources of mortality are estimated. In rare instances, an unrealistically high exploitation rate can be generated (e.g., ≥0.9), usually because of insufficient CWT recoveries in escapement. In these rare instances, the exploitation rate was dropped from the analysis to guard against bias introduced from small sample sizes.

Equation 1-1

$$x_{ik} = \left(\frac{E_{ik} * H_{ik}}{1 - H_{ik}}\right) + E_{ik}$$

Weighted standardized residuals in total production (ε) for n stocks in a calendar year were calculated as:

Equation 1-2

$$\varepsilon_k = \frac{\sum_{i=1}^{n} \omega_i I_{ik} \frac{x_{ik} - \bar{x}_i}{\sqrt{s_i^2}}}{\sum_{i=1}^{n} \omega_i I_{ik}}$$

where x_{ik} is the observed total run size for each stock-year combination, $\bar{x}_i$ is the timeseries average total run size for each stock, s_i^2 is the variance in total run size for each stock, I_{ik} is and indicator variable introduced to appropriately account for stock-year combinations with missing data where:

Equation 1-3

$$I_{ik} = \begin{cases} 1, if\ x_{ik}\ is\ observed\ and\ s_i^2 > 0 \\ 0, otherwise \end{cases}$$

and ω_i is a weight variable to account for differences in average run size within regional stock groups where:

Equation 1-4

$$\omega_i = \frac{\bar{x}_i}{\sum_{i=1}^{n} \bar{x}_i}$$

Thus, ω_i represents the average proportion that stock i contributes to the abundance in each regional stock group. Stocks were grouped into regional stock aggregates, determined by a representative CTC member for each region. A 5-year rolling average deviation was calculated for each stock group and stocks currently displaying negative 5-year rolling averages are highlighted in Table 1-4.

Total run production of Attachment I stocks in Alaska showed cyclical patterns, with alternating periods of below-average and above-average production (Figure 1-3). A period of higher-than-average production lasted from about the mid-1980s until the late-2000s, which has been followed by a protracted period of below-average production lasting until present.

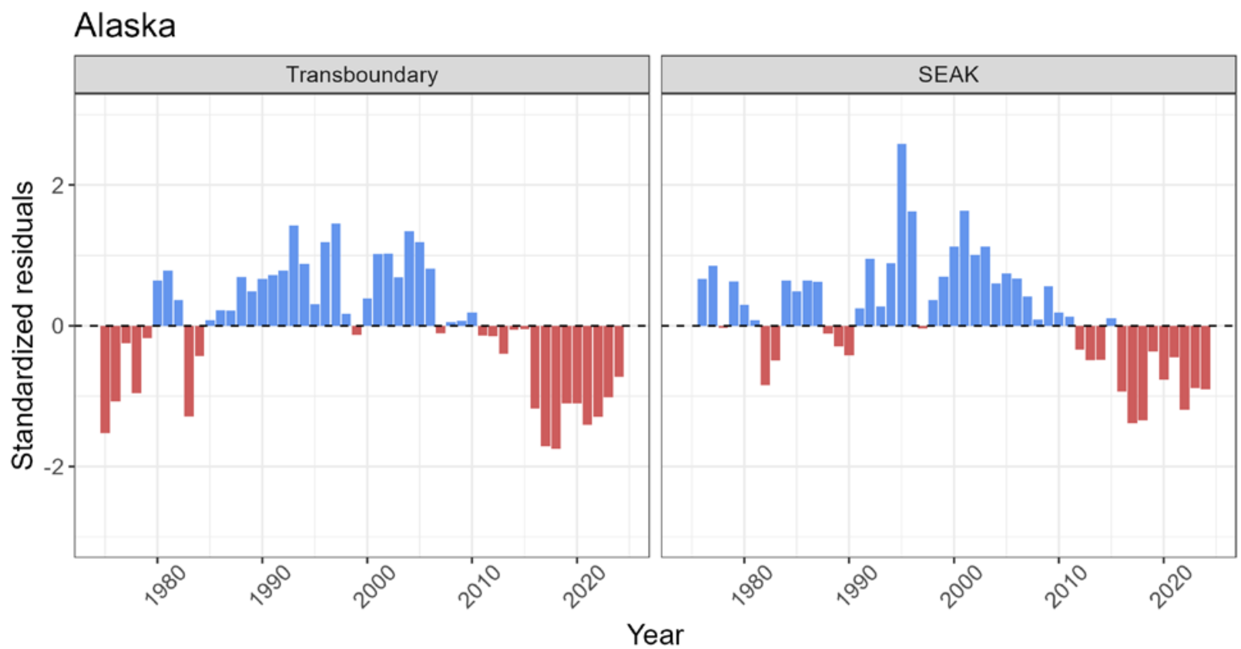

Figure 1-3—Deviation from average run size by stock grouping and year for Transboundary River and Alaska regional stock groups.

Production trends of Canadian stocks have been more mixed, with some regional stock groups exhibiting a more cyclical pattern over time where periods of lower-than-average abundance are followed by periods of higher-than-average abundance (e.g., SWVI and NWVI), while other regional stock groups have been in extended periods of lower-than-average abundance for a decade or more (e.g., Fraser River – Harrison, Fraser River – Nicola, Central BC, and Northern BC; Figure 1-4).

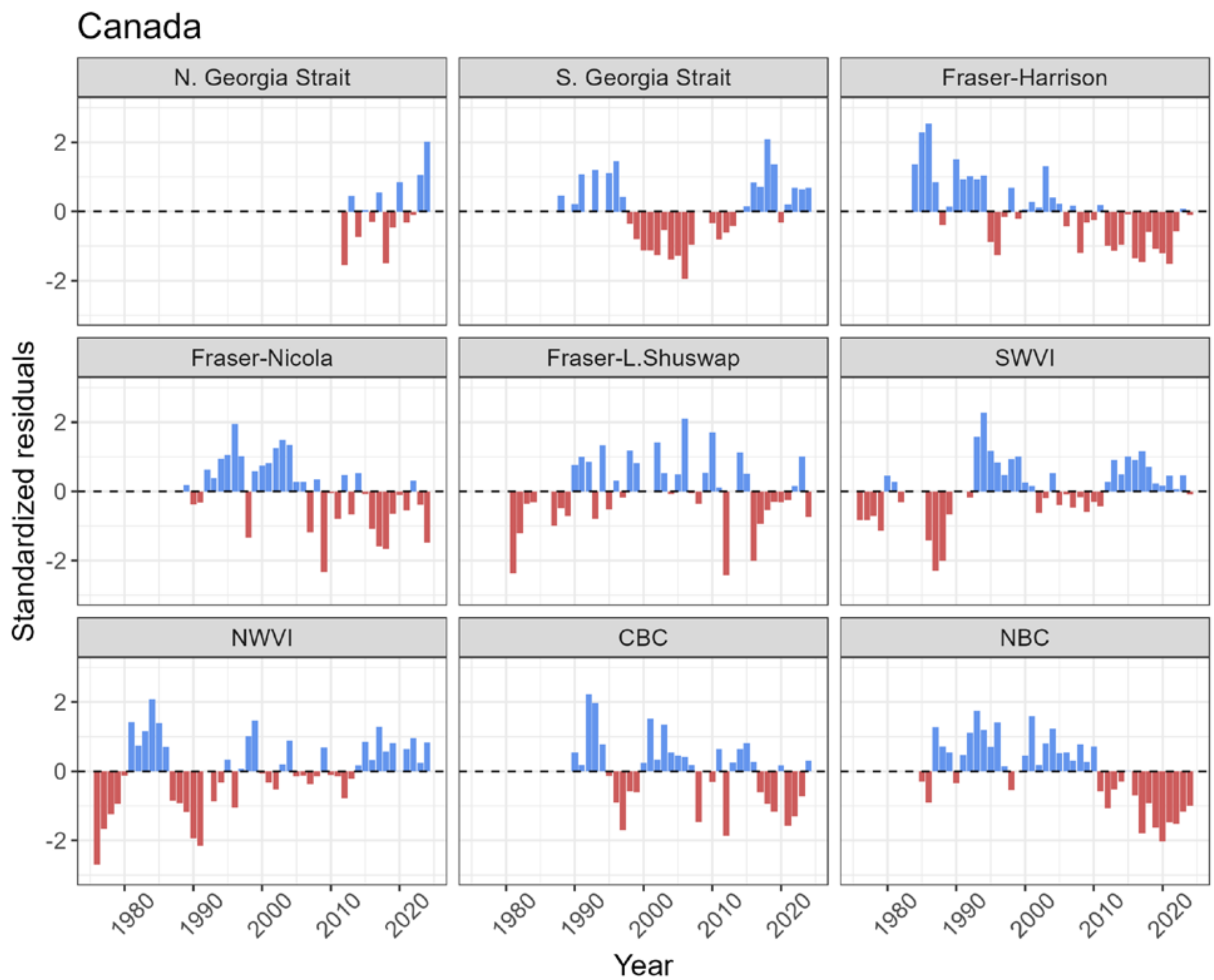

Figure 1-4—Deviation from average run size by stock grouping and year for Canadian regional stock groups.

Southern U.S. stock groups have generally exhibited cyclical trends in total production with higher- and lower-than-average production periods typically lasting between one and two brood cycles (Figure 1-5). Washington Coast stocks were producing higher than average total run abundances from the mid-1980s until the late 1990s, after which a period of lower-than-average production has been dominant throughout most of the 21st century so far; however, early signals of a potential reversal of this trend can be seen in the sustained above average production in recent years. Puget Sound production was below average throughout the 1990s, followed by a cyclical dynamic, lasting one or two brood cycles, which has maintained until present day. Mid- and North Oregon Coast stocks experienced below average production in the 1970s through the 1980s, roughly average production through the mid-1980s and 1990s, followed by alternating boom and bust periods lasting between 5 and 6 years. Lower Columbia River stocks experienced very high production during the late 1980s, followed by a long period of below-average production lasting from the 1990s until present, interrupted periodically by 2–3-year periods of increased production. Upper Columbia River stocks experienced a period of lower-than-average abundance through the 1980s and 1990s followed by an extended period of higher-than-average abundance over a roughly two-decade period in the 2000s and 2010s.

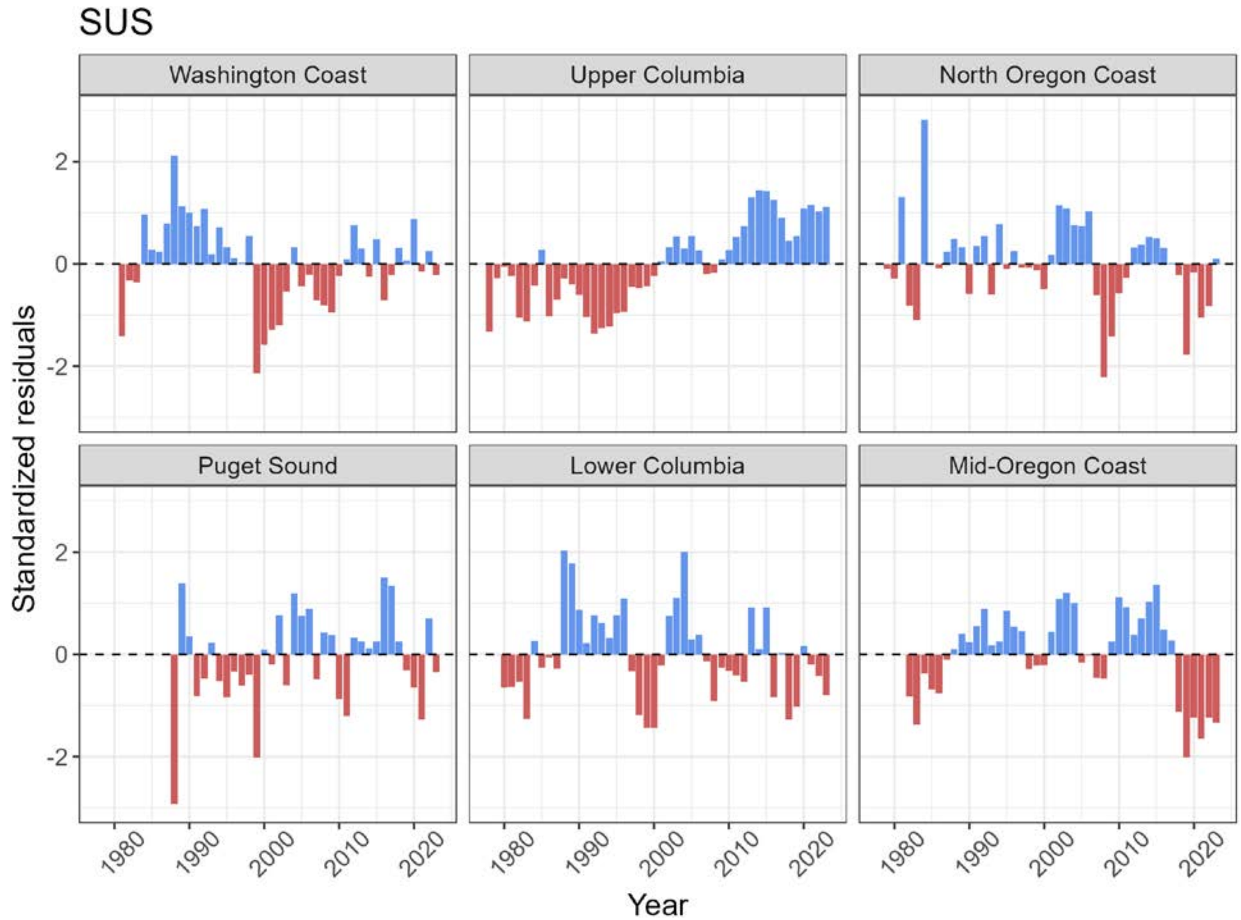

Figure 1-5—Deviation from average run size by stock grouping and year for SUS regional stock groups.

Table 1-4—Stock groups displaying a negative 5-year rolling average deviation in total run production compared to an historic average as of the most recent year of data available.

Stock group	Consecutive years with negative 5-year rolling average	Most recent data year	Most recent 5-year rolling average deviation
Transboundary	12	2024	-1.11
SEAK	11	2024	-0.84
NBC	12	2024	-1.43
CBC	6	2024	-0.63
Fraser-Harrison	17	2024	-0.67
Fraser-Nicola	16	2024	-0.44
Fraser-L. Shuswap	1	2024	-0.03
Puget Sound	3	2023	-0.37
Lower Columbia	6	2023	-0.45
Mid-Oregon Coast	5	2023	-1.49
North Oregon Coast	5	2023	-0.74

1.4 Stock Performance by Region

This section provides a regional summary of Attachment I indicator stock status performance. Previously in this chapter, each stock was assessed using biological and fishery-based metrics, including escapement levels, stock-specific fishery impacts, exploitation rates, and production. The following summaries present a regional overview of these assessments, highlighting key findings and recent trends.

1.4.1 Transboundary Rivers

The Alsek, Taku, and Stikine stocks comprise the Transboundary River (TBR) group and are managed under the PST Chapters 1 and 3. These large, glacial systems produce outside-rearing (yearling-emigrant) Chinook salmon with limited exposure to SEAK and Canadian fisheries while immature; harvest occurs primarily on returning adults in terminal and near-terminal areas (SEAK and in-river Canada). Preterminal exposure in AABM fisheries is brief and small in magnitude (typically hundreds to low thousands of fish annually). U.S. terminal harvests are accounted for within the SEAK AABM regime consistent with Chapter 1 provisions. Exploitation for Taku and Stikine is assessed using a hybrid of CWT, genetic stock identification (GSI), scale-based age composition, and catch accounting; in contrast, Alsek has no active CWT program and relies primarily on GSI, scales, and catch accounting. Escapement for all three stocks is estimated annually via mark-recapture.

Production has been depressed in recent years, driven largely by poor marine survival. Freshwater survival has generally not been the principal constraint, whereas marine survival has been below average across much of the current and previous Annex periods. For the Taku and Stikine, in response to low production, directed Chinook fisheries have not been prosecuted in recent years; as a result, exploitation has declined. Because the standardized metrics in this report do not report exploitation magnitudes (i.e., landed catch), the discussion below focuses on directional shifts in mortality distributions. In the current Annex (2019–2025), average CYERs in the SEAK AABM fishery decreased relative to 2009–2018 by approximately 6% (Alsek), 9% (Taku), and 4% (Stikine). Correspondingly, the proportion of mortality that makes it to escapement increased by about 8% (Alsek), 18% (Taku), and 15% (Stikine), with most of the run accruing to escapement.

Despite these shifts in mortality distributions, escapement performance has been variable. Alsek has met its goal in all but one year of the current Annex; average escapement has changed little relative to the previous Annex (2%). In contrast, Taku has met its goal once in the last six years and Stikine has not met its goal during this period. The Alaska Board of Fisheries designated the Taku and Stikine River Chinook as Stocks of Management Concern during the 2024/2025 management cycle (Salomone et al. 2022; Hagerman et al. 2025), whereas Alsek River Chinook were not designated. Management actions associated with these designations have reduced exploitation (Peterson et al. 2024); nevertheless, TBR escapement performance indicates that reduced fishery mortality has been necessary but not sufficient to consistently achieve goals while marine survival remains low.

TBR stocks currently exhibit low production attributable primarily to poor marine survival, with correspondingly low exploitation, and continued conservative measures in both countries. Escapement performance shows improvement in some cases (e.g., Taku 2024) but remains below objectives elsewhere (e.g., Stikine). Given present marine conditions and Stock of Management Concern designations, maintaining conservative terminal and near-terminal harvest strategies remains warranted until production improves.

1.4.2 Southeast Alaska

The Situk, Chilkat, and Unuk stocks comprise the SEAK indicator stock group. These systems differ in size and produce Chinook with varied life histories and marine rearing strategies. A period of poor productivity was observed beginning with brood year 2012, driven largely by poor marine survival (see Figures 3.6, 3.7 in TCCHINOOK 25-02). Freshwater survival has not been the principal constraint, whereas marine survival has been average-to-below-average across much of the current and previous Annex periods. The poor escapement performance of the Chilkat and Unuk led to their listing as State of Alaska Stocks of Management Concern in 2018. Consistent with low production, restrictive fishery measures have been put in place and have successfully reduced exploitation rates. Because the standardized metrics in this report do not report exploitation magnitudes (i.e., landed catch), the discussion below focuses on directional shifts in mortality distributions. In the current Annex (2019–2025), average CYERs in the SEAK AABM fishery decreased relative to 2009–2018 by approximately 24% (Situk), 16% (Chilkat), and 14% (Unuk). Correspondingly, the proportion of mortality that makes it to escapement increased by about 24% (Situk), 16% (Chilkat), and 14% (Unuk), with most of the run accruing to escapement.

Given these shifts in mortality distributions, escapement performance has generally improved and since 2023 run abundance has also improved. The Situk has met its goal in all but one year of the current Annex, with a 43% increase in average escapement relative to the previous Annex (a marked improvement over the prior period, when the goal was met in 4 of 10 years). The Chilkat has met its goal in all years of the current Annex, with an 11% increase in average escapement relative to the previous Annex. The Unuk has met its goal in 4 of the last 6 years, with a 4% decrease in average escapement relative to the previous Annex. As of October 2024, the Unuk and Chilkat Stock of Management Concern designations established in 2018 were removed; Situk has not been designated. Despite these removals, other stocks in the region remain designated (e.g., Taku, Stikine, King Salmon, Andrew), so some restrictive management will continue. Management actions associated with designations have reduced exploitation (Peterson et al., 2024); escapement performance indicates these reductions have contributed to improvements where observed, though production remains constrained by marine survival.

SEAK indicator stocks currently exhibit low production attributable primarily to poor marine survival, with correspondingly low exploitation and continued conservative measures. Escapement performance shows improvement in some cases (e.g., Situk, Chilkat) but remains variable elsewhere (e.g., Unuk). Given present marine conditions and ongoing State of Alaska Stock of Management Concern designations elsewhere in the region, conservative harvest strategies are likely to continue until production improves.

1.4.3 NORTHERN BRITISH COLUMBIA

The northern British Columbia production area encompasses Dixon Entrance to Kitimat; it includes Haida Gwaii and the Nass and Skeena watersheds, and it is represented by the Kitsumkalum River (KLM) CWT indicator stock. Fishing mortality for this stock aggregate occurs mainly in the SEAK AABM (17%), northern Canadian ISBM (6%), and NBC AABM (5%) fisheries. Reductions in total mortality in the SEAK AABM fishery (-1%), the northern Canadian ISBM fishery (-8%), and the NBC AABM fishery (-3%) have occurred during the 2019 Agreement. On average, 72% of Kitsumkalum Chinook are recruited to escapement which is an increase of 13% relative to the 2009 annex. Canadian ISBM impacts to the Kitsumkalum River stock differ from other NBC stocks because there are different terminal fisheries both in the marine and freshwater environments. Further, Chinook stocks in the Skeena River watershed upstream of the Kitsumkalum River also experience additional exploitation although impacts have not been included in the assessments. Due to declining productivity in the stock during the current and previous annex, Canadian marine and in-river conservation management actions have been taken to reduce harvest and pass fish to escapement (Figure 1-4).

1.4.4 CENTRAL BRITISH COLUMBIA

The central British Columbia production area encompasses Kitimat to Cape Caution and includes the Dean and Bella Coola watersheds as well as Rivers Inlet. It is represented by the Atnarko River (ATN) CWT indicator stock. Fishing mortality for this stock aggregate occurs mainly in Canadian ISBM fisheries (21%) followed by the SEAK AABM (6%) and NBC AABM (3%) fisheries. Reductions in total mortality in the Canadian ISBM (-9%), SEAK AABM (-2%), and NBC AABM (-3%) fisheries have occurred during the 2019 Agreement. On average, 69% of Atnarko Chinook are recruited to escapement, which is an increase of 14% relative to the 2009 Agreement. In-river and terminal marine catch from commercial, First Nations, and sport fisheries in the Bella Coola and Atnarko rivers are monitored and sampled to different degrees for CWTs. Terminal fisheries targeting returning Atnarko River spawners result in greater impacts on the ATN CWT indicator than may occur on associated escapement indicator stocks in the aggregate. Consequently, certain ISBM fishery impacts on ATN, generated with the mortality distribution data, are not representative of other CBC natural escapement indicator stocks. The Wannock and Chuckwalla-Kilbella rivers, which are not listed in Attachment I, are remote and have unique life histories, thus the ATN CWT data requires adjustment to represent these other stocks as an indicator. Such adjustments have not yet been made. The wild stock has shown declines in production in the current Treaty period (Figure 1-4).

1.4.5 West Coast Vancouver Island

The west coast of Vancouver Island (WCVI) production area covers both the inlets on the west side of Vancouver Island, and the offshore waters to the edge of the Canadian exclusive economic zone (EEZ) boundary, located approximately 200 nautical miles from shore. WCVI Chinook typically enter the ocean as subyearlings, with age 2 being the youngest age at which they are recovered. These fish are distributed from Northwest to Southwest Vancouver Island. The hatchery-origin Chinook are represented by the CWT indicator stock Robertson Creek (RBT) whereas wild Chinook is represented by the RBT indicator adjusted for terminal harvest differences between hatchery and wild (RBT adj). RBT adj serves as the ocean exploitation rate indicator for two WCVI escapement indicator aggregates: Northwest Vancouver Island (NWVI) and Southwest Vancouver Island (SWVI).

The NWVI escapement indicator includes natural stocks from Colonial-Cayeagle, Tashish, Artlish, and Kaouk rivers, while the SWVI escapement indicator includes stocks from Bedwell-Ursus, Megin, and Moyeha rivers.

Fishing mortality for the WCVI stock group mainly occurs in the AABM fisheries, with the majority of impacts from SEAK (13%) followed by NBC (5%). Since the previous annex period, harvest rates have decreased for SEAK (-4%) and NBC (-1%). Impacts in the WCVI AABM and the WCVI ISBM fisheries have also been constrained through time- and area-based management actions. Harvest decreases have contributed to escapement which has improved by 8% in the current annex relative to the previous annex. Canadian ISBM fishery impacts are estimated to be 8%. Under the 2019 Agreement, these impacts may have decreased by as much 3%. The percentage of fish accounted for in the escapement is estimated to be as much as 70% with an 8% total increase. In terms of production, both NWVI and SWVI have experienced lower-than-average production in the previous Treaty years but have now had periods of higher-than-average production in more recent years of the current annex.

1.4.6 Strait of Georgia

The Strait of Georgia is a large semi-enclosed basin on the southern coast of British Columbia, between the mainland of B.C. and Vancouver Island. The Strait of Georgia collects freshwater discharge from the Fraser River and other river systems from mainland B.C. as well as the eastern side of Vancouver Island.

The East Vancouver Island North (EVIN) production area is represented by a hatchery CWT indicator stock from Quinsam Hatchery that includes terminal adjustments (QUI adj). Currently, the escapement indicator stock for the EVIN is still to be determined. Fishing mortality for this stock group is mainly in the AABM SEAK fisheries (23%) with some mortality in NBC AABM (3%). AABM harvest rates have increased (3%) in SEAK and did not change in NBC (0%) compared to the previous annex period. EVIN stocks are not impacted in the WCVI AABM fisheries. Impacts occur in Canadian ISBM fisheries although there is a directed near-terminal sport fishery on the CWT indicator that does not impact the escapement indicator stocks. To better reflect the total ISBM fishery impacts on the escapement indicator stocks, the impacts of this fishery were subtracted from the ISBM mortality category and included with the escapement category. The mortality distribution data show that half of the fish pass through fisheries to escapement (50%) and a decrease has occurred since the previous agreement. The time series of production for the Upper Strait of Georgia begins in 2010 and shows a cyclical trend of being above and below the average, which production being above the average in the two most recent years.

The Lower Strait of Georgia is currently represented by the Cowichan River fall run Chinook stock. Previously Phillips River and Nanaimo River were indicators as well. The Nanaimo River last brood year was 2005. The Phillips River Chinook indicator program was discontinued with 2019 as the last brood year and 2024 the last expected year of marked returns. Despite being discontinued as an exploitation rate indicator stock, the Phillips Chinook program has continued as an escapement indicator program. Phillips is mostly impacted by the SEAK AABM fishery (18%), followed by Canadian ISBM fisheries which is estimated to have decreased from 18% to 10%. NBC and WCVI AABM and US ISBM fisheries have had an estimated 0% impact on Philips. Impacts on the Cowichan River stock in the WCVI AABM and US ISBM fishery decreased from 6% to 2%. The majority of impacts occur in the Canadian (40%) ISBM fishery. Fishery closures in terminal and near-terminal areas have been implemented, and extensive work has been underway in recent years to improve riverine and estuarine habitat for juveniles and spawners. This has resulted in a 55% mean Calendar Year % Escapement in the current agreement, which is a 25% increase compared to the previous annex for Cowichan River Chinook. In terms of production, both EVIN and Lower Georgia Strait have experienced higher-than-average production in more recent years of the current annex (Figure 1-4).

1.4.7 FRASER RIVER

The Fraser River watershed, with an area of over 220,000 km^2 (about 85,000 mi^2), encompasses the entire Fraser River Basin from its mouth near Vancouver, B.C., upstream to its headwaters in the Rocky Mountains near Valemount. The Fraser River Basin also incorporates all of its tributary basins, notably the Harrison, the Thompson / North Thompson / Shuswap system, the Chilcotin, the Quesnel, the Nechako / Stuart, the McGregor and the Bowron basins. The Fraser River region includes five stock groups representing the diversity in Chinook life-history strategies found in the watershed: Fraser spring-run age 1.2 (FS2 – Nicola CWT indicator), Fraser spring-run age 1.3 (FS3 – Lower Chilcotin developing indicator), Fraser summer-run age 1.3 (FSS – Chilko developing indicator), Fraser summer-run age 0.3 (FSO – Lower Shuswap CWT indicator), and Fraser fall-run age 0.3 (FHF – Harrison CWT indicator). Stock performance and fisheries impact can only be evaluated and compared for the three established CWT indicators. During the current treaty period, efforts were made to increase release size of Chilko (CKO) CWTs, leading to sufficient recoveries in Canadian and US ocean fisheries, terminal freshwater fisheries, and escapement to meet the CWT recovery targets for inclusion in the 2026 ERA.

The 2019 Big Bar landslide on the mainstem of the Fraser River created a 5-meter-tall waterfall blocking passage for salmon migrating upstream to the spawning grounds. Passage was re-established in 2020 and no migration barrier at the landslide site remains.

The three Fraser Attachment I indicator stocks (NIC, SHU, HAR) were not directly impacted by the landslide as they are located downstream. Impacts were significant for many populations within stock groups FS3 (Conservation Units CK-10 and CK-12) and FSS (Conservation Unit CK-11) and for their respective developing indicator stocks (Chilcotin and Chilko). The estimated freshwater migration mortality was 80% for CK-10 and CK-12, and 50% for CK-11 in 2019, and decreased to 20% for CK-10 and CK-12, and 0% for CK-11 in 2020 (Fisheries and Oceans Canada 2022).

Since 2019, fishing mortality for Nicola (NIC) occurred mainly in Canadian ISBM fisheries, specifically Terminal Net Fisheries (6%) and Southern BC Sport ISBM fisheries (1%). On average, fishing mortality decreased between the two periods, allowing 91% of Nicola Chinook to return to escapement during the 2019–2024 period, an increase of 14% compared to the 2009–2018 period (Table 1-3). This reflects management actions to decrease fishing impacts on the Fraser Spring Age 1.2 stock group due to concerns around low abundance and stock status. Despite efforts to decrease fishing mortality, production remains low, and Nicola has been in an extended period of lower-than-average run size for more than a decade (Figure 1-4).

Lower Shuswap (SHU) is caught in all three AABM fisheries though impacts in SEAK (5%) and NBC (2%) are greater than impacts in WCVI (1%) (Table 1-3). Overall, fishery mortality in AABM fisheries has decreased from an average of 23% during the 2009–2018 period to an average of 8% in the 2019–2024 period. Other fisheries of importance for this indicator stock occur in Canadian ISBM fisheries, notably Terminal Net (7%), Southern BC Sport ISBM (6%) and Terminal Sport (4%). The proportion of Lower Shuswap Chinook escaping fisheries to the spawning grounds has increased from 53% in the 2009–2018 period to 73% in the 2019–2024 period, an increase of 20% largely attributed to the decrease in AABM impacts from SEAK and NBC (Table 1-3). Production has been increasing since 2016, with 2022 and 2023 being above the long-term average run size, but abundance was below average again in 2024 (Figure 1-4). Lower Shuswap has met its management objective of 12,300 spawners all years since 2019 (Table 1-1).

Harrison (HAR) fishery mortality is mostly concentrated in Canadian ISBM fisheries (19%), specifically Southern BC Sport (17%), with minimal impact from AABM fisheries (1%) (Table 1-3). WCVI AABM mortality decreased from 5% in the 2009–2018 period to 1% in the 2019–2024 period. The proportion of Harrison Chinook escaping fisheries to the spawning grounds reached an average of 76% since 2019, an 8% increase from the 2009–2018 period. Consequently, Harrison has exceeded its escapement goal of 75,100 spawners in 2022, 2023, and 2024 (Table 1-1). However, Harrison production has generally remained below the long-term average run size since 2006 (Figure 1-4).

1.4.8 Canadian Okanagan

The Canadian portion of the Okanagan summer Chinook population represents a geographically distinct Chinook population as it is currently the only Columbia River Basin Chinook population in Canada. The population was assessed as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2017 due to extremely low returns of spawning adults and habitat challenges preventing its recovery. Consequently, the Canadian Okanagan was added to the list of Attachment I indicator stocks in the 2019 PST Agreement and is still under development. The Okanagan Work Group (OWG) was formed in 2019 with the objective to "*explore issues related to Okanagan Chinook, including the establishment of management objectives, enhancement and possible use of Okanagan Chinook as an indicator stock*" per the Chapter 3, paragraph 5(b). As it is still under development as a potential indicator stock, the CTC does not currently report on biological and fishery-based metrics, including escapement levels, stock-specific fishery impacts, exploitation rates, and production.

1.4.9 Puget Sound

There are five Attachment I escapement indicator stocks represented by coded-wire tagged and adipose-clipped fingerling release groups in Puget Sound: Nooksack spring (Kendall Creek Hatchery), Skagit spring (Marblemount Hatchery), Skagit summer/fall (Marblemount Hatchery), Snohomish fall (Wallace Hatchery), and Stillaguamish fall (Whitehorse Pond). Only two Puget Sound stocks have PSC-agreed escapement goals: Skagit spring (1,024) and Skagit summer/fall (8,201).

Escapement averages for Skagit spring and Skagit summer/fall have remained stable since the 2009 Agreement and have consistently met their escapement goals during the current agreement (Table 1-1). Stillaguamish and Nooksack spring average escapements during the current annex have increased 19% and 45% compared to the last annex, respectively, while Snohomish average escapements were essentially unchanged (-2%). Two Puget Sound stocks, Skagit spring and Stillaguamish, exhibited statistically significant trends in long-term average annual rates of change in escapements (Figure 1-1). Skagit spring escapements are trending positive, indicating population growth, while Stillaguamish escapements are trending negative, indicating population decline; meaning that even though the Stillaguamish escapement average during the 2019 Agreement was higher than the previous Agreement, the long-term trend since 1999 is declining. Total run production among Puget Sound stocks has followed a cyclical pattern over time, with low production in the early 1990s followed by generally higher production from the 2000s onward, interrupted by several years of below-average runs (Figure 1-5).

Based on mortality distribution tables produced for the 2025 ERA (Unmarked CYERs), the percentage mortality among the five Puget Sound stocks going to escapement averaged 52.6% from 2009–2018, compared to 60.5% from 2019–2023. Excluding escapement and escapement strays, the top five fisheries in terms of mortality from 2009–2018 were ISBM Southern BC Sport (16.8%), Terminal Southern US Net (6.7%), AABM WCVI Sport (6.4%), AABM WCVI Troll (4.3%), and ISBM Puget Sound Sport (3.9%). By comparison, the top five fisheries by mortality from 2019–2023 were ISBM Southern BC Sport (13.4%), Terminal Southern US Net (8.3%), AABM WCVI Sport (4.6%), ISBM Puget Sound Sport (3.0%), and AABM SEAK Troll (1.8%). Out of five Puget Sound indicator stocks only one, Skagit spring, showed a statistically significant long-term trend in exploitation rates (MREER), which has been increasing by an average rate of 3.5% annually since 1999 (Figure 1-2). This exploitation rate trend for Skagit spring is not unexpected given the corresponding significant increasing trend in escapement and perfect track record meeting its escapement goal.

Future decreases in Puget Sound Chinook stock abundances could be expected due to various (biotic and abiotic) environmental changes. Chinook stock abundances in Washington State are negatively influenced by increasing abundances of biannually returning pink salmon (Ruggerone et al., 2025). Furthermore, due to climate change future stream temperatures in the Pacific Northwest are projected to increase and discharge patterns to become more extreme, with lower summer discharges and higher winter/spring discharges due to flow patterns changing from predominantly snow-melt driven to more rainfall-driven (Georgiadis & Baker, 2023; Yoder & Raymond, 2022). This will inevitably increase mortality rates of juvenile Chinook as well as adult Chinook returning to the spawning grounds. The 2021 Nooksack pre-spawn mortality event resulted in an estimated 2,500 fish deaths. This unprecedented die-off was caused by extreme summer low-flows and high stream temperatures in the South Fork Nooksack River, which created conditions for *Columnaris* to proliferate, fatally infecting many returning spawners (Lummi Natural Resources, 2021). Predation of Chinook and other salmonid species in Washington State by pinnipeds (California sea lions, Steller sea lions, harbor seals) has considerably increased from 1970 to 2015 and further increases could be expected (Chasco et al. 2017a, 2017b).

1.4.10 Washington Coast

The Washington Coast has five Attachment I indicator stocks (Hoko fall, Grays Harbor fall, Queets fall, Quillayute fall, and Hoh fall), represented by two coded-wire tagged release groups from Hoko Falls hatchery and Salmon River/Quinault Lake hatcheries, with terminal harvest rate adjustments on Queets tags representing Grays Harbor, Quillayute, and Hoh. Escapement goals have been adopted by the PSC for all Washington Coast stocks except for Hoko, which held to a CYER limit under ISBM provisions.

Quillayute and Hoh consistently meet their escapement goals (one exception in 2014 for Quillayute), Hoko average escapements are up 112% compared to the last annex, while Queets fall is down 18% and has missed its escapement goal twice in the current annex (2022 and 2023) (Table 1-1). Grays Harbor average escapements have fallen 6%, and the stock has occasionally missed its escapement goals since 2014. Washington Coast stocks experienced roughly a decade of higher-than-average total run production from the mid-1980s to the late 1990s, followed by another decade of mostly below-average runs (Figure 1-5). Since the early 2010s, total run production has been variable, with no more than three consecutive years above or below the long-term average.

From 2009–2018, Washington Coast stocks averaged 42.4% mortality in escapement, compared to 39.4% from 2019–2023. The Washington Coast stocks have a northerly ocean distribution and minimal impact from mark-selective fishing throughout their recovery range. From 2009–2018 the top five fisheries by exploitation rate were AABM SEAK Troll (19.8%), Terminal Southern US Net (11.1%), AABM NBC Troll (8.9%), AABM SEAK Sport (5.6%), and AABM NBC Sport (5.5%). Between 2019–2023, the top five fisheries impacting Washington Coast stocks were AABM SEAK Troll (22.6%), AABM NBC Troll (12.9%), Terminal Southern US Net (8.5%), AABM SEAK Sport (4.7%), and AABM NBC Sport (4.1%). The long-term average exploitation rate trends (MREER) analysis indicated statistically significant annualized increases in exploitation rates over time for Grays Harbor, Quillayute, and Queets fall, all of which share the same CWT indicator (Queets fall) (Figure 1-2).

Overall, we can observe a transition from long cycles of higher and lower production to shorter, less variable production patterns in the figures. Similar to Puget Sound Chinook, decreases in Washington Coast Chinook stock abundances can be expected due to the same environmental changes as outlined above for Puget Sound Chinook (i.e., climate change, pink salmon abundances and marine mammal predation).

1.4.11 COLUMBIA RIVER

There are four Attachment I escapement indicator stocks in the Columbia River: Columbia summers (SUM), Columbia Upriver Brights (URB), Lewis (LRW), and Coweeman (CWF). Columbia River fisheries are intensively co-managed in-season to meet U.S. Endangered Species Act (ESA) constraints for some stock components (such as the Coweeman) and other co-migrating species, such as steelhead. The Coweeman does not have an escapement goal but had 33% lower escapement than in the last annex. The other three stocks have consistently met their goals during this annex, achieving greater than 200% escapement goal, except for two years when the Lewis met its goal. In addition, all four stocks have seen an increase in escapement trend.

Brood year exploitation rates for Columbia River stocks have decreased by 9%–21%, except for LRW, which increased 13% in this annex, so far. However, survival rates have declined 47%–64% for the fall stocks, even while increasing 39% for SUM. The long-term average exploitation rate trends (MREER) analysis indicates increases in exploitation rates over time for LRW and SUM, and slight decreases for URBs and Coweeman stocks. Average percentages to escapement have been 52%–75% during this annex, and total distribution to escapement has increased 6%–18% since the last annex. Major fishery impacts occur in SEAK (8%–26%) and US ISBM fisheries (9%–20%).

Recent production trends in the Columbia River have been positive in the Upper Columbia but predominantly negative in the Lower Columbia.

1.4.12 NORTH OREGON COAST

Those fishery changes which have impacted the Northern Oregon Coastal (NOC) aggregate are represented by the CWT indicator stock originating from the Salmon River Hatchery (SRH). SRH represents the entire production area for the NOC, which includes, but is not limited to, those Attachment I escapement indicators in the Nehalem, Siletz and Siuslaw rivers. Differences between the exploitation rate indicator stock and each escapement indicator stock's terminal harvests are accounted for in Terminal Adjustment Methods (TAMs) which are applied to those metrics generated from the SRH CWT group as indicated in Chapter 3 Attachment I. No appreciable changes between this annex period and the previous one have been observed in the exploitation of this stock aggregate in the SEAK, NBC or WCVI AABM fisheries. Differences in exploitation of both NOC and MOC indicators in AABM fisheries ranged from -1% to +4%. The two primary AABM fisheries which have historically had substantive impacts on the NOC stock aggregate are the SEAK and NBC AABM fisheries. Small changes are observed in recruitment into both ISBM fisheries (-4% to +2%) and escapement (+2% to +7%) between the two annex periods (Table 1-2). This stock aggregates' average production has declined during this annex period. In contrast to the previous annex period, the majority of years in the current annex have exhibited negative production residuals, with the exception of the last year's calculated production metric (Figure 1-5). During the previous annex period, production in the NOC aggregate was consistently above average.

1.4.13 Mid-Oregon Coast

The production area encompassed by the Mid-Oregon Coast (MOC) aggregate is represented by the CWT indicator stock from the Elk River (ELK). The MOC is represented by two Attachment I escapement indicator stocks, the South Umpqua and the Coquille. Neither has a PSC-agreed escapement goal yet. As in the NOC, differences in terminal harvest in the MOC are accounted for between the escapement indicators and exploitation rate indicator with TAMs for each escapement indicator. No appreciable changes in total mortality between the two time periods are noted in SEAK, NBC or WCVI AABM fisheries (differences of +4%, 0% and 1% respectively). The South Umpqua displayed little variation between the two periods in proportions of both ISBM harvest (-3%) and escapement (-1%). For ISBM fisheries, the Coquille displays a decrease in U.S. ISBM impacts (-12%). This is largely due to the closure of the terminal fishery for the last several years owing to the population's great decline, which also plays into the 8% gain seen in escapement proportion of total mortality between the two treaty periods for this stock (Table 1-2). This stock aggregates' average production has declined during this annex period. Contrasting with the previous annex period from 2009-2019, all the standardized residuals representing the production in the MOC for this annex period are negative (Figure 1-5). During the previous annex period, the majority of years exhibited above average production. Additionally, in 2024 the Umpqua, experienced its lowest Chinook escapement since 1980. The terminal fishery in the Umpqua basin for 2025 was managed to a quota of 500 fish.

Escapements to both the Siuslaw and Coquille basins have declined sharply during the current Agreement and recovery is uncertain. While ISBM provisions have been met, escapement objectives have not. However, both rivers have had terminal harvest (river and estuary) restrictions in the form of bag limits or closures during the current treaty period. Compared to the 2009 Treaty period, average terminal harvest in the 2019 period is 69% lower for Siuslaw and 98% lower for Coquille. Thus, for both stocks, issues before recruitment to terminal fisheries appear to be problematic.

1.5 Key Points and Recommendations

This section highlights key points based on the CTC's evaluation of management objectives and escapements for Attachment I indicator stocks.

1.5.1 Management Objectives for Attachment I Indicator Stocks

The 2019 Agreement continues an obligation from the previous annex that requires evaluation of whether a stock meets its management objective annually, while all stocks are held to an agreed exploitation rate limit outlined in Attachment I, regardless of whether a PSC-agreed management objective is in place. Of 38 stocks listed in Attachment I to Chapter 3, 22 (58%) have PSC-agreed management objectives. Nine of 13 (69%) Canadian stocks and 7 of 22 (32%) U.S. stocks lack stock-specific PSC-agreed objectives; all 3 TBR stocks have PSC-agreed objectives. Notably, no new PSC-agreed management objectives have been added during this annex. Evaluation of stock status would be facilitated by development of PSC-agreed biologically-based escapement goals and generation of suitable quality escapement data to better understand the underlying production relationships and to evaluate trends.

Two new escapement goals were presented to the CTC this annex for Skagit spring and Skagit summer/fall. These were reviewed and accepted by the CTC and subsequently adopted by the Commission. While both goals were approved, these stocks already had PSC-agreed management objectives; therefore, the number of stocks with management objectives is unchanged. These are the only two escapement goals accepted by the CTC during this annex so far; however, their approval represents a technical achievement on behalf of the Skagit co-managers in presenting a rigorous evaluation of biologically-based escapement targets.

> ***Recommendation 1.1. Develop and/or review Attachment I management objectives.*** With the exception of the two Skagit updates, Attachment I management objectives are unchanged and, in many cases, outdated. Of 37 remaining Attachment I stocks, 22 have PSC-agreed objectives, and none were added during this annex, despite notable shifts in stock productivity, fishery regimes, and monitoring over the past two decades.

1.5.2 Attachment I Coded-Wire Tag Indicator Stocks

In contrast to the evaluation of PSC-agreed management objectives, the 2019 Agreement revised prior obligations by explicitly defining CWT indicator stocks to be evaluated annually against country-specific ISBM CYER Limits. Of the 32 stocks for which ISBM provisions apply, 28 (88%) are evaluated annually by the CTC. Four stocks—Phillips River, Chilcotin, Chilko, and Okanagan—are not currently monitored under ISBM because they lack CWT indicators. The absence of CWT indicators for these stocks makes ISBM evaluation challenging and incomplete. ISBM evaluations would be strengthened by establishing PSC-agreed CWT indicators and by ensuring suitable data quality to characterize exploitation trends.

Consistent with a recommendation in PSC Technical Reports 46, 50, and 53, and given the increasing reliance on adjustments to CWT indicators (e.g., NSF and mark-selective fishery adjustments), the CTC recommends reviewing the Attachment I stocks to ensure each is monitored adequately for escapement and incidental mortality, and has an appropriate, representative CWT indicator for CYER estimation; where that is not feasible, an alternative approach should be developed.

> ***Recommendation 1.2. Review Attachment I coded-wire tag indicator stocks.*** Use of CWT indicators assumes they accurately represent fishery impacts on their corresponding escapement indicator stocks. The CWT Expert Panel (2005) and the CYER WG (2021, 2023, 2024) have recommended further review and testing of the correspondence between exploitation patterns and rates for tagged hatchery indicator stocks and their untagged natural counterparts.

1.5.3 Attachment I Indicator Stocks Under Development

Canadian Okanagan

The monitoring of escapement and exploitation rate relative to management objectives are critical elements for Attachment 1 indicator stocks. The CTC and Okanagan Work Group (OWG) collaborate for the annual reporting of exploitation rates and escapement; however, the stock does not currently have a bilaterally-agreed management objective.

For escapement monitoring, different methods are used on each side of the border where the Okanagan population spawns. In the U.S., the Colville Confederated Tribes implements redd count methods to estimate spawner abundance, whereas in Canada, the ONA applies either a PIT tag mark-recapture method, or an AUC method when there are insufficient PIT tag data. Neither the redd count nor AUC methods achieve the CTC's data standard for escapement indicator stocks, whereas the PIT tag mark-recapture achieves the data standards when sufficient PIT tag data are collected.

In order to regularly meet the CTC data standards for escapement indicator stocks, 18,000 PIT tagged Chinook smolts must be released in Canada annually. Recently, this target has not been met due to difficulty attaining brood stock in Canada and challenges with obtaining fertilized eggs and live adult brood stock from the U.S. programs. The OWG is working on a bilateral supplementation program to achieve multiple objectives in both countries.

For the U.S. program, a change in escapement methodology is likely needed to meet the CTC data standards for escapement indicator stocks. Changing methods can be a complex process involving feasibility planning and new resources to test and evaluate the efficacy of new methods among years and conditions before making a transition. Feasibility planning has not started for the U.S. escapement program.

Progress on the exploitation rate monitoring is more advanced than the situation for the escapement monitoring. The CTC and OWG assemble and analyze coded-wire tag data for smolts released at the Similkameen and Omak Ponds for the SMK exploitation rate indicator stock as part of their annual work plans. These data are analyzed and updated each year using the CTC's ERA and reported by the OWG. The CYER time series begins in Catch Year 1993 for the SMK indicator stock, with estimated CWTs among escapement and fisheries averaging about 10,000 per year over the last decade. Areas of improvement for this indicator stock involve improving the escapement estimation methods to improve accuracy of CWTs estimates on the spawning grounds, and to increase the CWT sampling rates to 20% for in the Columbia River net and sport fisheries to meet the 20% sampling rate guideline annually.

Phillips

With the discontinuation of Phillips River as a CWT Indicator and Attachment I stock as of 2025, there is no CWT Indicator Stock for Canadian Chinook salmon stocks in the Southern Mainland Inlets area. Canada is making progress developing potential replacement CWT indicator(s) for this stock that would allow the evaluation of fishery impacts for the region.

DFO is taking multiple steps to address the gap in the Southern Mainland Inlets Chinook CWT indicator programming by considering programs on the Southgate and Klinaklini Rivers. DFO decided to prioritize the Southgate program for the contemporary CWT program given limited budget and the historical data available on the Klinaklini River but would ideally embark on a CWT indicator program for both systems.

SOUTHGATE RIVER: DFO is currently piloting a CWT and escapement indicator in Southgate River. There is no historical data on marine distribution and fishery interactions. So far, this project has involved brood capture (September), adult escapement estimation (August-October), juvenile tagging (March/April) and juvenile release (May). In 2024, DFO released 80,000 juvenile Chinook, which was the largest release for this program to date. DFO is aiming to scale up releases annually until targets of 150,000 juveniles are reached. It is anticipated that age-3 marked and CWT'd Chinook will return in 2025. Although age-3 Chinook only make up a small proportion of the terminal return, they will provide preliminary fishery interception and ocean distribution information for this population.

KLINAKLINI RIVER: DFO is currently piloting an escapement indicator project for the Klinaklini River. Historical CWT and contemporary genetic stock-identification (GSI) data indicates these Chinook are far-north migrants and are intercepted in fisheries in Alaska and Northern BC. Adult escapement estimation is currently an index relying on a video-counter on the clear tributary at Devereux Creek, but a full-system estimate is feasible and has been developed in the past using a mainstem fishwheel for tagging and video-monitoring in the clear tributary for recapture.

There is reason to develop both of these systems as indicators for the Southern Mainland Inlets. Southgate would represent the Chinook of the large, glacial streams draining into the Strait of Georgia (SOG), while Klinaklini would represent Chinook in the systems draining into Johnstone and Queen Charlotte Straits (JST and QCS). This delineation would reflect the significant physical and biological differences not only in the streams, but also in the larger SOG and JST/QCS basins.

Chilcotin

The Lower Chilcotin Chinook stock was chosen to represent the Fraser Spring Run Age 1.3 stock group based on location and site accessibility, the availability of historical escapement estimates, knowledge of biology and life history, and an existing collaborative relationship with the Tŝilhqot'in National Government.

Improvements to the escapement estimation methodology have been implemented to increase the accuracy and precision of the estimate. Since 2020, a SONAR has been used to accurately and precisely enumerate Chinook migrating upstream to the spawning grounds on the Lower Chilcotin River. Aerial visual surveys that were historically used to enumerate the stock have continued, enabling the calibration of the historical time series. The current assessment program also includes carcass recovery surveys to collect biological data (sex, length, % spawn for females, and scales for age estimation). The assessment program using the SONAR has achieved an average precision of 13% CV (range 8%–18%) on the escapement estimates from the SONAR since 2020, meeting the CTC data standards for escapement indicator stocks for all years except 2023 (16% CV) and 2024 (18% CV).

Broodstock collection was attempted using tangle nets from 2019–2023, but the method failed to capture sufficient numbers. In 2024, angling to capture adult Chinook showed promising results with 40 adults captured. Some of the caught Chinook were not close enough to spawning maturity and had to be released due to a lack of availability of a holding facility and limited capacity in the short-term holding raceways installed in-river. Four adult pairs were successfully spawned from 2024 broodstock, with plans to adipose clip and CWT the resulting 12,000 juveniles prior to their scheduled release in 2026. Learning from the successes and challenges faced with broodstock collection from 2019-2024, the DFO Fraser Chinook stock assessment team will increase the angling effort to capture more Chinook and transport all captured Chinook to long-term holding containers at a DFO hatchery facility until they can be spawned. If broodstock collection remains too low to meet the production target for CWT-marked smolts, then capture of wild juveniles in the spring for clipping and CWT's may also be a viable option starting in the spring of 2026.

It is unclear if DFO can capture enough broodstock and rear enough juveniles for release that will result in a sufficient number of CWT recoveries. In order for the Lower Chilcotin to be fully implemented as a CWT indicator stock for the Fraser Spring Run Age 1.3 stock group, more marked and CWT juvenile Chinook need to be released to meet the CTC's CWT criteria. The broodstock collected in 2024 will produce the first marked and CWT Lower Chilcotin Chinook, with the 5-year-old component expected to return to the spawning ground in 2029. However, given the small release size, an insufficient number of CWT recoveries are expected, and a few more years will be necessary to determine if enough marked juveniles can be produced to meet objectives.

Chilko

The Chilko Chinook stock was chosen to represent the Fraser Summer Run Age 1.3 stock group based on location and site accessibility, the availability of historical escapement estimates, knowledge of biology and life history, and an existing collaborative relationship with the Tŝilhqot'in National Government.

Since 2010 (with the exception of 2019 when the Big Bar landslide occurred), the Petersen mark-recapture method has been used to estimate Chinook escapement by sex and age in the Chilko River. The escapement estimates produced by the mark-recapture experiments have met the CTC escapement data standards for all years except 2019 (17% CV) and 2024 (16% CV), two years when major landslides occurred and affected migration survival. Estimates of escapement by sex and age have been produced annually since 2010 using scale age and CWT data. Aerial visual surveys that were historically used to enumerate the stock have continued, enabling calibration of the historical time series.

Broodstock collection has been ongoing and successful since 2014. Due to limited hatchery capacity, the current target is the production of 150,000 marked (i.e., adipose fin clipped) smolts with CWTs. Production of marked CWT smolts has been increasing in recent years and there are plans to increase the release targets substantially in the future as a new collaborative DFO and Lheidli T'enneh First Nation hatchery is being constructed in the area. Broodstock collection is not a limiting factor in the progress towards meeting the CTC CWT indicator stock study objectives. To increase the total CWT recoveries in escapement, adipose clipped fish encountered during mark application are sacrificed to collect heads for CWT recovery and other biological data (sex, length, scales for age estimation).

Chilko CWT recoveries have occurred in marine and freshwater fisheries, as well as escapement, and are very close to meeting the minimum of 35 CWT recoveries across at least 3 ages per calendar year, a requirement for the CTC's mortality distribution tables. With increased production in 2021 and further increases planned over the next few years, Canada anticipates meeting the target consistently starting in 2025.

1.5.4 CONCERNING STOCKS

Four stocks (Taku River and Stikine River in the Transboundary region, Harrison River in British Columbia, and Siuslaw River in Oregon) were identified as "concerning stocks" as defined in subparagraph 7(a)(iv) for falling below 85% of their management objective across three consecutive years. One additional stock (Coquille River in Oregon) was identified as concerning based on compelling evidence, despite its lack of a PSC-agreed management objective. Subparagraph 7(a)(iv) requires the CTC to report annually on attainment of stock-specific management objectives for Attachment I escapement indicators and to flag any stock that falls below 85% of its objective in any rolling three-year window beginning in 2019. This provision has been triggered twelve times to date. Across the 6 evaluation windows, Taku triggered in 5/6, Harrison 3/6, Siuslaw 3/6, and Stikine 1/6. Additional information is presented for each of these concerning stocks in Appendix A.

Specifically for these five stocks:

- Taku River (Transboundary River). The average escapements declined from 94% of the lower bound during the 2009 Agreement to 79% during the current Agreement (Table 1-1). Escapement was below the lower bound during the 2016–2023 period. The management objective was met in 2024 and will likely be met in 2025. Assessment of this stock is led by the Transboundary Technical Committee. Management actions by ADF&G, DFO, and the Taku River Tlingit First Nation are coordinated through the Transboundary Panel and Transboundary Technical Committee under Annex IV, Chapter 1 of the 2019 Agreement.
- Stikine River (Transboundary River). The average escapements declined from 110% of the lower bound during the 2009 Agreement to 76% during the current Agreement (Table 1-1). Escapement has been below the lower bound since 2016. This decline is linked to the 2014 landslide on the Tahltan River, with additional pressure from a recent, region-wide downturn in production and marine survival (Figure 1-3). Assessment of this stock is led by the Transboundary Technical Committee. Management actions by ADF&G, DFO, and the Tahltan Central Government are coordinated through the Transboundary Panel and Transboundary Technical Committee under Annex IV, Chapter 1 of the 2019 Agreement.
- Harrison River (Fraser River). Estimated escapements increased from 86% of the lower bound during the 2009 Agreement to 108% during the current Agreement (Table 1-1). Since 2009, the stock met or exceeded its goal in 6 years and was <85% of the lower bound in 9 years (Table 1-1). Following a prolonged period of low abundance, the Harrison was designated as "Threatened" in 2018 by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), though no direct management action was required following this designation. The stock showed encouraging signs in recent years

by meeting its management objective in 2022, 2023, and 2024, due in part to low exploitation and above average survival. No immediate action is needed based on recent improvements, but particular attention and monitoring is necessary to ensure improved survival and productivity continue.

