PST Southern Coho Reference Points and Exploitation Rate Caps

DRAFT Engagement Report

July 2018

Fisheries and Oceans Canada

Pêches et Océans Canada

Prepared for Fisheries and Oceans Canada and the Pacific Salmon Commission

ESSA

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Prepared for:

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Abbreviations

CSAS	Canadian Science Advisory Secretariat
CU	conservation unit
DFO	Fisheries and Oceans Canada
ER	exploitation rate
IFCRT	Interior Fraser Coho Recovery Team
IFR	Interior Fraser River
LFR	Lower Fraser River
MU	management unit
PST	Pacific Salmon Treaty
S/R	spawner-recruit
SAR	Science Advisory Report
SoG	Strait of Georgia

EXECUTIVE SUMMARY

Under the Pacific Salmon Treaty (PST), Canada must decide upon an approach for identifying PST management reference points that demarcate the three PST status categories (low, moderate and abundant) for each Canadian southern Coho management unit (MU) and set caps on the maximum bilateral exploitation rate (ER) for each MU under each status level. This decision process has been informed and supported by both a science process and an engagement process. This document reports on the feedback received through the engagement process.

As described in the Engagement Plan, the purpose of this engagement process is to seek feedback from First Nations and stakeholders on their perspectives regarding: (1) the approach for determining status proposed through the science process, and (2) maintaining or changing the existing ER caps, as informed by the analyses from the science process plus supplementary information. Essential information and a set of specific engagement questions were compiled into a single discussion, which served as foundation for the engagement process. The discussion paper was distributed broadly, presented through two open-invitation webinars and formed the basis for a 1.5-day workshop.

The science process could only provide advice on developing PST reference points and associated ERs for the Interior Fraser River (IFR) MU due to data limitations, therefore the engagement process predominantly focused on reviewing the proposed approach for IFR Coho.

Participation and Feedback. The Engagement Plan and the Discussion Paper were both broadly distributed to First Nations and stakeholders in the recreational, commercial and conservation sectors. Although there was diverse participation from First Nations and a couple representatives from other sectors at webinars and the workshop, participation throughout the engagement process did not equally represent all sectors. However, there was still substantial breadth in the perspectives and views brought forward, and participants were genuinely surprised at the level of convergence on some of the dominant themes.

This document reports predominantly on the feedback received through the workshop and direct submissions to DFO. The major outcomes, emerging themes, and areas of convergence are summarized in the main body, with a more comprehensive record of the feedback provided in an appendix.

Integrating Escapement Data into Status Reference Points. None of the direct submissions and almost none of the workshop participants supported the proposed approach of setting PST reference points for the IFR Coho MU based solely on survival rates. There was strong interest, as reiterated numerous times, in incorporating escapement data into the status reference points for IFR Coho. Participants had multiple concerns about relying only on survival rates: a) survival rates may not reliably indicate if Coho are “doing well”; b) the estimates of survival may be quite poor and our ability to forecast survival rates is severely limited; and c) we actually have good escapement data for IFR Coho, so we should utilize it.

Based on these interests, a new framework for integrating survival rates and escapement targets into the status determination was proposed at the workshop. Workshop participants strongly supported this type of framework and six out of ten submissions explicitly supported a slightly modified version.

Status Reference Points. The vast majority of participants disagreed with survival rate break points used for the CSAS-proposed status reference points. Workshop participants strongly supported using 3% as the lower status reference point because it appeared to reflect a natural break point. All participants identified 3% or 3.5% as their preference for the lower status reference point. There was interest from many participants in setting the upper reference point at a level representative of periods of historically high abundance. From the workshop exercise, there was substantial agreement on setting the upper status reference points at 6%, with individual participants expressing preferences from 4.5% to 6.5% (Table ES-1). The submitted feedback also predominantly agreed with using 3% and 6%.

Exploitation Rate Caps. Under low status, roughly two thirds of participants supported maintaining the existing ER cap while the remaining third suggested decreasing it. The majority of direct respondents favoured decreasing the ER cap to 15%, and one respondent advocated increasing the ER cap as high as 24%. Those in support of maintaining the existing ER cap argued that if the US is guaranteed 10% and Canada is already managing domestically to 3-5%, then there appears to be negligible benefit of reducing the bilateral ceiling,

whereas keeping the ER cap at 20% would offer the benefit of providing Canada flexibility if survival does increase. Those in support of decreasing the existing ER cap wanted to constrain the total ER given conservation concerns.

Under moderate status, the vast majority of participants and respondents supported decreasing the ER cap. Only one workshop participant and one respondent offered support for maintaining the existing ER cap. Participants expressed concerns that the potential conservation implications of ERs near the existing cap would be unacceptable. There was a common perspective that moderate status should still be quite conservation focused.

Under abundant status, three quarters of workshop participants and two thirds of direct respondents supported decreasing the ER cap, though several individuals supported maintaining the existing ER cap. Those in support of maintaining had concern that there is no benefit for Canada to give away some of its potential future flexibility, especially if the US keeps the same entitlement either way - Canada could continue to make decisions domestically about target ERs, even if ERs are well below the cap, and keep that flexibility in case there are years with really high abundance. Those in support of decreasing the ER cap argued that the science results suggest that ERs greater than 45% will present serious conservation concerns and therefore it is imperative to remove the possibility of such high bilateral ERs even if the reduction is only coming from Canada's entitlement.

At workshop, the ER caps with the highest support were 20%, 30%, and 45%, for low, moderate and abundant status, respectively (Table ES-1). Through the written submissions, the ER caps with the highest support were 15%, 30%, and 40%, for low, moderate and abundant status, respectively, indicating preference for a more conservative approach toward low and abundant status than the sentiment at the workshop (Table ES-1).

Table ES-1. Dominant proposals for status reference points and exploitation rate caps emerging from the engagement process compared to the status quo.

		Low Status	Moderate Status	Abundant Status
Status Reference Points	**Status quo**	*n/a*	not formally defined	not formally defined
	Dominant proposal	*n/a*	3% marine survival	6% marine survival
Exploitation Rate Caps	**Status quo**	20%	40%	65%
	Dominant proposal	20%	30%	45% [1]

[1] The dominant proposal in the submitted feedback was 40%

Other Canadian Southern Coho MUs. Broadly, respondents expressed significant concerns about the lack of plans to assess and manage for the status of other MUs. Participants want to understand (a) the potential impacts and implications of currently excluding SoG and LFR MUs, and (b) what can/will be done to move toward including these MUs within the bilateral management framework.

1 Introduction and Background

This report documents the feedback received through the recent engagement process associated with establishing status reference points and exploitation rate (ER) caps for Canadian southern Coho management units (MUs) under the Pacific Salmon Treaty (PST).

The Government of Canada must decide upon its approach for assessing the status of Canadian Coho MUs and determining appropriate fishery reference points and the corresponding ER caps. Canada is required to make this decision to fulfil its obligations under the PST. This decision has been supported by both a science process and an engagement process, as described in the Engagement Plan[1] and Discussion Paper[2]. This document reports and summarizes feedback heard and received from First Nations and stakeholders through the engagement process.

The following associated documents are referred to throughout this document and are available through the Fisheries and Oceans Canada (DFO) Consultation website[3]:

- **Engagement Plan** – *"Coho Reference Points: Engagement Plan"*, distributed in January 2018
- **CSAS Science Advisory Report (SAR)** – *"Framework for Determination of Pacific Salmon Commission Reference Points for Status Determination and Associated Exploitation Rates for Selected Canadian Southern Coho Management Units"*
- **Discussion Paper** – *"PST Southern Coho Reference Points and Exploitation Rate Caps: Engagement Process Discussion Paper"*

1.1 Background and purpose of the engagement process

The Pacific Salmon Treaty (PST) has guided the collaborative management of Pacific salmon stocks originating in Canadian and US waters that are subject to harvest by the other Party since its inception in 1985. Fishing arrangements, captured under Annex IV of the PST, are subject to periodic renegotiation to address the evolving nature of fisheries management under the jurisdiction of both Parties. In this regard, negotiations have been underway since 2015 for most treaty chapters in preparation for the expiration of current arrangements at the end of the 2018 fishing season. This includes Chapter 5 which covers the management of Coho salmon fisheries in both the southern and northern boundary areas.

The purpose of the current engagement process is to review and seek feedback on the approach for identifying PST management reference points that demarcate the three PST status categories (i.e., low, moderate, and abundant) and determining corresponding exploitation rate (ER) caps or ceilings for Canadian Coho Management Units (MUs) under the Southern Coho Management Plan. This is a requirement of the Southern Coho Management Plan under Annex IV, Chapter 5 of the PST that has been in effect since 2009. Key points with respect to what is being sought during the engagement are summarized in the highlighted box below. The input gathered through this process will help inform the Government of Canada on the perspectives of First Nations and stakeholders with respect to desired outcomes and risk tolerances, and thus contribute to the final approach for establishing reference points and ER caps for the bilateral management of Canadian Coho MUs under the PST.

[1] See associated DFO Consultation website: http://www.pac.dfo-mpo.gc.ca/consultation/smon/pst-coho-tsp/index-eng.html

[2] http://waves-vagues.dfo-mpo.gc.ca/Library/40673972.pdf

[3] http://www.pac.dfo-mpo.gc.ca/consultation/smon/pst-coho-tsp/index-eng.html

Key Points:

- This engagement process focuses on Canada's obligation to provide maximum bilateral (Canada and US) exploitation rates (ER caps) for each PST status category of Low, Moderate, and Abundant, for Canadian Coho management units under the terms of Annex IV, Chapter 5 of the PST.
- Within each ER cap, explicit limits on the ERs for Canada and the US are established under the PST. Each country then manages within its ER cap through its own domestic fisheries management process and annual fishing plans.
- This means that within its portion of the PST ER cap, Canada will continue to implement its own annual domestic planning processes (*i.e.*, through the salmon Integrated Fisheries Management Plan (IFMP) development process) and determine fishery-specific, domestic management actions to implement. Domestic annual ER targets may be set less than or equal to the maximum permitted under the maximum bilateral ER cap for domestic management purposes.
- Any new bilateral ER caps will only come into effect for a 10-year period beginning with the 2019 fishing season with discussions on specific fishing plans for Canadian fisheries to take place in developing the 2019 IFMP through existing consultation processes.

1.2 Structure of Document

This document is organized into the following sections:

- **Section 1** introduces the report and provides some context for the overall engagement process.
- **Section 2** describes the main engagement mechanisms through which feedback was received from participants.
- **Section 3** summarizes the major outcomes from the workshop, including participant perspectives on status reference points and ER caps, and a participant-proposed integrated framework.
- **Section 4** summarizes major themes from the engagement feedback submitted directly to DFO.
- **Section 5** reports on feedback that was received regarding the engagement process itself.
- **Appendix A** provides full documentation of the feedback points raised throughout the engagement process.
- **Appendix B** presents the agenda from the engagement workshop.

2 Overview of Engagement Process

The feedback in this report was received through three engagement mechanisms.

2.1 Webinars

Two 2-hour webinars were held on April 11 and April 24, 2018. The objectives of the webinars were to: 1) summarize the material from the Discussion Paper and highlight key points; 2) provide an opportunity for questions and clarifications regarding the material; and 3) clarify the process for providing feedback on the material and engagement questions to DFO. The primary purpose was thus to help participants better understand the material and process, to provide a stronger foundation for either participation in the workshop or preparation of feedback to submit directly to DFO. The open invitation to participate was distributed widely among First Nations and stakeholders in the recreational, commercial and conservation sectors.

2.2 Workshop

A 1.5-day workshop, followed by a half-day First Nations meeting (i.e., Tier 1), was held on May 1-2 in Vancouver. The objectives of the workshop were to: 1) gather feedback on the approach for defining reference points and preferred options for ER caps; 2) understand and explore the factors that drive different views on the reference points and ER caps; and 3) facilitate discussion across sectors to develop a common understanding of different perspectives.

Participants were invited from First Nations (across different regions and regional bodies) and stakeholders in the recreational, commercial, and conservation sectors. The workshop had broad participation from First Nations, one recreational sector representative from the PSC Southern Panel, and no participants from the commercial or conservation sectors. DFO participants included staff from science, stock assessment, fisheries management, and regional headquarters. The overall goals were to ensure that participants had a strong understanding of the engagement questions being asked and the information available to support their recommendations, therefore being able to provide input on those questions throughout the workshop and/or subsequently through the engagement question worksheet submitted directly to DFO.

