



Report of the 17th Session of the IPHC Management Strategy Advisory Board (MSAB017)

Meeting held electronically, 18-20 October 2022

Commissioners

Canada	United States of America
Paul Ryall	Jon Kurland
Neil Davis	Robert Alverson
Peter DeGreef	Richard Yamada

Executive Director

David T. Wilson, Ph.D.

DISTRIBUTION:

Participants in the Session
Members of the Commission
IPHC Secretariat

BIBLIOGRAPHIC ENTRY

IPHC 2022. Report of the 17th Session of the IPHC
Management Strategy Advisory Board (MSAB017).
Meeting held electronically, 18-20 October 2022.
IPHC-2022-MSAB017-R, 22 pp.



The designations employed and the presentation of material in this publication and its lists do not imply the expression of any opinion whatsoever on the part of the International Pacific Halibut Commission (IPHC) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

This work is protected by copyright. Fair use of this material for scholarship, research, news reporting, criticism or commentary is permitted. Selected passages, tables or diagrams may be reproduced for such purposes provided acknowledgment of the source is included. Major extracts or the entire document may not be reproduced by any process without the written permission of the Executive Director, IPHC.

The IPHC has exercised due care and skill in the preparation and compilation of the information and data set out in this publication. Notwithstanding, the IPHC, its employees and advisers, assert all rights and immunities, and disclaim all liability, including liability for negligence, for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying upon any of the information or data set out in this publication, to the maximum extent permitted by law including the International Organizations Immunities Act.

Contact details:

International Pacific Halibut Commission
2320 W. Commodore Way, Suite 300
Seattle, WA, 98199-1287, U.S.A.
Phone: +1 206 634 1838
Fax: +1 206 632 2983
Email: secretariat@iphc.int
Website: <https://www.iphc.int/>



ACRONYMS

AK	Alaska
AM	Annual Meeting
ADFG	Alaska Department of Fish & Game
CDN	Canada/Canadian
DFO	Fisheries and Oceans Canada
IPHC	International Pacific Halibut Commission
Mlbs	Millions of pounds
MP	Management Procedure
MSAB	Management Strategy Advisory Board
MSE	Management Strategy Evaluation
NWIFC	Northwest Indian Fisheries Commission
OM	Operating Model
SRB	Scientific Review Board
SPR	Spawning Potential Ratio
SS	Special Session
TCEY	Total Constant Exploitation Yield
U26	Under 26 inches
USA	United States of America

DEFINITIONS

A set of working definitions are provided in the IPHC Glossary of Terms and abbreviations:
<https://www.iphc.int/the-commission/glossary-of-terms-and-abbreviations>

HOW TO INTERPRET TERMINOLOGY CONTAINED IN THIS REPORT

This report has been written using the following terms and associated definitions so as to remove ambiguity surrounding how particular paragraphs should be interpreted.

- Level 1: RECOMMENDED; RECOMMENDATION; ADOPTED** (formal); **REQUESTED; ENDORSED; ACCEPTED** (informal): A conclusion for an action to be undertaken, by a Contracting Party, a subsidiary (advisory) body of the Commission and/or the IPHC Secretariat.
- Level 2: AGREED:** Any point of discussion from a meeting which the Commission considers to be an agreed course of action covered by its mandate, which has not already been dealt with under Level 1 above; a general point of agreement among delegations/participants of a meeting which does not need to be elevated in the Commission's reporting structure.
- Level 3: NOTED/NOTING; CONSIDERED; URGED; ACKNOWLEDGED:** General terms to be used for consistency. Any point of discussion from a meeting which the Commission considers to be important enough to record in a meeting report for future reference. Any other term may be used to highlight to the reader of an IPHC report, the importance of the relevant paragraph. Other terms may be used but will be considered for explanatory/informational purposes only and shall have no higher rating within the reporting terminology hierarchy than Level 3.



EXECUTIVE SUMMARY

The 17th Session of the International Pacific Halibut Commission (IPHC) Management Strategy Advisory Board (MSAB017) was held in an electronic format (remote participation), from 18-20 October 2022. The MSAB consists of 29 board members/positions (6 vacant), 22 of which attended the Session from the two (2) Contracting Parties. A total of 4 individuals attended the Session as Observers. The list of participants is provided at [Appendix I](#). In the absence of sitting Co-Chairpersons, the meeting was opened by the Executive Director (Dr. David T. Wilson) who welcomed participants.

