



11 June 2024

**IPHC CIRCULAR 2024-015**

**SUBJECT: FOR INFORMATION – INTERSESSIONAL DECISIONS 2024-ID003 – ID007  
MANAGEMENT STRATEGY EVALUATION TASKS FOR 2024**

Dear Commissioners,

In accordance with Rule 11, paragraphs 4-10 ‘*Intersessional decision-making*’ of the [IPHC Rules of Procedure \(2024\)](#), I am pleased to provide you with the following intersessional Commission decisions **for information**.

The decisions were **adopted** by consensus (*In favour=6; Against=0; No response=0*). No further action is required by Commissioners at this time.

**BACKGROUND**

Management Strategy Evaluation Tasks for 2024 (Appendix I)

**DECISIONS**

**IPHC-2024-ID003:** The Commission **RECOMMENDED** that:

- a) the Secretariat work with the MSAB and SRB to explore a potential new coastwide objective that uses spawning biomass and/or fishery catch-rates to indicate the status of the resource, potentially replacing the current  $B_{36\%}$  objective;
- b) an ad-hoc working group of the MSAB, to be selected by each Contracting Party, meet in July or August 2024 for this purpose (ref a);
- c) the MSAB020 be held virtually in October 2024.

**IPHC-2024-ID004:** The Commission **RECOMMENDED** that the Secretariat evaluate the following management procedures (MPs) in 2024:

- a) Multi-year management procedures along with fishing intensity and multiple empirical rules for non-assessment years;
- b) additional management procedures, such as constraints on the interannual change in the TCEY.

**IPHC-2024-ID005:** The Commission **RECOMMENDED** that the Secretariat work with the SRB to:

- a) define exceptional circumstances (events) using information such as FISS observations, biological observations, and new research;
- b) recommend the actions to take when an exceptional circumstance occurs;
- c) incorporate these elements into the draft harvest strategy policy.

**IPHC-2024-ID006:** The Commission **RECOMMENDED** that the Secretariat draft a revised harvest strategy policy document that will be reviewed at the IPHC Work Meeting in September 2024 (WM2024):

- a) incorporating the outcomes of ID003, ID004 and ID005 for Commission review;
- b) clearly identifying the distribution of the TCEY as a component of the decision-making process and not an output of the management procedure.

**IPHC-2024-ID007: NOTING** that the investigation of FISS design scenarios:

- a) is an additional activity of the MSE work;
- b) is independent of the harvest strategy policy development;
- c) will extend into 2025;
- d) will be useful to inform the Commission on management outcomes if implementing reduced FISS designs in the future.

the Commission **RECOMMENDED** that the Secretariat evaluate FISS design scenarios using the MSE framework, as recommended by the SRB.

Please consider the date of this IPHC Circular to be the official '*date of notification*' of the decision detailed above, in accordance with Rule 11, paragraph 10 of the [IPHC Rules of Procedure \(2024\)](#).

Yours sincerely



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**Appendices:** Management Strategy Evaluation Tasks for 2024 (Appendix I)



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## Management Strategy Evaluation Tasks for 2024

PREPARED BY: IPHC SECRETARIAT (29 MAY 2024)

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### PURPOSE

To provide the Commission with a list of tasks, responsibilities, and deadlines, for the Management Strategy Evaluation (MSE) in 2024. Outcomes of these tasks will be delivered at AM101 in support of adopting an IPHC harvest strategy policy and a Management Procedure at the same time or soon thereafter.

### 1 BACKGROUND

The MSE program completed a number of tasks in 2023, including the development and conditioning of an operating model based on the data used and outputs from the 2022 stock assessment. This allows for MSE tasks to focus on those that support the adoption of a harvest strategy policy such as the evaluation of management procedures.

A number of requests and recommendations from Commission and subsidiary body meetings in 2023 and 2024 guide the MSE work for 2024 ([Appendix B](#)). These meetings include the 19<sup>th</sup> Session of the Management Strategy Advisory Board ([MSAB019](#)), the 23<sup>rd</sup> Session of the Scientific Review Board ([SRB023](#)), the 99<sup>th</sup> Session of the IPHC Interim Meeting ([IM099](#)), and the 100<sup>th</sup> Session of the IPHC Annual Meeting ([AM100](#)).