- Siuslaw River (North Oregon Coast). Estimated escapements decreased from 170% of the escapement goal during the 2009 Agreement to 67% during the current Agreement (Table 1-1). Since 2009, the stock met or exceeded goal in 9 years and was <85% of the goal in 7 years (Table 1-1).
- Coquille River (Mid-Oregon Coast). Estimated escapements have decreased 95% from the previous to current Agreement (Table 1-1). Coquille River has been of concern since escapement dropped to extremely low levels in 2018. Since then, escapement has been measured in several hundreds, rather than several thousands, as high as about 32,000 in 2010. The primary cause of the decline has been attributed to the proliferation of introduced predators, smallmouth bass (*Micropterus dolomieu*) throughout the basin and in lower reaches anadromous striped bass (*Morone saxatillis*). In 2019, the terminal fishery bag limit was greatly reduced and beginning 2020 was closed entirely; for 2025 a limited MSF will take place. The Coquille does not have a PSC-agreed management objective.

Recommendation 1.3. Consider action for Siuslaw and Coquille. Escapements to the Siuslaw and Coquille have declined sharply during the current Agreement and recovery is uncertain. While ISBM provisions have been met, escapement objectives have not. The Coquille Indian Tribe, in partnership with ODFW and local community groups, is leading restoration and recovery efforts. Examples of recovery efforts undertaken to date include a removal program targeted at introduced smallmouth bass, a hatchery rehabilitation program with high broodstock takes and stream-channel reconnection and restoration projects. However, with the exception of bag-limit restrictions and a 2022 closure for the terminal fishery, there are no similar recovery efforts directed at the Siuslaw Chinook population.

None of the Chinook stocks listed under the U.S. ESA have been delisted. Annual changes in jeopardy guidelines and uncertain recovery goals are not considered by CTC status assessments for ESA listed stocks. No Canadian stocks are presently listed under the Canadian *Species at Risk Act* (SARA).

2. Fishery Performance

The 2019 Agreement extends the provisions from the 1999 and 2009 Agreements for abundance-based management in two regimes: Aggregate abundance-based management (AABM) and individual stock-based management (ISBM). Aggregate abundance-based management fisheries are managed by constraining catch limits according to a numerical value linked to abundance indices (AIs), as specified in Tables 1 and 2 in Chapter 3 of the PST. These indices guide fishery harvest allocations and are determined preseason using established modeling methodologies. Specifically, the PSC Chinook Model has been consistently used for setting abundance indices in Northern British Columbia (NBC) and West Coast Vancouver Island (WCVI) AABM fisheries throughout the duration of this Agreement. In contrast, the Southeast Alaska (SEAK) AABM fishery initially relied on Catch Per Unit Effort (CPUE) methodology combined with Table 2 for abundance index determination from 2019 to 2022. In 2023, an alternative methodology, referred to as Method 4.3, employing a 17-tier abundance table, was adopted. However, the Commission did not reach consensus on applying Method 4.3 or any alternative method in 2024, which led to reverting to the PSC Chinook Model and Table 1 as stipulated in Paragraph 7(e).

The SEAK AABM catch limit is adjusted by two factors subtracted from the total harvests to determine the PST catch component that is compared with the PST allowable catch in Table 1 of the chapter. These are hatchery add-on fish (minus 5,500 base period enhancement fish and a 1 in 20 risk adjustment factor to account for uncertainty in hatchery contribution estimates) and terminal exclusion fish, which are Chinook caught in districts 108 (affronting the Stikine River) and 111 (affronting the Taku River) of transboundary origin in excess of base levels when directed fisheries are allowed as provisions of Chapter 1 of the Agreement. These adjustments account for local production and/or catch sharing of transboundary stocks as per Chapter 1 and are stock components not caught in PST fisheries of NBC or further south.

For ISBM fisheries, which encompass all Treaty fisheries not classified under AABM, management focuses on limiting adult equivalent (AEQ) mortality of naturally spawning Chinook stocks. Paragraph 5(e) states that they shall be managed to limit the total adult equivalent mortality for stocks listed in Attachment I that are not meeting agreed-to biologically-based management objectives, or that do not have agreed-to management objectives, to no more than the limits identified in Attachment I. Individual stock-based management fisheries are evaluated using the Calendar Year Exploitation Rate (CYER) metric on a postseason basis. Currently, CYER estimates are not available for all fisheries until two years after the fishing season due to a two-year lag in coded-wire tag (CWT) recovery reporting in some southern U.S. fisheries. The CTC is tasked with annually evaluating ISBM fishery performance relative to both annual obligations set forth in paragraph 5(d) and multi-year obligations set forth in paragraph 7(c). The Commission was to decide in 2022 on the continued application of the CYER or the use of an alternative metric; since no alternative metrics have been brought forward to date, the CTC continues to use the CYER to monitor the total fishery mortality in ISBM fisheries.

2.1 LANDED CATCH, INCIDENTAL MORTALITY, AND TOTAL MORTALITY

Per the terms of the 2019 PST Agreement the CTC is required to report annually on landed catch (LC) and incidental mortality (IM) that occur in all fisheries intercepting indicator Chinook (i.e., Attachment I and Chinook Model stocks) within the Treaty area. Canada and the U.S. compile and provide annual estimates of LC and IM for their respective jurisdictions within the Treaty area according to fishery regimes, regional locations, and gear type. Provided below is a general comparison between the average overall estimates of LC, IM, and their sum, total mortality (TM), that occurred during the 2009 Agreement with those that have occurred to date during the 2019 Agreement for each Party and fishery regime (AABM vs ISBM). Estimates of average annual mortality across mortality components and PST fisheries between the current and previous annex is provided in Table 2-1. Additional detail and a finer scale breakdown of these estimates for the current Agreement and most recent fishing year are provided in CTC Annual Report of Catch and Escapement (e.g., TCCHINOOK (25)-02).

Landed catch in PST fisheries since 1999 is summarized over the four broad categories of AABM and ISBM fisheries for both Parties in Figure 2-1. The total landed catch across all four fishery groups averaged 1,587,782 Chinook during the 2009 Agreement (2009–2018) and has averaged 1,195,598 so far during the 2019 Agreement (2019–2024), an average yearly decrease of 392,184 fish (25%). The Canadian ISBM landed catch average increased by approximately 41,000 fish (15%), while the averages for the other three fishery groups all decreased: by about 61,000 (24%) in U.S. AABM fisheries, about 136,000 (45%) in Canadian AABM fisheries, and about 236,000 (31%) in U.S. ISBM fisheries. During the 2009 Agreement, catch percentages of the total annual PST catch averaged 48% U.S. ISBM, 17% Canadian ISBM, 16% U.S. AABM and 19% Canadian AABM. During the first six years of the 2019 Agreement, percentages of total PST landed catch averaged 43% U.S. ISBM, 26% Canadian ISBM, 17% U.S. AABM and 14% Canadian AABM.

Table 2-1—Average annual landed catch, incidental mortality, and total mortality statistics of Chinook encountered in PST fisheries, as well as estimates of the nominal and percent changes between Treaty Agreement periods.

		Treaty Agreement Period			
	Fishery	**2009–2018**	**2019–2024**	**Nominal Change**	**Percent Change**
Landed Catch	U.S. AABM	260,805	199,364	-61,441	-24%
	Canadian AABM	300,936	165,167	-135,769	-45%
	U.S. ISBM	754,433	518,112	-236,322	-31%
	Canadian ISBM	271,608	312,940	41,332	15%
Incidental Mortality	U.S. AABM	45,910	46,702	793	2%
	Canadian AABM	39,435	26,593	-12,842	-33%
	U.S. ISBM	78,652	52,466	-26,186	-33%
	Canadian ISBM	58,471	97,867	39,396	67%
Total Mortality	U.S. AABM	306,715	246,066	-60,648	-20%
	Canadian AABM	340,371	191,759	-148,611	-44%
	U.S. ISBM	833,085	570,577	-262,508	-32%
	Canadian ISBM	330,079	410,807	80,728	24%

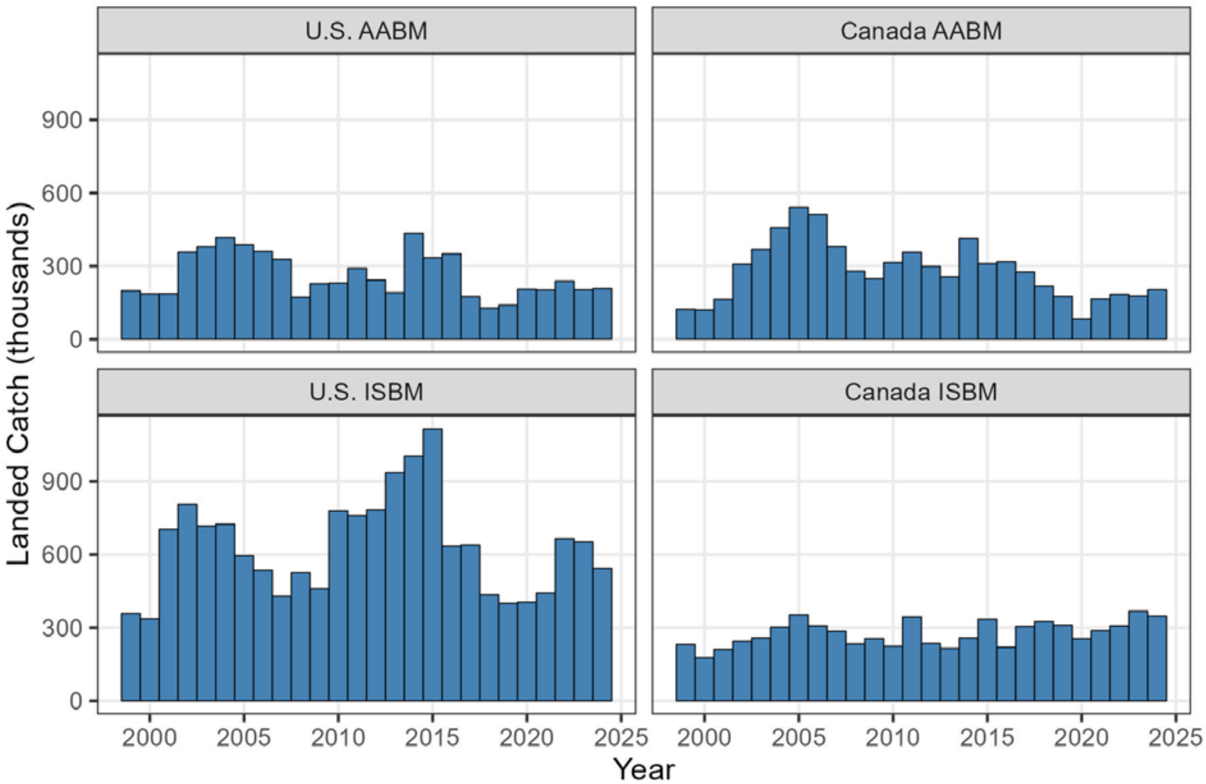

Figure 2-1—Landed catch estimates for U.S. and Canada AABM and ISBM fisheries, 1999–2024.

The 2019 PST Agreement includes new provisions related to IM. First, per subparagraph 4(e)(iii), is a requirement to identify any "*significant changes in rates or patterns of incidental mortalities in all fisheries that are subject to this Treaty*" relative to what occurred between 1999–2016 for AABM fisheries and between 1999–2015 for ISBM fisheries. Incidental mortality in PST fisheries since 1999 is summarized over the four broad categories of AABM and ISBM fisheries for both Parties in (Figure 2-2). Overall, the average annual IM that occurred across all four fishery groups during the 2009 Agreement (222,467) is nearly identical to what has occurred to date during the 2019 Agreement (223,628), however, the distribution across fishery groups has differed. During the 2009 Agreement, of the total IM, 21% occurred in U.S. AABM fisheries, 18% occurred in Canadian AABM fisheries, 26% occurred in Canadian ISBM fisheries, and 35% occurred in U.S. ISBM fisheries. To date during the 2019 Agreement, 21% of the total IM has occurred in U.S. AABM fisheries, 12% in Canadian AABM fisheries, 44% in Canadian ISBM fisheries, and 23% in U.S. ISBM fisheries. Total annual average mortality has decreased in the current Treaty Agreement so far compared to the 2009 Agreement for all except in the Canadian ISBM fisheries (Table 2-1; Figure 2-3).

A large increase in the Canadian ISBM IM was observed beginning in 2021 (Figure 2-2) despite landed catches similar to those observed in prior years. The main fishery contributing to this increase was the Strait of Georgia ISBM due to its large release of sublegal and super-legal fish (fish larger than specified management limits). The mortality associated with these releases, when combined with drop-off mortality associated with the landed catch, results in IM estimates since 2021 that are noticeably larger than those in past years. The high number of releases is attributed to two factors: extended periods of Chinook non-retention (beginning in 2019) and changes in the size limit. Starting in 2019, there were also changes to the fishery regulations; when Chinook retention was permitted, a maximum size limit of 80 cm was implemented and added to the 62 cm minimum size limit (i.e., legal size slot), resulting in releases of larger fish that were previously legal (over the 62 cm minimum). In 2019, the legal size slot limit was only applicable for two weeks in the northern regions of the Strait of Georgia, but by 2021 it was extended for six weeks in north Strait of Georgia and four weeks in south Strait of Georgia.

Paragraph 4(f) also establishes limits for the level of Treaty IM in AABM fisheries:

> "*an AABM fishery has a level of incidental mortality that exceeds 59,400 for the SEAK AABM fishery or 38,600 for the combined aggregate for the NBC and WCVI AABM fisheries, the Commission shall review the information, determine if fishery adjustments are needed during the Chapter Period, and recommend any appropriate remedial action to ensure that the Parties do not exceed incidental mortality limits.*"

Since the Agreement went into effect in 2019, estimates of IM in both the SEAK AABM fishery and the combined Canadian AABM fisheries have been below the respective limits in all years (Figure 2-2).

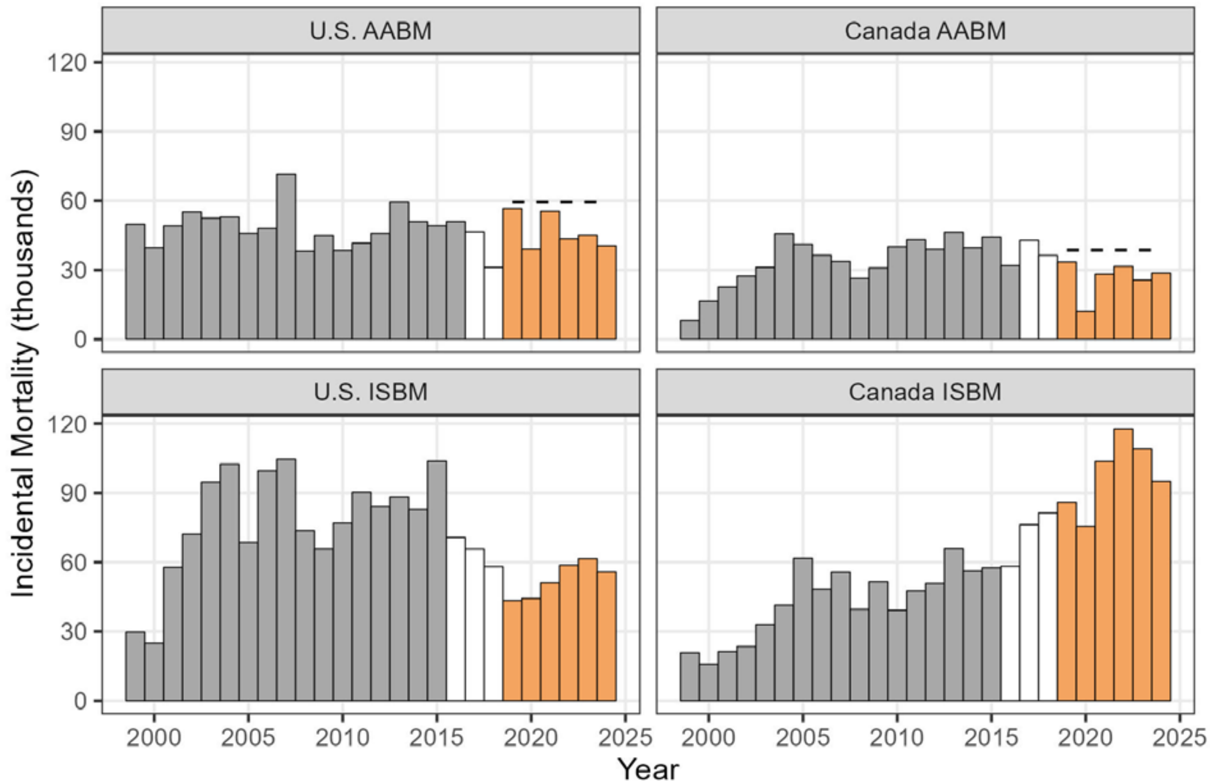

Figure 2-2—Estimates of incidental mortality (IM) for U.S. and Canada AABM and ISBM fisheries, 1999–2024. Orange bars indicate years subject to the 2019 Agreement and gray bars indicate reference years for assessing changes in patterns of IM, per subparagraph 4(e)(iii). For AABM fisheries, horizontal dashed lines represent Treaty IM limits as specified in paragraph 4(f).

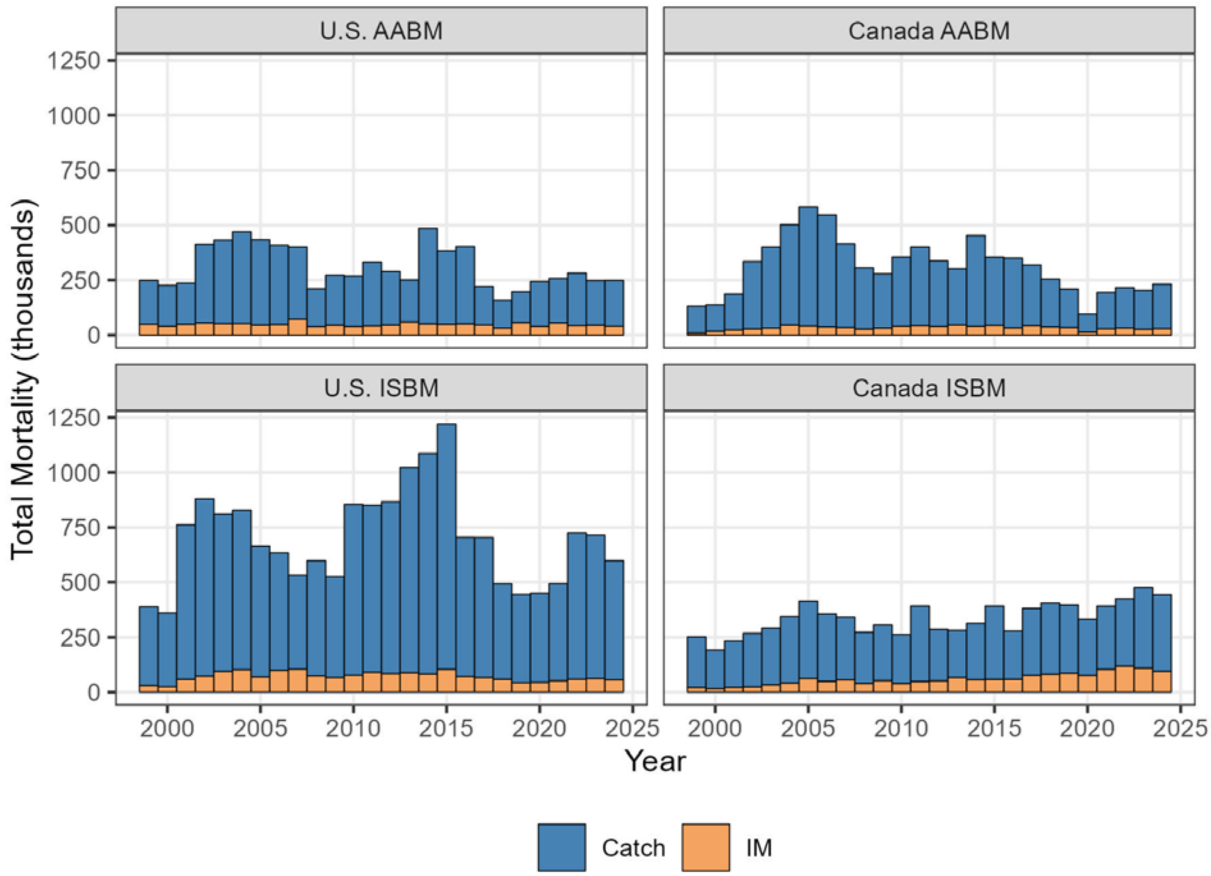

Figure 2-3—Estimates of total mortality, the sum of landed catch and incidental mortality (IM) for U.S. and Canada AABM and ISBM fisheries, 1999–2024.

2.2 ISBM Fishery Performance

Paragraph 5(a) under the 2019 PST Agreement Chapter 3 states:

> *"U.S. and Canadian ISBM fisheries shall be managed to limit the total adult equivalent mortality for stocks listed in Attachment I that are not meeting agreed biologically-based management objectives, or that do not have agreed management objectives, to no more than the limits identified in Attachment I."*

The CYER is the metric the PSC uses to monitor total mortality in ISBM fisheries and for limiting total AEQ mortality (Paragraph 5(e)). The CTC is tasked with evaluating ISBM fishery performance relative to the obligations set forth in Paragraphs 5 and 7 annually.

Paragraph 5(d) of Chapter 3 of the 2019 PST Agreement requires that:

> "*actual ISBM fishery performance relative to the obligations set out in this paragraph shall be evaluated by the CTC and reported annually to the Commission. Because the performance analysis is dependent on recovery of CWT, the CTC shall provide the evaluation for ISBM fisheries on a postseason basis*."

Thus, the CTC is required to annually compute and report the CYERs for ISBM fisheries and using "*the best available postseason data and* analysis*, report performance to the Commission of those metrics and the obligations set out in this Chapter*."

Here we report on results of the CTC's 2025 ERA, which includes annual CYERs (Chapter 3, Paragraph 5) and running 3-year average (3YA) CYERs through catch year 2023 as this was the most recent year from which data were available from both Parties' ISBM fisheries (Footnote 17, 2019 PST Agreement). The 3YA is calculated based on the most recent three years of CYERs that meet the criteria for inclusion specified in Paragraph 7(c), as agreed to by the PSC. For stocks in Attachment I without agreed management objectives, paragraph 7(c) specifies that all years shall be used to calculate the running 3YA. For stocks in Attachment I with an agreed management objective, the 3YA will include:

> "*all years in which the management objective is not achieved, and the years in which the management objective is achieved with a CYER that is less than or equal to the ISBM obligation identified in paragraph 5.*"

At their October 2022 meeting, the Commission provided guidance that the 3YA must include three years of CYERs that meet the criteria for inclusion specified in paragraph 7(c). Thus, in cases where there are years that do not meet the criteria for inclusion in the 3YA, the running 3YA will span a time frame greater than three years.

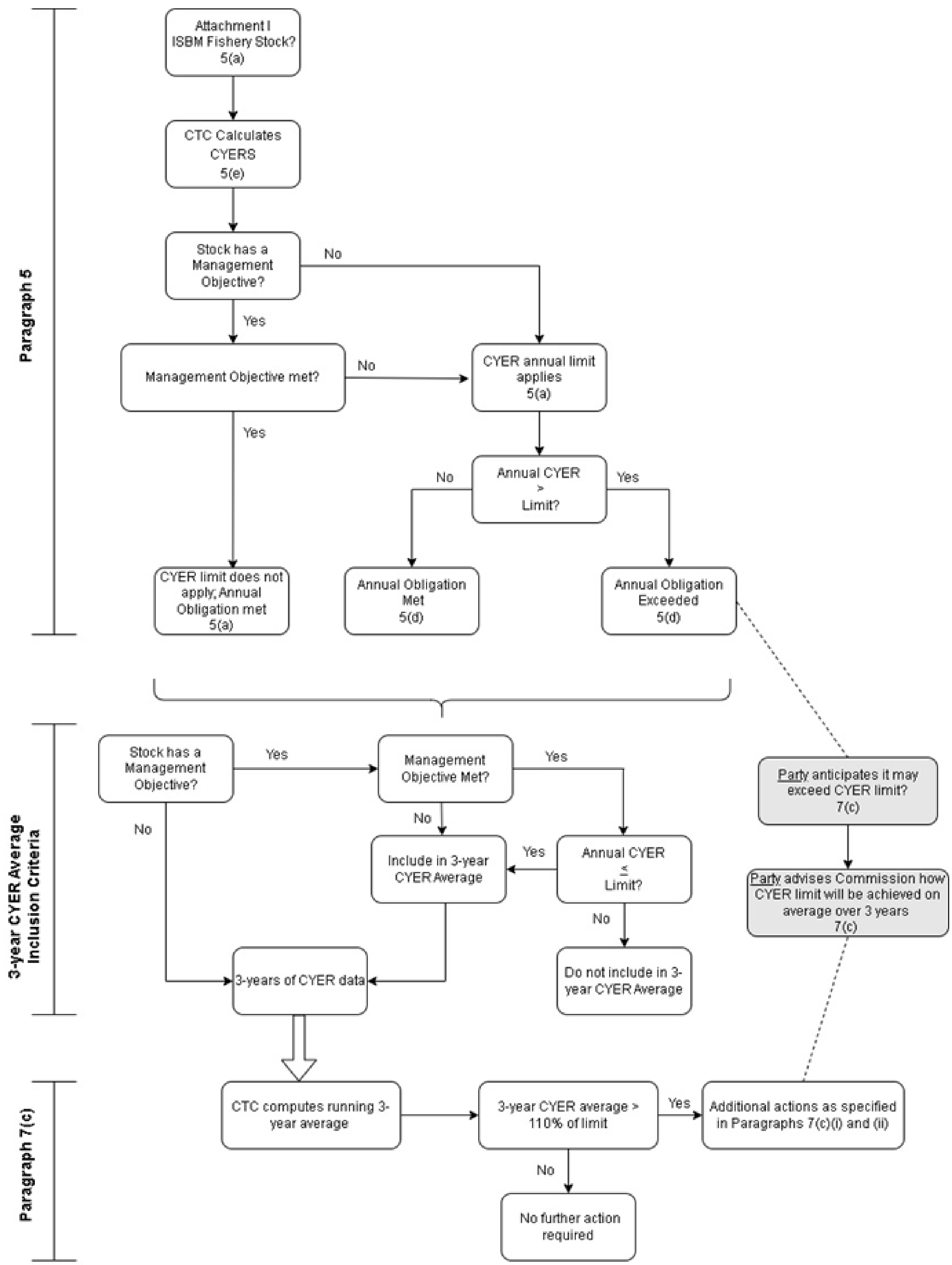

Figure 2-4—Flow diagram depicting the sequence of steps for individual stock-based management (ISBM) fisheries management framework under the 2019 Pacific Salmon Treaty Agreement.

2.2.1 Annual ISBM performance

Annual performance of Canadian and U.S. ISBM fisheries is depicted for 2019–2023 in Figure 2-5 and Figure 2-6, respectively. It is important to note that annual performance for all years in these figures is based on results from the 2025 ERA in order to provide a consistent perspective across years that incorporates all recent data refinements and methods improvements. As a result, the annual performance depicted for prior years in these figures may not align with what was reported in previous ERA reports or Commissioner Summary Reports, which were based on the best available information at the time. The CYERs presented in this section reflect those estimated for unmarked (adipose fin intact) Chinook. The figures provide performance through fishing year 2023, as this is the most recent year for which CYER estimates are available for both Parties' ISBM fisheries. Appendix B provides a set of figures that show the time series of CYERs from 2009 through 2023 for each stock with an ISBM limit identified in Attachment I for either Canadian or U.S. fisheries.

Between 2019 and 2023, CYER obligations were met on average 81% of the time for stocks with CYER limits in Canadian ISBM fisheries. The percentage of stocks meeting their CYER obligations within years ranged from a low of 64% in 2019 (nine of 14 stocks meeting their annual obligations) to a high of 100% in 2022 (all stocks meeting their annual obligations). Seven stocks failed to meet their annual obligation in at least one year during the current annex (Figure 2-5 and Table 2-2): Atnarko, Nicola, Nooksack Spring, and Stillaguamish (one year each), East Vancouver Island North (EVIN) (two years), Harrison (three years), and Snohomish (four years). From 2019 to 2023, stocks with CYER limits in U.S. ISBM fisheries (n=22) met their annual obligations 88% of the time. The percent of stocks meeting their CYER obligations each year ranged from a low of 77% in 2021 (17 of 22 stocks meeting their annual obligations) to a high of 100% in 2020 (all stocks meeting their annual obligations). Nine of 22 stocks did not achieve their annual obligation in at least one year (Figure 2-6 and Table 2-3): Harrison, Nooksack Spring, Snohomish, Nehalem, and Coquille (one year each), Stillaguamish, Queets, Siuslaw, and South Umpqua (two years each).

Table 2-2—Unmarked calendar year exploitation rate estimates from the 2025 ERA for stocks with Canadian ISBM obligations from 2019–2023. Green cells indicate the ISBM obligation was met for that stock and year, red cells indicate that the ISBM obligation was not met, while grey cells denote situations where an ISBM obligation was not applicable. Note that stocks with PSC management objectives may exceed the CYER limit in years for which the management objective was met.

Escapement Indicator	PSC Management Objective	CYER Limit	CYER				
			2019	2020	2021	2022	2023
Skeena	TBD	0.153	0.111	0.104	0.037	0.029	0.019
Atnarko	5,009	0.318	0.324	0.261	0.195	0.147	0.179
NWVI Natural Aggregate	TBD	0.119	0.095	0.041	0.068	0.108	0.083
SWVI Natural Aggregate	TBD	0.119	0.095	0.041	0.068	0.108	0.083
EVIN	TBD	0.242	0.288	0.138	0.233	0.166	0.260
Phillips	NA	0.130	0.105	0.068	0.127	0.102	
Cowichan	6,500	0.569	0.635	0.230	0.332	0.348	0.623
Nicola	TBD	0.182	0.022	0.277	0.052	0.023	0.035
Chilcotin							
Chilko							
Lower Shuswap	12,300	0.263	0.128	0.202	0.147	0.188	0.111
Harrison	75,100	0.173	0.311	0.204	0.213	0.068	0.235
Nooksack Spring adj	TBD	0.208	0.135	0.198	0.052	0.090	0.222
Skagit Spring	1,024	0.118	0.072	0.242	0.212	0.138	0.233
Skagit Summer/Fall	8,201	0.112	0.046	0.080	0.040	0.048	0.221
Stillaguamish	TBD	0.195	0.259	0.113	0.082	0.114	0.075
Snohomish	TBD	0.148	0.197	0.173	0.314	0.133	0.150

Table 2-3—Unmarked calendar year exploitation rate estimates from the 2025 ERA for stocks with U.S. ISBM obligations from 2019–2023. Green cells indicate the ISBM obligation was met for that stock and year, red cells indicate that the ISBM obligation was not met, while grey cells denote situations where there were insufficient CWT recoveries. Note that stocks with PSC management objectives may exceed the CYER limit in years for which the management objective was met.

Escapement Indicator	PSC Management Objective	CYER Limit	CYER				
			2019	2020	2021	2022	2023
Cowichan	6,500	0.055	0.039	0.016	0.022	0.018	0.012
Nicola	TBD	0.037	0.014	0.009	0.005	0.004	0.010
Harrison	75,100	0.055	0.044	0.024	0.059	0.022	0.031
Nooksack Spring adj	TBD	0.083	0.061	0.066	0.117	0.068	0.054
Skagit Spring	1,024	0.255	0.410	0.192	0.215	0.319	0.355
Skagit Summer/Fall	8,201	0.147	0.087	0.060	0.060	0.141	0.063
Stillaguamish	TBD	0.108	0.107	0.090	0.112	0.041	0.162
Snohomish	TBD	0.109	0.032	0.052	0.116	0.080	0.060
Hoko	TBD	0.100	0.063	0.005	0.004	0.047	0.047
Grays Harbor Fall	13,326	0.154	0.109	0.097	0.077	0.068	0.043
Queets Fall	2,500	0.136	0.201	0.240	0.154	0.272	0.147
Quillayute Fall	3,000	0.206	0.125	0.109	0.078	0.071	0.116
Hoh Fall	1,200	0.148	0.199	0.193	0.135	0.112	0.127
Upriver Brights	40,000	0.254	0.205	0.229	0.199	0.195	0.135
Hanford Wild Brights		0.281	0.165	0.194	0.199	0.247	
Lewis River Fall	NA	0.187	0.024	0.074	0.078	0.189	
Coweeman	TBD	0.194	0.116	0.073	0.139	0.160	0.059
Mid-Columbia Summers	12,143	0.286	0.220	0.131	0.222	0.283	0.122
Nehalem	6,989	0.130	0.137	0.130	0.161	0.251	0.155
Siletz	2,944	0.171	0.333	0.136	0.226	0.151	0.170
Siuslaw	12,925	0.202	0.423	0.184	0.239	0.024	0.194
South Umpqua	TBD	0.268	0.356	0.267	0.219	0.268	0.218
Coquille	TBD	0.222	0.514	0.092	0.073	0.057	0.070

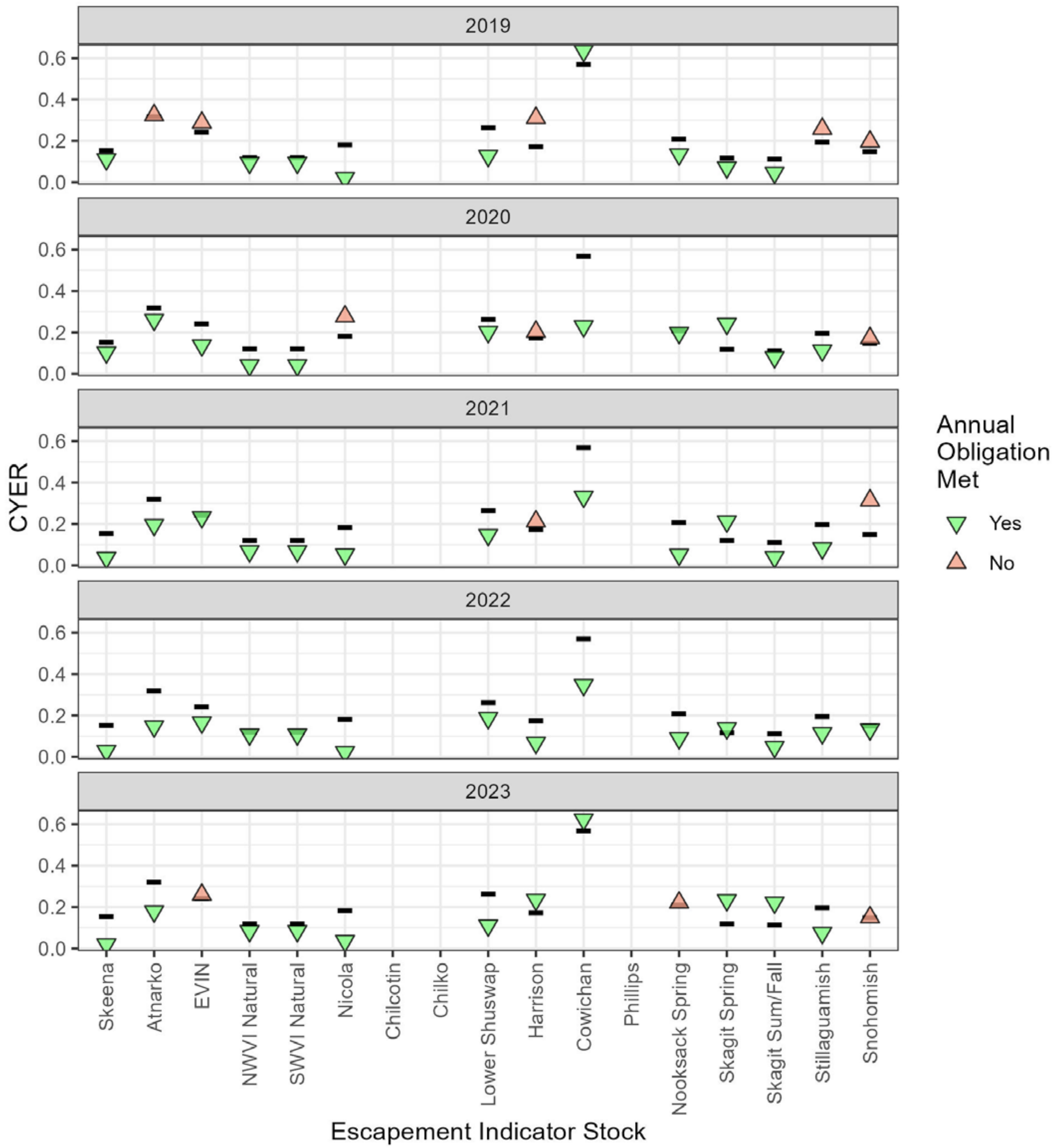

Figure 2-5—Annual performance of Canadian ISBM fisheries for fishing years 2019–2023 (vertical panels), based on results from the 2025 exploitation rate analysis. Black dashes represent the CYER limit and triangles represent the annual CYER estimate for each stock.

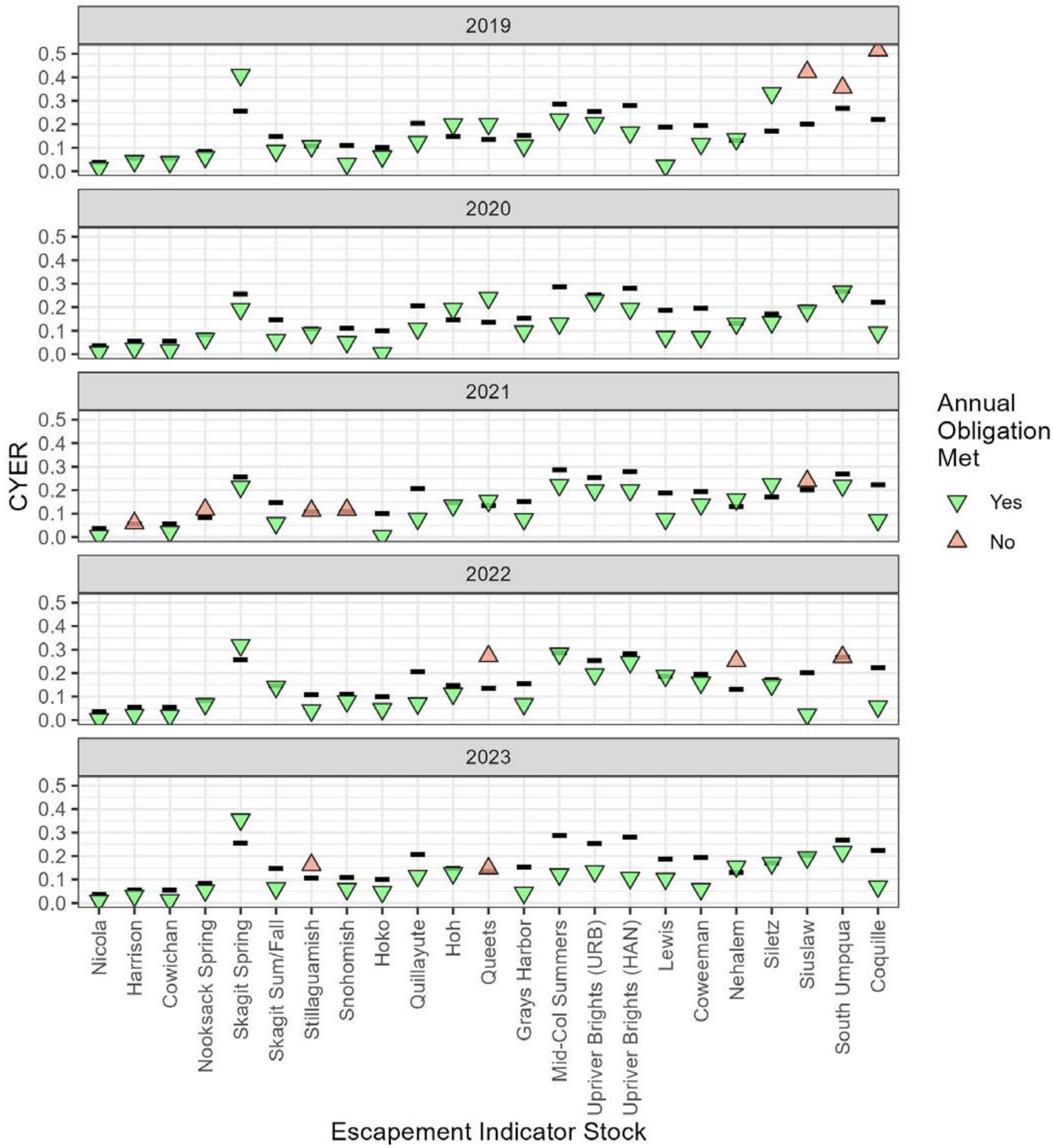

Figure 2-6—Annual performance of U.S. ISBM fisheries for fishing years 2019–2023 (vertical panels), based on results from the 2025 exploitation rate analysis. Black dashes represent the CYER limit and triangles represent the annual CYER estimate for each stock.

2.2.2 MULTI-YEAR ISBM PERFORMANCE

Individual stock-based management fisheries are evaluated using the CYER metric and based on a running 3YA, which is determined based on the inclusion criteria described in Chapter 3 paragraph 7(c) (Figure 2-4). For stocks that have a running 3YA of CYERs exceeding 110% of the CYER limit, the Commission "*shall request that the management entities responsible for the management of the ISBM fishery take necessary actions to minimize the deviation between the three-year CYER* average *and the CYER limits in Attachment I*" (Chapter 3, subparagraph 7(c)(i)). The Commission will discuss proposals from the management entities regarding actions that will be taken and expected outcomes prior to implementation. Meanwhile, the CTC "*shall provide to the Commission a plan to improve the performance of preseason, in-season and other management tools so that the deviations between the CYERs and the CYER limits are narrowed to a maximum level of 10% when limits apply (Attachment I)*" (Chapter 3, subparagraph 7(c)(ii)).

There are 17 Attachment I indicator stocks subject to Canadian ISBM fisheries performance evaluation, including five of U.S. origin. Of those, 11 stocks do not have management objectives listed in Attachment I, and two of those are currently under development and cannot be evaluated; therefore, annual CYER limits apply for 9 of the 11 stocks without management objectives. There are six stocks that have management objectives listed in Attachment I, and annual CYER limits only apply when these management objectives are not met.

For the multi-year assessment of Canadian ISBM fisheries performance specific to paragraph 7(c), there were initially only 12 stocks for which the 3YA could be calculated, and by 2025 there was enough data to calculate the 3YA for 14 stocks (Figure 2-7; Table 2-4). In the 2023 ERA and 2024 ERA, the 3YA exceeded (3YA ≥ 110% of the CYER limit) annual CYER limits for EVIN and Harrison, while Snohomish had a warning (<10% over CYER limit) in the 2023 ERA and subsequently exceeded in the 2024 ERA. By the 2025 ERA, the 3YAs for EVIN and Harrison dropped to below their CYER limits, while the 3YA for Snohomish remained more than 10% above its CYER limit.

An overview of multi-year performance in U.S. ISBM fisheries specific to subparagraph 7(c) is provided in Figure 2-8 and Table 2-5. For the 2023 ERA, there were initially seven stocks for which 3YA CYERs could not be calculated, meaning there was at least one year for each where the management objective was achieved and the CYER was greater than the limit. By the 2025 ERA, there were only three stocks remaining for which a 3YA CYER could not be calculated (Skagit Spring, Queets, and Nehalem). Based on results of the 2023 ERA, which included CYERs through fishing year 2021, the 3YA CYER for Nooksack Spring exceeded its limit by more than ten percent, requiring actions from both the Nooksack co-managers and the CTC as described in subparagraphs 7(c)(i) and 7(c)(ii), respectively. Additionally, 3YAs for the Harrison, Stillaguamish, and South Umpqua stocks also exceeded their respective CYER limits, but by less than ten percent (warning = <10% over the CYER limit). Results from both the 2024 and 2025 ERAs indicated that there were no stocks with 3YA CYERs that exceeded their limit in U.S. ISBM fisheries. For the 2025 ERA, note that the U.S. ISBM CYER limits for the five Puget Sound stocks reflect CYER limits from the 2024 ERA adjusted for unmarked Chinook, as agreed by the Chinook Interface Group (CIG) at their February 2025 meeting.

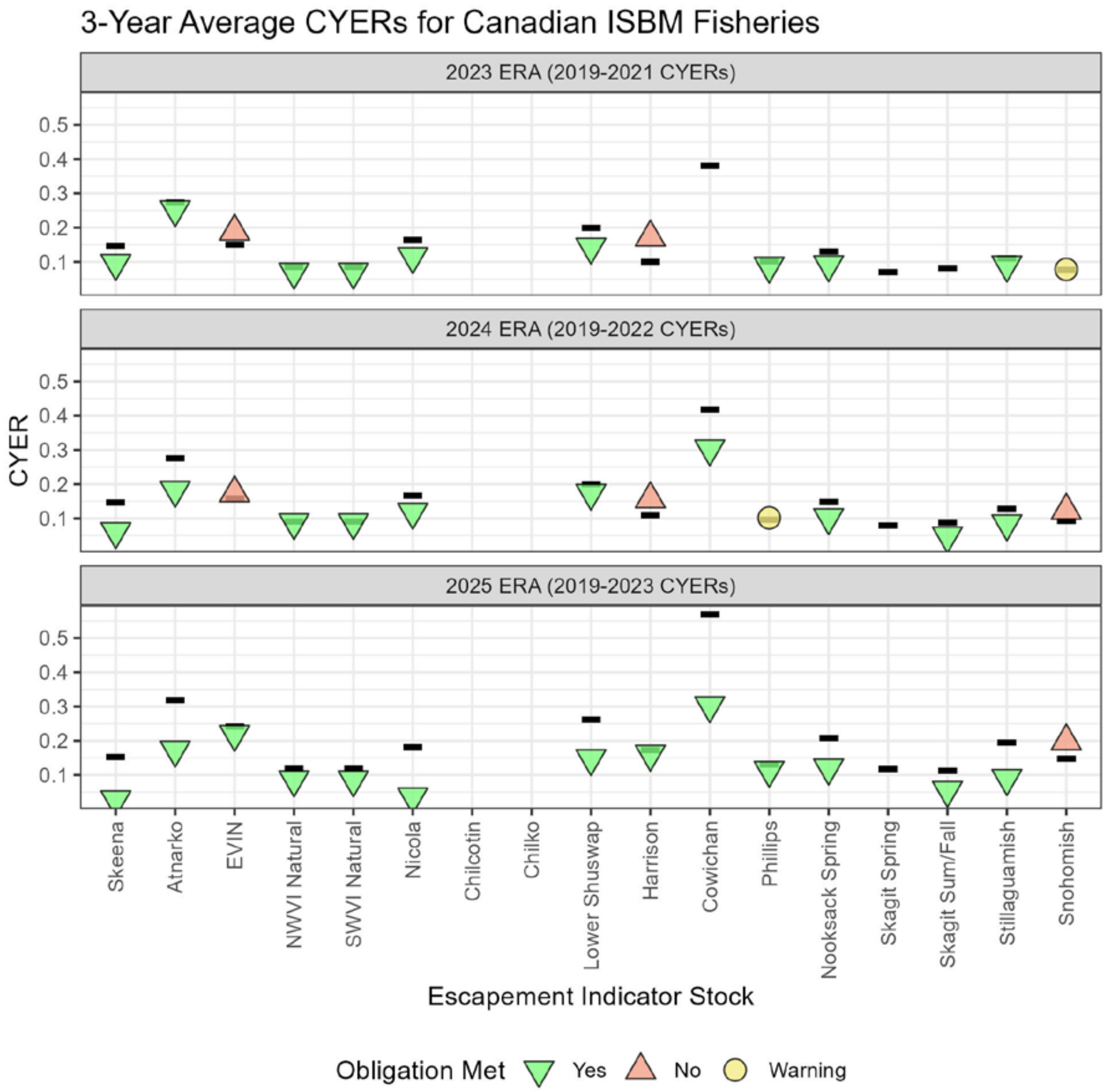

Figure 2-7—Performance of Canadian ISBM fisheries relative to three-year average (3YA) CYERs, as specified in paragraph 7(c) of Chapter 3 of the 2019 PST Agreement.

Vertical panels display the results of annual ERAs beginning with the 2023 analysis (top panel), which was the first year where three years of CYERs were available beginning with 2019. Black dashes represent the CYER limit for each stock. Shaded shapes represent the 3YA CYER for each stock, where green triangles pointing down indicate a 3YA that is below the limit, yellow circles indicate a 3YA that exceeds the limit by less than 10%, and red triangles pointing up indicate a 3YA that exceeds the limit by more than 10%, requiring actions specified in paragraph 7(c). Stocks without a 3YA had fewer than three years of CYERs that met the criteria for inclusion in the 3YA.

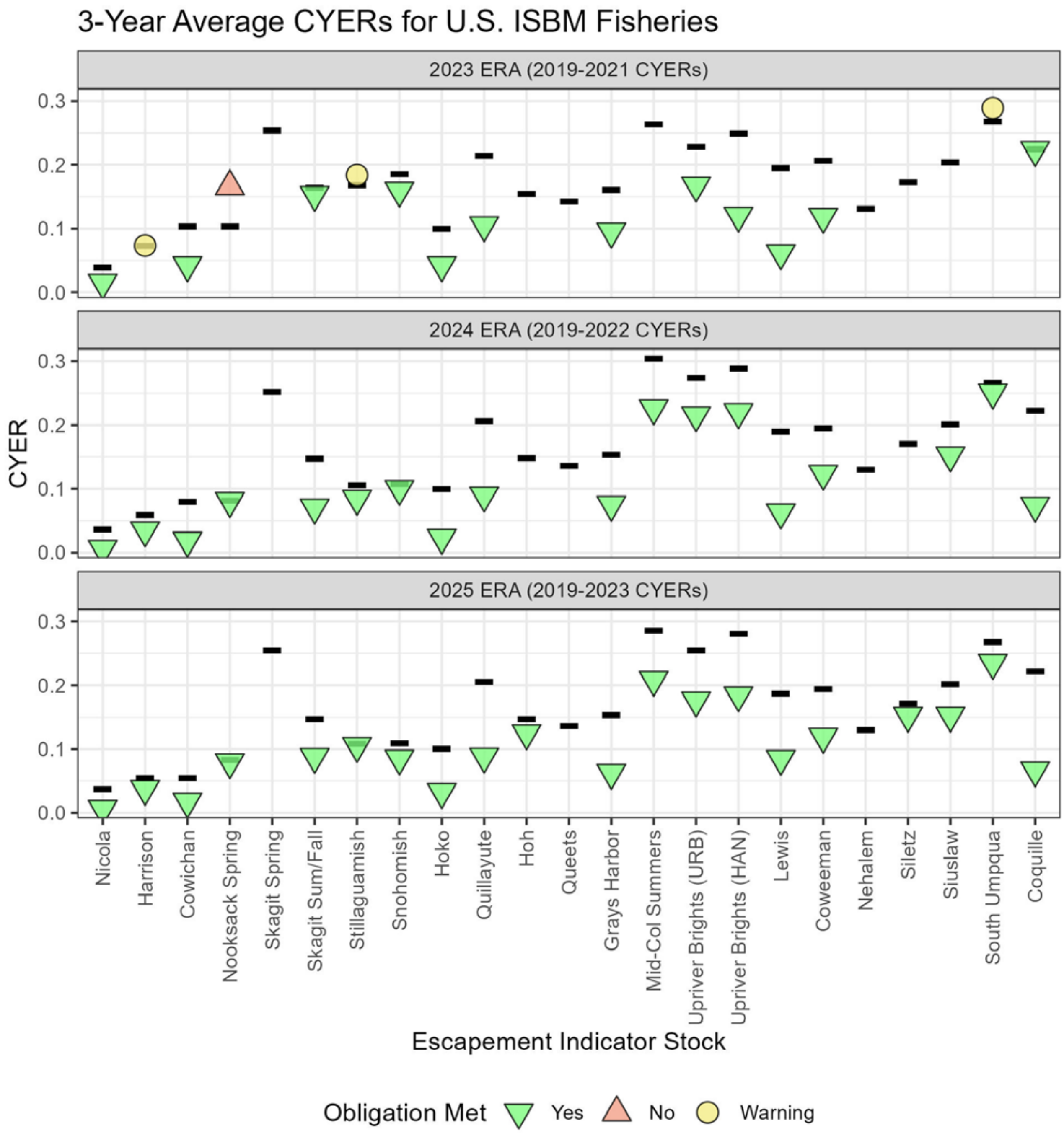

Figure 2-8—Performance of U.S. ISBM fisheries relative to three-year average (3YA) CYERs, as specified in paragraph 7(c) of Chapter 3 of the 2019 PST Agreement.

Vertical panels display the results of annual ERAs beginning with the 2023 analysis (top panel), which was the first year where three years of CYERs were available beginning with 2019. Black dashes represent the CYER limit for each stock. Shaded shapes represent the 3YA CYER for each stock, where green triangles indicate a 3YA that is below the limit, yellow circles indicate a 3YA that exceeds the limit by less than 10%, and red triangles indicate a 3YA that exceeds the limit by more than 10%, requiring actions specified in paragraph 7(c). Stocks without a 3YA had fewer than three years of CYERs that met the criteria for inclusion in the 3YA.

Table 2-4—Performance of Canadian ISBM fisheries in relation to stock-specific CYER limits defined in Attachment I of the Pacific Salmon Treaty, based on the results of the 2025 ERA.

Escapement Indicator	Years Included in 3YA	CYER 3YA	CYER Limit	Paragraph 7(c) Obligation Met?
Skeena	2021, 2022, 2023	0.028	0.153	Yes
Atnarko	2021, 2022, 2023	0.174	0.318	Yes
NWVI Natural	2021, 2022, 2023	0.087	0.119	Yes
SWVI Natural	2021, 2022, 2023	0.087	0.119	Yes
EVIN	2021, 2022, 2023	0.220	0.242	Yes
Phillips	NA	NA	NA	NA
Cowichan	NA	NA	0.569	NA
Nicola	2021, 2022, 2023	0.037	0.182	Yes
Chilcotin	NA	NA	NA	NA
Chilko	NA	NA	NA	NA
Lower Shuswap	2021, 2022, 2023	0.149	0.263	Yes
Harrison	NA	NA	0.173	NA
Nooksack Spring	2021, 2022, 2023	0.121	0.208	Yes
Skagit Spring	NA	NA	0.118	NA
Skagit Sum/Fall	NA	NA	0.112	NA
Stillaguamish	2021, 2022, 2023	0.091	0.195	Yes
Snohomish	2021, 2022, 2023	0.199	0.148	No

Table 2-5—Performance of U.S. ISBM fisheries in relation to stock-specific CYER limits defined in Attachment I of the Pacific Salmon Treaty, based on the results of the 2025 ERA.

