



Executive Secretary's Summary of Decisions
37th Annual Meeting
February 14-17, 2022 (online)

The Pacific Salmon Commission held its 37th Annual Meeting via webinar, and discussed a number of topics (see attached agenda).

The Commission AGREED:

1. The minutes from January 2022 are approved as circulated.
2. The report of the Chinook Interface Group (CIG) is accepted, including its primary recommendations:
 - a. Adding a new footnote 10 to Attachment I of the 2019 PST Agreement.
 - b. Amending Phillips River text in Attachment I of the 2019 PST Agreement to reflect its use as an escapement indicator stock only.
 - c. Directing the CIG to review the CTC's February 2022 incidental mortality report and adding this to their forward agenda.
 - d. Sending the provided letter to management entities via the Secretariat regarding CYER implementation
 - e. Scheduling CIG meetings with the Calendar Year Exploitation Rate Work Group as requested during the spring, summer, and fall 2022
 - f. Using management objectives as the trigger for a CYER limit for each stock identified in Attachment I.
 - g. Affirming that CYER limits apply each year as specified in the Treaty, while noting the three-year running average is designed to assess compliance with the Treaty.
 - h. Accepting the CWT&R/CEII Work Group 2021-2022 work plan.
 - i. Removing the 2022 timeline associated with the review of alternatives to the CYER metric. Should an alternative metric be proposed, the CTC will be responsible for carrying out a timely review of the proposed metric consistent with their approved work plan. This decision is noted for the record but will not affect Treaty text.
 - j. Removing the requirement to provide a completed Phase 3 PSC Chinook Model by January 2023 from the CTC's Treaty tasks. The completion of Phase 3 work continues to be a high priority item but will be delayed as a result of other higher priority tasks. This decision is noted for the record but will not affect Treaty text.
 - k. Amending the language in footnote 9 of Chapter 3, Paragraph 2(a)(ix) to reflect the current Phase 2 PSC Chinook Model. Significant management changes will be compared to BPCV1-28 AC1 rather than CLB1804.

1. Responding via the CIG to the Southern Fund Committee with Chinook priorities for the Southern Fund Committee's request for proposals. If requested, the CIG will also be prepared to respond to Northern Fund Committee on Chinook priorities.
- m. Sending forward agenda items to the CTC Coordinator to be discussed at the CIG's spring meeting.
3. The Commission authorizes at least \$750,000 USD to be released from the MSF Fund for projects solicited in 2022. This amount may be exceeded if necessary to accommodate high priority projects, and this will be decided at the October 2022 Commission meeting.
4. The Committee on Scientific Cooperation work plan for 2021/2022 is approved as circulated.
5. The Commission will address the Southern Panel's draft process for accommodating requests under Chapter 5, paragraphs 11(b) and (c) no later than October 2022 and potentially at the special spring 2022 Commission meeting.
6. The report of the F&A Committee is accepted, including the FY2022/23 budget and amendments to the Test Fishing Revolving Fund financial regulation.

ATTENDANCE

PACIFIC SALMON COMMISSION
37th ANNUAL MEETING
FEBRUARY 14-18, 2022
Via WEBINAR

COMMISSIONERS

UNITED STATES

S. Rumsey (Chair)
P. Anderson
W.R. Allen
W. Auger
R. Klumph
D. Moore
M. Oatman
D. Vincent-Lang

CANADA

R. Reid (Vice Chair)
R. Jones
J. McCulloch
M. Ned
M. Paish
B. Riddell
A. Thomson



**Draft Agenda
37th Annual Meeting
February 14-18, 2022
Online**

1. Adoption of agenda
2. Approval of minutes: January 2022 Post-Season Meeting
3. Executive Secretary's report

Chinook issues

4. CIG report (topics TBC)

Other action items pending

5. MSF Fund: project spending cap
6. Committee on Scientific Cooperation work plan for 2022
7. Reports from Panels and Committees
 - a. Work plan progress
 - b. F&A Committee
 - c. Restoration and Enhancement Fund Committees
8. Recognition of Brian Riddell's service
9. Public comment

Annotated agenda - 37th Annual Meeting

(Executive Secretary's annotations in *italics*)

1. Adoption of Agenda

- *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 the Chair and Vice Chair.*

2. Approval of minutes

- *The Parties received draft minutes from the January 2022 Post-Season Meeting for review prior to the present meeting.*

3. Executive Secretary's Report

- *The Executive Secretary will provide a short report on significant events since the last Commission meeting, "housekeeping" items for the current meeting, and other issues needing attention. These will include details of the Larry Rutter Award presentation.*

Chinook issues

4. CIG report (topics TBC)

Other action items pending

5. MSF Fund project spending cap: *Based on the Fund's Terms of Reference, the Commission is expected to set a spending limit for the next round of proposals. The RFP for those will circulate in June 2022.*
6. Committee on Scientific Cooperation (CSC) work plan for 2022: *The CSC has proceeded to develop a 2022 work plan as described via the Steering Committee's verbal report in January. The Commission is invited to review this plan and approve or amend it as necessary.*
7. Reports from Panels and Committees: *As per PSC bylaws and past practice, Panel and Committee leadership shall present and discuss written summaries of their work to implement their current work plans. For the Northern Panel, this will include an update on the Chapter 2 performance review.*
8. Recognition of Brian Riddell's service: *Dr. Riddell's service as a Canadian Commissioner will conclude shortly after the annual meeting. Commissioners are invited to comment and wish him well in his ventures after the PSC.*
9. Public comments as needed: *When appropriate, and with the concurrence of the Vice-Chair, the Chair may provide time for public visitors to speak during the meeting.*

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

Chapters 1, 2, 3, 5, and 6¹ in chronological order

Prepared by the Executive Secretary and national representatives (updated 2/10/22)

Deadline	Chapter/para	Task (emphasis added)	Status
January 2019 – December 2028	Chapter 3, paragraph 2(c)	<p>[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 .</p> <p>The purpose of the CWT&R program shall be to:</p> <p>(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,</p> <p>(ii) accelerate the processing of CWT data to provide CWT data for the pre-season planning process,</p> <p>(iii) increase the number of exploitation rate indicator stocks to represent Chinook production and fishery exploitation rates for escapement indicator stocks,</p>	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.

		<p>(iv) examine the representativeness of exploitation rate indicator stocks for escapement indicator stocks and CWT model stocks, and</p> <p>(v) develop analytical tools that involve the analysis of CWT data in the implementation of this Chapter;</p>	See above
January 2019 – December 2028	Chapter 3, paragraph 2(d)	<p>[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...</p>	Ongoing: Addressed through TOR for CEII-CWT/R working group
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.	Complete January 16, 2020 with adoption of revised Tables 1-2 and Appendix C

October 2019	Chapter 3, paragraph 5(b)	<p>The Parties agree that for the Chapter Period:</p> <p>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.</p>	Work group formally created October 2019
December 2019	Chapter 3, paragraph 2(e)	<p>[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:</p> <p>(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;</p> <p>(ii) review project results and conclusions from these programs and provide these reviews to the project proponents and the Commission; and</p> <p>(iii) identify, for the Commission, changes to projects or suggest new projects to fill gaps in knowledge.</p>	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
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 Parties⁴ 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. Ad hoc IM Work Group expected to publish report by 10/31/21

² The CWT&R and CEII programs. ³ It is not specified if the Parties will be acting through the TBR Panel or otherwise. ⁴ It is not specified if the Parties will be acting through the TBR Panel or otherwise.

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.	Revised Chapter 2 implementation plan, which includes this item, pending since Oct. 2021.
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.	CIG to revisit this assignment in Feb. 2022 for relevance and potential update
January 2022, 2025, 2028	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	Underway via S. Panel 2021/2022 work plan
January 2022, 2025, 2028	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	Underway via S. Panel 2021/2022 work plan

January 2022, 2025, 2028	Chapter 5, paragraph 12	<p>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:</p> <p>(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</p> <p>(b) issues associated with the procedures and methods employed to estimate and account for total coho mortalities, including those incurred in mark-selective fisheries.</p> <p>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.).</p>	3-year review planning will take place in S. Panel 2022 meetings
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January 2022	Chapter 2, paragraph 10	Canada agrees to complete a comprehensive escapement goal analysis (prior to the 2023 fishing season) for Nass and Skeena river sockeye salmon that shall be peer-reviewed by an independent contractor and then submitted to the Committee and Northern Panel for further review.	Revised Chapter 2 implementation plan, which includes this item, pending since Oct. 2021.
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.	N. Panel agreed bilaterally; published as PSC Tech Report June 2021
January 2022	Chapter 2, paragraph 14	The Committee shall review the sockeye run reconstruction model to provide recommendations to the Northern Panel at or before the January 2022 Commission post-season meeting, regarding the creation of a simpler run reconstruction model using genetic data and to provide recommendations on any improvements to the program, if needed.	Revised Chapter 2 implementation plan, which includes this item, pending since Oct. 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.	CTC will address this through 2021/2022 workplan; Commission decision after

c. January 2023, c. January 2026	Chapter 3, paragraphs 7(d-e)	<p>(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:</p> <p>(i) a comparison of cumulative actual catch and the cumulative post- season catch limit from the Commission Chinook model,</p> <p>(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</p> <p>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;</p> <p>(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;</p>	CTC forming ad hoc work group to outline task in 2021/2022. Review to begin in March 2023, after 2022 post-season AI's available c. 4/1/23.
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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.	CTC to develop outline in June 2022, forming ad hoc work group to address task
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.	
c. December 2023	Chapter 1, paragraph 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	
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.	
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.	CTC developing 5-year outline by June 2022, ready for CIG review Jan. 2023.
December 2026	Chapter 2, paragraph 5	The Parties agree to review⁶ 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.	

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

⁶ Chapter does not specify how this review will be conducted, including the respective roles of the Commission and the Northern Panel.

Unspecified	Chapter 1, paragraph 7	<p>the Parties⁷ 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. Any such arrangement is intended to inter alia:</p> <p>(a) ensure effective conservation of the stocks;</p> <p>(b) facilitate future enhancement of the stocks as jointly approved by the Parties;</p> <p>(c) avoid interference with United States management programs on the salmon stocks existing in the non-transboundary tributaries and the main stem of the Columbia River.</p>	Ongoing since October 2019 through establishment of the Okanagan Work Group
Unspecified (2019 to December 2028)	Chapter 1, paragraph 3(b)(i)(h). Appendix to Annex IV, Chapter 1	Expand and initiate new bilateral sockeye salmon enhancement programs in the Canadian portion of the Taku River watershed.	TBR Panel addressing through its implementation plan
Unspecified (2020 to December 2028)	Chapter 1, paragraph 2 & paragraph 3(c)	Develop and implement an abundance-based management regime for Chinook and Sockeye salmon in the Alsek River.	TBR Panel addressing through its implementation plan
Unspecified	Chapter 3, Appendix A, paragraph 14	The Commission shall receive the model improvements from Phase 3 and make a decision about their implementation.	CTC developing work group for Phase 3 improvements.

⁷ It is not specified how this consultation will be conducted, including the respective roles of the Commission and TBR Panel.

Ongoing	Chapter 3, paragraph 4(a-d)	<p>The Parties agree:</p> <p>(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;</p> <p>(b) that landed catch and incidental mortalities in ISBM fisheries are limited according to paragraph 5;</p> <p>(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.</p> <p>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];</p> <p>(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:</p> <p>(i) shall be developed by the Parties annually from direct observation of fisheries, or</p> <p>(ii) 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;</p>	<p>Paras c and d estimates presented in TCCHINOOK 21-05 and 21-04.</p> <p>CTC recommendations on standards for precision and accuracy pending Oct. 31, 2021</p>
Ongoing	Chapter 3, paragraph 4(g)(v)	<p>...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.</p>	<p>MSF Fund and committee established Oct. 2020</p>

Ongoing	Attachment E, paragraph 2	<p>The Parties request the Commission to:</p> <p>(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,</p> <p>(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.</p>	<p>Website update complete</p> <p>No scheduled reviews but CohoTC workshop on use of environmental indicators (5/11/21) is related to this effort.</p>
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PACIFIC SALMON COMMISSION WORK PLAN 2022-2023**Panel / Committee:** Standing Committee on Scientific Cooperation (CSC)**Date:** February 7, 2022**Update on CSC Work Plan For This Cycle:****Background**

In February 2020, the Commission approved a revision to the way the CSC develops its annual workplan which resulted in drafting it in consultation with a bilateral Liaison Group consisting of four commissioners (two from each of the parties) and participation by senior Secretariat staff. The workplan is to be completed each year by the close of the Pacific Salmon Commission (PSC) February annual meeting. This revised process was used to develop the 2021/2022 CSC workplan and will continue to be the template for CSC workplans moving forward.

Current Assignments

The Commission authorized a "test flight" of the above process via entries in the October 2019 Chinook Technical Committee (CTC) and Southern Panel's Work Plans that included actions for consideration by the CSC:

The PSC should consider establishing a coastwide, multi-species forum under the oversight of the Committee on Scientific Cooperation to share developments and advice regarding adaptation of Pacific salmon management approaches to environmental change. There is strong evidence that environmental change is occurring and accelerating to a degree such that past experience cannot be expected to serve as a reliable basis to forecast the future. Increases in uncertainty, variability and directional change are expected to alter hydrologic, precipitation, temperature and growth patterns which, in turn, are likely to affect the survival, productivity, abundance, distribution, and migration patterns of Pacific salmon. The forum should provide reporting of significant developments in the knowledge base as well as vetting of recommendations for monitoring and reporting systems, and potential adaptation strategies.

The CTC and Southern Panel's Work Plans identified the same/similar issues for CSC consideration in 2020 and 2021.

Progress to Date

The CSC formulated a plan in September 2020 to begin addressing the topic above. The CSC, with guidance and approval from the Liaison Group, recommended that the first step in this process be to inventory, at a high-level, what stock assessment and management frameworks are in place for

each chapter of the PST, how they consider environmental variability and changing survival, and the extent to which they meet treaty and management objectives.

Since then the CSC has worked to document the assessment and management frameworks of each chapter of the PST, using standardized templates, to determine if/how they incorporate environmental change and/or account for changes in productivity. To date the CSC has drafted and distributed six templates (highlighted in bold in Table 1). Three have been reviewed bilaterally and returned and have provisional final status until all templates are complete (Fraser sockeye, Fraser Pink, and Taku Chinook, sockeye and coho). The southern coho template has been reviewed bilaterally and returned; discussion with the reviewers is required to finish this document. The Nass and Skeena sockeye and the Chinook templates are awaiting return to the CSC after bilateral review. The remaining four templates will be drafted and distributed for bilateral review by March 31, 2022 (Yukon Canadian Chinook and chum, Alsek, Stikine, and southern chum).

Table 1. Summary of each PST chapter inventory: species and fisheries, the CSC leads for developing them, PSC members that are expected to provide review, and current status.

Template/inventory	CSC leads	PSC reviewers*	Status
Chapter 1 – Taku TBR Chinook, sockeye, coho	Scott	TC, P	Template drafted, reviewed by TC & P, provisional final draft completed.
Chapter 2 – Nass & Skeena River sockeye	Catherine, Scott	TC, P	Template drafted, PSC review underway (U.S. AK review passed to Canada about Sept 12).
Chapter 3 – Chinook (all stocks & fisheries)	Scott, Diana, Brian, Catherine, Jessica Gill	CTC, CIG?	Template drafted and submitted to TC for review.
Chapter 4 – Fraser sockeye (all stocks & fisheries)	Catherine	mgrs, TC, P	Template drafted, reviewed by TC & P, provisional final draft completed.
Chapter 4 – Fraser pinks (all stocks & fisheries)	Catherine	mgrs, TC, P	Template drafted, reviewed by TC & P, provisional final draft completed.
Chapter 5 – Southern Coho (all stocks & fisheries)	Catherine	TC?, P	Template drafted, reviewed by CoTC, comments are being addressed and meeting to be scheduled with CoTC to finalize.
Chapter 1 – Alsek TBR Chinook, sockeye, coho	Scott, +	TC, P	Anticipate sending to TC & P for review in February/March 2022
Chapter 1 – Stikine TBR Chinook, sockeye, coho	Scott, +	TC, P	Anticipate sending to TC & P for review in February/March 2022
Chapter 6 – Southern Chum	Catherine, +	TC, P	Anticipate sending to TC & P for review in February/March 2022
Chapter 8 Yukon River (Chinook and Chum)	Brendan, Scott	TC, P	Anticipate sending to TC & P for review in March 2022

* PSC reviewers key: mgr = managers and assessment staff, TC = technical committee, P = Panel

In 2021 the CSC also worked with the southern CoTC, Southern Panel and the PSC Secretariat to co-host a workshop titled *Introduction to using environmental indicators to inform salmon management*. This workshop was attended by approximately 155 PSC family members. The members of the organizing committee crafted a special 51-page PSC report covering the workshop, [available](#) on the PSC website. The recording of the workshop, and individual presentations, is also [available](#) on the PSC website.