The general flow of topics and tasks is outlined below and the full workshop agenda is included in Appendix C. The technical information shared at the workshop closely matched the webinars but with significantly more time for questions, plus exercises and discussion time specifically targeting the engagement questions. Day 2 was revised based on input from Day 1. The final workshop flow was:

- A round table for participants to hear the overall perspectives of everyone present
- An overview of the CSAS science advice on PST status reference points
- A participatory exercise - initial perspectives on maintaining or changing existing ER caps
- Review of the conservation, management and implementation considerations associated with ER caps (as presented in the Discussion Paper)
- A presentation of a participant-proposed framework
- A participatory exercise – perspectives on CSAS-proposed status reference points
- A participatory exercise – perspectives on maintaining or changing existing ER caps
- Summary of feedback and key discussion points and next steps

The current report documents the feedback received through the engagement process and highlights the major outcomes from the workshop.

2.3 Engagement Questions Worksheet

The engagement questions outlined in the Discussion Paper were developed to ensure that all respondents, regardless of whether they were able to participate in the workshop, would address the same set of questions. These questions reflect the key areas where DFO wanted feedback. The Discussion Paper poses these questions throughout the document, as well as compiling them in a "worksheet" that respondents could fill in and submit directly to DFO. These questions were also built directly into the workshop design.

When the Discussion Paper was distributed in March, the deadline for submitting direct feedback was set for May 11, 2018 (one week after the workshop) but submissions that were received in the following several weeks were still incorporated into this document.

DFO received ten submissions. Nine of the ten submissions used the engagement questions worksheet, and four of the respondents using the worksheet provided additional feedback in their accompanying email or letter. We compiled, reviewed, and synthesized all of the feedback submitted to DFO, regardless of format. Section 4 of this report summarizes the key messages from the submitted feedback and Appendix A provides more comprehensive reporting on the breadth and depth of feedback received.

3 Summary of Workshop Outcomes

This section reports on the broad, emerging themes and outcomes that arose from the workshop, which was the focal mechanism for active engagement. Each subsection represents one of the major sessions in the workshop. The intent is to communicate the breadth of ideas and issues that were raised and highlight areas where there was notable convergence among participants. For greater depth and detail, Appendix A provides more comprehensive documentation of the points raised in the workshop.

3.1 Initial participant perspectives on overall process and content

Shortly into the workshop, we held a "round table" session to allow each of the participants to voice their hopes and/or concerns associated with the process and/or content of the overall engagement process. This gave everyone a chance to share their perspectives and to hear and understand the perspectives of others.

The following points were raised by multiple participants (roughly in order of frequency):

a) Concern about the uncertainty in the survival rate data, and hope that robust escapement data could be included in the analyses that influence ER cap decisions. This survival rate method is a new method, and it needs to be linked to escapement. Other research has cautioned using just a survival approach and promoted linking it with escapement.
b) Concern that poor data quality may impede proper management.
c) Concern about the state of salmon, and hope that Canada can make a decision that will protect and rebuild Interior Fraser (IFR) Coho stocks, and maintain their genetic and ecological diversity.
d) Concern that the other MUs are not being addressed at all in this approach and that "passive management" for those MUs is inadequate.
e) Concern that First Nations' interests may not be adequately acknowledged and integrated but with hope for better integration of the special relationship moving forward.
f) Concern about the sustainability of Coho fisheries.
g) Observation that, conceptually and empirically, there is no true, objective "moderate" status level – there is clearly a low level and a high level.

The following points were raised by individual participants:

a) We need to make sure we have got this right, otherwise fish and First Nations suffer.
b) There is a desire to see a management approach that aligns with the data that exists, acknowledging information we have to work with, and addresses all the MUs, not just IFR. The initial intent of this process was to develop an approach that could be applied to all MUs with limited data. But the current methodology was developed because we do not have quality data for the non-IFR MUs. This is not the only methodology we should be considering – maybe we should focus on escapement goals, which is the one part of the cycle we monitor quite well.
c) It seems by using only more recent data, we are perhaps limiting our data and perspective to a low productivity regime and setting ER caps based on that. But what happens if we shift into a higher abundance regime?
d) Concern about the sustainability or future trajectory of stock assessment funding.
e) Desire to see more technical analysis done on the demarcation of status zones, rather than just a qualitative, visual assessment (as per the SAR).
f) Given that there is not a well-defined "moderate" status, maybe high status should be tied to the higher conservation objective of 40,000 spawners (the long-term recovery objective).
g) Management of IFR is only "virtual". We do not want to mislead people (and future readers) to believe we have a strong scientific basis and solid data for our decision when we do not actually have much data.

3.2 Participant-proposed framework for reference points and ER caps for IFR Coho

On the morning of Day 2 of the workshop, one of the participants presented a proposed approach for using survival rates and escapement to determine status, along with proposed ER caps for each status level. Table 1 shows the proposed approach, incorporating the modifications that were made as part of the discussion of the original proposal. This proposal was discussed prior to the participatory exercises eliciting the views of participants on the status reference points and ER caps.

Table 1. Participant-proposed approach for determining status and ER caps for each status level, based on the combined use of survival rates and escapement data.

	Low	Moderate	Abundant
Survival rates (S)	S ≤ 0.03	Three consecutive years 0.03 < S ≤ 0.06	Three consecutive years S > 0.06
		and	and
Escapement	Monitored in Conservation Units (CUs) and subpopulations but no thresholds	Three consecutive years: • Half of subpopulations in each CU > 1000; and/or[4] • Aggregate MU escapement objective (*e.g.*, 27,000)	Three consecutive years: • All IFR subpopulations in each CU > 1000; or • Aggregate MU escapement objective (*e.g.*, revised 40,000)
ER cap [1] (US/Can)	**0.20** (0.10/0.10)	**0.30** (0.12/0.18)	**0.45** (0.15/0.30)

[1] The existing, default ER caps are 0.20, 0.40, and 0.65 for low, moderate and abundant status levels, respectively.

Discussion prompted by participant-proposed framework:

- Instead of determining the ER caps for each status level, shouldn't we reassess the ER cap if we reach a new regime (moderate or abundant)
    - Could put an asterisk next to it on the table, saying that for now, these ER caps have been determined, but we need to reassess if we move past a breakpoint.
- Let's get rid of the second options in the escapement cells. Get away from proxies and focus on sub-population measures.
    - No, I think you should try to meet the first escapement objective, then try to hit the other.
    - Some CU's not assessed as well – which might trigger failure. We don't want one sub-population to drive overall status.
- We want to better understand Conservation Unit (CU) allocation.
- The work has already been done – we have the marine survival and exploitation rates simulations, so I think we can look at this information and use it now.
    - The escapement data doesn't need to be re-worked. Let's just look at some "what-if" scenarios to make sure this framework holds up.
- This framework works in reverse as well (*i.e.*, moving from moderate to low). The conservation probabilities calculated were based on meeting those same escapement objectives, so this proposed approach is great because it's adding something that the stock-recruit based objectives should pick up anyway. This approach will pick up some of the error in the categorization.

[4] Workshop discussion had not resolved whether this operator should be "and" or "or".

Conclusions from workshop:

There was strong interest, as reiterated from numerous participants, in incorporating escapement into the status reference points for IFR Coho. Participants had multiple concerns about relying only on survival rates: a) survival rates may not reliably indicate if Coho are "doing well" (e.g., survival could be high while abundance is low); b) the estimates of survival may be quite poor (low accuracy) and our ability to forecast survival rates is severely limited; and c) we actually have good escapement data for IFR Coho, so we should utilize it. Given these concerns, there was strong support among workshop participants for the type of framework proposed, despite it not being possible to fully discuss all the components in detail. This proposal was presented as a complete "package" but with understanding that each of the components (i.e., survival thresholds, escapement indicators and targets, ER caps, time frames, etc.) could be modified based on further analyses and review. For example, there were unresolved discussions about whether or not both conservation indicators would need to be achieved, and whether three consecutive years was the right timeframe (other discussion had suggested that it might take five or more years to detect a change in survival rates).

3.3 PST Status Reference Points for IFR Coho

The CSAS work proposed that status should be determined based on marine survival rates, with the proposal of using 2% and 4% as status reference points. Participants discussed both the general approach and the specific reference points during the workshop. This subject was discussed on both Day 1 and returned to for further discussion and for an explicit elicitation exercise on Day 2, following the discussion of the participant-proposed framework.

On Day 1, several broad discussion points were raised:

a) There was general consensus that escapement data is more robust than survival rate data alone and that including escapement data as part of the status determination would better ground the approach. Some participants felt that the survival data alone is inadequate for informing decisions, and many participants expressed a desire to integrate escapement data into the process.
b) Participants observed that despite being required by the PST to identify three status levels, the survival data appear to show only two states (*e.g.*, high and low survival). Some participants therefore questioned the usefulness of having a "moderate" status level. However, others suggested that for management and conservation purposes it was beneficial to have a "grey zone" as a buffer to prevent immediately jumping from a heavily conservation-focused regime (*i.e.*, low status) to a harvest regime (*i.e.*, abundant status), even if it is not clear from the data where that zone should sit.
c) There was broad interest to move away from the 2% and 4% status levels. Given that there appears to be a well-defined break point around 3%, there was common interest in setting the lower status reference point to 3%, with some suggestions of increasing it as high as 4%. With respect to the upper status reference point, interest varied between keeping it at 4% and increasing it as high as 6 or 7%.
d) Generally, participants supported increasing the status reference points and integrating escapement data into status determination.

On Day 2, similar points were raised along with the concern, as frequently mentioned throughout the workshop, about if and how the other MUs will be considered and managed.

Workshop Exercise on Status Reference Points

Workshop participants asked to complete an exercise handout answering the following questions (from the engagement questions) aimed at understanding their perspectives on the status reference points:

➔ *Which statement best represents your perspective on the proposed status reference points?* (responses shown in Figure 1)
➔ *How do you think the status reference points should be changed?* (responses shown in Figure 2)

➔ *If you have a suggested alternative(s), please identify specific lower (low/moderate) and upper (moderate/abundant) status reference points?* (responses shown in Figure 3)

The results show strong convergence on: (a) disagreement with the proposed 2% and 4% reference points, (b) desire to increase the reference points, and (c) setting the reference points at 3% and 6%.

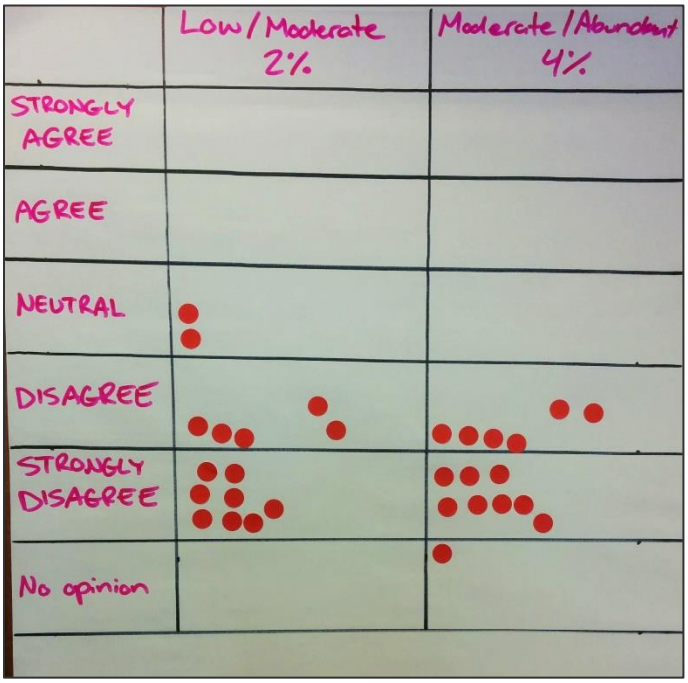

Figure 1. Participants' relative level of agreement with the current Coho status reference points. In the workshop exercise, participants were asked, "Which statement best represents your perspective on the proposed status reference points?"

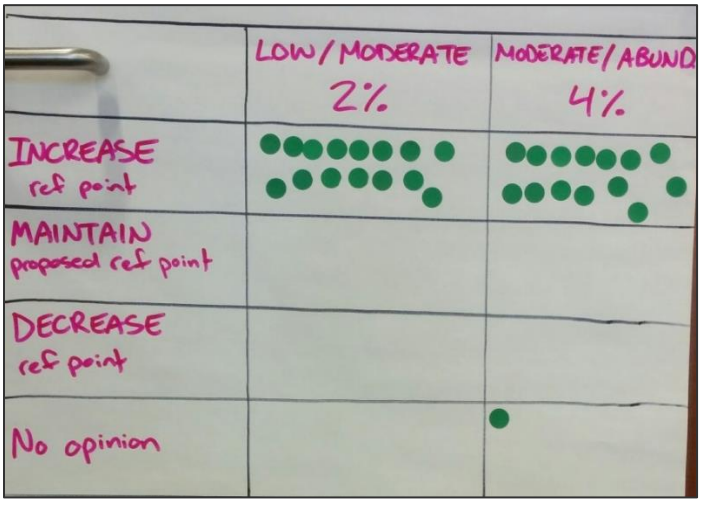

Figure 2. Participants' preferences on whether to increase, maintain, or decrease the CSAS-proposed Coho status reference points. In the workshop exercise, participants were asked, "How do you think the status reference points should be changed?"