Escapement Indicator	Years Included in 3YA	CYER 3YA	CYER Limit	Paragraph 7(c) Obligation Met?
Cowichan	2021, 2022, 2023	0.018	0.055	Yes
Nicola	2021, 2022, 2023	0.006	0.037	Yes
Harrison	2021, 2022, 2023	0.038	0.055	Yes
Nooksack Spring	2021, 2022, 2023	0.080	0.083	Yes
Skagit Spring	NA	NA	0.255	NA
Skagit Sum/Fall	2021, 2022, 2023	0.088	0.147	Yes
Stillaguamish	2021, 2022, 2023	0.105	0.108	Yes
Snohomish	2021, 2022, 2023	0.085	0.109	Yes
Hoko	2021, 2022, 2023	0.033	0.100	Yes
Grays Harbor	2021, 2022, 2023	0.063	0.154	Yes
Queets	NA	NA	0.136	NA
Quillayute	2021, 2022, 2023	0.088	0.206	Yes
Hoh	2021, 2022, 2023	0.125	0.148	Yes
Upriver Brights (URB)	2021, 2022, 2023	0.176	0.254	Yes
Upriver Brights (HAN)	NA	NA	NA	NA
Lewis	NA	NA	NA	NA
Coweeman	2021, 2022, 2023	0.119	0.194	Yes
Mid-Columbia Summers	2021, 2022, 2023	0.209	0.286	Yes
Nehalem	NA	NA	0.130	NA
Siletz	2020, 2022, 2023	0.152	0.171	Yes
Siuslaw	2021, 2022, 2023	0.152	0.202	Yes
South Umpqua	2021, 2022, 2023	0.235	0.268	Yes
Coquille	2021, 2022, 2023	0.067	0.222	Yes

2.3 HARVEST RATES: MREER METRIC

The mature-run equivalent exploitation rate ($MREER$) quantifies the reduction of the potential spawners in a given year due to removal by fishing, regardless of the timing or location of those fisheries. To calculate the potential spawners removed by catches of immature fish, mature-run equivalents ($TotMRE$) are calculated by scaling estimates of total mortality (TM) from preterminal fisheries to account for the probability that harvested fish would have survived to spawn in calendar year (CY). This is achieved by multiplying the total mortality estimate for each age a in preterminal fishery f by a mature-run equivalent (MRE) scalar, which represents the maturation-weighted probability that a fish of brood year $BY = CY - a$ and age a would have returned to spawn in calendar year CY in the absence of fishing. Like AEQ factors, MRE factors are computed using brood-age-specific maturation rate estimates and assumed survival probabilities. Total mortality from terminal fisheries is added directly without scaling, as fish in terminal fisheries are, by definition, mature spawners ($MRE = 1$) (Equation 2-1).

Equation 2-1

$$TotMRE_{CY} = \sum_{f \in PreTerm} \sum_{a=minage}^{maxage} MRE_{BY=CY-a,a} \cdot TM_{CY,a,f} + \sum_{f \in Term} \sum_{a=minage}^{maxage} TM_{CY,a,f}$$

Mature-run equivalent exploitation rates can then be calculated as the ratio of total MRE impacts over total MRE impacts plus escapement (Equation 2-2).

Equation 2-2

$$MREER_{CY} = \frac{TotMRE_{CY}}{TotMRE_{CY} + \sum_{a=minage}^{maxage} ESC_{CY,a}}$$

Because the calculation is additive across fisheries, results can be partitioned in any desired dimension (e.g., US vs. Canadian, AABM vs. ISBM, etc.). See Chapter 3 of the CTC annual catch and escapement report for additional methodological details (e.g., TCCHINOOK 25-02). The time series of MREER for the 41 aggregate stocks represented in the Chinook Model, partitioned into five fisheries categories (SEAK AABM, NBC AABM, WCVI AABM, Canada ISBM, and US ISBM) are presented in the regional sections below. Note that the Chinook Model does not have the ability to account for differential impacts of mark-selective fisheries on marked and unmarked stock components and is therefore not reflected in the MREER estimates.

SEAK

Mature-run equivalent exploitation rates for Transboundary River (TBR) and SEAK stocks exhibit variable patterns of exploitation over time (Figure 2-9). All stocks experienced reduced exploitation rates in the more recent years compared to the historic average, reflective of domestic management to conserve wild stocks. Nearly all exploitation of the assessed stocks occurred in the SEAK AABM fishery, with some exploitation by Canadian ISBM and the NBC AABM fisheries on the Taku and Stikine (TST) stock. Mature-run equivalent exploitation rates for the Southern Southeast stock (SSA) were between 25% and 50% in most years, while those for the Northern Southeast stock (NSA) averaged closer to 50% over the time series before declining to approximately 30% on average since 2018, and preceding the current agreement. The Alsek (ALS) stock has remained below 10% throughout the dataset, whereas Yakutat Forelands (YAK) MREERs rose to over 50% from 1995 to 2004 and have been near zero since 2017.

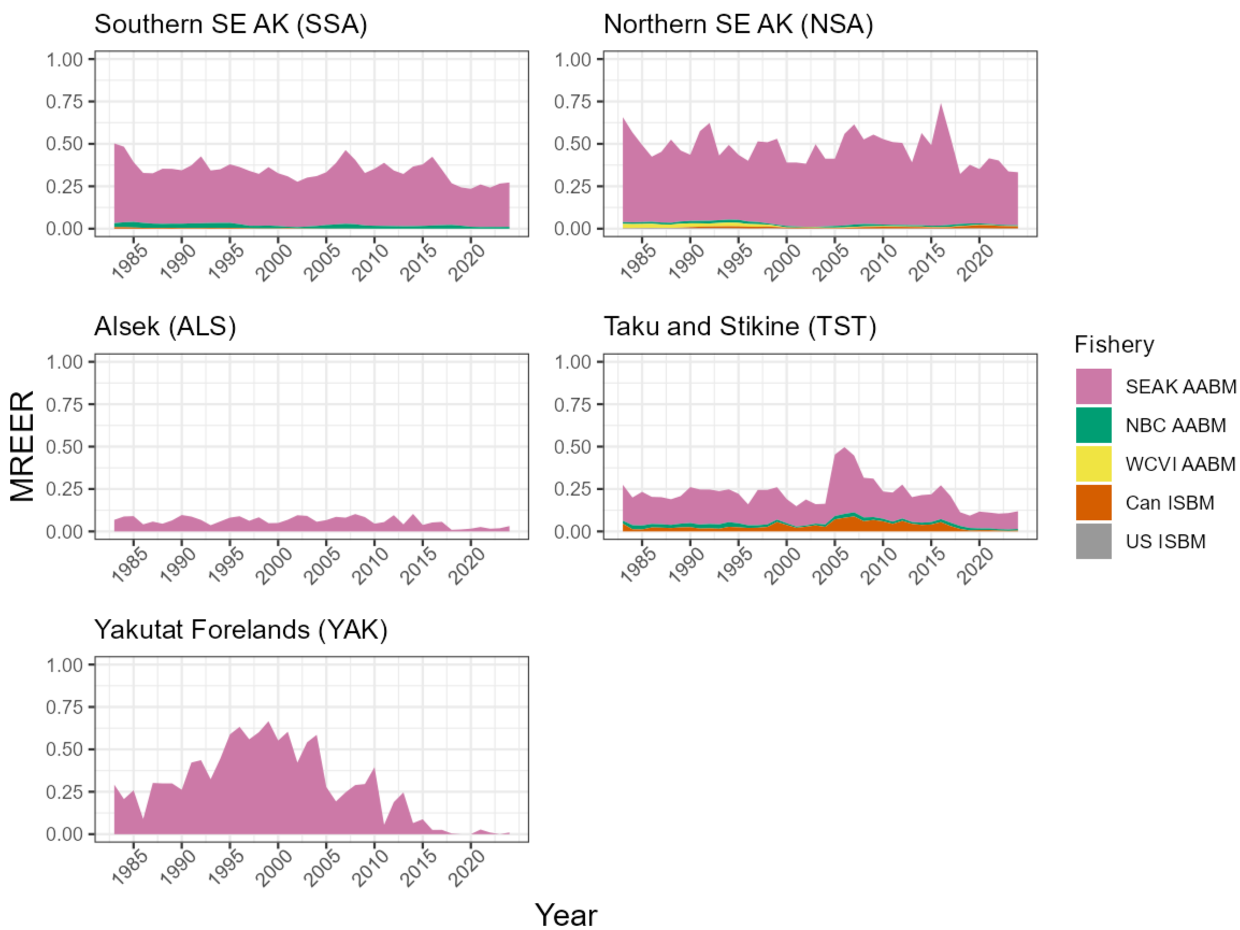

Figure 2-9—Mature-run equivalent exploitation rates (MREER) for Canadian and U.S. AABM and ISBM fisheries on Transboundary and regional stocks in Southeast Alaska.

British Columbia

Reductions in MREERs in British Columbia have been mostly achieved by reductions in Canadian ISBM and WCVI AABM (Figure 2-10). These reductions are most noticeable with the Georgia Strait and the Puntledge Summers stocks. Despite this general decrease, there is considerable year-to-year variability, particularly in LGS and MGS. In contrast, NBC, CBC, and WCVI exhibit the most consistent MREERs throughout the time series. Notably, the period from 2019 onward reflects the lowest and most stable MREERs, potentially due to shifts in management strategies and decreased fishing pressure.

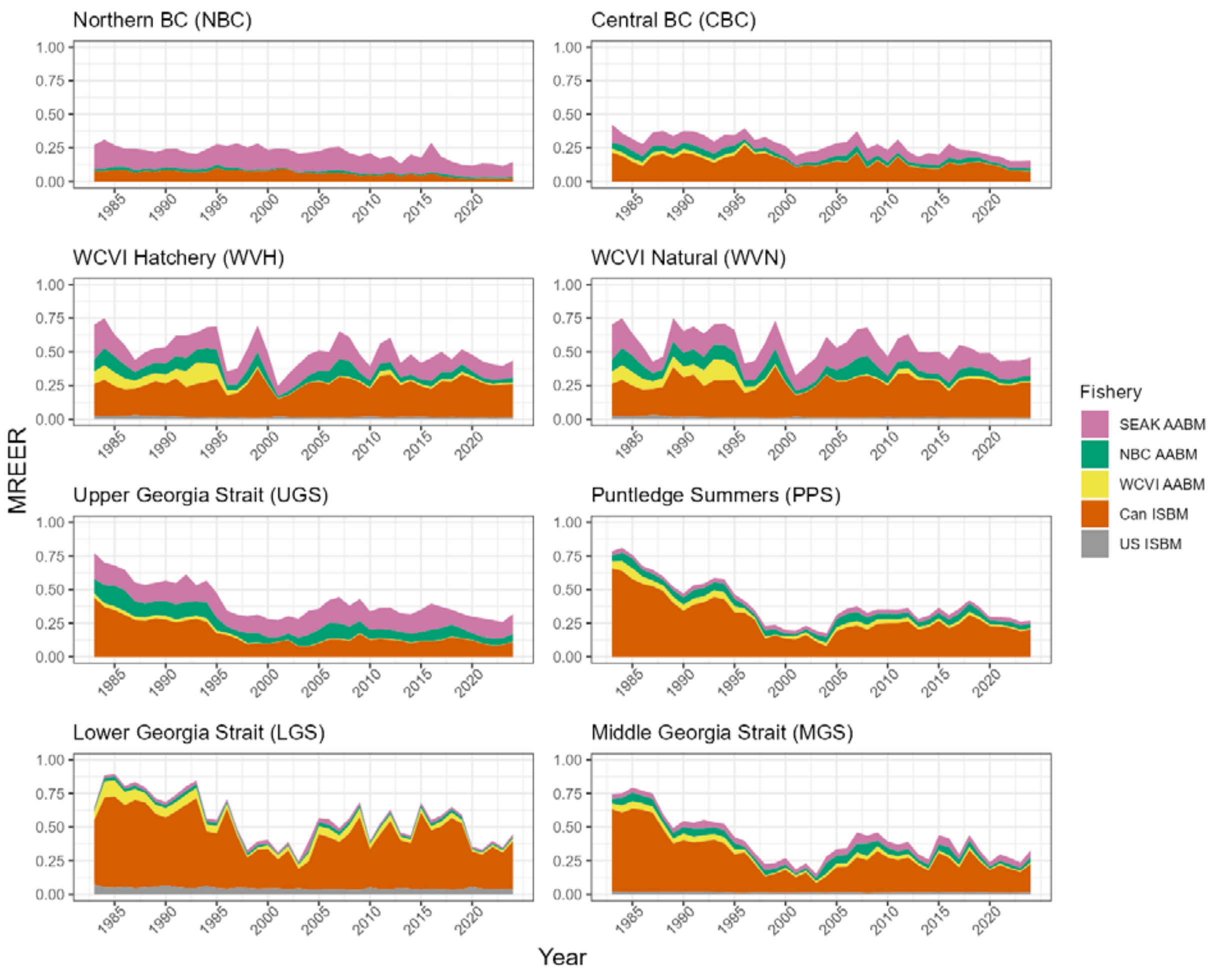

Figure 2-10—Mature-run equivalent exploitation rates (MREER) for Canadian and U.S. AABM and ISBM fisheries on stocks in British Columbia.

Canada ISBM fisheries impact all BC stocks, though the impact on NBC is considerably lower than other stocks. SEAK AABM fisheries also impact all stocks, but MREERs are greater for NBC and UGS in more recent years (2019 onward). WVH, WVN, PPS, LGS, and MGS are primarily impacted by Canada's ISBM fisheries, with SEAK AABM also contributing to impacts on WVH and WVN. NBC AABM has smaller but consistent impacts across most BC stocks, whereas WCVI AABM has small impacts that have declined in recent years.

Fraser

The Fraser region in BC exhibits trends similar to those observed in the above MREER figures, with greater variability earlier in the time series and a general decline in exploitation in recent years, reaching some of their lowest values during the 2019–2024 period (Figure 2-11).

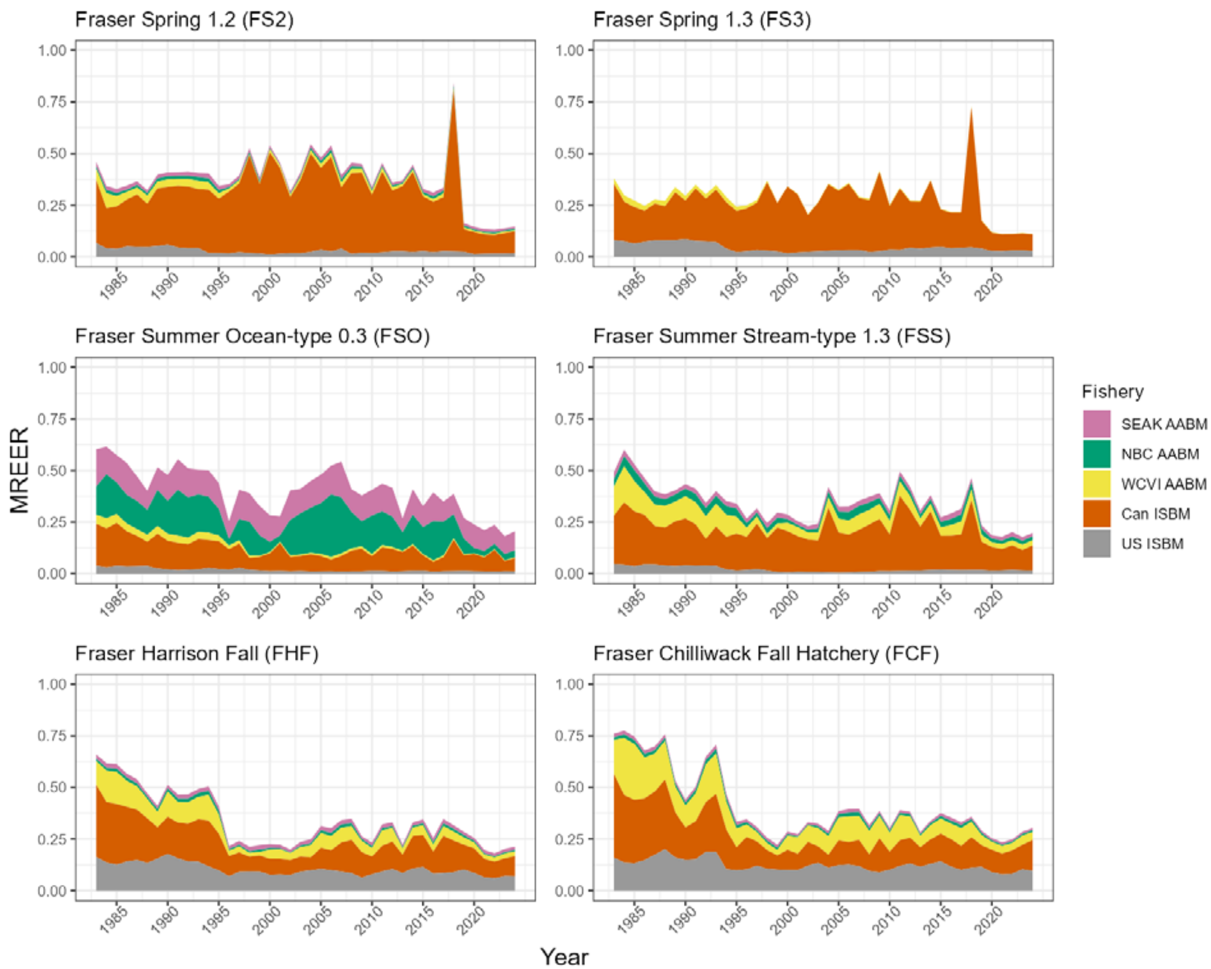

Figure 2-11—Mature-run equivalent exploitation rates (MREER) for Canadian and U.S. AABM and ISBM fisheries on stocks in the Fraser region of British Columbia.

SEAK and NBC AABM MREERs are greatest for FSO, and minimal for all other Fraser stock groups. Within FSO, SEAK AABM MREER has remained somewhat constant while NBC AABM MREER has decreased in the 2019–2024 period compared to the full time series. WCVI AABM impacts are observed in all Fraser stock groups, but greatest for FSS, FHF, and FCF. WCVI MREER has generally decreased over time for all stock groups, with the 2019–2024 period displaying the lowest MREER estimates.

Throughout the time series, Canadian ISBM MREERs have had the greatest impact of all fisheries for all Fraser stock groups except FSO. Notably for the spring stock groups (FS2 and FS3), Canadian ISBM MREER peaked around the onset of the new Treaty in 2019 but has decreased to its lowest and most stable MREERs during the 2019–2024 period. US ISBM impacts are greatest for the Fraser Fall stock groups (FHF and FCF) and MREER has declined slightly over the time series.

Columbia River

Impacts on Columbia River stocks occur primarily in US ISBM fisheries. For Columbia River Summers and Mid- and Upriver Brights, there are also substantial impacts in the SEAK and WCVI fisheries (Figure 2-12). The remaining summer and fall indicators that have more southerly distributions are all substantially impacted by the WCVI fishery as well. The majority of impacts on the Willamette River spring-returning stock occur in in-river fisheries in the Columbia and Willamette rivers, with comparatively smaller impacts occurring in preterminal fisheries. Preterminal fishery impacts have declined through successive PSC management periods, with the largest reductions following the restructuring of WCVI fisheries in the mid-1990s. Early-maturing Tule stocks, such as those represented by Spring Creek Hatchery and Lower Bonneville Hatchery, are primarily impacted by US ISBM fisheries, with relatively small but consistent impacts occurring in Canadian ISBM fisheries and diminishing impacts occurring in WCVI AABM fisheries.

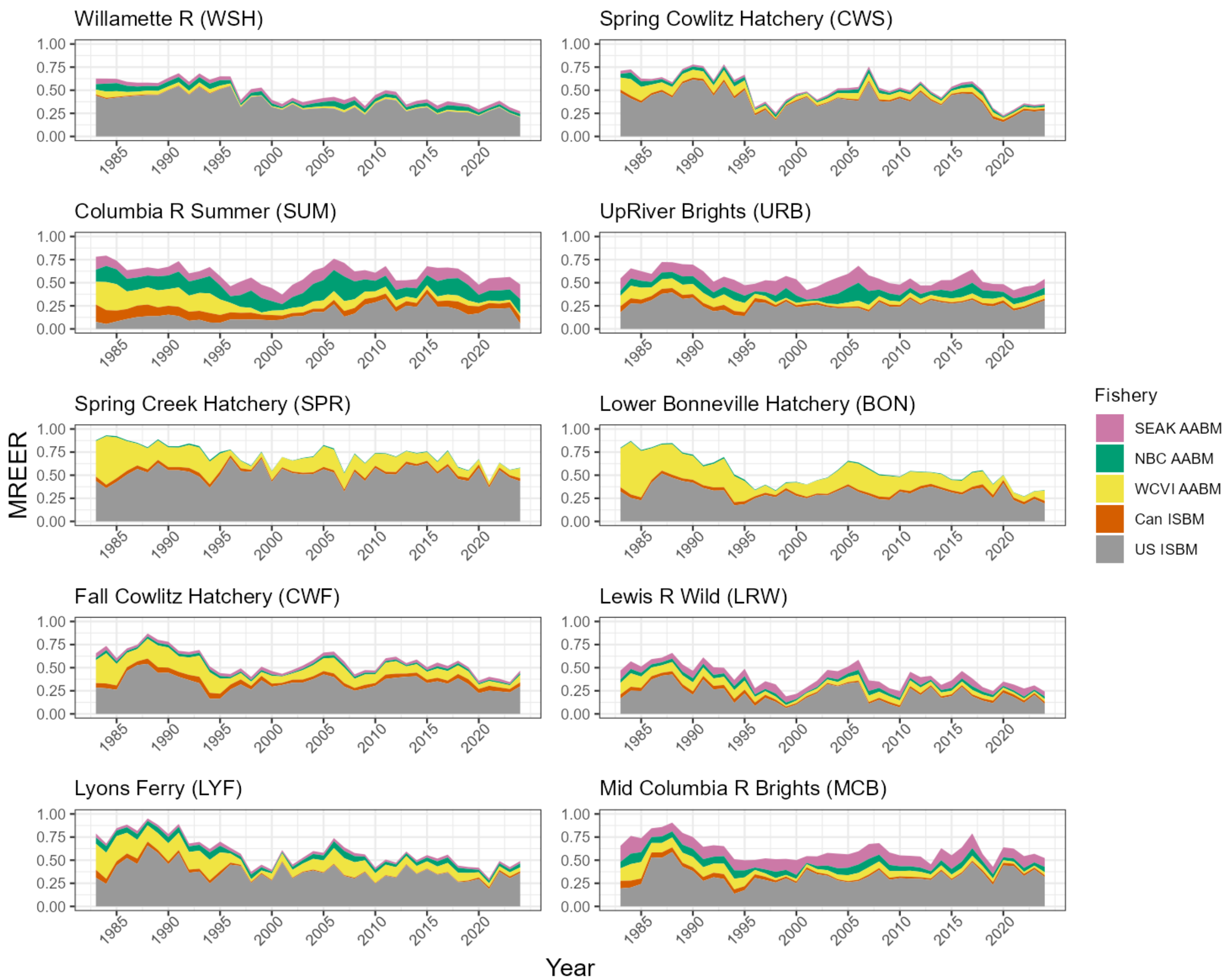

Figure 2-12— Mature-run equivalent exploitation rates (MREER) for Canadian and U.S. AABM and ISBM fisheries on stocks in the Columbia River.

Puget Sound

Total mature-run equivalent exploitation rates have generally declined across all Puget Sound stocks, but the rate of decline varies across fisheries (Figure 2-13). For example, U.S. ISBM impacts across all stocks have remained relatively stable across the timeseries while impacts from the WCVI AABM fishery has dwindled across all stocks. An important consideration here, however, is that the PSC Chinook model does not account for the differential impacts of MSFs on marked and unmarked fish. As a result, MREERs presented here for wild stocks may be biased high in fisheries where MSFs occur, such as U.S. ISBM, where most recreational fisheries inside Puget Sound have transitioned to MSFs over the past two decades. Canadian ISBM impacts have also remained stable, even while shrinking somewhat in the early to mid-2000s. The SEAK AABM and NBC AABM fisheries have consistently had the lowest proportional impacts on Puget Sound stocks.

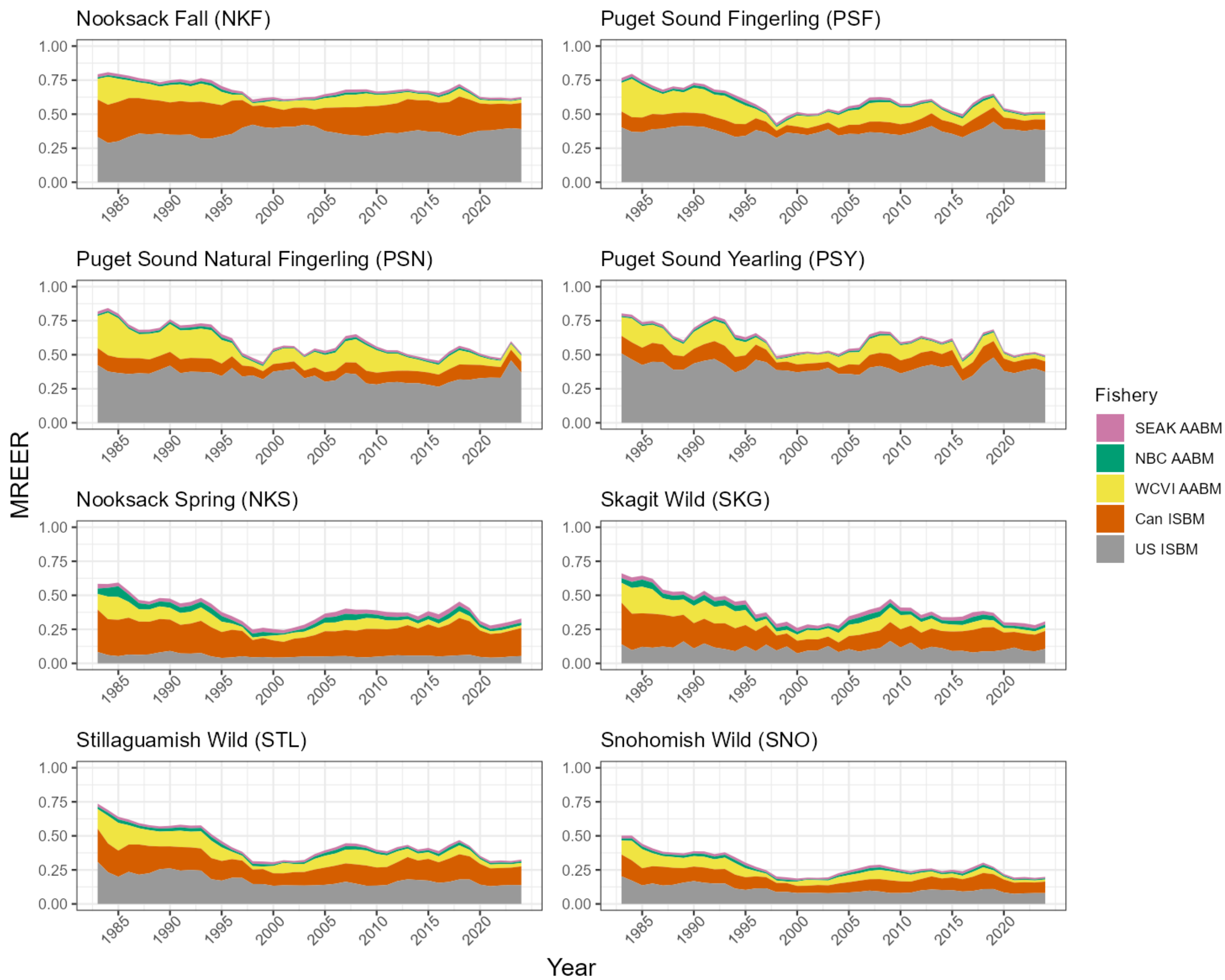

Figure 2-13—Mature-run equivalent exploitation rates (MREER) for Canadian and U.S. AABM and ISBM fisheries on Puget Sound stocks.

Washington-Oregon Coast

On the Washington Coast, MREERs have generally declined for both the WA Coastal Hatchery and WA Coastal Wild stocks (Figure 2-14). Most of the reductions in fishery impacts have come from declines in the AABM fisheries, particularly SEAK and NBC, where the majority of interceptions occur on Washington Coastal stocks. Canadian ISBM fisheries have consistently represented the smallest proportional impacts on the Washington Coastal stocks. Impacts on WA Coastal Hatchery in the US ISBM fishery has declined slightly over the length of the timeseries, while US ISBM impacts on WA Coastal Wild have remained somewhat stable.

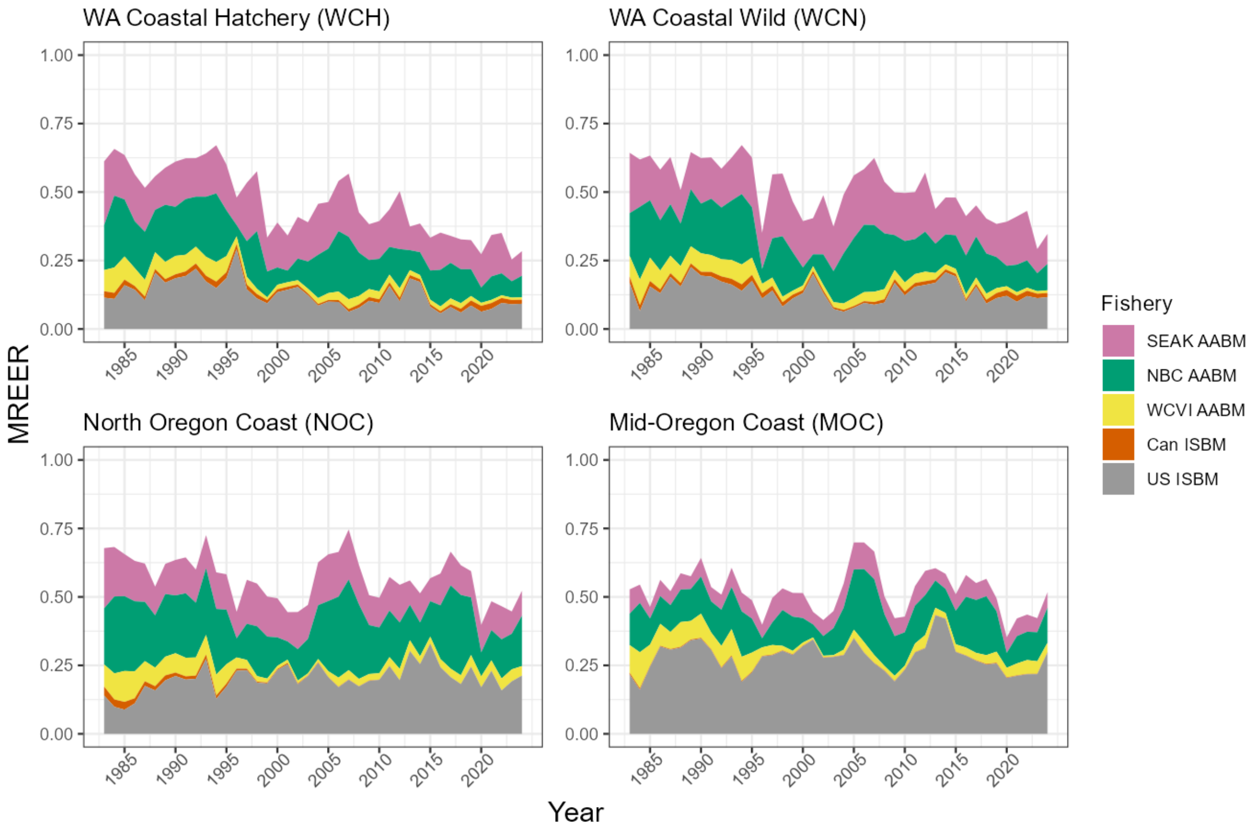

Figure 2-14—Mature-run equivalent exploitation rates (MREER) for Canadian and U.S. AABM and ISBM fisheries on Washington-Oregon Coast stocks.

For the Oregon Coast, MREERs display a mix of impacts from SEAK AABM, NBC AABM, WCVI AABM and US ISBM fisheries. A small impact on North Oregon Coast (NOC) stocks in the Canadian ISBM fishery has essentially disappeared following its restructuring in the 1990s. Impacts from WCVI AABM have been least among the AABM fisheries for both NOC and Mid-Oregon Coast (MOC), particularly from the mid-1990s to the late 2000s, and still thereafter reduced from the level of impacts seen in the earliest years. Through time, SEAK AABM and NBC AABM have had large impacts on both aggregates, particularly NBC on MOC. US ISBM impacts on NOC have always been relatively large, generally increasing proportionately since the beginning of the time-series. For MOC, US ISBM impacts have been consistently large, being the largest mortality component for many years or periods of years. For both the NOC and MOC aggregates, terminally operated sport fisheries have dominated the US ISBM take in both areas.

2.4 AABM Fisheries Performance

The AABM regime relies on relationships based on data for catches and incidental mortality, fishery impacts (CWT indices), and the abundance indices (AIs) generated by the PSC Chinook Model. The Chinook Model uses catch data (i.e., encountered fish that are either kept or released), escapement data, CWT recovery data, and abundance forecasts to predict the AI for the upcoming year and to estimate the time series of AIs since 1979 (identified as the post season AIs). The performance of the AABM fishery management regimes is evaluated based on two measures of error: management error and composite error. Management error assesses how well the management agency was able to keep catch within the preseason annual catch limit (ACL) and is simply calculated as the difference between actual catch and the preseason ACL. The composite error assesses the error between the observed catch estimate and the postseason ACL.

When assessing management error, the postseason catch estimate provided immediately after the season (i.e., first postseason catch) was used. Catch estimates may be updated with additional data or improved methods subsequent to the first postseason estimate; this is referred to as the “best available” catch estimate. The first postseason catch is used to assess management error (Table 2-6; Figure 2-15), as it reflects the estimate that was available to inform management decisions at the time. To ensure the relationship between the ACL and all postseason catch estimates are tracked and understood, both the first postseason and best available catch estimates are provided.

Annual Performance

The differences between the first postseason catches and the postseason ACLs (Figure 2-15) are the result of two processes: 1) management error, defined here as the difference between the first postseason catch estimate and the preseason ACL; and 2) model error which is the difference between the preseason ACL and the postseason ACL. We use the term management *error* but recognize it as a misnomer in many situations (when negative) as the deviations of catch from the preseason ACL may have been the result of deliberate actions. The combination of management error and model error is referred to as *composite error,* which is calculated as the difference between the first postseason catch estimate and the postseason ACL. Management error in the current Treaty Agreement period (2019–2024) averaged -2.6% for the SEAK AABM fishery, -45.0% in the NBC AABM fishery, and -18.6% in the WCVI AABM fishery while composite error has averaged 24.2%, -45.1%, and -17.6%, respectively (Table2-6; Table 2-7).

Table 2-6—SEAK AABM fishery preseason catch limit, postseason catch limit, and observed catch. Management error is provided as the difference between the first postseason catch and preseason catch limit as both absolute fish and relative difference. Similarly, composite error is provided as the difference between the first postseason catch and postseason catch limit. Negative differences represent 'underages' and positive values represent 'overages'.

Year	SEAK AABM						
	Catch Limit		First Postseason Catch	Management Error[1]		Composite Error[2]	
	Pre[3]	Post					
2019	140,323	140,323	140,307	-16	0.0%	-16	0.0%
2020	205,165	140,323	204,624	-541	-0.3%	64,301	45.8%
2021	205,165	140,323	202,083	-3,082	-1.5%	61,760	44.0%
2022	266,585	140,323	238,621	-27,964	-10.5%	98,298	70.1%
2023	206,027	267,594	202,740	-3,287	-1.6%	-64,854	-24.2%
2024	211,400	190,000	207,811	-3,589	-1.7%	17,811	9.4%
Mean	205,778	169,814	199,364	-6,413	-2.6%	29,550	24.2%

Footnotes:

[1]Management Error = First Postseason Catch - Preseason Catch Limit

[2]Composite Error = First Postseason Catch - Postseason Catch Limit

[3]For 2019–2022 the SEAK preseason ACL was determined using the CPUE statistic in conjunction with Table 2 of Chapter 3 of the 2019 PST Agreement. For 2023, the SEAK preseason ACL was determined using the predicted AI derived using the multivariate model and 17 tier structure adopted by the PSC in February 2023. In 2024, the SEAK preseason ACL was determined using the PSC Chinook Model preseason AI and Table 1.

Table 2-7—Canadian AABM fisheries preseason annual catch limit (ACL), postseason ACL, first postseason catch and best available catch. Management Error is provided as the difference between the first postseason catch and preseason ACL as both absolute fish and relative difference. Similarly, Composite Error is provided as the difference between the first postseason catch and postseason ACL. Negative differences represent 'underage' and positive values represent 'overage'.

	NBC AABM													
	Catch Limits		**Reported Catch**		**Catch difference**		**Preseason Statistics**				**Postseason Statistics**			
Year	**Pre**	**Post**	**First Postseason Catch**	**Best Available Catch**	**# Fish**	**Percent**	**Management Error[1]**		**Difference between Best[3] Available Catch and Preseason ACL**		**Composite Error[2]**		**Difference between Best[3] Available Catch and Postseason ACL**	
2019	124,800	122,200	88,026	94,401	6,375	7.2%	-36,774	-29.5%	-30,399	-24.4%	-34,174	-28.0%	-27,799	-22.7%
2020	133,000	141,700	36,103	38,042	1,939	5.4%	-96,897	-72.9%	-94,958	-71.4%	-105,597	-74.5%	-103,658	-73.2%
2021	153,800	147,200	90,987	87,758	-3,229	-3.5%	-62,813	-40.8%	-66,042	-42.9%	-56,213	-38.2%	-59,442	-40.4%
2022	142,800	133,000	83,153	85,446	2,293	2.8%	-59,647	-41.8%	-57,354	-40.2%	-49,847	-37.5%	-47,554	-35.8%
2023	141,700	229,000	78,254	85,120	6,866	8.8%	-63,446	-44.8%	-56,580	-39.9%	-150,746	-65.8%	-143,880	-62.8%
2024	179,400	145,000	106,823	106,823	0	0.0%	-72,577	-40.5%	-72,577	-40.5%	-38,177	-26.3%	-38,177	-26.3%
Mean	145,917	153,017	80,558	82,932	2,374	3.4%	-65,359	-45.0%	-62,985	-43.2%	-72,459	-45.1%	-70,085	-43.5%

	WCVI AABM													
	Catch Limits		**Reported Catch**		**Catch difference**		**Preseason Statistics**				**Postseason Statistics**			
Year	**Pre**	**Post**	**First Postseason Catch**	**Best available catch**	**# Fish**	**Percent**	**Management Error[1]**		**Difference between Best[3] Available Catch and Preseason ACL**		**Composite Error[2]**		**Difference between Best[3] Available Catch and Postseason ACL**	
2019	79,900	76,000	73,482	81,851	8,369	11.4%	-6,418	-8.0%	1,951	2.4%	-2,518	-3.3%	5,851	7.7%
2020	87,000	78,500	43,581	46,058	2,477	5.7%	-43,419	-49.9%	-40,942	-47.1%	-34,919	-44.5%	-32,442	-41.3%
2021	88,000	84,800	75,776	77,556	1,780	2.3%	-12,224	-13.9%	-10,444	-11.9%	-9,024	-10.6%	-7,244	-8.5%
2022	100,700	112,400	95,288	99,117	3,829	4.0%	-5,412	-5.4%	-1,583	-1.6%	-17,112	-15.2%	-13,283	-11.8%
2023	115,500	115,500	83,596	92,700	9,104	10.9%	-31,904	-27.6%	-22,800	-19.7%	-31,904	-27.6%	-22,800	-19.7%
2024	105,000	101,800	97,583	96,128	-1,455	-1.5%	-7,417	-7.1%	-8,872	-8.4%	-4,217	-4.1%	-5,672	-5.6%
Mean	96,017	94,833	78,218	82,235	4,017	5.5%	-17,799	-18.6%	-13,782	-14.4%	-16,616	-17.6%	-12,598	-13.2%

Footnotes:

[1]Management Error = First Postseason Catch - Preseason Catch Limit

[2]Composite Error = First Postseason Catch - Postseason Catch Limit

[3]Included for illustration purposes since Catch Limits would have been different if updated catches were used for Model Calibrations

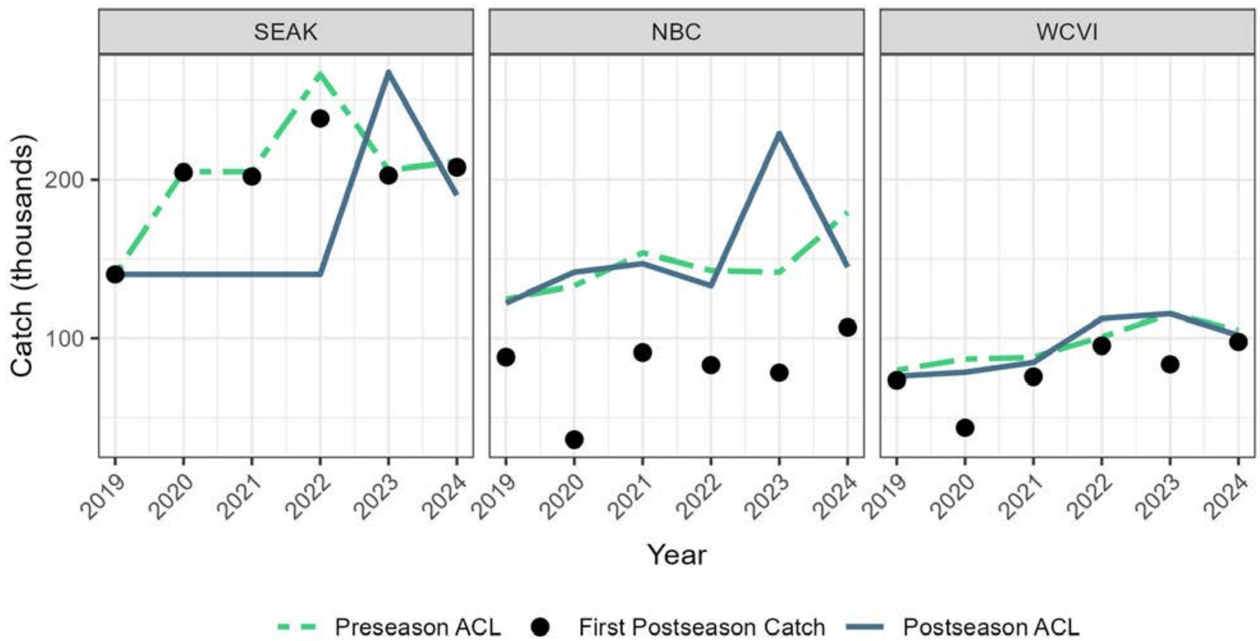

Figure 2-15—Comparison (in thousands of fish) of preseason ACL, first postseason catch estimate, and postseason ACL by year for each AABM fishery.

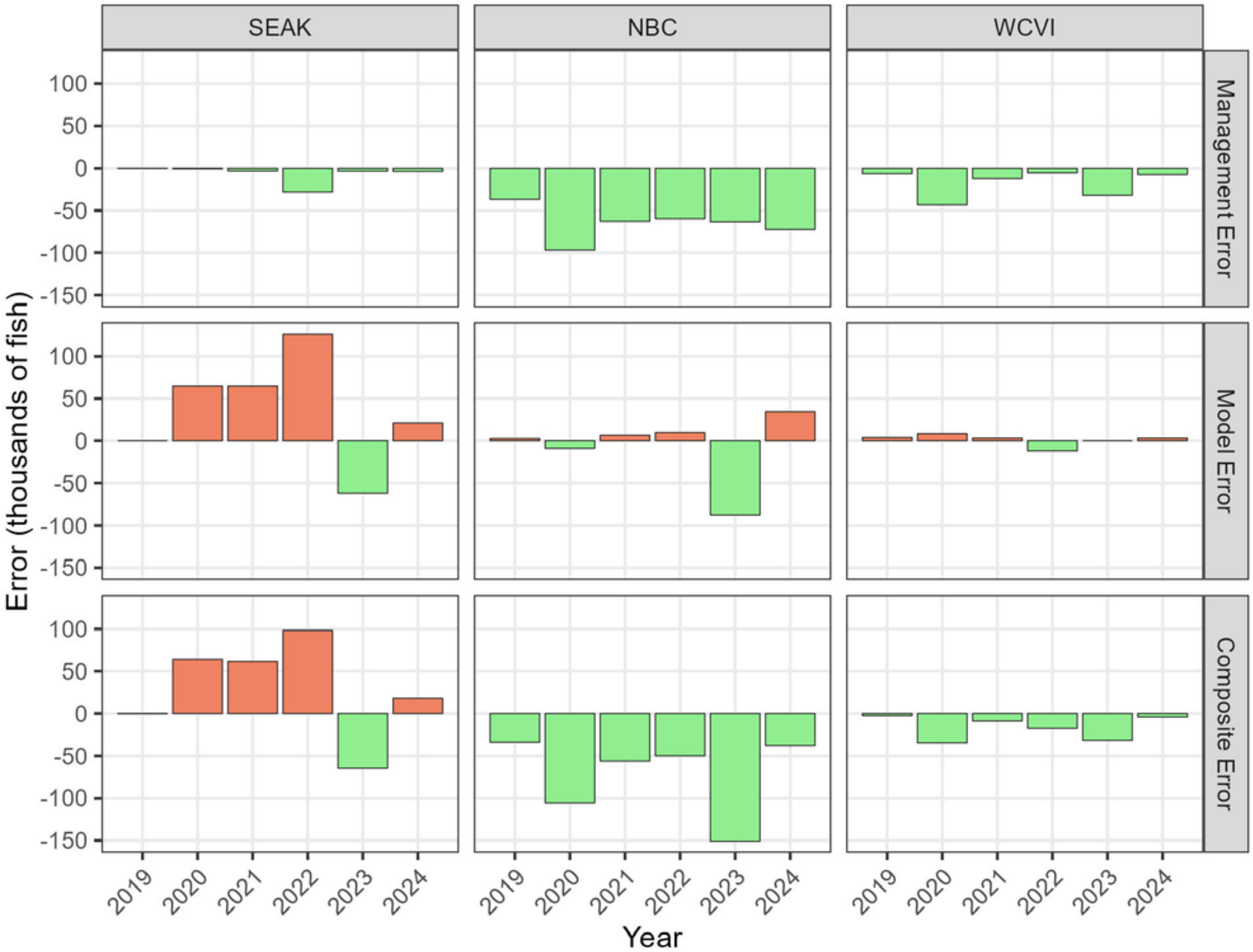

Figure 2-16—Management error (defined as first postseason catch estimate minus preseason annual catch limit), model error (preseason annual catch limit minus postseason annual catch limit), and composite error (first postseason catch estimate minus postseason annual catch limit) by year for each AABM fishery, where green bars represent 'underage' and red bars represent 'overage'.

SEAK AABM Fishery

Between 2019 and 2024, the SEAK AABM first postseason catch was below the preseason catch limit every year, with an average management error of -2.6% and a range of 0 and -10.5% (Table 2-6). Average composite error over the same time period was 24.2% with a range between -24.2% and 70.1%. These relatively large errors were driven by model error (preseason catch limit – postseason catch limit), with a particularly large deviation in 2022. This was also noticeable in the management error for 2022, which was well below what is typical for this fishery because catch rates were much lower than expected for the AI and associated preseason catch limit. These errors suggest the model preseason AI was too high.

NBC AABM Fishery

The NBC first postseason catch was consistently below the preseason allowable catch with an average of -45.0% from 2019 to 2024 (range -29.5% to -72.9%; Table 2-7). Negative management errors in NBC were the result of Canada's domestic efforts to reduce impacts on Fraser River stocks of concern and WCVI stocks, and to provide increased availability of not-at-risk Fraser River Chinook for First Nations harvest opportunities. Model error in NBC were generally smaller compared to management error (ranging from -38.1-% to 23.7%) (Figure 2-16). Updates to 2019 to 2023 catch estimates in NBC AABM (best available catch) resulted in an average increase of 4.1%, ranging from -3.5% to 8.8%, compared to the first postseason catch estimate. The best available catch reflects improvements to recreational catch estimation methods.

WCVI AABM Fishery

Average management error in WCVI AABM was -18.6% from 2019 to 2024 with a range of -5.4% in 2022 to -49.9% in 2020 (Figure 2-16). Similar to NBC AABM, management error typically had a larger impact on composite error compared to model error, except for 2022 with management error of -5.4% compared to model error of -10.4%. All other years had relatively lower model errors (ranging from 0% to 10.8%) compared to management error. Updates to 2019 to 2023 catch estimates in WCVI AABM resulted in an average increase of 6.9%, ranging from 2.3% to 11.4%, compared to the first postseason catch estimate. Similar to NBC AABM, the increase from the first postseason and best available catch was associated with improvements to recreational catch estimation methods.

2.4.2 AABM Fishery Indices

The reliability of model outputs, including abundance index/catch limit predictions, are dependent on many factors including model parameters (e.g., base period exploitation rates), model structure (e.g., spatial-temporal fishery strata), and annual CWT, catch, and run-size inputs (forecast or postseason estimates) used for calibration. In the following sections, annual comparisons of model-based AABM fishery exploitation rate indices (FIs) versus CWT-based FIs are presented for landed catch.

Fishery indices are calculated from exploitation rate estimates, which can be derived from either the PSC Chinook Model or CWT estimates via the CTC ERA. Due to data limitations for sport and net fisheries during the base period (1979–1982), model-based FIs are only calculated for the troll component of each AABM fishery. Since troll fisheries typically account for most of the exploitation in AABM fisheries, it is assumed that these troll-specific FIs are representative of the entire AABM fishery. However, this assumption may be violated if the relative proportion of exploitation attributed to the three component fisheries (troll, sport, net) shifts considerably over time from that in the base period years. In such a case, the troll-specific FI may be less representative of the AABM fishery overall.

In contrast, CWT-based FIs derived from exploitation rates from the ERA do not rely on this assumption. Instead, they incorporate data from all component fisheries in which they are sampled and thus provide an empirical estimate. Therefore, model-based FIs can be evaluated by comparing them to empirical CWT-based FIs, presented in this section.

Fishery indices can be constructed as a ratio of means (ROM) or as a stratified proportional fishery index (SPFI; CTC 2009). However, because of data limitations (detailed in the Harvest Rate Index Analysis (CTC 2009), the CTC has used ROMs to represent NBC and WCVI AABM fisheries. Comparisons between annual Model- and CWT-based SPFIs (SEAK) or ROMs (NBC and WCVI) associated with landed catches used in the Chinook model are provided below.

Southeast Alaska Troll Fishery Exploitation Rate Indices

The SEAK troll FI based on Chinook Model estimates closely follows the trend of the CWT-based SPFI from 1979 through 2000 (Figure 2-17). However, since 2001, the model FI estimates have typically been higher than the CWT-based SPFI estimates. Throughout the time series, the model-based estimates show less interannual variability than the CWT-based indices. The CWT-based estimate was at a historic low in 2019 for both total mortality and landed catch. The model-based estimates were also low, though not outside the historic range of estimates.

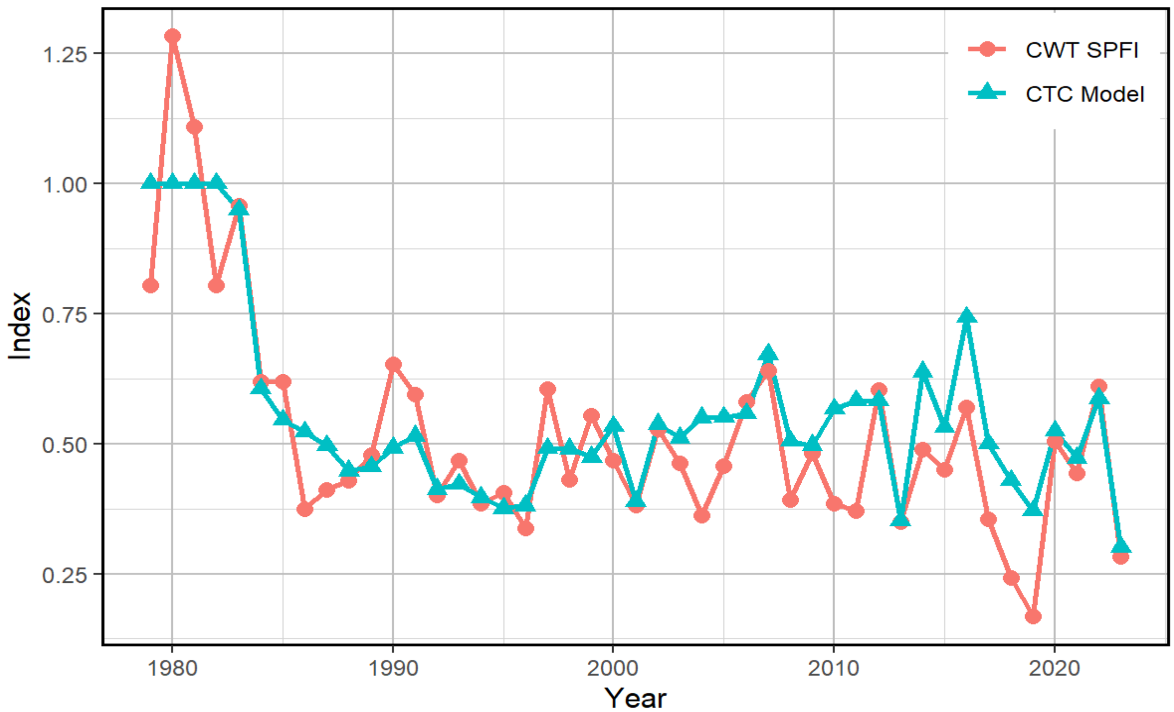

Figure 2-17—Estimated coded-wire tag (CWT)-based stratified proportional fishery index (SPFI) and Pacific Salmon Commission Chinook Model-based fishery indices for landed catch in the Southeast Alaska (SEAK) troll fishery through 2023.

Northern British Columbia Troll Fishery Indices

The model-based FIs for NBC troll fishery generally follow the same trend as the CWT-based ROM FIs (Figure 2-18) across the time series. The ROM FI was consistently lower than the Chinook Model index between 2003 and 2008 and much higher than the model-based FI in 2018 and 2022. From 2019 to 2021, the differences between the indices were smaller.

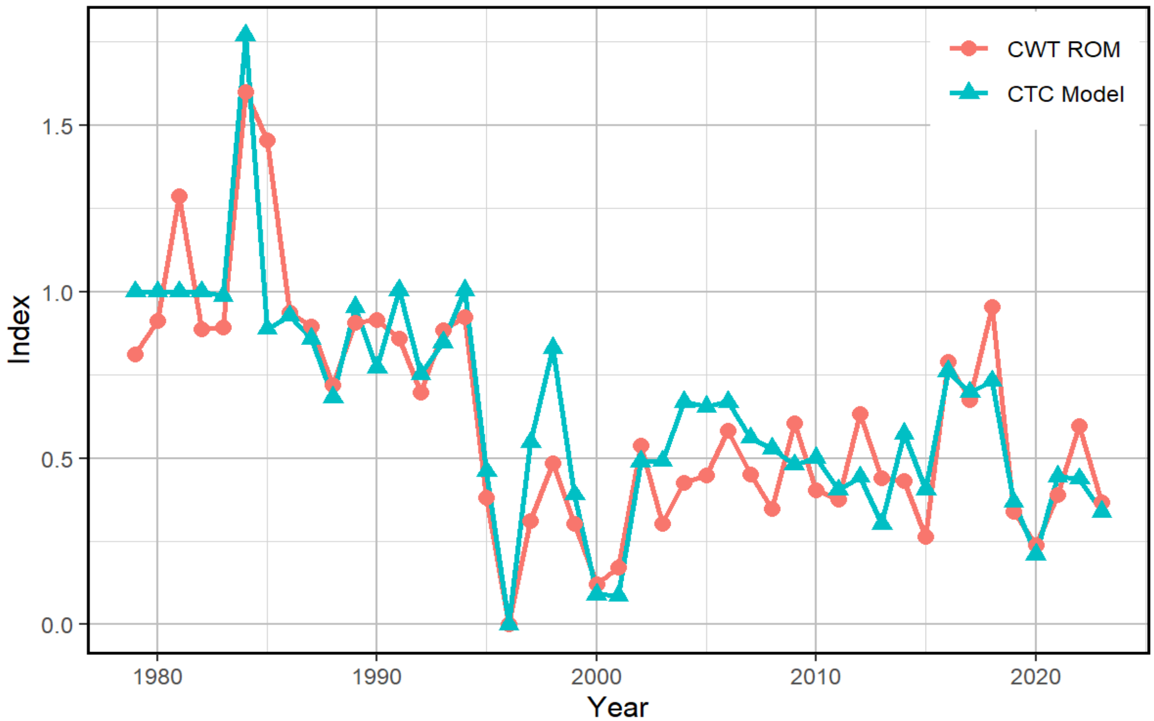

Figure 2-18—Estimated coded-wire tag (CWT)-based ratio of means (ROM) and Pacific Salmon Commission Chinook Model-based fishery indices for landed catch in the Northern British Columbia (NBC) troll fishery through 2023.