A mixed case was presented at the workshop on the value of environmental indicators for forecasting salmon returns and informing management. However a common message was that environmental variability is increasing and that the past may no longer be a good indication of how salmon will respond to environmental variation in a “no analogue” future.

The workshop highlighted that there is an urgent need to develop effective strategies across the PSC to address environmental change. A number of recommendations were formulated from the workshop presentations and panel discussion, responses to a post-workshop questionnaire, and discussions within the Organizing Committee, including:

- **Examine current practices** (e.g., systematically evaluate if and how environmental indicators could be beneficial if included in the work of Technical Committees),
- **Share information** (e.g., coordinate information sharing on indicators and methods across the Committees and the broader PSC family),
- **Build technical capacities** (e.g., capacity-building workshops for Tech Committees including opportunities for incorporation of Indigenous Knowledge and ways of knowing), and
- **Maintain momentum by hosting future workshops** (e.g., in-depth methodologies for developing and using environmental indicators and broader, bigger picture topics for improved salmon assessment and management).

There was also broad consensus that Technical Committees and Panels should support the CSC (e.g., via timely review of chapter templates) as it synthesizes the extent to which current PSC assessment models and management frameworks are responsive to environmental change and develops recommendations and options for if and how PSC management approaches could be adapted to be more robust to it.

Proposed 2022/23 activities:

PSC Inventory and Report. During calendar year 2022, the CSC plans to complete templates for the four remaining chapters (Yukon Canadian Chinook and chum; Alsek Chinook, sockeye, and coho; Stikine Chinook, sockeye, and coho; and southern chum; Table 1). To complete this the CSC will pre-populate each template, then distribute them to the appropriate PSC Technical Committee and Panel for review, completion, and return. The CSC will then finalize each chapter’s template to the satisfaction of all parties.

Once templates for all chapters are completed, the CSC will draft a PSC technical report consisting of the individual PSC chapter inventories and a brief summary of key findings. The summary

information in this report will not be extensive, but will include basic information on the assessment and management frameworks employed, how environmental and productivity changes are dealt with, what is working, and what major obstacles remain. The CSC feels it important to publish the templates in a timely manner while the extensive citations within it are still current, and for its general educational value. More importantly, the report can then serve as a common foundation upon which a subsequent process (e.g., expert panel, facilitated workshop) can draw to develop recommendations and options for if and how PSC assessment and management approaches could be adapted to be more robust to environmental change. The CSC believes it is important that development of recommendations based on insights generated by the templates occur with broad input and buy-in from across the PSC family. Therefore, following the completion of the report, the CSC will work with the liaison group to map out and propose a process for development of recommendations. This discussion is expected to occur in the late spring, early summer of 2022. The implementation of this plan may occur in late 2022 or in 2023 depending on the nature and scope of the process.

Accounting for demographic change in Chinook. The Chinook Technical Committee (CTC) noted in its 2021-2022 workplan that:

Recent studies and presentations at workshops have provided evidence of various types of demographic changes in Chinook populations such as declining mean size at age, increasing mean maturation rates, and even decreasing fecundity at age in females. A review of the accumulating evidence for these types of population level changes, the geographic extent of such changes, the occurrence of discernible trends, the possible causal factors such as long-term environmental changes and their influence on output from management models would be helpful to the CTC. The ability of the Chinook Model to generate accurate abundance forecasts is tied to algorithms that generate age compositions of fish vulnerable, by size, in fisheries. It is crucial to understand whether historical methods can no longer be expected to work as they once did and whether alternative methods must be developed or new approaches to generating inputs to forecasting procedures are needed.

The CSC, after consultation with the Liaison Group, proposes to further identify and frame this issue, and then proceed with developing a workshop or appropriate forum with the CTC to provide advice on if, and how, to adapt CTC assessment and management frameworks to account for demographic change in Chinook. The CSC proposes to meet with CTC leadership in April 2022 to scope out the exact nature and extent of the advice it is seeking. From there a plan will be developed with the CTC and the Liaison Group, with the idea that a solution-oriented workshop (or appropriate forum) would take place during the fall of 2022. The workshop could consist of 1) experts that review evidence for coastwide patterns in Chinook demographics and hypothesized drivers of observed trends, 2) CTC members who outline the challenges these changes pose to Chinook assessment frameworks (e.g., escapement goals, forecasts, etc.) and 3) experts or a roundtable that share recent advancements in quantitative approaches for accounting for demographic change and identify potential solutions for the CTC and PSC to consider. It is expected that this workshop or forum will take place remotely via webinar, be recorded on the PSC's Sharepoint site and produce a short

report to be published in the PSC’s Special Report series and hosted on psc.org. The CSC anticipates co-hosting this workshop with the CTC and the PSC Secretariat, and anticipates needing to request funding (sources TBD) to hold it this fall.

The Southern Panel (CoTC) has requested consultation with the CSC in their current workplan on actions to implement the Environmental Change provisions of the new Southern Coho Agreement. The CSC will accommodate this request (c. September 2022) within the bounds of the bandwidth it has at the time (e.g., one or two meetings).

Proposed timeline:

Table 2. Summary of proposed tasks and timelines for CSC 2022/23 workplan.

Task	Timing	Comments
Finish drafting chapter inventories	March	
Meeting with CTC co-chairs	April	Initiate discussion with the CTC to scope workshop or forum on detecting and accounting for Chinook demographic change. Develop an plan with the CTC, including a potential fall 2022 workshop. Determine if external funding is required.
Liaison meeting	Late spring / early summer 2022	Status update on templates and discussions with CTC. Discussion of potential approaches for developing recommendations from templates, and Chinook demographic workshop, that require external support (e.g., expert panel, facilitated workshop) so that if needed funding could be sought through Endowment Fund processes.
Complete inventory of responsiveness of PSC assessment and management frameworks to environmental change, by chapter	Spring / Summer 2022	Timing depends in part on timely feedback received from Panels and Technical Committees. Finalize plans for fall workshop with CTC, PSC Secretariat and outside experts.
Draft final report on inventories including brief summary of commonalities and unique challenges across chapters	Early fall 2022	This report would form basis of subsequent development of recommendations. Published through PSC Special Report series.
Liaison meeting	Fall 2022 (before October Commission meeting)	Meeting to (1) review key insights from inventories and (2) finalize approach(es) for developing recommendations and options for if and how PSC assessment and management approaches could be adapted to be more robust to environmental change. Discuss other CSC assignments as appropriate.
Consultation with CoTC	Fall 2022	The Southern Panel workplan for this cycle included a call to <i>“Initiate deliberations between the CoTC and CSC on recommended actions for implementing the Environmental Change provisions of the new Southern Coho Agreement and to further explore alternative approaches for monitoring, evaluating, and addressing environmental change for</i>

Task	Timing	Comments
		<i>management of Southern Coho and other species of Pacific salmon."</i>
Chinook demographic change workshop	Fall 2022	Host a recorded workshop co-sponsored with CTC, PSC Secretariat, and external experts. Hold follow-up meetings to synthesize recommendations and produce a short report.
Review of 2022/23 panel/committee work plans	Fall 2022	Examine for new/emerging tasks where CSC support is requested, do preliminary prioritization for CSC workload.
Implementation of the plan to develop recommendations.	Fall 2022/spring 2023	The nature and the scope of this work will depend on the feedback from the Liaison meeting in the fall of 2022.
Presentations at PSC meeting	January 2023	Presentations to national sections, panels, and technical committees, and Commission on insights from inventories, emerging recommendations, and next steps.
Draft 2023/24 workplan	January 2023	Seek input from Liaison Group as it is drafted.
Deliver annual CSC report to commission	February 2023	Seek approval of 2023/24 workplan.

Proposed activities beyond this cycle:

The CSC emphasizes that the principal charge given last cycle is a multi-year endeavor. The CSC is a small 4-person committee (plus PSC Secretariat staff) whose members have commitments beyond CSC obligations. This charge to investigate environmental variability/change, and adapt assessment and management to it, is both complex and far-reaching, and has been recognized as such for decades.

Development of 2023/2024 work plan will be initiated at the September meeting with the Liaison Group, there will be a number of considerations to address in forming a work plan for 2023/2024. These include developing management recommendations for consideration by the PSC, which will likely vary by species and geographic location. The CSC will seek advice from the PSC on the best avenue to develop these recommendations for assessment and management, such as through an expert panel, a PSC panel or another avenue. Additionally, the CSC believes that the completed PSC inventory will have significant informational value that should be made available expeditiously to the PSC family and other interested parties, as a PSC publication for orienting Panel/Technical Committee members to the variety of assessment and management approaches employed within the Treaty area.

Other issues will likely be presented in workplans in October 2022, from which the CSC and Liaison Group will develop priorities and the next CSC workplan (e.g., a 2021 GSI standards request from the Endowment Fund Committees).

Obstacles to Completing above Bi-lateral Tasks:

The most likely obstacles to completing the above tasks is competing priorities both from within the CSC and within the organizations individual members work in. With this in mind this workplan has been carefully scoped to minimized the potential for competing priorities to impact the completion of assigned CSC tasks. In addition, consideration will be given to application for external funding to support the execution of some of these tasks.

Outline of Other Panel / Committee Tasks or Emerging Issues: N/A

Potential Issues for Commissioners:

This is a multi-year assignment which requires some additional work and cooperation by PSC panels and technical committees. In addition, the CSC may need other experts and financial support to provide the recommendations and options to the PSC, either through facilitated workshops, or expert panels (like that done for the Coded-wire Tag group), etc. Once the requirements are defined, the CSC will inform the Commission and propose options for resourcing them. In the meantime, the CSC could, if directed by commissioners, request funding from the NEF and SEF (joint proposal, costs split) in 2022 to hold a forum to address GSI standards and PSC applications in 2023 or early 2024.

Potential Issues for Committee on Scientific Cooperation:

The CSC notes that the southern Coho Technical Committee has organized, with assistance from the CSC and the PSC Secretariat, a seminar series via webinar to continue educational opportunities stemming from the May 2021 workshop regarding environmental variability and salmon management. The CSC will remain in contact with the CoTC leadership and attend seminars semi-regularly, but will play a limited role in coordinating this effort due to time limitations.

Proposed Meeting Dates and Draft Agendas:

The CSC plans to teleconference monthly over the next few months (February – June) to get the draft templates populated and distributed and to develop an initial approach to summarize them. We also will meet monthly via webinar from September 2022 – February 2023 to complete other assignments and the next workplan. These meetings will require attendance from the four national CSC members (Connors, McPherson, Dobson and Beckman), plus ex officio members John Field and Catherine Michielsens from the PSC Secretariat. These meetings will last 1-2 hours and all will be conducted remotely through August. Meeting travel will be re-evaluated at that time. Additionally, these 6 members will meet with the 4-member Liaison Group (Riddell, Auger, Thomson, Klumph) this spring, fall and winter via teleconference. The coordination with the Southern Panel/Coho TC will likely occur in September via webinar.

Status of Technical or Annual Reports:

The CSC has regularly provided annual reports/workplans through 2021, and will next provide an annual report/workplan to the Commission at the 2022 Annual Meeting.

Comments: N/A

Pacific Salmon Commission

Northern Panel and Northern Boundary Technical Committee Report to Bilateral Commissioners

2022 Annual Meeting, February 14 to 18, 2022

Annual Work Plan

The Northern Panel met domestically and bilaterally at the postseason meeting during the week of January 10–14, 2022. The Panel did not participate in this week’s annual meeting.

Outcomes from the January session included

Northern Panel: Reviewed and accepted the

- Northern Boundary Technical Committee’s 2020 Final Boundary Area sockeye salmon run reconstruction.
- The final 2021 pink salmon run reconstructions.
- The preliminary 2021 Boundary Area sockeye salmon run reconstruction.
- The cumulative Annual Allowable Harvest sharing agreements.

Received updates and status on

- Post season fishery reports from both parties for 2021.
- NBTC coho assignment from 2017 on stock status, management actions, and recommendations. The U.S. published their PSC report in June 2021. Canada provided an update on their progress and estimated time for completing the task. Canada has since completed a review of the comments and edits received from the U.S. on the Canadian report and has produced a final version of the report that is now ready for publication.
- A review of the coho triggers defined in Chapter 7 will take place in 2022 and be presented to the Panel in January 2023.

Chapter 2 Renewal Work Plan

Two assignments that resulted from the renegotiation of Chapter 2 were completed in 2021 and two are ongoing with expectations of completion in 2022 for review and discussion prior to the 2023 mid-point of Chapter Implementation.

District 104 Pink Salmon Fishery Review (completed): Under the revised provisions within Chapter 2, “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.” The U.S. completed this assignment with the final PSC report published in June 2021.

Northern Boundary Sockeye Run Reconstruction Model Review (completed): Under the renewed Chapter 2 provisions, “The Committee shall review the sockeye run reconstruction model to provide recommendations to the Northern Panel, at or before the January 2022 Commission post-season meeting, regarding the creation of a simpler run reconstruction model using genetic data and to provide recommendations on any improvements to the program, if needed.” The final report on this assignment was made at the January 2021 Post Season Meeting with the recommendation from the NBTC to the Northern Panel to continue use of the NBSRR model in its current form and continue to supplement the

work with efforts to improve genetic baselines for Boundary Area sockeye salmon. A letter outlining this recommendation was provided from the NBTC to the Northern Panel and was signed by both Panel co-Chairs in January 2021.

Escapement Goal Analysis for Populations (Conservation Units) of Skeena and Nass Sockeye Salmon (ongoing): Under the renewed Chapter 2 provisions, “Canada agrees to complete a comprehensive escapement goal analysis (prior to the 2023 fishing season) for Nass and Skeena river sockeye salmon that shall be peer-reviewed by an independent contractor and then submitted to the Committee and Northern Panel for further review.” This project is currently on track for completion prior to 2023 with a CSAS review scheduled for April 2022. The escapement goal source data was given to the U.S. in January 2022 as agreed to in the Joint Implementation Workplan.

Chapter 2 Evaluation of Performance (ongoing): Under the renewed provisions within Chapter 2, it is stated that “The Parties shall complete a review of the results of the implementation of this Chapter by the Commission post-season meeting in January 2022. The review shall identify management actions taken to support the conservation of Nass River and Skeena River sockeye, to evaluate the consistency of those actions with the obligations of this Chapter and outline, if feasible, the benefit of those actions for Nass River and Skeena River sockeye.” Our plan to deal with this task will be

1. Canada and Alaska will complete separate evaluations of Chapter 2 performance using the three objectives outlined above to guide the review.
2. The report format will be a technical document in the PSC reporting template.
3. Each parties’ draft report will be completed in advance of the Commissioners’ meeting in October 2022 with finalized report(s) completed prior to the January 2023 session.

Transboundary Panel Report to Pacific Salmon Commission

February 17, 2022

The Transboundary Panel (Panel), and Transboundary Technical Committee (TTC) and Enhancement Sub-Committee (TESC) representatives, met bilaterally during both the 2021 Post-Season (January 11-12) and the 2022 Annual meetings of the Pacific Salmon Commission (February 15-16).

January Meeting Session: The Panel received post-season reporting on 2021 Transboundary Stikine, Taku, and Alsek Rivers salmon runs including: catch from terminal marine and in-river fisheries, escapements, results of enhancement projects, and results of stock assessment projects. As required in Chapter 1 (Paragraph 4), 2021 U.S. and Canadian fishery management measures and associated catch were evaluated to confirm if bilateral escapement goals were achieved and harvest shares were not exceeded. The lower end of the escapement goal range was not achieved for Taku and Stikine River Chinook salmon for the fifth consecutive year and management actions will continue to be required by the Parties in 2022. In 2021, all U.S. and Canadian fisheries were maintained within PST harvest share allocations. Canada is required to implement mitigative fishery management actions for Stikine River sockeye salmon in 2022 as a result of exceeding allowable catch allocations in 3 of the past 5 consecutive years (2017, 2018, 2020). The Panel requested the TTC to provide presentations on Chinook salmon base-level catch rates in Transboundary terminal marine and in-river fisheries, interim arrangement for Alsek River Sockeye salmon Alsek River sockeye salmon (Chapter 1. Section 3.(c)(ii)(C)), as well as information on incidental Chinook salmon mortality resulting from non-directed fisheries at its February 2022 meeting. The Panel received reports for enhancement activities in 2021 from the TESC on egg takes and fry stocking levels completed as part of the joint Stikine and Taku sockeye enhancement programs (SEPP and TEPP). The results of the Final 2020 SEPP was approved. The TESC also presented the protocol for determining in-season adjustments to sockeye enhancement production plans. Proposed 2022 Stikine and Taku enhancement production plans were reviewed by the Panel. Finally, the Panel received a presentation on the Taku River 2020 landslide site and adult salmon passage in 2021.