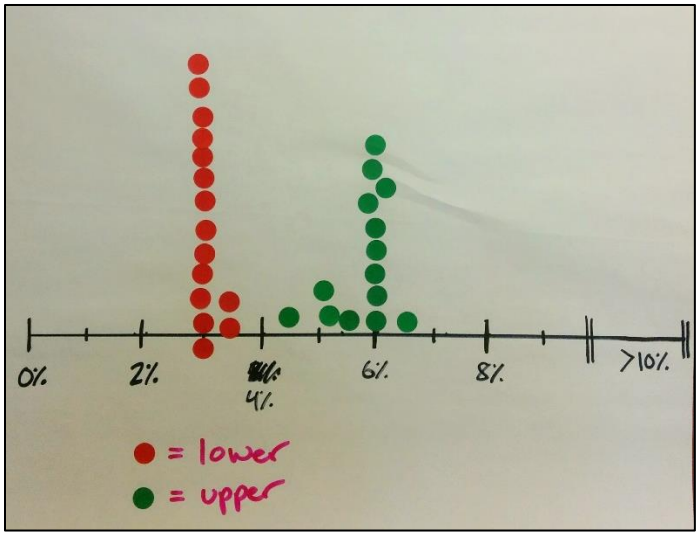

Figure 3. Participant input on preferred status reference points for Interior Fraser River Coho MU. In the workshop exercise, participants were asked, "If you have a suggested alternative(s), please identify specific lower (low/moderate) and upper (moderate/abundant) status reference points?"

Conclusions from the workshop

Participants had concerns with selection of reference points based on visual analysis, and particularly strong concerns with the selection of 2% and 4% as status reference points. It was very clear from both discussion and the workshop elicitation exercise, that the vast majority of participants disagreed with the CSAS-proposed status reference points and wanted them to be increased. The data seem to show a clear break point at 3% (which had been supported by quantitative analyses) and participants therefore had a strong support for using this as the lower status reference point. All participants identified 3% or 3.5% as their preference for the lower status reference point. There was interest from many participants in setting the upper reference point at a level representative of periods of truly high abundance, considering a much longer history than reflected in the data (e.g., pre-1980). Some participants expressed concern that if the reference point is too high, we may never achieve abundant status; others who supported using a higher reference point argued that this was appropriately conservative. Based on the workshop exercise, there was substantial agreement on setting the upper status reference points at 6%, with individual participants expressing preferences from 4.5% to 6.5%.

Some participants expressed concern that using higher survival rates for reference points could mean that the status level would have a higher ER cap (e.g., ER cap for low status could be based on 3% instead of 2%), but the counter-argument was that the decision on the ER cap for a status level is not deterministic and does not have to be increased if the status reference point is increased.

3.4 Exploitation Rate Caps for IFR Coho

The CSAS work included simulation analyses required to understand the conservation outcomes of choosing particular ER caps under different survival rates, but did not propose specific ER caps. The Discussion Paper presented a selection of results from the CSAS work framed around the existing ER caps for low, moderate and abundant status (*i.e.*, 20%, 40% and 65%, respectively), although it also did not advocate a particular position with respect to maintaining or changing the existing ER caps

At the workshop participants were asked to participate in an exercise to share their initial views on maintaining or changing the ER caps, before exploring the topic in greater detail and discussion. This exercise was similar to the final exercise (as below) but was exclusively for the purpose of catalyzing discussion at the workshop and thus the results are not reported. After the initial elicitation exercise, there were presentations and discussion on the conservation, management, and implementation considerations associated with setting ER

caps for each status level. On Day 2, following the discussion of the participant-proposed framework and the elicitation exercise on status reference points, participants returned to the same elicitation exercise on ER caps to share their final perspectives and suggestions with respect to maintaining or changing the ER caps for each status level. Although the initial exercise was only internal to the workshop, it facilitated an opportunity for participants to reflect on whether the additional information and discussion influenced their final recommendations or simply solidified their initial perspectives. The results from the exercise on Day 2 are reported here.

On Day 1, several broad discussion points were raised:

a) For moderate and abundant status, the majority of participants felt that the ER caps are too high and should be decreased; a couple participants supported maintaining the current ER caps; no one proposed increasing the caps.
b) For low status, the majority of participants supported decreasing the ER cap but there was also support for maintaining the existing ER cap in order to maintain Canada's flexibility within which to manage domestic ER.
c) Multiple participants argued that Canada should not restrict itself within the PST to a lower ER cap than the US (i.e., a total bilateral ER cap of <20% for low status when the US is guaranteed 10%), even if Canada continues to choose to manage to a lower level domestically.

Workshop Exercise on Status Reference Points

On Day 2, workshop participants asked to complete an exercise handout answering the following questions[5] (from the engagement questions) aimed at understanding their perspectives on the ER caps for each status level:

- ➔ *Which statement best represents your perspective on maintaining the current ER caps?* (Figure 4)
- ➔ *How do you think the PST ER cap should be changed for each status level?* (Figure 5)
- ➔ *If you have a suggested alternative(s), please identify a specific ER cap and/or a range of values you would find acceptable for each status level?* (Figure 6 and Figure 7)

The results for the first two questions, as compiled and discussed during the workshop, are presented below (Figure 4, Figure 5). The responses for the third question were not compiled during the workshop – participants had the option of submitting their worksheets for compilation after the workshop.

[5] NOTE: Given the results of the preceding elicitation exercise on status reference points, this exercise was conducted under the explicitly stated assumption that the status reference points being used are 3% and 6%.

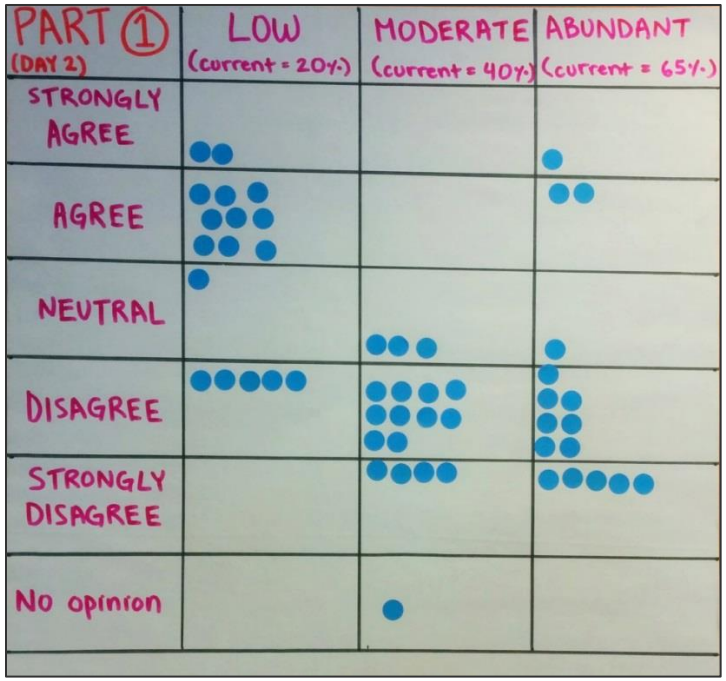

Figure 4. Participants' relative level of agreement on the ER caps for each of the status categories (low, moderate, and abundant). In the workshop exercise, participants were asked, "Which statement best represents your perspective on maintaining the current ER caps?"

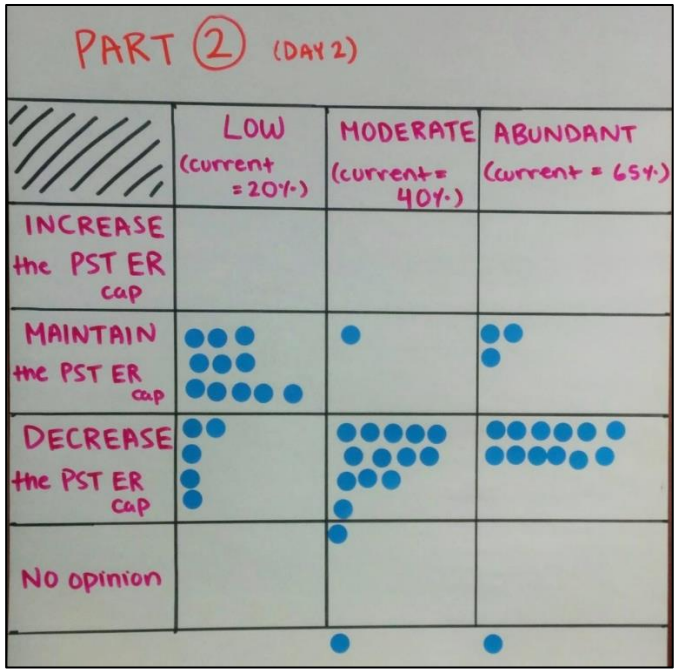

Figure 5. Participants' preferences on whether to increase, maintain, or decrease the current ER caps for each of the status categories (low, moderate, and abundant). In the workshop exercise, participants were asked, "How do you think the PST ER cap should be changed for each status level?" Note that the interpretation of the two dots placed outside the table could not be explicitly clarified at the workshop without breaching the principle of anonymity.

Following the workshop exercise, there was little discussion on the outcome beyond the key points evident from the exercise:

a) The majority of participants support maintaining the ER cap for low status, albeit roughly a third of respondents expressed their desire to decrease the existing ER cap.
b) For moderate and abundant status levels, a strong majority of participants (≥75%) disagree with the existing ER cap and favour a decrease
c) No one advocated increasing the ER caps for any of the status levels

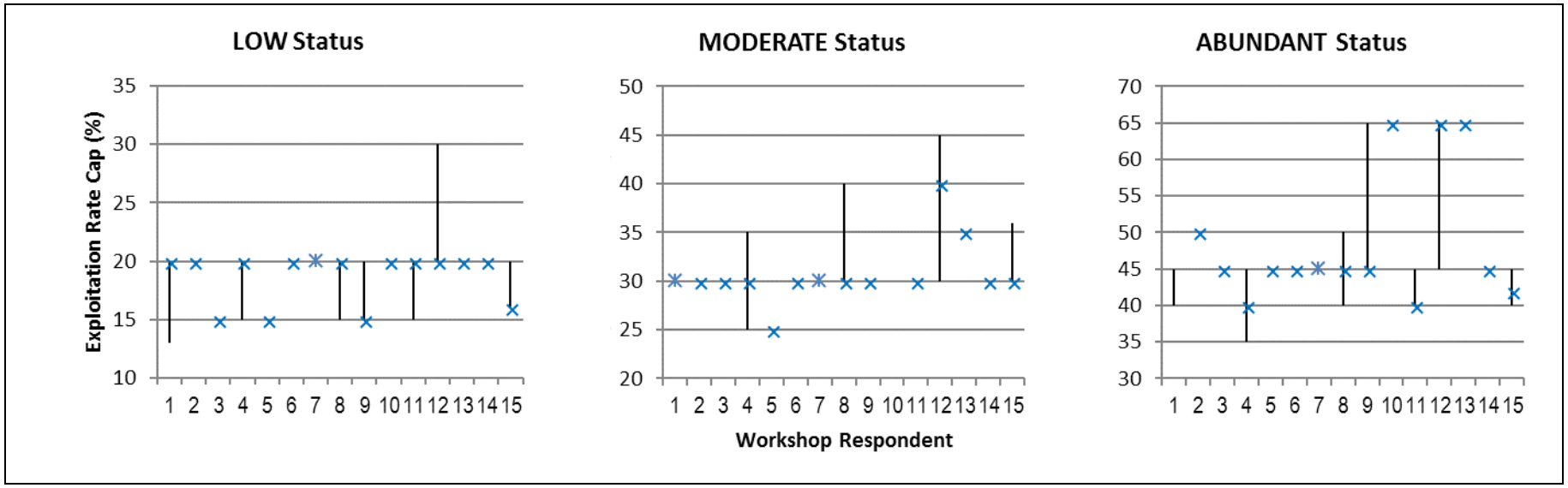

Figure 6. Participant input on preferred ER caps. On the workshop handout, participants were asked, "If you have a suggested alternative(s), please identify a specific ER cap and/or a range of values you would find acceptable for each status level?" Each 'x' represents a respondent's suggested ER cap for that particular status level. The vertical line represents the range between the values that the respondent indicated as their minimum and maximum acceptable ER caps for that status level. The 'x' with a small vertical line through it represents a user that chose the same value for their minimum acceptable, preferred, and maximum acceptable values. An 'x' with no vertical line means the respondent suggested an ER cap but did not explicitly provide a minimum and maximum acceptable value. Note that the Y-axis is different for each status level.