West Coast Vancouver Island Troll Fishery Indices

For the WCVI troll fishery, correspondence between the model-based FI and the CWT-based ROM FI was very close from the start of the time series (1979) to the mid-1990s (Figure 2-19). Starting in 2000, model-based and CWT-based ROM FIs diverged noticeably, with the CWT-based FIs consistently exceeding the model-based FIs. This divergence is attributed to changes in the spatial and temporal conduct of the fishery (e.g., cessation of fishing in the summer period) to reduce impacts on B.C. stocks of conservation concern (e.g., Fraser River early return-timing stocks). The CWT-based FI has corresponded more closely with the model-based FI since 2009, although recent divergence in 2022 may also be attributed to conservation measures being implemented to protect at-risk Fraser Chinook. An examination of the temporal distribution of catch in WCVI troll shows that most of the catch in years prior to 1998 occurred during the July to September time frame, whereas during 1998 and the years of the 1999 PST Agreement the catch shifted to other months of the year.

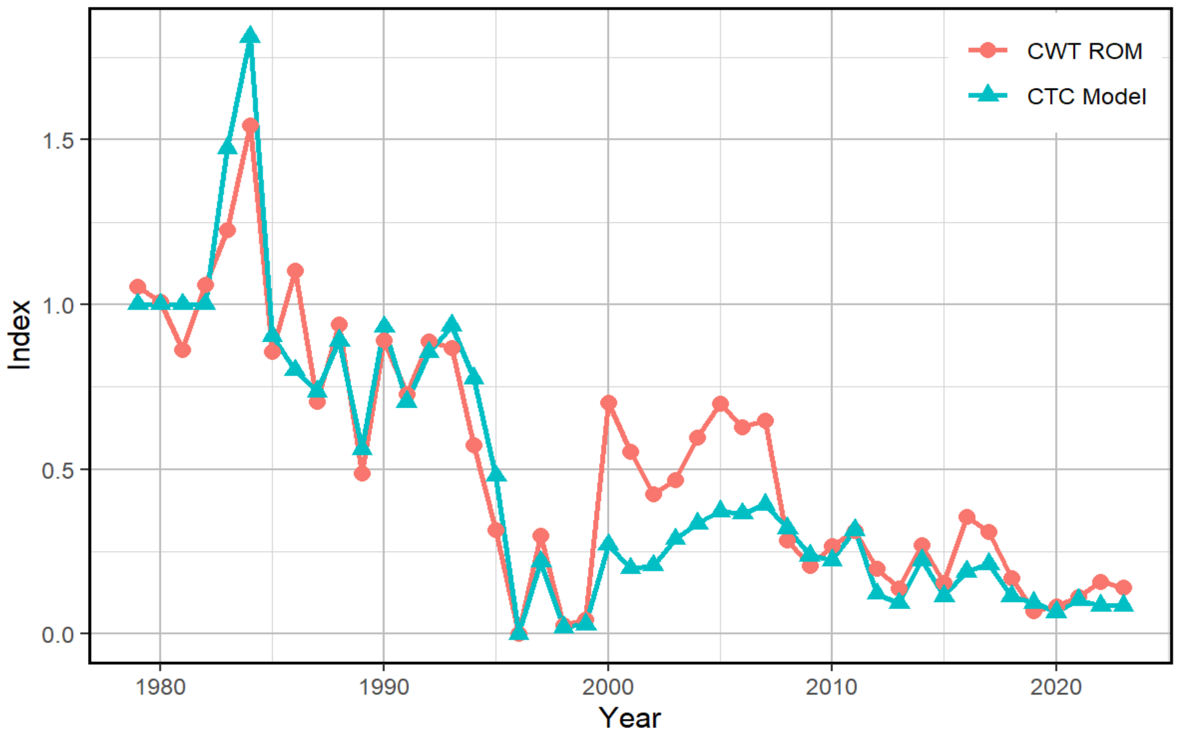

Figure 2-19—Estimated coded-wire tag (CWT)-based ratio of means (ROM) and Pacific Salmon Commission Chinook Model-based fishery indices for landed catch in the West Coast Vancouver Island (WCVI) troll fishery through 2023.

In terms of years in the current Agreement, 2019–2023, the FIs from the Chinook Model correspond closely to those produced by CWT-based ROM for the two Canadian AABM fisheries NBC and WCVI. However, for the SEAK AABM fishery, the 2014 through 2019 CWT-based SPFIs were noticeably lower than the FI produced by the Chinook Model.

2.5 Key Points and Recommendations

This section highlights key points based on the CTC's evaluation of fishery performance of AABM and ISBM fisheries.

2.5.1 Alternative Metrics to CYER

The CYER was introduced with the 2019 annex to be used in ISBM evaluation. Parties have generally met annual stock-specific CYER obligations during the Treaty obligation period. Nonetheless, several concerns remain with CTC members regarding reliance on CYER in ISBM evaluations. Continued exploration of alternative, or complementary, metrics to CYER for setting and monitoring limits on exploitation rates on individual stocks in ISBM fisheries should be encouraged—as well as ensuring the requisite data is available in a timely manner.

The MREER is a potential candidate metric for expanded use in CTC evaluations. Like CYER, it can be calculated from catch data on incomplete cohorts, enabling an estimate to be produced as soon as new CWT data become available. Further like CYER, it is additive across stock and fishery components, allowing information to be presented for any desired variety of comparisons (e.g., by Party or between specific fisheries).

The MREER has an intuitive definition as the proportional reduction of all potential spawners in a calendar year due to fishing. The metric considers age-specific maturation and natural mortality rates to estimate the number of potential spawners removed by fishing. Thus, MREER is an appealing alternative and/or complement to the current CYER metric.

2.5.2 AABM Base Period

A concern that is expressed regularly within the CTC is the use of an AABM Base Period (1979–1982) that is almost 50 years old and raises questions of representativeness of that base period in terms of stock distribution or fishing patterns to the present day (or in previous agreements). Methods exist for correcting some of these deficiencies (e.g., Out-of-Base procedure, Fishery Policy values), but these involve additional unquantified uncertainty. Additionally, there are CWT indicator stocks that were important contributors during the base period but are no longer active (e.g., University of Washington White River Yearling), and there are important contemporary contributors that were not tagged in the base period (e.g., Shuswap).

> ***Recommendation 2.1. Consider base period evaluation and update for AABM fisheries.*** As long as AABM management relies on an AI or similar metric, the reference to a base period will be necessary. Current explorations of alternative models (the SCA) will reduce but not eliminate the reliance on a base period. The choice to continue utilizing the current Chinook Model would be accompanied by a concurrent suggestion to re-evaluate and perhaps recast that time period from which future AIs are calculated.

3. Analytic Performance and Improvements

Chapter 3 of the 2019 Pacific Salmon Treaty Agreement mandates that the Chinook Technical Committee (CTC) report annual metrics—including catches, harvest rate indices, incidental mortality estimates, exploitation rates, and supporting model results—to inform and evaluate the management of Chinook salmon fisheries and stocks within the Treaty area. The CTC uses numerous analytical tools to complete these annual tasks including the PSC Chinook Model (hereafter; Chinook Model), the programs and computer scripts that comprise the annual exploitation rate analysis (ERA), and a host of other programs and tools that fulfill various purposes in the implementation of Chapter 3. Candid evaluation of the status and performance of these tools is critical to ensuring that the CTC is positioned to provide the best scientific advice possible in the coming Treaty annex. Many of the programs and analytical tools used by the CTC have not been updated for several decades; nonetheless, we still must contend with the reality that many of the underlying assumptions of our models and methods (e.g., stable stock and age composition, fishery behavior, and maturation rates) are becoming increasingly stressed under contemporary circumstances.

The Chinook Model, originally developed as a tool to rebuild depressed Chinook stocks by simulating the effects of different fishery management scenarios, has been repurposed over time and is now used to set annual catch limits for the three AABM fisheries. The Chinook Model has been modified and adapted through time to accommodate changes to stock and fishery data.

The CTC conducts an annual cohort analysis, a multi-stage procedure to reconstruct age-specific cohort sizes and exploitation histories for each stock, using CWT release and recovery data. This cohort analysis, along with several associated input and output data processing and visualization programs, is collectively referred to as the ERA. The ERA provides several metrics used to evaluate fishery and stock performance, including stock-specific estimates of brood year and calendar year total, age-, and fishery-specific exploitation rates, maturation rates, smolt-to-age-2 (falls) or age-3 (springs) survival rates, and annual distributions of mortalities among fisheries and escapement. Several improvements have been made to the ERA process in the current annex, most notably the incorporation of mark-selective fishing algorithms.

The CTC analytical work group (CTC-AWG), with valued support from the PSC-secretariat, has made improvements in data management, transparency, and reproducibility of our analyses. These improvements have included such projects as the development of the Chinook Analytic and Modelling Platform (CAMP), a centralized cloud-database to house and serve CWT data, the Chinook Extract Transform and Load Executable Program (CETL), an R-based program to replace data handling functions previously provided by a dated windows executable-based Cohort Analysis System (CAS) application, and the conversion of the Exploitation Rate Analysis into R, called R Exploitation Analysis Module (REAM) incorporating data summary and visualization programs. These changes have streamlined the CTC-AWG's workflow and lowered barriers to future program development by translating legacy code into modern programming languages. The code for CETL and REAM is public and has been made available through the CTC GitLab (R packages · GitLab).

A Research and Development (R&D) work group was formed in May 2022 to investigate alternative modeling approaches and methodologies to improve Chinook salmon management tools that could be applied in the next PST Agreement (2029). This research effort is necessary to ensure a better understanding of Chinook populations, fishery resources, and management outcomes based on the best available science and technology. A description of progress made towards these improvements is contained in this section.

3.1 Chinook Model Performance

The implementation of the 1999 Agreement changed the regime for some fisheries to abundance-based management through the estimation of abundance indices (AIs) for fishery areas. Each year, the annual Chinook Model calibration estimates the postseason AIs for the previous year and the preseason AIs for the current year, which are translated into pre- and postseason annual catch limits (ACLs). Preseason AIs are used to determine the ACLs in the upcoming fishing season for the AABM fisheries as per Table 1 of Chapter 3 of the PST. Modifications to the Chinook Model, including various improvements, refinement of data inputs, and re-calibration of the 1979–1982 base period data are described in this section.

3.1.1 Stock Forecasting

The ability of the Chinook Model to accurately predict Chinook salmon ocean abundance indices in AABM fisheries depends on a variety of aspects such as the quality of data provided as input and the accuracy of parameters estimated by the model. The accuracy of forecasts relative to actual returns is one of the primary factors that affects the accuracy of preseason AIs compared to postseason AIs. This is particularly apparent if the stock contributes significantly to an AABM fishery. However, there are other factors (e.g., forecasted and observed maturation rates) that play a role in how well the pre- and postseason AIs align, which can sometimes counteract the effect of forecast performance.

Previous work by the CTC has demonstrated that the Chinook Model is sensitive to the quality of the current year spawning escapement or terminal run estimates provided to the model. Agency-produced forecasts are provided for all model stocks, except for SEAK and transboundary stocks which are produced directly from the Chinook Model. Thus, variation between predicted and actual ocean abundance can result from two processes: 1) the ability of the model to fit the agency-produced forecasts used as inputs, and 2) the ability of the agency-produced forecasts to accurately predict the actual return of Chinook salmon in the upcoming year. Poor agency forecasts will result in real-world degradation in Chinook Model performance because it uses the agency forecasts as inputs. For SEAK and transboundary stocks, variation between model forecasts and actual returns are only influenced by the Chinook Model's ability to accurately predict the actual returns in the upcoming year.

Transition to the Phase II Chinook Model base period occurred in 2020. Overall, since transitioning to the Phase II model, the model forecasts have been similar to the agency-produced forecasts. This result is strongly influenced by the incorporation of the agency-produced forecasts into the model calibration procedure. The mean percent error (MPE) and mean absolute percent error (MAPE) for model forecasts relative to agency-produced forecasts were 0.3% and 12.9%, respectively. On average, model forecasts displayed high precision and were close to, but slightly higher than, the agency-produced forecasts. For 2020–2024 (the only years with both forecasts and actual returns since transitioning to the Phase II model), the agency-produced forecasts were, on average, biased slightly low, but precise compared to the actual returns, with MPE of -0.2% and MAPE of 30.9%. Similarly, the MPE and MAPE for model forecasts relative to actual returns were biased high, yet precise compared to actual returns, with MPE of 4.1% and MAPE of 37.5%, respectively.

Forecast error by year and stock is displayed in Figure 3-1, arranged from north to south to highlight regional trends in forecast performance. Results vary across regions and years, with no consistent interannual trends observed. Figure 3-2 compares the agency-produced forecast with the actual return for each stock by year, ordered by the magnitude of the absolute difference in each year. From 2020 to 2023, the largest absolute differences between agency forecasts and actual returns were in Puget Sound Fingerling (PSF), Columbia Upriver Bright (URB), Spring Creek Hatchery (SPR), and Fraser Summer Ocean (FSO), respectively. All four of these stocks contribute >3% to at least one AABM fishery and would accordingly impact the AI accuracy in each respective year.

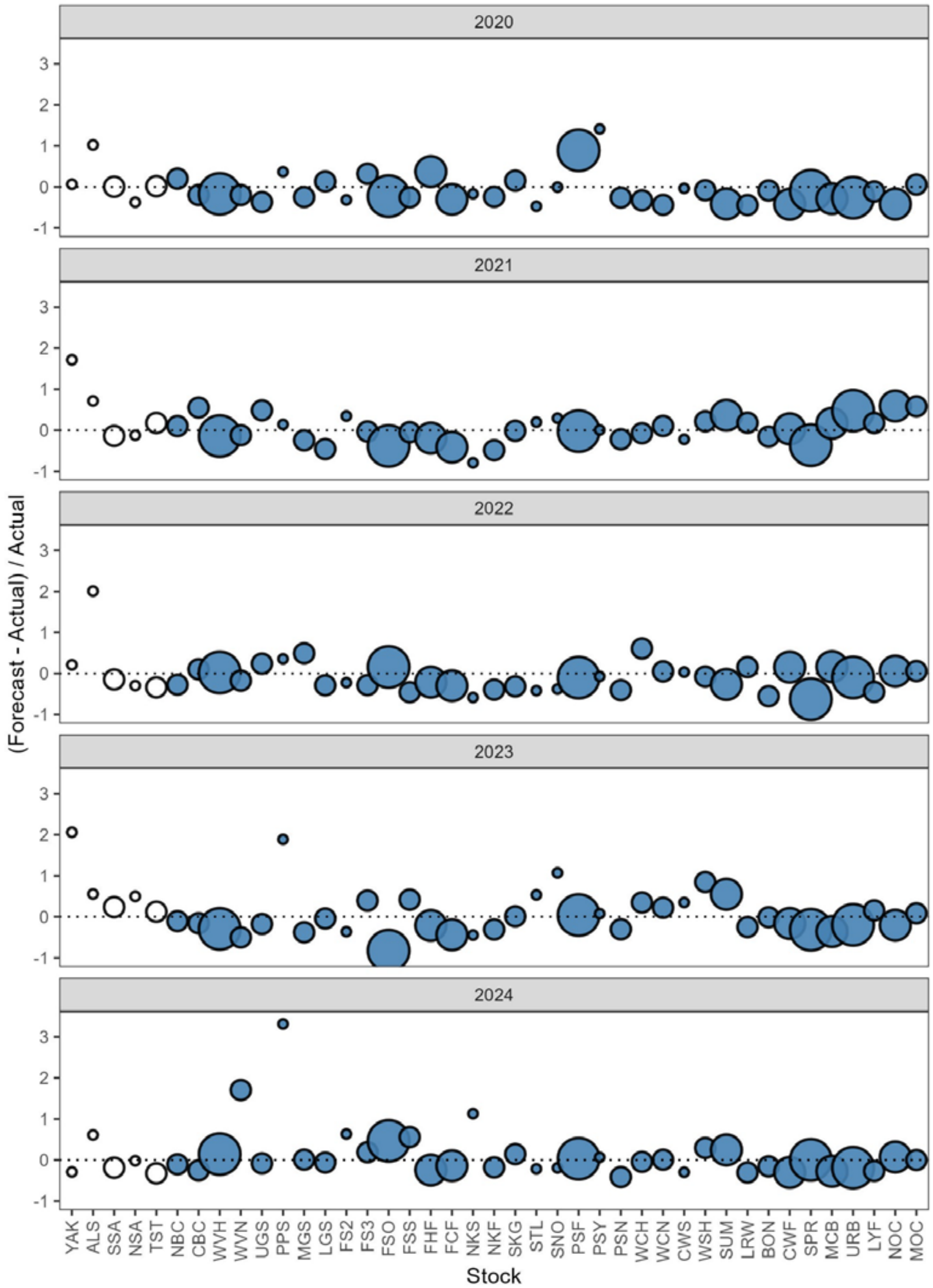

Figure 3-1—The forecast error relative to the actual return for stocks represented in the Pacific Salmon Commission (PSC) Chinook Model for 2020–2024.

Note: Points lying above the dashed horizontal line returned lower than forecast; points lying below the dashed horizontal line returned greater than forecast. Filled (blue) circles represent stocks with agency-produced forecasts; unfilled (white) circles represent stocks with forecasts generated by the Chinook Model. The four circle sizes correspond to categories of increasing relative stock size (based on average terminal run size: <10,000, 10,000–50,000, 50,000–100,000, and >100,000). Stocks are arranged along the x-axis from north to south and are defined according to the model stock acronyms.

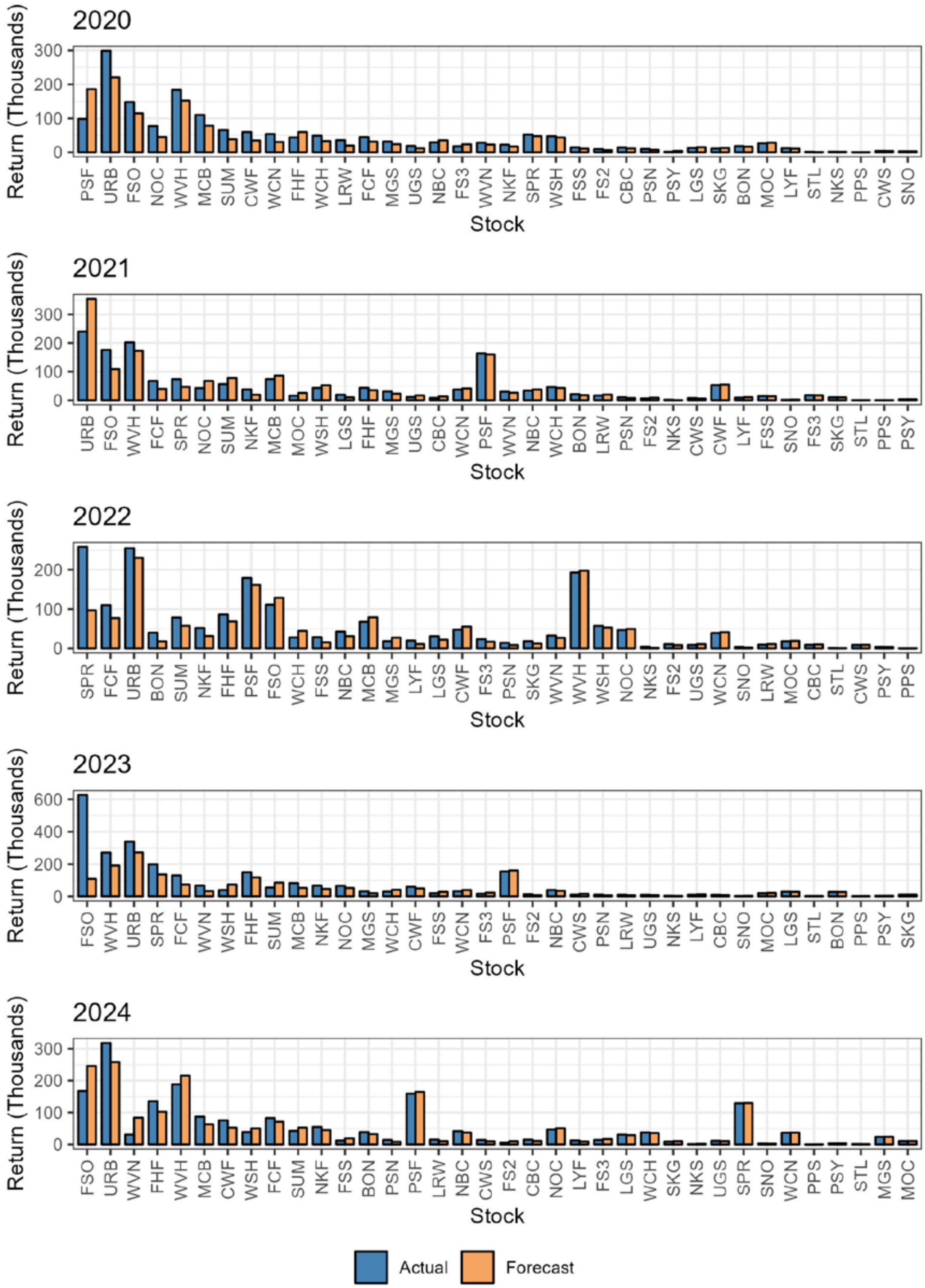

Figure 3-2—Comparison of agency-produced forecasts to actual returns for Pacific Salmon Commission (PSC) Chinook Model stocks where an agency-produced forecast was supplied, since 2020.

Note: Stocks are arranged from left to right along the x-axis based on the absolute value of the difference between the forecast and the actual return in each year.

3.1.2 CHINOOK MODEL ERROR

For the purpose of this section, model error will refer to differences between Chinook Model-generated preseason AIs and the first postseason estimate of AIs for each of the AABM fisheries, as generated by the annual calibration in the following year. The performance of the Chinook Model in representing an index of Chinook abundance in AABM fisheries is affected by a suite of parameters, although most significantly by 1) accuracy of the agency forecasts for the largest stocks, 2) the accuracy of the escapement estimates, and 3) accuracy of maturation rates.

The yearly percent deviations between preseason and postseason AIs for the three AABM fisheries are illustrated in Figure 3-3. For each AABM fishery, the deviations between the preseason and postseason AIs have varied considerably since 1999. The deviations in AIs between pre- and postseason calibrations from 2012 to 2016 were among the largest observed and resulted in major discrepancies (greater than 20% difference) between preseason and postseason ACLs across the three AABM fisheries. Deviations have continued through the 2019 Agreement even with model transition to the current Phase II, most notably for SEAK and NBC in 2023 which represents the largest source of Model Error since 1999 (Figure 3-3); Model Error in WCVI since 2019 declined precipitously and represents a significant departure from what was observed previously. Large deviations can compromise the utility of preseason AIs for setting harvest levels for each of the fisheries, which creates a misalignment with the abundance-based management regime that is the foundation of the 2019 PST Agreement. This misalignment may result in fishery overages relative to postseason limits—termed 'composite error' and distinct from model error—which are of particular concern per paragraph 7(b). Model errors of this magnitude also underscore the importance of routine model validation, as well as occasional targeted investigations and ongoing longer-term efforts to improve the Chinook Model—two primary goals of the R&D workgroup. The SEAK AABM was uniquely buffered from any management misalignment due to Model Error, 2019–2023 as the preseason ACL was based on the CPUE (2019–2022) and multivariate model 4.3 (2023). Model Error however was still occurring and tracked for all 3 AABM fisheries—although the relevance for evaluation is largely restricted to NBC and WCVI (2019–current) and SEAK (2024–current).

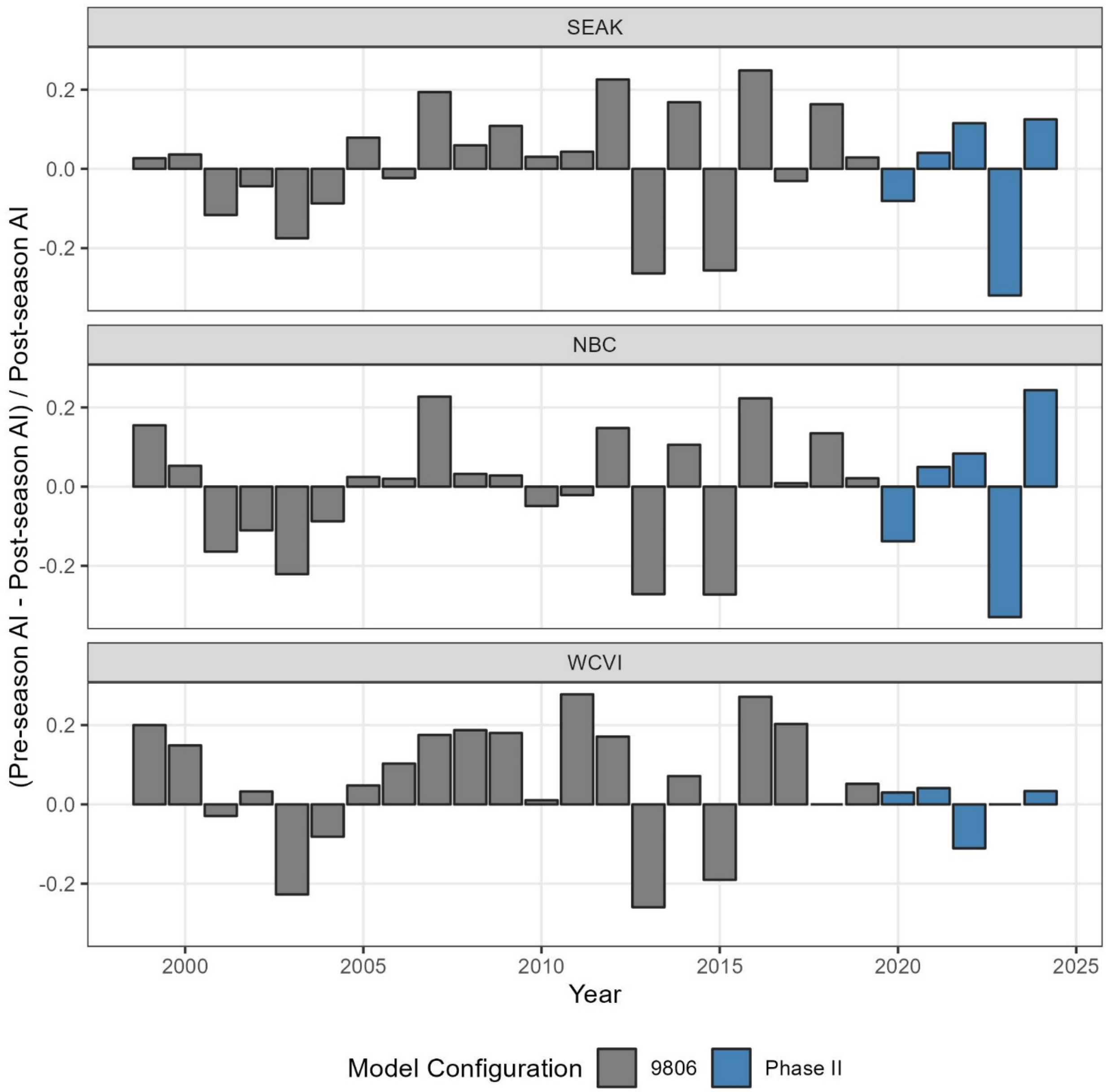

Figure 3-3—Difference between pre- and postseason abundance indices (AIs) for the three AABM fisheries, 2009–2024.

Note: The SEAK AABM fishery was managed 2019–2023 according to preseason ACL informed by alternative methods to the Chinook Model (CPUE: 2019–2022; multivariate model 4.3 [2023]).

AI STABILIZATION TIME FRAME

The CTC reports the first postseason AI, produced from the Chinook Model calibration immediately after producing the preseason AI. It is also the first calibration where the oldest cohort is complete (e.g., age-5), and escapement and terminal run estimates are available for other ages. Typically, only a small component of the total cohort matures at the oldest age even though the maturation rate is 100%. This attribute of Chinook salmon biology dampens some of the variability between the first postseason AI and subsequent AI estimates. The maturation of incomplete cohorts during the next three years following the first postseason AI causes the final estimate of AI to change until the youngest cohort is completed (3 years). Much of the uncertainty in cohort sizes is from the youngest cohorts because they have the least amount of data available from fisheries and escapement. This may cause greater variation in postseason AIs for AABM fisheries that have a larger component of the abundance represented by younger ages, compared to AABM fisheries where younger ages represent a smaller component of the AI.

3.1.3 Chinook Model Improvements

To address some of the limitations of the Chinook Model, the CTC has worked on a number of improvements to the model and associated programs. Some of the major refinements to the Base Period Calibration (BPC) and Chinook Model during the previous Agreement included:

Increased stock stratification – the number of stocks modeled increased from 30 to 41 as a result of 1) adding stock groups (Alsek, Taku and Stikine, Mid-Oregon Coast, and Yakutat Forelands), 2) splitting or reconfiguring stocks to better represent life histories and ocean distributions (Southeast Alaska, Northern BC and Central BC, and Fraser River), and 3) improving representation by CWT hatchery indicator stocks (e.g., Elk River, Atnarko River, Northern and Southern SEAK).

Increased fishery stratification – fisheries resolution was increased for both pre-terminal and terminal fisheries, resulting in an increase from 25 to 48 fisheries. For example, WA/OR troll and sport fisheries were split into north and south of Cape Falcon areas, North/Central BC sport fishery was split into North and Central areas (with northern sport divided into AABM and ISBM), a WCVI ISBM sport fishery was incorporated, and the Strait of Georgia sport fishery was split into Strait of Georgia and Juan de Fuca areas. Also, the generic terminal fisheries, one each for net and for sport, were made more geographically specific.

New Base Period Calibration – Efforts by the CTC from 2013 through 2019 culminated in the replacement of the 1998 Base Period Calibration (BPC Phase II) with a new BPC. Further work was then undertaken to incorporate the new BPC results into a revised Chinook Model. Documentation of the new BPC and model changes are found in four volumes: (CTC 2021a) on fishery changes, (CTC 2021b) on stock changes, (CTC 2023b) on parameter and program changes, and TCCHINOOK (2x)-0x V4 (*in prep*) comparing stock composition estimates from the Chinook Model versus genetic mixed-stock analysis.

Data improvements – Stock-specific escapements, terminal runs, CWT representation and productivity parameters were reviewed and updated, as necessary. Also, fishery-specific proportion non-vulnerable parameters were reviewed and updated for each stock and age, as available, as well as each model fishery's exploitation rates and catch quotas or ceilings (in the fishery policy (*.FP) and ceiling strategy (*.CEI) files).

Programs and Procedures – (CTC 2023b) documents several changes to programs and procedures now being used in the annual model recalibration process including 1) terminal fishery policy adjustments, 2) stock aggregate cohort evaluations (SACE) for those aggregates with stock-age specific terminal return estimates, and 3) the basis of methods used to project maturation rates and environmental variables.

3.2 Catch Per Unit Effort (CPUE) Method and Alternative Models

Aggregate abundance-based management fisheries were implemented starting with the 1999 Treaty. Under this agreement, the SEAK, NBC, and WCVI fisheries were given allowable catch limits (ACL) that varied with preseason estimates of regional abundance indices (AI) produced by the Chinook Model. After the 2009 renegotiation, between 2012–2016, model error (difference between preseason and postseason AIs) for the SEAK AABM fishery increased, prompting concern. To address this discrepancy, a catch-per-unit-effort (CPUE) based approach for setting SEAK AABM ACLs was proposed. This method was anticipated to improve timeliness and allowed for incorporation of localized data to inform mixed-stock abundance indices for the SEAK fishery.

The CPUE Method was used between 2019 and 2022. The winter troll CPUE in District 113 during statistical weeks 41-48 (Oct-Nov) was selected as the annual index of abundance. ACLs for seven tiers of CPUE were set by comparing CPUE to postseason AI and ACL values produced by the Chinook Model. The Treaty mandated periodic reviews of the performance of this methodology, the first after calculation of the 2022 postseason AI and the second after the calculation of the 2025 value. Following these reviews, Treaty language said, "Unless the Commission decides to continue to use the CPUE-based approach or adopt an alternative method, the Commission Chinook Model estimate of the AI and Table 1 shall be used to determine the annual preseason and postseason catch limits".

At the first review in 2023, the CPUE-based preseason ACLs had exceeded Chinook Model-based postseason ACLs by 65,000, 65,000, and 126,000 fish in 2020, 2021, and 2022 respectively. For the 2023 season, the Commission used an alternative method, and for the 2024 season reverted to the Chinook Model for setting the preseason ACL for SEAK (details below).

At the January 2024 PSC Postseason meeting, pursuant to paragraph 7(d) and 7(e), the Pacific Salmon Commission returned to the use of the Commission Chinook Model and Table 1 for SEAK AABM fisheries and approved the application of the 10% exceedance rule that defines the triggers for 7(b)(i) and (ii).

The PSC arrived at this decision after a review of the catch per unit effort (CPUE)-based approach, as per Appendix A to Annex IV, Chapter 3, paragraph 12 of the 2019 Pacific Salmon Treaty (PST) Agreement:

The Commission may request CTC (Chinook Technical Committee) *support in conducting up to two reviews of the CPUE-based approach to decide whether to continue to use this method to determine the catch limit for the SEAK AABM fishery, to return back to use of the Commission Chinook Model, or to adopt an alternative method as determined by the Parties, to determine preseason estimates of the aggregate AI* (abundance index) *of Chinook stocks available to the SEAK troll fishery and the relationship between the catch and AIs specified in Table 1.*

The elements of that review are fully documented in (CTC 2023). A chronological description of this process follows.

As per the provisions identified in paragraph 7(b) of the 2019 Pacific Salmon Treaty (PST) Agreement, on January 6, 2023 the CTC submitted a memo to the Commission, "Response to Ch. 3, 7(b)(ii) task: Exploration of alternative approaches to minimize deviations between

Chinook salmon preseason and postseason annual catch limits in the Southeast Alaska aggregate abundance-based management fishery" because for the SEAK AABM fishery, both the preseason annual catch limit (ACL) and the observed catch had exceeded the postseason ACL for two consecutive years (2020 and 2021). In that memo the CTC evaluated four types of alternative preseason forecast modeling approaches, and 10 methods that fall within those approaches:

1. Reverting to use of the Pacific Salmon Commission (PSC) Chinook Model abundance indices (AIs) and PST Table 1 to determine preseason ACLs (Chapter 3 of the 2019 PST Agreement) (Approach 1)
2. Non-tier approach that preserves the original AI-CPUE relationship (Approach 2)
3. Approaches that rely on updated AI-CPUE time series (Approach 3 – five methods)
4. Multivariate regressions (Approach 4 – three methods)

The CTC evaluated the performance of the 10 methods and the original CPUE-based approach across a 3-year evaluation period (2019–2021). Performance of the alternative approaches was evaluated in terms of both the overall and relative magnitude of deviations between pre- and postseason ACLs and the likelihood of incurring deviations greater than 10%. As a result of this evaluation, the CTC recommended using one of the two multivariate regressions, Method 4.2 or Method 4.3, to determine SEAK AABM fishery preseason ACLs until the CPUE method review (outlined in paragraph 7(d) of Chapter 3 of the 2019 PST Agreement) can be conducted. Method 4.2 predicts preseason ACLs based on Chinook Model preseason AI, Catch, Effort, and an interaction term between Catch and Effort in place of a CPUE term whereas Method 4.3 predicts preseason ACLs using CPUE and the Chinook Model preseason AI and one-year-ahead projection. A parallel analysis by ADF&G also identified Method 4.3 as their best model.

Following discussion about the January 6 CTC memo and the ADF&G analyses, the Commission asked the CTC to undertake the following tasks:

1. Resolve any differences and summarize the technical merits of selecting Method 4.2 or Method 4.3/ADF&G model.
2. Provide additional assessments that evaluate the performance of the two proposed models with and without tiers and summarize the technical merits of the use of tiers versus no tiers and identify any potential technical improvements to the tiers proposed by ADF&G.

The CTC submitted a memo on February 7, 2023 in response to these tasks with a recommendation to use Method 4.3 and a revised 17-tier table using the ACLs proposed by the CTC, as they should be better aligned with the AI/catch relationship defined in Table 1 and Appendix C of Chapter 3 to predict the preseason AI for the Southeast Alaska (SEAK) fishery in 2023.

On February 16, 2023, the Commission agreed to suspend the use of the CPUE-based approach to determine the catch limit for the SEAK AABM fishery. At the same time, the Commission agreed that a new multivariate model in conjunction with 17 tiers would be used to set the catch limit for the SEAK AABM fishery in 2023. Moreover, during the February 2023 PSC Annual Meeting, the Commission requested a formal review of the CPUE-based approach including the information outlined in Chapter 3, subparagraph 7(d), and any additional information that could better inform the Commission's decision as to whether to continue using the new multivariate model and the 17 tiers to set the SEAK AABM fishery catch limit for 2024 and subsequent years. The Commission also asked the CTC to conduct further analyses to inform how a trigger point for Chapter 3, subparagraph 7(b) for the SEAK AABM fishery could be set in the future if the multivariate model in conjunction with the 17 tiers continues to be utilized to set the SEAK AABM catch limit moving forward.

In response to concerns about autocorrelated errors in Method 4.3, the CTC expanded ADF&G's cross-validation approach described in Appendix B of (CTC 2023) to include an AR(1) autocorrelation term as an additional predictor in a candidate model. The originally proposed model still came out as the best of the expanded set of models. The CTC further examined the model residuals for evidence of autocorrelation and found very little. The CTC also recommended using AI values rounded to two digits in data sets for calculation of AIs and in calculating ACLs from these predictions in the interest of consistency and facilitating reproducibility. This adheres to the long-standing practice of rounding the AI to two digits both before calculating the ACL from the ACL-AI tier tables, and in publishing AI values.

Regarding the investigation of a trigger point for the SEAK AABM fishery, the CTC assessed the potential for SEAK AABM ACL buffers from a parity perspective, by examining the feasibility of implementing buffers like the 10% ACL buffer permitted for the NBC and WCVI AABM fisheries. This evaluation showed that a tier-specific trigger point system would be necessary for the 17-tier system given that the percent differences in catch limits between tiers are not consistent.

Lastly, on October 19, 2023, the PSC tasked the CTC to compare the performance of the Commission Chinook Model and Method 4.3 for the SEAK AABM fishery as detailed below:

1. Use the "cross-validation" approach for the years 2001 through 2022 to compare the preseason abundance index (AI) from the Commission Chinook Model and from Method 4.3 with the first postseason AI from the Commission Chinook Model. Provide a similar comparison using the annual catch limits (ACLs) from Table 1.
2. Use the "retrospective" approach for the years 2019 through 2022 to compare the preseason AI from the Commission Chinook Model and from Method 4.3 with the first postseason AI from the Commission Chinook Model. Provide a similar comparison using the ACLs from Table 1.

At the end of this evaluation, the CTC concluded that cross-validation showed smaller AI and ACL errors for Method 4.3 except for a large predicted error for Method 4.3 in 2022, noting that this assessment evaluated mostly the old version of the Chinook Model (9806: 2001–2018). In terms of retrospective analyses, both the Chinook Model and Method 4.3 showed comparable overall performance for the last four years (2019–2022) except for the large predicted error noted for Method 4.3 in 2022. Lastly, the typical errors calculated based on 2019-2022 data showed better performance (i.e., higher precision) of the Chinook Model. Accordingly, the Chinook Model was re-adopted for setting the preseason ACL for SEAK in 2024 through to the end of this annex.

3.3 Exploitation Rate Analysis Challenges and Improvements

In practice, many underlying assumptions of the Exploitation Rate Analysis (CTC 1988) are likely violated. The assumption of stable stock and fishery distributions, for instance, is becoming increasingly untenable given predicted ocean redistribution patterns, productivity changes, and altered population dynamics among salmon stocks driven by rising sea-surface temperatures and their cascading effects on fishery timing, duration, and allocation (Shelton et al., 2021). At present, ocean distribution is not explicitly considered in the ERA. In addition, the ERA uses many fixed parameters for such quantities as maturation rates, natural and incidental mortality rates, and selectivity factors, all of which could vary widely over time and across stocks and fisheries.

The gradual increase in mark-selective fishing over time has also impacted the accuracy of CYER estimates due to the selective retention rules resulting in unequal impacts on marked and unmarked fish. In 2024, the CTC completed a multi-year undertaking to address this shortcoming, following methods described in CYER WG (2024). The CTC now reports both marked and unmarked CYER estimates for each PSC indicator stock, with the incorporation of mark-selective fishing algorithms and the mixed-fishery adjustment.

3.3.1 Mark-Selective Fishing Algorithms and Mixed-Fishery Adjustments

Several substantial improvements were made to the ERA during the current annex, including the development of mark-selective fishing algorithms which account for a mixed-fishery adjustment procedure. Mark-selective fisheries are now accounted for in the ERA with the introduction of the SIT 4 program. SIT 4 is a forwards cohort analysis that allows the retention ratio of marked to unmarked fish to vary by time and fishery, enabling estimates of CYER by mark status (CYER WG, 2024). Beginning with the 2024 ERA (CTC 2025), the CTC now reports CYERs for both the marked and unmarked stock components. Prior to development of SIT 4, unmarked release mortalities in mark-selective fisheries (MSFs) were unaccounted for in fisheries. Completion of mark-selective fishing algorithms has improved the accuracy of total mortality and exploitation rate estimates on stocks impacted by MSFs.

A strictly pure MSF is one that all marked fish caught are kept and all unmarked fish caught are released; however, this assumption may be violated for a variety of different reasons. For example, in many cases a fishery may be subject to multiple different regulations in a calendar year. Furthermore, mixed-bag fisheries allow for a certain number of unmarked fish to be kept out of a total bag limit. Such situations can result in the number of marked releases and unmarked retentions to depart from that expected in a strictly pure MSF and therefore requires a mixed fishery adjustment. When accounting for differential impacts on marked and unmarked fish, it is not the specific regulation that matters but rather, the actual proportions of marked fish released and unmarked fish kept (Table 3-1). Values for marked release rate (MRRs) and unmarked kept rate (UKRs) used in the mixed fishery adjustment can either be assumed values (e.g., for a strictly pure MSF or non-selective fishery) or they can be calculated (e.g., using estimates of retentions and releases by mark status).

Table 3-1—Hypothetical marked release rate (MRR) and unmarked kept rate (UKR) values for different fishery types.

Fishery type	MRR	UKR
Non-selective	MRR = 0	UKR = 1
Mark-selective	MRR = 0	UKR = 0
Non-retention	MRR = 1	UKR = 0
Mixed fishery	0 < MRR < 1	0 < UKR < 1

3.4 Supporting Software, Databases, and processes

The continued evolution of CTC tools and infrastructure has been critical to improving the efficiency and reproducibility of yearly assessments. During the current annex, substantial effort from the CTC-AWG and PSC Secretariat has been directed toward modernizing legacy software and core programs, transitioning to centralized cloud-based databases, improving estimation of age-specific cohorts and maturation rates, and the application of new models and incorporation of environmental covariates for agency forecasts. These improvements have not only streamlined annual processes and reporting but have also contributed to more robust evaluation methods. The following section outlines key updates to core programs and other improvements that support the technical work of the CTC-AWG.

3.4.1 Key Updates to Core Programs and Databases

Numerous key improvements to other CTC-AWG programs and databases have been made during the current annex, a summary of which is provided in Table 3-1. Most notably, for the ERA, the CTC-AWG (with substantial support from the PSC Secretariat) completed the development of the R Exploitation Rate Analysis Model (REAM), which translated the old program—CoShak, written in Visual Basic—into R. The completion of REAM has led to substantial productivity gains for the annual ERA. Now a single analyst can run the program for all stocks simultaneously and share the output, replacing the previous piecemeal process where each analyst ran their own stocks on separate program instances with standalone databases (a customarily error-prone system). The migration from CoShak to REAM has also encouraged other improvements to the ERA by allowing analysts to work on the model in a modern, more widely used programming language.

Advances in the Chinook Model have come from the development and refinement of supporting programs that generate its inputs. Introduction of the Stock Aggregate Cohort Evaluation (SACE) procedure has led to better estimates of age composition for wild stock aggregates in the Chinook Model, and changes to the MATAEQ file have addressed problems arising from earlier-trending maturation rates observed for many Chinook stocks. The HRJ-to-FP program has allowed for the automation of the conversion of ERA output harvest rates (HRJs) into Fishery Policy Scalars (FPs), which account for differences between the base period harvest rates and the harvest rates from the ERA. The maintenance and development of supporting programs and databases that help produce Chinook Model inputs is vital to the work of the CTC.

Table 3-2—Summary of key updates to core programs and databases to improve the efficiency and functionality of data management and analyses associated with the annual Exploitation Rate Analysis (ERA) and Chinook Model calibration.

CTC Analysis	Supporting Software or Database		Description
	Predecessor	Current	
Exploitation Rate Analysis (ERA)	Cohort Analysis System (CAS)	Chinook Extract Transform and Load Executable Program (CETL)	Program to load and store CWT data release and recovery data.
		Chinook Analysis and Modeling Platform Database (CAMP)	Cloud-connected database to store all stock and fishery data associated with an annual ERA.
		Quality Control Reporting (QCCAMP)	Automated reports that identify common data quality issues and concerns within the ERA data.
	Cohort Analysis with Shakers (CoShak)	R Exploitation Rate Analysis Model (REAM)	Backwards marked cohort analysis on CWT escapement and catch data.
	--	SIT 4	Forwards unmarked cohort analysis, adjusting for mark-selective fishing impacts.
	--	Synoptic Evaluation and Survival Programs	An amalgamation of scripts and program files used for post-processing ERA results were consolidated into a pair of R packages. These are being further incorporated into a comprehensive R package (ctcEraReports).

	--	Stock Aggregate Cohort Evaluation (SACE)	Improves age composition estimates for wild stock aggregates.
	MATAEQ	MATAEQ	Updated to replace 5-year average, and previously used long-term series average, with exponential smoothing in response to trending patterns in maturation rates.
Chinook Model	HRJ-to-FP (VB code)	HRJ-to-FP (R code)	Program to address differences between base rate harvest rates to harvest rate from the ERA.
	--	Automated Chinook Model Evaluation (ACME) Reports	Series of Quarto documents to generate automated QA/QC reports for the annual Chinook Model calibration.

In addition to translating code and introducing new programs, the CTC-AWG has also taken steps to enhance functionality and improve collaborative workflow. For example, all data inputs to the ERA are now stored and maintained within a central cloud-based SQL Server database (CETL and CAMP; Table 3-1), allowing all CTC-AWG members to access, update, and review this database collaboratively and transparently. Prior to this system, each CTC-AWG member worked independently off local databases stored on individual computers, resulting in a cumbersome, error-prone workflow that hamstrung reproducibility. In addition, the CTC has implemented version control for critical programs via tools such as GitLab (https://gitlab.com). Adopting cloud systems and version control software in the CTC-AWG workflow has fostered a more collaborative environment, enabling individuals to jointly develop and maintain programs and databases, rather than leaving discrete tasks to isolated members, while still preserving revisions and version history. Additionally, development of a Report Automation Database (RAD) was initiated, which is expected to speed up annual reporting and enable CTC members to spend more time focused on other areas of productivity.

The annual implementation and delivery of the CTC-AWG ERA has benefited substantially from these changes and improvements made since 2019. The process, which previously relied on the physical exchange of data and computer programs during one- to multi-week in-person meetings, has been streamlined to not only save time but to assure the quality and reproducibility of these products. This transition, initiated before the COVID-19 pandemic, accelerated with the urgent need for remote data access and collaborative editing capabilities that had not previously been available. Both agency analysts and PSC staff rose to the occasion and produced a series of software programs which has enhanced productivity, increased transparency, and improved the accuracy of our work as a technical body.

3.4.2 Agency Forecasts

ForecastR

Since 2016, agency forecasts of escapement or terminal runs for Canadian and Oregon Chinook Model stocks have been produced, evaluated, and reported using an R-based program developed by CTC members and external collaborators, ForecastR (https://github.com/SalmonForecastR, https://psc1.shinyapps.io/ForecastR/). The program generates age-specific or total abundance forecasts using a wide variety of statistical and/or mechanistic forecast models and can be run via R or a Shiny app interface. The forecasting process involves four steps, selection of forecast models, selection of measures of retrospective forecast performance, comparison of model performance via model selection and ranking, and reporting of forecasted results and diagnostics in summary reports. The number of available forecast models and additional capacities of ForecastR have been implemented over six developmental phases, improving the utility of the program for agency forecasts applied to the Chinook Model. The latest release incorporated improvements and refinements to the Shiny app and incorporated Kalman-Filter sibling regressions, complex-sibling-regressions that can incorporate up to three environmental or biological variables. The environmental covariates can be matched to average escapement or terminal run with a 0, 1 or 2-year time lag or lead from brood year or return year depending on underlying hypotheses for their inclusion as covariates. The program then evaluates the fit of each environmental covariates and picks the model with the best fit for each age class.

Environmental Covariates

Since ForecastR has gained the capability to include up to three environmental covariates, the CTC-AWG developed a database of candidate environmental covariates to be used in forecast modelling. The consideration for including a covariate in the database was the availability of a yearly timeseries with geographic, temporal and biological relevance to the stocks of interest. The sources of data include repositories run by the National Oceanic and Atmospheric Administration (NOAA), Fisheries and Oceans Canada (DFO), and the Canadian Integrated Ocean Observing System (CIOOS). Data are then matched to a given stock based on the proximity to sampling stations to a stock's distribution. Thus far, the CTC-AWG has collected and explored the application of oceanic-atmospheric indices (e.g., Pacific Decadal Oscillation), temperature, salinity, zooplankton biomass, and other biotic and abiotic indices. Additional environmental covariates are under development (e.g., NOAA Fisheries, Peterson et al. 2013, Warkentin et al. 2022) and could inform future improvements in forecast models used by the CTC.

3.5 Chinook Model Challenges and Formation of the Research and Development Work Group

The current Chinook Model used for AABM stock and fishery assessments reflects limitations of data, information, and computational processes available in the early 1980s. For example, it is deterministic, requires that some parameters be estimated in external analyses, assumes spatiotemporal stability in fishing and stock distribution patterns, and relies on data from a 1979–1982 base period—some of which are extrapolated from surrogate data sources.

The Chinook Model is currently used for a different purpose than originally intended when it was developed. The Chinook Model was devised as a tool to evaluate alternative fishery management scenarios under a rebuilding strategy for depressed Chinook stocks. Today, the Chinook Model is used to produce single year forecasts of abundance indices which drive AABM fishery regimes. Important stock assessment considerations such as uncertainty and variability or directional changes in key processes are not considered in the Chinook Model. Variability in ocean dynamics have precipitated changes over time in stock productivity, which, along with associated changes in fisheries management and harvest re-allocation among sectors, make many of the Chinook Model's assumptions of stability problematic.

There are many reasons to consider replacing the Chinook Model and other components of the CTC's current set of stock assessment procedures (e.g., the exploitation rate estimate procedures for ISBM fisheries, described below, also lack estimates of uncertainty). First, as detailed above, the decades-old Chinook Model is used for a purpose today for which it was never intended to be used, and its deterministic structure is partly based on limitations of its era. Likewise, the CWT-based analytical methods employed by the CTC for stock-specific exploitation rate calculations are deterministic and date from the same period. Computing capability and other technological advancements have greatly expanded the range of possibilities for the types and complexity of the models and analytical tools for fisheries management that could be employed. Second, management measures employed to regulate fisheries have become increasingly complex, which may not be well-represented by current CTC analyses. For instance, the Chinook Model current stock assessment procedures represent fisheries at coarse regional spatial scales, and on annual time steps, but the spatial and temporal scales of regulations have become increasingly implemented at much finer levels. For example, mark-selective fisheries are being implemented in very small areas (often a portion of statistical catch reporting areas) for short periods (often as little as a few days). The Chinook Model and analytical tools struggle to incorporate and evaluate the effects of mark-selective fishing due to mismatches in time/area stratifications between the model and observed fisheries. Additionally, evidence has mounted over time that stock distribution patterns, migratory behavior, fishing patterns, and regulations such as size limit changes and mark retention restrictions can substantially and differentially affect hatchery and wild stocks in ways that current assessment methods may not capture.

In response to the limitations of the current Chinook Model, the CTC formed a Research and Development work group (R&D) in May of 2022. The R&D work group was tasked with exploring alternative approaches to PSC Chinook management strategies and the analytical tools used to support them. The overall objective of the R&D work group has been to investigate alternative modeling approaches and methodologies for the improvement of Chinook salmon management tools (e.g., the Chinook Model) that could be used in the next PST Agreement (2029). Better understanding of Chinook populations and fishery patterns through improved modeling techniques would ensure that fishery management decisions will be based upon the best available science and technology.

The most important aspects of alternative approaches to the current PSC Chinook Model stock assessment processes are that they must incorporate modern statistical stock assessment techniques, use readily available data to quickly produce results for timely decision-making, and can be readily understood and reviewed by CTC members (i.e., maintain a balance between complexity and utility). Ideally, the updated model stock assessment process would be resilient to environmental, ecological and demographic changes and robust to uncertainty and natural variation, would rely on best available agency data such as escapement and catch estimates, CWT release and recoveries, and GSI analysis. It would also have the capacity to convey uncertainty in model inputs and outputs in a form useful to inform decision making. And finally, any alternative to the current Chinook Model and CTC stock assessment process should provide a consistent framework for Chapter 3 implementation and a stable management system from year to year, meet timelines and deadlines associated with Chapter 3 of the PST, and enable consistent, coordinated approaches for management of Chinook stocks throughout their migratory ranges.

There is a growing consensus among the CTC that challenges and limitations of the Chinook Model and other components of current stock assessment procedures (e.g., ERA) warrant consideration of alternatives that better align with contemporary management regimes and stock assessment practices.

3.6 Key Findings and Recommendations

The analytic performance of the CTC was evaluated for the current annex. Transition to the Phase II Chinook Model has resulted in precise, yet biased slightly-high, forecasts compared to actual returns. Model error continues to be highly variable for the SEAK and NBC fisheries compared to the previous annex, while variance in the model error for the WCVI fishery has reduced.

Several improvements have been made in both the Chinook Model and the ERA, resulting in better analytic products necessary for the implementation of Chapter 3. These improvements stemmed from additional support from external sources, the implementation of new analytical tools, data management, as well as communication and organization. Within the Treaty itself, the addition of Appendix A has allowed the CTC to access a clear summary of the tasks laid out for them as stated in the Treaty, and in general the 2019 Treaty has more technical language and less policy issues for the CTC compared to the previous annex

3.6.1 Data Management and Program Improvements

Contributions by the PSC Database Manager have allowed the CTC to have centralized databases (CAMP and RAD), while also working with CTC members to bring old programs into modern programming languages (e.g., R packages REAM and CETL). This transparent and flexible coding allowed the CTC to incorporate MSF algorithms into the ERA and make several other improvements to the programs to ensure they are utilizing the best available analysis. The databases have also made it easier to produce secondary aids like CAMP comparison spreadsheets, which allow CTC members to much more easily and quickly track data errors and correct them. Improvements also included the use of modern tools such as Git Lab, which has aided in streamlining automation and coding processes.

> ***Recommendation 3.1. Continue support for PSC Secretariat staff so they may assist with further CTC analytic and process improvements.*** The PSC Secretariat staff have been instrumental in helping the CTC to modernize its analytical tools and procedures for the implementation of Chapter 3. In addition, the contributions by PSC Secretariat staff to update and maintain the various software programs and databases used by the CTC to accomplish annual work plan tasks has been invaluable. Finally, administrative support provided by the PSC Secretariat is vital to the CTC's ability to maintain progress towards completing annual work plan tasks.

3.6.2 Report Automation and Accessibility

Automation has also been a priority within the CTC to reduce the workload of annual reports and improve responsiveness to information requests (e.g., through the development of an online Shiny application). The Shiny App has allowed for the publication of more CTC data online and includes information such as Chinook catch and escapement estimates, mortality distribution tables, and the data behind figures in CTC reports. This allows the public to access published data on their own without requiring the CTC to review a Data Request, resulting in increased capacity for the CTC to focus on other tasks. The Data Request Process, which previously required CTC discussions and often resulted in an individual dedicating a significant amount of time fulfilling a request, was also standardized. The CTC also developed a mostly automated Commissioner Summary Report in 2023, which provides the PSC a high-level overview of important details regarding the AABM and ISBM fishery performance, and any relevant Treaty Obligations by October each year. Additionally, the RAD database was developed to allow the automation of other reports, such as the yearly Catch & Escapement report, by allowing CTC members to input values once in the database, which then populates tables and figures in those reports.

3.6.3 Succession Planning and Documentation

The CTC made improvements to their onboarding process, and an onboarding package was developed that allows new members to get up to speed more quickly. There has also been a significant effort towards documentation of critical programs, allowing new members to quickly learn these programs prior to using them.