February Meeting Session: The Panel initiated its meeting session with presentations from the TTC on recommended considerations for Chinook salmon incidental mortality associated with terminal marine and in-river fisheries, review of base level accounting for Chinook salmon, updates to the annual 2021 Paragraph 4 spawning escapement and fishery harvest performance reports, and interpretation of Chapter 1. Section 3.(c)(ii)(C) – interim arrangement for Alsek River sockeye salmon. The Panel tasked the TTC with incorporated estimated incidental mortality rates for Taku and Stikine Rivers Chinook salmon into 2022 post-season reporting. The Panel received bilateral forecasts for Stikine, Taku, and Alsek Rivers stocks for the 2022 season, proposed bilateral assessment fisheries (*no mortality-based assessment fisheries were recommended for 2022*) as well as fishery management measures and strategies proposed by the Parties for the 2022 season (*which included strategies intended to conserve Taku and Stikine River Chinook salmon for escapement as well as specific Canadian Stikine River sockeye salmon fishery management measures required in response to the 2021 Paragraph 4 fishery harvest trigger*). The Panel was also provided presentations from the TESC on recommended Taku and Stikine River Sockeye Enhancement Production Plans proposed for 2022 (*which were endorsed by the Panel and recommended by Panel Co-Chairs for implementation*). Finally, the Panel received updates on ongoing juvenile Chinook/coho tagging programs; stock assessment program development (Alsek River sockeye/Chinook and Stikine Coho); the Stikine sockeye salmon escapement goal review (*recommendation to be provided to the Panel in early 2023*); Northern Fund project proposals under consideration for 2022; and progress on Chapter 1 Transboundary Rivers Implementation Plan activities.

The Transboundary Panel's next meeting is scheduled for January 2023 (2022 Post-Season Reporting).

PSC ANNUAL MEETING February 14-18, 2022

SOUTHERN PANEL MEETING REPORT

Session Activities:

- The US and Canadian Sections of the Southern Panel developed an agenda that enabled bilateral and section time to focus on activities associated with our annual work plans and other related assignments, including:
 - *Reviewing the ten-year implementation plans for Chapter 5 (Coho) and Chapter 6 (Chum) of the PST;*
 - *Receiving and discussing reports from the Coho and Chum Technical Committees;*
 - *Developing priorities for Southern Endowment Fund proposals for 2023*
 - *Conducting tasks from the annual workplans for 2022.*
- The Bilateral Panel met and received presentations on:
 - *Coho and Chum Technical Committee updates on work tasks and progress on current Endowment Fund projects and potential proposals for consideration (TC co-chairs)*
 - *Ocean Conditions update for 2022 (January meeting) from Laurie Weitkamp (of CoTC, NOAA Fisheries)*
- The Panel welcomed Linda Higgins as the Canadian Co-Chair and Marla Maxwell as the Canadian Alternate Co-Chair.
- Canadian Southern Panel member Don Hall joined the Environmental Change Seminar Series Steering Committee. This addition balances the number of US and Canadian Southern Panel representatives on the steering committee.
- **Chapter Implementation Plans**
 - Both section and bilateral time was spent to review the ten-year implementation plans for Chapters 5 and 6, including assigning tasks to sub-committees, Technical Committees as appropriate, and assigning short-term and longer-term tasks, including:
 - *The bilateral Southern Panel completed a draft process to provide guidance on how to implement paragraphs 11(b) and 11(c) within Chapter 5 (Coho) – in which a requesting party could, in exceptional circumstances, request a decrease (11b) or increase (11c) in exploitation rate caps for the receiving party’s consideration. After making substantial progress on this effort in a small group last year, the bilateral Southern Panel approved this draft process during the current February Annual PSC Meeting.*

The guidance process will then be presented to the Commissioners for approval.

- *Chapter 5, Paragraph 12 provides for a three-year review of the Southern Coho agreement. The Southern Panel spent time in section and bilaterally to devise a process to conduct the review.*
- Update from the Coho Technical Committee
 - *The Coho TC welcomed Kevin Pellett, Ashlee Prevost, Dan Auerbach, and Emily Shallow as new members.*
 - *Completed the 2020 Coho Annual Post-season ER Report*
 - *Southern Endowment Fund (SEF) priority proposals and project updates:*
 - *Update on existing projects*
 - *List of SEF priorities from CoTC*
 - *Comments on 2022 SEF proposals that will be provided to the SEF Selection Committee, with copies provided to the Southern Panel*
 - *Update on CoTC electronic, web-enabled Periodic Report (through year 2019)*
 - *Planning for Workshop on Salmon Range Expansion, tentatively scheduled for April 2022. Members of the Southern Panel and Chinook Technical Committee have been added to the Environmental Change Seminar Series Steering Committee*
 - *SFEC -CoTC Comparison of Coho Double Index Tagging and Backwards FRAM*
 - *Planning for CoWG meeting*
 - *Other CoTC work items*
- Update from Chum Technical Committee
 - *2018 Chum Tech Annual report has been completed and now available on the PSC website.*
 - *Chum TC has been working on the draft report covering 2019 fisheries and research as a principal focus during 2022 PSC meetings.*
 - *Further evaluation of the ChumGEM run reconstruction model for Southern BC and Washington State Chum*
 - *Continued work on the Chum Genetic Baseline and metadata for GIS application*
 - *Provided updated on SEF priorities for 2023 to the Southern Panel*
 - *Succession plan discussion: What skill sets would benefit the Chum Technical Committee*
 - *Other Chum TC work items*

Preparation for Future Meetings

- Finally, the bilateral Panel worked on a schedule for upcoming meetings, including scheduling the annual Manager-to-Manager information exchange for

March 15, a Coho TC seminar on Salmon Range Expansion planned for April 2022, additional seminars on topics relating to environmental change, and the potential May and July meetings of Coho Working Group and Coho Technical Committee. The Chum TC is also planning a May bilateral session to continue with identified tasks and deliverables.

Fraser River Panel Report
17 February 2022
Mark Baltzell, U. S. Section – FRP Chair
Les Jantz, Canadian Section – vice Chair

2022 Annual Meeting of the Pacific Salmon Commission

Commission Briefing – Report of the Fraser River Panel

Items addressed in this report:

- Post-season review of 2021 season
- 2022 pre-season outlook and test fishing plan for 2022
- Species Composition Assessments
- Roles and Responsibilities for Panel
- Pre- and In-season management meeting plans

2021 Post-season review

Sockeye and Pink Salmon runsize, harvest, and escapement

Following poor returns in 2019 and 2020, the pre-season forecast for sockeye returning to the Fraser, the 2021 return (p50) was predicted to be 88% lower than the cycle average of 11 million. All sockeye management groups were in a 10% LAER cap. Pre-season fisheries directed at sockeye were not planned for both Canada and the United States at this run size as there was no available TAC. The actual 2021 return of sockeye to the Fraser River system was above the pre-season prediction (p50) for all stock groups. The current estimated runsize of Fraser sockeye is 2,562,000. The table below presents the total estimated escapement by management group in comparison to the in-season estimate of escapement and the pre-season forecast:

Management Group	Prelim Estimated escapement	Potential Esc. (est. in-season)	Pre-Season forecast (p50)
Early Stuart	54,000	68,600	18,000
Early Summer	89,500	117,600	108,000
Summer	1,580,000	1,690,000	1,046,000
Late	166,300	606,000	159,000
Total Fraser Sockeye	1,970,000	2,550,000	1,330,000

Migration conditions were improved from the previous 2-year period and environmental conditions in river and on the spawning grounds were generally good. All run timing groups were exposed to elevated river water temperatures for a portion of their migration period while discharge was well below average for most of the year. Fish passage at Big Bar was not an issue in 2021 due largely to the previous work that had been done at the site to improve passage and the very low discharge levels. Sockeye escapements in 2021 exceeded 2017 brood escapements for all 4 run timing groups. Spawning success of these fish was high, ranging from 88 – 99%; spawner success was average for Early Stuart and above average for all other groups.

The total return of Fraser River pinks was estimated at 8.1 million based on Mission passage; nearly 5 million fish more than pre-season median forecast. There was a fair amount of uncertainty with the preseason forecast and in-season assessments of pink and sockeye abundance was very uncertain due

to stock composition issues at Mission coupled with fluctuations in Marine Area abundance estimates. Panel management actions were primarily centered around balancing pink fishing opportunity and low sockeye abundances. Understanding the previous 2 seasons historic low returns, the continuing effects of the Big Bar slide, and some general uncertainty around in-season information, the Panel was cautious in its approach for harvest opportunities. Neither country was able to take advantage of the available harvestable surplus of pink salmon. Specifically, the U.S. fishery harvested just 196K of their 513K share, meanwhile the balance to Canada was 1.4 million and only 77K were harvested.

At the final 2021 in-season meeting, sockeye run-size increases and reductions to management adjustments resulted in International TAC being generated for sockeye after US fisheries were completed for the season. This created a unique circumstance that falls outside of current chapter language. Parties agreed to final TAC and allocation adjustments for the 2021 season with an agreement to commit to developing further language to address this circumstance moving forward.

2022 Pre-season Planning and test fishing plan

The p50 forecast for sockeye in 2022 is 9.8 million with potential TAC available for the Aboriginal Fishery Exemption (AFE) and international sharing in all groups except Early Stuart at this run size. The Panel is planning test fisheries needed to assess the run size with a planned program that is anticipated to cost about \$1.6 million; the test fishing plan will be further refined at our April 2022 meeting. Further discussion and direction is needed on implementation of the new Test Fishing policy as it relates to the required conditions and level of pay fish and/or extra pay fish to be harvested at varying run sizes. It is expected that the total sockeye required for test fisheries is 86k with pay fish ranging from 37 – 54k depending on returns.

Species Composition Assessments

Current methods of detecting and correcting species composition errors at the Mission and Qualark hydroacoustic sites are usually based on a variety of different data sources in season. In 2021, this was again demonstrated as late correction of species composition biases resulted in an untimely increase in TAC, which resulted in a foregone harvestable surplus in the Summer and Late Runs. The Fraser River Panel has requested a thorough review of species composition and the development of an implementation plan to address these issues prior to the 2023 season, if possible, to improve species composition estimates. Work is continuing on the development of a scope of work and timelines.

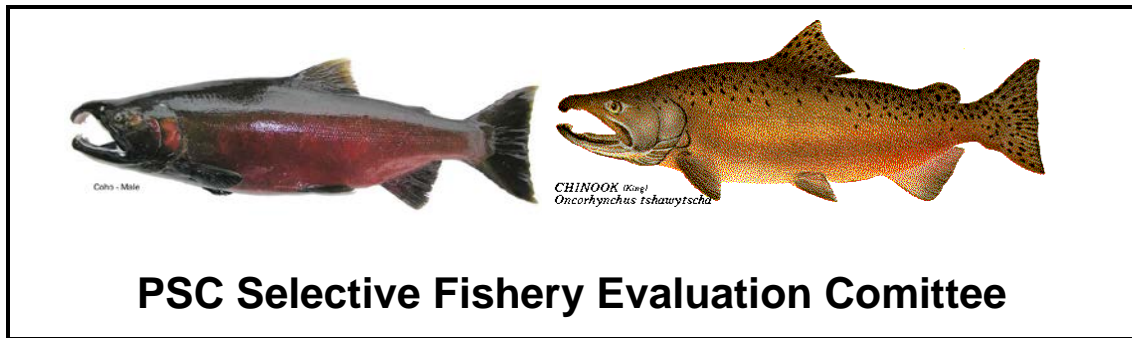
Roles and Responsibilities

The 2021 Fraser River season for sockeye and pink management revealed certain disagreement and uncertainty about the respective roles and processes for the Fraser River Panel (FRP), Fraser River Technical Committee (FRTC), FRP Small Group, and Commission staff (Secretariat). There has been a substantial turnover of staff within the secretariat and respective national parties. Therefore, at the final FRP post-season meeting on September 28, it was agreed that a written description of the various roles and processes might facilitate a common understanding or adjustments where needed. That work continues with a final document consensus planned for the April FRP meeting.

Pre- and In-season management meeting plans

Additional meetings for the 2022 season are tentatively planned for April 25-28 (Virtual) and June 20-24 (tentatively in-person). In person meetings are being tentatively planned for late July-August. Much of the meeting planning is predicated on ease of effected parties to move across the border and potential

continuing travel restrictions. Accommodations may need to be considered for a hybrid (in person + virtual) approach for future meetings.



**SELECTIVE FISHERY EVALUATION COMMITTEE
PROGRESS REPORT TO COMMISSION
February 17, 2022**

The SFEC met in November 2021 to review 2022 Mass Marking (MM) and Mark Selective Fishery (MSF) proposals.

The planned Mass Marking for 2022 included:

- Coho proposals included a region-wide total of approximately 37.2 million MM fish. This is an increase of 3.6 million fish from 2021.
- Chinook proposals included approximately 130.6 million MM fish, a reduction of approximately 5.7 million.

Agency	Coho (in millions)		Chinook (in millions)	
	2021	2022	2021	2022
ADFG	-	-	1.0	2.5
CDFO	3.8	3.4	3.2	3.2
USFWS	2.0	1.9	26.5	26.3
WDFW/Tribes	22.4	25.3	80.7	79.7
ODFW/Tribes	5.3	6.5	24.9	18.8
Total	33.6	37.2	136.3	130.6

- 2021 and 2022 estimates include some U.S. hatchery production increases for Southern Resident Killer Whale (SRKW) prey.
- Canada proposed mass marking 3.2 million Chinook in WCVI rivers, similar to releases in 2021. The purpose of the marking is for brood stock management in rivers where there is a focus on conserving natural production.
- Canada has also provided 'early notice' for possible mass marking (MM) of Chinook in Strait of Georgia, and North Coast and Yukon, primarily for brood stock management but also for potential terminal MSF. If any 2022 MM production is to take place in these regions, proposals will be submitted to SFEC for review.

- Chinook and Coho DIT groups are limited to Puget Sound, the Washington Coast and the Columbia River. WDFW, USFWS and NWIFC are the only agencies still tagging DIT groups.
- ODFW/Tribes Chinook reduction was largely due to decreased brood availability.

Planned MSFs for 2022 include 37 proposals for Coho fisheries and 44 for Chinook:

- The number of Coho MSF proposals increased from 33 in 2021. Coho MSF proposals included 9 from CDFO, 7 from ODFW, 18 from WDFW, and 3 joint ODFW/WDFW proposals for Columbia River fisheries. The one new proposal from ODFW is for a troll fishery on the coast that was conducted in 2021 and submitted to SFEC in July of 2021. WDFW submitted proposals for two fisheries in the Willapa Bay area that were neither proposed or conducted in 2021.
- Chinook MSF proposals included 4 from CDFO, 29 from WDFW, 4 from ODFW and 5 joint ODFW/WDFW proposals for Columbia River fisheries. The new proposal, from CDFO, is for a pure MSF in WCVI. This proposal was mentioned in last year's workplan update.

Agency	Coho		Chinook	
	2021	2022	2021	2022
ADFG	0	0	0	0
CDFO	9	9	3	4
WDFW	16	18	29	29
ODFW	6	7	4	4
WDFW/ODFW	3	3	5	5
IDFG	0	0	1	1
Lummi	0	0	1	1
Total	33	37	43	44

Potential issues for the Commissioners and obstacles for completing bilateral tasks:

- Incomplete post-season reporting on MSFs, including the reports on MSFs conducted and the kept and released catches in those, as well as the reports estimating stock-age mortality estimates of unmarked fish impacted in MSFs.
- Complexity of MSF regulations.
- Lack of electronic CWT sampling in some areas where DIT groups are expected to be encountered (lack of sampling of unmarked fish).
- Inaccuracies in data, including reporting MSF recoveries and DIT release groups.
- Lack of DIT programs geographically representing the PST area.
- The adequacy of monitoring, enforcement, and reporting programs for MSFs.
- Expansion of Chinook MSFs in BC (potentially changing mark rates in "downstream" fisheries).
- Potential for expansion of Chinook MM in Southern B.C.

- Proposed expansion of MM in SEAK (for brood management, stock distribution study, monitoring programs not in place, i.e., no electronic detection).

Progress on 2021/22 Annual Work Plan

- The SFEC annual report *Review of Mass Marking and Mark-Selective Fishery Activities Proposed to Occur in 2020* was released in January 2022. We also anticipate the 2021 report to be submitted for publication by spring 2022, and the 2022 report to be submitted by end of 2022.
- The SFEC held its annual meeting in November virtually to review 2022 proposals and discuss how SFEC can best support CYER improvement and implementation as outlined in the CYER working group report.
- Joint meetings with CYER/CTC, and with CoTC are planned to support development and analytical methods for assessing impacts of MSFs on wild stocks, including changes to data requirements for such methods, and comparison of Coho FRAM and DIT results.



Report of the Standing Committee on Finance and Administration

February 17, 2022

The Standing Committee on Finance and Administration met by teleconference on June 1, October 12, October 18 and December 15, 2021, January 12, 2022, and February 15, 2022. The Committee addressed several issues and made recommendations for the Commission's consideration as noted below.

Budget proposal for FY 2022/2023

The Committee reviewed the proposed budget for FY 2022/2023 as amended on February 15, 2022 (Table I).