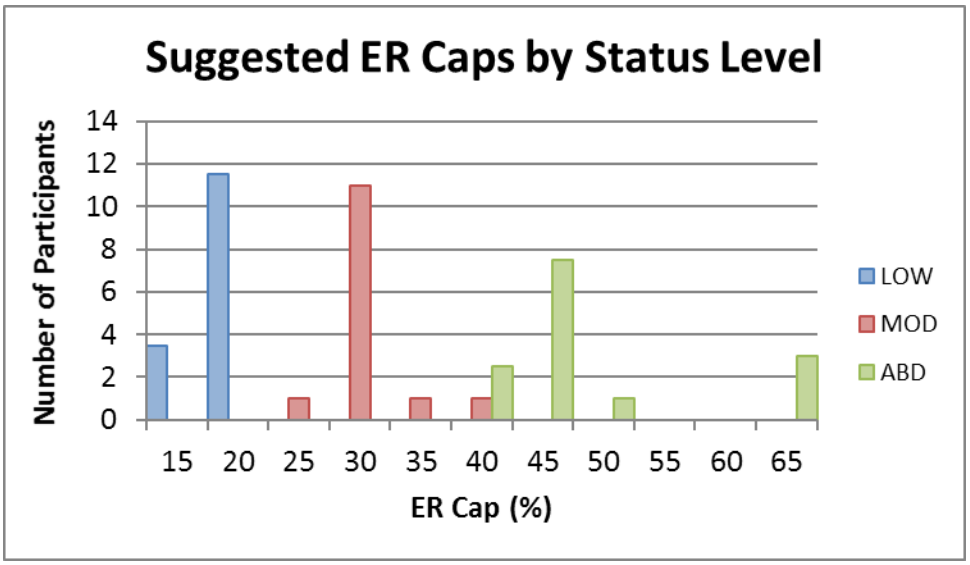

Figure 7. Participants' preferred ER caps by status level. This graph only shows the suggested ER caps for each status level and does not represent the minimum or maximum acceptable ER caps specified by workshop respondents.

Conclusions from the workshop

Under low status

Roughly two thirds of participants supported maintaining the existing ER cap while the remaining third suggested decreasing it. Those in support of maintaining the existing ER cap argued that if the US is guaranteed 10% and Canada is already managing domestically to 3-5%, then there appears to be negligible benefit of reducing the bilateral ceiling, whereas keeping the ER cap at 20% would offer the benefit of providing Canada flexibility if survival does increase. Those in support of decreasing the existing ER cap want to constrain the total ER to lower levels given conservation concerns. Despite assurances that it is not currently feasible under the existing treaty to reduce the US share to less than 10%, some participants still supported a decrease in the bilateral ER cap under the condition that it was split 50-50 with the US.

Under moderate status

The vast majority of respondents supported decreasing the ER cap and only one participant offered support for maintaining it. Participants expressed concerns that the potential conservation implications of ERs near the existing cap would be unacceptable. There was a common perspective that moderate status should still be quite conservation focused.

Under abundant status

Three quarters of respondents supported decreasing the ER cap, though several participants supported maintaining the existing ER cap. Those in support of maintaining had concern that there is no benefit for Canada to give away some of its potential future flexibility, especially if the US keeps the same entitlement either way - Canada could continue to make decisions domestically about target ERs, even if ERs are well below the cap, and keep that flexibility in case there are years with really high abundance. Those in support of decreasing the ER cap argued that the science results suggest that ERs greater than 45% will present serious conservation concerns and therefore it is imperative to remove the possibility of such high bilateral ERs even if the reduction is only coming from Canada's entitlement.

4 Summary of Major Themes from Submissions

This section reports on the major themes and outputs from the feedback received through direct submissions to DFO. The intent is to communicate the major ideas and to highlight areas where there was notable convergence among respondents. For greater depth and detail, Appendix A documents the points raised in the submitted feedback more comprehensively.

4.1 PST Status Reference Points for IFR Coho

None of the respondents supported the proposed approach of setting PST reference points for the IFR Coho MU based solely on survival rates. The majority of respondents support setting reference points based on both survival rates and escapement data. Many respondents felt that incorporation of escapement data into the reference points would be more conservative and provide a higher quality metric with less uncertainty. Most respondents raised concerns with the survival data – that the measurement is highly uncertain, that the data/tools are not robust enough to detect meaningful changes, and/or that the hatchery smolt survival rates are not representative of wild smolts. Many of the respondents supported status reference points based on survival rates of 3% and 6%[6], while also incorporating spawner data. Generally, the feedback submitted favoured applying the IFCRT short-term and long-term recovery goals (approximated by MU-level escapement of 27,000 and 40,000 spawners, respectively). Respondents also requested to have the summaries in the Discussion Paper of the probability of achieving conservation objectives updated based on these survival rates and objectives (i.e., Con1.5 rather than 20,000 spawners).

Six of the ten respondents explicitly supported a slightly modified version of the participant-proposed framework presented at the workshop (see Appendix A.1.2). The two differences are: 1) achieving either of two escapement targets is sufficient for moderate status (whereas discussion in the workshop had not resolved whether it should be one or both), and 2) the proposed ER cap for abundant status is reduced from 45% to 40%.

A number of respondents expressed that the high productivity regime is not well informed due to limited data in periods of historically high productivity. They therefore recommended that if IFR Coho were to show survival rates and recruitment consistent with a high productivity regime, then the present models and analyses being used should be re-evaluated.

4.2 Exploitation Rate Caps for IFR Coho

As in the workshop, the engagement questions worksheet asked multiple questions about respondents' views on maintaining or changing the existing ER caps, and their perspectives on acceptable and/or unacceptable ER caps for each status level. The majority of respondents disagreed with the existing ER caps across all status levels and favoured decreases in the ER caps. The only respondent that "strongly disagreed" with any of the existing ER caps advocated increasing the ER cap for low status up to as high as 24%, arguing that the ER caps (and managed ER levels) need to be high enough to support "base" commercial and recreational marine fisheries that intercept IFR Coho as by-catch.

The respondents' views on maintaining or changing the existing ER caps are shown in Table 2 and Table 3 (in a format that matches the structure of the results from the similar exercise at the workshop, as shown in Figure 4 to Figure 7).

[6] Note: The engagement question on status reference points, as expressed in the worksheet, was an open ended question that did not take the same structured approach as the workshop exercise on this subject.

Table 2. Respondents' relative level of agreement on the ER caps for each of the status categories (low, moderate, and abundant), based on submitted feedback. The engagement questions worksheet asked, "Which statement best represents your perspective on maintaining the current ER caps of [20%, 40%, 65%] for [low, moderate, abundant] status?"

	Low (current = 20%)	Moderate (current = 40%)	Abundant (current = 65%)
Strongly Agree			
Agree	●	●	●
Neutral	●	●	
Disagree	●●●●●●	●●●●●●	●●●●●●
Strongly Disagree	●		
No opinion			●
(left blank)		●	●

Table 3. Respondents' preferences on whether to increase, maintain, or decrease the current ER caps for each of the status categories (low, moderate, and abundant). The engagement questions worksheet asked, "If you do not support [the current ER cap for each status level]… Do you think the PST ER cap should be increased or decreased?"

	Low (current = 20%)	Moderate (current = 40%)	Abundant (current = 65%)
INCREASE the PST ER cap	●		
MAINTAIN the PST ER cap	*Not asked in engagement question worksheet†*		
DECREASE the PST ER cap	●●●●●●	●●●●●●	●●●●●●
No opinion	●	●	●
(left blank)	●	●●	●●

† Note: due to the framing of the question, the worksheet version of this question did not provide respondents with an opportunity to choose "maintain" – the "agree" responses from the previous question correspond with "left blank" in this question, and the "neutral" responses registered "no opinion".

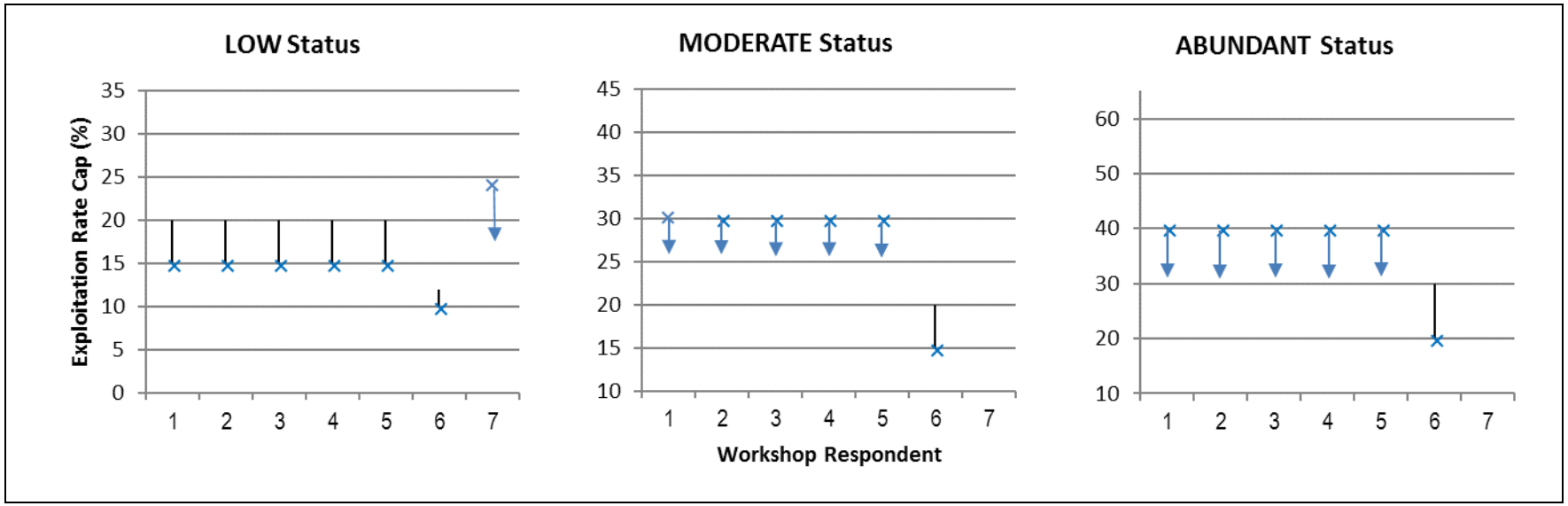

Figure 8. Respondent input on preferred ER caps by status level, as submitted to DFO via the engagement question worksheet. The engagement questions ask, "If you have a suggested alternative(s), please identify a specific ER cap or a range of values you would find acceptable and/or unacceptable for [low, moderate, abundant] status?" Each 'x' represents a respondent's suggested ER cap for the particular status level. The vertical line represents the range between the suggested value and maximum acceptable value for each participant. The descending arrows indicate that respondents provided a suggested ER cap and expressed that any value greater than that was unacceptable but we do not know if they have a minimum acceptable value (this was not explicitly asked) – e.g., for moderate status multiple respondents suggested the ER cap should be 30% and expressed that anything greater than 30% would be unacceptable but did not confirm whether their minimum acceptable ER cap would be 0% or some intermediate value. Note that the Y-axis is different for each status level.