The 2<sup>nd</sup> Performance Review of the International Pacific Halibut Commission ([PRIPHC02](#)) also provided two recommendations related to the MSE work ([Appendix B](#)). These were to prioritize the ongoing work of the MSE to ensure there is a management framework with minimal room for ambiguous interpretation, and to conclude the MSE process. The tasks listed below support the development of a harvest strategy policy which would satisfy both recommendations.

The main goal of the MSE work in 2024 is to support the continued development and subsequent finalization of an IPHC harvest strategy policy for consideration and adoption at the 101<sup>st</sup> IPHC Annual Meeting (AM101). A secondary goal is to evaluate reductions in the Fishery-Independent Setline Survey (FISS) designs.

The requests and recommendations from the Commission and subsidiary bodies are summarized below into a priority list of tasks with the aim to fill in the gaps in the interim harvest strategy policy and investigate FISS design scenarios. Additional details are provided in [Appendix A](#).

## 2 MSE TASKS FOR 2024

- 1) Incorporate outcomes from the following tasks in a Harvest Strategy Policy document.
  - a) Work with the MSAB and SRB to explore a new coastwide objective related to absolute spawning biomass or catch-rates, to either replace the current B36% objective or to be added as a fifth priority objective.
  - b) Evaluate the following management procedures (MPs).
    - i) multi-year management procedures along with fishing intensity and multiple empirical rules for non-assessment years, while incorporating uncertainty on how the TCEY is distributed.
    - ii) if so tasked by the Commission during intersessional discussions, additional management procedures shall be evaluated by the IPHC Secretariat, and considered by the MSAB and SRB in 2024 (e.g. constraints that mitigate large changes in the coastwide TCEY, and procedures to provide a reference TCEY distribution to inform decision-making). These are additional MP elements that may be beneficial to the harvest strategy policy.
  - c) Continue to work with the MSAB and SRB to:
    - i) define exceptional circumstances (events) using information such as FISS observations, biological observations, and new research;
    - ii) recommend the actions to take when an exceptional circumstance occurs.
- 2) Evaluate FISS design scenarios using the MSE framework, as recommended by the SRB. This will provide an understanding of how reductions in the FISS design may affect management outcomes.
- 3) Hold an MSAB meeting in October 2024, if needed, to discuss MSE results and the updated harvest strategy policy.

### 2.1 Completion of tasks

The tasks listed can be completed in 2024 given that the MSE framework is available to support MSE work. However, it is important to consider the meetings and deadlines throughout 2024. June will mostly be spent preparing for and participating in the 24<sup>th</sup> meeting of the SRB. From June through August runs will be conducted using the MSE framework and then summarized in preparation for the 2024 Work Meeting (WM2024) in September, and the SRB meeting, also in September. Following a subcommittee meeting of the MSAB to discuss objectives (yet to be scheduled) it may be useful to have an MSAB meeting in the fall, although an online informational session or inclusion of MSE results in Q&A's for the CB and PAB that may be held before AM101 may be used to inform MSAB members and others of the MSE outcomes in preparation for AM101.

### 3 RECOMMENDATIONS

That the Commission:

- 1) **RECOMMEND** that the Secretariat work with the MSAB and SRB to explore a new coastwide objective related to absolute spawning biomass or catch-rates, to either replace the current B36% objective or to be added as a fifth priority objective. This includes the Secretariat organizing a subcommittee meeting of the MSAB in summer 2024 to discuss an objective and management procedure options related to an absolute spawning biomass or fishery catch-rate.
- 2) **RECOMMEND** that the Secretariat evaluate the following management procedures (MPs) in 2024, and recommend to the Commission for adoption:
  - a) Multi-year management procedures along with fishing intensity and multiple empirical rules for non-assessment years, while incorporating uncertainty on how the TCEY is distributed.
  - b) Additional management procedures such as constraints on the interannual change in the TCEY, such as those recommended at MSAB019.
- 3) **RECOMMEND** that the Secretariat continue to work with the MSAB and SRB to:
  - a) define exceptional circumstances (events) using information such as FISS observations, biological observations, and new research;
  - b) recommend the actions to take when an exceptional circumstance occurs.
- 4) **RECOMMEND** that the Secretariat evaluate FISS design scenarios using the MSE framework, as recommended by the SRB.
- 5) **RECOMMEND** that the Secretariat schedule an MSAB meeting in October 2024, if needed, to discuss MSE results and the revised draft harvest strategy policy.
- 6) **RECOMMEND** that the Secretariat draft a revised harvest strategy policy document incorporating outcomes of the recommended tasks for the Commission to review and possibly endorse at the 101<sup>st</sup> Annual Meeting of the IPHC (AM101).