The Committee understood that the proposed budget for FY 2022/2023 incorporated the annual salary and benefits of the CTC Coordinator position (as was the case over the last two previous years' budgets), who would transition from term employment to permanent/ indeterminate status.

The Committee agreed to a budget presentation that included annual contributions from the Parties calculated such that the cumulative deficit/surplus at the end of the fiscal year would be NIL. The Committee agreed to include a footnote to the budget schedule that addressed the mechanism through which Canada would process its dues, with the understanding that the final amount contributed from each Party will be equal for each fiscal year.

Accordingly, the Committee recommends that the Commission adopt the proposed budget for FY 2022/2023 as shown in Table I.

Test Fishing

Test fishing finances remained a significant issue for the Parties, after record-low return of Fraser River sockeye and pink salmon over the last several years. The low returns have precluded the capture and sale of adequate numbers of fish to recover test fishing costs in those years, and the Parties have made supplementary financial contributions to the Test Fishing Revolving Fund (TFRF) to help defray the test fishing costs.

To facilitate an equitable apportionment of test fishing deficits and surpluses and to maintain an adequate balance in the Test Fishing Revolving Fund (TFRF), the Committee is proposing amendments to the Commission financial regulations (Attachment II). These amendments serve to:

- a) Establish a separate TFRF for each Party;
- b) Ensure adequate cash flow to cover operational test fishing deficits; and
- c) Outline each Party's process for the supplementation of its respective TFRF.

Secretariat staffing - workforce strategy

The Committee reviewed the draft document "Secretariat workforce planning" as revised on February 3, 2022, prepared by the Secretariat (Attachment III). A previous version of this

document had been presented to the F&A Committee for consideration at its December 2020 meeting. The revised document expanded on the Secretariat's goals, provided up-to-date information on current and expected future staffing changes, and offered recommendations on dealing with staff recruitment and retention issues at the Secretariat.

The Committee agreed to hold future discussions about the Secretariat's general workforce objectives for how the staff can best support Treaty implementation. After these discussions, the F&A Committee can recommend a final workforce strategy for Commission adoption.

In the meantime, the Committee acknowledged that the Secretariat had pressing timelines for staff recruitment. The Committee therefore recommends that the Secretariat adhere to its recruitment timelines within the constraints of the current salary budgets.

Secretariat loss of flood insurance coverage

The Committee acknowledged that the Secretariat had lost insurance coverage for flooding at its Mission hydroacoustics site. The Secretariat estimated that the equipment vulnerable to loss (primarily sonar units) was valued at approximately \$426,000 and is unable to find an insurer to issue a policy for the site. The Committee recommends that in case of a catastrophic loss due at the Mission site, the Secretariat would notify the Parties (Chair and Vice Chair of the Commission) and consult with them prior to taking any action.

External performance review of the Commission

The Committee reviewed the discussion paper "Considerations for a second PSC performance review" dated December 8, 2021 and prepared by the Executive Secretary (Attachment IV). The paper provided background to the issue of a performance review, outlined the process undertaken for the 2011-2012 performance review, and provided examples of current issues that would benefit from a third-party independent review.

The Committee agreed to defer the discussion on the PSC performance review to the December 2022 or early 2023 meetings.

TABLE I

PACIFIC SALMON COMMISSION

FORECAST BUDGETS

(February 2022)

	Forecast results 2021/2022	Proposed Budget 2022/2023	Forecast Budget 2023/2024	Forecast Budget 2024/2025
	(pink)	(Adams)	(pink)	(none)
1 INCOME				
A. Contribution from Canada (Notes 1, 2)	1,879,636	2,056,719	2,425,578	2,385,208
B. Special contribution pension CA	166,250	166,250	166,250	166,250
C. Contribution from U.S.A. (Note 1)	1,879,636	2,056,719	2,425,578	2,385,208
D. Special contribution pension U.S.A.	166,250	166,250	166,250	166,250
Sub total	4,091,772	4,445,938	5,183,656	5,102,916
E. Interest	30,000	20,000	20,000	20,000
F. Other income	250,000	245,000	245,000	245,000
G. Carry-over from previous fiscal year	939,184	704,950	(0)	(0)
H. Total Income	5,310,956	5,415,888	5,448,656	5,367,916
2 EXPENDITURES				
A. 1. Permanent Salaries and Benefits	2,975,505	3,335,929	3,490,149	3,596,815
2. Unfunded pension liability payments	332,500	332,500	332,500	332,500
3. Temporary Salaries and Benefits	203,974	256,460	262,587	203,108
4. Total Salaries and Benefits	3,511,979	3,924,889	4,085,236	4,132,424
B. Travel	48,072	153,266	175,499	169,479
C. Rents, Communications, Utilities	80,080	191,005	204,250	190,874
D. Contractual Services	702,989	873,953	712,996	593,119
E. Supplies and Materials	39,886	49,775	47,674	59,019
F. Equipment	223,000	223,000	223,000	223,000
G. Total Expenditures	4,606,006	5,415,888	5,448,656	5,367,915
3 BALANCE (DEFICIT)	704,950	(0)	(0)	0
Carry-over generated (expended) in the year	(\$234,234)	(\$704,950)	\$0	\$1

Note 1

For presentation purposes, the Parties' contributions are shown as the amounts required to generate a cumulative surplus/deficit of NIL at the end of each fiscal year.

Note 2

Canada's commitment is limited to \$1,879,636 (historical contribution), plus 50% of the deficit for the respective fiscal year, as forecasted each December of that fiscal year, and calculated based on a notional contribution from the U.S. of \$1,879,636.

Proposed revision to Test Fishing Revolving Fund Financial Regulation

Prepared by the Secretariat

[Changes shown to the approved text from February 10, 2021]

Rule 25 Test Fishing Revolving Fund

In accordance with Chapter IX, Section E, Rule 18, the Commission has established a Test Fishing Revolving Fund (TFRF) ~~for each Party~~. The following shall govern use of the ~~TFRF~~ TFRFs to support assessment of Fraser River sockeye and pink salmon:

- a) The following definitions are consistent with the Test Fishing Policy¹ and are included for clarity:

Test fish = all fish caught (and sold) in test fisheries that are required for sampling purposes and those fish incidentally killed in gillnet test fisheries, not limited to Fraser River sockeye and pink salmon

Pay fish = all sockeye and/or pink salmon retained in test fisheries, in excess of test fish, up to the level which is required to cover test fishing program costs in the current year

Extra pay fish = all sockeye and/or pink salmon retained in test fisheries exceeding that which is required to cover the test fishing program costs in the current year

Surplus = any revenues from the sale of retained fish in excess of test fishing program costs

Deficit = any shortfall in revenues from the sale of retained fish below test fishing program costs

Conservation issues or concerns = conservation constraints on management groups as agreed by the Fraser River Panel in a given year

- b) Additional incomes generated through the incidental catch and sale of non-target species and stocks as well as decisions made regarding the retention of pink salmon pay fish will not influence the regulation of surplus/deficit sharing among the Parties.
- c) Monies held in the revolving ~~fund~~ funds shall be a) used to pay for test fishing deficits when insufficient fish are available for retention and sale; b) supplemented by test fishing program surpluses; and c) supplemented by the Parties if they so agree.
- d) The Executive Secretary shall provide a full annual accounting of TFRF activity to the Standing Committee on Finance and Administration (F&A Committee) including categories of revenues and expenses affecting the ~~fund~~ funds, and the ~~proportion of the fund balance allocated to~~ for each Party. The Commission shall address, as appropriate, any positive or negative TFRF balances it deems excessive upon advice from the F&A Committee.

¹Pacific Salmon Commission Test Fishing Policy. Feb. 10, 2021. Pacific Salmon Commission.

- e) The PSC Test Fishing Policy shall prescribe the fish available for retention and sale in any given year. That policy is separate and distinct from the PSC bylaws, and is subject to amendment separately from these bylaws.
- f) Test fishing program costs (contractual or administrative) shall not be borne from the PSC's ordinary budget or sources other than fish sales or the ~~TFRF~~TFRFs, unless otherwise agreed by the Commission. Changes to the types of test fishing costs recoverable from fish sales or the ~~TFRF~~TFRFs shall be approved by the Commission on advice from the F&A Committee.
- g) A Party may unilaterally withdraw funds from its TFRF when its recorded contributions (excluding program-generated surpluses) exceed its recorded withdrawals (excluding program-generated deficits) as of March 31 of each year. In no circumstances should withdrawals yield a negative balance in a national TFRF.

TFRF Accounting

The following TFRF accounting guidelines are subject to the availability of funds from each Party.

The Secretariat will maintain timely records of the deficits (or surpluses) incurred and apportion those 50% / 50%, as stated in the TFRF Decision Tree (Appendix A), between the Parties after the conclusion of the sampling season (unless otherwise noted below):

- ~~g~~h) _____ Where in-season the Fraser River Panel determines that conservation issues will result in no directed harvest of Fraser River sockeye, no sockeye pay fish will be retained.
- ~~h~~i) Where in-season the Fraser River Panel determines that the sockeye run sizes are such that there is no international TAC, no sockeye pay fish will be retained.
- ~~i~~j) Where in-season the Fraser River Panel determines that the sockeye run sizes are large enough to generate international TAC but not large enough such that there is in Canada, within and outside Panel area waters, inadequate TAC to address First Nation food, social, and ceremonial fisheries and First Nations Treaty allocations, no sockeye pay fish will be retained. When these conditions are true on the date of the scheduling of the last Fraser River Panel-approved U.S. sockeye fishery of the season, Canada agrees to cover 83.5% of the resulting deficit.
- ~~j~~k) Where in-season the Fraser River Panel determines that the sockeye run sizes are such that the international TAC is insufficiently large, no sockeye pay fish will be retained.
- ~~k~~l) Where in-season the Fraser River Panel determines that the sockeye run sizes are such that there are:
 1. in Canada, within and outside Panel area waters, adequate TAC to address First Nation food, social, and ceremonial fisheries and First Nations Treaty allocations; and

2. sufficient international TAC to allow the retention of pay fish up to the levels needed to meet program costs in accordance with the PSC Test Fishing Policy; then sockeye pay fish will be authorized.

~~h)m)~~ m) Where conditions allow for the harvest of “extra pay fish” due to an extremely high abundance of Fraser River sockeye or pink salmon, such harvest may be authorized by the Fraser River Panel.

~~m)n)~~ n) In the event that either country depletes its ~~available resources in the~~ revolving fund, the country would need to make a timely contribution to ~~theits~~ revolving fund to cover outstanding costs per paragraph c.

o) The Secretariat shall forecast any program deficit based on worst-case Fraser River sockeye and pink salmon returns projected each February.

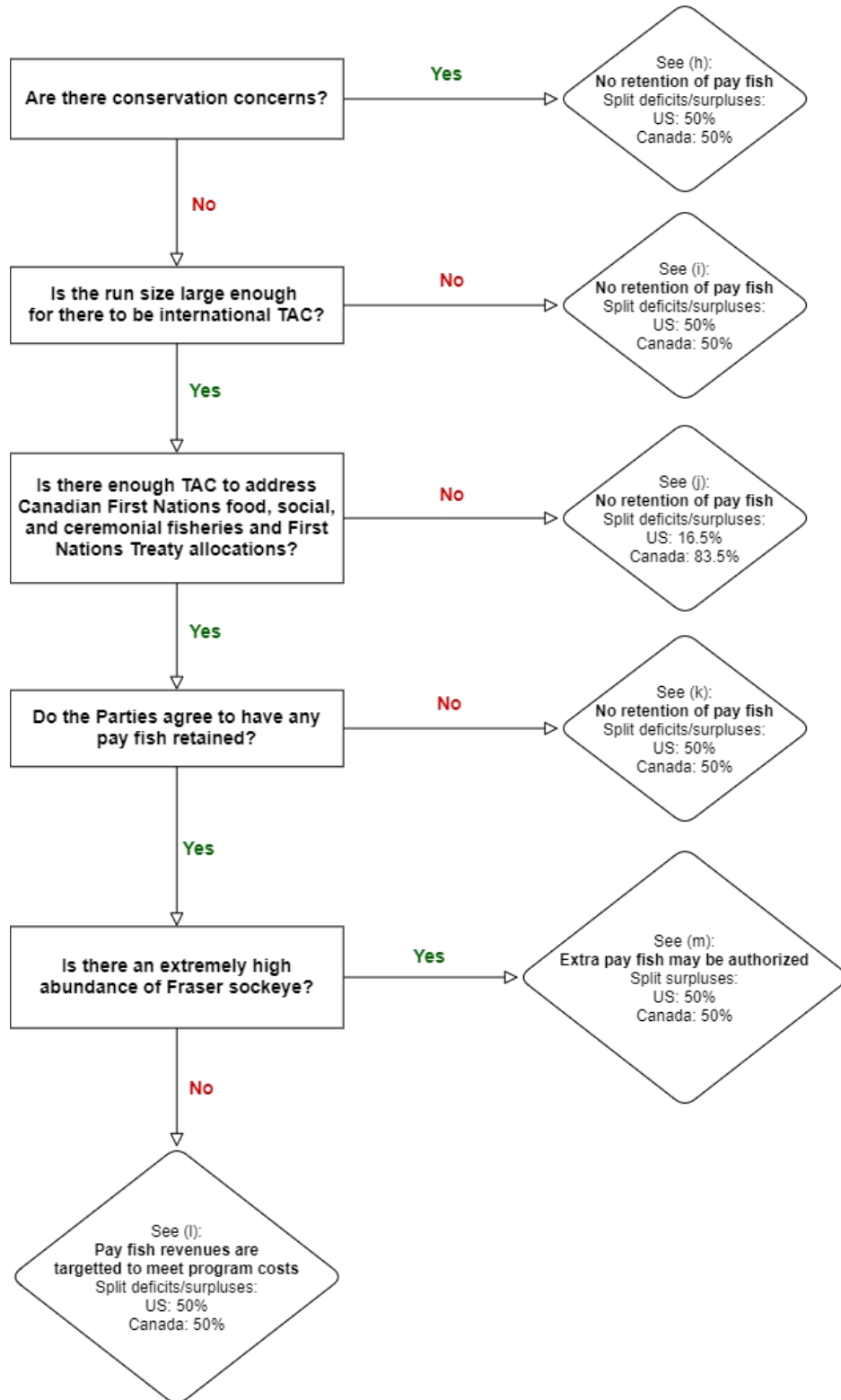
p) TFRF supplementation would be processed as follows:

1. Canada: The Secretariat shall invoice Canada each fiscal year (no later than March 31) for its share of the test fishing deficit incurred that fiscal year. If the Canadian TFRF balance proves insufficient during the course of a sampling season, a supplemental invoice for the deficit incurred to-date will be issued to allow Panel-approved test fishing to conclude. Canada will ensure payment of invoices according to Canada’s Financial Administration Act.
2. U.S.A.: The Secretariat shall invoice the United States for its share of the forecast deficits for the upcoming season (as per paragraph o) no later than March 31 each year. The United States will make its contribution to ensure funds are transferred by May 1 of the same calendar year. If the U.S. TFRF balance proves insufficient during the course of a sampling season, a supplemental invoice will be issued for an amount sufficient to allow Panel-approved test fishing to conclude.

~~n)q)~~ q) The Secretariat shall regularly calculate forecast cash flows ~~pre-season and~~ in-season, including deficit implications of Panel decisions. If the forecast deficit is greater than 75% of the sum of the two revolving fund ~~balanceebalances~~, the Fraser River Panel and the Secretariat shall apprise the F&A Committee. Otherwise, the F&A Committee shall not be engaged in Panel decisions on test fishing schedules.

~~o)r)~~ r) As appropriate under paragraph (~~no~~), the F&A Committee shall collaborate with the Panel and the Secretariat to revise the test fishing schedule to minimize deficits, enable conservation, and ensure adequate assessments of Fraser sockeye and pink salmon.

Appendix A





Secretariat workforce planning

Prepared by the Executive Secretary and staff

Revised February 3, 2022

Background

The amendments to Annex IV have changed workloads for panels, committees, and domestic agencies. These changes have prompted discussions about expanding Secretariat services to support the Parties and the PSC family better. Accordingly, the Executive Secretary's 2019/2020 performance agreement included the following deliverable:

A workforce strategy, including succession planning, is undertaken for the Secretariat staff and Executive Secretary to support the Commission's work over the current agreement period and to position the organization over the long term.

This document responds to that directive and is intended to facilitate Commission discussion about the future of the Secretariat's workforce. It replaces a prior version from November 30, 2020.

Current staff

The Secretariat has 26 permanent/indefinite employees and 5 short-term staff with contracts of 1-2 years (see Attachment 1). In total, 18 positions are assigned to Fraser River sockeye/pink salmon assessment and support for the Fraser River Panel (FRP)/Technical Committee (FRTC). The CTC Coordinator supports that committee and several associated groups. Another two staff divide their time between Fraser programs and other initiatives¹. These 21 staff comprise the Secretariat's Fisheries Management Division.