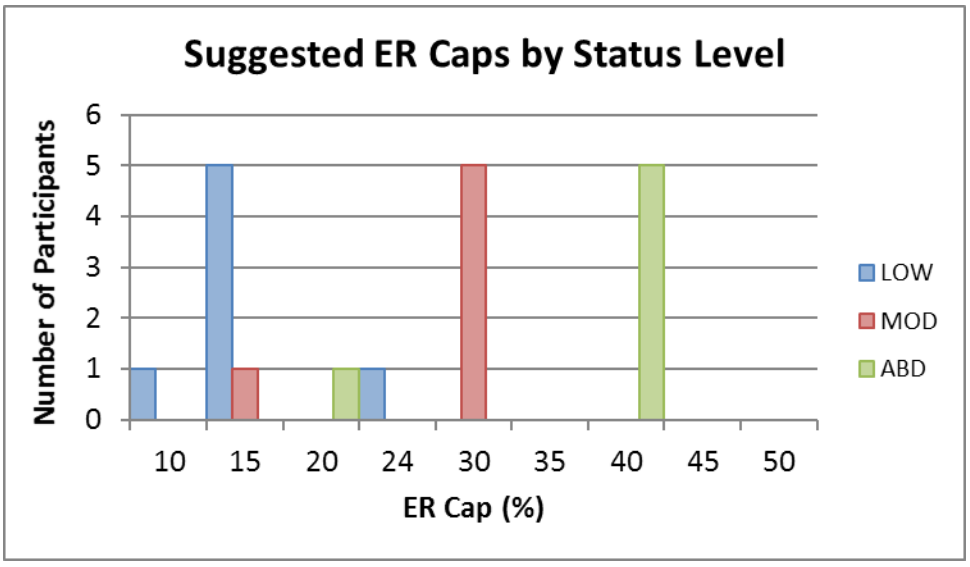

Figure 9. Respondents' preferred ER caps by status level, as submitted to DFO via the engagement question worksheet. This graph only shows the suggested ER caps for each status level and does not represent the maximum acceptable ER caps specified by respondents.

4.3 Non-IFR Management Units

Broadly, respondents expressed significant concerns about the lack of plans to assess and manage for the status of other MUs (*i.e.*, Strait of Georgia and Lower Fraser River). Coho management under PST should consider all MUs intercepted by bilateral fisheries. In the absence of adequate data to determine status or explicit ER caps for the SOG and LFR MUs, respondents were concerned that there are therefore no constraints on exploitation of these MUs by either Party. Participants want to understand (a) the potential impacts and implications of currently excluding SoG and LFR MUs, and (b) what can/will be done to move toward including these MUs within the bilateral management framework.

4.4 Other Substantive Feedback

This section includes comments or issues raised through the direct submission that do not completely align with any of the specific feedback questions:

- One respondent, who did not complete engagement questions, expressed the desire to have a coast wide management plan to protect all Coho stocks and the interests of coastal First Nations. The respondent felt that currently there are far too many missing links from this vision for effective management of Coho.
- One respondent emphasized that: "Canada must take additional domestic management actions to meet Coho conservation objectives and to ensure priority access to First Nations when harvest opportunities are identified (e.g. assignment of sufficient exploitation rate)."
- One respondent stated that: "DFO must prioritize adequate and dedicated resourcing to meet the obligations of the newly negotiated Coho Chapter, which includes determining the status of all Management Units."

5 Feedback on Engagement Process

Throughout the workshop, and especially during the closing, participants expressed their thoughts and views on the workshop and overall engagement process. Some of the feedback on process included:

- I think that the discussion on status ref points (e.g., whether selecting 2, 3, 4%) was great. The proposed solution to add in escapement data was also great.
- Discussion around reconceptualizing this with different breakpoints was great for me, the discussion about US-Canada was really good to remind me about domestic vs US scopes.
- I'm hopeful that when we discuss domestic fisheries, we use a more scientific approach and have some of these good discussions.
- The participants in this room don't represent everyone who was invited to attend.
- The kind of convergence we've got here is really impressive. Don't discount that. There are other voices to be heard, but what we did accomplish here was important. There was good representation, and surprising convergence.
- The other goal of this process was to determine a good method that we can now apply to the other MUs.

One participant raised the concern this overall process still needs to engage more with those whose values are at play because as technical staff or representatives of First Nations, many of the participants are able to help think about the technical details and the decisions that need to be made, but they are not in a position to make a decision or answer questions of risk tolerance.

As part of the workshop exercise on ER caps, participants were also asked whether the workshop improved their understanding of these issues/questions and whether participating in the workshop changed their perspectives (**Error! Reference source not found.**). The results showed that workshop was useful for increasing the understanding of participants, and furthermore that participation in the workshop discussion had an influence on shifting the perspectives of participants on their preferred ER caps.

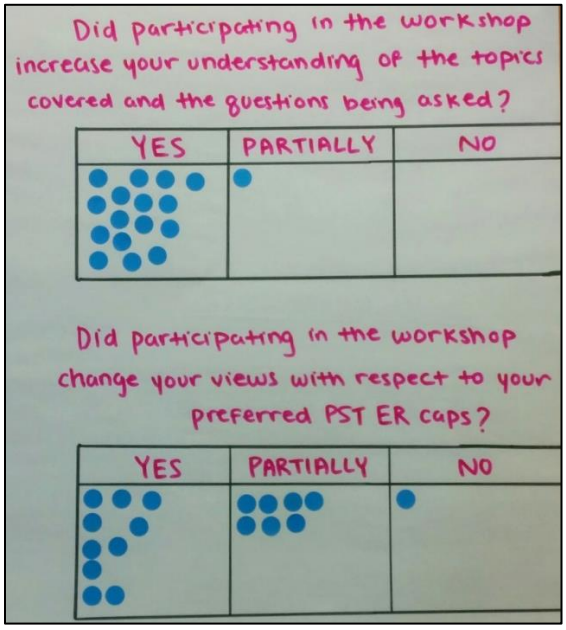

Figure 10. Feedback exercise on the perceived value of the workshop

Appendices

Appendix A. Feedback and Discussion by Engagement Question

This appendix includes comprehensive documentation of the feedback, comments and discussion provided by First Nations and stakeholders through the engagement process. This includes input via all three feedback mechanisms described in Section 2 (*i.e.*, webinars, workshop, and engagement question worksheet). Feedback is organized by the engagement questions, which were intended to serve as the key framework for soliciting feedback and shaping the workshop, and are thus a logical structure for organizing the feedback received. While comments and discussion sometimes do not clearly address a particular question, they have been placed with the question they best align with.

Under each question, the feedback is split between that which was heard throughout the workshop and that which was received outside of the workshop (*i.e.*, webinar, engagement questions worksheet and other direct submissions). This distinction is relevant because those that did not attend the workshop did not get to participate in the evolving discussion, and most participants at the workshop found that participating did increase their understanding, and many found that it influenced the conclusions at which they ultimately arrived. However, 6 of the 10 people/organizations that submitted feedback to DFO had also participated in the workshop. The majority of the feedback from outside the workshop came from the engagement questions and other direct submissions. Relatively little feedback on the engagement questions was received during the webinars as they were primarily focused on helping participants better understand the content of the Discussion Paper, clarifying any questions, and helping give participants and stronger foundation from which to either participate in the workshop or prepare responses to the engagement questions to submit directly to DFO.

The feedback from the workshop are presented as bullet points, which essentially represent the discussion as recorded. The notes have not been further consolidated or synthesized here, as the dominant themes have been summarized in the main body of the report. The feedback received through submissions has been consolidated since it was too voluminous to include as is and there was relatively large overlap in content among some of the submissions.

A.1. Question 1 – Developing Status Reference Points based on Survival

Engagement Question: Do you support the proposed approach of setting PST reference points for the IFR Coho MU based on survival rates? If not, why not?

A.1.1. Discussion points and feedback raised in the workshop

Day 1:

- I have more confidence in the escapement data than the marine survival rates
    - Can ER be based on spawning escapement and survival rates in a combined way?
    - Escapement would be a great thing to look at
    - Hope to have the freedom to expand on this, to blend escapement data with the survival rate approach (needs to be grounded)
- Through negotiations, are there going to be resources to address the gaps?
    - Resource discussions not part of PST negotiations, but there are requests to Canada to increase funding through a treasury board. We aren't there yet, but we're aware of the need for more funding

A.1.2. Feedback provided outside the workshop

Common feedback across multiple responses

All respondents answered "No" if survival rate data were to be used on its own.

Many respondents felt that the survival rate data have too much uncertainty and lack robustness. There was general agreement that survival rate data, if it were to be used, should be augmented with stock recruitment or escapement data, as these are more precautionary measures that alleviate sampling error that would arise with the sole use of survival rate data.

A number of respondents proposed the following table, similar to the participant-proposed framework (Table 1), but with some recommended alterations [red emphasis added]:

Status	Low	Moderate	Abundant
Survival Rate	S <= 0.03	Three consecutive years 0.03 < S <= 0.06	Three consecutive years S > 0.06
		and	and
Escapement	Monitored in CU's and subpopulations but no thresholds	Three consecutive years: • Half of subpopulations in each CU > 1000; or[7] • Aggregate MU escapement objective (*e.g.*, 27,000)	Three consecutive years: • All IFR subpopulations in each CU > 1000; or • Aggregate MU escapement objective (*e.g.*, revised 40,000)
ER cap (US/Can)	**0.20** (0.10/0.10)	**0.30** (0.12/0.18)	**0.40** (0.15/0.25)

Unique feedback received from individual responses

One of the respondents explicitly stated their support for using a 3-year period to confirm observed changes in the survival and/or escapement indicators. This is a feature of the proposed framework; however, none of the other respondents made any explicit comments.

There was concern that the establishment of these reference points used hatchery smolt-to-adult survival data rather than stock recruitment data, since hatchery smolts have a different survival rate than wild Coho. Similarly, there was apprehension about fluctuations in survival rates, and the question of how this data could be used to make in-season predictions to allow fisheries to harvest was raised.

Questions about whether survival data used included adjustments that account for the influence of habitat loss, lower water levels, and marine predators and environmental factors on productivity.

[7] The original participant-proposed frame work specified an "or" here but the discussion at the workshop landed on replacing this with "and/or". This subtle difference is not explicitly addressed in the submitted feedback worksheets and therefore it is unclear whether those whose submissions support this proposal intended to revert back to the original or not.

A.2. Question 2 – Selection of Status Reference Points

Engagement Question: Do you agree with the selection of survival rates of 2% and 4% as the status reference points for PST management purposes? If not, why not?

A.2.1. Discussion points and feedback raised in the workshop

Day 1:

- Concern about whether moderate zone really exists - but it's nice because it gives you a grey zone so that you don't just immediately flip from one regime to another (low/high), even if it's not clear where the moderate zone sits in the data
- Can we move away from 2 and 4%?
  - That's the point of this meeting
- I would say low would be below 3, 3-4 = moderate, above 4 = abundant
  - I agree with those ranges, and then anchor it with escapement data that would ground it
- Visually, I agree with those ranges
- The low, moderate, abundant levels are based on data from 80's and on… Abundance was greater prior to this period (millions of Coho in the 70's). "What is *abundant?"* – the 80's weren't abundant relative to the 60's and 70's when one could catch 2 million over 2 days. Therefore, we might even want to move the ER cap for the abundant status (ie. 4%) up quite a bit as well.
- We don't have the data we need to adequately inform our decision here. We need to align management program with resources
- Any reason why the breakpoints need to be in the observed data? What if we moved the lower to 4%, and the upper to 7%, is that too conservative?
  - We could change first breakpoint to 3, then the other would be at 7% or above.

Day 2:

- What are the implications for other MUs? How can this be shown?
  - What is the plan for other MUs?
  - We need a [monitoring / assessment] pulse to establish/check relationships between other MUs
- As a fisher, I chose a lower number for the upper breakpoint, because I would like to see escapement optimized. I support proposed suggestion of a reduction in the ER at the abundant status. Concerns of never reaching abundant status – don't want to forego harvest due to an increase. I do support reduction in the ER, but with lower upper status reference points.
- Why are we lowering our abundant status? The US is not going to reduce its upper cap.
  - 65% under any model was intangible.
  - It's in Canada's interest to make sure we are as flexible as possible.
- We need to be careful, because there is large variation regarding these breakpoints (close to 3% you can harvest 40%, but closer to 1.75, it's much lower) – there are a steep curve at the lower levels. The benefit of 3% is we aren't forced into moderate status early.

A.2.2. Feedback provided outside the workshop

Common feedback across multiple responses

Many respondents agreed that the proposed survival rates of 2% and 4% should not be used. The argument was made that these breakpoints were based on an arbitrary visual assessment, and that a large amount of uncertainty exists in the survival rate and recruitment data. It was highlighted that recruitment in the range of 0-2% is indistinguishable from 2-3%.

Many respondents agreed that survival rates of 3% and 6% should be used as status reference points.

It was recommended by many that recruitment and survival rate data prior to 1984 should be considered, and that survival rate data should not be utilized on its own.

Unique feedback received from individual responses

It was highlighted that answering this question is impossible without properly defining the moderate status zone to make an informed recommendation on the breakpoints. The proposed survival rates (2% and 4%) were supported under a regime where the moderate zone encompasses the higher end of the low productivity zone, and survival rates of 3% and 6% were supported under a regime where the moderate zone encompasses the lower end of the high productivity zone.