3.6.4 Summary and Future Improvements

Because of these improvements, the capacity of the CTC to be able to undertake more projects that were previously contracted out to external sources has increased. The CTC anticipates further updates to data collection and estimation methods such as the Internet Recreational Effort and Catch Reporting Program (iREC) (Canada) and electronic data loggers (WA/OR) to continue to improve the quality of the data used in CTC analysis as well as the timeliness and availability of these analyses, although the 2-year lag in CWT recovery reporting for southern US sport fisheries remains.

3.6.5 Research and Development

The legacy modeling process used by the CTC is dated and labor-intensive, and its accuracy is unknown. The CTC recognized the need to evaluate its current assessment approaches and investigate potential alternatives. A Research and Development (R&D) work group was created to fulfill this need.

The approach selected was to evaluate the current assessment process, and potential alternatives, using a simulation framework. A simulation that captures the essential features of the PST Chinook fisheries and stocks can generate realistic data that can be analyzed using competing assessment approaches. The advantage of this framework is that the “true” values of the desired management reference points will be known, so that the precision and accuracy of the competing assessment methods can be evaluated.

The R&D work group has set a schedule of milestones such that results will be available for technical and stakeholder review in time for potential implementation in the next version of the Treaty. The CTC has also recommended that the R&D work group continue into the next Treaty period, and that the new Treaty allow incorporation of improvements.

> ***Recommendation 3.2. Continue support for the CTC R&D work group.*** The CTC recognizes there is a pressing need to update its analytical processes to be more responsive to changes in environmental conditions, fishery regimes, and productivity. Therefore, the CTC recommends continued support for the R&D work group.

4. Challenges to the Implementation of Chapter 3

The implementation of the Chapter 3 annex in the 2019 PST Agreement brought several challenges, despite some improvements from the 2009 annex. Some challenges were pre-existing or inherent, such as data quality and availability, lack of analysis and reporting of uncertainty statistics, and perennial staffing shortages for data collection. Other challenges emerged during the current annex, such as COVID-19 impacts and federal travel restrictions. The CTC has been successful in addressing some challenges. For example, the CTC developed and implemented mark-selective fishing algorithms to better meet the assumption that impacts on marked coded-wire tagged fish accurately represent impacts on unmarked populations of interest. In addition, the CTC has made our data and analyses more transparent and accessible.

The 2019 Chinook Annex is data intensive and requires substantial fiscal resources and coordination across jurisdictions to collect data on catches and escapements and maintain the CWT system. During the negotiations, the Parties recognized that improvements to data quality and timeliness from the CWT and escapement indicator stock programs would be required to implement Chapter 3. In response, the Parties included two additional programs in the Agreement:

> Paragraph 2(c) commits to a 10-year Chinook salmon Coded-Wire Tag and Recovery program that provides timely data via improvements and studies designed to achieve CTC and Technical Committee on Data Sharing (TCDS) standards and guidelines.
>
> Paragraph 2(d) commits to a 10-year Chinook salmon Catch and Escapement Indicator program that provides timely data via objective and repeatable methodologies in data limited situations and in others via improvements and studies designed to achieve CTC data standards, guidelines, and analysis timelines.

Unlike the CWT Improvement Program and Sentinel Stocks Program in the 2009 PST Agreement, which had funding specified in Treaty language, no funding was specified for these two programs. The Parties combined these two programs but decided to not administer them bilaterally. Instead, the Parties created the Coded Wire Tagging and Recovery and Catch and Escapement Indicator Improvement work group, referred to as C2, to discuss the programs initiated in sub-paragraphs 2(c) and 2(d) and to share project results.

The management agencies continue to face challenges to meet the ongoing obligations of Chapter 3 due to funding shortfalls and are often unable to incorporate these programs into their agency budgets. There are increasing concerns for the ability of agencies to maintain the viability of the CWT system, catch and escapement monitoring programs, and exploitation rate and escapement indicator stock programs necessary to implement Chapter 3.

4.1 Data Quality and Availability

The availability and quality of data used for the coastwide Chinook indicator stock and fisheries monitoring programs are evaluated in this section of the report. Timeframes are very tight for agencies to assemble the data used to prepare their forecasts. Delivery of agency forecasts to the CTC can be delayed by late reporting of escapements, late reading of age samples, or the late estimation and reporting of CWT recoveries in fisheries and spawning escapements. Since the calibration procedure is especially sensitive to agency forecasts for large stocks, delays in obtaining agency forecasts for large model stocks can delay the entire Chinook Model calibration. Thus, forecasts for larger model stocks should receive high priority by agencies to ensure that the CTC completes the model calibration in March. This is also important because the calibration provides the first postseason AI for evaluating the previous year's fishing regime and associated allowable catch, relative to PST expectations. The CTC's Annual Calibration Report compares the observed catch to preseason and postseason allowable levels. Overages and underages are monitored for systematic patterns and reported to the PSC annually.

The annual evaluation of stock status for escapement indicator stocks depends on availability and timeliness of escapement data, so the CTC can advise the PSC regarding whether conditions are met for review of fisheries on specific escapement indicators, with such review aimed towards additional fishery reductions under provisions of Paragraph 7(c).

Key challenges include delayed availability of escapement, catch, and CWT recovery estimates (e.g., southern U.S. fisheries and terminal return), which often are not available until two years postseason. These delays can reduce the accuracy of agency forecasts, stall the estimation of exploitation rates, and impede timely reporting of ISBM fishery impacts. While Alaskan and Canadian CWT data are available shortly after each season, delays in estimating southern U.S. sport fishery impacts remain a bottleneck .

Staffing and housing shortages are a major chronic challenge coastwide, hindering recruitment and retention of field personnel essential for fishery monitoring and CWT sampling. In some areas, such as coastal Oregon, these limitations have rendered the 20% CWT sampling rate unachievable, thereby risking the accuracy of both fishery and escapement data. These logistical barriers are exacerbated by increasing costs, especially in remote field sampling programs. In addition, indicator stock tagging programs continue to face threats from domestic budget shortfalls.

Addressing the above challenges and maintaining indicator stock programs remains essential to fully supporting treaty obligations and future decision-making frameworks. The Phillips (PHI) stock tagging program was discontinued in 2019 and removed from CYER analysis in 2022. There is a risk that the Salmon River Hatchery (SRH) tagging program may also be discontinued, which would eliminate the exploitation rate indicator stock for the Northern Oregon Coast (NOC) escapement indicator stocks.

Despite these obstacles, numerous advancements have improved data quality and processing capacity in recent years. Critical improvements have been made in sampling mark-selective fisheries (MSFs), including collection of data on fish retention and release by clip status. In 2019, the Oregon Department of Fish and Wildlife (ODFW) replaced its mail-in punchcard system with a smartphone-based Electronic Licensing System (ELS) and a refined e-Creel survey method. These tools provide near-daily harvest estimates and have significantly reduced reporting delays. Canadian data systems have likewise been enhanced through integration of the iREC catch reporting, bolstering the quality of recreational catch estimates supporting the Chinook Model and Exploitation Rate Analysis. Efforts by the Washington Department of Fish and Wildlife to address reporting delays in recreational salmon fisheries have also been initiated with the formation of a work group to develop mobile catch reporting. This functionality is expected as part of a transition to electronic fishing and hunting licenses, as a voluntary option likely available for purchase with 2026 licenses.

The CYER work group has driven several important reforms, including identifying under-sampled areas, initiating retrospective recovery estimation for prior fisheries, and verifying time series of catch and escapement data. These efforts have improved both the ERA and model calibration processes.

Collaborative tools such as the PSC SharePoint site and GitLab have facilitated a more streamlined approach to reporting, group editing, and code development. Efforts led by the PSC Secretariat to automate production of charts and tables for annual reports have improved workflow efficiency in the CTC. Furthermore, a new R Shiny application has been developed to provide the public with greater access to published CTC data, which is anticipated to reduce the number of ad hoc data requests while providing greater transparency and data availability.

4.1.1 Stock and Fishery Attributes

The CTC has the following stock data standards: 1) the coefficient of variation of escapement estimates should be less than 15% and unbiased, and 2) the mean annual percent error (MAPE) of forecasts should be less than 7.5%. The standard errors of forecasts should be less than 30% and forecasts should be provided by February 15 of each year to facilitate model calibration. Ideally, forecasts for model stocks are age-specific and derived independently of the Chinook Model. Data standards for escapement, CWT sampling, and forecast error have been published in past CTC reports and memos (Bernard, 2008; PSC, 2008).

To summarize the existing status of data quality and availability for indicator stocks, the CTC defined seven attributes of the indicator stock program and three data quality levels for each of these attributes during the current annex period (Table 4-1). The CTC scored the attributes of each indicator stock against these data quality criteria as a means of evaluating the indicator stocks used to monitor stock status of Chinook under Chapter 3 of the Agreement (Table 4-2). The evaluation demonstrates that the information currently available ranges from high quality information available for some stocks to poor quality and/or quantity of information available for others.

For fisheries data, there are also several recommendations regarding data quality. Accounting for catch and incidental mortality should ideally be directly estimated, or indirect estimates should be made using well-documented and unbiased methods. Fishery sampling rates for CWT recovery should be at least 20%, and CWT estimates should be provided within the timeframe to facilitate CTC analyses. If relevant, data needed for evaluating mark-selective fisheries should be available.

To summarize the existing status of data quality and availability for fisheries data, the CTC defined six attributes and three data quality levels for each (Table 4-3). The CTC scored the attributes for each of eighteen regional fisheries and fishery types (Table 4-4), revealing several opportunities for improved fisheries monitoring, including timeliness of Southern U.S. CWT estimates, and CWT sampling rates in several sport fisheries.

Table 4-1—Attributes and status for assessment of escapement indicator stocks.

Attribute	Red	Yellow	Green
Escapement assessment meets CTC data standards	Standards not met (e.g., uncalibrated index)	Standards met for some years	Standards met for all years (e.g., calibrated escapement indices)
Escapement survey coverage	Escapements have not been estimated for some spawning areas in some years (missing estimates)	Escapements have not been estimated directly for some spawning areas, stocks in some years, but estimates have been generated indirectly (infilling methods)	Escapements have been estimated for all spawning areas, stocks in all years
Escapement estimates by age available	Escapements not estimated by age	Escapements estimated sporadically by age	Escapements estimated by age for all years
Final escapement and CWT indicator data provided in time for CTC analysis and evaluation of fishery performance	Data provided after annual CTC analysis	On at least one occasion since 2019, data was provided after annual CTC analysis or interim estimates were required	Escapement, terminal run, or CWT data provided before annual CTC analysis
Representative CWT indicator and adequate tagging	No CWT indicator stock	CWT indicator stock present, but doesn't represent all naturally spawning stocks and/or tagging is inadequate	CWT indicator stock is a good representation of most stocks
CWT indicator meets escapement sampling expectation set out in Tech Report 25	Escapement estimates are biased and CWT sampling rates <20%	Escapement estimates are biased or CWT sampling rates <20%	Escapement estimates are unbiased, CWT sampling rates >20%
ISBM CYER metrics reported, represent natural escapement indicator	ISBM CWT metrics not developed annually, no base period CWT data	ISBM CWT metrics developed annually, but adjustments have not been made yet to represent differences in terminal fisheries or MSFs	ISBM CWT metrics developed annually, represent terminal fisheries for natural escapement indicator stock
Annual forecast developed in time for model calibration	A model independent forecast is not developed annually	Model independent forecast is developed annually, but not by age or not specific for escapement indicator stock	Age-specific model independent forecast developed annually
Forecast meets CTC data standard of <7.5% MAPE and SE < 30%	No	Occasionally	Most years

Table 4-2—Escapement data availability and quality to support the implementation of Chapter 3.

Region	Attachment I Stocks	Escapement assessment meets CTC data standards	Escapement survey coverage	Escapement estimates by age available	Final escapement and CWT indicator data provided in time for CTC analysis and evaluation of fishery performance	Representative CWT indicator and adequate tagging	CWT indicator meets escapement sampling expectation set out in Tech Report 25	ISBM CYER metrics reported, represent natural escapement indicator	Annual forecast developed in time for model calibration	Forecast meets CTC data standard of <7.5% MAPE and SE < 30%
TBR	Stikine	Yellow	Green	Green	Yellow	Green	Green	Grey	Red	Red
	Taku	Green	Green	Green	Green	Green	Green	Grey	Red	Red
	Alsek	Green	Green	Green	Green	Red	Grey	Grey	Red	Red
SEAK	Situk	Green	Green	Green	Green	Red	Grey	Grey	Red	Red
	Chilkat	Green	Green	Green	Green	Green	Green	Grey	Red	Red
	Unuk	Green	Green	Green	Green	Green	Green	Grey	Red	Red
Canada	Skeena	Green	Yellow	Green	Green	Yellow	Green	Green	Green	Green
	Atnarko	Green	Green	Green	Green	Green	Green	Green	Green	Green
	NWVI Natural Aggregate	Green	Yellow	Yellow	Green	Green	Green	Green	Green	Red
	SWVI Natural Aggregate	Green	Yellow	Yellow	Green	Green	Green	Green	Green	Red
	East Vancouver Island North	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red
	Phillips	Green	Green	Green	Green	Grey	Grey	Grey	Red	Red
	Cowichan	Green	Green	Green	Green	Green	Yellow	Green	Green	Red
	Nicola	Green	Green	Green	Green	Green	Yellow	Green	Yellow	Yellow
	Lower Chilcotin (in development)	Green	Green	Yellow	Grey	Red	Grey	Red	Yellow	Yellow
	Chilko (in development)	Green	Green	Green	Grey	Red	Grey	Red	Yellow	Yellow
	Lower Shuswap	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow
	Harrison	Green	Green	Green	Green	Green	Yellow	Green	Green	Yellow
	Canadian Okanagan	Red	Green	Yellow	Grey	Red	Grey	Red	Red	Grey
Southern US	Nooksack Spring	Red	Green	Green	Yellow	Yellow	Green	Green	Green	Red
	Skagit Spring	Yellow	Yellow	Green	Green	Green	Green	Green	Green	Yellow
	Skagit Summer/Fall	Yellow	Yellow	Green	Green	Green	Green	Green	Green	Yellow
	Stillaguamish	Green	Green	Green	Green	Green	Green	Green	Green	Yellow
	Snohomish	Red	Green	Green	Green	Green	Green	Green	Green	Yellow
	Hoko	Green	Green	Green	Green	Green	Green	Green	Green	Red
	Grays Harbor Fall	Red	Yellow	Green	Green	Yellow	Yellow	Green	Green	Yellow
	Queets Fall	Red	Yellow	Green	Yellow	Green	Yellow	Green	Green	Yellow
	Quillayute Fall	Red	Yellow	Green	Green	Yellow	Yellow	Green	Green	Yellow
	Hoh Fall	Red	Yellow	Green	Green	Yellow	Yellow	Green	Green	Yellow
	Upriver Brights	Green	Green	Green	Green	Green	Green	Green	Green	Yellow
	Lewis	Green	Green	Green	Green	Green	Green	Green	Green	Yellow
	Coweeman	Green	Green	Green	Green	Green	Green	Green	Green	Yellow
	Mid-Columbia Summers	Green	Green	Green	Green	Green	Green	Green	Green	Yellow
	Nehalem	Green	Green	Green	Green	Green	Green	Green	Green	Yellow
	Siletz	Green	Green	Green	Green	Green	Green	Green	Green	Yellow
	Siuslaw	Green	Green	Green	Green	Green	Green	Green	Green	Yellow
	South Umpqua	Yellow	Yellow	Green	Green	Yellow	Green	Green	Green	Yellow
	Coquille	Yellow	Green	Yellow	Green	Yellow	Green	Green	Green	Yellow

Table 4-3—Attributes and status for assessment of fisheries.

Attribute	Red	Yellow	Green
Catch accounting	No estimates	Angler/Purchaser reporting or imputed values for strata without estimates	Direct estimation (e.g., e-Creel survey/Creel survey/Boat sampling)
Incidental mortality estimates	No estimates	Imputed values for strata without estimates	Direct estimation (e.g., landings/releases based estimates)
CWT sampling rate	CWT sampling rate ≤ 10%	CWTs sampled > 10% but < 20%	CWTs sampling rate ≥ 20%
CWT sampling methods	Indirect methods	Indirect methods	Direct methods
Timeliness of CWT Data	More than 2 years-out availability for CTC ERA	2 years-out availability for CTC ERA	Previous year available for CTC ERA
MSF Data	Releases and retention by clip status in MSFs not monitored	Retention by clip status is available but not releases by clip status	Releases and retention by clip status in MSFs is monitored

Table 4-4—Fishery data availability and quality to support the implementation of Chapter 3.

Fishery		Region	Catch accounting			Incidental mortality			CWT sampling rate			CWT sampling methods			Timeliness of CWT data			MSF data		
			T	N	S	T	N	S	T	N	S	T	N	S	T	N	S	T	N	S
Preterminal	AABM	SEAK	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Green	Green	Green	Green	Green	Green	Grey	Grey	Grey
		NBC	Green	Grey	Green	Green	Grey	Green	Green	Grey	Green	Green	Grey	Green	Green	Grey	Green	Grey	Grey	Grey
		WCVI	Green	Grey	Green	Green	Grey	Green	Green	Grey	Green	Green	Grey	Green	Green	Grey	Green	Grey	Grey	Grey
	ISBM	NBC & CBC	Grey	Green	Green	Grey	Green	Green	Grey	Green	Yellow	Grey	Green	Green	Grey	Green	Green	Grey	Grey	Grey
		Southern BC	Grey	Yellow	Green	Grey	Yellow	Green	Grey	Green	Yellow	Grey	Green	Green	Grey	Green	Green	Grey	Grey	Green
		N Falcon	Green	Grey	Green	Yellow	Grey	Green	Green	Grey	Green	Green	Grey	Green	Green	Grey	Green	Grey	Grey	Green
		S Falcon	Green	Grey	Green	Yellow	Grey	Yellow	Green	Grey	Green	Green	Grey	Green	Green	Grey	Green	Grey	Grey	Grey
		Puget Sound	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Grey	Green	Green
Terminal	AABM	SEAK	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Green	Yellow	Yellow	Green	Green	Green	Grey	Grey	Grey
	ISBM	NBC & CBC	Grey	Yellow	Yellow	Grey	Yellow	Yellow	Grey	Green	Yellow	Grey	Green	Green	Grey	Green	Green	Grey	Grey	Grey
		Southern BC	Grey	Yellow	Green	Grey	Yellow	Green	Grey	Yellow	Yellow	Grey	Yellow	Green	Grey	Green	Green	Grey	Grey	Green
		Fraser	Grey	Green	Green	Grey	Green	Green	Grey	Yellow	Red	Grey	Green	Green	Grey	Green	Green	Grey	Grey	Grey
		WA Coast	Grey	Green	Yellow	Grey	Green	Yellow	Grey	Green	Yellow	Grey	Green	Yellow	Grey	Yellow	Yellow	Grey	Grey	Red
		Puget Sound	Grey	Green	Green	Grey	Green	Green	Grey	Green	Green	Grey	Green	Green	Grey	Yellow	Yellow	Grey	Green	Green
		Columbia River	Grey	Green	Green	Grey	Green	Green	Grey	Green	Green	Grey	Green	Green	Grey	Green	Yellow	Grey	Green	Yellow
		Oregon Coast	Green	Grey	Yellow	Yellow	Grey	Yellow	Green	Grey	Green	Green	Grey	Green	Yellow	Grey	Yellow	Grey	Grey	Green
TBR	Terminal	Alaska	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Green	Green	Green	Green	Green	Green	Grey	Grey	Grey
		Canada	Grey	Green	Yellow	Grey	Green	Yellow	Grey	Green	Red	Grey	Green	Yellow	Grey	Green	Green	Grey	Grey	Grey

Table Notes:

- T = Troll
- N = Net
- S = Sport
- [1]Grey cells indicate Not Applicable (NA)
- [2]Red cells indicate No Data (ND)

Transboundary Rivers

Stocks

Three TBR escapement indicator stocks are currently recognized under the PSC Chinook salmon indicator program: Taku, Stikine, and Alsek. Collectively, these stocks represent all known TBR Chinook salmon populations. All three indicators have established CTC-approved escapement goals, comprehensive escapement monitoring, and annual age composition sampling, with data routinely provided in time for annual PSC model calibrations (Table 4-2).

Juvenile Chinook from the Taku and Stikine Rivers are captured and coded-wire tagged annually. Recoveries from these tagging programs enable direct estimation of exploitation rates, marine survival, and maturation rates without relying on a proxy hatchery indicator stock. Although the Alsek River stock is not currently tagged annually, previous CWT studies showed negligible fishing mortality outside terminal fisheries. Therefore, ongoing tagging is unnecessary unless fishing patterns or ocean distribution change substantially.

Age-specific forecasts for Taku and Stikine stocks are generated annually by the Transboundary Technical Committee (TTC) but are not yet fully integrated into the PSC Chinook Model, primarily because Chinook Model forecasts represent ages 3–6, whereas the TTC forecasts are specifically for larger fish (≥660 mm mid-eye-to fork length [METF]), generally age-5 and older.

While the TBR indicator stock programs generally maintain exceptionally high data quality, recent sampling challenges associated with the Stikine River have led to periodic shortfalls in data standards due to low sample sizes in the two-event mark-recapture study and methodological adjustments in how event 2 data are collected. These issues are currently under review by the TTC.

A notable complexity in TBR management arises from parallel analyses conducted by the CTC and TTC. For instance, harvest estimates derived by the TTC use genetic mixed-stock analysis and fishery ticket data, while the CTC relies exclusively on CWT recoveries. This divergence occasionally results in differing estimates reported to the PSC. Addressing these methodological differences is critical for improving clarity and consistency.

Fisheries

Terminal fisheries targeting Chinook salmon in the Taku, Stikine, and Alsek rivers within SEAK are extensively monitored. Catch accounting, incidental mortality assessment, and CWT sampling methods generally meet or exceed CTC standards, though occasional deficiencies in sampling rates have been noted, particularly in sport fisheries (Table 4-4). Both CWT and GSI data are available, enhancing the precision and reliability of fishery exploitation estimates.

Canadian terminal fisheries for these stocks are similarly monitored. In-river commercial fisheries are generally well monitored, but in-river subsistence and sport fisheries exhibit limited catch accounting, indirect or uncertain estimates of incidental mortality, and inadequate or absent CWT sampling. These deficiencies are mitigated by the fact that in-river harvest, particularly in recent years, have been minimal to non-existent.

SEAK

Stocks

Three SEAK escapement indicator stocks are currently recognized under the PSC Chinook salmon indicator program: Situk (Yakutat Forelands), Chilkat (Northern SEAK), and Unuk (Southern SEAK). Collectively, these represent only a small proportion of SEAK Chinook salmon populations (3 of 31, where the aforementioned TBR stocks are excluded in the total count of 31 Chinook stocks in SEAK). Additional stocks (King Salmon River, Chickamin, Blossom, Keta, and Andrew Creek) are also actively monitored by the ADF&G, with their data contributing directly to the PSC Chinook Model.

All recognized indicator stocks have CTC-approved escapement goals, full annual age composition sampling, with data routinely provided in time for annual PSC model calibrations (Table 4-2). Wild juvenile Chinook tagging occurs annually on the Chilkat and Unuk Rivers, enabling precise exploitation rate estimates without reliance on proxy hatchery stocks. The Situk stock was previously demonstrated through tagging studies to experience significant mortality only in terminal fisheries and does not require annual tagging unless fishing patterns or ocean distribution changes substantially.

Age- and size-specific forecasts are produced for all recognized SEAK indicator stocks. However, composite forecasts for the broader SEAK aggregates (Yakutat Forelands, Northern Southeast Alaska, Southern Southeast Alaska) are not yet fully integrated into the PSC Chinook Model, primarily because Chinook Model forecasts represent ages 3–6, whereas the agency forecasts are specifically for larger fish (≥660 mm METF), generally age-5 and older.

Overall, the SEAK indicator stock program maintains high data quality. Escapement monitoring covers 8 of 31 SEAK populations annually, with direct wild exploitation indicator stocks representing 2 of 31 populations. Additionally, the combination of wild and hatchery tagging programs uniquely enables validation of hatchery stock assumptions concerning maturity schedules and fishery exploitation patterns. Generally, this evaluation has shown notable differences (e.g., Chilkat versus Northern Southeast Alaska CYERs), highlighting the importance of simultaneous wild and hatchery stock monitoring.

Fisheries

Terminal and preterminal fisheries in SEAK are extensively monitored. Catch accounting, incidental mortality estimation, and timeliness of CWT data reporting generally meet or exceed CTC standards (Table 4-4). Direct sampling methods dominate, although indirect methods occasionally supplement monitoring in specific Terminal Harvest Areas (THAs), where stocks are nearly exclusively Alaska hatchery-origin fish. These indirect estimates are highly reliable due to known hatchery stock composition. CWT sampling meets CTC standards, though occasional shortcomings persist, notably in sport fisheries. GSI data collection complements CWT information, providing robust validation of fishery stock compositions and exploitation estimates.

NBC/CBC

Stocks

There are currently six PSC escapement indicator stocks that return to NBC/CBC: Nass, Skeena, Kitsumkalum, Atnarko, Wannock and Chuckwalla-Kilbella. Escapement estimates for Skeena and Atnarko meet CTC data standards, are sampled for age composition annually, and are provided in time for annual CTC model calibrations (Table 4-2). Only Atnarko has a PSC-agreed escapement goal but three have proxy estimates of S_{MSY} developed by the agency. Unlike other stocks in the NBC/CBC region, Wannock and Chuckwalla-Kilbella. are not currently sampled on an annual basis for age composition. The Wannock and Chuckwalla-Kilbella. rivers are remote and have unique terminal fisheries and life histories (e.g., run timing and maturation patterns). Habitat-based escapement goals have been developed by DFO for Wannock and Chuckwalla-Kilbella, but deficiencies in the escapement estimation programs pose a challenge to evaluate stock status. Hatchery-produced juvenile Chinook are coded-wire tagged in the Kitsumkalum (tributary of the Skeena) and Atnarko, and CWT recoveries from these programs are used to estimate survival, maturation rates and exploitation rates. Currently the Kitsumkalum and Atnarko CWT indicator stocks, KLM and ATN, are used to represent exploitation rates in NBC and CBC, respectively. Although age-specific forecasts are produced for Atnarko Chinook, the forecast of the aggregate CBC is not age-specific. Further refinement of input data for the Chinook Model is underway to better represent the Chinook production in NBC and CBC, and additional modifications are in progress to allow for inclusion of age-specific forecasts for NBC and CBC. In general, the NBC/CBC indicator stock program has moderate to high data quality for the largest and most accessible stocks, but the smaller and more remote stocks have poor quality data.

Fisheries

Preterminal fisheries for NBC/CBC are extensively monitored. Catch accounting, incidental mortality estimation, and timeliness of CWT data reporting generally meet or exceed CTC standards (Table 4-4). Shortcomings in catch reporting and CWT sampling persist in some terminal fisheries, notably in CBC sport fisheries and NBC/CBC subsistence fisheries. GSI data collections complement CWT information. Discrepancies between CWT and GSI data in some years require further investigation.

West Coast Vancouver Island

Stocks

West Coast Vancouver Island escapement indicator stocks that are currently recognized under the PSC Chinook salmon indicator program include: a 3-stream index for SWVI which includes Bedwell-Ursus, Megin and Moyeha; 4-stream index for NWVI which includes Colonial-Cayeagle, Artlish, Kaouk, and Tahsish; and a 14-Stream index for WCVI which includes the NWVI and SWVI systems in addition to Marble, Leiner, Burman, Tahsis, Sarita, Nahmint and San Juan. These represent over 72 watersheds with multiple observations of spawners that contain Chinook on the WCVI.

No WCVI escapement indicator stocks have PSC-agreed escapement goals. There has been some work toward habitat-based escapement goals, however concerns about the accuracy of the escapement estimates and the numbers of hatchery-origin spawners have limited their utility and made it difficult to implement Chapter 3 effectively. Escapement monitoring is completed with weirs, snorkel surveys, and aerial surveys, with standard error on estimates varying within and between methods. Escapement monitoring occurs on about 40 tributaries and systems annually, with many of these being peak counts; about 20 of these systems are visited 6-8 times allowing for an “area under the curve (AUC)” estimate.

Robertson Creek has CWTs applied, full annual age composition sampling, with data routinely provided in time for annual Exploitation Rate Analysis and the PSC Chinook Model calibration (Table 4-2). Exploitation is represented by Robertson Creek, but this assumption may not be entirely valid.

Otolith thermal marks, CWT, PBT, and GSI data are used to estimate returns of hatchery- and natural-origin fish to WCVI.

In addition to CTC-produced terminal run forecasts for the Chinook Model calibration, DFO produces annual domestic age- and size-specific forecasts for five main WCVI regions; these domestic forecasts represent an aggregate of hatchery- and natural-origin fish for a given region. These regions are: Somass (AKA Robertson Creek, Mean Absolute Percentage Error [MAPE] = 21%), Conuma (MAPE = 31%), Nitinat (MAPE = 34%), Burman (MAPE = 58%) and “Other WCVI” (MAPE = 19%). The “Other WCVI” includes the 14 PSC Escapement Indicators listed above, as well as Cypre, Gold, Tranquil and Zeballos Rivers. Note “Other WCVI” uses a shorter time series so the MAPE may reasonably increase. In 2025, the domestic forecasting process was improved by excluding pre-2000 data and non-WCVI catch in the forecasting methodology. In general, the WCVI indicator stock program is partially supporting the implementation of Chapter 3, but using Robertson Creek hatchery as the coast-wide indicator stock may be limited. Development of more monitoring, sampling, and analysis would go a long way toward supporting the implementation of Chapter 3.

Fisheries

Terminal and preterminal fisheries on Vancouver Island are for the most part extensively monitored. Catch accounting, incidental mortality estimation, and timeliness of CWT data reporting generally meet or exceed CTC standards (Table 4-4). Direct sampling methods dominate, although indirect methods occasionally supplement monitoring for areas with small harvest, which includes tidal and freshwater areas. CWT sampling meets CTC standards, though occasional shortcomings persist, notably in sport fisheries. Additionally, we have new First Nations fisheries emerging, and capacity for funding, sampling, processing and analysis is still being identified. In some cases, compliance with sampling is an issue. In all these cases, parental based tagging (PBT), genetic stock identification (GSI), and otolith thermal mark data collection complements CWT information, providing more robust validation of local fishery stock compositions and exploitation estimates.

Strait of Georgia

Stocks

Currently, there are three CTC escapement indicator stocks that return to the Strait of Georgia area; Cowichan, Nanaimo, and Phillips. Additional wild stocks in Strait of Georgia are also monitored for escapement (Kingcome, Wakeman, Nimpkish, Salmon), and the data collected from these contributes to the Chinook Model. Only Cowichan has a PSC-agreed escapement goal.

Escapement estimates meet CTC data standards for all three escapement indicator stocks. Cowichan is also sampled for age composition annually. The data are all provided in time for annual CTC model calibrations (Table 4-2). Hatchery-produced juvenile Chinook are tagged in the Cowichan and Quinsam, and CWT recoveries from these programs are used to estimate exploitation rates. Both Phillips and Nanaimo have been discontinued as CWT indicator stocks - Phillips in 2022 (last brood was 2019), and Nanaimo in the mid-2000s.

Annual composite forecasts are produced by the CTC for broader Strait of Georgia aggregates (Upper Georgia Strait, Middle Georgia Strait, Lower Georgia Strait). Middle and Lower Georgia strait forecasts are age-specific, while Upper Georgia Strait forecasts are not.

Cowichan maintains high data quality in its escapement monitoring as an indicator stock. However, the Upper Georgia Strait stock group needs to be refined. An escapement indicator stock for EVIN is still to be determined, and CWT sampling rates in the region remain below optimal levels. Overall, the indicator stocks in Upper Strait of Georgia require continued enhancement to fully support the implementation of Chapter 3, whereas the Cowichan has a high-quality assessment program.

Fisheries

Terminal and preterminal recreational fisheries are extensively monitored except for some remote mainland inlet areas that are unlikely to see much effort. However, First Nations fisheries for food, social and ceremonial purposes are not closely monitored. Also, there are no commercial Chinook fisheries in the Strait of Georgia. Catch accounting, incidental mortality estimation, and timeliness of CWT data reporting generally meet CTC standards (Table 4-4). Direct sampling methods dominate, although indirect methods occasionally supplement monitoring for areas with small harvest, which includes tidal and freshwater areas. CWT sampling meets CTC standards, though occasional shortcomings persist, notably in sport fisheries. In all these cases, parental based tagging (PBT) and genetic stock identification (GSI) data collection complements CWT information, providing more robust validation of fishery stock compositions and exploitation estimates.

Fraser

Stocks

Five distinct Chinook life-history strategies are present in the Fraser River watershed, with variation in run timing, juvenile freshwater residence (stream-type and ocean-type), and age at maturity. Associated CWT indicator stocks are established or being developed to represent stock groups with each unique life-history strategy. The Fraser spring-run age 1.2 (FS2), Fraser summer-run age 0.3 (FSO), and Fraser fall-run age 0.3 (FHF Harrison) stock groups have associated CWT indicator stocks, while CWT indicator stocks for the Fraser spring-run age 1.3 (FS3) and Fraser summer-run age 1.3 (FSS) stock groups are in development.

All Fraser Region Attachment I indicator stocks meet the CTC data standards in terms of the methodology employed, accuracy and precision of the escapement estimates, and survey coverage. Escapement estimates stratified by sex and age are available for all CWT indicators except for Lower Chilcotin, with the latter stratified by age only.

The escapement estimates and CWT data are provided in time for the CTC analysis for Nicola, Lower Shuswap and Harrison, but it does not apply to the developing indicator stocks (Lower Chilcotin and Chilko) as they are not included in the exploitation rate analysis yet.

Nicola, Lower Shuswap, and Harrison are well established CWT indicator stocks that are representative of their respective stock groups.

CWT programs are in development for Lower Chilcotin and Chilko. Challenges with hatchery rearing capacity and broodstock collection have limited the number of released marked and CWT juveniles at Lower Chilcotin, but measures are in place to increase broodstock collection and meet tagging targets in the upcoming years. In comparison to the Lower Chilcotin, broodstock collection is not a limiting factor in the development of the Chilko CWT indicator stock. During the current treaty period, efforts were made to increase release size of Chilko (CKO) CWTs, leading to sufficient recoveries in Canadian and US ocean fisheries, terminal freshwater fisheries, and escapement to meet the CWT recovery targets for inclusion in the 2026 ERA.

CWT sampling rates >20% are only consistently achieved at Lower Shuswap. Nicola met the target in 2019, 2021 and 2023, but failed to do so in 2020 (10%), 2022 (15%) and 2024 (18%). Harrison has remained between 8% and 18% since 2019. Over the years, CDFO has implemented different approaches to increase the CWT sampling rate at Harrison and reach the 20% target, including sacrificing all marked fish encountered during the tag application phase of the mark-recapture program and increasing carcass recovery effort. However, due to the physical characteristics of the Harrison River with its short length and large width, carcasses tend to exit the study area towards the Fraser River where they can't get recovered. For Lower Chilcotin, since no CWTs have returned to escape yet, it is not possible to estimate sampling rate, whereas for Chilko, a CWT sampling rate >20% was achieved for all years since 2019 except 2024.

For the three established CWT indicators (Nicola, Lower Shuswap, Harrison), ISBM CYER metrics are reported annually, and the metrics are not reported yet for Lower Chilcotin and Chilko as they are not part of the CTC Exploitation Rate Analysis.

An annual forecast is developed in time for the Chinook Model Calibration for all Fraser model stocks. Forecasting is performed at the model stock level for the Fraser spring-run age 1.2 (FS2 – Nicola indicator), Fraser spring-run age 1.3 (FS3 – Lower Chilcotin developing indicator), Fraser summer-run age 1.3 (FSS – Chilko developing indicator), Fraser summer-run age 0.3 (FSO – Lower Shuswap indicator), and Fraser fall-run age 0.3 (FHF – Harrison wild indicator and FCF, Chilliwack hatchery indicator). An age-specific forecast is only developed for Harrison (FHF), and none of the forecasts consistently meet the accuracy standards.

Harrison and Lower Shuswap have escapement goals specified in Attachment I of 75,100 and 12,300 spawners, respectively. Habitat-based escapement goals have been developed for the other Fraser stocks, but the escapement data quality at the stock group level has limited their utility for determining stock status thus far.

Fisheries

Terminal fisheries in the Fraser River region are extensively monitored and include freshwater recreational fisheries, First Nation net fisheries, and gillnet test fisheries. Fraser fisheries catch accounting, incidental mortality estimation, CWT sampling methods and timeliness of the CWT data generally meet the CTC standards. CWT sampling rates are high for the gillnet test fisheries, but variable for First Nation net fisheries, and the combined net fisheries exceeded the 20% CWT sampling rate only once since 2019. Freshwater sport fishery sampling rates are low in the Fraser River terminal areas and overall do not meet the CTC standards despite extensive creel surveys in key harvest areas to estimate catch and collect coded wire tags and other biological information. Difficulties in attaining CWT samples from First Nation and recreational fishers outside the extensively monitored harvesting areas and periods explain the low CWT sampling rates observed.

Canadian Okanagan

The Okanagan escapement assessment programs in the United States and Canada do not currently meet the CTC data standards for escapement indicator stocks. In the U.S. the redd-based escapement methods likely underestimate escapement, and in Canada, the visual surveys produce an index rather than an absolute abundance estimate. In Canada, a PIT-tag mark-recapture program has been developed, but currently the number of PIT tagged adults returning to the spawning grounds is too low to meet the precision target. Forecasting is developed for the Columbia Summers, but no specific forecast is developed for the Okanagan population. In Canada, very low returns have limited access to broodstock and led to low hatchery production. However, in the U.S. the returns are more abundant and the CWT releases for the SMK indicator stock achieve the targets for the CYER metrics and is used to inform the mortality distribution and exploitation rate of the Okanagan population.

Puget Sound

Stocks

There are five Puget Sound indicator stocks which includes Nooksack spring, Skagit spring, Skagit summer/fall, Stillaguamish, and Snohomish. All Puget Sound stocks scored high across most attributes for data quality and availability (Table 4-2). Escapement and terminal run estimates are provided on time for annual Chinook Model calibrations and fishery performance analysis. Escapement estimates are available by age for all stocks. Skagit spring and Skagit summer/fall scored lower for their escapement survey coverage due to challenges with sampling such a large watershed. Escapement estimates are produced from redd and fish count methods covering the total spawning reach or index reaches for Nooksack spring and Snohomish; however, these methods produce only point-estimates and are not capable of generating a coefficient of variation to assess for CTC data standards. Skagit spring and Skagit summer/fall escapement estimates are produced from a combination of aerial and foot surveys of cumulative redd counts. Stillaguamish escapement estimates are now produced primarily using transgenerational mark-recapture (tGMR) methods, which have consistently met CTC data standards.

A coded-wire tagged release group is used to represent each Puget Sound stock. All CWT tag indicators are considered representative and to have adequate tagging, except for Nooksack springs. The Nooksack springs management unit is represented by indicator stock CWT releases at the Kendall Creek hatchery (North/Middle Fork Nooksack). Current data reflects recent increases in total South Fork abundance and a terminal area harvest adjustment is now applied to estimate CYERs. CWT sampling rates in escapement meet CTC data standards (≥20%) and ISBM CYER metrics are considered representative for all stocks.

Forecasts for all Puget Sound stocks are provided in time for annual PSC Chinook Model calibrations; however, no Puget Sound stock is consistently meeting the CTC data standards for forecasts (<7.5% MAPE; SE <30%).

Fisheries

Puget Sound supports troll, net, and sport fisheries both preterminal and terminal (except for troll, which is limited to preterminal). Catch accounting and incidental mortality estimates from Puget Sound fisheries comes from direct estimation methods. Coded-wire tag sampling rates exceed 20% in all Puget Sound fisheries and direct CWT sampling methods with electronic tag detection are used. There is a two-year lag in CWT recovery data reporting from Puget Sound fisheries. There are various causes for the reporting delay in Puget Sound. One major source of delay is the Puget Sound marine sport fishery which relies on outdated paper catch record cards to complete CWT expansions. The Washington Department of Fish and Wildlife is currently developing an eCRC mobile application and complementary e-Creel system to improve timeliness of catch and CWT data reporting. Other reasons for the CWT reporting delay include the intensive stock and age composition monitoring programs undertaken by the co-managers on several of the Puget Sound stocks, often combining both genetics and an otolith analysis. In addition, data provided to the CTC by the Washington co-managers often require independent verification and agreement among multiple parties, a process that slows reporting but enhances quality assurance and control.

Mark-selective fishing is widespread in Puget Sound marine sport fisheries and several terminal net and sport MSFs impact PSC indicator stocks. The CTC now accounts for mark-selective fishing in the ERA (since 2024) and CYER estimates can now be produced for both the marked and the unmarked components of each stock. The new mark-selective fishing algorithms, and mixed fishery adjustment, requires estimates of marked release rates and unmarked retention rates. These quantities can be derived from catch and release estimates by mark status, which are currently available for all Puget Sound fisheries relevant to implementation of Chapter 3.

Washington Coast

Stocks

The Washington Coast is represented by five fall run indicator stocks: Hoh, Queets, Quillayute, Grays Harbor, and Hoko. The stocks have PSC-agreed escapement goals; however, none of the annual estimates produced for the coastal stocks meet CTC data standards. Both Hoko and Queets are represented by a coded-wire tag release group with adequate release size.

Quillayute, Grays Harbor, and Hoh are represented by the Queets group for ocean fisheries. Forecasts, escapement by age and terminal run estimates are provided on time for annual Chinook Model calibrations and fishery performance analysis.

Fisheries

Troll and sport fisheries occur in the pre-terminal areas of the Washington Coast, with net and sport fisheries supported in the terminal areas. Direct estimation methods are used to account for catch and incidental mortality in the Washington Coast fisheries, and coded-wire tag sampling methods with electron tag detection are used to sample the fisheries at >20%. There is a delay of greater than one year in CWT recovery reporting for some Washington Coast fisheries due to the reliance on catch record cards for estimating total catch. In addition, the Washington Coast has the same issue as Puget Sound in that data provided to the CTC by the Washington co-managers often require independent verification and agreement among multiple parties, a process that slows reporting but enhances quality assurance and control.

Mark-selective fishing only occurred in Washington Coast marine sport fisheries from 2010–2014 Marked release rates and unmarked retention rates are available for these fisheries from catch and release estimates.

Columbia River

Stocks

There are currently four PSC escapement indicator stocks that return to the Columbia River: Mid-Columbia Summers, Upriver Brights, Lewis River Fall, and Coweeman Tule. Escapement estimates for all four Columbia River stocks meet or nearly meet CTC data standards. Expansion factors have been verified for Lewis River Fall, and Coweeman Tule; whereas annual escapement estimates for Mid-Columbia Summer and Upriver Brights are based upon dam counts, catches, hatchery removals, and estimated inter-dam losses. Annual age-specific data is available from sampled escapements. PSC-agreed escapement goals are in place for Mid-Columbia Summers, Upriver Brights, and Lewis River Fall stocks. Goals for Coweeman Tule have not been submitted for CTC review. In-river pre-smolt collection programs in the Hanford Reach (Upriver Brights) and in the Lewis River are used to represent CWT naturally-produced Chinook for fishery distribution and exploitation rate analyses. These are some of the very few cases, coastwide, where naturally produced fish from the stock itself are coded-wire tagged. Smolts released from Priest Rapids Hatchery are also used as an exploitation rate indicator for the Upriver Brights. Hatchery fish from Mid-Columbia Summer broodstock are used to estimate fishery distribution and exploitation for the Mid-Columbia Summer stock; this stock is a combination of hatchery and natural origin fish. The degree of representativeness of the hatchery indicator for the natural portion of the Mid-Columbia Summer stock has not been documented. The hatchery produced Cowlitz Fall CWT indicator is used as a surrogate to represent ocean impacts for the Coweeman Tule natural escapement indicator. TAC forecasts for Columbia River stocks are provided annually for input to the Chinook Model. In general, the Columbia River indicator stock program has some of the highest quality data available coast-wide.

Fisheries

Sport, net, and tribal Fisheries occur within the Columbia River Basin from the Buoy 10 marker at the mouth through the terminus of the anadromous zone at Chief Joseph and Hells Canyon Dams. Fisheries are closely monitored with effort and creel sampling to estimate total catch and collect coded-wire tags and other biological information. Effort estimation is by counts of boats and bank anglers by flight or ground survey. Commercial catch is enumerated at fish buyers' facilities. Catch sampling and angler interviews occur at boat ramps, along banks, and at fish buyers. Interview questions include number of kept and released fish by mark status. Recreational anglers also self-report catch via catch-record-cards, although these are not always processed in time for use in CTC analyses, in which case effort- and creel- based estimates are used. Catch sample rates are generally above 20% for all fisheries. Coded-wire tags are often but not always processed in time to use for the following year's ERA. An area of development is to integrate the interview data on mark status of released fish in all estimates of marked and unmarked retention rates, because assumptions based on regulations and mark-rate information have been used in some instances. There are also ongoing efforts to explore the use of electronic catch record cards for estimation in Washington.

Oregon Coast

Stocks

The Oregon Coast has two stock aggregates in the CTC Chinook Model, North Oregon Coast (NOC) and Mid-Oregon Coast (MOC). For both, considerable resources have been expended in improved evaluation of/for escapement, terminal catches, CWT sampling, forecasts, and fisheries performance during the 2019 Agreement period, following improvements that occurred as well during the 2009 Agreement period. The Escapement Indicator Stocks (EISs) representing NOC (Nehalem, Siletz, and Siuslaw) and MOC (S. Umpqua and Coquille), have benefited from continued support of ongoing programs through the U.S. LOA process. Data availability and quality for NOC is generally high: escapement estimates for EISs have always met the CTC CV standard, and evaluation of whether escapement goals (NOC EISs) have been met have been possible each year. For the MOC, however, escapements for Coquille have plummeted to unprecedented lows beginning in 2018 (in the hundreds rather than thousands) which has made adequate age surveying problematic, and in 2024 Umpqua fell to its lowest escapement since 1980 (there are no escapement goals for Coquille and Umpqua). Estimates of escapement for both the Umpqua and Coquille are now solidly below those calibrated expansion values that had been developed during mark-recapture study. Surveys for the South Umpqua are expanded to represent the entire basin, and survey coverage does not encompass the North Fork nor Main stem segments. Nonetheless, annual surveys conducted throughout the MOC aggregate represent high quality design and execution, yielding defensible estimates in both EIS and ERIS basins.

Fisheries

The South of Falcon (SOF) terminal fishery includes all estuary/rivers in the NOC and MOC aggregates. In the 2019 treaty period ODFW has shifted from the previous "punch-card" harvest reporting system (hand-recorded harvest cards either directly submitted or mailed in by anglers) to the Electronic Licensing System (ELS). For ELS, most anglers immediately report catch using a cellular phone application. An innovative extension to this is an “e-creel” estimation of harvest, a mark-recapture estimation among anglers using the ELS system. ODFW has recently completed a technical evaluation to calibrate ELS/punch-card estimates to e-creel/creel estimates historically, although this remains to be utilized in our reporting for PST/CTC evaluations (hence the “yellow” rather than “green” rating for sport fishing).

4.2 Management Objectives

The Chinook fishery management program described in Chapter 3 of the 2019 PST Agreement uses harvest regimes based on annual indices of abundance that are responsive to changes in production, that take into account all fishery induced mortalities, and that are designed to meet maximum sustainable yield (MSY) or other agreed biologically-based numeric escapement or exploitation rate objectives, including those set out in Attachment I. Although no exploitation rate objectives have been identified for any of the indicator stocks listed in Attachment I, numerous escapement goal objectives exist for indicator stocks in this attachment: three for Southeast Alaska, three for transboundary stocks, four for British Columbia, and 12 for Southern U.S. stocks.

Escapement goals are integrated into CTC assessments in two ways: (1) the synoptic evaluation of stock status (reported annually in CTC Catch and Escapement report) and (2) the evaluation of annual and three-year average ISBM obligations stipulated in paragraph 5 and subparagraph 7c of Chapter 3. The synoptic evaluation of stock status summarizes in bivariate plots the performance over time for many of the escapement indicator stocks relative to established exploitation rates at maximum sustainable yield and escapement goals. Regarding ISBM obligations, both annual and three-year average evaluations are based on PSC-agreed escapement goals (if available) and the calendar year exploitation rate (CYER) metric that monitors the total mortality in ISBM fisheries. For stocks without PSC-agreed escapement goals, the evaluation of ISBM obligations is based entirely on CYER information.

The CTC is tasked to evaluate and review escapement objectives that fishery management agencies have set for Chinook stocks subject to this Chapter for consistency with MSY or other agreed biologically-based escapement goals and, when requested by the Commission, recommend goals for naturally spawning Chinook stocks that are consistent with this Chapter. Escapement goals reviewed and accepted by the Commission are based on analyses that followed the guidelines developed in the CTC escapement goal report (CTC 1999), with further clarification and options for escapement goal submissions to the CTC provided in CTC Technical Note 1301 (Bilateral Data Standards for MSY or Other Biologically-Based Escapement Goals, May 4, 2013; Appendix E of TCCHINOOK (13)-01). One challenge of developing escapement objectives relates to the size and complexity of some of the escapement indicator stocks; some of these model stocks consist of numerous smaller stocks that have varying migration timing, ocean distributions, and maturation patterns that influence their vulnerability to fisheries. In many cases, the necessary total escapement at age and exploitation rate data are not available to generate escapement objectives by traditional stock-recruitment analysis. Habitat-based methods are available to estimate escapement objectives for data limited stocks; however, the use of these escapement objectives to evaluate stock status requires methods that produce total escapement estimates, or calibrated survey methods that frequently are not available.

The CTC has reviewed two escapement goals during this Agreement, Skagit spring and Skagit summer/fall Chinook. A joint escapement goal review for both Skagit spring and Skagit summer/fall was presented by the Skagit co-managers in September 2020. At that time, the CTC requested additional information before considering adoption of the proposed spawning escapement goals presented for either stock. The Skagit co-managers submitted a follow-up request to review updates to the management objectives at the September 2024 CTC meeting. The updated goals for both stocks were accepted by the CTC with no opposition and subsequently adopted by the Commission. The new escapement goals are now 1,024 for Skagit spring and 8,201 for Skagit summer/fall (CSCWG 2024).

Research and consultations with First Nations were initiated by DFO in 2023 with the objective of developing escapement goals for Nass and Skeena Chinook. Completion of a research document and Fishery Science Advice Report is anticipated for the Fall of 2026. Skeena Chinook is one of the Canadian stocks in Attachment I and therefore adoption of an escapement goal will support the evaluation of ISBM obligations for this stock. If the above DFO reports are completed in 2026, a submission for CTC review is to be expected sometime in 2027.

4.3 Issues with Implementation and Application of Calendar Year Exploitation Rate Metrics

The CYER metric replaced the previous “non-ceiling” ISBM metric in this Agreement. Historically, “non-ceiling” referred to fisheries not managed under fixed catch ceilings. With the 1999 Agreement, some of the ceiling fisheries became AABM and others ISBM (CTC 2011). The former metric was a ratio, expressed as the stock-specific Adult Equivalent (AEQ) total mortalities in each ISBM fishery (by country) in the current year divided by the total mortalities that would have occurred under base period exploitation rates. The new CYER metric, conceptually a harvest rate measure, is the ratio of stock-specific AEQ total mortalities in each ISBM fishery (by country) divided by the sum of all AEQ total mortalities across all fisheries plus escapement, with results compared to the 2009–2015 base period. CYER has many desirable features, such as simplicity and improved stability over the old metric. However, unlike the previous ISBM index, the distributional nature of the CYER metric does not reflect the impacts of ISBM fisheries alone; the denominator includes the combined impacts of AABM and ISBM fisheries of both Parties.

Despite these improvements, implementation of the CYER metric presented several challenges. These are grouped into three categories: external factors—changes that affect estimation but are not specific to CYER (e.g., two-year lag in CWT data reporting, untagged brood year and resulting pseudo-recoveries, mark-selective fishery adjustments, and data revisions); intrinsic factors—issues inherent to the metric (e.g., appropriateness of a universal 2009–2015 base period, distributional nature of the CYER metric, instability to incomplete brood years, and sensitivity to CWT release group size); and implementation issues—challenges in applying Treaty provisions (e.g., clarity of Treaty provisions, timing between analysis cycles and decision needs, weak linkage between CYER and biologic reference points, lack of or changes to CWT indicators, and the Treaty provision asking the CTC to wade into policy-level discussions). The sections below describe each set of challenges and their implications.

4.3.1 External Factors

External factors are issues outside the CYER metric that affect estimation and interpretation. They would have impacted CYER, the prior ISBM metric, and most alternative metrics because they change inputs, timing, or context rather than the metric itself. External factors include the two-year lag in CWT data reporting, the untagged 2019 brood year due to COVID-19 pandemic and resulting pseudo recoveries, MSF adjustments, and data revisions. These factors can shift CYER values and alter CYER Limit evaluations independent of underlying ISBM impacts.

Two-Year Lag in CWT Data Reporting

The Southern US lags two years behind in their CWT reporting due to slow reporting of catch records in sport fisheries where there is no creel survey. This two-year lag impacts the timeliness of the CYER metric, leading to delayed management actions that might not address overexploitation of the stocks that are triggered. For example, the CTC would determine if a stock triggers paragraph 7 (c) in the two years before the spring of the analysis year. These results would not be presented until the fall of the analysis year, which is typically after most of the effort occurs in sport fisheries. As a result, the management entity cannot respond until the following year which is 3 years after the year in which the party failed to meet its ISBM obligations. This highlights the critical need for more timely reporting of CWT data to ensure that management actions are effective and relevant.

Untagged Brood Year and Resulting Pseudo-Recoveries

Due to COVID-19 disruptions in 2020, many 2019 brood-year CWT indicator stocks, primarily in British Columbia, were released without CWTs. Consequently, no direct CWT recovery data exists for the affected cohorts in catch years 2021–2025 (depending on subyearling vs. yearling release). To maintain continuity in ERA/CYER estimation and ISBM evaluation, the CTC developed and iteratively refined methods to impute stock-, fishery-, and age-specific pseudo-recoveries (see Section 4.5, COVID-19 pandemic; Table 4-5 for affected indicators).

While necessary, these imputations introduce additional uncertainty for affected stocks and can influence CYER estimates and their interpretation. Annual ERA appendices provide with/without pseudo-recovery sensitivity checks; CYERs for affected years should therefore be treated as higher uncertainty estimates and compared cautiously to fully observed cohorts.

Mark-Selective Fishery Adjustments

Adoption of the CYER metric and subsequent MSF adjustments in the ERA change estimated exploitation rates and, in several cases, the resulting management advice. Because MSFs selectively retain marked fish and release unmarked fish, fishery impacts on a CWT indicator stock can diverge from those on the associated escapement indicator stock. The MSF adjustment relaxes the equal-exploitation assumption for marked vs. unmarked fish (PSC CYER WG 2024, Rec. 3) and reattributes mortalities accordingly. This methodological change has altered CYER estimates and the subsequent CYER Limit evaluation, including cases where a stock is not directly subject to MSFs.

The MSF adjustment increases data requirements and adds uncertainty. Key inputs include marked retention rates (MRR) and unmarked kept rates (UKR) derived from kept/released tallies by mark status, as well as mark incidence, encounter rates, release mortality, and timing/age structure. Where historical catch-monitoring programs do not capture these elements, estimation uncertainty increases and propagates into CYER. To manage this, ERA outputs for MSF-affected stocks/years should: (i) present with/without MSF sensitivity comparisons; (ii) document data sources and QA/QC for MRR/UKR and related inputs; and (iii) prioritize standardized collection of kept/released by mark status in MSF fisheries.

Data Revisions

The CYER metric is sensitive to revisions in ISBM fishery data, AABM fishery data, and escapement because it is a ratio of stock-specific AEQ mortalities in ISBM fisheries (by party) to total AEQ mortalities across all fisheries plus escapement. Revisions therefore propagate through the numerator, denominator, and the base-period reference, introducing volatility in CYER estimates and, consequently, shifts in management advice. While data review and correction are necessary, such updates complicate evaluation of ISBM provisions.

An illustrative case is the 2025 ERA for Puget Sound stocks: improved Canadian recreational catch estimates increased base period AEQ mortalities for Canada, which in turn lowered base period CYER limits for several U.S. indicators (notably the five Puget Sound indicators). Some stocks then exceeded their limits solely because the base-period reference changed. In response, an ad hoc exploitation rate analysis recalculated base period limits incorporating the new MSF algorithms but excluding the updated Canadian recreational estimates, demonstrating how revisions can alter CYER values and evaluation of ISBM provisions. Additional examples of data changes are documented in the CTC annual Exploitation Rate Analysis reports (e.g., Appendix I of TTCHINOOK (25)-01).