The remaining 10 personnel (including the Executive Secretary) comprise the Administrative Division supporting the broader PSC family and the restoration and enhancement funds. This team addresses office management, accounting, information technology, endowment fund support, meeting planning, and other administrative duties.

Despite this staff makeup and appreciation from the Parties, discussions with delegates show demand for enhanced support in scientific collaboration, data management, and report collation/publication. There is also room for improvement in staff retention and diversity. Below is the Secretariat's strategy to meet those evolving needs.

Goals and staffing implications

The Secretariat has identified five goals for its workforce strategy:

1. Make Fraser data and information accessible and publicly available
2. Provide broader support to the PSC community

¹ Specifically, Chinook data management (Mark McMillan) and endowment fund clerical support (Christina Langlois)

3. Prevent compromising the services to the Fraser River process
4. Improve the Secretariat's diversity, equity, and inclusion
5. Improve staff recruitment and retention

Each of these goals and staffing implications are discussed below. See Attachment 2 for a summary of the staff positions and funding sources for each

Goal 1. Making Fraser salmon data accessible and publicly available

The most important way to strengthen the science and policy nexus is to make data accessible and available (FAO 2020²). Regional Fishery Management Organizations (RFMOs) like the PSC can facilitate this and Secretariats can play a significant role in this regard.

In the PSC, data used by various panels/committees can suffer from inadequate version control, lack of centralized access, and/or ad hoc security. This was also true for the Secretariat's Fraser datasets, which prompted development of an internal data management policy, cross-training staff in data stewardship, and construction of several new relational databases. It also prompted the Parties to fund a permanent Database Administrator position (McMillan) in 2020.

In the near-term, curation of Chinook and Fraser sockeye/pink data will be principally supported by the Database Administrator and a term employee (Wong, until Nov. 2022) who conducts quality assurance/quality control (QA/QC) on inputs and outputs. After the conclusion of Wong's term, this will require staffing a new Data and Assessment Biologist position for appropriate QA/QC and liaison with Division staff.

The Fisheries Management Division is also working with the IT Manager to make Fraser sockeye and pink salmon data available on our website (and to regional partners) with guidance from the Fraser River Panel.

The Secretariat will continue to refine its data management policy in collaboration with the relevant PSC Technical Committees (see below) and an internal Data and Information Sharing Committee (DISCO). Long-term, the Secretariat should recruit a Database Assistant to assist with more complex tasks, expanded support for other Technical Committees (see below), and troubleshooting.

Staffing and funding:

- 2023:
 - Hire a Data and Assessment Biologist (BI-2, permanent) to assist the Database Administrator (McMillan) and other biologists (see also Goals 2 and 3)
 - Funding: Savings from the Director of Stock Monitoring (Jenkins) vacancy; obligated for short-term staff until 2023.
- 2024 and beyond:
 - Hire a Database Assistant (CS-2, permanent staff) to support McMillan and the Data & Assessment Biologist (see Goal 2)
 - Funding: Portion of Hydroacoustic Scientist vacancy (Xie, RE-3); obligated for short-term staff until 2024

Goal 2. Provide broader support to the PSC community

The Secretariat has identified areas for expanded support that would not impede support to the FRP and FRTC.

Data/assessment support: Fisheries Management Division staff could support technical committees beyond the Fraser arena by making data accessible and secure while developing requested analytical tools/apps. An important

² FAO. 2020. *Proceedings of the International Symposium on Fisheries Sustainability: strengthening the science-policy nexus*. FAO Headquarters, 18–21 November 2019. FAO Fisheries and Aquaculture Proceedings No. 65. Rome.

expansion of the current support will be the Chinook data QA/QC provided by the Data and Assessment Biologist (see Goal 1). The data management team would be completed by recruitment of a Database Assistant after 2023 (see Goal 1).

CTC coordination: The CTC Coordinator (Jessica Gill) is a term position notionally ending in April 2022. The incumbent provides meeting support for several PSC groups³, drafts various deliverables, and assists with selected analyses. The Parties' reliance on this position-- and the efficiencies achieved --show this should be converted to a permanent/indeterminate position in April 2022. Budget forecasts have included this position since late 2020.

Committee on Scientific Cooperation (CSC): The Executive Secretary is an *ex officio* member of the CSC and has advised the committee for many years on workplan development. Recently, the Chief of Fisheries Management Science (Michielsens) has assisted the committee in documenting the use of environmental variables in the treaty's assessment and management frameworks. Given the breadth and relevance of the CSC's work, the Secretariat will retain this level of support.

Publication support: The PSC publishes an average of 10-15 reports annually. In many cases, these documents have multiple authors (without uniform formatting or software) and are problematic to finalize. Requests for Secretariat publication support have come repeatedly over the years from the CTC and other technical committees who had exhausted options for agency publications support. Thus far, the Secretariat has been unable to fulfill many of these requests due to staff time constraints and/or lack of expertise to solve formatting problems. Requests have focused on two areas: 1) collating, formatting, editing, and finalizing bilateral reports, and 2) automating updates of figures and tables using code (rather than manual re-entry).

Modern publication software is complicated, requiring specific skills, and efficient organizations hire experts for this work. PSC and Endowment Fund reports would benefit from a dedicated staff person to generate documents (and web content) efficiently for a wide audience. Such capacity would also alleviate workloads for Secretariat and agency scientific staff who spend significant time formatting reports by Panels and Technical Committees. Therefore, the Secretariat recommends a reallocation of its permanent salary budget to fund a Publication Manager (see below). The incumbent would also assume archivist duties from the Librarian (Tarita) upon her retirement.

The future Data and Assessment Biologist (see Goal 1) will have the coding skills to automate figures and tables in reports from Panels and Technical Committees, thus complementing the Publication Specialist capacity.

Staffing and funding:

- 2022:
 - Convert CTC Coordinator from a term to a permanent position (BI-2)
 - Funding: Ordinary budget as proposed
- 2023:
 - Hire a Data and Assessment Biologist (see Goal 1 for details and funding source)
- 2024 and beyond:
 - Hire a Publication Manager (PM-4⁴; permanent/indeterminate staff)
 - Funding: Librarian vacancy (Tarita, LS-2; c. 2024)
 - Hire a Database Assistant (see Goal 1 for details and funding source)

3. Prevent compromising the services to the Fraser River process

³ CTC, CYER Working Group, Okanagan Working Group, CIG, CSC (on Chinook issues)

⁴ Based on similar NAFO position; subject to final job description and classification review

Secretariat support for other technical committees and panels will need to progress slowly to avoid compromising support for the FRP and FRTC. Retirements of long-serving staff have generated opportunities for rethinking and broadening staff assignments (as noted above) while re-examining the needs of the Fraser process. The following examples show how such reconfiguration is underway, but are not exhaustive.

Task-oriented job descriptions: In the past, Secretariat jobs were specific to individual programs. For example, a biologist from the hydroacoustics department would be solely focused on hydroacoustics tasks. Task-oriented positions offer much more flexibility compared to department-based positions. Following annual performance reviews, job descriptions are adjusted to ensure that the tasks are still relevant and minor adjustments can be made to realign jobs and account for unexpected vacancies (e.g., parental leave, staff retirements, or resignations).

PSC staff support to other Committees/Panels: The sharing of staff across Secretariat teams is an important precursor to support for other Committees and Panels. For example, the term Stock Assessment Assistant (Wong) has been working on QA/QC of Fraser sockeye/pink and CTC data in collaboration with the Database Administrator (McMillan). This dual capacity would continue with a new permanent Data and Assessment Biologist (see Goal 1).

Additional funding for ad hoc FRP tasks: Unexpected assignments to support the FRP/FRTC do occur and often exceed the capacity of existing staff. As in the past, SEF funding will be sought to hire additional term or seasonal staff for such ad hoc scientific work. A current example is species composition work in the Fraser assessment process in 2023.

Staffing and funding:

- 2023:
 - Hire a short-term biologist (BI-2) for species composition work in Fraser sockeye assessments
 - Funding: hiring conditional on successful SEF application
 - Hire a Data and Assessment Biologist (see Goal 1 for details and funding sources)
 - Request reclassifying certain staff if needed due to accretion and realignment of duties (following PSC bylaws for reclassification)
 - Funding: Remaining portion of Hydroacoustic Scientist vacancy (Xie, RE-3) after hiring the Database Assistant in 2024 (see Goal 1)

Goal 4. Improve the Secretariat's diversity, equity, and inclusion

The Secretariat has a reputation for high performance and professionalism. This has been achieved through deliberative recruitment processes and consistent performance evaluation. Still, while there have been positive changes made in certain areas (especially in gender diversity), there is room for improvement. This includes recruitment of indigenous personnel to reflect the breadth of salmon fisheries in each country.

In the near and midterm, the Secretariat aims to improve staff diversity of culture, race, and other elements of the society the PSC serves. This effort will start with developing a common understanding among staff about the elements of diversity, its benefits to the organization, and means to secure it through equity and inclusion.

Achieving such improvement will take effort and access to expertise outside of the Secretariat, given the limited resources for this on staff. The Executive Secretary is directed to pursue this work in his 2022/2023 performance plan for the Commission, and this will involve regular updates on these efforts. National perspectives and input on the best approaches to pursue are welcome from the Parties.

Goal 5. Improve staff recruitment and retention

The PSC uses its host government's federal pay scales as a guide for classifying and compensating staff, although the staff are considered international civil servants. This is normal practice for international fishery commissions since it offers a convenient system for base pay scales and job classifications.

However, the small size of these commission Secretariats limits career mobility (upward and lateral) compared to host country agencies. The commissions' non-salary benefits (e.g. group health plans, training) are more limited than the public system with its greater purchasing power. Such discrepancies can handicap efforts to recruit and retain qualified staff who often compare career opportunities in the public sector and organizations like the PSC.

For example, the Secretariat has experienced 43% turnover in the last five years. Of those departing, 33% were retirements and 33% were due to other employment (the rest were short-term plus two terminated employees). Four were scientific staff taking jobs in private, provincial, and federal Canadian agencies (and representing 25% of permanent Fisheries Management Division). Those scientific staff noted a desire for greater job mobility or the high cost of Vancouver living⁵ when resigning. Likewise, it is difficult to find qualified applicants who are not already residents of Metro Vancouver or southern B.C. for PSC vacancies.

The PSC is an international organization that will benefit from a diverse staff with a variety of educational, cultural, and work experiences. To recruit and then retain the caliber of PSC staff the Parties expect, the Secretariat sees a need for greater incentives like internationally competitive pay scales. Such a change is allowed by the PSC bylaws which state "*notwithstanding that the Public Service of Canada serves as a guide, the Commission may adjust salary scales.*"⁶ It is thus clear the Parties left this option open for consideration when circumstances dictate.

In fact, Canada and the United States have agreed to do this in their two other bilateral fishery commissions (International Pacific Halibut Commission/IPHC; Great Lakes Fishery Commission/GLFC). The multilateral commissions in San Diego (IATTC) and Halifax (NAFO), where Canada and the United States are also Parties, have also augmented their Secretariat pay scales. All of these Secretariats are in cities with costs of living lower than Vancouver⁷.

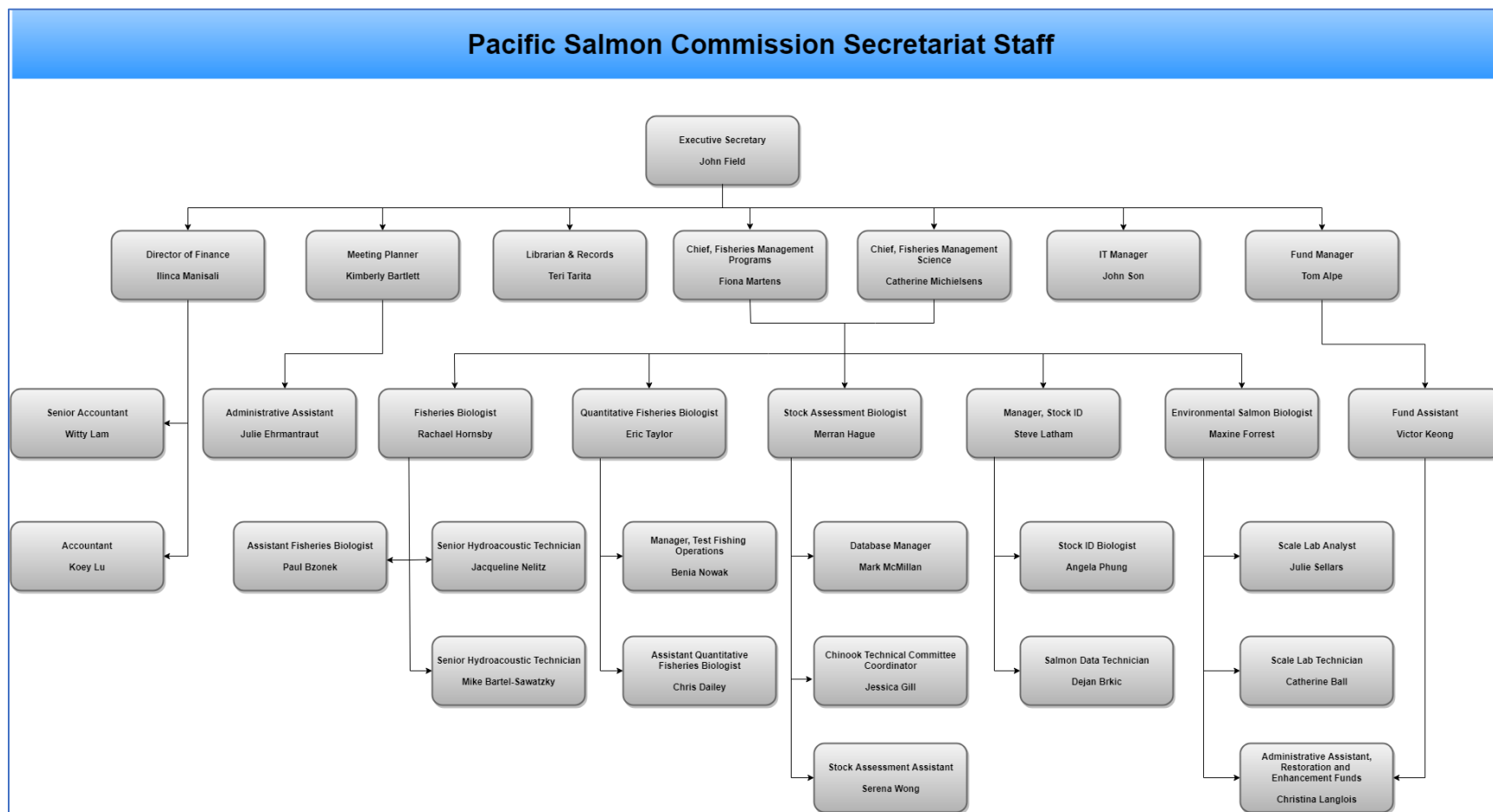
The Secretariat therefore recommends adopting augmented pay scales for all permanent/indeterminate staff of the PSC. In January 2022 the F&A Committee heard these concerns and expressed interest in examining the use of locality pay to supplement the Canadian public service pay scales. The Secretariat will investigate options for the F&A Committee to consider, while examining locality pay models elsewhere.

⁵ For example, Vancouver exhibited the world's least affordable housing market, after Hong Kong, as of late 2018. <https://www.bnnbloomberg.ca/hong-kong-housing-ranked-world-s-least-affordable-for-9th-year-1.1201263>

⁶ PSC bylaws, Chapter X, Rule 22

⁷ <https://www.numbeo.com/cost-of-living/>

Attachment 1



Attachment 2

Summary of staffing changes and funding sources

Fiscal year	Goal 1	Goal 2	Goal 3	Funding source
FY 2022/23		CTC Coordinator (BI-2)		Ordinary budget
FY 2023/24	Data & Assmt Biologist (BI-2)			Director of Stock Monitoring (Jenkins) vacancy
		Term Biologist (BI-2) species comp		SEF
FY 2024/25	Database Asst. (CS-2)			Hydroacoustic Scientist (Xie) vacancy
		Publications Manager (PM-4)		Librarian (Tarita) vacancy



Considerations for a second PSC performance review

Prepared by the Executive Secretary

December 8, 2021

Background

Since its inception 36 years ago, the PSC has reviewed certain aspects of its work. This has included “internal reviews” of Secretariat operations by the staff and expert reviews of particular scientific programs. However, the Commission has only conducted one broad external review of its operations¹ in the Secretariat and the Commission’s various bodies.

That 2011-2013 effort arose because the Parties noted a) such a review had never been done; b) growing domestic financial constraints might affect Commission funding; and c) global best practices called for such action in regional fishery management organizations (RFMO’s). The terms of reference for the review focused on Commission efficiency and effectiveness, including:

1. Commission procedures;
2. Financial performance of the Secretariat in supporting the work of the Commission; and
3. Information exchange between the Commission and the Secretariat

One of the Executive Secretary’s deliverables for 2021 is a discussion paper on a subsequent performance review of the PSC. This paper responds to that directive.