**APPENDIX A**

**DETAILED DESCRIPTION OF MSE TASKS**

**Table A1.** Detailed descriptions of MSE tasks.

<b>TASK</b>	<b>OUTCOME</b>	<b>RESPONSIBLE</b>	<b>TIME</b>	<b>NOTES</b>
Coastwide objective	A recommended new coastwide objective related to absolute level of biomass <b>or</b> recommendation that one is not needed	Secretariat MSAB SRB Commission	MSAB subcommittee in summer and SRB024 in June.	This is a very important task related to dynamic reference points.  The Commission would need to decide if this is a priority objective. An indication of priority objectives at the Work Meeting would be helpful.
Multi-year and fishing intensity MP	Performance metrics and evaluations for simulated MPs using annual, biennial, or triennial stock assessments, an empirical rule for non-assessment years, and various fishing intensities.	Secretariat MSAB SRB	Secretariat: simulations in June and July. SRB025 in Sept. MSAB possibly in October.	A key outcome of the MSE tasks. Commission agreed there is utility to investigate at AM099.
Additional MP elements	Recommended elements of MPs to investigate to be endorsed by the Commission. Possibly some preliminary investigations if tasked by the Commission.	Secretariat MSAB SRB	MSAB019 in May. SRB024 in June. Secretariat possibly in summer or fall.	Constraints on the interannual change in the TCEY are of interest.
Define a framework for exceptional circumstances	Recommended exceptional circumstance definitions and actions to take if an exceptional circumstance is realized.	Secretariat MSAB SRB	SRB024 in June.	Will discuss with SRB to complete.
FISS design scenarios	Evaluate different reduced FISS designs and their effect on management.	Secretariat SRB	Throughout 2024	This is the most time-consuming task as it will take coordination between staff and maybe some

				additional development of the MSE framework. Recommended by SRB.
MSAB meeting in October 2024.	Hold an MSAB meeting in October 2024 to discuss MSE results and the updated harvest strategy policy.	Secretariat MSAB	September and October	If needed.
Revise the draft harvest strategy policy document for endorsement	The Secretariat to revise the current draft harvest strategy policy document to be endorsed by the Commission at AM101.	Secretariat Commission	October through December	This document can be completed after completing the first four tasks in this table. A <a href="#">draft interim harvest strategy policy</a> is available.

**Table A2.** Gantt chart showing months where activities related to each task would take place.

TASK	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Coastwide objective							
Multi-year and fishing intensity MP							
Additional MP elements							
Define a framework for exceptional circumstances							
FISS design scenarios							
MSAB meeting in October 2024.							
Revise the draft harvest strategy policy document							



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## APPENDIX B

### REQUESTS AND RECOMMENDATIONS RELATED TO THE 2024 MSE PROGRAM OF WORK FROM PAST MEETINGS

#### PRIPHC02

11. The PRIPHC02 **RECOMMENDED** that ongoing work on the MSE process be prioritised to ensure there is a management framework/procedure with minimal room for ambiguous interpretation, and robust pre-agreed mortality limit setting frameworks.

12. The PRIPHC02 **STRONGLY URGED** the Commission to conclude its MSE process and **RECOMMENDED** it meet its 2021 deadline to adopt a harvest strategy

#### AM100

53. The Commission **AGREED** to undertake intersessional discussions on the recommendations contained within paper [IPHC-2024-AM100-11](#), and provide further direction to the IPHC Secretariat.