4.3.2 Intrinsic Factors

Intrinsic factors are issues with the CYER metric itself that also affect estimation and interpretation. For this review, intrinsic factors include the appropriateness of a universal 2009–2015 base period, the distributional nature of CYER, instability prior to brood completion, and sensitivity to CWT release group size. These properties can shift CYER values and alter CYER Limit evaluations and may produce ISBM obligation determinations that are misaligned with current conditions.

Appropriateness of a Universal 2009–2015 Base Period

A rigid base period, such as the chosen 2009–2015 period, may be too arbitrary for effective assessment of management among the fisheries and Attachment I stocks. Such a fixed and universally applied period lacks flexibility to accommodate specific-year(s) fishery regulations not representative of typical management, nor variability among stocks in current years' abundance relative to the fixed period. While this period may generally represent fishing patterns, its applicability should be evaluated across the stocks; current evaluations for certain stocks have indicated this period to be aberrant for ISBM fisheries assessment. As a result, prescribed management actions to meet ISBM obligations may be misaligned with the needs of certain stocks and fisheries, highlighting the need for a more adaptable approach in defining base periods. Combined with the two-year lag in CWT data, the reliance on a three-year average means that paragraph 7(c) may be triggered based on fishery performance from anywhere from three to five years prior. This limits agencies' ability to take timely and responsive management actions.

Distributional Nature of the CYER Metric

CYER is a distributional statistic: it expresses ISBM mortalities (by party) as a proportion of total AEQ mortalities across all fisheries plus escapement. Because the denominator includes AABM and ISBM mortalities and escapement, CYER values do not isolate impacts of ISBM fisheries. Consequently, methodological or data revisions for any fishery rescale CYER values even when ISBM mortalities are unchanged. The same issue applies to the 2009–2015 base period; updates to historical estimates changed past CYER values and the limits used for comparison (see CTC reference memos regarding revisions to Canadian recreational fishery data). Consequently, observed shifts in CYER can arise from re-scaling rather than changes in ISBM impacts, complicating evaluation of ISBM provisions.

Instability to Incomplete Brood Years

The CYER metric is considered an improvement over the previous ISBM metric due to its relative simplicity and reduced reliance on precise cohort size estimates. However, CYER remains subject to instability until all contributing brood years are complete, because incidental mortality calculations and age composition continue to update until all brood years contributing to a catch year are complete. The CTC has evaluated the sensitivity of CYER to incomplete brood years and found the effects generally small, but not negligible; some instability is inherent and persists until brood completion.

Sensitivity to CWT release group sizes

An emerging issue with the application of CYER is the potential effect of abrupt changes in the size of the CWT release group on CYER estimates. An anomalously high Canadian ISBM CYER estimate (31.4%) for CY 2021 on the Snohomish indicator stock prompted investigation into its cause. It was discovered that age-2 shaker mortality was a major contributor to the estimate. This increase in age-2 shaker mortality coincided with a substantial increase in CWT releases of Snohomish indicator tags; releases went from roughly 200,000 in 2018 to over 700,000 in 2019. Simulations by the CTC-AWG demonstrated sensitivity in CYER estimation to varying tagging levels, particularly if there is a change in tagging level that is associated with a large component of the total mortality in that calendar year, such as the age-2 shaker mortality component. This interaction between CYERs and CWT release group size was unanticipated, and no technical solution has yet been implemented; however, several potential correction procedures have already been investigated.

4.3.3 Implementation Issues

The adoption of the CYER metric in the 2019 Agreement marked a substantive shift in the PSC's evaluation of ISBM fisheries. The transition introduced implementation issues in applying Treaty provisions that, while outside external and intrinsic factors, determine whether results are timely, interpretable, and actionable. In this review, implementation issues include clarity of

Treaty provisions related to CYER, timing misalignment between the ERA analysis cycle and Commission decision, weak linkage between CYER and biological reference points (and the basis for stock-specific CYER Limits), availability and consistency of CWT indicator stocks, and application of subparagraph 7(c)(ii).

Clarity of Treaty Provisions

Ambiguities in Treaty language relevant to CYER implementation have required repeated CTC requests to the CIG for interpretation (e.g., treatment of adjustments, timing of evaluations, and presentation standards).

Timing Between Analysis Cycle and Decision Needs

Reporting lags between the CTC's ERA cycle and Commission meetings delay the availability of CYER-based advice. The two-year Southern U.S. CWT reporting lag exacerbates but is not the sole cause. Under the current schedule, fisheries occur in a given year; the ERA is conducted the following February; results are delivered to the Commission in October; and any Commission action occurs the January/February thereafter. With the two-year CWT lag, the interval from fishery to decision stretches to roughly three years; even without it, a two-year delay remains. As a result, management responses typically cannot be implemented until the year after results are reported, creating a persistent timing disconnect between evaluation and action, which reduces the effectiveness of the CYER metric for ISBM evaluation.

Link Between CYER Metric and Biological Reference Points

CYER, as defined, is not directly anchored to biological reference points (e.g., the exploitation rate at MSY, U_{MSY}). By contrast, in the late 2000s to early 2010s CTC developed MREER, a metric explicitly linked to U_{MSY}; MREER is referenced elsewhere in this report and used in CTC's annual synoptic evaluation (C&E report). In addition, the basis for country and stock specific CYER Limits in Attachment I is not consistently documented, leading to limits that may be misaligned across stocks or not reflective of current productivity. Although these issues have not prevented implementation, recurring questions about the basis for specific limits have consumed CTC time and introduced ambiguity regarding intent. A near-term goal could be to document the rationale for current CYER Limits and clarify the criteria used to establish them, particularly in advance of the next negotiation.

CWT Indicator Stock Availability and Changes

Of the 32 stocks subject to ISBM provisions, four are not evaluated annually by the CTC because they lack CWT indicators or CWT indicators are in development so base period data are unavailable: Phillips River, Chilcotin, Chilko, and Okanagan. Phillips previously had an indicator, which the Commission discontinued after tagging ceased with the 2019 brood year. The CTC has not yet reviewed the Okanagan work group's proposed indicator and has not received updates on a Phillips River replacement or on the status of the Chilcotin indicator. Canada is preparing to incorporate Chilko as a CWT indicator stock in the 2026 ERA. The absence of indicators creates information gaps for the stocks they are intended to represent. Among the 28 evaluated stocks, two issues complicate interpretation of CYER Limits: (1) Upriver Brights (URB) is listed with two CWT indicators, creating ambiguity about how CYER Limits should be computed and compared; and (2) Nooksack Spring's indicator changed from NSF to NSF-adj, reducing continuity with prior years and affecting management advice.

Subparagraph 7(c)(ii)

A recurring challenge arises when a Party triggers paragraph 7(c), which requires the CTC to provide a plan for remittal. Under subparagraph 7(c)(ii), "the CTC shall provide to the Commission a plan to improve performance of preseason, in-season, and other management tools so that the deviations between CYERs and CYER limits are narrowed to a maximum level of 10% when limits apply." Developing such a plan can draw the CTC toward policy-level discussions, as technical evaluations may be perceived as prescribing harvest restrictions, allocation, or conservation priorities.

This provision has been triggered multiple times. In practice, the CTC has provided technical advice (heat maps) rather than a prescriptive plan, but even that level of detail risks being interpreted as management advice and blurring the technical–policy boundary. Moreover, requests often arrive well after the relevant fisheries have concluded, sometimes up to three years later due to data and reporting lags so any plan is necessarily prospective and cannot retroactively affect the completed fishery, creating a timing disconnect between the requirement and its intended effect.

4.4 Incidental Mortality Standards

To fully account for mortality in pre-terminal and terminal salmon fisheries, both landed catch and estimates of incidental mortality (IM) must be included. Incidental mortality is composed of release mortality (pre-release and post-release) and drop-off/out mortality. Pre-release mortality occurs when fish that would otherwise be released due to size limits, mark-selective fishery regulations, or other reasons die during capture or subsequent handling. Post-release mortality occurs when fish that have encountered fishing gear succumb to physical or physiological injuries caused by capture, handling, and release, or experience elevated risk of predation due to injuries incurred during capture. Drop-off mortality includes a wide range of mortality mechanisms acting on fish that physically encounter gear but are not caught, such as depredation and escape mortality. Drop-out mortality refers to fish that are entangled and die during capture but then fall off fishing gear prior to capture. Avoidance mortality applies to fish that die because of avoiding a fishery encounter, but this parameter is not included in estimates of IM. Figure 4-1 depicts potential outcomes of a fishery encounter, including all mortality components.

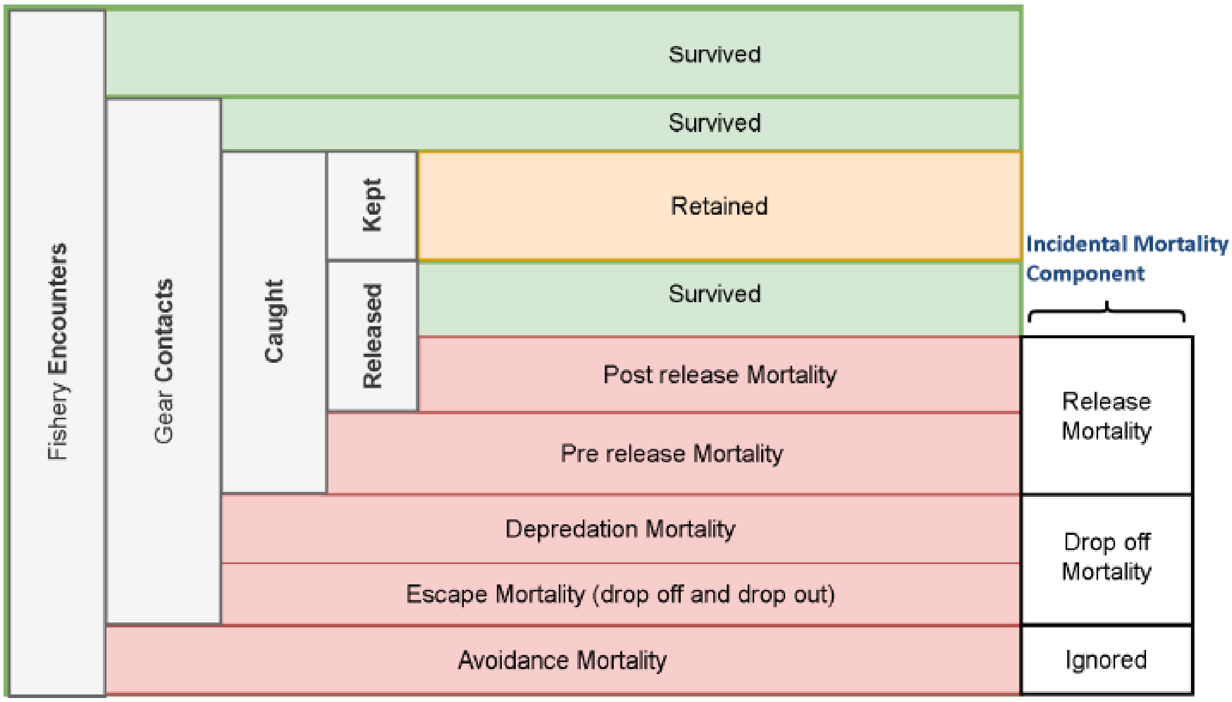

Figure 4-1—Components of incidental mortality and the potential outcomes for a fish that experiences a fishery encounter (CTC, 2022).

As part of the 2019 Agreement, specified in Paragraph 4(c) the CTC was tasked with providing estimates of IM in AABM and ISBM fisheries, along with "recommend standards for the desired level of precision and accuracy of data required to estimate incidental fishing mortality by February 2020". Starting with the 2021 Catch and Escapement Report, the CTC now reports all sources of IM and will continue to throughout the Agreement. However, to further improve estimation of IM there are two critical pieces to consider: (1) estimates of mortality rates and (2) estimates of the number of fish kept and released.

The CTC has produced reviews of incidental fishing mortality, one in 1997 (CTC, 1997), a second in 2004 (CTC, 2004b), and now a third report in 2022 (CTC, 2022). The 2022 report contains a literature review of IM rate studies that have been conducted since 1997, along with a preliminary assessment of current methods used to estimate the number of Chinook encountered and released in fisheries.

In order to develop standards of precision and accuracy for IM, a full analysis of data availability and the uncertainty and bias within those current estimates would need to be completed. The CTC partially achieved this with CTC (2022), but focused on developing precision estimates (CVs) and identified that:

C.1 Further investigation of this topic would be a time-consuming endeavor, that would require a substantial investment of CTC staff time.

C.2 Many regions suggested that estimates of either catch or release in fisheries and their associated variance were not available or only potentially available (no current estimates). Within PSC fishery groupings, there were occasionally instances where multiple agencies or regions contributed to a fishery and had available estimates or variances, but other agencies or regions contributing to the same PSC fishery grouping did not have estimates or variances associated with the fishery.

C.3 Further analysis of IMs would require a more coordinated release information data request to agencies and regional staff with a standardized format for the information requested.

C.4 It may be possible to prioritize IM information and analyses in fisheries that impact stocks of concern.

C.5 IM rates applied to releases can vary based on environmental, biological, and fishery conditions.

C.6 Releases from mark-selective fisheries may have a different hatchery versus wild structure compared to a non-selective fishery.

Overall, while there are several challenges associated with the development of IM standards themselves, the CTC continues to seek improvements to how IM is accounted for in Chinook fisheries. Literature reviews and studies with updated IM rates may be brought forward for CTC consideration to be used in analysis, and recommendations for improvements to current algorithms may also be considered when applicable, although careful consideration of how such changes may affect Chapter 3 implementation would be required. Future work by the R&D work group includes investigating alternative ways to incorporate IM that would not rely on a single, static estimate.

4.5 COVID-19 Pandemic

Core functions of the CTC, including annual data collation, running of assessment models (i.e., the ERA and Chinook Model), and annual reporting by the committee were largely unimpacted by the COVID-19 pandemic. Some analysts fell ill and were unable to work for short periods. There were isolated cases in which analysts were unable to attend meetings in-person, which made virtual attendance a helpful alternative.

Coded-wire tag sampling rates and catch accounting remained relatively consistent, as did estimation of escapement for stocks under the jurisdiction of the PST. Rather, the primary impacts of COVID-19 on Chinook salmon stock and fishery assessments under the jurisdiction of the PST were on marking and tagging operations in 2020, especially in British Columbia where the majority of exploitation rate indicator stocks were released without marks or tags (Table 4-5). This section describes the primary impacts and their duration on CTC functions, solutions, subsequent mitigative measures taken by the CTC in response, and summarizes regional impacts and responses to COVID-19 in relation to Chinook stock and fishery assessments associated with Chapter 3 of the PST. This section is largely based on the contents of a CTC memo to the CIG and PSC commissioners from September 30, 2020. The memo was in direct response to a proactive request from the PSC (early July 2020) to each technical committee to assist in understanding potential impacts of the COVID-19 pandemic.

4.5.1 Implementation and Timelines

COVID-19 impacted the CTC's ability to meet in-person beginning in early 2020 and continuing through mid-2022, initially reducing efficiencies and influencing timelines. Instead of being in-person, meetings were moved online through the use of Microsoft Teams. In order to account for reduced efficiency and difficulties in adopting the new meeting format and communicating technical work virtually, the AWG extended their annual ERA and model calibration meetings by three days each in 2021. Such timeline extensions were not deemed necessary in subsequent years as the committee became more proficient at operating virtually. In 2022, as travel and work restrictions began to lift, meetings transitioned to hybrid formats, allowing for greater flexibility, wider attendance, and additional work group meetings between the committee's primary annual meetings; this format continues to be followed, allowing for a continued balance between attendance and budget or other travel constraints among agency staff.

Table 4-5—Summary of COVID-19 impacted marking, tagging (CWT), and release operations of 2019 Brood Year Chinook salmon indicator stocks in British Columbia in 2020.

2020 Chinook Marking			
Program	Stage	Tags applied	Unmarked
Atnarko R	Smolt 0+	0	1,924,871
Big Qualicum R	Smolt 0+	0	3,418,046
Chilko R	Smolt 1+	30,970	0
Chilliwack R	Smolt 0+	0	2,231,008
Cowichan R	Smolt 0+	200,170	151,000
Harrison	Smolt 0+	0	365,653
Kitsumkalum	Fed Fry	0	253,000
Nicola R	Smolt 1+	213,841	666
Phillips R	Smolt 0+	83,217	8,381
Puntledge R	Smolt 0+	0	264,239
Quinsam R	Smolt 0+	237,414	2,457,452
Robertson Cr	Smolt 0+	0	6,397,220
Shuswap R Low	Smolt 0+	60,223	493,377
Shuswap R Up	Smolt 0+	0	169,200

4.5.2 Implications for Chapter Implementation

Chinook salmon marking and tagging operations were reduced or suspended in 2020 for multiple hatchery facilities and wild or natural-origin stocks in Southeast Alaska, British Columbia, and Washington due to COVID-19. However, the magnitude of these reduced or suspended operations was larger in Canada where most indicator stocks were released without marks or tags. Impacts of Canada's reduced or suspended marking and tagging operations in 2020 began to manifest in catch year 2021, when age 2 fish from the 2019 brood year started recruiting to fisheries and escapement, with impacts extending with each older age class recruiting to each subsequent year through age 5 fish in catch year 2025. These releases were from the subyearling exploitation rate indicator stocks Atnarko (ATN), Big Qualicum (BQR), Chilliwack (CHI), Harrison (HAR), Middle Shuswap (MSH), Puntledge (PPS), Robertson Creek (RBT), Lower Shuswap (SHU), and sub-yearling and yearling Kitsumkalum indicator stocks KLM and KLY (Table 1-1). This information gap was expected to have an impact on the ERA and associated CYER estimates, and evaluation of ISBM fishery performance, as well as the Chinook Model, AABM fisheries limits, and their performance evaluations. In response to this information gap, the CTC developed and applied statistical methods to estimate stock-, fishery-, and age-specific pseudo-recoveries that would have occurred had the 2019 broods been released with CWTs and adipose fin clips (i.e., pseudo-recoveries). These methods were described in a memo provided to the CIG and were included as supplementary materials to the 2022 ERA Report (CTC, 2023).

Each year, the effect of including these pseudo-recoveries in CTC models are assessed by comparing ERA results with and without them in appendices found in the annual ERA report (e.g., Appendix J of CTC 2022). While these comparisons allow for broad assessments of the magnitude of including pseudo-recoveries of a given age in a given year, the inclusion of pseudo-recoveries requires assumptions related to relatively consistent age structures and run timing in impacted return years, stock composition of recoveries in fisheries, straying rates, etc.

4.5.3 Regional Impacts

Regional Impact summaries are provided below for additional context and reflect more detailed information found in CTC publications and memos distributed to the PSC.

Southeast Alaska Assessments

Southeast Alaskan Chinook stock and fisheries assessment operations and commitments in relation to Chapter 3 of the PST were not notably impacted by COVID-19. Escapement sampling and assessment and marking and tagging programs continued to operate as usual except for the NOAA Fisheries Little Port Walter research facility which suspended its marking and tagging operations during 2020. Two additional tagging trailers were purchased in 2020 resulting in increased marking and tagging rates and related operational efficiencies in two hatchery facilities. Sampling for CWTs in Alaska’s Chinook salmon sport and commercial fisheries continued at similar rates to recent years.

Canada

The primary Canadian activities in support of Chapter 3 obligations that were impacted by the suspension of lab and field activities due to COVID-19 were the CWT tagging, marking, and release of indicator stocks in 2020. The majority of CWTs applied to Chinook by the Salmonid Enhancement Program (SEP) are conducted in the spring (March through May). In 2020, the impacts of COVID-19 pandemic resulted in most Chinook PST indicator stocks in Canada being released without CWTs and fin clips. There were only four sub-yearling stocks that received CWTs: Phillips, Cowichan, Lower Shuswap, and Quinsam. With the exception of Phillips, tagging levels were well below pre-planned targets, but proved adequate for stock monitoring and CTC data needs. Due to the larger potential tagging window for yearling-release indicator stocks such as Nicola, no tagging target shortfalls occurred for these stocks with the exception of

Kitsumkalum for which neither sub-yearling fry (KLM) nor yearling (KLY) releases from the 2019 brood year were tagged or marked. Tagging and Marking programs had largely resumed full operations by fall 2020 with no further impacts to Chapter 3 implementation or obligations.

Impacts on Chinook sampling programs were minimal in 2020 due to many regional Chinook closures in place to the end of July. Fishery sampling and CWT lab services re-commenced in mid-July and were back to full capacity for commercial and First Nations fisheries under contract by August. Sampling of West Coast Vancouver Island First Nations fisheries occurred at full capacity in July as sampling is performed by local First Nations technicians. Sampling of recreational fisheries was ongoing as year-round salmon head recovery depots remained in place during the COVID-19 work stoppage. Similarly recreational fishery monitoring programs largely continued throughout 2020 though internet recreational effort and catch reporting (iREC) information was required to estimate adipose fin clip incidence and catch in Northern BC (NBC) due to reduced access to catch in the AABM fishery and reduced sampling in the ISBM creel survey. Despite initial backlogs in spring 2020, CWT and ageing lab processes were able to maintain operations through 2020 and meet timeline requirements for Chinook indicator stocks.

Catch monitoring were not meaningfully impacted by COVID-19. Reductions in 2020 creel surveys were offset by an increased sampling and response rate in iREC surveys improving both precision and accuracy of recreational catch estimates and this increased rate has continued in subsequent years. Similarly, despite minor reductions in the scale of some programs in 2020, Canadian Chinook escapement assessments were not significantly impacted by COVID-19 and they were able to meet all operational and PST related requirements throughout 2020-2022.

Southern U.S.

Southern U.S. marking, tagging, escapement assessment and sampling programs were not significantly impacted by COVID-19 in 2020 or subsequent years.

4.6 Increasing Uncertainty due to Climate Change

Climate change is not specifically referenced in Chapter 3. However, two provisions, including Paragraph 1(g) and 2(a)(ii) are related to climate change. Paragraph 2(a)(ii) indicates that the Chinook fishery management regime is intended to be "*responsive to significant changes in productivity of Chinook salmon stocks associated with environmental conditions*." Responding to how climate change will affect Chinook salmon is complex, because there are multiple mechanistic pathways through which its effects will manifest. The expected impacts linked to climate change will vary in direction and magnitude across the Chinook stocks encompassed within the Treaty Area. Anticipating higher uncertainty and increasing error associated with current modeling practices as climate change progresses, there is a pressing need to address these shortcomings and to ensure that the technical advice the CTC provides to the Commission is rooted in the best available science.

Chinook salmon encounter a broad range of environmental conditions (freshwater, estuarine, and marine) during their anadromous life-cycle, meaning they can be exposed to numerous environmental stressors along the way. Climate change is omnipresent and because of this, is expected to impact Chinook salmon through myriad mechanistic pathways, ranging from physiological impacts on individuals to ecosystem-wide regime change, the predicted effects of these impacts on Chinook productivity could fundamentally alter the status quo. For example, evidence of plasticity in the thermal tolerances of Chinook salmon raises questions about how stock distributions might respond to selection towards more heat-tolerant individuals (Muñoz et al., 2015). Demographic changes towards younger and smaller fish have also been observed across most stocks along the Pacific coast (Ohlberger et al., 2018). Rapidly evolving demographic profiles within and among stocks impacts maturation rates, for example, a key parameter in producing Chinook Model forecasts. Climate scenario modeling has also shown that rising sea-surface temperatures is expected to contribute towards major declines in marine survival, which will require dramatic increases in average smolt survival to compensate (Crozier et al., 2021).

Additionally, there are other second-order effects of climate change that impact habitat and broad ecosystem dynamics that must be considered to effectively manage a highly-migratory anadromous species in an uncertain future. Glacial retreat in Alaska, for example, will affect hydrology, seasonal flow, water temperatures, and habitat quantity and quality (Pitman et al., 2020). In Washington, the transition away from snowmelt-dominant watersheds to rainfall-dominant systems will result in longer and more severe summer low flow periods as well as more frequent, higher-intensity winter flood events (Mantua et al., 2008). Large and persistent marine heatwaves, such as “The Blob” from 2013–2016, are observed more frequently in the Northeast Pacific. Marine heatwaves can present with sea-surface temperatures 3-5°C above seasonal averages, which may affect everything from metabolic demands of individual fish to species composition of the entire food web (Grant et al., 2019). But while there will be variability in the specific effects from climate change on individual stocks, the overwhelming expectation is that the net effect will result in less productive fisheries in most cases. Altogether, rapidly changing environmental conditions gnaw away at key assumptions in the CTC’s major technical analyses, so adapting to dynamics beyond our current models is essential to our continuing success.

4.7 Key Points and Recommendations

4.7.1 Data Quality and Availability

Pacific Salmon Commission fishing agreements are dependent on data and information provided by agency programs for stock and fishery assessments. Fiscal pressures have already and continue to seriously erode the capacity of management agencies in both the U.S. and Canada to provide the basic data and other vital information for implementation of the current PSC fishing regime.

The CTC is concerned about the ability of agencies to maintain the viability of the CWT system, the performance of catch and escapement sampling and monitoring, and sustaining exploitation rate and escapement indicator stock programs. In response to coastwide austerity measures, agencies are increasingly turning to the Northern and Southern Endowment and the US Letter of Agreement (LOA) funds to conduct work that would previously have been considered core fishery management and stock assessment programs.

It is becoming increasingly difficult to collect and analyze data vital to implementing the PST management framework. Staffing and housing shortages are exacerbating the fiscal challenges of maintaining recruitment and retention of field personnel essential for fishery monitoring, CWT sampling, and stock assessment. If fiscal conditions continue to degrade, the capacity to implement PSC fishery regimes will be compromised.

The CTC evaluated the indicator stock and fishery monitoring programs and found that the information currently available ranges from high quality information for some stocks to poor quality and/or a lack of quantitative information available for many others.

At the conclusion of the negotiations for the 1999 Agreement, the lead Canadian and U.S. negotiators wrote a memorandum, dated 23 June 1999, to the Honorable Lloyd Axworthy, Honorable David Anderson, and Secretary of State Madame Albright stating:

> *"The Agreement represents a commitment to abundance-based management for the salmon fisheries covered by the Treaty. This important, new conservation-based approach will require adequate resources by each Party to ensure that the necessary scientific and management needs are met. In particular, the coastwide Chinook Chapter (Annex IV, Chapter 3) which represents a departure from previous Annexes, is dependent upon high quality fishery and stock assessment data being collected by management agencies coupled with time-consuming analysis of the data by the Chinook Technical Committee. Management agencies are urged to provide adequate resources, both staff and time, to the Chinook Technical Committee for successful implementation."*

The CTC documented numerous information gaps and data quality issues in this report. Deficiencies in many of the stock assessment and fishery evaluation programs make parts of Chapter 3 impractical for some stocks and fisheries. While the CTC may attempt to address these deficiencies using auxiliary analyses and proxy methods (e.g., data imputation), the efficacy of our final analytic products is ultimately limited by the quality of the underlying stock and fishery monitoring programs.

An increase in funding for agencies is required to ensure data of appropriate quality can be provided for implementation of Chapter 3. The CTC recommends that the Parties fully fund the stock and fishery data collection programs necessary to implement the abundance-based management regime. In the event of continued fiscal challenges, streamlining Chapter requirements may be necessary so that available funds support the collection of data necessary to fully implement the chapter.

> ***Recommendation 4.1. Provide sufficient funding to support the PST management framework, including stock assessment and fishery monitoring.*** The CTC's work is undergirded by agency stock and fishery monitoring programs which provide the necessary data to complete annual technical analyses. These data form the foundation of Chinook fishery management under Chapter 3 of the PST; it is therefore imperative that agency-led monitoring programs are sufficiently funded.
>
> ***Recommendation 4.2. Address delayed availability of escapement, catch, and CWT recovery estimates.*** Reporting delays in critical fishery data constrain the CTC's ability to provide timely management advice. The two-year lag in CWT expansion estimates for

SUS sport fisheries represents the most urgent priority. This delay stems from the time-intensive process of manually handling paper catch-record cards, among other things. Addressing this delay will enable more responsive fishery management.

Recommendation 4.3. Address critical deficiencies in CWT sampling (e.g., Fraser Terminal ISBM and Canadian TBR fisheries). Missing or inadequate CWT sampling in fisheries or escapement may result in inaccurate and biased CYER estimates. It is recommended that agencies devote adequate resources towards providing full coverage CWT sampling in all fisheries where Attachment I indicator stocks are encountered, as well as in escapement.

Recommendation 4.4. Encourage agencies to improve or develop alternative stock forecasting methods in order to achieve CTC standards (e.g., <7.5% MAPE and SE < 30%). The accuracy and precision of individual stock forecasts provided to the Chinook Model is of critical concern to the CTC. Nearly all stocks monitored under Attachment I fail to consistently meet the CTC data standards for forecasts and, since agency-supplied forecasts are crucial inputs to the Chinook Model, the error in individual stock forecasts propagates through to the estimation of abundance indices. Considerable effort by each agency should be directed towards updating stock forecasting methods to achieve CTC standards. Exploration of more sophisticated modeling techniques for generating stock forecasts (e.g., individual population models, life-cycle models, Bayesian hierarchical models) should be encouraged.

Recommendation 4.5. Improve catch monitoring and reporting systems to provide accurate estimates of catch and fishery-related mortalities. Chinook Technical Committee analyses rely on accurate and unbiased accounting of total fishery mortality. Therefore, efforts to estimate catch and incidental mortality should be made using direct methods wherever possible; use of indirect estimates should be well-documented and use unbiased methods.

4.7.2 Virtual Meetings

Virtual and hybrid meetings have offered increased flexibility and provided more opportunities for CTC members to participate; however, limited in-person meetings has created its own challenges. Fully virtual meetings can hinder group productivity and communication. For example, engagement has suffered during fully virtual meetings. While technology makes it possible to participate more easily, remote attendance is more impersonal, which may lead to poorer quality group discussion and lack of group cohesiveness, which is critical to a body which relies on consensus-based decisions. Additionally, receptiveness to virtual meetings varies among CTC members, and online forums impose impediments for some. Another important, and often overlooked, benefit of in-person meetings is the opportunity to build social cohesion and exchange ideas organically, rather than through structured conversation. Furthermore, many CTC members make use of in-person meetings to focus on CTC tasks without distraction, leading to bursts of productivity that move major assignments forward with extended work hours. In-person collaboration can also prevent tasks from stalling because help is more readily available from other committee members, who can quickly answer questions or review work products informally.

Recommendation 4.6. Maintain funding for an adequate number of in-person CTC meetings. The CTC carefully considers the number of in-person, hybrid, and virtual meetings each year during annual review of its work plan. Funding constraints, delays in reimbursements, and evolving travel policy have disrupted the CTC's ability to maintain consistent meeting schedules and complete work plan tasks on time. Strategizing ways to insulate planned meetings and travel schedules from these forces would help the CTC maintain progress towards work plan goals.

4.7.3 Implementation of CYERs

The CYER metric has replaced the previous ISBM evaluation approach, which had several issues associated with its implementation. New challenges encountered with CYER fall into three broad categories: extrinsic, intrinsic, and implementation-related factors.

Extrinsic factors that affect the CYER remain a challenge, such as timely reporting of CWT data. Although the Treaty directs improvements to the two-year lag in CWT reporting, the CTC emphasizes the importance of minimizing this delay to support timely assessments of ISBM fisheries. Concerns also persist regarding the use of a universal base period for all Attachment I stocks, and particularly how the CYER limits relate to biological metrics such as management objectives and U_{msy}.

The CTC is considering technical improvements to the CYER metric itself, to present to the CIG as outlined in Appendix A of Annex 4, Chapter 3, Paragraph 5. Proposed improvements include addressing sensitivity to cohort size fluctuations and improving how the metric handles changes in hatchery release group sizes.

Several issues have also arisen during CYER implementation, including policy-related matters that could have been avoided by stronger communication between the CIG and CTC, including opportunities for review and feedback prior to the adoption of new metrics or the assignment of tasks. In addition, the CTC provides several specific recommendations that would improve implementation of Chapter 3:

Recommendation 4.7. Explore the use of alternative base periods. Potential misalignment between the CYER base period (2009–2015) and current stock/fishery management practices warrants exploration. The current base period may be arbitrary for many stocks under current distribution and composition of stocks and fisheries, undermining their utility as a reference point for management. Potentially updating to stock- or fishery- specific base periods, or exploring alternative strategies altogether, could result in more accurate assessment of ISBM fisheries.

Recommendation 4.8. Consider methods to correct for interactions between CYERs and CWT release group size. Abrupt changes in CWT release size can result in short-term destabilization in the estimation of CYER. Although no technical solution has yet been agreed to, several potential correction procedures have been investigated. Implementing such a correction could improve the robustness of the current CYER metric.

Recommendation 4.9. Clarity needed for application of subparagraph 7(c)(ii). With the temporal misalignment of information provided to the CTC and the current lack of bilateral preseason or in-season management tools, the responsibility of preseason and in-season assessment are wholly within the purview of the management agencies. Because of this, it is unclear what role the CTC can play in assessing or making recommendations aimed at reducing deviations between CYERs and CYER limits to a maximum level of 10% when limits apply. The CTC requests further clarity on our role in the application of 7(c)(ii) for the remainder of the current annex and the next agreement.

4.7.4 Incidental Mortality

Current IM rate estimates used in CTC models and analyses are historic static values based on recommendations developed by the CTC in 1997 (CTC, 1997). Application of these possibly outdated IM rates may be inappropriate, as the mortality rates can vary based on environmental conditions, fishery gear and practices, or other biological factors that change through time. In addition, there may be differences in post-release mortality between hatchery and wild fish in mark-selective fisheries.

The CTC recognizes the importance of comprehensive analysis of current IM data availability, uncertainty, and bias to develop accuracy and precision standards for IM estimates. Standardization of IM data requests (e.g., kept and released estimates) would expedite collection and review of IM information across agencies and regional staff. Fisheries impacting stocks of concern should be prioritized for IM information review.

Recommendation 4.10. Continue seeking improvements in estimation of mortality rates, numbers of fish kept and released, and how IM is accounted for in Chinook fisheries. Incidental mortality comprises a non-trivial component of total mortality in fisheries. Continuously improving IM estimates and documentation of current IM estimation practices across agencies will ensure use of the best possible estimates in CTC analyses.

Recommendation 4.11. ***Update IM rate assumptions and values as necessary based on new studies.*** Increasing evidence suggests a misalignment between current CTC IM assumptions and the distribution of true IM rates across stocks and fisheries. Stock- and/or fishery-specific IM rates, informed by high quality studies, could be applied to more accurately estimate fishery-related mortalities, in turn resulting in more accurate CYER estimates.

4.7.5 Climate Change and Uncertainty

The CTC's methods and models are deterministic and do not reflect uncertainty. For example, escapement goals and indices are based on assumptions of stability and do not consider pressures from development, biological diversity of component populations, plasticity, and other factors which affect resilience to stresses from change. The ERA is based on CWT recoveries and the degree of confidence depends on the number of CWT recoveries in strata of interest; variations and reductions in survivals and harvest rates are resulting in fewer CWT recoveries in fishery and escapement strata, increasing uncertainty in exploitation rate estimates. The Chinook Model is deterministic, single pool (i.e., fishing occurs simultaneously on all fisheries in the model), employs base period average exploitation rates, and relies on assumptions regarding mortality rates. These features of the Chinook Model all represent limitations in its ability to reflect real-world variability in fishery dynamics. In addition, the reliability of model inputs such as forecasts of stock abundance and maturation rates are problematic.

Major sources of uncertainty include geophysical variations and the response of different stocks and environments to accelerating impacts of climate change (Crozier et al., 2021). The expected impacts linked to climate change will vary in direction and magnitude across the Chinook stocks encompassed within the Treaty Area. Some of these changes such as alteration of temperature and flow regimes, maturation rates, size at age, invasive species, inter-species competition, and predation loss are expected to alter stock productivity and maximum sustained harvest escapement targets. Other uncertainties stem from alterations in the physical environment such as suitability and use of historic habitats, acidification, hypoxia, harmful algal blooms, pollution from retardants and sediment deposition from increasing wildfires, alteration of ocean distribution and atmospheric currents, sea level rise, and the frequency and intensity of extreme events, will affect survival rates, species ranges and food webs. Some stocks have declined to the extent that they have been listed for protection under the U.S. Endangered Species Act or Canadian Species at Risk Act (Ford et al., 2010). Greater uncertainty and increasing error associated with current modeling practices as climate change progresses should be anticipated.

There is an urgent need for CTC methods and models to be able to evaluate risk to the resource, but the noise of uncertainty makes it increasingly difficult to evaluate such risk. Technical information and advice provided to the Commission should be accompanied by transparent disclosure of information limitations and robust guidance on appropriate interpretation. The R&D work group is developing methods and models that consider uncertainty, but the presentation, interpretation and application of these variables into PST management are substantial challenges that remain to be addressed.

> ***Recommendation 4.12. Continue to steer technical analyses towards a paradigm that incorporates uncertainty.*** Rapidly changing environmental conditions and key data gaps have eroded key assumptions underpinning the CTC's primary technical analyses. Adapting to dynamics beyond our current models and incorporating uncertainty into CTC methods is essential to achieving the conservation and management goals outlined in Chapter 3.

> ***Recommendation 4.13. Revisit assumptions about maturation rates, natural mortality rates, and intrinsic productivity across stocks.*** Environmental variability has been linked to changes in size-at-age, fecundity, freshwater and ocean survival, and maturity rates in salmonids coastwide. A reassessment of current CTC modeling assumptions is warranted given the dynamic and pervasive nature of the expected changes in both freshwater and marine ecosystems.

4.7.6 Effective Communication

The new Chapter 3 annex in the 2019 PST Agreement brought several challenges, despite overall improvements from the 2009 annex. Many of these issues were addressed through enhanced support and communication within the CTC. However, some matters required escalation to the CIG to resolve policy-related issues. The CIG generally made timely decisions, allowing the CTC to stay on track with its workplan. However, communication from the CIG during the off-season was limited, leading to delays in certain tasks.

> ***Recommendation 4.14. Strive for effective and timely communication and collaboration between the PSC Commissioners, the CIG, and the CTC during regular annual tasks and the upcoming negotiation cycle.*** Issues periodically arise which require decisions from the CIG. Without a structure in place to facilitate effective communication between the CTC and CIG on such matters, projects can become delayed and compromise competing priorities if unresolved for an extended period. A more intentional system of communication between the CTC and the CIG on urgent matters, such as regular meetings or check-ins on priority issues (e.g., AABM fishery performance), would help provide more expedient resolution on such matters.

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APPENDICES

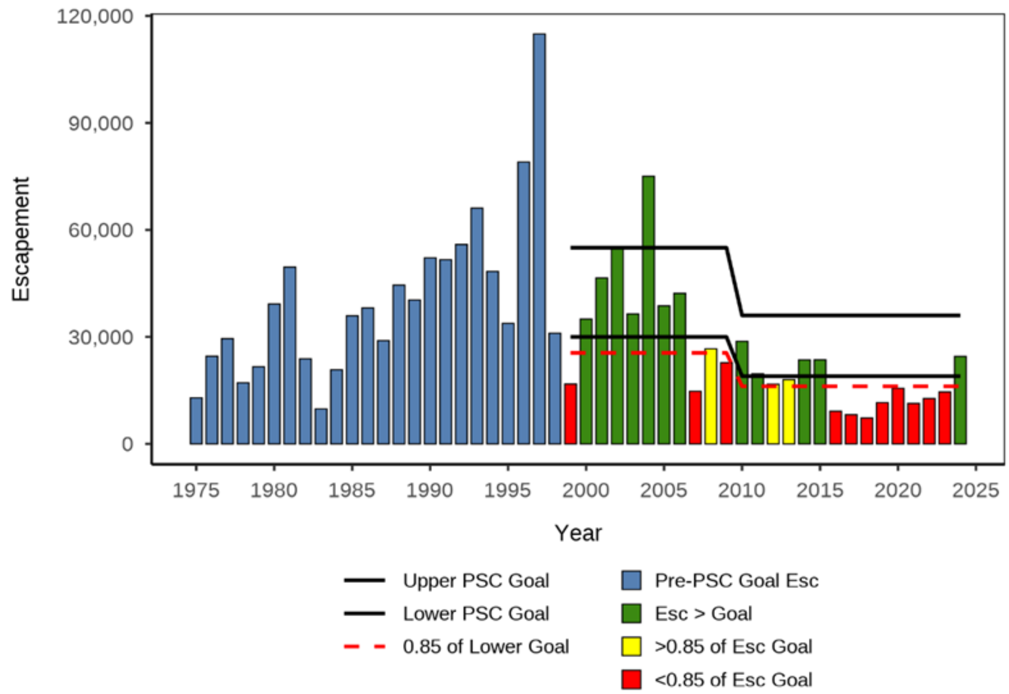
APPENDIX A. CONCERNING STOCK PROFILES

A.1 TAKU RIVER

Region	Transboundary River
Escapement Indicator Stock	Yes
CWT Indicator Stock	Taku Wild
ISBM CYER Limit	N.A.
Life History Type, Ocean Distribution	Stream type, outside
Primary Age at Maturity	5 yrs
Escapement Method	Mark-recapture
Management Objective	19,000–36,000

The Taku River is a large glacial system that originates in Northwest British Columbia and flows into marine waters of SEAK, about 20 miles (30 km) northeast of Juneau, Alaska. The Taku River supports a run of outside-rearing Chinook salmon, most of which are caught in terminal marine waters of SEAK and in the lower river in Canada. Directed gillnet fisheries take place in terminal U.S. (District 111 of SEAK) and Canadian in-river fisheries when forecasted abundance or in-season assessments exceed predetermined levels as described in the 2019 PST Agreement under Annex IV, Chapter 1, paragraph 3(b)(3). Taku River Chinook are incidentally harvested in terminal directed sockeye salmon gillnet fisheries in the U.S. and Canada, in sport fisheries near Juneau, Alaska, and in-river in Aboriginal and sport fisheries in Canada and in a U.S. personal use fishery just below the border. Taku Chinook salmon are also harvested outside of the terminal area, primarily in SEAK sport and troll fisheries.

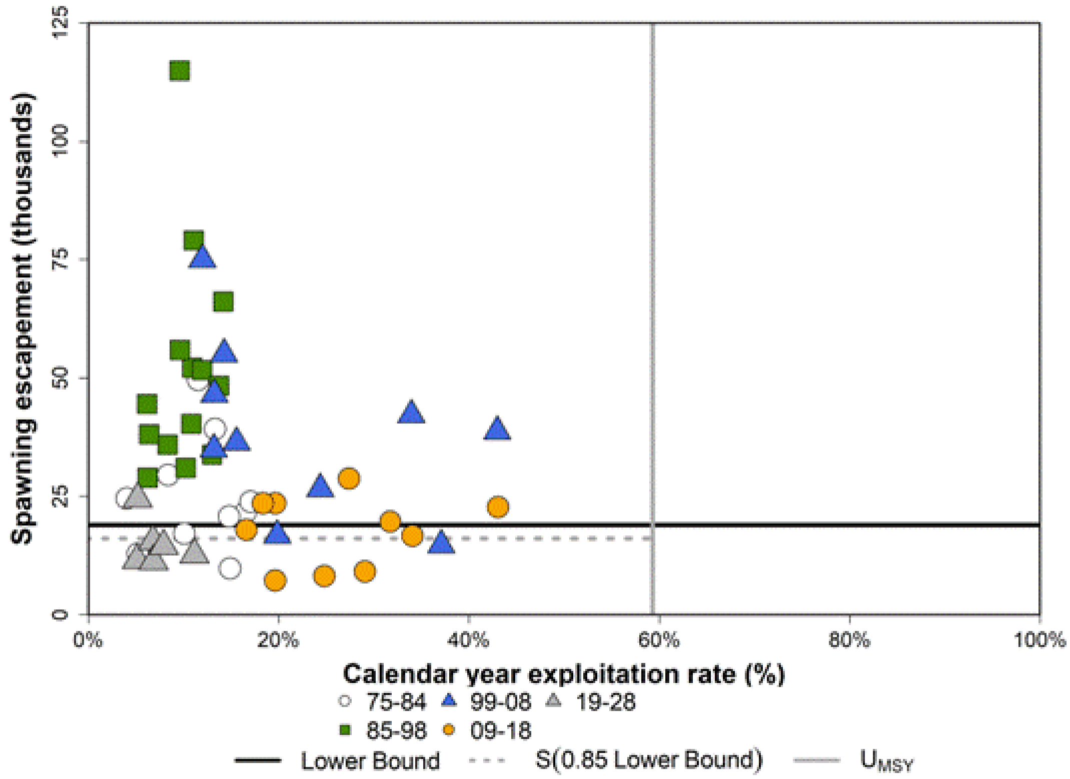
Escapement Trends: Escapements of less than 85% of the lower bound of the current goal range occurred eleven times since 1999 and most notably in eight consecutive years from 2016-2023. The 2024 escapement estimate is 24,518 (CV = 17%) large Chinook salmon, which is above the lower bound of the escapement goal range and close to the S_{MSY} point goal of 25,500 (Appendix A.1.1).



Appendix A.1.1—Taku River escapements of large (>=660 METF) Chinook salmon, 1975–2024.

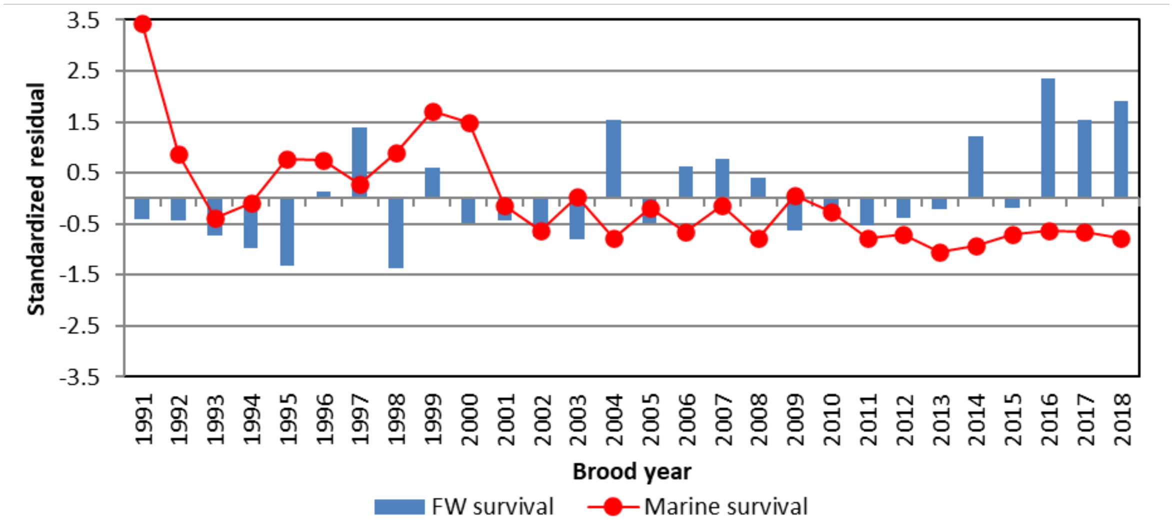
Fisheries Impacting Taku River Chinook: Like the Stikine River stock of Chinook salmon and some SEAK stocks, the Taku River stock has been experiencing a decline in productivity, largely due to poor marine survival. Restrictive management measures have been in place since 2018 and will continue in 2025. Until marine survival improves, it is unlikely that productivity will improve enough to allow directed fisheries. CYERs averaged 14% with a range of 5% to 29% since 2014.

Taku River calendar year exploitation rates averaged 14% over the recent decade, however escapements have failed to achieve the lower bound of the escapement goal range in eight of those years (2016–2023). Large runs of Chinook salmon occurred between 2005 to 2008 and directed Chinook salmon fisheries resulted in exploitation rates averaging 35%. exploitation rates remained below the U_{MSY} threshold of 59% during the entire time series (Appendix A.1.2). Between 1979 and 2004, the average exploitation rate was 12%, and escapements were below the lower bound of the escapement goal range in only two years over this 26-year period.



Appendix A.1.2—Calendar year exploitation rate, spawning escapement, and threshold reference lines for exploitation rate and spawning escapement for large (>= 660 mm METF in length) Taku River Chinook salmon, 1975–2024.

Environmental, non-fishing factors: Taku River Chinook salmon smolt abundance and survival has been estimated since the 1991 brood year. In the recent decade, freshwater survival has been above the long-term average; however, marine survival has been below average in all years and until this improves overall production will likely remain below average (Appendix A.1.3).



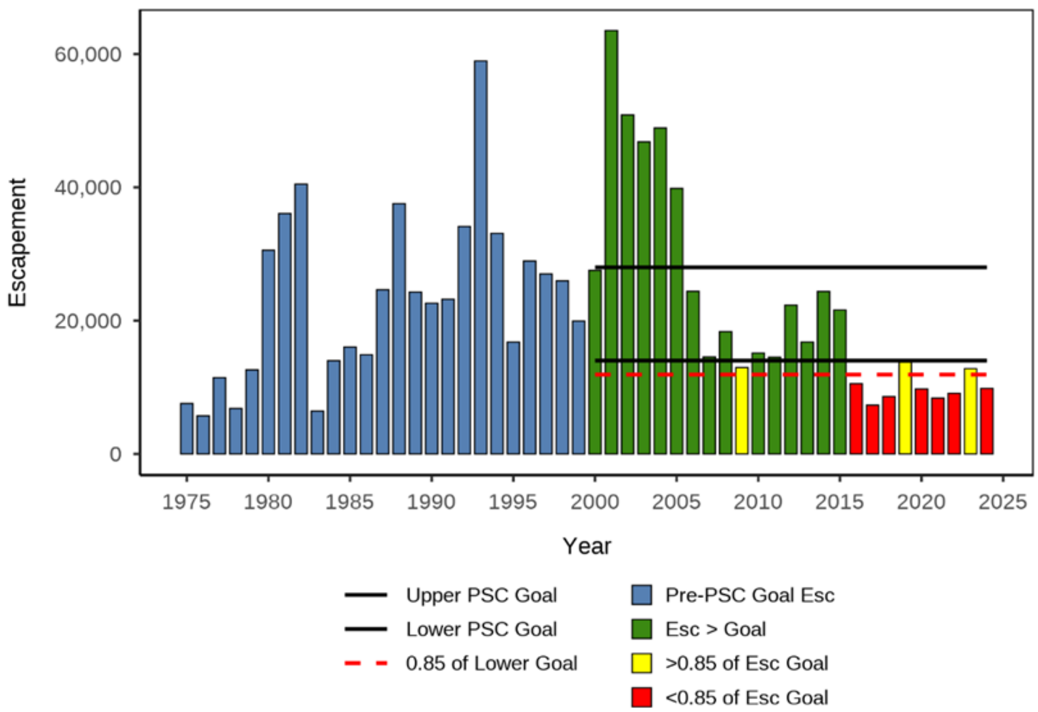
Appendix A.1.3—Freshwater and marine survival indices (standardized to a mean of zero) for the Taku River stock of Chinook salmon, 1991–2018 brood years.

A.2 STIKINE RIVER

Region	Transboundary River
Escapement Indicator Stock	Yes
CWT Indicator Stock	Stikine Wild
ISBM CYER Limit	N.A.
Life History Type, Ocean Distribution	Stream type, outside
Primary Age at Maturity	5 yrs
Escapement Method	Mark-recapture
Management Objective	14,000–28,000

The Stikine River drainage is the largest in SEAK, originating in British Columbia and flowing into the marine waters in central SEAK, about 12 miles (19 km) northeast of Wrangell, Alaska and 25 miles (40 km) southeast of Petersburg, Alaska. The Stikine River supports a run of outside-rearing Chinook salmon and most harvest occurs in terminal areas, including U.S. commercial gillnet and sport fisheries in District 108. There are also commercial gillnet, Aboriginal, and recreational fisheries in the Canadian portion of the drainage. Stikine Chinook salmon are also harvested outside of the terminal areas in SEAK sport and troll fisheries. Starting in 2005, during years of surplus production to the Stikine River, directed Chinook salmon fisheries were allowed in District 108 marine waters and in-river in Canada.

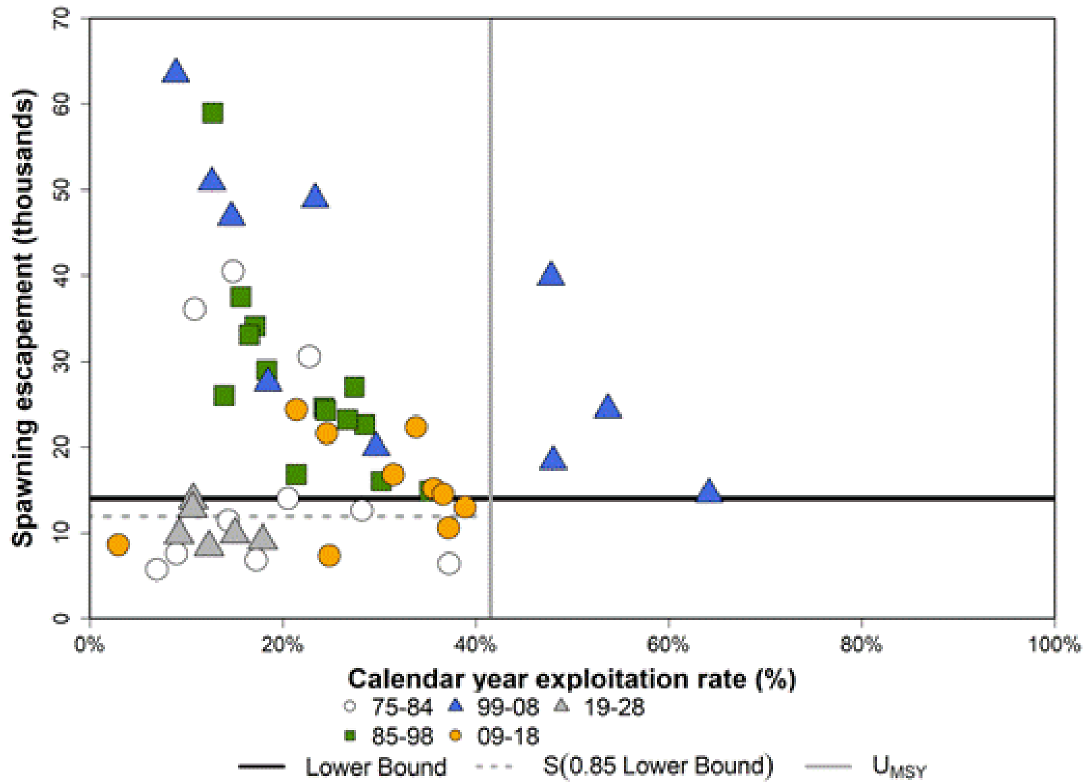
Escapement Trends: Escapements of less than 85% of the lower bound of the current goal range occurred twelve times since 1999 and most notably in 7 of the last 9 years. The 2024 escapement estimate is 9,835 (CV = 32%) large Chinook salmon, which is below the 85% threshold of the lower bound of the escapement goal range (Appendix A.2.1).



Appendix A.2.1—Stikine River escapements of large (>=660 METF) Chinook salmon, 1975–2024.