The following are a subset of the complete recommendations/requests for action from the MSAB017, which are provided in full at [Appendix V](#).

RECOMMENDATIONS

Results investigating size limits and multi-year stock assessments for Pacific halibut fisheries

MSAB017-Rec.1 ([para. 41](#)) If the Commission wishes for further evaluation of size limits, the MSAB **RECOMMENDED** that the evaluation include the consideration of impacts of alternative size limits specific to IPHC Regulatory Areas, alternate distribution procedures (e.g. all-sizes stock distribution), and the development of additional metrics related to value and efficiency of the commercial fishery.

MSAB017-Rec.2 ([para. 49](#)) If the Commission wishes for further evaluation of multi-year assessments the MSAB **RECOMMENDED** further evaluation of the multi-year assessments to understand the drivers of inter-annual variability in the TCEY and changes in the TCEY specific to assessment years and non-assessment years.

MSAB017-Rec.3 ([para. 53](#)) The MSAB **RECOMMENDED** that future evaluations of size limits, multi-year assessments, and other management procedures include elements that reduce inter-annual variability in the coastwide and area-specific TCEY. For example:

- a) Constraints on the change in the coastwide TCEY (e.g. a maximum of 15% in either direction);
- b) Averaging the stock distribution over recent years (e.g. 3 years).

REQUESTS

MSAB Membership & Rules of Procedure

MSAB017-Req.1 ([para. 12](#)) **NOTING** the proposed amendments to the MSAB Terms of Reference and Rules of Procedure, the MSAB **REQUESTED** the Commission note the following comments:

- a) Membership continuity through various aspects of the Program of Work is desirable;
- b) Term limits should be staggered, wherever feasible, to facilitate continuity within the Board;
- c) Continuity would be well served by first term limits remaining at four (4) years, with subsequent terms at two (2) years, and without a limit on the number of terms that could be served by an individual board member. Some members expressed that term renewal limits were not supported as they would likely undercut consistency, member expertise, and contributions to the MSE process;
- d) Should the Commission decide to limit the number of terms a member may serve, it should consider more than two (2) terms as a limit;



- e) Should the number of term limits be implemented, the Commission is requested to clarify how current members would be impacted, noting some have been on the board for greater than 10-13 years.

Primary MSE goals and objectives, performance metrics, and MSE Explorer

MSAB017-Req.3 ([para. 28](#)) The MSAB **NOTED** that objective 2.1 is stated as a target that has also been interpreted as a threshold and **REQUESTED** clarification from the Commission.

Other key outcomes

([para. 40](#)) The MSAB **ACCEPTED** that relevant factors to consider when deciding on size limits include stock dynamics as well as economic impacts, market acceptance, stakeholder acceptance, and management complexity (e.g. Regulatory Area 2A). **NOTING** [paras. 35 and 36](#), the stock dynamics associated with reducing or removing the current size limit generally indicated:

- a) an increase in yield with minimal changes to spawning biomass distribution and baseline variability;
- b) significant numbers of small fish entering the market in the short-term due to the current low weight at age and a potential positive recruitment trend resulting from recent PDO conditions;
- c) a decrease of O32 fish available to the market;
- d) reduced directed commercial fishery discard mortality.

([para. 47](#)) The MSAB **ACCEPTED** that costs associated with multi-year assessments (biennial or triennial) with an empirical method using FISS observations in years without an assessment to adjust the TCEY include:

- a) Detailed stock assessment results (e.g. stock status) would not be available every year;
- b) A higher chance of smaller stock size.

([para. 48](#)) The MSAB **ACCEPTED** that benefits associated with multi-year assessments (biennial or triennial) with an empirical method using FISS observations in years without an assessment to adjust the TCEY include:

- a) Potential for reduced inter-annual variability in the TCEY;
- b) Multi-year stability and short-term predictability;
- c) Use of fishery-independent observations that are a reasonable proxy to coastwide and area changes in a transparent process in years without an assessment;
- d) More focused assessment research;
- e) Potential for additional collaboration time within the Secretariat;
- f) A triennial assessment frequency would be consistent with the current assessment cycle of update and full assessments.