#### IM099

35. **NOTING** the current priority objectives, the Commission **RECOMMENDED** that the Secretariat, working with the MSAB and SRB, explore the development of a new coastwide objective related to absolute spawning biomass or catch-rates, to either replace the current B36% objective or be added as a fifth priority objective. The Secretariat supports developing a new objective for the Commission to decide if it is a useful objective to assist in determining an MP that optimizes yield via optimal catch-rates or opportunity.

#### SRB023

24. The SRB **RECOMMENDED** that an objective to maintain spatial population structure be added or redefined to maintain the spawning biomass in a Biological Region above a defined threshold relative to the dynamic unfished equilibrium spawning biomass in that Biological Region with a pre-defined tolerance. The percentage and tolerance may be defined based on historical patterns and appropriate risk levels recognizing the limited fishery control of biomass distribution.

25. The SRB **RECOMMENDED** that the Commission re-evaluate the target objective for long-term coastwide female spawning stock biomass given that estimated 2023 female spawning biomass (and associated WPUE), which was well-above the current target B36%, in part triggered harvest rate reductions from the interim harvest policy. Such ad-hoc adjustments limited the value of projections and performance measures from MSE.



26. The SRB **RECOMMENDED** continued examination, within the MSE, of FISS scenarios that are better representative of the levels of uncertainty and bias that may result from future reductions in FISS sampling.

27. **RECOGNIZING** the spatial variability of environmental factors that influence population dynamics, the SRB **RECOMMENDED** that an exceptional circumstance be defined based on regional as well as stock-wide deviations from expectations. For example, an exceptional circumstance could be declared if any of the following are met:

- a) The coastwide all-sizes FISS WPUE or NPUE from the space-time model falls above the 97.5<sup>th</sup> percentile or below the 2.5<sup>th</sup> percentile of the simulated FISS index for two or more consecutive years.
- b) The observed FISS all-sizes stock distribution for any Biological Region is above the 97.5<sup>th</sup> percentile or below the 2.5<sup>th</sup> percentile of the simulated FISS index over a period of 2 or more years.
- c) Recruitment, weight-at-age, sex ratios, other biological observations, or new research indicating parameters that are outside the 2.5<sup>th</sup> and 97.5<sup>th</sup> percentiles of the range used or calculated in the MSE simulations.

28. The SRB **RECOMMENDED** that if an exceptional circumstance occurred the following actions would take place:

- a) A review of the MSE simulations to determine if the OM can be improved and MPs should be re-evaluated.
- b) If a multi-year MP was implemented and an exceptional circumstance occurred in a year without a stock assessment, a stock assessment would be completed as soon as possible along with the re-examination of the MSE.
- c) Consult with the SRB and MSAB to identify why the exceptional circumstance occurred, what can be done to resolve it, and determine a set of MPs to evaluate with an updated OM.
- d) Further consult with the SRB and MSAB after simulations are complete to identify whether a new MP is appropriate.

29. The SRB **RECOMMENDED** evaluating fishing intensity and frequency of the stock assessment elements of management procedures and FISS uncertainty scenarios using the MSE framework. MP elements related to constraints on the interannual change in the TCEY and calculation of stock distribution may be evaluated for a subset of the priority management procedures as time allows.

30. The SRB **RECOMMENDED** that the Commission consider revising the harvest policy to (i) determine coastwide TCEY via a formal management procedure and (ii) negotiate distribution independently (e.g. during annual meetings). Such separated processes are used in other jurisdictions (e.g. most tuna RFMOs, Mid Atlantic Fishery Management Council, AK Sablefish, etc.).

45. The SRB **RECOMMENDED** that the compensatory assumption of the stock recruitment models be critically evaluated via a MSE stress test scenario in which recruitment is compensatory at some low spawning biomass.