2011-2013 process

It is important to note that the first review was not a scientific evaluation of the commission’s salmon management approach, nor an evaluation of the quality/correctness of the decisions made by the PSC.

With that context, the Commission created a Steering Committee (two Commissioners per country) in early 2011 to guide the external review. At the PSC’s direction, the Steering Committee solicited bids from consultants through the summer of 2011 and eventually recommended a firm with expertise in business operations and planning.

¹ 49 Solutions, Inc. (2012). Pacific Salmon Commission performance review: final report. Submitted to the Pacific Salmon Commission March 31, 2012. 66 pp. Vancouver, B.C. Canada.

The consultants worked between October 2011 and March 2012. Their final observations and recommendations were based on:

- Confidential interviews with PSC participants and stakeholders. A total of 50 interviews were conducted. Of those, 45 interviewees were designated by the respective national sections. The reviewers also identified four Secretariat staff members to interview, and one process participant self-identified as a candidate for an interview.
- Observation of two PSC meetings (including sessions of the Commission and selected Panels and Committees).
- Review of documentation provided by the Secretariat or available on the PSC website.
- Review of news reports and other external publications about the PSC.
- Review of leading practices for Regional Fisheries Management Organizations.

Outcomes

The final report contained 30 recommendations ranked by priority (high, medium, low), timeframe (short-, medium-, long-term), and effort (high, medium, low). These recommendations addressed the Secretariat, panels/committees, and the Commission itself. Upon receipt of this report, the PSC created a Performance Review Implementation Group (PRIG) comprised of four delegates from each Party. The PRIG was directed to a) develop an implementation plan for the review's recommendations and b) solicit public comment on the final report via the PSC's website.

This process concluded in February 2013 with the Commission agreeing to several actions recommended by the consultants. These included:

- **Onboarding:** Launch of orientation sessions and materials for all delegates, provided by the Executive Secretary
- **Procedural improvements:** Complete review/amendment of the PSC bylaws to reflect current practices and improve clarity.
- **Secretariat business planning:** Development of a 2013-2018 operational plan for the Secretariat (e.g., expanded IT infrastructure, security upgrades, succession planning)
- **Improved information sharing:**
 - Launch of SharePoint platforms for the PSC family
 - Redesign and augmentation of the PSC website
- **CTC support:** CIG, CTC, and Secretariat collaboration on improved administrative support for the committee (which eventually led to the "CTC Coordinator" position).

International best practice

For the last 15 years, the international community has repeatedly stressed the importance of performance reviews for RFMOs like the PSC. Through their participation in the United Nations and its fisheries forums, Canada and the United States have supported such action. For example, the two countries supported the 2006 UN General Assembly Resolution on Sustainable Fisheries (UNGA 61/105), which called on RFMOs to undertake regular performance reviews, include some element of independent evaluation, and make the results publicly available. The two

countries have joined subsequent calls for external reviews as accepted best practice, including recent reviews of the IPHC (2019) and NAFO (2018). External expertise is best practice for such reviews to reduce bias and introduce new perspectives on long-standing procedures.

Recommendation

It has been a decade since the PSC's last performance review, and negotiations for the 2029 agreement will likely begin in a few short years. Since the last review, there have been significant concerns in Panels and Technical Committees (expressed in their recent workplans) that current assessment techniques and modelling assumptions are inadequate to deal with declining salmon productivity and a rapidly changing North Pacific ecosystem. There are also questions about the best suite of Secretariat services to support current and future Treaty implementation (as discussed in the recent Workforce Strategy).

Therefore, the Executive Secretary invites the Commission to consider the benefits of a second performance review in the near term. Such a review could be conducted with a "hybrid" panel of external and internal experts (as with the IPHC and NAFO reviews) with terms of reference agreed by both countries. Funding for external expertise could be sought through a staff proposal to the Northern and Southern Endowment Fund Committees, thus alleviating pressure on the ordinary budget.



**Annual Report of the
Southern Boundary Restoration and Enhancement Fund and the
Northern Boundary and Transboundary Rivers Restoration and Enhancement Fund
for the year 2021.**

Introduction

In June of 1999, the United States and Canada reached a comprehensive new agreement (the “1999 Agreement”) under the 1985 Pacific Salmon Treaty. Among other provisions, the 1999 Agreement established two bilateral funds: the Northern Boundary and Transboundary Rivers Restoration and Enhancement Fund (Northern Fund); and the Southern Boundary Restoration and Enhancement Fund (Southern Fund). The purpose of the two funds is to support activities in both countries that develop improved information for fishery resource management, rehabilitate and restore marine and freshwater habitat, and enhance wild stock production through low technology techniques. The United States agreed to capitalize the Northern and Southern Funds in the amounts of \$75 million U.S. and U.S. \$65 million respectively. Canada also contributed CAD \$500,000. The 1999 Agreement also established a Northern Fund Committee and a Southern Fund Committee, each comprised of three nationals from each country, to oversee investment of the Funds’ assets and make decisions about expenditures on projects. Only the earnings from investments can be spent on projects.

Committee Members

Northern Fund Committee

Canada:

Mr. Steve Gotch
Chief Russ Jones
Mr. John McCulloch

United States:

Mr. Doug Mecum
Mr. Bill Auger
Mr. Doug Vincent-Lang

Southern Fund Committee

Canada:

Dr. Laura Brown
Dr. Don Hall
Mr. Mike Griswold

United States:

Mr. Larry Peck
Dr. Peter Dygert
Mr. Joe Oatman

Executive Summary

- The market value of the fund on December 31, 2021, was approximately USD \$273,308,000 or CAD \$345,229,000.
- Investment market momentum continued in 2021, with the restart of economic activity resulting in stocks having another year of strong gains overall. North American markets were among the strongest, while Emerging Markets struggled. However, the gains in most stock markets came with falling bond returns as interest rates began to rise as well as price pressures and supply bottlenecks. With inflation at the highest rates seen in several years, it remains to be seen how long it will last and whether or how governments will respond.
- In 2021 the Southern Fund supported 41 projects. Grants awarded totaled U.S. \$3 million. The Northern Fund supported 52 projects and grants awarded totaled U.S. \$5.05 million.
- Since 2004, the Northern and Southern Fund Committees have approved grants of U.S. \$109.03 million to a total of 1480 projects. In addition, the funds contributed U.S. \$10 million to the *Sentinel Stocks Program*.
- In 2021 the Northern and Southern Fund Committee members met together as a Joint Fund Committee on two occasions (May 10, and November 22 and 23). The Northern Fund Committee met on three occasions, and the Southern Fund Committee met on four occasions. Most meetings were held virtually due to COVID-19 public health and travel restrictions.
- In 2021 the Northern and Southern Fund Committees each took steps to identify and address overdue reporting from previous funding cycles. The Committees have reviewed their processes and have implemented new measures designed to significantly improve compliance with project reporting requirements. The Committees and PSC secretariat staff also undertook a number of significant tasks associated with improving the administration of grants in 2021, such as formalizing their procedures for reviewing and selecting projects to support and transitioning to new administrative systems.
- Chief Russ Jones was appointed to the Canadian Section of the Northern Fund Committee on February 22, 2021, replacing Dr. Carmel Lowe.

Investment Review

Over the year, the investment portfolio performed well overall, with returns above 12% for 2021 (in both Canadian and US dollar terms), well above the target of exceeding inflation by 3.5%. Positive performance in the portfolio was primarily due to public equity and real estate investments where returns from the fund managers ranged between 18-25%. Returns from the infrastructure investments were not far behind, with smaller positive results within the portfolio's mortgage investments. The Fund's bond portfolio contributed negative returns as did most bond portfolios over the year.

With respect to equity investments, the portfolio's passive U.S. equity manager, BlackRock, continued to achieve its objective of replicating the performance of its benchmark in one of the strongest performing markets for the third year in a row. The broad U.S. equity benchmark used by the fund was up almost 25% for 2021 in Canadian dollar terms. For the global equity mandates, PH&N underperformed their benchmark while Morgan Stanley outperformed thanks to a strong finish to the year. Both managers finished the year with returns near 20%.

With respect to fixed income investments, interest rates rose during the year, leading to negative returns, particularly for longer term bonds. Rates rose quickly in the early part of 2021, but had come back down some by mid-year, only to rise again in the fall before declining again late in the year, ending 2021 at close to pre-COVID levels for mid- and longer-term ranges. The PH&N Core Plus Bond Fund finished the year with negative returns, but above its benchmark, while ACM's mortgage mandate had a modest positive return over the year.

Lastly, the portfolio's alternative investments provided solid results in 2021. The U.S. Real Estate manager, Invesco, had strong positive returns, reflecting a recovery from losses the prior year related to the impacts of COVID. IFM's infrastructure mandate also brought strong positive returns. The newer infrastructure mandate with Axiom gradually started to become funded over the year, but given the short timeframe thus far, meaningful returns are not yet available.

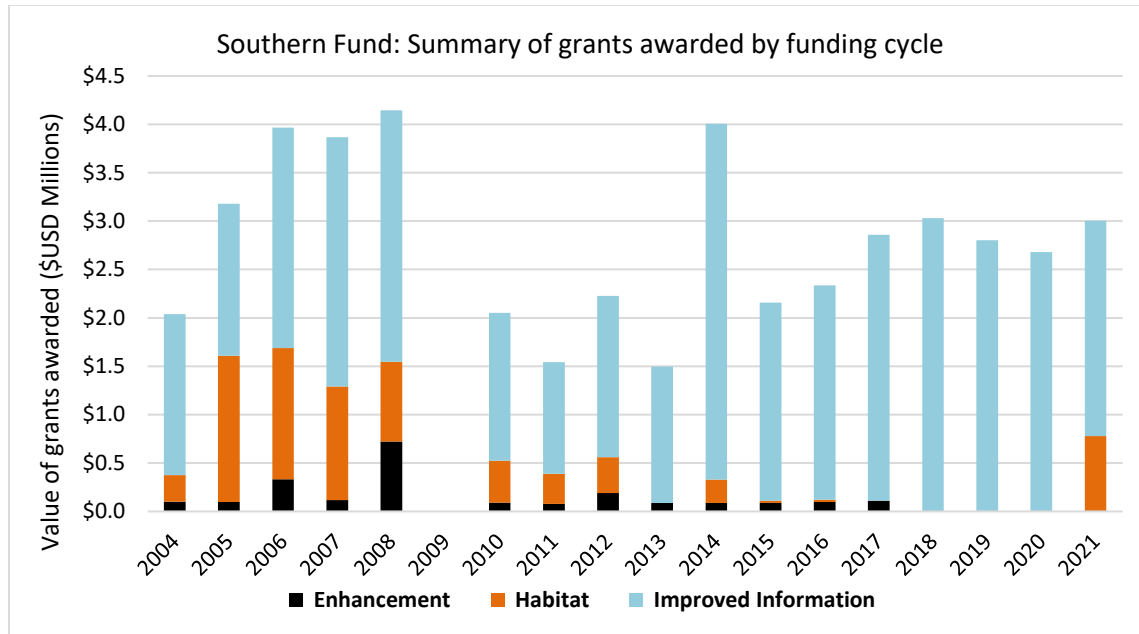
Total contributed capital (nominal) was U.S. \$140,065,000 (the equivalent of CAD \$209,796,000 using the exchange rate at the time the last installment was made). Actual fund market value on December 31st, 2021, was approximately USD \$273,308,000 or CAD \$345,229,000.

Contributed capital and asset value of the individual funds as of December 31st, 2021, stood as follows:

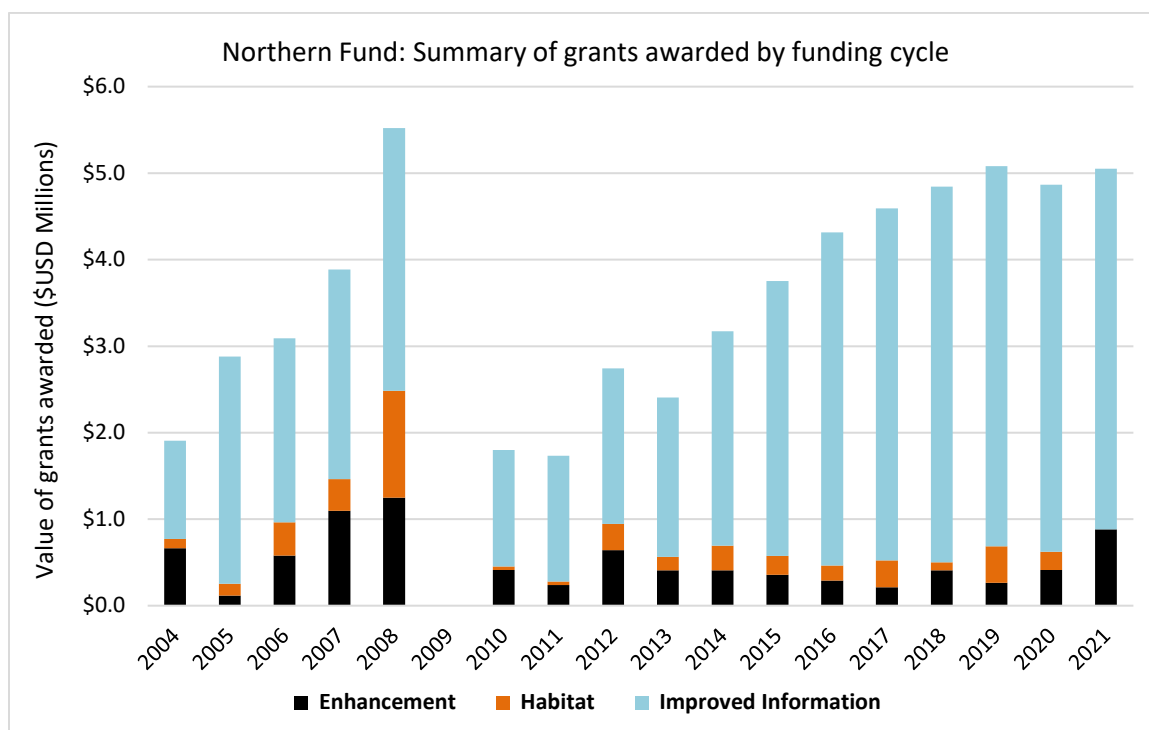
Contributed Capital		Asset Value	
Northern:	U.S. \$75,000,000 CAD \$112,388,000	U.S. \$145,817,000	CAD \$184,189,000
Southern:	U.S. \$65,000,000 CAD \$97,408,000	U.S. \$127,491,000	CAD \$161,040,000

2021 Project Funding

In 2021 the Southern Fund supported 41 projects. Grants awarded totaled U.S. \$3 million. Projects addressing specific priorities identified by the Pacific Salmon Commission's Fraser River Panel and Southern Panel accounted for U.S. \$1.9 million of grants awarded (63%).

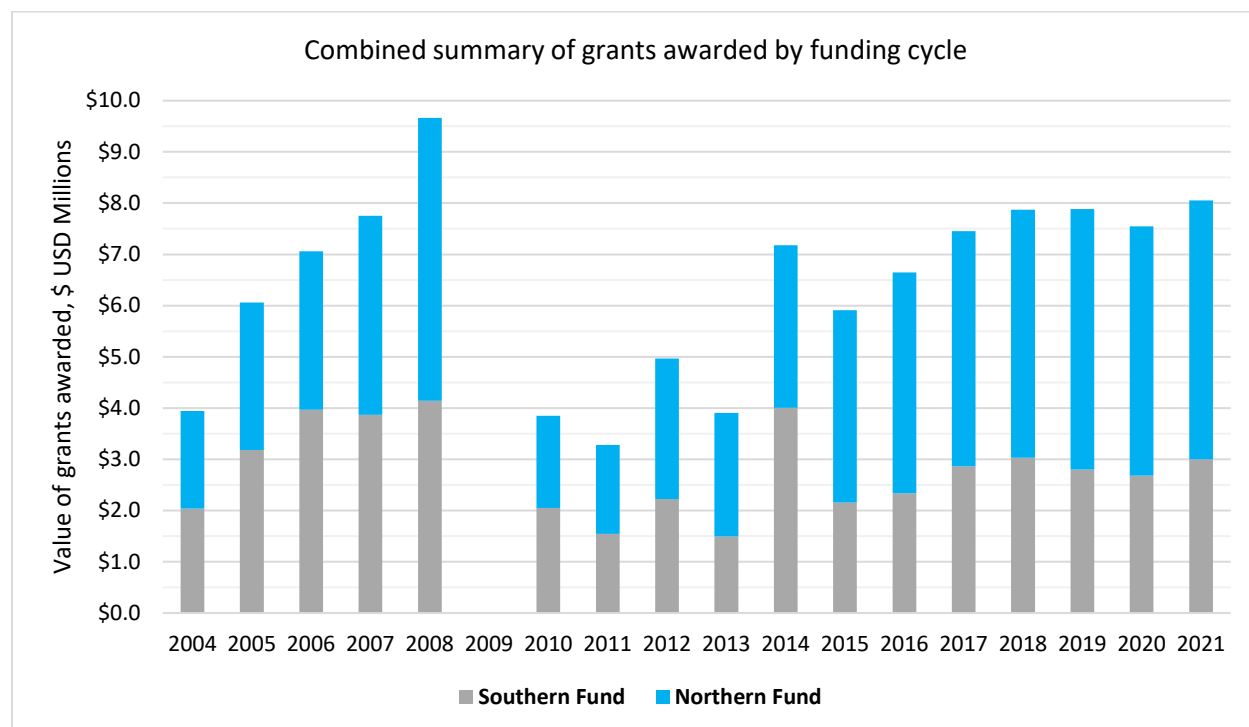


In 2021 the Northern Fund supported 52 projects. Grants awarded totaled U.S. \$5.05 million. Five projects with a total value of U.S. \$881,892 were classified as Enhancement projects and 47 projects with a total value of U.S. \$4.17 million were classified as Improved Information projects.