TABLE OF CONTENTS

REPORT OF THE 17TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB017)..... 1

EXECUTIVE SUMMARY 4

TABLE OF CONTENTS..... 6

1. OPENING OF THE SESSION 7

2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION 7

3. IPHC PROCESS..... 7

 3.1 *Election of Co-Chairpersons 7*

 3.2 *MSAB Membership & Rules of Procedure..... 8*

 3.3 *Update on the actions arising from the 16th Session of the MSAB (MSAB016) 9*

 3.4 *Outcomes of sessions of the IPHC Scientific Review Board..... 9*

 3.5 *Outcomes of the 98th Session of the IPHC Annual Meeting (AM098) and Special Sessions of the IPHC 9*

4. MANAGEMENT STRATEGY EVALUATION..... 9

 4.1 *MSE framework to investigate management procedures for Pacific halibut fisheries 9*

 4.2 *Primary MSE goals and objectives, performance metrics, and MSE Explorer 10*

 4.3 *Results investigating size limits and multi-year stock assessments for Pacific halibut fisheries 10*

5. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 17TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB017)..... 14

APPENDIX I LIST OF PARTICIPANTS FOR THE 17TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB017)..... 15

APPENDIX II AGENDA FOR THE 17TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB017)..... 17

APPENDIX III LIST OF DOCUMENTS FOR THE 17TH SESSION OF THE MANAGEMENT STRATEGY ADVISORY BOARD (MSAB017)..... 18

APPENDIX IV MSAB MEMBERSHIP 19

APPENDIX V CONSOLIDATED SET OF RECOMMENDATIONS AND REQUESTS OF THE 17TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB017)..... 21



1. OPENING OF THE SESSION

1. The 17th Session of the International Pacific Halibut Commission (IPHC) Management Strategy Advisory Board (MSAB017) was held in an electronic format (remote participation), from 18-20 October 2022. The MSAB consists of 29 board members/positions (6 vacant), 22 of which attended the Session from the two (2) Contracting Parties. A total of 4 individuals attended the session as observers. The list of participants is provided at [Appendix I](#). In the absence of sitting Co-Chairpersons, the meeting was opened by the Executive Director (Dr. David T. Wilson) who welcomed participants.
2. The MSAB **NOTED** that no apologies were received by the IPHC Secretariat from absent board members ([Appendix I](#)).
3. The MSAB **RECALLED** that the primary role of the MSAB is to advise the Commission on the Management Strategy Evaluation (MSE) process. To meet this advisory role, the Commission has articulated the following specific objectives for the MSAB, as described in Appendix V, para. 2 of the [IPHC Rules of Procedure \(2022\)](#):

The MSAB will:

- a) *define clear measurable objectives and performance measures for the fishery;*
 - b) *define candidate management strategies, which include aspects of the fishery that can be managed (e.g. regulatory requirements); and*
 - c) *advise the IPHC Secretariat about plausible scenarios for investigation, which include aspects of the fishery that cannot be managed by the IPHC (e.g. environmental conditions and removals under the management authority of a domestic management agency).*
 - d) *Gather and clearly articulate the interests and concerns of constituents and incorporate them into the MSAB's discussions;*
 - e) *Encourage and allow members to test tentative ideas and exploratory suggestions without prejudice to future discussions;*
 - f) *Represent information, views, and outcomes of the MSAB discussions to external parties accurately and appropriately;*
 - g) *Encourage the understanding and support of their constituencies for the MSAB process and for consensus positions developed by MSAB.*
4. **NOTING** [paragraph 3](#), the MSAB **RECALLED** that the Management Strategy Evaluation process is a stakeholder informed, scientifically driven process.

2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

5. The MSAB **ADOPTED** the Agenda as provided at [Appendix II](#). The documents provided to the MSAB017 are listed at [Appendix III](#).