60. The SRB **REQUESTED** that the Commission **NOTE** that some longer-term (2025 and beyond) implications of reduced FISS designs are predictable and potentially consequential. For instance, higher FISS CVs will generally result in higher inter-annual variation in TCEY under the current decision-making process. This would occur for two reasons: (1) biomass estimates and projections from the assessment model will have greater uncertainty and therefore greater variability in outputs and (2) ad hoc management adjustments to the interim harvest policy recommendations would be more frequent and/or more variable for greater input uncertainty. The SRB therefore **REQUESTED** the following analyses for SRB024:

- a) Assessment of reduced FISS designs (2025-2027) via simulation tests of assessment model outputs (e.g. probability of decline, estimated stock abundance and status, TCEY) under alternative revenue-neutral FISS designs using the existing stock assessment ensemble;
- b) Mitigation options of reduced FISS designs (short-term and long-term) via MSE simulations of management procedures that deliberately aim to reduce inter-annual variability in TCEY via multi-year TCEYs and (possibly) fixed stock distribution schemes;
- c) Components (a,b) above would be integrated since (a) will need to inform simulations in (b).

61. The SRB **REQUESTED** that simulations above ([para. 60](#)) include:

- a) a relationship in which the FISS CV is relatively higher at lower stock abundance (i.e. the current CV issue is a function of stock abundance rather than a short-term condition);
- b) target regulatory area CVs of 15%, 20%, 25%, and 30%;
- c) coastwide target CV of 15% without controlling specific regulatory area CVs.

64. **NOTING** the presentation demonstrating how secondary FISS objectives influence choices for future FISS designs that may have already been endorsed by the SRB based only on primary objectives, the SRB **RECOMMENDED** that the MSE include some scenarios in which the FISS is skipped (as similarly requested above in [paras. 62 and 63](#)) because of occasional (or functional) economic constraints on executing full FISS designs. Such simulation scenarios would provide some indication of the potential scale of impacts on MP performance of maintaining long-term revenue neutrality of the FISS.

### **MSAB019**

32. The MSAB **REQUESTED** that outreach materials be developed by the Secretariat that synthesize the effect of the PDO (e.g. via recruitment) on the coastwide and regional stock dynamics and the relative effect of fishing in simple terms with interpretation and consequences of the outcomes. This may be a pamphlet or a short document to be reviewed via email by MSAB members before the 100th Session of the IPHC Interim Meeting (IM100).

39. The MSAB **REQUESTED** that the evaluation of annual, biennial, and triennial assessments include, but is not limited to, the following concepts.

- a) Annual changes in the coastwide TCEY is driven by an empirical rule in non-assessment years of a multi-year MP;
- b) A constraint on the coastwide TCEY to reduce inter-annual variability and the potential for large changes in every year or only assessment years. This may be a 10%, 15%, or 20% constraint, a slow-up fast-down approach, or similar approach;
- c) SPR values ranging from 35% to 52%.

40. **RECALLING** paragraph 39 item a) the MSAB **REQUESTED** the Secretariat and SRB develop empirical rule options using the following possible sources of data:

- a) A static coastwide TCEY determined from the stock assessment;
- b) FISS O32 WPUE;
- c) Incorporation of commercial and FISS age data with FISS O32 WPUE.

42. The MSAB **REQUESTED** that the Commission provide guidance on whether and how to incorporate distribution in the MSE simulations. Three potential options are:

- a) Integrating over multiple distribution procedures;
- b) Use a single distribution procedure and add uncertainty;
- c) Use recent years to define percentage of TCEY in each IPHC Regulatory Area and add uncertainty.

47. The MSAB **REQUESTED** that the Secretariat report performance metrics noted in paragraph 44 and 45 over ten (10) and fifteen (15) year periods.

48. The MSAB **NOTED** that the estimated stock status of Pacific halibut is above a relative spawning biomass of 36% (a priority objective of the Commission, para. 23b), but the FISS WPUE, commercial WPUE, and estimated absolute spawning biomass are at their lowest values observed in many decades.

51. **NOTING** paragraph 48, the MSAB **RECOMMENDED** developing an objective and identifying a management procedure that addresses the current circumstances and differences in perception of the stock status.