Another respondent supported the 2% and 4% survival rates but emphasized the need to determine at what resolution this can be monitored, measured, and managed. Concern was raised that setting a low ER on IFR Coho would constrain recreational fisheries. It was indicated that one area of the Strait of Georgia used to house 7-8 small boat rental business through the 1980's, but now there are only 1 or 2 still in business at a much smaller scale than in the 80's and 90's. It was recommended a total marine ER of 6% (as what was effectively applied in 2014 when recreational Coho limits were 1 per day) should be used as the base for the marine recreational fishery to operate within, with the commercial fishery fluctuating with changes in sockeye stocks.

There was interest to see the years added to the scatterplot of recruitment versus survival rate for IFR (Figure 3 in the Discussion Paper) to be able to see if there had been a temporal shift in productivity.

A.3. Question 3 – Conservation Objectives

Engagement Question: Are these conservation objectives appropriate for assessing conservation outcomes of different ERs under different survival levels? If not, what would you suggest as alternative objectives or as an alternative approach for assessing conservation outcomes of different ERs?

A.3.1. Discussion points and feedback raised in the workshop

Day 1:

- Why is 20,000 used for illustrative purposes and in discussion paper, rather than the SAR 1.5 conservation objective
    - This objective was used because we thought it would be easier for people to understand
    - Is 20,000 going to deliver the Interior Fraser Coho Recovery Team (IFCRT) goal?
    - I think there was a description in the discussion document
    - 1.5 conservation objective actual management conservation unit calculated. 20k meant to be surrogate of short-term, 40k meant to be a surrogate of long-term.
    - We had to use one to summarize, but it's not the only conservation objective
- CSAS work is not able to reach model levels that we reach in actuality
- Concerned about model accuracy at low abundance, and would like to be precautionary and use depensatory model
    - CSAS process decided that all models should be included because they are all plausible
- When will we talk about probabilities in the table? Over 10 years, 'how many times would I like to see the objective met'? There will be a difference in the probability of achieving objectives.
    - Could we adopt a probability recovery exercise form past work that has been done?
    - Need to consider hierarchy of objectives. Discussions of probability and risk tolerance should be wholistic.
    - Probability of achieving conservation objective is only one objective, and decisions need to made integrating all objective (and models). Risk tolerance is implicit in discussions of tradeoffs.

Day 2:

- Objective 1 is that the escapement to each CU such that at least half of the subpopulations in the CU will meet or exceed 1000 spawners. The Con1.5 and 27k are based on newer data and is better (than the legacy 20k value). Con1.5 is the lowest probability of meeting the objectives and is in the spirit of the short-term objective.
- What is the difference between 20k and 25k?
    - 25k was never a thing – it went specifically from 20k to 27k. We don't know where that 25k value came from.
    - Con1.5 is approximately equivalent to 27k spawners at MU-level. It seems that perhaps 25k was used a rough proxy at some point rather than 27k (to use round numbers)?
    - We need to now do the same analysis on that 40k. But that's not going to happen before the PST decision, is it?
    - You can do that this afternoon. (ie. it should get done before the PST decision. Need to do it now).
- Can we flag in this process about what was said about the different between 0% and 1% survival – is there someway to flag that moving forward in the treaty – to include it in the treaty?
    - No way to address that in this Treaty. I think that's a domestic issue. Usually things go bad coast-wide.

A.3.2. Feedback provided outside the workshop

Common feedback across multiple responses

Most respondents agreed that assessments should be based on the updated short-term recovery goal of 27,000 spawners, and the long-term recovery goal of 40,000 spawners.

Generally, there was agreement that Conservation Objective 1.5 (25,000 spawners [27,000]) should be used for assessing conservation performance (low /moderate status reference point) under different ERs and survival rates as it best approximates the revised IFCRT Short-Term Objective.

Suggestions were made for the probability analysis to be repeated with the revised IFCRT Conservation Objective spawner abundances (*i.e.*, 27,000 and the revised long-term recovery goal).

Unique feedback received from individual responses

It was recommended that the simulation models be re-evaluated for the high productivity regime.

One respondent raised concern that the two modified stock-recruitment regressions don't consider the newer lower productivity regime of the Coho, and that changes in productivity due to environmental factors, habitat loss, and marine predation have not been considered.

Only one respondent expressed explicit agreement with the proposed conservation objectives, with no further feedback.

Feedback from webinars

One respondent was concerned that the omission of older data may bias the model results. They felt the high recruitment years should be used in the development of the models.

A.4. Question 4 – Implementation Considerations

Engagement Question: Do you have comments, concerns or suggestions regarding the implementation considerations?

A.4.1. Discussion points and feedback raised in the workshop

Day 1:

- We need to anchor survival rates with escapement data – we should combine the two
- How many years do we need to look at to identify regime shift?
- Post-season assessment – there are many issues with this. Lots of uncertainty because it's based on models that can't be validated, and old data – Coho distributions may no longer apply. Post-season assessments to see if we've met the objectives is a challenge.
- The tools for assessment are the same as the tools the planning is based on – this creates issues and needs to be dealt with.
- Long-term assessments become more important for regimes that fluctuate a lot – this is the case for us stuck in a low regime -we need to make sure a jump into a different status level isn't just a blip and is actually a regime shift.

A.4.2. Feedback provided outside the workshop

Common feedback across multiple responses

Broadly, respondents were concerned about the lack of plans to manage for the status of other MUs, namely the Strait of Georgia and Lower Fraser River MUs.

Most respondents indicated that the focus will need to be on conservation objectives for the low status. Management must consider data and model quality for estimating survival rates and establishing ER caps. The frame of reference underpinning sustainable harvest and escapement benchmarks should also be considered. Domestic management within bilateral ER caps should reflect the current low productivity period.

Unique feedback received from individual responses

One response expressed concern about the lack of data, and that the Straight of Georgia and Lower Fraser MU-conservation objectives are not available due to this lack of data.

It was mentioned that changes in migration patterns, fishery contributions, Recreational Fishery demographics, and environmental factors should be considered.

An individual respondent felt that discussions surrounding changing ER caps is not useful unless it includes discussion on changing the ER cap under which the US operate, which is currently fixed. It was also mentioned that all 3 models should be considered with equivalent weight.

One response recommended conducting analytical work beyond what is reported in the Discussion Paper to assess potential relationships between survival and abundance:

> *The Fig. 3 survival figures reported in the 2018 EPDP shows two clusters: one w/ total recruitment <100,000 and survival <4%, and another w/ total recruitment >100,000 and survival >3.5%. A quick renumbering shows there were 21 points with low abundances (<100,000) and low survival rates (<4%) all for 1992-2012. Only 10 points for the other cluster, all before 1992. So the survival estimates may be influenced may be influenced by abundance levels. Cut-off of 3.5% may be even better than 3%, and one might expect more reliable figures when abundances >100,000 fish.*

This response asserted that none of the 3 stock-recruit models fit the entire times series well. The distribution of residuals obtained after inclusion of co-variates should be shown, and major assumptions used to account for sources of uncertainty for the model components should be mentioned.

DFO should have a preference of stock-recruit model and reference point/ER cap scenario, and not simply rely on stakeholders to decide on preferences. The merits of new scenarios and caps based on the preferred

position should be shown in a table, at a minimum for comparative purposes. Figures in the tables should be recomputed using survival cut-off points of 3% and 6%.

Feedback from webinars

It was recommended that addition data like DNA be incorporated, aside form coded wire tag data.

One respondent wondered if considerations will be made regarding fish that will be left over for bears, whales, upstream and downstream.

Concern that we were looking for a methodology to put caps on catch where we were lacking data to determine those caps – we have no caps on those MUs. Only control we have is over the plan, and implementation in the Interior Fraser, but we have no safety net for the other MUs.

A.5. Question 5 – Views on Maintaining Current ER Cap for Low Status

*Engagement Question: What are your views on maintaining the current ER cap of 20% for **low** status?*

a) *Which statement best represents your perspective on maintaining the current ER cap of 20% for **low** status (choose one – strongly agree, agree, neutral, disagree, strongly disagree, or no opinion)?*
b) *Which factors were most important in supporting your perspective?*

A.5.1. Discussion points and feedback raised in the workshop

Day 1:

Part (a): Results summarized in Figure 4.

Part (b):

- Low category is the most important one – I put strongly agree for part 1, because I don't see why we would select less than what the US is operating at. Low category constrains fishing management opp., the US will not go below 10% (inconceivable), why would we accept less that the US (equity and feasibility)
- Counterpoint to previous point, I said strongly disagree for low status solely based on the numbers, no management perspective – I did this because if the exploitation rates are accurate, the average for those years is 13% ER, at the same time period, the marine survival was about 1.1%, so the IFR Coho are being fairly stable with what we're doing. Escapement holding for 2004-2005 (except 2014). At most, ER caps should be 15% (not considering Canada-US).
- No way US will go below 10%. I like it the way it is, and Canada can decide to operate lower internally.
- I agree. We can operate closer to 3%, but still have the option to bump it up to 10% if abundance is better. Good to have the option. 20% gives flexibility, especially at higher survival (e.g., what if status reference point is higher)
- I was thinking about our ability to control fisheries, we can't control them too much, so better to be conservative
- For abundant status, I answered "no opinion", but I think 65% is high and should go lower
- For abundant, simulations, even with Ricker base 50/50, should be looking lower.
- Even at high smolt survival rates 65% is higher than usual harvest rate. Management for harvest unsustainable.
- Concern is that we're trying to establish an ER cap, but even within a category there is a range of marine survivals, so the probabilities are going to vary. So how do you pick a cap that reflects that low status variability?

- Important to think about that these are ER caps, not ERs that will happen all the time. Domestically, we have opted to harvest at a much lower exploitations rate than our cap, so if you put faith in the system working, you can parse each status level into smaller status levels. So as long as you know where you are in terms of survival, the caps aren't that important
- The process needs to engage more with those whose values are at play. We are not in a position to make a decision. We can help but can't answer the question of risk tolerance.

A.5.2. Feedback provided outside the workshop

Part (a):

STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	No opinion
	1	1	6	1	

Part (b):

Common feedback across multiple responses

Those who selected "DISAGREE" emphasized that The IFCRT Objective 1 (20,000 spawners) was only achieved in 7 of 12 years (58%), and that reduced bilateral ERs (less than 15%) are needed to ensure meeting IFCRT Objective 1 as a minimum, but do not provide any prospect for rebuilding.

Multiple responses stated that the difference between bilateral ER caps and domestic management constraints may be confusing and/or misleading to respondents. If bilateral PST ER caps are maintained so not to limit Canada's flexibility within the Treaty, then Canada should be required to take additional actions through domestic management to reduce ERs to less than 15% on the IFR MU.

Unique feedback received from individual responses

Rationale provided by the respondent that selected "AGREE" is that fisheries are currently managed conservatively, and the average post-season ER of 14% is well under the 20% for low status.

The respondent that selected "STRONGLY DISAGREE" maintained that the ER caps need to be managed to diminish constraints on domestic fisheries, while the full ER is used in planning for domestic fisheries.

The "NEUTRAL" respondent provided no rationale.

Feedback from webinars

One respondent expressed the view that it doesn't make sense to lower our ER caps, since we are already operating lower than our 10% cap. We should just stay where we are, or even go higher.

A.6. Question 6 – Views on Potential Changes to Current ER Cap for Low Status

*Engagement Question: If you do not support a PST ER cap of 20% for **low** status (i.e., "disagree" or "strongly disagree" above):*

a) *Do you think the PST ER cap should be increased or decreased for **low** status (choose one – increase, decrease, no opinion)?*[8]
b) *If you have a suggested alternative(s), please identify a specific ER cap or a range of values you would find acceptable and/or unacceptable for **low** status?*
c) *Please explain your rationale. Which factors were most important in supporting your decision?*

A.6.1. Discussion points and feedback raised in the workshop

Part (a): Results summarized in Figure 5.

Part (b): Results summarized in Figure 6 and Figure 7.

Part (c): See A.5.1. Questions 5-10 were discussed in an integrated manner at the workshop and Section 3.4 provides a synthesized summary of the workshop discussion on participants' views on maintaining or changing ER caps.

A.6.2. Feedback provided outside the workshop

Part (a):

INCREASE	DECREASE	No opinion	(left blank)
1	6	1	1

- The respondent who selected INCREASE had selected "STRONGLY DISAGREE" in question 5
- The respondents who selected DECREASE had selected "DISAGREE" in question 5
- The respondent who selected No opinion had selected "NEUTRAL" in question 5
- The respondent who left this question blank had selected "No opinion" in question 5

Part (b):

	Submitted responses						
ACCEPTABLE PST ER caps for low status:	15%	15%	15%	15%	15%	10%	< 24%
UNACCEPTABLE PST ER caps for low status:	> 20%	> 20%	> 20%	> 20%	> 20%	> 12%	
(answer for "a")	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease	Increase

[8] NOTE: In the engagement questions, respondents were prompted to answer this question only if they did not support the existing ER cap, whereas in the workshop this question included a "maintain" option so that it was applicable to everyone regardless of how they answered the previous question.