3. IPHC PROCESS

3.1 *Election of Co-Chairpersons*

6. The MSAB **NOTED** that the terms of the previous Co-Chairpersons, Mr Adam Keizer (Canada) and Dr Carey McGilliard (U.S.A.), expired on 23 October 2021 ([IPHC-2019-MSAB014-R, para. 9](#)) and 10 May 2022 ([IPHC-2020-MSAB015-R, Para 10](#)), respectively, and as per Rule 9 of the IPHC Rules of Procedure (2022) the MSAB is required to elect Co-Chairpersons for the next biennium.



7. The MSAB **NOTED** that in accordance with Appendix V, Sect III.5 of the IPHC Rules of Procedure (2022), Mr. Adam Keizer (Canada) and Dr. Pete Hulson (USA) were nominated, seconded, and elected as Co-Chairpersons of the MSAB for a two-year period (ending 17 October 2024, assuming renewed membership).
8. The MSAB **THANKED** Dr Carey McGilliard for her service to the MSAB over past years as Co-Chairperson and wished her well.

3.2 *MSAB Membership & Rules of Procedure*

9. The MSAB **NOTED** paper [IPHC-2022-MSAB017-03 Rev_1](#) that provided the current membership list and term expirations for the MSAB, as well as the governance review currently being undertaken by the Commission. The current full membership list is provided at [Appendix IV](#).
10. The MSAB **NOTED** the following new members since the last MSAB meeting:
 - a) Pete **Hulson** (USA Science Advisor) was appointed by the USA on 13 July 2022, replacing Dr Carey McGilliard;
 - b) Karla **Bush** (NPFMC) was appointed by the NPFMC on 25 October 2021 to replace Rachel Baker;
 - c) Kurt **Iverson** (NOAA-Fisheries) was appointed by NOAA-Fisheries on 13 October 2022 to replace Glenn Merrill;
 - d) Heather **Hall** (PFMC) was appointed by the PFMC on 17 October 2022 to replace Maggie Sommer.
11. The MSAB **NOTED** the Commission, as part of its intersessional decision process, had agreed to revisit the MSAB membership/representation as specified in the IPHC Rules of Procedure, and that the two Contracting Parties would be discussing internally with their delegations, ways to ‘rationalise’ the membership and representation. The Commission’s stated goal is to reduce meeting costs (travel) for non-government members, noting that government employees are required to pay for their own meeting attendance. The Commission will provide feedback on the internal discussions described above and provide direction to the Secretariat on how it would like to proceed.
12. **NOTING** the proposed amendments to the MSAB Terms of Reference and Rules of Procedure, the MSAB **REQUESTED** the Commission note the following comments:
 - a) Membership continuity through various aspects of the Program of Work is desirable;
 - b) Term limits should be staggered, wherever feasible, to facilitate continuity within the Board;
 - c) Continuity would be well served by first term limits remaining at four (4) years, with subsequent terms at two (2) years, and without a limit on the number of terms that could be served by an individual board member. Some members expressed that term renewal limits were not supported as they would likely undercut consistency, member expertise, and contributions to the MSE process;
 - d) Should the Commission decide to limit the number of terms a member may serve, it should consider more than two (2) terms as a limit;
 - e) Should the number of term limits be implemented, the Commission is requested to clarify how current members would be impacted, noting some have been on the board for greater than 10-13 years.
13. The MSAB **NOTED** the removal of “environmental conditions” in para. 2c) and **AGREED** that retention of that phrase would be within the mandate of the MSAB.
14. The MSAB **NOTED** the proposed rationalisation of MSAB member numbers/seats that have been vacant for a number of years, and that some MSAB members preferred not to reduce total membership numbers/seats. Others felt that some reduction could be possible, at the Commission’s discretion. The current equity in membership seats between Contracting Parties and representation across a range of interests, as well as the importance of maintaining those, was seen as important.



15. **NOTING** well defined opportunities for observers and the general public to participate in meetings of the Commission and subsidiary bodies (Rule 12, [IPHC Rules of Procedure 2022](#)), the MSAB **AGREED** that a possible method to support continuity is to allow for alternate members.
16. The MSAB **AGREED** that if necessary, a limit could be placed on the number of in-person attendees at each meeting that are paid for by the Commission. This could be supported by a hybrid meeting format whereby a portion of the membership attends in-person and another portion via electronic means.
17. The MSAB **REQUESTED** the following minor amendments to the MSAB Rules of Procedure be incorporated in the current update:
 - a) Review terminology throughout and ensure consistency, e.g.: Fisheries vs fishery; Session vs meeting;
 - b) Para. 3: Change ‘employees’ to ‘board members’ at the end of para. 3;
 - c) Para. 7: Co-Chairpersons: no limit to the number of co-chairperson terms.