52. The MSAB **RECOMMENDED** adopting the following exceptional circumstances:

- a) The coastwide all-sizes FISS WPUE or NPUE from the space-time model falls above the 97.5th percentile or below the 2.5th percentile of the simulated FISS index for two or more consecutive years.
- b) The observed FISS all-sizes stock distribution for any Biological Region is above the 97.5th percentile or below the 2.5th percentile of the simulated FISS index for two or more consecutive years.
- c) Recruitment, weight-at-age, sex ratios, other biological observations, or new research indicating parameters that are outside the 2.5th and 97.5th percentiles of the range used or calculated in the MSE simulations.

54. The MSAB **REQUESTED** that the SRB and Secretariat work together to consider different ways to incorporate fishery-dependent data into an exceptional circumstance.

55. The MSAB **RECOMMENDED** adopting the follow actions if an exceptional circumstance occurs:

- a) Consult with the SRB and MSAB to identify why the exceptional circumstance occurred, what can be done to resolve it, and determine a set of MPs to evaluate with a possibly updated OM.
- b) If a multi-year MP was implemented and an exceptional circumstance occurred in a year without a stock assessment, a stock assessment would be completed as soon as possible along with the reexamination of the MSE.
- c) Further consult with the SRB and MSAB after simulations are complete to identify whether a new MP is appropriate.

56. The MSAB **REQUESTED** that the Secretariat assist with hosting an ad-hoc working group (in accordance with the MSAB Terms of Reference and Rules of Procedure (Appendix V, Sect. V, para 10), in 2024 to discuss potential management procedures that include adjusting fishing intensity at low spawning biomass, low FISS WPUE, low commercial fishery catch-rates, or low productivity.

57. The MSAB **RECOMMENDED** a one- to two-day hybrid MSAB meeting in the fall of 2024, prior to the 100th Session of the IPHC Interim Meeting (IM100), to discuss results from the ad-hoc working group (para. 56) and review any simulation designs and results.

#### [AM099](#)

85. The Commission **AGREED** that there is utility in continuing to explore multi-year stock assessment management procedures, in a manner consistent with the advice from SRB and MSAB.

## APPENDIX C

### SIMULATING UNCERTAINTY IN THE DISTRIBUTION OF THE TCEY

The distribution of the TCEY to IPHC Regulatory Areas is a necessary part of the harvest strategy, but is not a part of the management procedure currently being evaluated. Distributing the TCEY is part of the Commission's annual decision-making and negotiation process, and is currently not being considered in the MSE process to develop a management procedure and harvest strategy policy. However, the uncertainty in the decision-making process must be represented in the MSE simulations, which includes distributing the TCEY to IPHC Regulatory Areas and varies from year to year.

In the past, results were summarized over five (5) distribution procedures used in the MSE simulations that spanned a range of potential distribution procedures. Results were not reported for any one distribution procedure but were integrated across all of them. This required the Commission to decide on the five distribution procedures that were used in the MSE simulations to represent the uncertainty in the distribution of the TCEY that would result from the negotiation process:

**IPHC-2022-SS012-R (para. 10)**: *The Commission **RECOMMENDED** the following five distribution procedures to be used in the management strategy evaluation of size limits and multi-year assessments, noting that these distribution procedures are for analytical purposes only and are not endorsed by both parties, thus would be reviewed in the future if the Commission wishes to evaluate them for implementation.*

- a) Baseline based on recent year O32 FISS results, relative harvest rates of 1.0 for IPHC Regulatory Areas 2-3A, relative harvest rates of 0.75 for IPHC Regulatory Areas 3B-4, and no application of the current interim agreements for 2A and 2B;*
- b) Baseline based on recent year O32 FISS results, relative harvest rates of 1.0 for IPHC Regulatory Areas 2-3A, relative harvest rates of 0.75 for IPHC Regulatory Areas 3B-4, and current interim agreements for 2A and 2B;*
- c) Baseline based on recent year O32 FISS results with 1.65 Mlbs to 2A and 20% of the coastwide TCEY to 2B;*
- d) Baseline based on recent year O32 FISS results, relative harvest rates of 1.0 for IPHC Regulatory Areas 2-3, 4A, and 4CDE, a relative harvest rate of 0.75 for IPHC Regulatory Area 4B, and no agreements for 2A and 2B;*
- e) Baseline based on recent year O32 FISS results, relative harvest rates of 1.0 for IPHC Regulatory Areas 2-3, 4A, and 4CDE, a relative harvest rate of 0.75 for IPHC Regulatory Area 4B, and current interim agreements for IPHC Regulatory Areas 2A and 2B.*