Between 2004 and 2021 the Northern Fund has awarded grants worth U.S. \$61.64 million to 834 projects. Over this same period the Southern Fund has granted U.S. \$47.39 million to 646 projects.

Total Fund project grants awarded to date are U.S. \$109.03 million in support of 1480 projects. Included in this total is U.S. \$5 million from the Southern Fund to the Salish Sea Marine Survival Program. In addition to these amounts, the Chinook Sentinel Stocks Program was funded jointly by the Northern and Southern Funds between 2009 and 2014 for U.S. \$10 million.



Joint Fund Committee Meetings

The Northern and Southern Fund Committees have agreed that given the congruent nature of their agendas, their decision to combine the funds into a single master account for investment management purposes, and the efficiencies involved with respect to interaction with investment advisors and managers, it is appropriate to meet together periodically as a Joint Fund Committee. The two Fund Committees met together as Joint Fund Committee twice in 2021.

Spring Meeting: May 10, 2021

This meeting was held virtually. The agenda included:

- Receipt and review of Q4 (2020) and Q1 (2021) investment performance reports from the Committee's investment consultants, George & Bell Consulting.
- A review of the costs of fund administration in the previous financial year, and the review and approval of a budget for fund administration in FY 2021/22.
- Finalization of an onboarding / orientation pack for new Fund Committee members.
- Adoption of guidance clarifying how honoraria payments are made to eligible Fund Committee members.

- A discussion about the possibility of developing bilaterally recognized standards for projects that receive support from the Endowment Funds which involve Genetic Stock Identification techniques.
- A review of the workplan for the PSC Fund Manager, and a review of the staff support provided to the Fund Committees by the Secretariat in the prior year.

Fall Meeting: November 22 and 23, 2021

Some members attended this meeting in-person at the PSC offices in Vancouver, other members connected virtually. The agenda included:

- The receipt and review of Q2 and Q3 investment performance reports from George & Bell Consulting.
- The review and approval of the Committee's updated Statement of Investment Policies and Procedures.
- An update on the progress made towards recovering withholding taxes associated with the Committee's investments, provided by Ms. Manisali (PSC Director of Finance) and a discussion and decision about how to proceed with managing withholding taxes in future.
- A discussion about the appropriateness of different investment structures for fund investments, including investment manager fee structures.
- Receipt of an educational update from George & Bell consulting regarding Environmental, Social and Governance principles in investing, how these have changed over time, and the extent to which the Committee's investment managers incorporate these into their investment processes.
- Presentations / interviews with three of the Committee's current investment managers: Morgan Stanley, Invesco and PH&N Institutional.
- A discussion about the next steps to take to pursue the development of bilaterally recognized standards for projects involving Genetic Stock Identification techniques.
- The review and approval of an updated policy for the payment of honoraria.
- Receipt of the results of the FY 2020/21 audit of the Endowment Funds, which did not identify any issues, and the approval of the associated financial statements.
- The PSC Secretariat provided a proposal to the Joint Fund Committee which seeks to restructure the manner in which annual PSC Secretariat administrative service costs are determined and reimbursed. The proposal identified a "fixed" administrative service fee of \$434K/year (inclusive of a 5% year-to-year inflationary adjustment" for a 5-year period starting in 2021-22. The Committee deferred decision on the proposal until its spring 2022 meeting.

Northern Fund Committee Meetings

The Northern Fund Committee met on three occasions in 2021.

1. February 23-24 (virtual meeting): The Committee met to make final decisions about the projects to support in 2021. The Committee also reviewed compliance with Northern Fund reporting requirements in previous years, and took initial steps to address outstanding project reports.

2. May 12 (virtual meeting): The Committee met to agree the scope, priorities, and timetable for the next Northern Fund Call for Proposals. The Committee also formally adopted an internal policy document detailing their procedures for proposal submission, review and evaluation and discussed and took further steps to address outstanding reporting associated with projects supported by the Northern Fund in the past.
3. September 29 (hybrid meeting): The Committee met to make decisions about the project concepts to advance to the detailed proposal stage. The Committee also received an update on progress towards addressing outstanding reports; formally adopted their procedures for managing project change requests; further discussed the potential development of bilaterally recognized standards for projects involving Genetic Stock Identification techniques; discussed the formulation of their spending policy; and reviewed actual (vs. budgeted) expenditures on Northern Fund projects.

Southern Fund Committee Meetings

The Southern Fund Committee met four times in 2021.

1. February 25 (virtual): The Committee met to make final decisions about the projects to support in 2021.
2. May 11 (virtual): The Committee met to agree the scope, priorities, and timetable for the next Southern Fund Call for Proposals. The Committee also met with representatives of Long Live the Kings and the Pacific Salmon Foundation to discuss the outcomes of the Salish Sea Marine Survival Program; discussed their procedures for assessing habitat-related proposals; and agreed to a new process for engaging the Coho Technical Committee to review relevant proposals. The Committee also formally adopted a document detailing their procedures for reviewing, evaluating, and approving project proposals. The Committee received an initial report detailing outstanding project reports.
3. July 29 (virtual): The Committee met to receive a detailed report from the Secretariat regarding overdue project reports associated with projects previously supported by the Committee, and made decisions about addressing this issue and ensuring compliance with Southern Fund reporting requirements in future.
4. September 28 (hybrid): The Committee met to make decisions about the project concepts to advance to the detailed proposal stage. The Committee also discussed their procedures for reviewing habitat related proposals and received a further report detailing outstanding project reports still due to the Committee.

Committee Appointments

Chief Russ Jones was appointed to the Canadian Section of the Northern Fund Committee on February 22, 2021, replacing Dr. Carmel Lowe.

2021 Call for Proposals for projects in 2022/23

Both Fund Committees issued a Call for Proposals in June 2021 for projects starting in 2022.

The Southern Fund Committee focused its 2022 Call for Proposals on habitat restoration projects and specific priorities identified by the Pacific Salmon Commission's Fraser River and Southern

Panels. In response, the Committee received 50 proposals requesting approximately U.S. \$4 million. During the first-round review meeting the Committee selected 47 of these proposals to move to the second stage. The final decisions on 2022 funding will be made in February 2022.

The Northern Fund Committee focused its 2022 Call for Proposals on projects seeking to develop improved information for resource management; the rehabilitation and restoration of marine and freshwater fish habitat; the enhancement of wild-stock production through low technology techniques and proposals responsive to the recommendations and objectives set out within the PSC's Transboundary Panel Strategic Salmon Plan. The Committee received a total of 61 concept stage proposals requesting approximately U.S. \$7.1 million. 43 proposals were selected to move to the second-round detailed proposal stage (some related proposals were combined into single applications at stage 2). Bilateral technical reviews of the detailed proposals will take place in January 2022 and final decisions will be made in February 2022.

Chinook Interface Group Report to Pacific Salmon Commission
17 FEB 2022

Chinook Interface Group Report to the Pacific Salmon Commission
2022 PSC Annual Meeting

The CIG met three times during this week with a focus on nine agenda items. The following reports our work and recommendations for the Commission's consideration.

Commissioners in attendance: Phil Anderson, Andrew Thomson, Russ Jones, McCoy Oatman, John McCulloch, Doug Vincent-Lang

- 1) **Adoption of the agenda:** No changes were made to the agenda.
- 2) **Documenting removal of Phillips River as a CWT indicator stock:** Mr. John Field (PSC) provided an option for documenting the removal of Phillips River as a coded-wire tag (CWT) indicator stock and remain as an escapement indicator stock. At the January 2022 CIG meeting, the CIG recommended removing Phillips River as a CWT indicator stock as the recovery program met its targets, and the last brood year tagged was 2019. Paragraph 7(g) in Chapter 3 of the 2019 PST Agreement indicates flexibility in implementation of the chapter when unusual circumstances arise in the management of AABM and ISBM fisheries. The flexibility outlined in Paragraph 7(g) applies when removing Phillips River from Attachment I. Commissioner Vincent-Lang asked when the obligation for Phillips River ends, when it is removed from Attachment I or when the 2019 brood (last tagged year) have been exhausted. Dr. Antonio Velez-Espino (DFO) noted that the Chinook Technical Committee (CTC) intends to add a footnote when reporting on Phillips River in the annual reports, indicating that the last tagged brood year was 2019. Commissioner Thomson noted that when Phillips River is removed from Attachment I is when the obligation ends. Commissioner Riddell noted Phillips River tags will be exhausted in 2024, which sets the tone for continued use and obligation. Commissioner Thomson provided language for a new footnote 10 specific to Phillips River in Attachment I. Commissioner Vincent-Lang highlighted urgency in finding an alternate CWT replacement for Phillips River.

- CIG recommends adding the following footnote 10 to Attachment I of the 2019 PST Agreement:

The CTC will be reporting on CWT recoveries for the Phillips River stock until 2024, when all age classes from the last tagged brood (2019) recruit to fisheries, however as the criteria for calculations of mortality distributions (which are the basis for CYERs) are: (1) recoveries available for three ages at least, and (2) minimum of 35 estimated recoveries per age, the CYER for Phillips cannot be calculated past 2022. The Phillips River will continue as an escapement indicator and Canada is continuing to assess options for a potential CWT indicator stock that is representative of Mainland Inlet Chinook stocks.

- CIG recommends amending Phillips River in Attachment I of the 2019 PST Agreement as follows:

Stock Region	Escapement Indicator Stock (CWT Indicator Stock ⁸)	Canadian ISBM CYER Limit	US ISBM CYER Limit	Management Objective
	Phillips (TBD)	TBD	NA ³	TBD ⁶

- 3) **Review Incidental Mortality report and discuss the recommendations, including next steps:** Ms. Laura Tessier (DFO) updated the CIG on the progress reporting uncertainty in catch and release estimates to quantify incidental mortality (IM). The CTC sent out a survey for estimates of release and variance during the period of 2009–2019. Fisheries were ranked in terms of magnitude of estimate and amount of uncertainty associated with the estimate. It is important to note that the fisheries reviewed are aggregate fisheries, and if a component fishery did not have an estimate or variance, the entire aggregate resulted in a high ranking.

Dr. Derek Dapp (WDFW) review recommendations found in the report. Additional studies are recommended to update troll and net IM rates and to incorporate varying IM rates in the PSC Chinook Model. Commissioner Jones noted an additional recommendation of not changing IM rates and Dr. Dapp agreed with the addition. Commissioner Vincent-Lang inquired about static rates used in the Model and Dr. Dapp indicated that IM rates change temporally, with weather conditions and with climate change, though IM rates are applied regardless of changing conditions, and referred readers to the discussion section of the report for additional information. Ms. Tessier noted that any changes made to IM rates will need to be reviewed for Treaty confirmation and Dr. Velez-Espino agreed. Mr. John Carlile (ADF&G) noted that changing IM rates would impact Table 1. Commissioner Vincent-Lang and Commissioner Anderson both expressed concern over investing resources to study and change IM rates without having a large impact on the estimate of IM, for example updating the IM rate used by different net gear. Mr. Carlile noted some challenges with updating the rates used for different gear and that it could impact the Abundance Index time series for some fisheries. Commissioner Riddell suggested to condense the recommendations down to a workable program that would achieve results.

Dr. Dapp reviewed additional recommendations found in the report but noted that no specific fisheries were identified for improvement in monitoring. He noted that fisheries that have high ratio of releases could be investigated, and a cost-benefit analysis would be an important step. One recommendation is to consider stock composition when prioritizing fisheries for improvement. The CIG was appreciative of the efforts of the group to develop this report and recommendations. This report and literature review made significant progress on the task outlined in the Treaty to develop IM data standards, but does not completely absolve the CTC of this task.

- CIG recommends reviewing the report and adding the incidental mortality report on their forward agenda.

4) Calendar year exploitation rates:

1. **Management entities letter:** Mr. Jim Scott (WDFW) reviewed the decision at the January 2022 meeting of the CIG to draft a letter to management entities regarding the recommendations outlined in Technical Report 46. The letter to management entities asks if managers support the recommendations outlined in Technical Report 46, what steps they would take to implement the recommendations, and if they require support from the Commission. Mr. Field noted the management entities distribution list from previous work is available but does need to be reviewed for accuracy. Commissioner Riddell suggested to include a link to the PSC Endowment Funds webpages for readers that might be unfamiliar.
 - CIG recommends sending the provided letter to management entities for their response (Attachment 1).
2. **Schedule for CYER Work Group meetings:** Mr. Scott noted that the CYER WG will be developing a transition plan for MSFs that requires interfacing with the CIG. The work group is requesting at least three half-day meetings beginning May 2022.
 - CIG recommends meeting with the Calendar Year Exploitation Rate Work Group as requested during the spring, summer, and fall 2022.
3. **Identify and initially discuss CYER policy questions from the CTC:** The CIG indicated that they would respond to the first two questions posed by the CTC. The first question, *“For escapement indicator stocks with a management objective identified in Attachment I, is the trigger for application of the associated CYER limit: a) the management objective or b) 85% of the management objective?”*, the CIG was in agreement that the trigger for applying a CYER limit was the management objective and not the 85% for each stock, as that is a standalone provision in Paragraph 7(a).

The second question, *“Are the CYER limits in Attachment I applicable to ISBM fisheries in each year for escapement indicator stocks without an agreed management objective and escapement indicator stocks with fewer spawners than the agreed management objective? Or, alternatively, are the CYER limits in Attachment I only relevant to the three-year running average calculated as described in paragraph 7 (c).”*, the CIG was in agreement to respond in the affirmative to the first part of the question and in the negative for the second part of the question. Management entities are obligated to the best of their abilities to manage ISBM fisheries to comply with CYER limits each year and will be reported each year. The three-year running average is designed to assess compliance with the Treaty. The third question, *“What years are included in the computation of the running three-year average?”*, will be addressed during the spring CIG meeting.

- CIG recommends use of the management objective as a trigger for a CYER limit for each stock identified in Attachment I.
- CIG recommends responding in the affirmative to first part of question (CYER limits apply each year as specified in the Treaty), and second question is separate issue addressed in paragraph 7.

5) **Okanagan Chinook Working Group presentation:** Mr. Chuck Parken (DFO) and Mr. Bill Tweit (WDFW) provided an overview of ongoing work by the Okanagan Chinook Working Group (OWG). The OWG hosted four workshops to gain a better understanding of the barriers to restoration of Chinook in the Canadian portion of the Okanagan River and provided preliminary recommendations from each workshop. The first workshop, hosted on December 17, 2020, was held on Escapement Methodology on both sides of the border. Recommendations focused on improvements for programs to achieve CTC data standards. The second workshop, hosted on April 21, 2021, was focused on the impact of a potential invasion of Northern Pike to Okanagan Chinook. Recommendations included a bilateral response plan for agencies to prepare for suppression, eradication, and restrict the spread of Northern Pike. The third workshop, hosted on July 14, 2021, was a review of survival bottlenecks throughout the watershed, including the Columbia River mainstem. Recommendations included prioritizing habitat restoration and supporting climate change impacts planning. The fourth workshop, hosted on September 9, 2021, was on developing a bilateral supplementation plan. Recommendations included increased coordination between the programs to meet hatchery strategic principles on both sides of the border. Ms. Jessica Gill (PSC) added that at the bilateral supplementation workshop, adult holding capacity in the U.S., transport of live fish from the U.S. to Canada, and wild broodstock availability were listed as largest implementation barriers to developing a bilateral supplementation plan. The OWG will host a final workshop on baseline assessments in April and will develop a synthesis report for Commissioners and workshop participants during its meeting in June. The OWG intends to present clear recommendations and an action plan from the synthesis report at the October CIG session.

6) **Review Coded-Wire Tag and Recovery/Catch and Escapement Indicator**

Improvement work plan: Mr. Tommy Garrison (CRITFC) reported on the Coded-Wire Tag and Recovery/Catch and Escapement Indicator Improvement (CWT&R/CEII) Work Group's 2021–2022 work plan. The work group intends to submit future work plan annually for review at the October meeting. The work group is intended to bilaterally review project results and outcomes, but initial funding of projects began in 2021 and results from these projects are not yet available.