Part (c):

Common feedback across multiple responses

"Refer to [the common rationale provided in] Question 5 (b)."

Unique feedback received from individual responses

The respondent who answered "No opinion" for parts (a) and (b) noted that for the current 2% breakpoint regime, changing the ER caps is only relevant if the US cap is reduced, and that based on the low productivity simulation models put forward (1% and 1.75%), the ER within the low status zone should not exceed 15% in order to meet the conservation goals >50% of the years for all 3 stock-recruit models. However, if the breakpoints are shifted to 3%, the ER cap for low status is sufficient. This is contingent on domestic management constraining ER targets below 20% when necessary.

One of the 6 respondents who answered "DECREASE" argued that the desire to limit Canada's [reduction in] flexibility within the Treaty is not a robust justification. There is little evidence that Canadian wild Coho stocks can sustain an ER >15% when ocean survival is low. Even if ER cap of 10% chosen, there will errors, and the realized limit may end up at 12-15%. Emphasis should be on rebuilding all weak/depleted stocks as rapidly as possible to protect biodiversity.

The respondent who selected "INCREASE" for part (a) stated that the ER caps need to be set and managed with consideration to the commercial and recreational marine fisheries that intercept Interior Fraser Coho as by-catch - neither fishery is targeting Interior Fraser Coho.

A.7. Question 7 – Views on Maintaining Current ER Cap for Moderate Status

*Engagement Question: What are your views on maintaining the current ER cap of 40% for **moderate** status?*

*a) Which statement best represents your perspective on maintaining the current ER cap of 40% for **moderate** status (choose one – strongly agree, agree, neutral, disagree, strongly disagree, or no opinion)?*

b) Which factors were most important in supporting your perspective?

A.7.1. Discussion points and feedback raised in the workshop

Part (a): Results summarized in Figure 4.

Part (b): See A.5.1. Questions 5-10 were discussed in an integrated manner at the workshop and Section 3.4 provides a synthesized summary of the workshop discussion on participants' views on maintaining or changing ER caps.

A.7.2. Feedback provided outside the workshop

Part (a):

STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	No opinion
	1	1	6		

- One respondent left the entire question blank.

Part (b):

Common feedback across multiple responses

The six respondents who selected "DECREASE" for (a) were concerned that the moderate status was not clearly defined (visually assessed), and that based on the simulations provided, a 40% ER would not achieve the short-term 20K Conservation for 2 of the 3 stock-recruitment models. However, at an ER of less than 30%, there is a 50% or greater probability two of the three stock-recruitment models would achieve the short-term Conservation Objective. These probabilities would change with re-analysis of the short-term Conservation Objective. They asserted that within the existing bilateral ER Caps, Canada should adjust domestic exploitation to reach the desired probability of achieving a conservation objective

Unique feedback received from individual responses

The respondent who answered "NEUTRAL" in (a) left this part blank.

The respondent who answered "AGREE" in (a) argued that Canada and US domestic fisheries are already managed conservatively. The respondent recommended lowering the ER cap if it was consistently not being met.

A.8. Question 8 - Views on Potential Changes to Current ER Cap for Moderate Status

*Engagement Question: If you do not support a PST ER cap of 40% for **moderate** status (i.e., "disagree" or "strongly disagree" above):*

*a) Do you think the PST ER cap should be increased or decreased for **moderate** status (choose one – increase, decrease, no opinion)?*
*b) If you have a suggested alternative(s), please identify a specific ER cap or a range of values you would find acceptable and/or unacceptable for **moderate** status?*
c) Please explain your rationale. Which factors were most important in supporting your decision?

A.8.1. Discussion points and feedback raised in the workshop

Part (a): Results summarized in Figure 5.

Part (b): Results summarized in Figure 6 and Figure 7.

Part (c): See A.5.1. Questions 5-10 were discussed in an integrated manner at the workshop and Section 3.4 provides a synthesized summary of the workshop discussion on participants' views on maintaining or changing ER caps.

A.8.2. Feedback provided outside the workshop

Part (a):

INCREASE	DECREASE	No opinion	(left blank)
	6	1	2

- The 2 respondents who left this question blank, also left part (b) and (c) blank. The respondent who answered with "No opinion" also answered with "No opinion" for part (b) and (c).

Part (b):

	Submitted responses					
ACCEPTABLE PST ER caps for moderate status:	≤ 30%†	≤ 30%†	≤ 30%†	≤ 30%†	≤ 30%†	15%
UNACCEPTABLE PST ER caps for moderate status:	> 30%	> 30%	> 30%	> 30%	> 30%	> 20%
(answer for "a")	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease

† "assuming full utilization of ER cap at determined Status level"

Part (c):

Common feedback across multiple responses

Answers given by the majority of respondents in parts (a) and (b) are based on the simulation results and the probability that two of the three stock-recruitment models will achieve the short-term Conservation Objective.

Unique feedback received from individual responses

The respondent who answered "No opinion" for parts (a) and (b) noted that changing the ER caps is only relevant if the US cap is reduced, and that based on the moderate productivity simulation model put forward (3.75%), the ER within the moderate status zone should not exceed 25% in order to meet the conservation goals >50% of the years for all 3 stock-recruit models. Given the simulation models presented for 3.75% and 5% marine survival, the ER cap of 40% seems sufficient.

One of the 6 respondents who answered "DECREASE" felt that allowing ER caps of 30% may be premature, and that there is no reason to assume weak stocks can tolerate even ERs of 20% (evidence needed to show these stocks are rebuilding). For now, preference is given for a lower ER cap of 15% to account for the potential that improved survival is a short-term event.

A.9. Question 9 – Views on Maintaining Current ER Cap for Abundant Status

*Engagement Question: What are your views on maintaining the current ER cap of 65% for **abundant** status?*

a) *Which statement best represents your perspective on maintaining the current ER cap of 65% for **abundant** status (choose one – strongly agree, agree, neutral, disagree, strongly disagree, or no opinion)?*
b) *Which factors were most important in supporting your perspective?*

A.9.1. Discussion points and feedback raised in the workshop

Part (a): Results summarized in Figure 4.

Part (b): See A.5.1. Questions 5-10 were discussed in an integrated manner at the workshop and Section 3.4 provides a synthesized summary of the workshop discussion on participants' views on maintaining or changing ER caps.

A.9.2. Feedback provided outside the workshop

Part (a):

STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	No opinion
	1		6		1

- One respondent left the entire question blank.

Part (b):

Common feedback across multiple responses

Respondents who answered "DISAGREE" provided the rationale that uncertainties in the stock-recruitment models and the low probabilities of achieving conservation objectives (50% or less for achieving the short-term objective, and 5% or less for achieving the long-term objective) were the primary influencers of their answer. Furthermore, if the re-evaluation with updated data indicates the conservation escapement objectives should be increased, the probabilities of achieving conservation objectives (as reported in the Discussion Paper) would likely decrease.

Unique feedback received from individual responses

The respondent who answered "AGREE" in (a) argued that Canada and US domestic fisheries are already managed conservatively. The respondent recommended lowering the ER cap if it was consistently not being met.

The respondent who answered "No opinion" in (a) left this part blank.

A.10. Question 10 – Views on Potential Changes to Current ER Cap for Abundant Status

*Engagement Question: If you do not support a PST ER cap of 65% for **abundant** status (i.e., "disagree" or "strongly disagree" above):*

*a) Do you think the PST ER cap should be increased or decreased for **abundant** status (choose one – increase, decrease, no opinion)?*
*b) If you have a suggested alternative(s), please identify a specific ER cap or a range of values you would find acceptable and/or unacceptable for **abundant** status?*
c) Please explain your rationale. Which factors were most important in supporting your decision?

A.10.1. Discussion points and feedback raised in the workshop

Part (a): Results summarized in Figure 5.

Part (b): Results summarized in Figure 6 and Figure 7.

Part (c): See A.5.1. Questions 5-10 were discussed in an integrated manner at the workshop and Section 3.4 provides a synthesized summary of the workshop discussion on participants' views on maintaining or changing ER caps.

A.10.2. Feedback provided outside the workshop

Part (a):

INCREASE	DECREASE	No opinion	(left blank)
	6	1	2

- The 2 respondents who left this question blank, also left part (b) and (c) blank. The respondent who answered with "No opinion" also answered with "No opinion" for part b.

Part (b):

	Submitted responses					
ACCEPTABLE PST ER caps for abundant status:	≤ 40%	≤ 40%	≤ 40%	≤ 40%	≤ 40%	20%
UNACCEPTABLE PST ER caps for abundant status:	> 40%	> 40%	> 40%	> 40%	> 40%	> 30%
(answer for "a")	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease

Part (c):

Common feedback across multiple responses

Most respondents rationalized that with an ER of 40%, the probability of achieving the long-term (40,000 spawner) and short-term (20,000 spawners) conservation objectives is 57% and 99%, respectively using the Base Ricker model. According to past CSAS reports discussed at the workshop, there appeared to be recognition the S/R models are applicable to a lower productivity regime (1998-2012 data), and if productivity shifted to higher regime, the S/R model relationships would need to be redeveloped using updated (more current data) and the S/R curves would likely be different than current analysis.

Unique feedback received from individual responses

The respondent who answered "No opinion" for parts (a) and (b) noted that changing the ER caps is only relevant if the US cap is reduced (DFO managers make domestic decisions that do not treat the ER caps as management targets). However, based on the abundant productivity simulation model put forward (5%), the ER within the abundant status zone needs to be well below 65% since short and long-term goals are not being met with consistency. It needs to be acknowledge that the models are biased due to a lack of data within a high productivity regime, and that if Interior Fraser Coho were to shift into a high-productivity regime, the analysis would need to be revaluated.

One of the 6 respondents who answered "DECREASE" felt that allowing ER caps of 40% may be premature, and that there is no reason to assume weak stocks can tolerate ERs of 30% (evidence needed to show these stocks are rebuilding). For now, preference is given for an ER cap of 20% to account for the potential that improved survival is a short-term event. High ERs in the past have damaged stocks, and they need elbow room to rebuild.

A.11. Question 11 – Missing Information

Engagement Question: Is there any critical information missing that would have helped inform your responses to the engagement questions? If so, please specify what information and how it would have helped.

A.11.1. Discussion points and feedback raised in the workshop

Day 2:

- Assuming we implemented something sooner like the proposed framework presented, what would that have looked like? (i.e., do some "what if" analyses on past years)
- The data quality – we had very few good observations of survival rates. If we had had better data, I would have felt like my decisions determining the breakpoints would be more robust, less arbitrary, with more of a scientific basis. Now, how do we account for the uncertainty when answering these questions?
- The steepness of those curves that were presented [isopleths of probability of achieving conservation objective over range of survival rates and ERs] would have been good to know before hand because those are critical and there's so much uncertainty there.
- There are two models used (marine, river), with 2 associated CSAS projects both stalled for ~4 years (exploitation models). That works would have been really great information that should have preceded this discussion.

A.11.2. Feedback provided outside the workshop

Common feedback across multiple responses

The majority of people felt that utilizing more robust data with greater certainty (eg. survival rates, exploitation, escapement) would make answering these questions easier. IFCRT objectives need to be recalculated including the most recent spawner data, and technical considerations and responses are based on assumptions regarding domestic ER caps, but both domestic and PST ER caps need to be considered.

Unique feedback received from individual responses

One respondent would like to see new assessment and simulation models results used in the tables produced for the Discussion Paper for comparative purposes.

Another person recommended that to better understand Figure 3 on page 11 of the Discussion Paper, the years should be added to the graph in order to see if there was a shift in productivity, and that the graph should be divided into Low, Medium and High productivity statuses.

The assumption that the US fisheries will not be reduced, and that Canada is not interested in negotiating a reduction in US fisheries. This leads to ER cap reduction discussions only applying to Canadian fisheries, while DFO puts forward that ER caps are not management targets. Using these assumptions there is no rationale to reduce international ER caps within each status zone unless the US fisheries are reduced.

One respondent reiterated interest (expressed in Question 2) in adding the years to the scatterplot of recruitment versus survival, to visually identify potential regime shifts.

A.12. Question 12 – Additional Information that DFO Should Consider

Engagement Question: What additional information should DFO consider in its decision and approach? Please provide reasons.