3.3 Update on the actions arising from the 16th Session of the MSAB (MSAB016)

18. The MSAB **NOTED** paper [IPHC-2022-MSAB017-04](#) which provided the MSAB with an opportunity to consider the progress made during the inter-sessional period in relation to the recommendations and requests of the 16th Session of the IPHC Management Strategy Advisory Board (MSAB016).
19. The MSAB **AGREED** to consider and revise as necessary, the actions arising from the MSAB016, and for these to be combined with any new actions arising from the MSAB017.

3.4 Outcomes of sessions of the IPHC Scientific Review Board

20. The MSAB **NOTED** paper [IPHC-2022-MSAB017-05](#) which provided the outcomes of the 20th and 21st sessions of the IPHC Scientific Review Board (SRB020; SRB021) relevant to the mandate of the MSAB, which were provided for reference.
21. The MSAB **NOTED** the complexities associated with decision-making variability and appreciated the SRB’s review and consideration of how it is currently modelled.

3.5 Outcomes of the 98th Session of the IPHC Annual Meeting (AM098) and Special Sessions of the IPHC

22. The MSAB **NOTED** paper [IPHC-2022-MSAB017-06](#) which detailed the outcomes of the 98th Session of the IPHC Annual Meeting (AM098), and the 12th Special Session of the IPHC (SS012), relevant to the mandate of the MSAB.

4. MANAGEMENT STRATEGY EVALUATION

4.1 MSE framework to investigate management procedures for Pacific halibut fisheries

23. The MSAB **NOTED** paper [IPHC-2022-MSAB017-07](#) that provided an update of improvements to the Management Strategy Evaluation (MSE) framework.
24. The MSAB **NOTED** the new Operating Model (OM) with different parameterizations and assumptions including migration between Biological Regions, and **NOTED** paragraph 16, from the Report of the 20th Session of the Scientific Review Board ([IPHC-2022-SRB020-R](#)):

[IPHC-2022-SRB020-R](#) (para. 16) “*The SRB **NOTED** and **APPRECIATED** the many improvements to the closed-loop simulation framework, methods to simulate implementation variability, two types of management procedures to simulate and evaluate in 2022, and potential areas of improvement to the evaluation process.*”



25. The MSAB **NOTED** that decision-making variability is included to evaluate the effects of this variability on the ranking of MPs, and if it has an effect the specific methods of modelling decision-making variability may be revisited to reflect future uncertainty more accurately.

4.2 *Primary MSE goals and objectives, performance metrics, and MSE Explorer*

26. The MSAB **NOTED** paper [IPHC-2022-MSAB017-08](#) that provided an overview of goals, scale and distribution objectives, and associated performance metrics to the MSAB for use in the MSE process.
27. The MSAB **RECALLED** paragraph 59a from [IPHC-2019-AM095-R](#) and paragraph 86 from [IPHC-2020-AM096-R](#) pertaining to primary objectives:
- [IPHC-2019-AM095-R, para 59](#). *The Commission:*
- a) **ENDORSED** the primary objectives and associated performance metrics used to evaluate management procedures in the MSE process (as detailed in paper IPHC-2019-AM095-12).
- [IPHC-2019-AM096-R, para 86](#). *The Commission NOTED that the MSAB will use the primary objectives and associated performance metrics detailed in Appendix V of IPHC-2019-MSAB014-R for the evaluation of management procedures*
28. The MSAB **NOTED** that objective 2.1 is stated as a target that has also been interpreted as a threshold and **REQUESTED** clarification from the Commission.
29. The MSAB **NOTED** that the minimum percent proportion of female spawning biomass threshold for IPHC Regulatory Area 4B (objective 1.1) was determined in an ad hoc manner using recent observations from the FISS. The performance standard has not been met in previous MSE analyses and this objective will benefit from further refinement.
30. The MSAB **AGREED** to maintain the primary objectives as in [paragraph 27](#) without consideration of additional objectives, although future programs of work may allow for a re-evaluation of current objectives and the definition of new objectives when defining MPs to investigate and before beginning simulations.