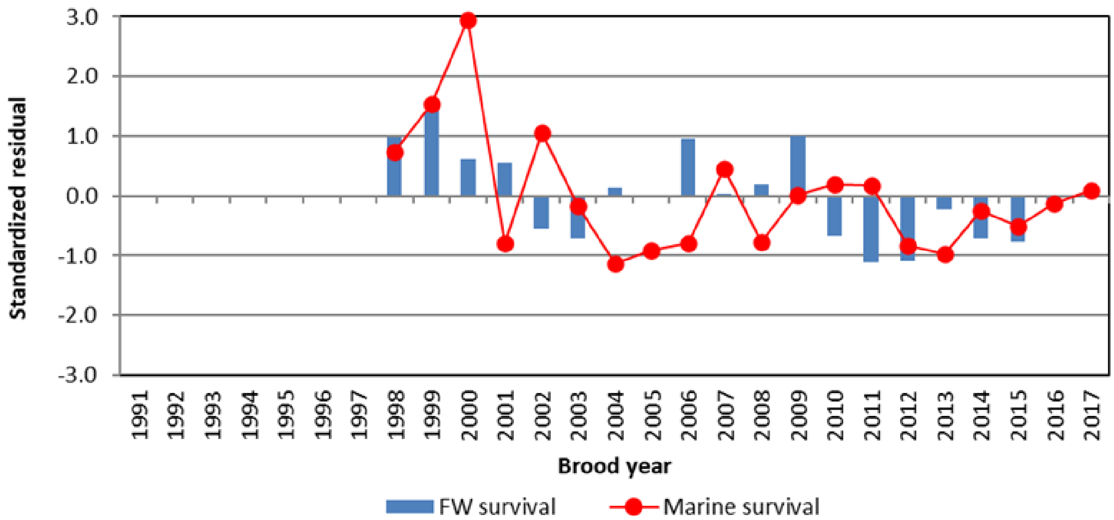
Fisheries Impacting Stikine River Chinook: Like the Taku River stock of Chinook salmon and some SEAK stocks, the Stikine River stock has been experiencing a decline in productivity, largely due to poor marine survival. Restrictive management measures have been in place since 2018 and will continue in 2025. Until marine survival improves, it is unlikely that productivity will improve enough to allow directed fisheries. CYERs averaged 17% with a range of 3% to 37% since 2014.

Stikine River Chinook salmon CY exploitation rates averaged 16% over the most recent 10-year period, and escapements failed to meet the lower bound of the escapement goal range in the most recent nine years (2016–2024; Appendix A.2.2). Like the Taku River, large runs of Chinook salmon were observed from 2005 to 2008 and directed Chinook salmon fisheries were implemented. During this time exploitation rates averaged 53%, which is above the U_{MSY} threshold value of 42% (Appendix A.2.2). Nevertheless, the lower bound of the escapement goal range was achieved each of those years. From 1981 to 2004, the average exploitation rate was 21%, and escapements were above the goal in all but two years over this 24-year period.



Appendix A.2.2—Calendar year exploitation rate, spawning escapement, and threshold reference lines for exploitation rate and spawning escapement for large (>= 660 mm METF in length) Stikine River Chinook salmon, 1975–2024.

Environmental, non-fishing factors: Stikine River smolt abundance and survival have been estimated since the 1998 brood year. Freshwater survival has been declining over this time, and in the recent decade, marine survival has been below the long-term average; until this improves overall production will likely remain below average (Appendix A.2.3).



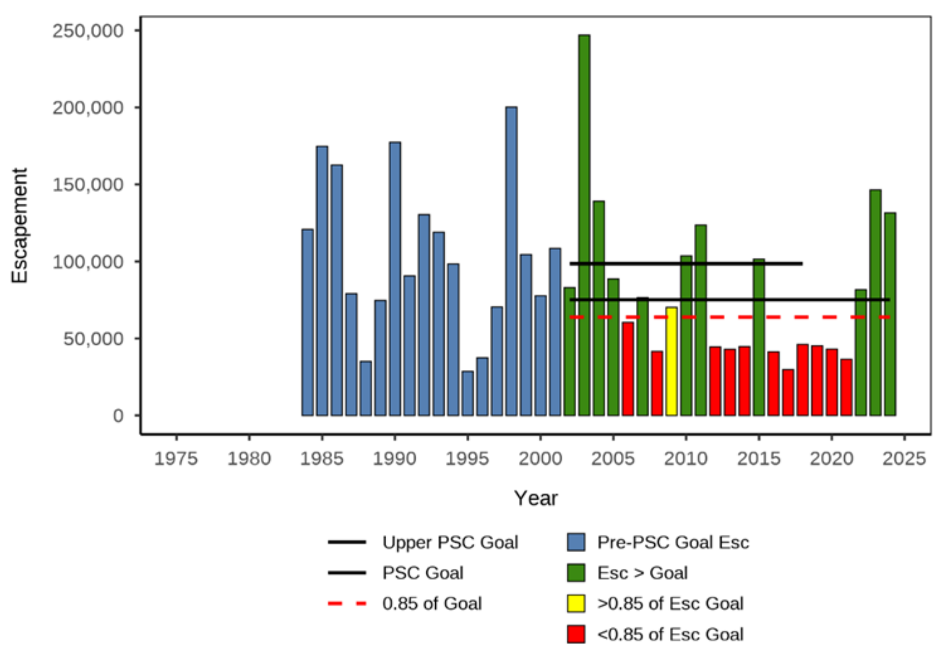
Appendix A.2.3—Freshwater and marine survival indices (standardized to a mean of zero) for the Stikine River stock of Chinook salmon, 1998–2017 brood years.

A.3 HARRISON RIVER

Region	Fraser River
Escapement Indicator Stock	Yes
CWT Indicator Stock	Chehalis Hatchery
ISBM CYER Limit	Canada and US: 95% avg 09-15
Life History Type, Ocean Distribution	Ocean type, local
Primary Age at Maturity	4 yrs
Escapement Method	Mark-recapture
Management Objective	75,100-98,500

The Harrison River is a large, clear river flowing into the Fraser River, approximately 100 km east of Vancouver. Harrison River Chinook salmon are harvested in fisheries in the Strait of Georgia, Puget Sound, Juan de Fuca Strait and on the West Coast, mostly between the Columbia River and Northern Vancouver Island.

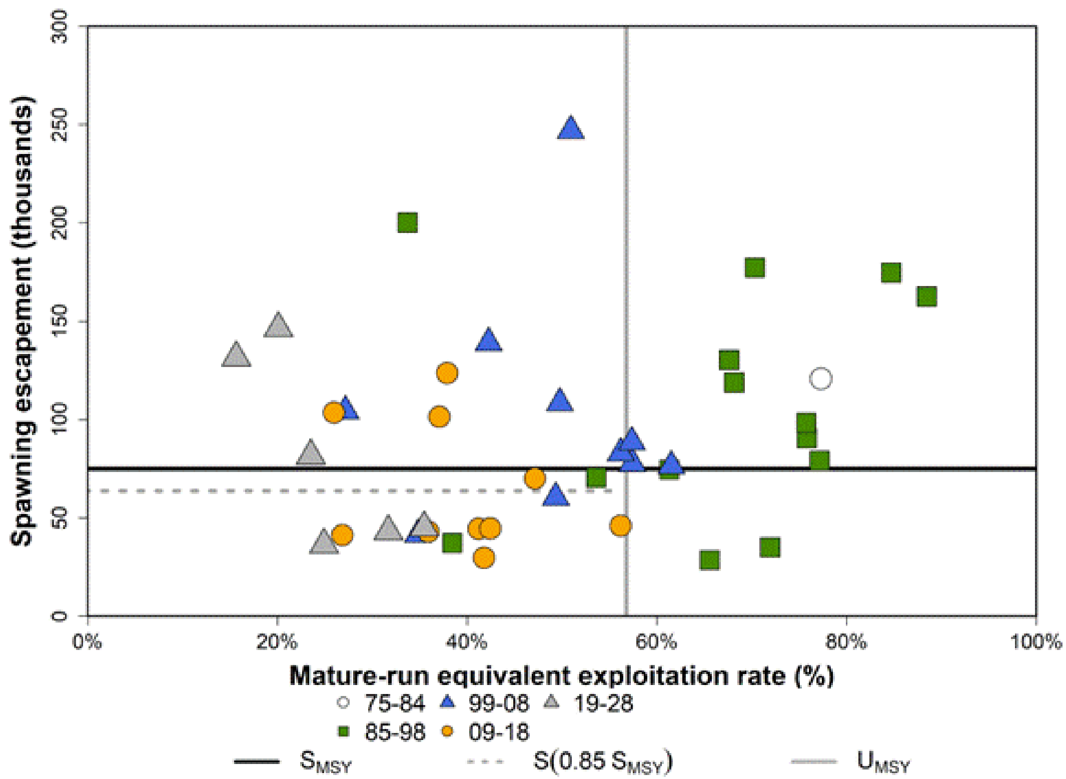
Escapement Trends: Spawning escapements to the Harrison River have varied widely from a low of 28,616 adults in 1995 to a high of 246,986 adults in 2003. Following a period of low abundance between 2016 and 2021, escapements have exceeded the management objective in the last three years (Appendix A.3.1).



Appendix A.3.1—Harrison River escapements of Chinook salmon, 1984–2024.

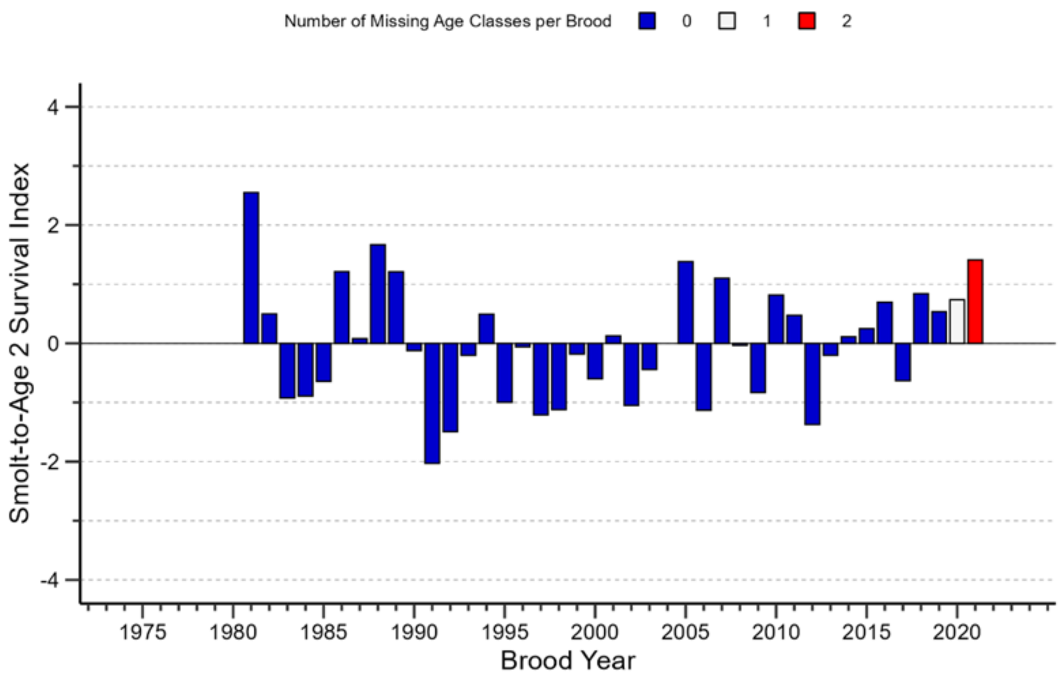
Fisheries Impacting Harrison River Chinook: Exploitation on the Harrison stock has declined over the period of monitoring. Overall, total exploitation averaged about 40% between 1999 and 2008, 33% between 2009 and 2018, and 26% since 2019. In the current treaty period (2019-2024), the largest sources of fishing mortality are the ISBM Southern BC Sport fishery (average 17%) and the ISBM North of Falcon Troll fishery (average 2%). Fishery impacts in the WCVI AABM fisheries have declined over time, now averaging 0.7% in both WCVI AABM Sport and Troll. Harrison Chinook rarely occur in catches in Northern BC or SEAK. There is a limited terminal First Nations net fishery that occurs on the Harrison River, which averaged 1.4% exploitation since 2019

The synoptic plot (Appendix A.3.2) shows a gradual reduction in exploitation rate between the different treaty periods, with consistent years below UMSY since 2009. The current treaty period has some of the lowest exploitation rates in the time series, with three years below the escapement management objective, and the most recent three years (2021-2024) above the goal in the low exploitation and high escapement zone.



Appendix A.3.2—Mature-run equivalent exploitation rate, spawning escapement, and threshold reference lines for exploitation rate and spawning escapement by calendar year for the Harrison River stock of Chinook salmon, 1984–2024.

Environmental, non-fishing factors: Early marine survival has fluctuated throughout the time series, with the largest fluctuations in the 1980s and 1990s. Following a period of negative survival index between brood years 1990 and 2003, and variable survival between 2005 and 2013, marine survival is trending upwards since 2014, with only brood year 2017 with a negative survival index (Appendix A.3.3).



Appendix A.3.3—Marine survival index (standardized to a mean of zero) for the Harrison River stock of Chinook salmon, 1981–2021 brood years. No data are available for brood year 2004.

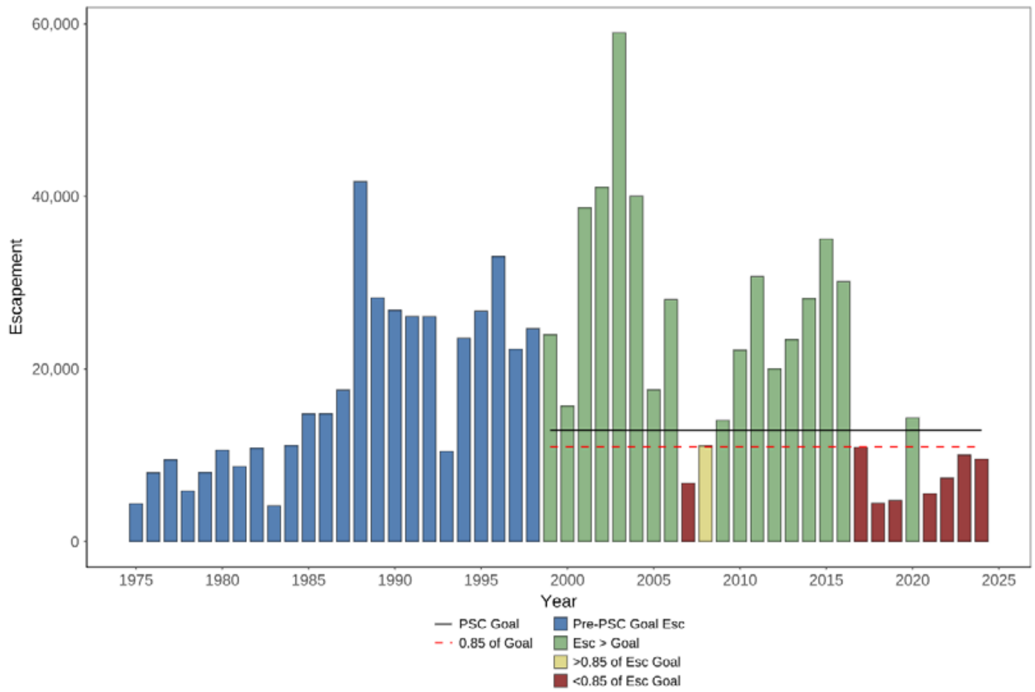
A.4 Siuslaw River

Region	North Oregon Coast
Escapement Indicator Stock	Yes
CWT Indicator Stock	Salmon River Hatchery (SRH)
ISBM CYER Limit	US: 85% avg 09-15
Life History Type, Ocean Distribution	Ocean type, far-north migrating
Primary Age at Maturity	4 yrs
Escapement Method	Mark-recapture-calibrated surveys
Management Objective	12,925

The NOC Chinook salmon production consists predominantly of naturally spawned, fall-returning fish, with an ocean-type life history. Adult spawning escapement is dominated by 4-year-old, particularly, and 5-year-old fish, with smaller proportions of 3-year-olds, as well as relatively small proportions of 6-year-olds. These Chinook salmon from the NOC aggregate are caught primarily in SEAK, NBC, and in terminal fisheries.

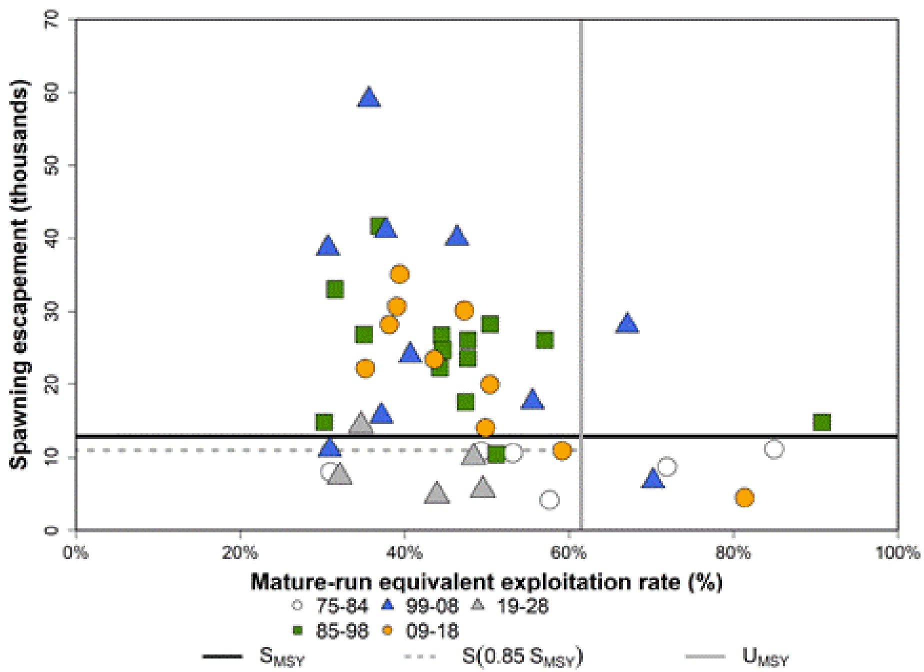
Escapement Trends:

With the exception of 2020, Siuslaw Chinook escapement has been below goal since 2017 (Appendix A.4.1). However, escapement has been generally increasing since its 2018 minimum, in association with terminal fishing bag limits generally below permanent (regular) rules, with closure in 2022.



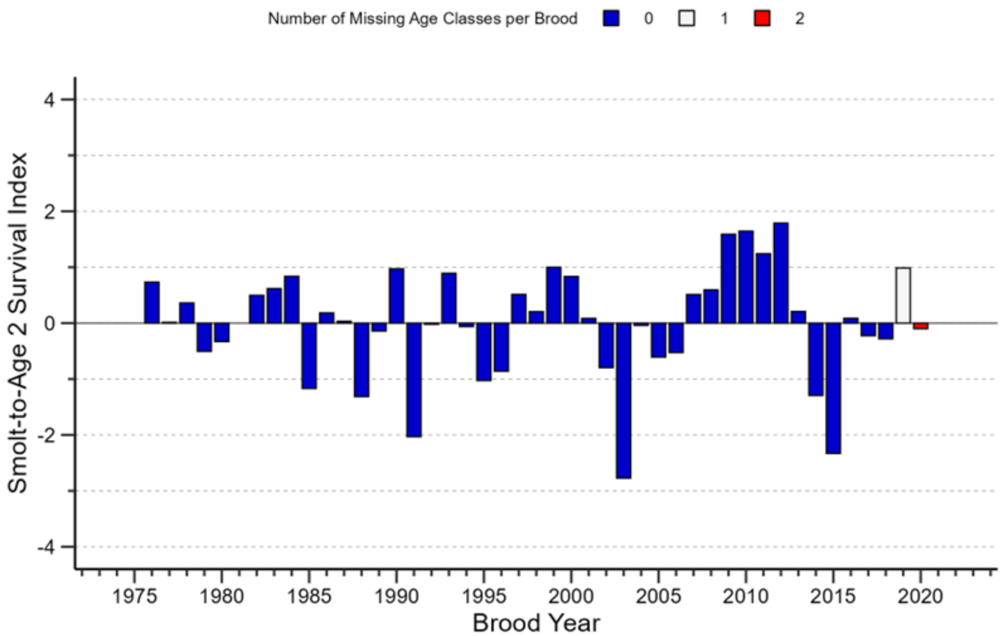
Appendix A.4.1—Siuslaw River fall escapements of Chinook salmon, 1975–2024.

Fisheries Impacting Siuslaw River Chinook: Since 2016 the Siuslaw stock has been above escapement goal in only 2020, but all but one of these below goal years were in the low escapement/low exploitation zone; 2018 was in the high risk zone (Appendix A.4.2). Within the periods of AABM management only two other years (2007 and 2008) had below goal escapement; 2007 was in the high risk zone, but 2008 was in the buffer zone above 85% of goal attainment. Recent poor escapement performance, high exploitation rate and low survival are flags suggesting cautious management; the terminal fishery was closed to harvest of wild fish in 2022 and strict bag limits have been in place since 2019, with the exception of 2021.



Appendix A.4.22—Mature-run equivalent exploitation rate, spawning escapement, and threshold reference lines for exploitation rate and spawning escapement by calendar year for the Siuslaw River stock of Chinook salmon, 1979–2023.

Environmental, non-fishing factors: Survival rates for SRH generally increased through 2012 with a long-term median of 5.2%. Recently, the survival of the SRH stock has declined from a historic high of 19% for BY 2012 to a historic low of 1% during 2013–2015. Available (yet incomplete) information on BY 2019 and 2020 indicate there has been an increase in survival following the prior 3-year decline.



Appendix A.4.33—Marine survival index (standardized to a mean of zero) for the Salmon River hatchery stock of Chinook salmon.

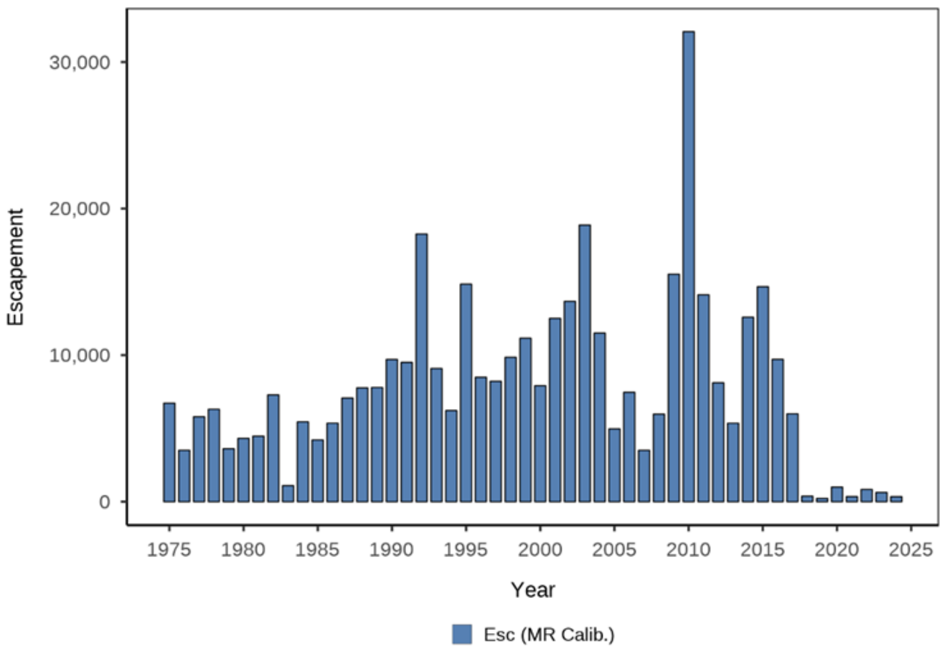
Note: Brood years 1976–2020 are shown, with the exception of 1981, for which there is no information.

A.5 Coquille River

Region	Mid-Oregon Coast
Escapement Indicator Stock	Yes
CWT Indicator Stock	Elk River Hatchery (ELK)
ISBM CYER Limit	US: 85% avg 09-15
Life History Type, Ocean Distribution	Ocean type, far-north migrating
Primary Age at Maturity	4 yrs
Escapement Method	Mark-recapture-calibrated surveys
Management Objective	No current PST goal

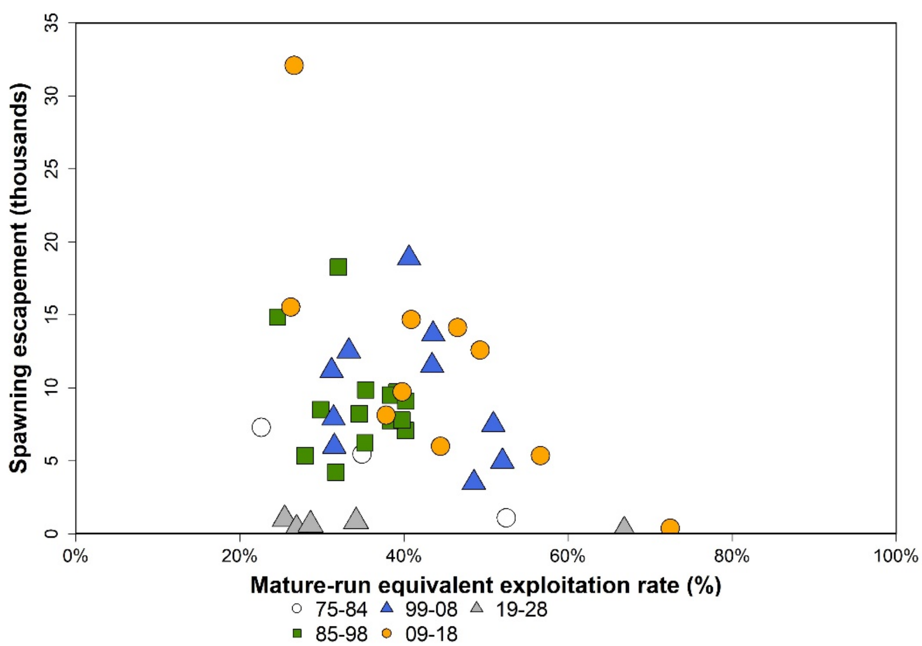
The MOC consists of a mixture of natural and hatchery-produced salmon, mostly natural, both of which return in the fall and follow an ocean-type life history. The largest age class proportion typical among spawners is 4-year-old fish, followed by 3-year-olds, then 5-year-olds, with some very rare 6-year-old fish. These Chinook salmon are caught primarily in SEAK, NBC, WCVI, and PFMC fisheries and in terminal fisheries. Basins within this aggregate have generally, experienced an escapement downturn since 2017, with the Coquille stock plummeting to numbers far below those observed historically.

Escapement Trends: The trend since 2018 of very low Coquille adult escapement relative to previous years continued in 2024 (Appendix A.5.1). This is the seventh consecutive year in which this stock has exhibited very poor escapement performance and consequently ODFW has elected to continue the closure of terminal fishing for wild Chinook in this basin for the 2025 season. A new Conservation Hatchery program under joint Coquille Indian Tribe and ODFW management has had substantial success in broodstock collection, thus limited harvest was allowed for hatchery Chinook in the terminal fishery in 2025.



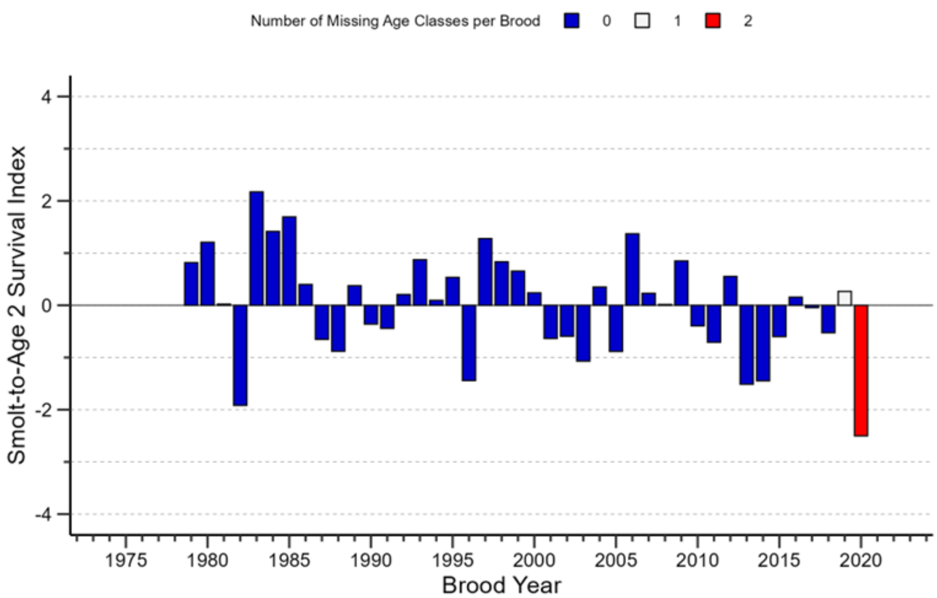
Appendix A.5.14—Coquille River escapement of fall Chinook salmon, 1975–2024.

Fisheries Impacting Coquille River Chinook: The synoptic evaluation plot for Coquille is presented in Appendix A.5.2; however, there are no reference points (S_{MSY}, U_{MSY}) because this stock does not have an agreed-to PSC management objective.



Appendix A.5.25—Mature-run equivalent exploitation rate and spawning escapement for exploitation rate and spawning escapement by calendar year for the Coquille River stock of Chinook salmon, 1979–2023.

Environmental, non-fishing factors: In recent years, marine survival brood year metrics showed below average survival and translated into reduced expectations for this aggregate's production. Thus, there are low expectations for the coming year's terminal return in 2025.



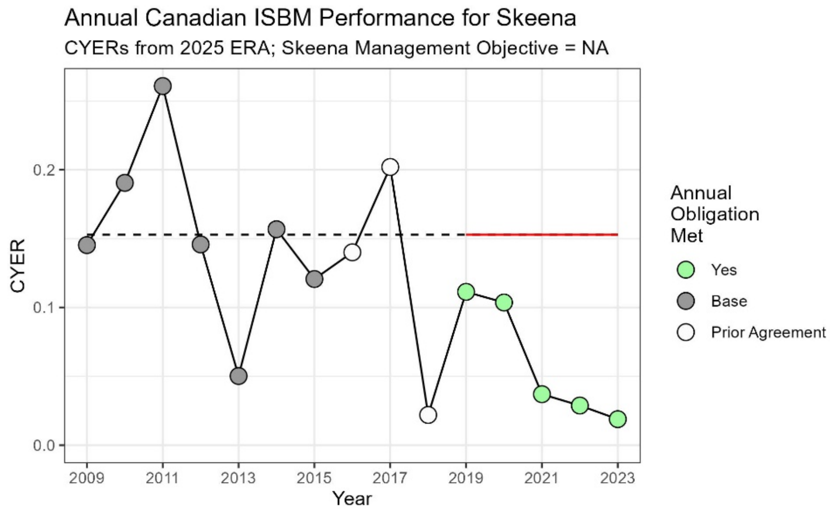
Appendix A.5.36—Marine survival index (standardized to a mean of zero) for the Elk River hatchery stock of Chinook salmon.

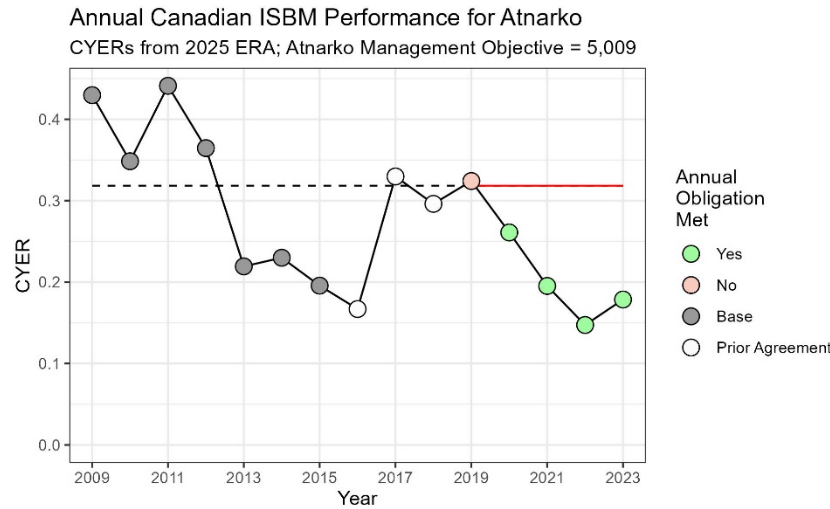
APPENDIX B. STOCK-SPECIFIC CALENDAR YEAR EXPLOITATION RATE TIME SERIES FOR STOCKS WITH LIMITS IN INDIVIDUAL STOCK-BASED MANAGEMENT FISHERIES

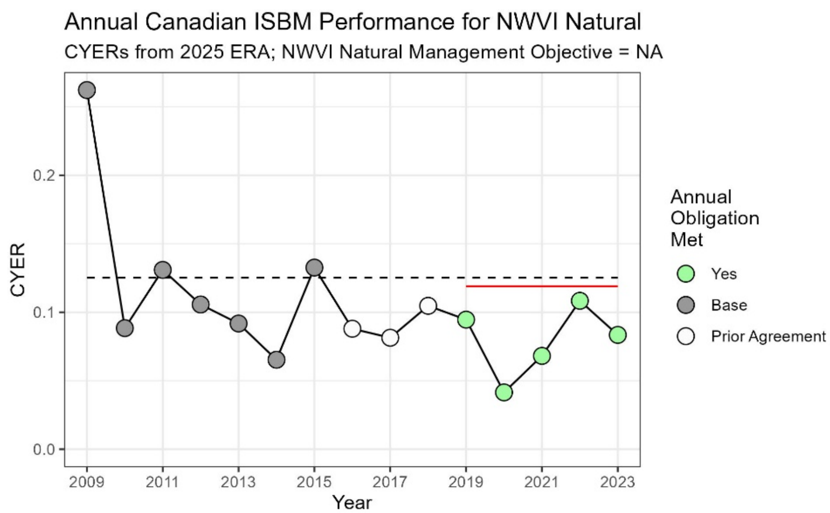
The following figures present annual CYERs in Canadian (Appendix B.1) and U.S. (Appendix B.2) ISBM fisheries for each stock with a CYER limit specified in Attachment I to Chapter 3. In each figure, gray points represent CYERs in base period years (2009–2015) and the horizontal black dashed line represents the base period average CYER. For years managed under the current Agreement (2019–2023), the horizontal red line represents the CYER limit and each point is shaded based on whether (green) or not (red) the annual obligation was met. Note that in some instances a CYER may be shaded green even though it exceeds the CYER limit—this can occur for stocks with management objectives in years where the management objective is met, per paragraph 5(a) of Chapter 3.

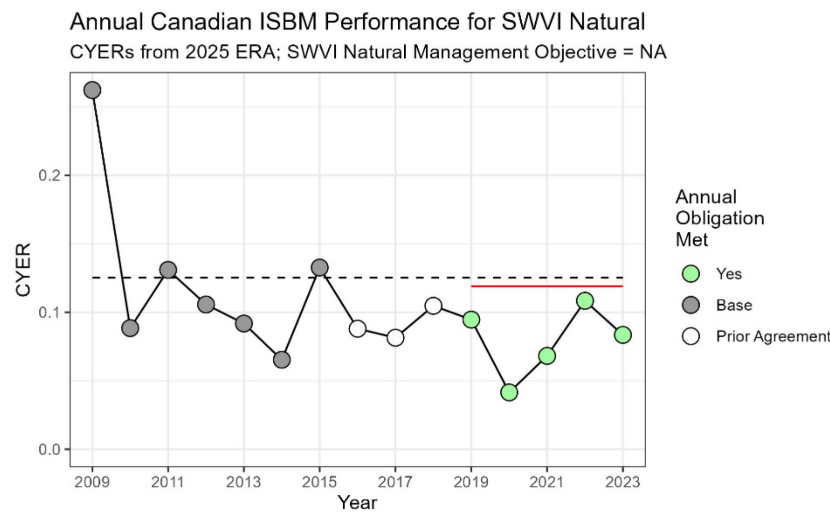
For the five Puget Sound stocks in U.S. ISBM fisheries, the CYER limits presented in the figures below were derived separately from the 2025 ERA, as recommended by the CIG and agreed-to by the Commission in February 2025. Specifically, in response to effects to U.S. ISBM CYERs from updated catch and release estimates in Canadian recreational fisheries, the CIG recommended that "*pursuant to Chapter 3, Paragraph 7(g), the CYER limits for U.S. ISBM fisheries for Nooksack, Skagit (Spring and Summer), Stillaguamish, and Snohomish stocks will remain consistent for 2025 with those provided by the CTC in April 2024 as adjusted for unmarked Chinook salmon using methods developed by the CTC."* The resulting CYER limits for these five stocks are incorporated into the respective figures in Appendix B2 below, and were provided in an April memo from the CTC to the CIG, which also included a description of the approach used to derive them.

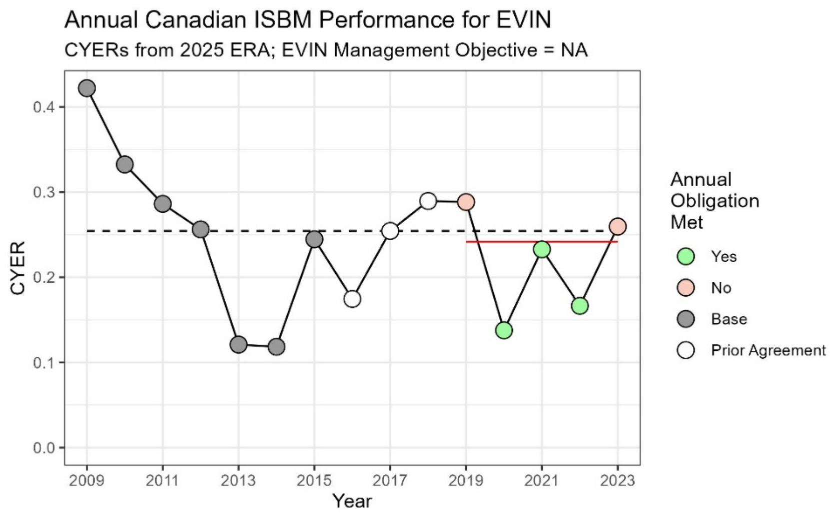
Appendix B.1—Annual calendar year exploitation rates in Canadian individual stock-based management fisheries; 2009–2023. Horizontal black dashed lines represent base period average CYER, horizontal red lines represent stock-specific CYER limit.

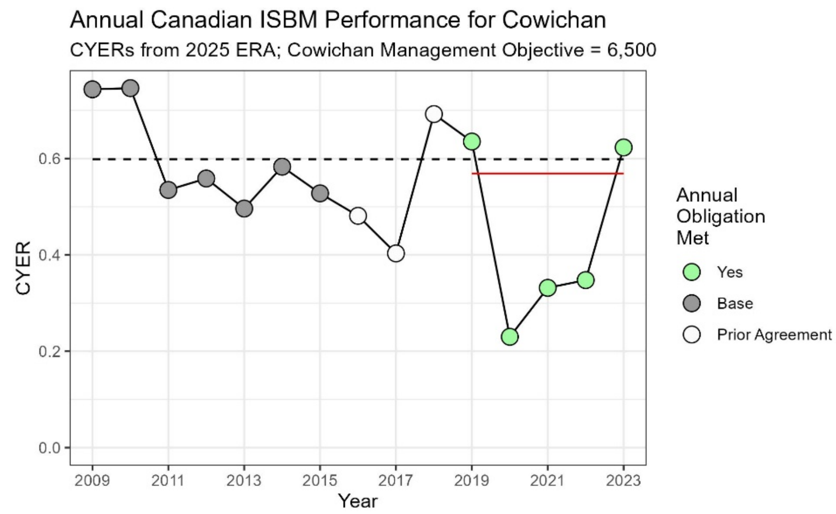


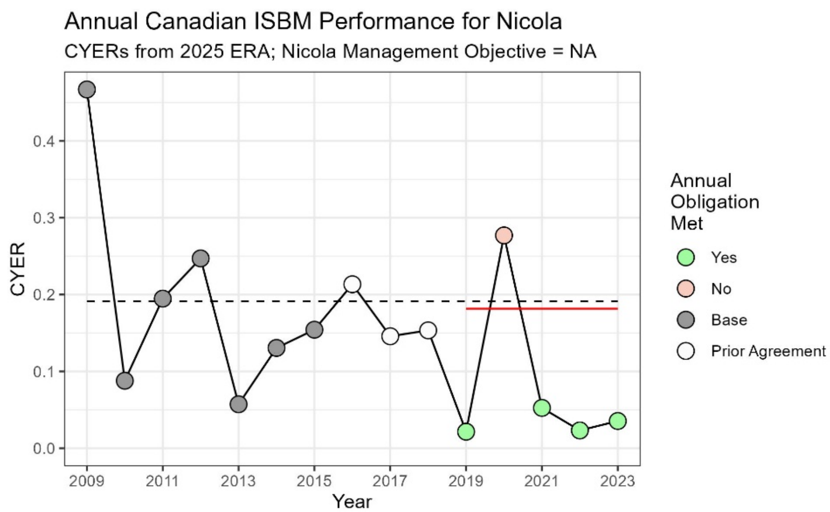


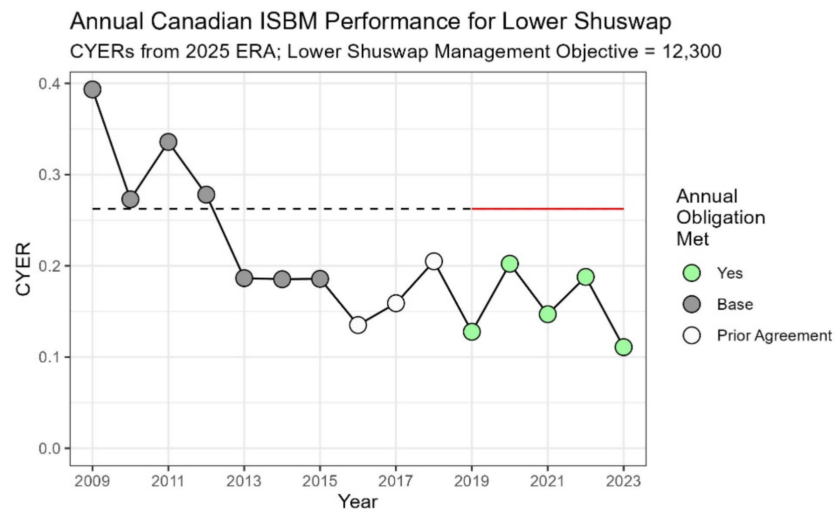


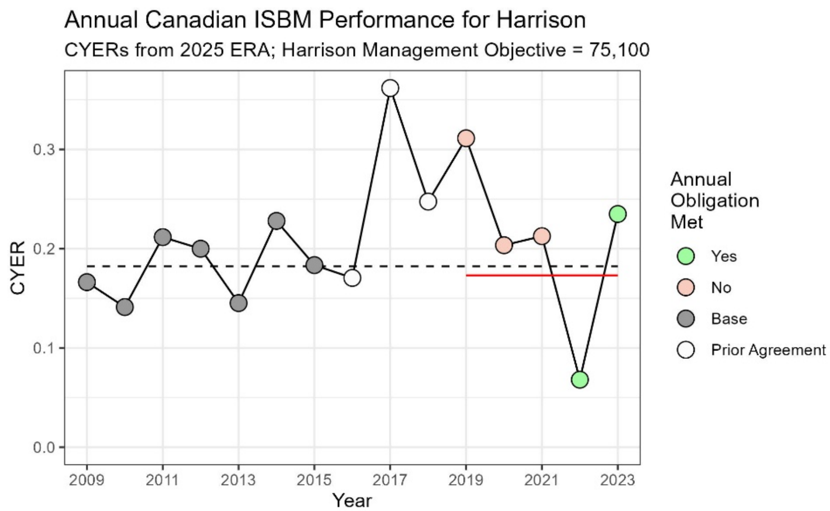



Annual Canadian ISBM Performance for EVIN
CYERs from 2025 ERA; EVIN Management Objective = NA
CYER
Year
Annual Obligation Met
Yes
No
Base
Prior Agreement

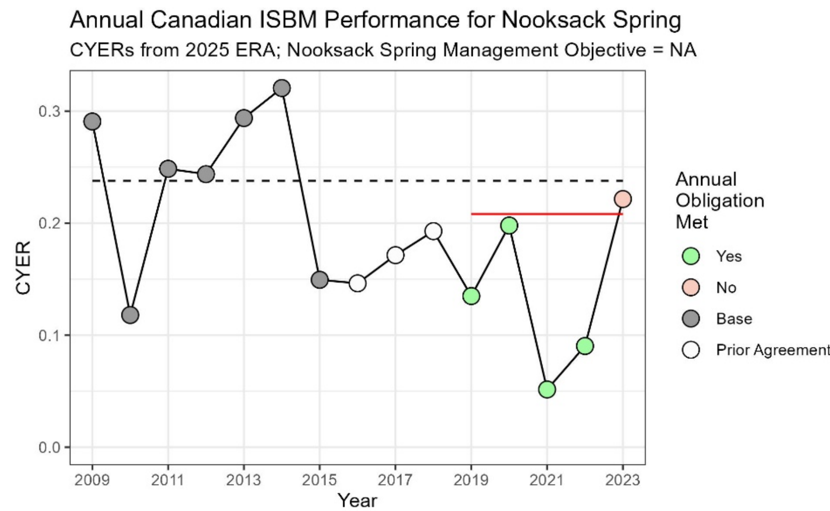

Annual Canadian ISBM Performance for Cowichan
CYERs from 2025 ERA; Cowichan Management Objective = 6,500
CYER
Year
Annual Obligation Met
Yes
Base
Prior Agreement


Annual Canadian ISBM Performance for Nicola
CYERs from 2025 ERA; Nicola Management Objective = NA
CYER
Year
Annual Obligation Met
Yes
No
Base
Prior Agreement

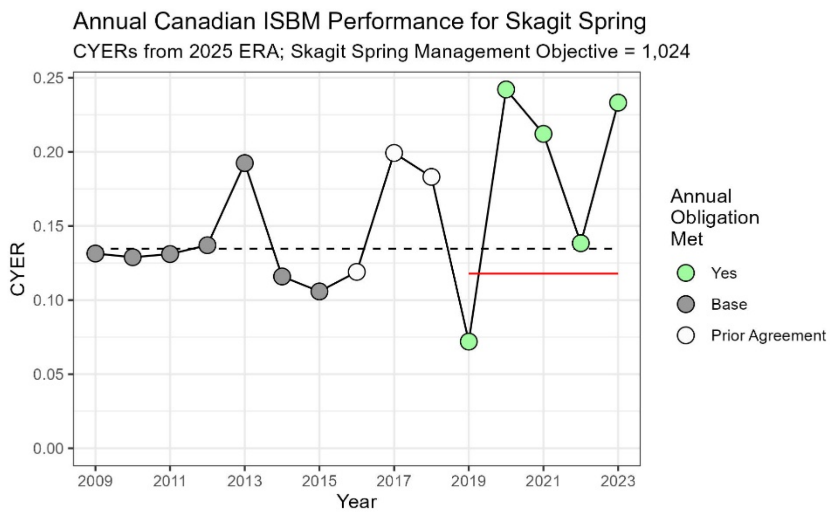

Annual Canadian ISBM Performance for Lower Shuswap
CYERs from 2025 ERA; Lower Shuswap Management Objective = 12,300
CYER
Year
Annual Obligation Met
Yes
Base
Prior Agreement



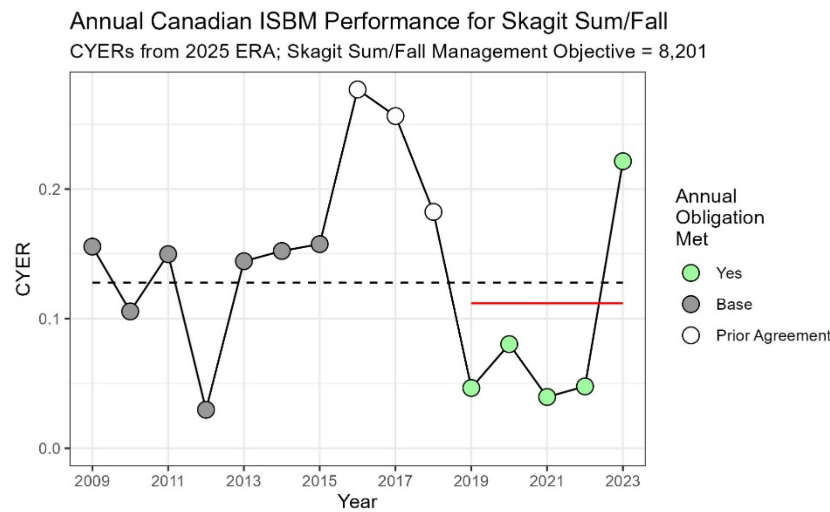
Annual Canadian ISBM Performance for Harrison
CYERs from 2025 ERA; Harrison Management Objective = 75,100
CYER
Year
Annual Obligation Met
Yes
No
Base
Prior Agreement



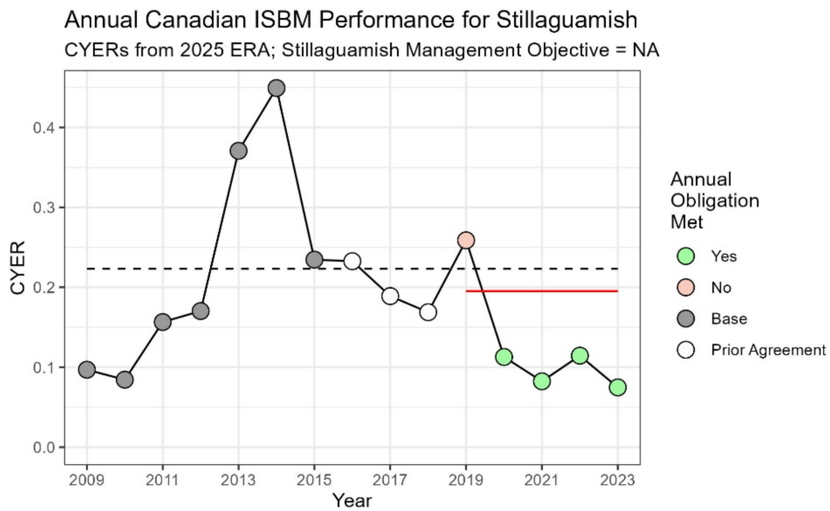
Annual Canadian ISBM Performance for Nooksack Spring
CYERs from 2025 ERA; Nooksack Spring Management Objective = NA
CYER
Year
Annual Obligation Met
Yes
No
Base
Prior Agreement



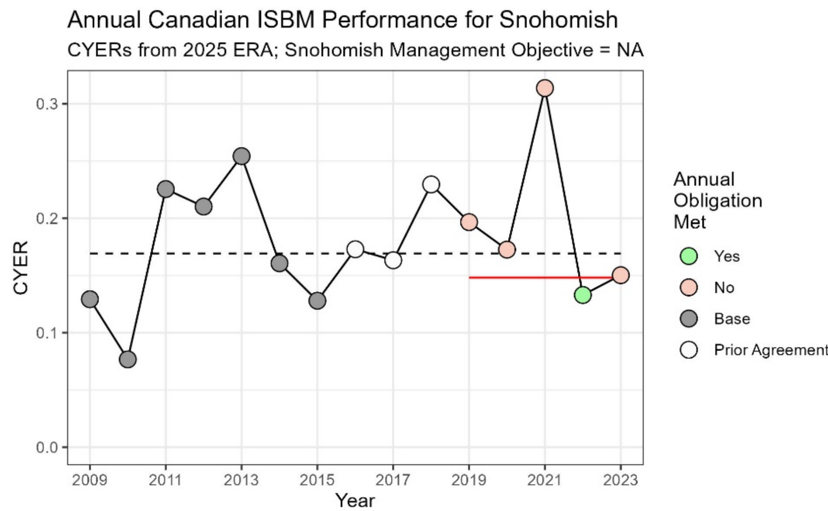
Annual Canadian ISBM Performance for Skagit Spring
CYERs from 2025 ERA; Skagit Spring Management Objective = 1,024
CYER
Year
Annual Obligation Met
Yes
Base
Prior Agreement



Annual Canadian ISBM Performance for Skagit Sum/Fall
CYERs from 2025 ERA; Skagit Sum/Fall Management Objective = 8,201
CYER
Year
Annual Obligation Met
Yes
Base
Prior Agreement

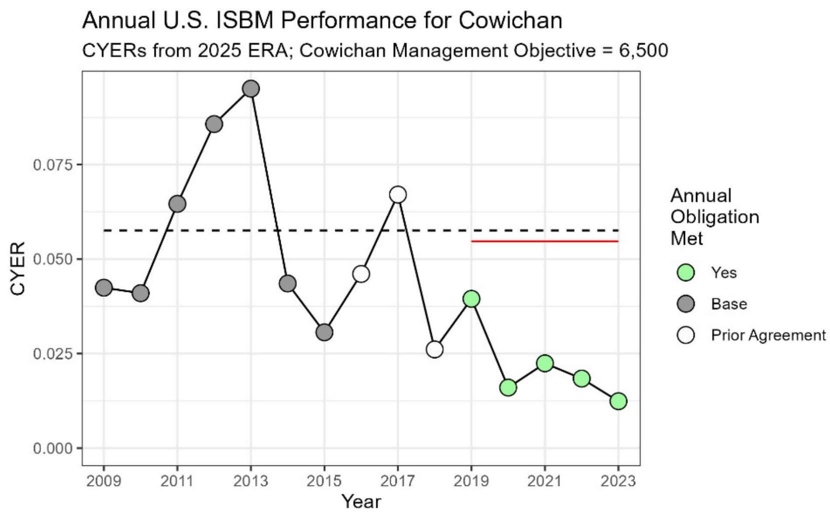


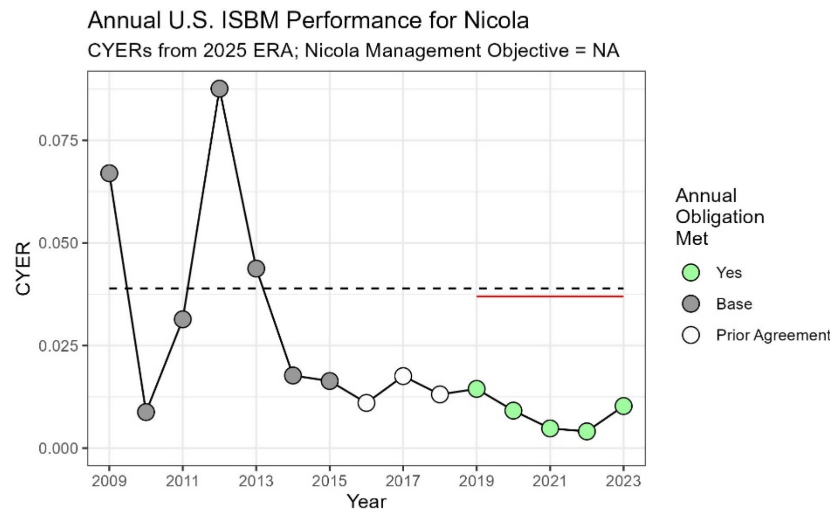
Annual Canadian ISBM Performance for Stillaguamish
CYERs from 2025 ERA; Stillaguamish Management Objective = NA
CYER
0.0
0.1
0.2
0.3
0.4
2009
2011
2013
2015
2017
2019
2021
2023
Year
Annual Obligation Met
Yes
No
Base
Prior Agreement

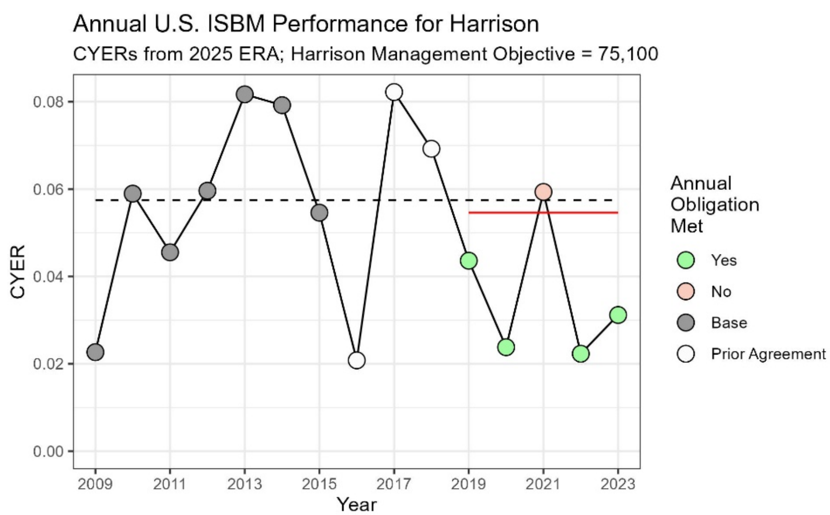


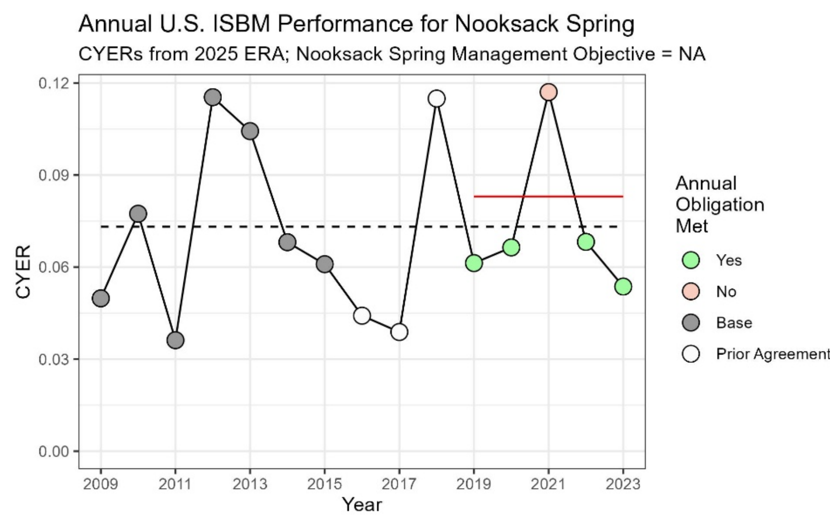
Annual Canadian ISBM Performance for Snohomish
CYERs from 2025 ERA; Snohomish Management Objective = NA
CYER
0.0
0.1
0.2
0.3
2009
2011
2013
2015
2017
2019
2021
2023
Year
Annual Obligation Met
Yes
No
Base
Prior Agreement

Appendix B.2—Annual calendar year exploitation rates (CYER) in U.S. individual stock-based management (ISBM) fisheries; 2009 – 2023. Horizontal black dashed lines represent base period average CYER, horizontal red lines represent stock-specific CYER limit.