A.12.1. Discussion points and feedback raised in the workshop

Day 2:

- What if we do a better job of sampling fisheries and estimating impacts of fisheries – we could get better quality survival rates.
    - There are gaps in tag recoveries
    - If we sampled more fisheries, we would reduce our bias, but that doesn't mean we should immediately open up the fisheries to harvesting just because estimated survival rates might increase.
    - For coded wire tags, "not caught" = dead (even if caught but not counted)
- We need to research whether that 2014 high marine survival rate corresponded with the moderate abundance, not because survival was actually better, but because we eliminated the bias (uncertainty) by increasing our sampling.

A.12.2. Feedback provided outside the workshop

Common feedback across multiple responses

DFO should re-engage with First Nations technical representatives if there is additional analysis of the data and results generated by this process. And DFO should consider the uncertainty inherent in assessment data and pre-season planning and post-season assessment tools and exercise caution when moving between status categories. Changes in monitoring programs or methodology could be misinterpreted as changes in status reference points.

Unique feedback received from individual responses

Additional consultation should happen prior to any decisions or use of new approaches. Suggestion to have a full presentation around these outcomes at upcoming First Nations' technical meetings.

More information could be used, or has been collected but not used, or should be collected to update assessments. For example, genetic analysis of bio-samples collected to verify fishery-specific ER estimates based on coded wire tag recoveries. Hypothesized levels of incidental mortalities by gear type, and the benefits of shutting down the most problematic fisheries (GNs in approach waters). Consider benefits of better catch monitoring, better escapement monitoring, more wild stock coded wire tagging and small-scale hatchery supplementation. Such initiatives should be started soon, not in 10 years. Consider how ER caps would impact other co-migrating IFR stocks of sockeye, chinook, and steelhead subject to conservation concerns (maybe ER caps too high for SARA-listed stocks?).

Consider changes in migration patterns (for the Strait of Georgia, only data from inside distributions are used in models, and years with outside distributions are not considered).

Consider habitat loss, lower than normal water levels, and the effects of predation and environmental factors on marine survival.

A.13. Question 13 – Other Comments

Engagement Question: Do you have any other comments?

A.13.1. Discussion points and feedback raised in the workshop

- Need to bring up some of the important ideas raised and work to be done for the panel call that will be happening soon.
    - There are opportunities to reinvest in Coho
- We should consider having more MUs, rather than clumping them together into larger areas
- How will the output of this affect the other MUs? Will there be ER and status points in the tables for those other MUs? Or will it be blank.
    - Everything at workshop was interior Fraser focused. This workshop process has flowed from a point from the development engagement questions, which was after the decision to not to deal explicitly with the other MUs.
    - Canada's still open to working with the other MUs, but there will not be explicit reference points in the annex to the treaty (we have the opportunity to do that, but it's not going to happen before the due date).

A.13.2. Feedback provided outside the workshop

Common feedback across multiple responses

This questionnaire and proposed approach to managing Coho under PST status categories focuses mainly on identifying ER caps for the IFR MU. Ensuring adequate escapement to each of the IFR subpopulations and rebuilding the IFR MU are also obligations under the PST and should be considered when determining status /ER caps and implementing domestic fisheries. Coho management under PST should consider all MUs intercepted by bilateral fisheries. In the absence of adequate data to determine status or explicit ER caps for the SOG and LWF MUs, there are no constraints on exploitation by either Party.

Unique feedback received from individual responses

One respondent stated that DFO needs to apply similar resources to domestic Coho fisheries management.

Another respondent inquired if a decrease in the ER cap would extend the IFR Coho Closure Window and wondered how this would this affect First Nations' FSC (food, social, and ceremonial) fisheries.

Appendix B. Workshop Agenda

Fisheries and Oceans Canada | Pêches et Océans Canada | Canada

Engagement Process on:

PST Southern Coho Reference Points and Exploitation Rate Caps

Room 420 (Strategy Room) Wosk Centre of Dialogue
580 Hastings Street,
Vancouver, BC
V6B 1L6

Engagement Workshop Agenda

May 1-2, 2018

Workshop Facilitator

Alex Hall

ESSA

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DFO

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Purpose

From the Engagement Plan:

The purpose is to review and seek feedback on the approach for identifying Pacific Salmon Treaty (PST) status reference points (i.e. low, moderate or abundant) and determining corresponding exploitation rate (ER) caps for Canadian Coho management units (MUs). This process will engage Canadian First Nations and stakeholders in reviewing potential options while considering the possible conservation risks to Coho populations. The input gathered through this process will help inform the Government of Canada on the perspectives of First Nations and stakeholders with respect to desired outcomes and risk tolerance, and thus inform the final approach for establishing reference points and ER caps for the bilateral management of Canadian Coho MUs.

Remote Connection Details

Day 1 – May 1, 2018	Day 2 – May 2, 2018
Topic: PST Coho ER Discussion – Day 1 Date: Tuesday, May 1, 2018 Time: 9:00 am, Pacific Daylight Time (San Francisco, GMT-07:00) Meeting Number: 550 892 935 Meeting Password: salmon **To join the online meeting** 1. Go to https://pwgsc-nh.webex.com/pwgsc-nh/j.php?MTID=m46cb92f24749c34d25c59a134b77f154 2. Enter your name and email address. 3. Enter the meeting password: salmon 4. Click "Join Now".	**Topic: PST Coho ER Discussion - Day 2** Date: Wednesday, May 2, 2018 Time: 9:00 am, Pacific Daylight Time (San Francisco, GMT-07:00) Meeting Number: 553 972 897 Meeting Password: salmon **To join the online meeting** 1. Go to https://pwgsc-nh.webex.com/pwgsc-nh/j.php?MTID=mc61d222a4d7ba313f7cb8a942f68e1e1 2. Enter your name and email address. 3. Enter the meeting password: salmon 4. Click "Join Now".
For assistance 1. Go to https://pwgsc-nh.webex.com 2. On the left navigation bar, click "Support". 3. Call 1-800-226-6338 or 613-941-9554	You can contact me at: cynthia.johnston@dfo-mpo.gc.ca
IMPORTANT NOTICE: This WebEx service includes a feature that allows audio and any documents and other materials exchanged or viewed during the session to be recorded. By joining this session, you automatically consent to such recordings. If you do not consent to the recording, discuss your concerns with the meeting host prior to the start of the recording or do not join the session. Please note that any such recordings may be subject to discovery in the event of litigation.	

Pre-workshop Preparation

Please ensure you have **read the Discussion Paper**. This document was developed explicitly for the purpose of the engagement process. It is expected that participants will have read this document and workshop design is based on this assumption.

Please **review the engagement questions** in the Discussion Paper and think about your views on these items. In particular, please think about your views on questions 5-10.

Participants are strongly encouraged to **look through the CSAS Science Advisory Report**.

Web Links to Relevant Documents:

- DFO Consultation Website: http://www.pac.dfo-mpo.gc.ca/consultation/smon/pst-coho-tsp/index-eng.html
- Discussion Paper: http://waves-vagues.dfo-mpo.gc.ca/Library/40673972.pdf
- CSAS Science Advisory Report: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_016-eng.html

Objectives of Workshop

1. Gather feedback on approach for defining reference points and preferred options for ER caps
2. Understand and explore what factors drive different views
3. Facilitate discussion across sectors to develop common understanding of different perspectives

What does success look like?

1. Participants have a clear understanding of the questions being asked and information available to support recommendations on ER caps and reference points.
2. Opportunity for participation by a wide range of stakeholders and First Nations.
3. Provide a space for open discussion on the factors which influence participants' recommendations.
4. Participants provide input on the engagement questions through the workshop
5. DFO gathers a broad range of input and perspectives to help inform Canada's recommendation on status reference points and ER caps under the PST.
6. Participants that wish to provide additional input will complete the engagement questions worksheet after the workshop and submit them by May 11, 2018.

Agenda

DAY 1 – May 1, 2018

Approx. Timing	Content	Engagement Questions	Participants
8:45 am	***Arrival***		All
9:00 am	***Start of Day 1***		
INTRO, BACKGROUND AND PERSPECTIVES			
9:00 am	Introduction, overview, scope and background		
9:45 am	Participant perspectives		
10:30 am	***Break (coffee/tea and snacks provided)***		
STATUS REFERENCE POINTS			
10:45 am	CSAS science advice and implications PST status reference points	Q1, Q2	
PST ER CAPS FOR CANADIAN MANAGEMENT UNITS			
12:00 pm	PST ER caps - introduction		
12:15 pm	***Lunch (provided)***		
1:15 pm	PST ER caps – initial perspectives	Q5-10	
2:00 pm	PST ER caps – conservation considerations	Q3	
3:00 pm	***Break***		
3:15 pm	PST ER caps – management considerations		
4:00 pm	PST ER caps – implementation considerations	Q4	
4:25 pm	Recap of Day 1		
4:30 pm	***End of Day 1***		

DAY 2 – May 2, 2018

Actual agenda, as revised and implemented

Approx. Timing	Content	Engagement Questions	Participants
8:45 am	***Arrival***		All
9:00 am	***Start of Day 2***		
9:00 am	Approach for determining status (revisit discussion)	Q1	
9:30 am	Participant-proposed framework	Q1, 2, 5-10	
10:00 am	Status reference points – participant perspectives (exercise)	Q2	
10:30 am	***Break***		
10:45 am	Outstanding technical questions from Day 1 for CSAS authors		
11:00 am	PST ER caps – revised participant perspectives (exercise)	Q5-10	
12:00 pm	PST ER caps – additional considerations	Q11, Q12	
12:15 pm	Workshop recap and next steps		
12:30 pm	***Lunch (provided)***		
1:30 pm	***End of Workshop***		

1:45 pm	***Start of Tier 1 Meeting***		Tier 1
1:45 pm	Tier 1 Meeting		
4:30 pm	***End of Tier 1 Meeting***		

Background

From the Discussion Paper:

The Pacific Salmon Treaty (PST) has guided the collaborative management of Pacific salmon stocks originating in Canadian and US waters that are subject to harvest by the other Party since its inception in 1985. Fishing arrangements, captured under Annex IV of the PST, are subject to periodic renegotiation to address the evolving nature of fisheries management under the jurisdiction of both Parties. In this regard, negotiations have been underway since 2015 for most treaty chapters in preparation for the expiration of current arrangements at the end of the 2018 fishing season. This includes Chapter 5 which covers the management of Coho salmon fisheries in both the southern and northern boundary areas.

The purpose of the current engagement process is to review and seek feedback on the approach for identifying PST **management reference points**[9] that demarcate the three PST status categories (i.e. low, moderate and abundant) and determining corresponding **exploitation rate**[10] (ER) **caps**[11] or ceilings for Canadian Coho Management Units (MUs) under the Southern Coho Management Plan. This is a requirement of the Southern Coho Management Plan under Annex IV, Chapter 5 of the PST that has been in effect since 2009. Key points with respect to what is being sought during the engagement are summarized in the highlighted box below. The input gathered through this process will help inform the Government of Canada on the perspectives of First Nations and stakeholders with respect to desired outcomes and risk tolerances, and thus contribute to the final approach for establishing reference points and ER caps for the bilateral management of Canadian Coho MUs under the PST.

Key Points:

- This engagement process focuses on Canada's obligation to provide maximum bilateral (Canada and US) exploitation rates (ER caps) for each PST status category of Low, Moderate and Abundant, for Canadian Coho management units under the terms of Annex IV, Chapter 5 of the PST.
- Within each ER cap, explicit limits on the ERs for Canada and the US are established under the PST. Each country then manages within its ER cap through its own domestic fisheries management process and annual fishing plans.
- This means that within its portion of the PST ER cap, Canada will continue to implement its own annual domestic planning processes (i.e. through the salmon Integrated Fisheries Management Plan (IFMP) development process) and determine fishery-specific, domestic management actions to implement. Domestic annual ER targets may be set less than or equal to the maximum permitted under the maximum bilateral ER cap for domestic management purposes.
- Any new bilateral ER caps will only come into effect for a 10 year period beginning with the 2019 fishing season with discussions on specific fishing plans for Canadian fisheries to take place in developing the 2019 IFMP through existing consultation processes.

[9] Population levels based on biological, economic and policy considerations that trigger specified management actions under the Pacific Salmon Treaty. The use of the term is consistent with Holt and Irvine (2013).

[10] Mortality due to landed catch and incidental mortality, expressed as fishing mortality divided by fishing mortality plus escapement.

[11] Under the PST Southern Coho Management Plan (SCMP), the maximum ER that a MU can be subjected to, given its categorical abundance status. The US share of the ER cap is specified under the terms of the SCMP.

Visual Diagram of Overall Process