4.3 *Results investigating size limits and multi-year stock assessments for Pacific halibut fisheries*

31. The MSAB **NOTED** paper [IPHC-2022-MSAB017-09](#) that provided results for the Management Strategy Evaluation (MSE) simulations of size limit and multi-year stock assessment management procedures (MPs).
32. The MSAB **RECALLED** the following recommendation from the 11th Special Session of the IPHC (SS011), identifying aspects of the MSE Program of Work for 2021–2023:
- [SS011-Rec.01 \(para. 7\)](#) *The Commission RECOMMENDED that the IPHC Secretariat:*
- a) *prioritize tasks F1, F.2, F.3 and F.5 to support the development of a robust framework, and E.3 to work with stakeholders and the Commission to improve the methods of presenting MSE results.*
- b) *continue to work on task M.3 to understand the trade-offs with multi-year stock assessments.*
- c) *continue investigation of size limits (M.1) to understand the long-term effects of a change in the size limit, including under different realizations of population dynamics such as size-at-age.*
33. The MSAB **RECALLED** the following recommendation from the 12th Special Session of the IPHC, identifying five distribution procedures to include as part of the management procedure and these are for analytical purposes:
- [SS012-Rec.01 \(para. 10\)](#) *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.

34. The MSAB **AGREED** that the five core management procedures developed by the IPHC Secretariat investigating size limits and multi-year assessments, along with the integration of the five distribution procedures, reflects the Commission direction in [paragraphs 32 and 33](#).

35. The MSAB **NOTED** the following observations related to the primary objectives and performance of size limit management procedures when using an SPR of 43%.

- a) That biological sustainability objectives were met for all management procedures, notwithstanding objective 1.1 for IPHC Regulatory Area 4B ([para. 29](#));
- b) A 3.3% gain (~ 1.9 Mlbs) in short-term coastwide median TCEY and a 1.9% gain (~1.3 Mlbs) in long-term coastwide median TCEY;
- c) All IPHC Regulatory Areas show an increase in the median TCEY when lowering the size limit, except for 2A which has a constant TCEY in 3 of the 5 distribution procedures;
- d) When removing the size limit, increases in commercial landings and recreational limits ranged between 0.4% and 12.7% in the short-term across IPHC Regulatory Areas. In the long-term, gains in yield for commercial and recreational fisheries were generally less pronounced (ranging between 0.6% to 4.1%) which may be due to stock composition and conditions including numbers of small fish and weight-at-age;
- e) Variability in the coastwide TCEY was high and size limits had little if any effect.

36. The MSAB **NOTED** that the following additional observations and metrics were useful to evaluate the performance of size limit management procedures when using an SPR of 43%

- a) Coastwide commercial discard mortality was reduced by approximately 80% (from 855,000 to 168,000 lbs) without a size limit, noting that some discard mortality remains without a size limit due to lost gear and discards related to quota or trip limit attainment.
- b) The gain in commercial yield due to removal of size limit results in fewer O32 fish and more U32 fish. In some IPHC Regulatory Areas more than 10% of the commercial landings in the short-term could be composed of U32 fish.
- c) There was very little long-term change to distribution of spawning biomass and TCEY.

37. The MSAB **NOTED** that all five distribution procedures used O32 stock distribution and that using all sizes stock distribution may result in additional differences between size limit MPs.