- CIG reviewed the Coded-Wire Tag and Recovery/Catch and Escapement Indicator Improvement (CWT&R/CEII) Work Group's 2021–2022 work plan (Attachment 2) and is in agreement with it.

7) **Discuss work plan update from the Chinook Technical Committee:** Mr. Carlile reviewed the tasks in Chapter 3 of the 2019 PST Agreement identified for completion by the CTC. In Paragraph 5(e), the Treaty identifies a review of alternative metrics to CYERs and a timeline of reviewing these metrics in 2022. No alternative metrics have been proposed and data to perform a review of the CYER metric will not be available until 2023. In Appendix A(14), the CTC is to complete Phase 3 of the PSC Chinook Model in time for the five-year review (i.e., by January 2023), but there are significant technical issues to address before engaging in this work. In Paragraph 2(a)(ix), footnote 9, a reference to a Model Calibration from March 2018 (CLB 1804) is noted to compare any significant management changes against. Mr. Carlile notes that an adjustment to the footnote should be to refer to the current approved PSC Chinook Model (BPCV1-28 AC1). Commissioner Riddell noted that the language regarding alternative CYER metrics was written into the Chapter because use of the CYER metric was not agreed to and the allowed for the CTC to provide alternative metrics. The Commission has accepted the CYER metric, and no alternatives have been proposed. He notes the task as outlined in the Treaty is no longer appropriate. Commissioner Riddell acknowledged that MSF algorithms, a key update to the Phase 3 PSC Chinook Model, is not yet complete and the Phase 3 work will take significant time. The work should still be scheduled. He agreed that the Treaty language should reflect the change to the Phase 2 PSC Chinook Model instead of CLB 1804. Commissioner Anderson, Commissioner Vincent-Lang, Commissioner Thomson, and Commissioner Oatman agreed with Commissioner Riddell. Commissioner Anderson noted that the CIG should discuss with the CTC the timeframe on the Phase 3 work.

- CIG recommends removing the timeline (2022) associated with the review of alternatives to the CYER metric. Should an alternative metric be proposed, the CTC will be responsible for carrying out a timely review of the proposed metric consistent with their approved work plan.
- CIG recommends removing the requirement to provide a completed Phase 3 PSC Chinook Model by January 2023 from the CTC's Treaty tasks. The completion of Phase 3 work continues to be a high priority item but will be delayed as a result of other higher priority tasks.
- CIG recommends amending the language in footnote 9 of Paragraph 2(a)(ix) to reflect the current Phase 2 PSC Chinook Model. Significant management changes will be compared to BPCV1-28 AC1.

8) **Discuss Southern Fund Committee's letter and potential response:** Commissioner Thomson reviewed the memo from the Southern Fund Committee (SFC) to the Commissioners, dated July 14, 2021. The SFC requested a pathway for research projects for Chinook in the annual request for proposals, as is done for other PST species. The CTC drafted a letter to the SFC responding with a list of priorities under three headings. The letter has not been sent to the SFC. However, the Commissioner Thomson notes that the CIG should provide the list of priorities to the Commission, not the CTC. Mr. Carlile

asked if the letter submitted by the CTC should be readdressed to the CIG instead of the SFC and there was agreement for that change. Commissioner Vincent-Lang asked for clarification on the priorities identified by the CTC and Mr. Carlile noted that the priorities listed could be applicable to both Northern and Southern Endowment Funds. Mr. Tom Alpe (PSC) noted the SFC is meeting May 5, 2022 and a draft request for proposals will be developed by April 28.

- CIG notes that they have received funding priorities for the Endowment Funds from the CTC and seek Commission's concurrence for the CIG to respond to the Southern Fund Committee with priorities for the Southern Fund Committee's request for proposals (Attachment 3). If requested, the CIG will also be prepared to respond to Northern Fund Committee on Chinook priorities.

9) Complete forward agenda for the next 12 months: The CIG directed members to submit forward agenda items to Ms. Gill in advance of the spring CIG meeting. Ms. Gill will coordinate with the CIG to determine an ideal meeting time.

- CIG recommends sending forward agenda items to Jessica Gill to be discussed at the CIG's spring meeting.

SUMMARY OF RECOMMENDATIONS:

1. CIG recommends adding the following footnote 10 to Attachment I of the 2019 PST Agreement:

The CTC will be reporting on CWT recoveries for the Phillips River stock until 2024, when all age classes from the last tagged brood (2019) recruit to fisheries, however as the criteria for calculations of mortality distributions (which are the basis for CYERs) are: (1) recoveries available for three ages at least, and (2) minimum of 35 estimated recoveries per age, the CYER for Phillips cannot be calculated past 2022. The Phillips River will continue as an escapement indicator and Canada is continuing to assess options for a potential CWT indicator stock that is representative of Mainland Inlet Chinook stocks.

2. CIG recommends amending Phillips River in Attachment I of the 2019 PST Agreement as follows:

Stock Region	Escapement Indicator Stock (CWT Indicator Stock ⁸)	Canadian ISBM CYER Limit	US ISBM CYER Limit	Management Objective
	Phillips (TBD)	TBD	NA ³	TBD ⁶

3. CIG recommends reviewing the report and adding the incidental mortality report on their forward agenda.
4. CIG recommends sending the provided letter to management entities for their response (Attachment 1).
5. CIG recommends meeting with the Calendar Year Exploitation Rate Work Group as requested during the spring, summer, and fall 2022.
6. CIG recommends use of the management objective as a trigger for a CYER limit for each stock identified in Attachment I.
7. CIG recommends responding in the affirmative to first part of question (CYER limits apply each year as specified in the Treaty), and second question is separate issue addressed in paragraph 7.
8. CIG reviewed the Coded-Wire Tag and Recovery/Catch and Escapement Indicator Improvement (CWT&R/CEII) Work Group's 2021–2022 work plan (Attachment 2) and is in agreement with it.
9. CIG recommends removing the timeline (2022) associated with the review of alternatives to the CYER metric. Should an alternative metric be proposed, the CTC will be responsible for carrying out a timely review of the proposed metric consistent with their approved work plan.
10. CIG recommends removing the requirement to provide a completed Phase 3 PSC Chinook Model by January 2023 from the CTC's Treaty tasks. The completion of Phase 3 work

continues to be a high priority item but will be delayed as a result of other higher priority tasks.

11. CIG recommends amending the language in footnote 9 of Paragraph 2(a)(ix) to reflect the current Phase 2 PSC Chinook Model. Significant management changes will be compared to BPCV1-28 AC1.
12. CIG notes that they have received funding priorities for the Endowment Funds from the CTC and seek Commission's concurrence for the CIG to respond to the Southern Fund Committee with priorities for the Southern Fund Committee's request for proposals (Attachment 3). If requested, the CIG will also be prepared to respond to Northern Fund Committee on Chinook priorities.
13. CIG recommends sending forward agenda items to Jessica Gill to be discussed at the CIG's spring meeting.

{Date}

Dear {Name}:

The negotiations leading to the 2019 updates to Chapter 3 (Chinook salmon) of the Pacific Salmon Treaty (Treaty) reinforced our recognition that a collaborative approach is essential to successful management of Chinook salmon fisheries and Treaty implementation. An example is a new provision of the Treaty related to monitoring the performance of Individual Stock-Based Management (ISBM) fishery regimes. We are writing to request your assistance in implementing further improvements in the coastwide coded-wire tag (CWT) program to implement this provision of Chapter 3 more effectively.

The 2019 update to Chapter 3 of the Treaty includes new provisions to clarify and improve performance monitoring of the ISBM fishery regimes. Paragraph 5(a) of Chapter 3 establishes limits on the total adult equivalent mortality for the CWT indicator stocks identified in Attachment I monitored through estimates of calendar year exploitation rates (CYERs). If performance criteria are not met, paragraph 7(c) requires management entities to identify the fishery management actions that will be taken in future years to meet the criteria. These provisions increase the necessity that our coastwide CWT system provides management entities the information needed for Treaty implementation.

We appreciate the outstanding efforts of management entities to maintain and improve a coastwide data system that is fundamental to Chinook salmon management. However, a recent review identified several potential improvements that, if addressed, could increase our confidence in our estimates of CYERs. The potential improvements are discussed in depth in [Technical Report 46](#), but we would like to highlight four recommendations:

Recommendation 3.1.2. Prioritize funding to initiate improved fishery and stock assessment programs where the use of the proxy methods poses the greatest risk to accurate estimation of CYERs. These fisheries include the Central Sport, North Georgia Strait Sport, Canadian Juan de Fuca Sport, South Georgia Strait Sport, and Lower Fraser River Net.

Recommendation 4.4.1. Prioritize the implementation of studies to verify or recalibrate the estimated escapement for the five escapement indicator stocks found by the CTC to not meet CTC standards (Grays Harbor Fall, Quillayute Fall, Hoh Fall, NWVI Natural Aggregate, and SWVI Aggregate).

Recommendation 4.5.1. Conduct studies to test the assumption that the CWT indicator stocks accurately reflect exploitation rates on the escapement stocks and evaluate if a better CWT stock exists or could be developed. Prioritize the implementation of these studies for stocks such as the NWVI Natural Aggregate and Grays Harbor Fall where a significant difference exists between the geographic location of the escapement and associated CWT indicator stock.

Recommendation 5.1.2 Encourage management entities responsible for estimating CWT recoveries to provide the estimated CWT recoveries for each fishery with landed catch using indirect methods if

Attachment 1. Management Entities Letter

necessary. An example is the Puget Sound Freshwater Recreational analysis done by WDFW and presented to the CYER WG in February 2021 (K. Ryding pers. comm.).

For recommendations affecting fisheries or stocks within your jurisdiction, we are seeking to learn if you agree with the conclusions and recommendations of Technical Report 46 and, if so, what actions you are considering to implement the recommendations. We recognize that addressing the recommendations may be constrained, at least in the short term, by funding, biological constraints, legal requirements, or other factors. Where these constraints exist, we would be interested in learning how the Commission or the Endowment Funds might aid in the implementation of the recommendations and improvements in our coastwide CWT system.

Once again, we would like to thank you for your ongoing assistance and collaborative implementation of the Treaty.

Sincerely,

Scott Rumsey
Chair

Rebecca Reid
Vice Chair

Attachment 2: CWT&R/CEII Work Plan

PACIFIC SALMON COMMISSION WORK PLAN
2021-2022

Panel / Committee:

Coded Wire Tagging and Recovery and Catch and Escapement Indicator Improvement Committee (CWT&R/CEII).

Date:

This work plan is for review by the Commission during the February Annual Meeting, 2022 over Webinar.

Update on Bi-lateral Tasks Assigned Under the 2019-2028 PSC Agreement:

Currently no tasks have been formally assigned to this work group by the Pacific Salmon Commission.

This work group is intended to support the Parties in reviewing the CWT&R and CEII programs, and to assist each Party as it makes decisions on priorities and allocations with its respective domestic management authorities. Per Chapter 3, Section 2 (e), the work group shall:

- (i) *Create opportunities for the exchange of project results and conclusions, advancements in knowledge, discussion of the direction of these programs between the Parties, management entities, and knowledgeable individuals;*

Status Summary: The workgroup met for the first time in January 2022 during the PSC Post Season Meeting. A work plan was developed.

- (ii) *Review project results and conclusions from these programs and provide these reviews to the project proponents and the Commission; and*

Status Summary: No progress on this item has been made to date. Currently project summaries are not available for funded projects.

- (iii) *Identify, for the Commission, changes to projects or suggest new projects to fill gaps in knowledge.*

Status Summary: Initial progress on this item has been made. The US is reviewing proposals focused on recommendations from the Calendar Year Exploitation Rate Workgroup's Technical Report 46.

Committee Terms of Reference (TOR) were bilaterally endorsed in October 2020. The TOR specify that:

The work group shall consider convening, in conjunction with an existing PSC meeting and with the assistance of the Secretariat, workshops targeted at specific Chinook stock assessment topics selected in consultation with the CTC, CYER WG, and SFEC. Discussions during the sessions would promote understanding of the challenges, advances, and potential further improvements in

Attachment 2: CWT&R/CEII Work Plan

stock assessment in the PST area. In order to further enhance communication and address the requirements of paragraph 2(e) i-iii, abstracts from the presentations would be published as a PSC Special Report and included as addenda in the relevant annual report of the Pacific Salmon Commission, as appropriate.

Status Summary: No progress on this item has been made to date.

Obstacles to Completing above Bi-lateral Tasks:

Committee assembly and specific activities have been delayed. More progress on the above bi-lateral tasks is expected once initially funded projects have provided their respective progress reports.

Outline of Other Panel / Committee Tasks or Emerging Issues:

None

Potential Issues for Commissioners, including enhancement activities reported under Article V:

None

Potential Issues for Committee on Scientific Cooperation

None

Proposed Meeting Dates and Draft Agendas:

When	Who	Location	Purpose
January 2022	Bilateral CWTR/CEII Committee	Webinar/in- person	Members to meet and complete development of Committee work plan.
June 2022	Bilateral CWTR/CEII Committee	Webinar	Placeholder
September 2022	Bilateral CWTR/CEII Committee	Webinar	Placeholder

Status of Technical or Annual Reports:

Under development.

The CTC has reporting responsibilities in relation to this Committee in the form of an annual summary (Chapter 3, paragraph 2(b)(ix)).

Comments:

No additional comments.

Attachment 3: CTC letter to CIG on funding priorities



TO: Chinook Interface Group
FROM: Chinook Technical Committee Co-Chairs
DATE: February 10, 2022
SUBJECT: Southern Fund Committee Call for Proposals
CC: Tom Alpe, John Field

In July 2021, the Southern Fund Committee (SFC) requested feedback on priorities of interest to the Chinook Technical Committee (CTC) and the Chinook Interface Group (CIG), with the aim to incorporate advice as part of the process for developing the call for proposals for 2023. The SFC is interested in priorities for Chinook stocks that originate and contribute to fisheries that are in the SFC's geographic area of interest which includes southern British Columbia, Washington, Oregon, and the Snake River basin in Idaho.

Previously, the SFC and the Northern Fund Committee (NFC) have jointly funded high priority Chinook projects through two proposal calls: Very High Priority Chinook (VHPC, 2015–2018) and Sentinel Stocks Program (SSP, 2009–2014). The following proposed priorities for the SFC for the 2023 call for proposals were developed from recommendations included in the VHPC projects, SSP final report, Coded-Wire Tag Improvement Program (CWTIP) reports, Catch Estimates Report from the Incidental Mortality Work Group, and Chapter 3 of the Pacific Salmon Treaty.

The CTC recommends priorities under three broad categories: CTC analytical improvements, improvements to the CWT network, and improvements to catch and escapement estimation. The following priorities could be included in future calls for proposals from the SFC:

Attachment 3: CTC letter to CIG on funding priorities

Priorities for CTC analytical improvements:

- PSC Coast Wide Chinook Model and Exploitation Rate Analysis development using contemporary modelling software (e.g., R).
- Improvement of methods for stock and fishery assessments (e.g., estimation of spatial/temporal stock-age distribution, projection of maturation rates for incomplete broods, systematic evaluation of current analytical methods using the Data Generation Model).
- Improvements to the forecasting tools (e.g., models and evaluations) used to inform CTC analyses.

Priorities for coded-wire tag (CWT) network improvement:

- Sampling in fisheries and escapements, lab processing, and data reporting to support the recovery of adequate numbers of CWT to support estimation of precise statistics used in CTC analyses.
- Coded-wire tagging of CTC exploitation rate indicator stocks (single index tagging and double index tagging) designed to improve the quality and quantity of CWT data identified in PSC CWT guidelines.
- Improve precision and accuracy of CWT-based statistics used by the CTC.
- Accelerate processing and reporting of CWT data for the pre-season planning process.

Priorities for improvements in catch and escapement estimation:

- Continued or improved estimates of catch, terminal returns, and escapements to meet CTC data standards and support the Chapter 3 Catch and Escapement Improvement Initiative (CEII; e.g. development of more timely catch, terminal run and escapement data).
- Development of additional escapement goals and stock-specific exploitation rate management objectives needed to implement the Chinook management regime, targeted at stocks listed in Chapter 3 Attachment 1 of the Pacific Salmon Treaty.
- Examine the representativeness of exploitation rate indicator stocks for escapement indicator stocks and PSC Chinook Model stocks.
- Improve accuracy of escapement assessment programs.
- A rigorous, statistically designed field study to estimate hatchery composition of spawners in West Coast Vancouver Island (WCVI) aggregate population. This information could be used to provide estimates of natural production for the aggregate and perhaps for a domestic conservation unit on WCVI.
- Improve accuracy and precision in estimates of incidental mortality (e.g., improved methods used to estimate the incidental mortality using CWT data and to quantify releases, and studies to improve estimates of drop-off and drop-out mortality rates).

The CTC thanks the SFC for the opportunity to provide priorities for future funding cycles. We hope that our recommendations will result in strong proposals and enhance the work of the CTC.