Instead of defining distribution procedures, an alternative and more empirical approach to represent this uncertainty is to use the observed distribution of the TCEY in recent years to define distributions of the potential TCEY or percentage of TCEY in each IPHC Regulatory Area. This approach allows progress to be made in evaluating other components of the harvest strategy pending a formal agreement on a distribution procedure, but does not constrain the uncertainty in the simulations. [Table 1](#) shows the percentage of the adopted coastwide TCEY in each IPHC Regulatory Area, which could be used to define the range of distribution.

**Table 1.** Percentage of the adopted coastwide TCEY (millions of pounds) for each IPHC Regulatory Area from 2013 to 2024.

Year	2A	2B	2C	3A	3B	4A	4B	4CDE
2013	2.4%	17.1%	11.0%	37.5%	12.9%	5.3%	4.2%	9.4%
2014	3.0%	20.8%	14.9%	32.9%	10.2%	4.3%	4.1%	9.8%
2015	2.7%	20.0%	15.6%	32.8%	9.4%	4.9%	3.9%	10.8%
2016	3.2%	20.8%	16.5%	32.2%	8.6%	4.9%	3.5%	10.3%
2017	3.6%	20.4%	17.3%	31.8%	9.8%	4.4%	3.3%	9.4%
2018	3.5%	19.1%	17.0%	33.7%	8.8%	4.7%	3.4%	9.7%
2019	4.3%	17.7%	16.4%	35.0%	7.5%	5.0%	3.8%	10.4%
2020	4.5%	18.7%	16.0%	33.3%	8.5%	4.8%	3.6%	10.7%
2021	4.2%	17.9%	14.9%	35.9%	8.0%	5.3%	3.6%	10.2%
2022	4.0%	18.3%	14.3%	35.3%	9.5%	5.1%	3.5%	9.9%
2023	4.5%	18.3%	15.8%	32.7%	9.9%	4.7%	3.7%	10.4%
2024	4.7%	18.3%	16.4%	32.2%	9.8%	4.6%	3.5%	10.5%

For the last six years, the TCEY in IPHC Regulatory Area 2A has been 1.65 M lbs. Over the last twelve years, the adopted TCEY in IPHC Regulatory Area 2B has ranged from 17.1% to 20.8% of the coastwide TCEY with the three most recent years equal to 18.3%. A reasonable process to represent distribution of the TCEY to IPHC Regulatory Areas 2A and 2B would be to assume 1.65 Mlbs for 2A and randomly draw a percentage from a distribution of percentages ranging from 17% to 21% for 2B with the mode of the distribution at 18.3%. The TCEY in IPHC Regulatory Areas in Alaska could be distributed after the TCEY has been distributed to IPHC Regulatory Areas 2A and 2B using recent observed percentages from Alaskan areas only ([Table 2](#)).

To assist the Secretariat with representing this uncertainty in the MSE simulations, the Commission may **RECOMMEND** one of the following methods to incorporate uncertainty of distributing the TCEY to IPHC Regulatory Areas. The Secretariat supports option a) and will discuss these options with the SRB024.

- a) Assume 2A receives 1.65 Mlbs except at very low simulated biomass and distribute the TCEY to IPHC Regulatory Areas 2B, 2C, 3A, 3B, 4A, 4B, and 4CDE using the range of observed percentages adopted from 2013 through 2024.
- b) Define multiple distribution procedures such as the five defined at SS012.