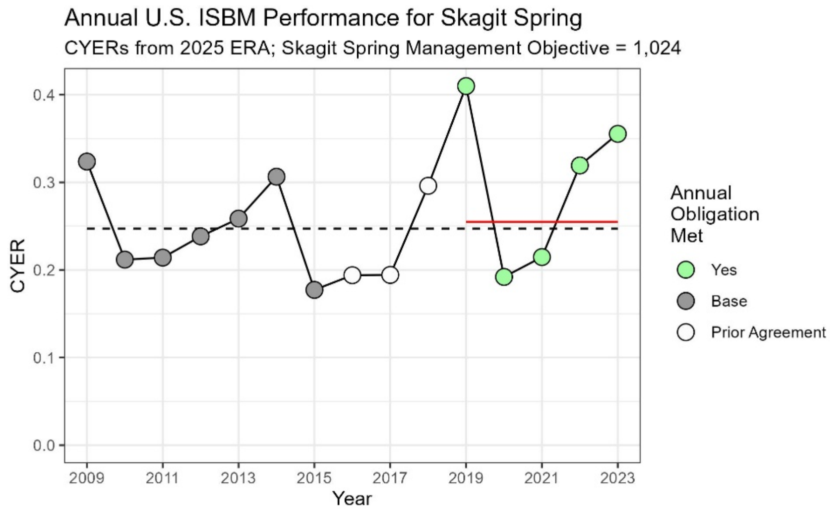


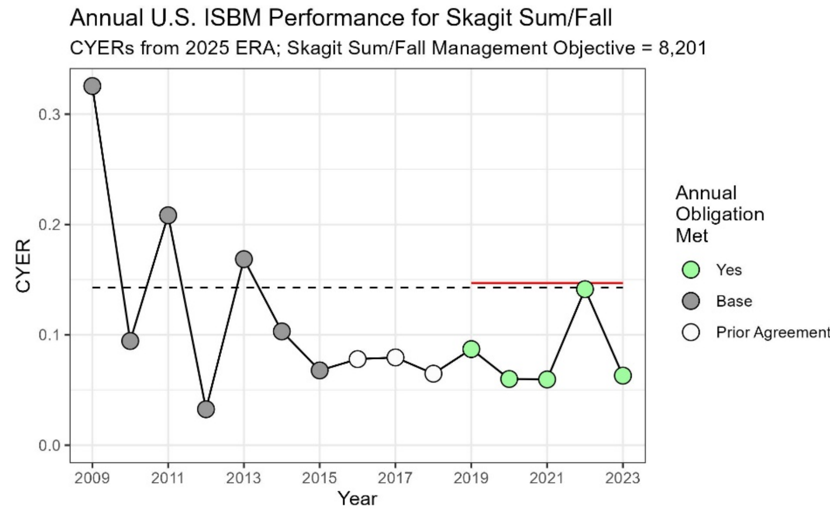




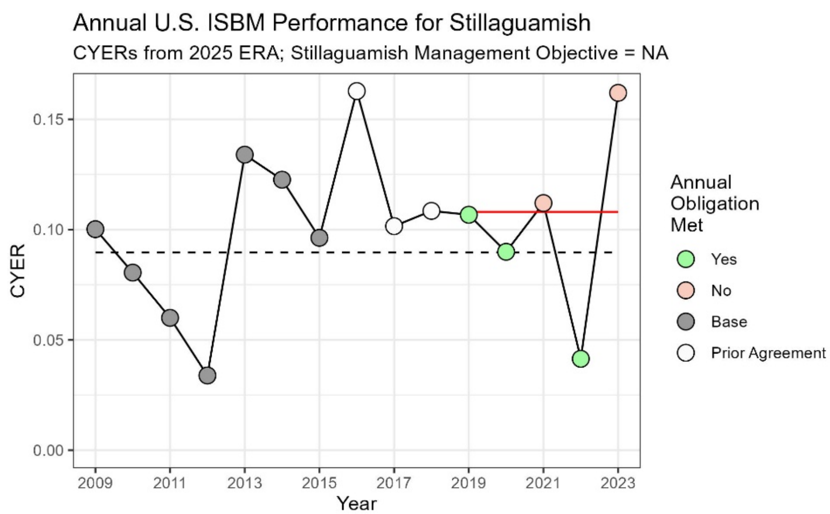


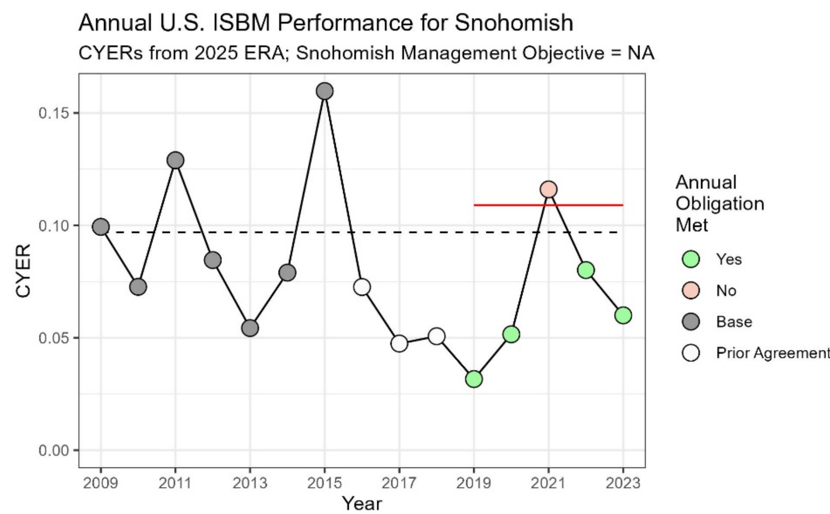
Note: CYER limit for the Nooksack Spring stock was derived externally to the 2025 ERA – see Appendix B introductory text for details.



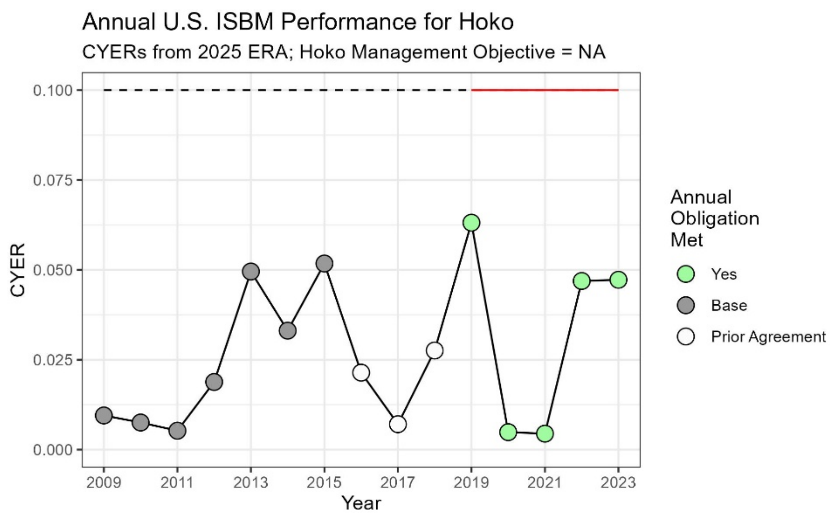


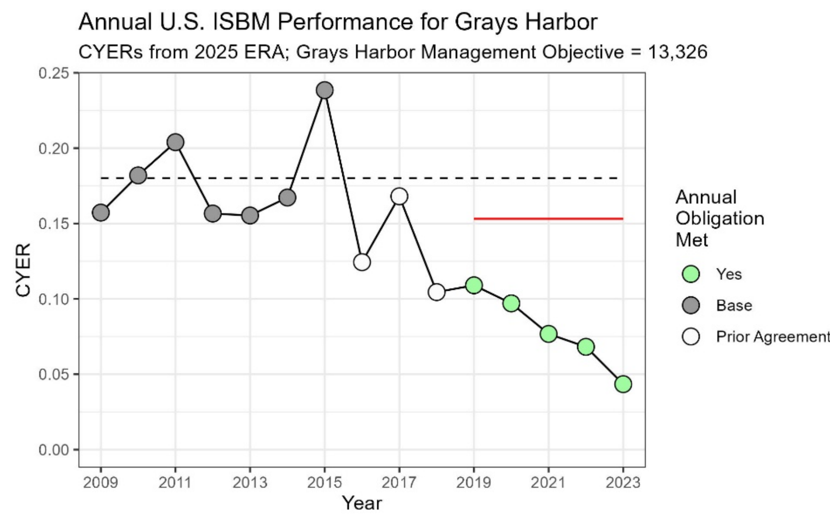
Note: CYER limits for the Skagit Spring and Skagit Summer/Fall stocks were derived external to the 2025 ERA – see Appendix B introductory text for details.

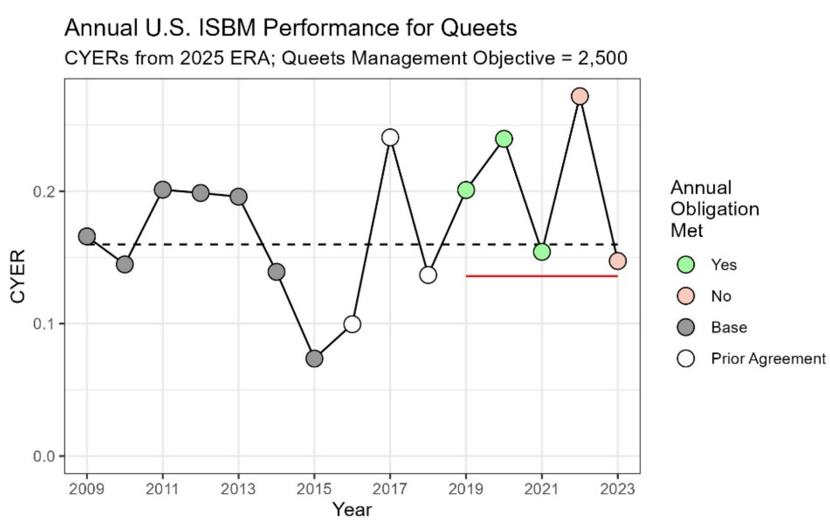


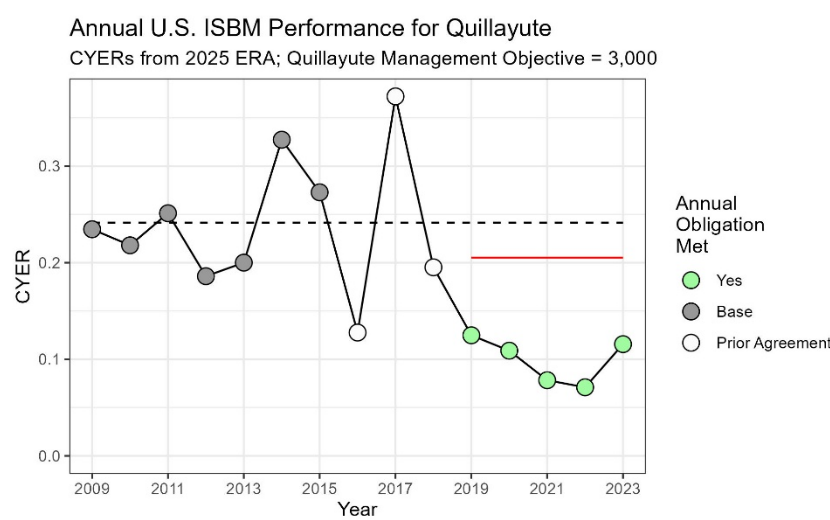


Note: CYER limits for the Stillaguamish and Snohomish stocks were derived external to the 2025 ERA – see Appendix B introductory text for details.


Annual U.S. ISBM Performance for Hoko
CYERs from 2025 ERA; Hoko Management Objective = NA
CYER
0.100
0.075
0.050
0.025
0.000
2009
2011
2013
2015
2017
2019
2021
2023
Year
Annual Obligation Met
Yes
Base
Prior Agreement

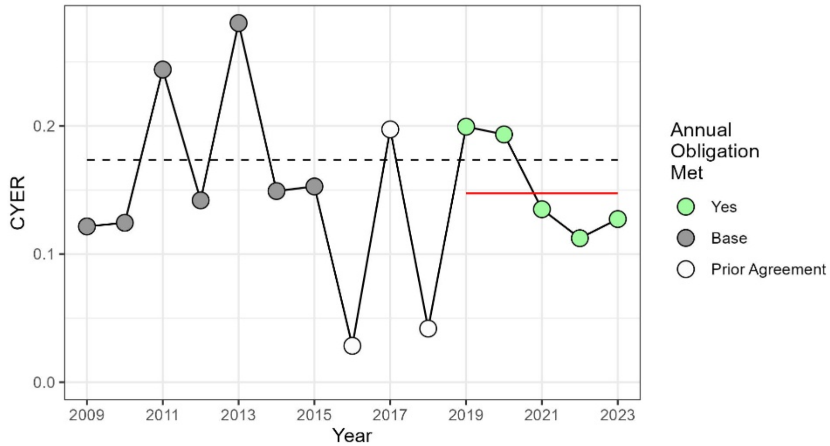

Annual U.S. ISBM Performance for Grays Harbor
CYERs from 2025 ERA; Grays Harbor Management Objective = 13,326
CYER
0.25
0.20
0.15
0.10
0.05
0.00
2009
2011
2013
2015
2017
2019
2021
2023
Year
Annual Obligation Met
Yes
Base
Prior Agreement


Annual U.S. ISBM Performance for Queets
CYERs from 2025 ERA; Queets Management Objective = 2,500
CYER
0.2
0.1
0.0
2009
2011
2013
2015
2017
2019
2021
2023
Year
Annual Obligation Met
Yes
No
Base
Prior Agreement


Annual U.S. ISBM Performance for Quillayute
CYERs from 2025 ERA; Quillayute Management Objective = 3,000
CYER
0.3
0.2
0.1
0.0
2009
2011
2013
2015
2017
2019
2021
2023
Year
Annual Obligation Met
Yes
Base
Prior Agreement

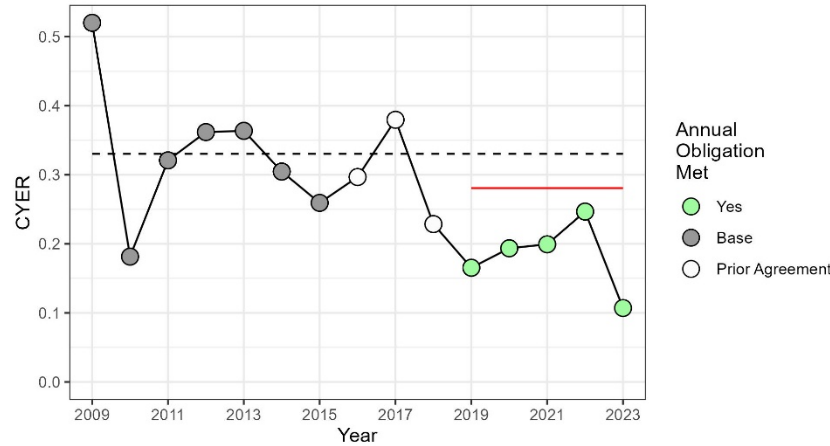
Annual U.S. ISBM Performance for Hoh

CYERs from 2025 ERA; Hoh Management Objective = 1,200



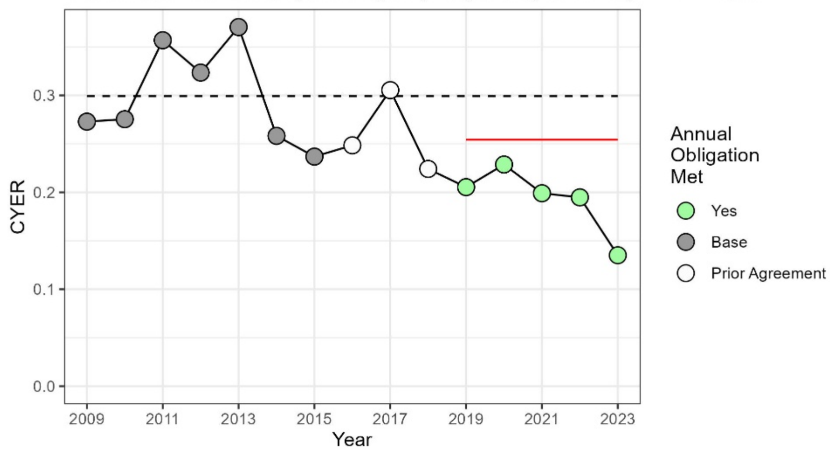
Annual U.S. ISBM Performance for Upriver Brights (HAN)

CYERs from 2025 ERA; Upriver Brights (HAN) Management Objective = 40,000



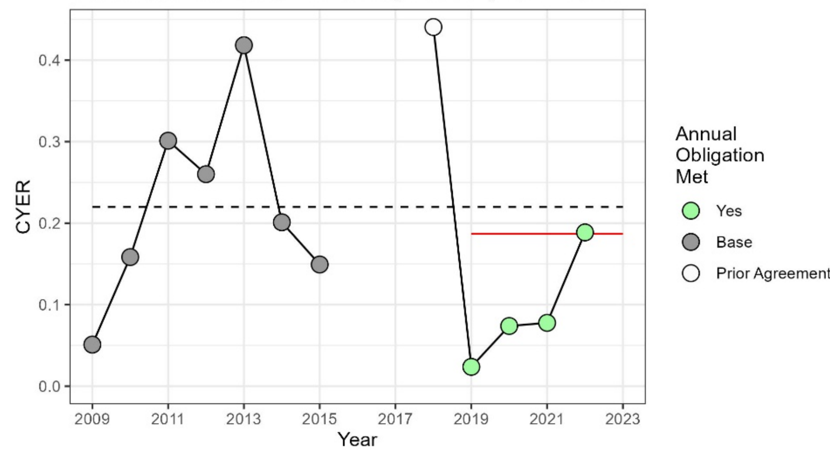
Annual U.S. ISBM Performance for Upriver Brights (URB)

CYERs from 2025 ERA; Upriver Brights (URB) Management Objective = 40,000



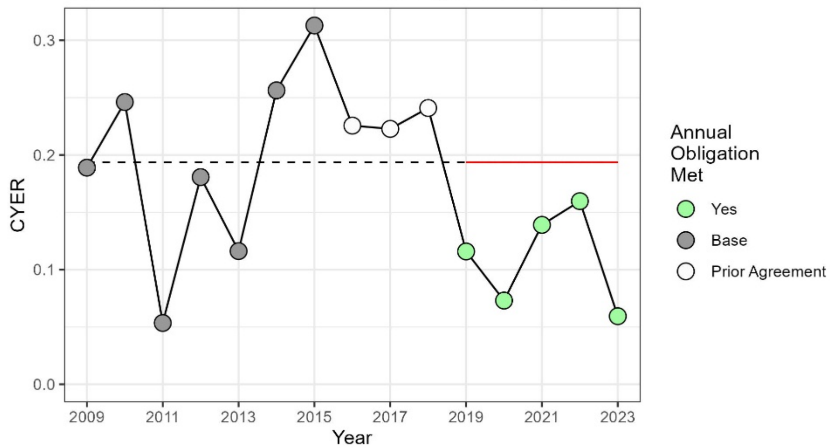
Annual U.S. ISBM Performance for Lewis

CYERs from 2025 ERA; Lewis Management Objective = 5,700



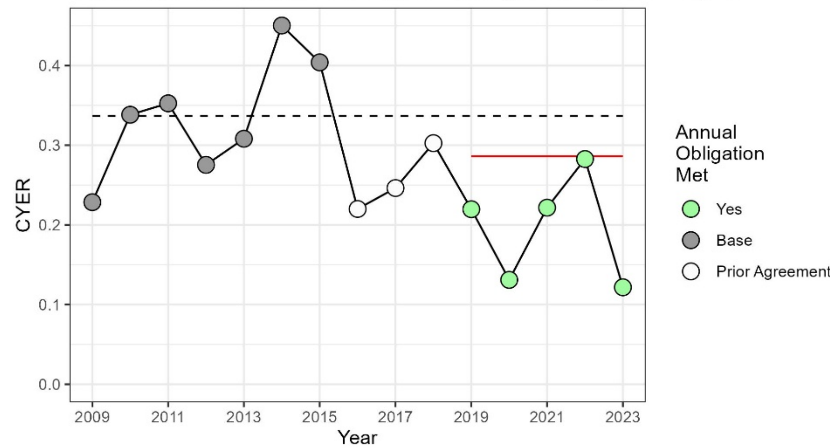
Annual U.S. ISBM Performance for Coweeman

CYERs from 2025 ERA; Coweeman Management Objective = NA



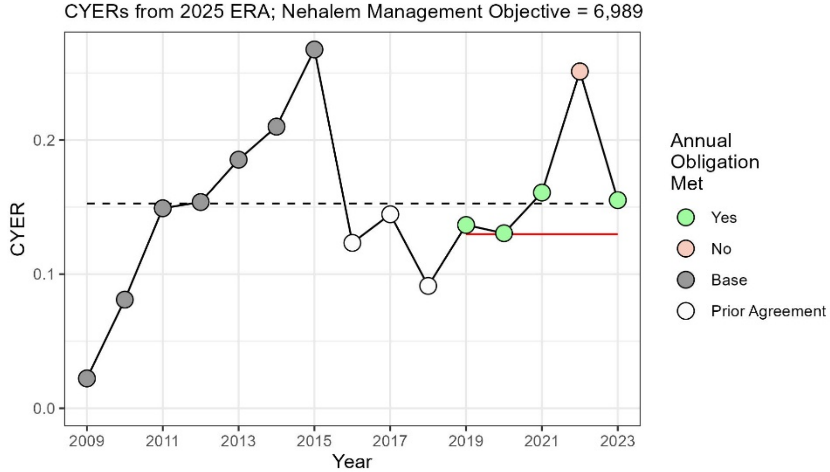
Annual U.S. ISBM Performance for Mid-Col Summers

CYERs from 2025 ERA; Mid-Col Summers Management Objective = 12,143



Annual U.S. ISBM Performance for Nehalem

CYERs from 2025 ERA; Nehalem Management Objective = 6,989

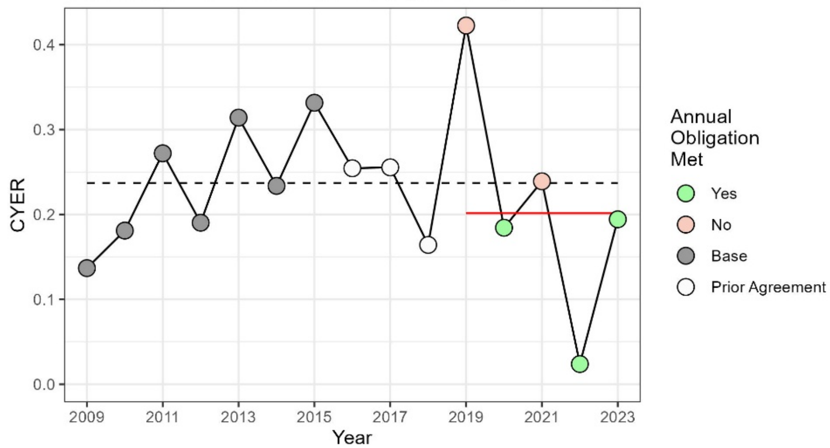


Annual U.S. ISBM Performance for Siletz

CYERs from 2025 ERA; Siletz Management Objective = 2,944

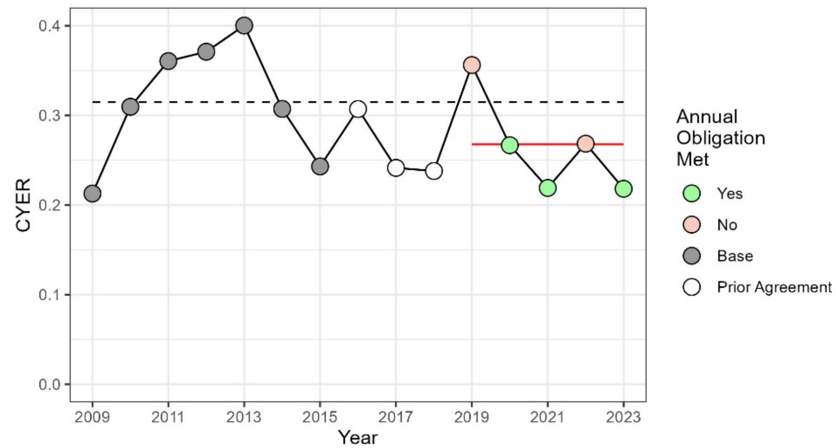
Annual U.S. ISBM Performance for Siuslaw

CYERs from 2025 ERA; Siuslaw Management Objective = 12,925



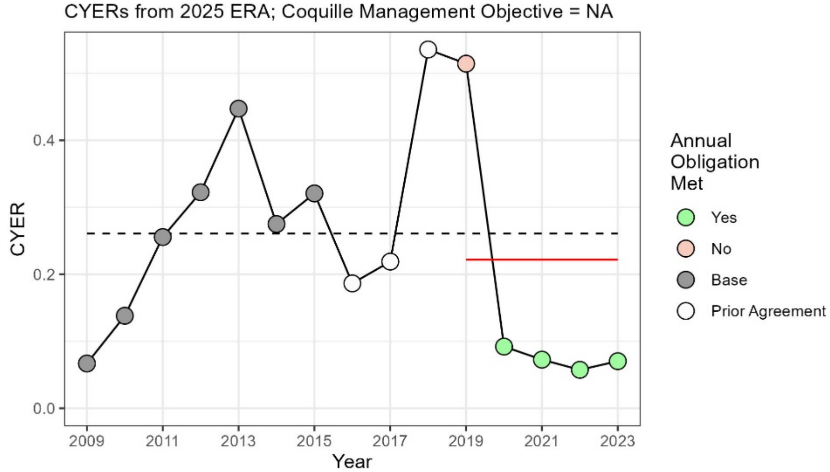
Annual U.S. ISBM Performance for South Umpqua

CYERs from 2025 ERA; South Umpqua Management Objective = NA



Annual U.S. ISBM Performance for Coquille

CYERs from 2025 ERA; Coquille Management Objective = NA



PACIFIC SALMON COMMISSION

ESTABLISHED BY TREATY BETWEEN CANADA
AND THE UNITED STATES OF AMERICA
MARCH 18, 1985

600 – 1155 ROBSON STREET
VANCOUVER, B.C. V6E 1B5
TELEPHONE: (604) 684-8081
FAX: (604) 666-8707

November 3, 2025

Ms. Anna Classen, Commissioner
Pacific Salmon Commission
Regional Director General
Fisheries and Oceans Canada
Via email: *Anna.Classen@dfo-mpo.gc.ca*

Dear Commissioner Classen,

On behalf of the Pacific Salmon Commission, I am writing to request information on the management of Snohomish Chinook fisheries affected by the Pacific Salmon Treaty (Treaty). This request arises from Treaty requirements articulated in Annex IV, Chapter 3, paragraph 7(c)(i).

The Commission is aware that ISBM Chinook fishery three-year average calendar year exploitation rates (CYER) exceeded their limits by more than 10% for this stock. The three-year average CYERs were calculated using the CYERs from the following years: 2021, 2022, and 2023. In this circumstance, the Treaty stipulates:

> *"the Commission shall request that the management entities responsible for the management of the ISBM fishery take necessary actions to minimize the deviation between the three-year CYER average and the CYER limits in Attachment I. By the end of the annual meeting of the Commission, the Commission shall discuss proposals from the management entity regarding the actions to be taken and the expected outcomes of those actions before those actions are implemented".*

In anticipation of its winter meeting cycle, the Commission seeks your help in providing the needed proposals as soon as possible prior to the 2026 Post-Season Meeting (January 12-16, 2026). This will permit the Commission to review the proposals and then discuss future actions by the end of the 2026 Annual Meeting (February 9-13, 2026).

Thank you in advance for your assistance, and the Commission looks forward to the continued excellent collaboration it enjoys from you and your colleagues.

Sincerely,

John Field

John Field
Executive Secretary

Cc: National Correspondents

Fisheries and Oceans Canada | Pêches et Océans Canada

Pacific Region | Région Pacifique

Regional Director General | Directrice générale régionale

Our File:
2025-501-00061

John Field
Executive Secretary
Pacific Salmon Commission
field@psc.org

Dear Mr. Field:

Please find attached Canada's response regarding your November 3, 2025 letter requesting information on the management of Snohomish Chinook fisheries affected by the Pacific Salmon Treaty (PST). This letter provides information related to our management approach for Canadian Individual Stock Based Management (ISBM) fisheries to address objectives for Snohomish Chinook.

Canada remains committed to its obligations under the Treaty and continues to carefully monitor our management approaches for consistency with our obligations for Chinook stocks of concern pursuant to PST Annex IV, Chapter 3, paragraph 7(c)(i). The table below highlights Snohomish Chinook calendar year exploitation rate (CYER) values relative to limits for the 2019 to 2023 Chinook calendar years. While we acknowledge that Canadian fisheries have exceeded the limit for Snohomish Chinook (Table 1), we have previously documented in our January 10, 2025 letter some of our concerns with the 2021 estimate which appears to be an outlier, and also concerns with the CYER estimates for this stock more generally. Substantial changes to both the Snohomish Chinook coded wire tag indicator and kept and released catch estimates have caused overestimation of CYER impacts (CYER Method Standardization Memo, in preparation). Given changes to the assessment programs and the extremely high estimate in 2021, the overall CYER average since 2019 is higher than the target and the 10 per cent buffer and will remain higher than the target until the 2021 data point is no longer part of the average.

Table 1: Recent CYER values (recall the annual limit is 0.148 and the treaty obligation is to be within 10 per cent of the limit averaged over three years)

Calendar Year	Canadian ISBM CYER
2019	0.197
2020	0.173
2021	0.314
2022	0.133
2023	0.15

Canada has reviewed the times and areas where this stock is encountered in Canadian ISBM fisheries and notes that the stock is widely distributed at low rates in southern British Columbia (B.C.). As a result, there is considerable uncertainty about how fishery management actions will affect CYER outcomes.

Regardless, Canada has implemented management actions that have reduced impacts on Snohomish Chinook in 2022 and 2023 and we will continue to take actions to meet our PST obligations. Since 2019, Canada has implemented Chinook fishery non-retention or closures over a broad area of southern B.C. from April 1 to July 15 or July 31 depending on statistical area. Since these measures were first implemented in the 2019 season, Canada has also implemented additional restrictions and the management actions for the 2022 and 2023 seasons. As the most recent Snohomish CYER estimates for 2022 and 2023 show, recent management measures are bringing the CYER in line with the annual limit for Snohomish Chinook. With the completion of the 2026 and 2027 Exploitation Rate Analysis (ERA) reports, Canada will better understand the impacts of management measures taken in 2024 and 2025.

In 2024 and in 2025, Canada maintained prior restrictions introduced in 2022 and 2023 and added the following measures in ISBM fisheries which are expected to further reduce impacts on Snohomish Chinook:

1. Closed previously open portions of Pacific Fishery Management Area (PFMA) 20-5 to recreational and commercial fishing from August 1-October 31 (increased the area of no salmon fishing 26 per cent, or a 53 square kilometre spatial increase from the 2023 measures).
2. Changed a spring recreational mark-selective fishery in Juan de Fuca from mixed-bag (some wild retention permitted) to pure mark selective fishery (no wild retention) from March 1- March 31 (PFMA 19-1,19-3, 19-4, and 20-4 to 20-7).

Canada’s consultation with First Nations and harvest sectors on management measures for the 2026 season begins in January and continues through April with decisions communicated publicly when our management plans are released in July 2026. We anticipate continued implementation of a precautionary management approach for Chinook

ISBM fisheries in 2026 and will be consulting on incremental changes that may be considered to meet our PST obligations for Snohomish Chinook and domestic planning considerations.

Details of specific fishing plans including any new changes being consulted on in 2026 will be provided in February 2026 after the development of the Draft Integrated Fisheries Management Plan (IFMP). While projecting the impacts of these actions on Snohomish Chinook remains challenging given the uncertainties in the data and limited tools, we will continue to assess the impact any proposed actions may have on Snohomish Chinook.

Canada remains interested in advancing work to develop new fishery planning tools that can be used to forecast ISBM fishery impacts based on available information. The Research and Development group of the Chinook Technical committee is engaged in an ambitious project to modernize the Chinook Model; our expectation is that when properly developed this model could support more timely advice and allow for improved ability to assess the impacts of current and future fisheries.

Yours sincerely,

Anna Classen
Vice-Chair, Pacific Salmon Commission
Lead Commissioner for Canada

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January 10, 2025

John Field
Executive Secretary
Pacific Salmon Commission

Dear Mr. Field

On October 29th the Pacific Salmon Commission wrote to Canada indicating that our ISBM fisheries obligations for two Canadian stocks and one Southern United States stock were not in compliance with the treaty, and to request information on the management of Harrison River, East Vancouver Island North (EVIN) and Snohomish Chinook fisheries and to seek information on Canada's plans to support compliance with the obligations as noted.

"The Commission is aware that the Harrison, East Vancouver Island North (EVIN) and Snohomish Individual Stock-Based Management (ISBM) ISBM Chinook fishery three-year average calendar year exploitation rates (CYER) have exceeded their required limits by more than 10%, as described in Annex IV of the treaty. The three-year average CYERs were calculated using the CYERs from the following years: 2020, 2021, and 2022."

The purpose of this letter is to describe how ISBM fisheries for these three stocks are managed to support compliance with the Pacific Salmon Treaty objectives. Canada seeks to manage its fisheries to achieve PST obligations for identified stocks and ISBM fishery planning in 2024 was informed by pre-season information for these stocks including CYER information available from past years, updated coded wire tag (CWT) data for EVIN and Harrison Chinook, escapement forecast for Harrison Chinook. and heat maps showing the monthly impacts of relevant fisheries by Pacific Fisheries Management Areas (PFMAs) for years 2019-2023 (Figures 1-3),

2024 Canadian Domestic Chinook ISBM Fisheries Planning

Conservation remains Canada's number one priority. In 2024, fisheries planning was focused on meeting conservation objectives for Chinook stocks of concern, including Fraser Chinook. These Fraser Chinook stocks of concern are encountered in fisheries which also encounter EVIN, Harrison River and Snohomish Chinook stocks. These more restrictive management measures were designed to protect Fraser Chinook stocks of concern. With the assistance of the Canadian members of the CTC, Canada projected the returns and expected exploitation rates for EVIN, Harrison River and Snohomish Chinook. The measures meant to protect Fraser Chinook stocks of concern are likely to generate additional reductions in ISBM mortalities for CY 2024.

In recent years area closures to recreational and commercial salmon fishing, predominantly in Juan de Fuca and Swiftsure Bank, have been implemented to reduce disturbance and increase prey availability for Southen Resident Killer Whales (SRKW). These closed areas were modified in 2022 with significantly more spatial area added, in effect from July 15 to October 31, which may further reduce impacts to Snohomish Chinook.

2024 Harrison Chinook Forecast and 2023 returns

Attachment I of the 2019 PST Agreement identifies a management objective of 75,100 for Harrison Chinook, which was established from a Ricker stock-recruit analysis in 2001 (Brown et al. 2001). Historically, spawning escapements to the Harrison River have varied widely, ranging from a low of 28,616 adults in 1995 to a high of 246,986 adults in 2003.

Annual forecast estimates for each Fraser Chinook management unit (MU) are conducted by DFO. The forecasts for Harrison Chinook represent the estimated spawner abundance (i.e., returns to the spawning grounds after all ocean and freshwater fisheries harvest and mortalities). The final escapement estimate in 2023 was 149,730 which was above the escapement goal. As Harrison is also anticipated to have a CYER above the limit in 2023 with an escapement exceeding the management objective, this year may not meet the criteria for inclusion in the three-year average. In addition the 2024 forecast of 104,116 was above the PST-approved escapement goal of 75,100 and returns are expected to be above the forecasted amount. New management actions taken in 2023 and 2024 for Fraser River Chinook stocks of concern were anticipated to reduce the CYER in 2023 consistent with Canada’s obligations under the Treaty.

Figure 1. *Distribution of estimated adult equivalent (AEQ) Total Mortality of Harrison Chinook from sport (top) and Net and Troll (bottom) fisheries across PFMAs by month for the in 2019–2023 where color denotes the estimated number of fish mortalities attributed to the fishery.*

EVIN Chinook Management

The reduction in impacts within ISBM recreational fisheries targeting EVIN Chinook were a result of management actions taken to protect both Skeena and Fraser Chinook stocks. Further conservation actions were taken in the Strait of Georgia ISBM fishery to allow for the passage of Fraser Chinook stocks of concern to the Fraser River. Combined, these actions have led to a reduction in ISBM CYER impacts to EVIN Chinook, from 18.9% in the marked 2023 ERA (2019 – 2021 3YA) to 17.4% in the unmarked 2024 MSF ERA (2020 – 2022 3YA).

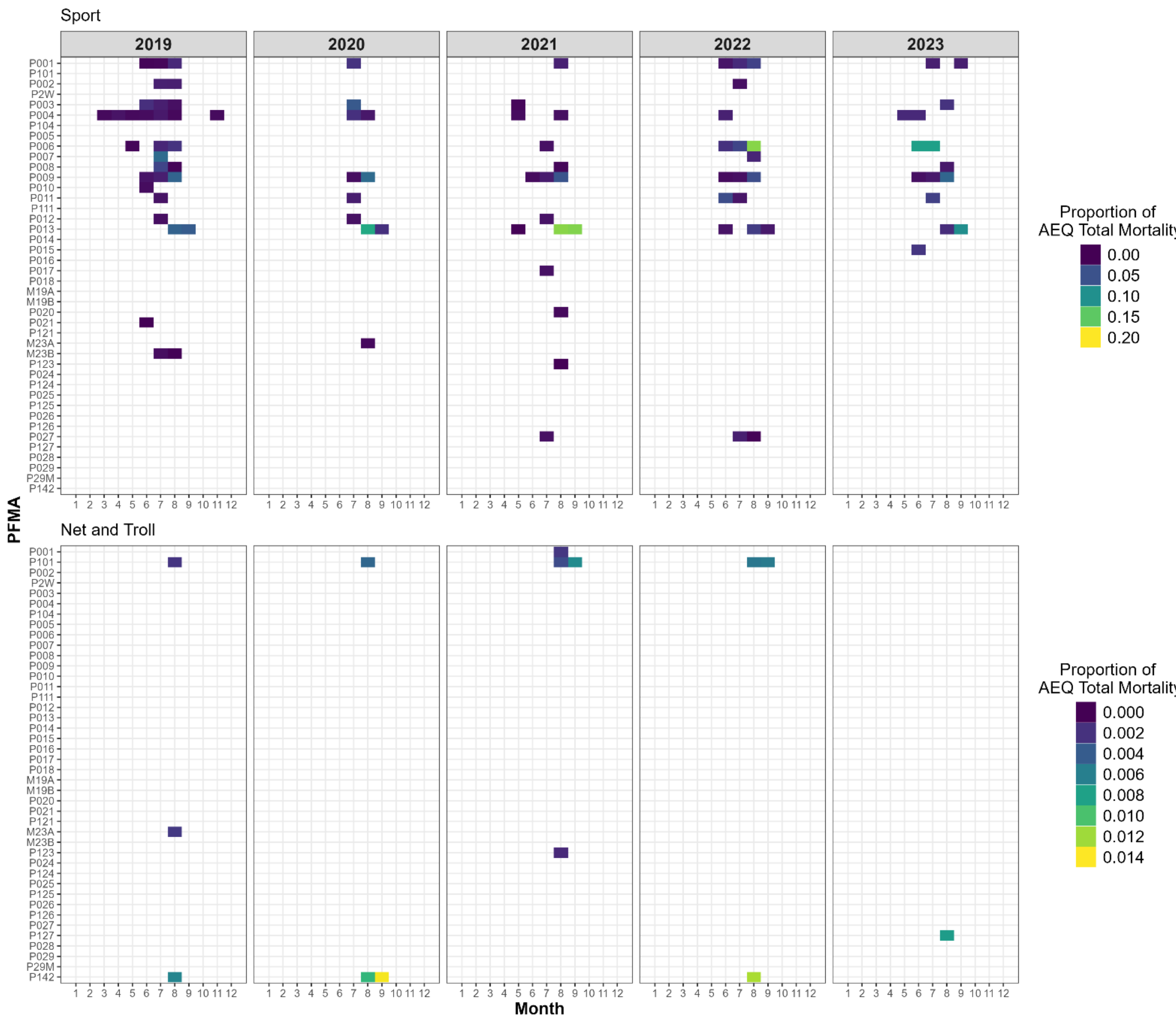

Figure 2. *Distribution of estimated adult equivalent (AEQ) Total Mortality of Quinsam (adj) Chinook from sport (top) and Net and Troll (bottom) fisheries across PFMAs by month for the in 2019–2023 where colour denotes the estimated number of fish mortalities attributed to the fishery.*

2024 updates to CTC model baseline recreational data

Canada has implemented improvements to two analytical processes where there was an underestimation of recoveries in the CYER base period, and where indirect methods were being used to estimate submission rates for recreational catch estimates for periods and regions with lower fishing effort. Specifically, the two analytical processes that will improve the data quality to evaluate ISBM obligations in Chapter 3's subparagraph 7c of the current Agreement are: (1) revisions of recreational catch data in marine Canadian fisheries, and (2) revisions based on updated estimation methods for coded-wire-tags (CWT) in the Pacific Region marine waters.

The first analytical improvement addresses the underestimation of recoveries during the base period years by standardizing the methodology used to estimate sport catch data. The ERA currently incorporates catch (kept and release) sport data that includes information from both creel surveys and the internet recreational effort and catch (iRec) reporting program, thus allowing for a comprehensive temporal and spatial coverage of sport fishery catch data. The iRec program has been used for Chinook salmon since July 2012; prior to that only creel surveys were used to collect sport catch data which only cover certain months and areas, leading to an underestimation for years before iREC. Thus, the 2009-2015 CYER base period includes a mixture of creel-only and creel-iRec data. The base period calibration initiative involves statistical modeling to produce sport catch data from 2009 to June 2012 comparable to that used in the present. Because the combination of creel and iRec results in greater catch than the catch reported from creel only, due to its greater spatial and temporal coverage, this analytical development increased the overall base period sport catch. This update resulted in generally higher base period CYER limits, and therefore reduces the chances of not meeting Canadian ISBM obligations for stocks caught in sport fisheries. The revised recreational catch data in marine Canadian fisheries was introduced to the CTC on September 9, 2024 and incorporated into the 2024 MSF ERA. More details regarding the methodology will be available from Brown et al.(in prep).

The second analytical improvement addresses the recommendation from the CYER WG (2021) to transition from indirect to direct methodologies wherever possible, which will improve the accuracy of the resulting estimates. As identified by the September 9, 2024 memo, past recreational catch estimates had gaps in coverage that needed to be revised and updated. Before this update to CWT estimation methods, there were regions and time periods that had no marked catch estimates or had inconsistencies between the number of recoveries and estimated marked catch. To handle these issues, CWT estimates were based on several indirect methods. Indirect methods included using the average submission rate of the same region from other months (e.g. Strait of Georgia summer submission rates for winter months), the average of the submission rates in other regions (e.g. Southern BC submission rates for Central BC), or assumed maximum and minimum submission rates applied when estimated submission rates were unreasonably high or low, presumably resulting from uncertainty in the marked kept catch estimates. On December 4, 2024, the CTC was presented with a memo from their Canadian members which introduced a revision of CWT expansions methods using iREC estimates in combination with ongoing creel based estimates from high effort periods, allowing for a transition to directly estimate submission rates for most strata. A detailed description of these methods will be provided in an upcoming DFO technical report (Brown et al., in prep).

Although the updated recreational catch provides complete coverage, approximately 2.5% of observed CWT recoveries are associated with regions and time periods with an estimated marked catch estimate of zero or result in extreme submission rates (i.e., less than 2% or greater than 40%). Most of these recoveries are associated with years before iREC (before 2013) when we rely on modelled catch. Updated and standardized algorithms to indirect catch estimation methods were developed leveraging the more extensive coverage of recreational catch estimates.

With updates to recreational CWT estimates primarily increasing impacts to earlier run years, Canadian Calendar Year Exploitation Rates (CYER) based period (2009 to 2015) are expected to increase with the additional mortality estimated in recreational fisheries. While there is an overall moderate increase on CWT estimates for most indicator stocks, individual stock impacts may vary based on the relationship between submission rates and stock distributions. Preliminary and unofficial results, after the incorporation of the revised CWT expansion methods (Table 1), show that based on years 2020-2022, 7c is untriggered for EVIN and Harrison but remains triggered for Snohomish in Canadian ISBM fisheries. For U.S., fisheries, 7c is triggered for Nooksack Spring. This is intuitive given the CYER for this stock in base-period years decreased (see Dec.4, 2024 memo) and this stock was on the cusp of triggering 7c in the 2024 MSF ERA.

Table 1*. Performance of Canadian and U.S ISBM fisheries relative to three-year average (3YA) calendar year exploitation rates (CYERs), as specified in paragraph 7(c) in Chapter 3 of the 2019 PST Agreement, derived from the 2024 MSF ERA (as in tables 1 and 2) and after Canadian revisions of CWT expansion methods. Only cases that triggered 7c or changed between these two analyses are shown.*

			Paragraph 7(c) obligation met?	
Country	**Escapement Indicator**	**Years included**	**2024 MSF ERA**	**Revised Preliminary**
Canada	EVIN	2020, 2021, 2022	No	Yes
Canada	Harrison	2020, 2021, 2022	No	Yes
Canada	Snohomish	2020, 2021, 2022	No	No
U.S.	Nooksack Spring	2020, 2021, 2022	Yes	No

Snohomish Chinook Management

Snohomish escapement was the lowest on record in 2019 while 2022 escapement was the highest since 2017 and second highest of the 2009-current period (CTC 2024). Escapement percent mortality in SKY also increased from its lowest amount in the 2019 time series of 55.3% in 2021 to 70.9% in 2022. Management actions are expected to continue to reduce interceptions of SKY Chinook, although due to the two year lag in CWT data, the impacts of actions taken in 2022 will not be available until the 2025 ERA.

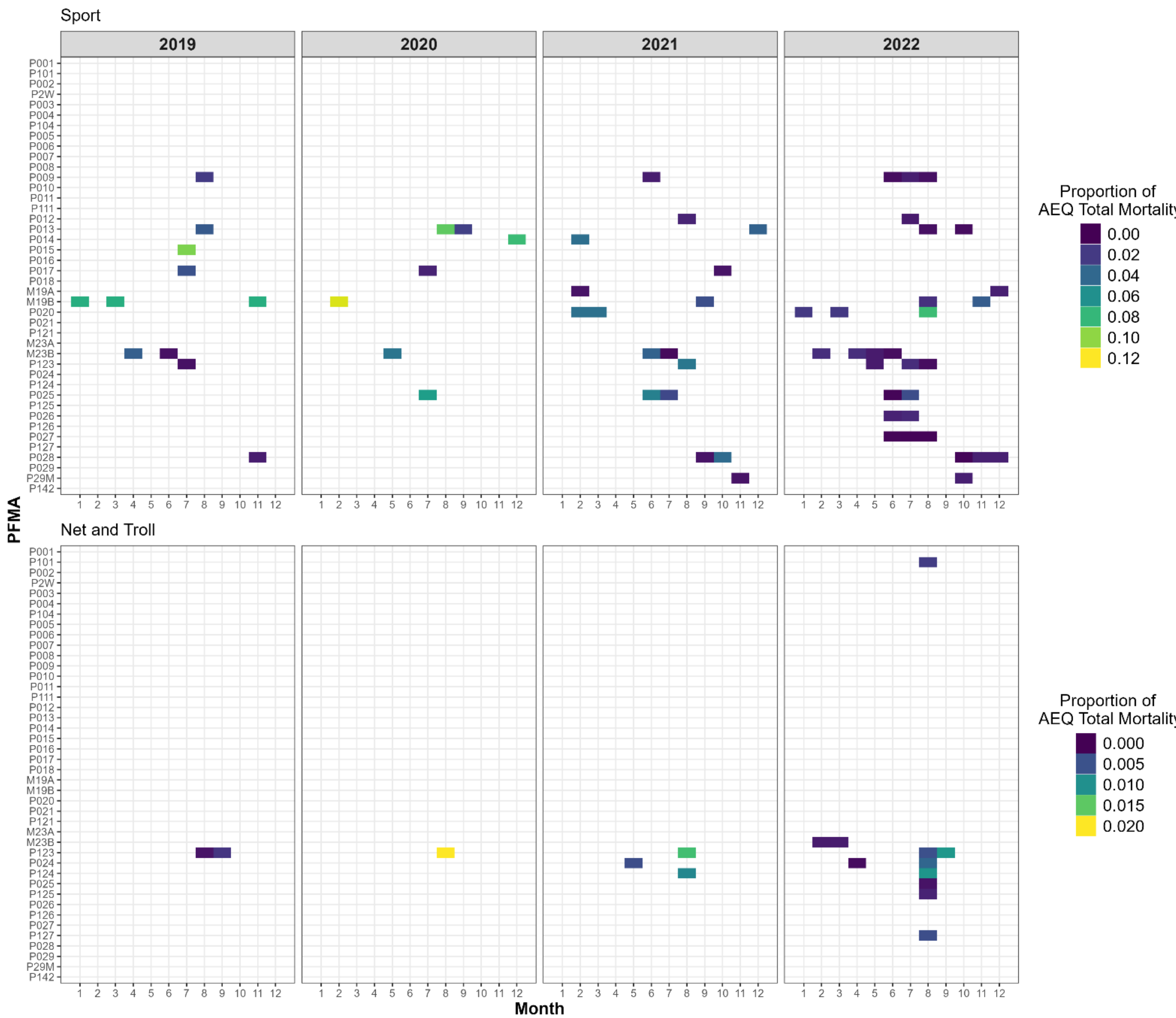

Figure 3. *Distribution of estimated adult equivalent (AEQ) Total Mortality of Snohomish Chinook from sport (top) and Net and Troll (bottom) fisheries across PFMAs by month for the in 2019–2022 where color denotes the estimated number of fish mortalities attributed to the fishery.*

Figure 4 demonstrates how the analytical improvements described above impact the CYERs for SKY in both Canadian and U.S. ISBM fisheries. Notably, after a large increase in 2021 it follows the largest decrease in SKY CYER in Canadian ISBM fisheries, dropping from 33% to 13%, which is arguably due to the effect of management actions implemented in recent years. In addition to decreasing impacts to SKY, escapement trends have improved for this stock (CTC 2024). The CTC discussed the presence of a potential outlier in 2021 where the CYER for SKY is significantly greater than anywhere else in the time series. This estimate is based on an expanded estimate of Age 2 fish from an incomplete cohort, which may lead to high levels of uncertainty until the cohort is complete.

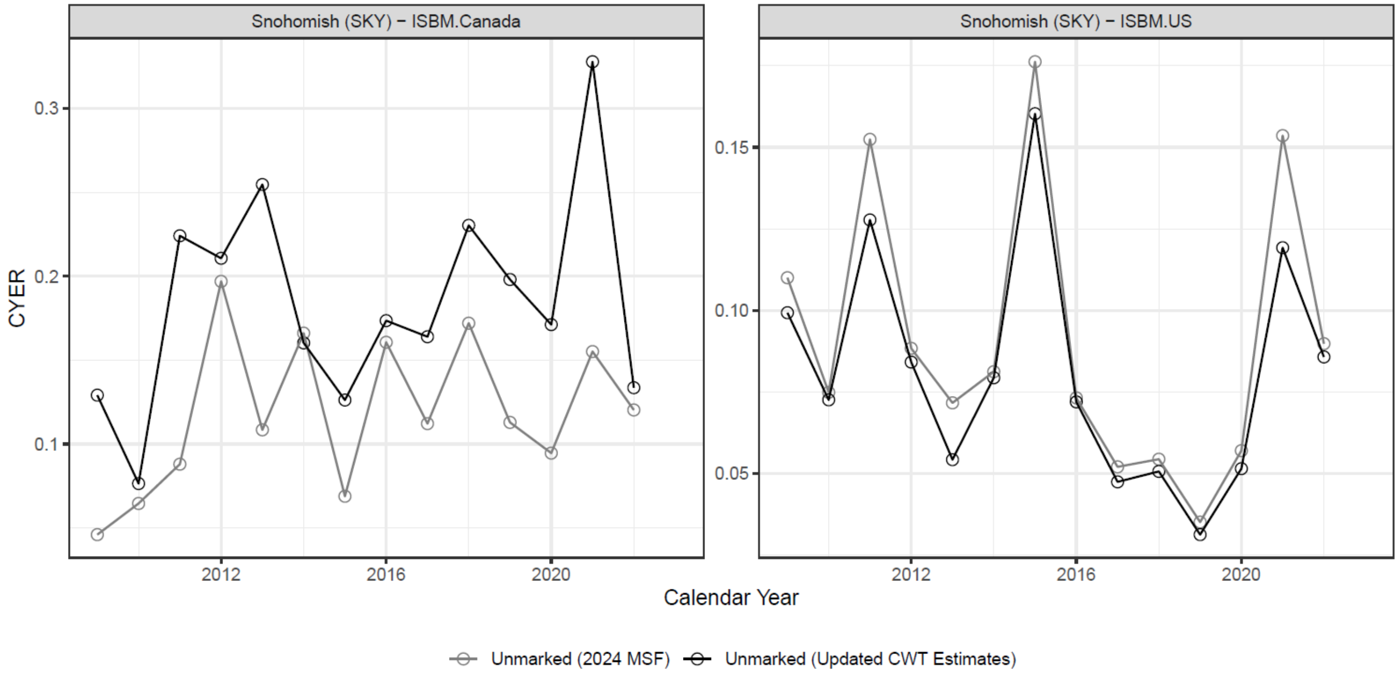

Figure 4. *Comparison of CYERs from the September 2024 MSF ERA (unmarked 2024 ERA) and updated CYERs with the Canadian CWT expansion estimates (Updated CWT Estimates) in ISBM fisheries by country for Snohomish (SKY).*

In addition to the information provided in this letter I have also provided attached materials provided to Commissioner Anderson via email as part of a CIG commitment from the June 2024 meeting. These materials were provided in response to a a request for additional information on the management actions and data Canada used to evaluate CYER obligations for Snohomish Chinook.

Canada will continue to monitor its CYER commitments and manage its fisheries to support conservation goals and ensure PST obligations are met.

Yours sincerely,

Andrew Thomson
Alternate Commissioner for Canada
Pacific Salmon Commission

Attachments:
1. Snohomish DNA Single YR
2. Snohomish Chinook Measures
3. 2024 SRKW ERS Overview
4. 2018 Management Measures
5. 2019 SRKW
6. 2021SRKW
7. 2022 SRKW Overview Apercu
8. 2023 SRKW ERS Overview Apercu
9. Summary Table of SRKW Fishing Measures
10. SRKW Management Measures 2020
11. PFMA Monthly Heatmap Methods
12. Map of DFO's Pacific Fishery Management Areas (PFMAs)

References

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