**Table 2.** Percentage of the adopted TCEY for Alaskan IPHC Regulatory Areas only.

<b>Year</b>	<b>2C</b>	<b>3A</b>	<b>3B</b>	<b>4A</b>	<b>4B</b>	<b>4CDE</b>
2013	13.7%	46.6%	16.0%	6.6%	5.3%	11.7%
2014	19.6%	43.2%	13.4%	5.6%	5.3%	12.8%
2015	20.2%	42.4%	12.1%	6.4%	5.0%	13.9%
2016	21.7%	42.4%	11.3%	6.5%	4.6%	13.5%
2017	22.7%	41.9%	12.9%	5.8%	4.3%	12.4%
2018	22.0%	43.6%	11.4%	6.0%	4.4%	12.6%
2019	21.0%	44.8%	9.6%	6.4%	4.8%	13.3%
2020	20.8%	43.4%	11.1%	6.2%	4.7%	13.9%
2021	19.1%	46.1%	10.3%	6.8%	4.6%	13.1%
2022	18.5%	45.5%	12.2%	6.6%	4.5%	12.8%
2023	20.5%	42.3%	12.9%	6.1%	4.8%	13.5%
2024	21.3%	41.8%	12.7%	5.9%	4.6%	13.6%

**APPENDIX D****MANAGEMENT STRATEGY ADVISORY BOARD (MSAB) MEMBERSHIP***(AS OF 01 MAY 2024)*

<b>Membership category</b>	<b>Member</b>	<b>Canada</b>	<b>U.S.A.</b>	<b>Current Term commencement</b>	<b>Current Term expiration</b>
<b>Commercial harvesters (6-8)</b>					
<b>1</b>	Sporer, Chris	CDN Commercial		10-April-23	31-Dec-26
<b>2</b>	Hauknes, Robert	CDN Commercial		10-April-23	31-Dec-24
<b>3</b>	Grout, Angus	CDN Commercial		10-April-23	31-Dec-26
<b>4</b>	<b>Vacant</b>	CDN Commercial			<b>Vacant</b>
<b>5</b>	Behnken, Linda		USA Commercial	01-May-24	30-April-28
<b>6</b>	Odegaard, Per		USA Commercial	10-April-23	31-Dec-24
<b>7</b>	Conrad, Michele		USA Commercial	01-May-24	30-April-28
<b>8</b>	Johnson, James		USA Commercial	17-Apr-23	31-Dec-24
<b>First Nations/ Tribal fisheries (2-4)</b>					
<b>1</b>	Lane, Jim	CDN First Nations		10-April-23	31-Dec-26
<b>2</b>	<b>Vacant</b>	CDN First Nations			<b>Vacant</b>
<b>3</b>	Mazzone, Scott		USA Treaty Tribes	9-May-23	31-Dec-24
<b>4</b>	<b>Vacant</b>		USA Treaty Tribes		<b>Vacant</b>



Membership category	Member	Canada	U.S.A.	Current Term commencement	Current Term expiration
<b>Government Agencies (4-8; max 4 from each party)</b>					
1	Mason, Gwyn	DFO		01-May-24	30-April-28
2	Huang, Ann-Marie	CDN Science Advisor		10-April-23	31-Dec-24
3	Vacant	DFO			Vacant
4	Iverson, Kurt		NOAA-Fisheries		31-Dec-26
5	Hulson, Pete		USA Science Advisor	13-Jul-22	31-Dec-24
6	Hall, Heather		PFMC	17-May-22	31-Dec-26
7	Bush, Karla		NPFMC	25-Oct-21	31-Dec-24
8	Vacant		ADFG		Vacant
<b>Processors (2-4)</b>					
1	Vacant	CDN Processing			Vacant
2	Vacant	CDN Processing			Vacant
3	Parker, Peggy		USA Processing	9-May-23	31-Dec-24
4	Drobnica, Angel		USA Processing	17-Apr-23	31-Dec-26
<b>Recreational/ Sport fisheries (2-4)</b>					
1	Ashcroft, Chuck	CDN Sportfishing		17-Apr-23	31-Dec-24
2	Fowler, Michael	CDN Sportfishing		01-May-24	30-April-28
3	Marking, Tom		USA Sportfishing (CA)	9-May-23	31-Dec-26
4	Braden, Forrest		USA sportfishing (AK)	17-Apr-23	31-Dec-24