38. The MSAB **NOTED** a metric called Equal Value Price Ratio was useful to evaluate the performance of size limits because it did not rely on ex-vessel price and provided an indication of value of the fishery in light of the composition of U32 and O32 fish in commercial landings. This metric may be also be useful if presented by IPHC Regulatory Area.
39. The MSAB **AGREED** that there are other management considerations when adjusting a size limit. For example, removal of a size limit may complicate the management of derby fisheries (e.g. Regulatory Area 2A).
40. The MSAB **ACCEPTED** that relevant factors to consider when deciding on size limits include stock dynamics as well as economic impacts, market acceptance, stakeholder acceptance, and management complexity (e.g. Regulatory Area 2A). **NOTING** [paras. 35 and 36](#), the stock dynamics associated with reducing or removing the current size limit generally indicated:
- an increase in yield with minimal changes to spawning biomass distribution and baseline variability;
 - significant numbers of small fish entering the market in the short-term due to the current low weight at age and a potential positive recruitment trend resulting from recent PDO conditions;
 - a decrease of O32 fish available to the market;
 - reduced directed commercial fishery discard mortality.
41. If the Commission wishes for further evaluation of size limits, the MSAB **RECOMMENDED** that the evaluation include the consideration of impacts of alternative size limits specific to IPHC Regulatory Areas, alternate distribution procedures (e.g. all-sizes stock distribution), and the development of additional metrics related to value and efficiency of the commercial fishery.
42. The MSAB **NOTED** that multi-year management procedures with a biennial assessment or a triennial assessment were evaluated where the TCEY in years without an assessment was adjusted at the coastwide level using the FISS index and distributed to IPHC Regulatory Areas using the five distribution procedures (called option b). Two additional options were evaluated where the coastwide TCEY was held constant in non-assessment years (options a and c).
43. The MSAB **NOTED** the following observations related to the primary objectives and performance of multi-year management procedures (using option b as described in [para. 35](#)) when using an SPR of 43%:
- That biological sustainability objectives were met for all management procedures, notwithstanding objective 1.1 for IPHC Regulatory Area 4B ([para. 29](#));
 - That using the FISS results in years without an assessment produced similar results as an annual assessment, potentially with less variability in the TCEY. A biennial assessment resulted in a slight increase in the AAV but a reduction in annual change, whereas as triennial assessment resulted in clear reduction in inter-annual variability of the TCEY. Further investigation of the drivers of variability for the biennial frequency would be useful.
44. The MSAB **NOTED** that options a and c ([para. 35](#)) held the coastwide TCEY constant in non-assessment years and may result in loss of yield.
45. **NOTING** that changes in the TCEY in the assessment year may be larger than changes in non-assessment years for all options evaluated, the MSAB **AGREED** that small annual changes in the TCEY are preferred to larger changes at a longer interval.
46. The MSAB **RECALLED** the following request from the 21st Session of the IPHC Scientific Review Board (SRB021), related to the benefits of a multi-year assessment with an empirical approach:
- [SRB021–Req.02 \(para. 30\)](#) *The SRB REQUESTED that the Secretariat examine MPs based on a three-year assessment cycle with annual TCEY changes proportional to changes in the FISS index because (i) this approach would be simpler and more transparent than a model, which has not yet been developed); (ii) the high benefit to cost ratio for multi-year TCEYs; (iii) it matches the current*



three-year full assessment cycle; and (iv) the general approach has precedents in other fishery commissions (e.g. Southern Bluefin Tuna).

47. The MSAB **ACCEPTED** that costs associated with multi-year assessments (biennial or triennial) with an empirical method using FISS observations in years without an assessment to adjust the TCEY include:
- Detailed stock assessment results (e.g. stock status) would not be available every year;
 - A higher chance of smaller stock size.
48. The MSAB **ACCEPTED** that benefits associated with multi-year assessments (biennial or triennial) with an empirical method using FISS observations in years without an assessment to adjust the TCEY include:
- Potential for reduced inter-annual variability in the TCEY;
 - Multi-year stability and short-term predictability;
 - Use of fishery-independent observations that are a reasonable proxy to coastwide and area changes in a transparent process in years without an assessment;
 - More focused assessment research;
 - Potential for additional collaboration time within the Secretariat;
 - A triennial assessment frequency would be consistent with the current assessment cycle of update and full assessments.
49. If the Commission wishes for further evaluation of multi-year assessments the MSAB **RECOMMENDED** further evaluation of the multi-year assessments to understand the drivers of inter-annual variability in the TCEY and changes in the TCEY specific to assessment years and non-assessment years.
50. The MSAB **NOTED** that results for size limits and multi-year assessments change slightly depending on fishing intensity (i.e. SPR). In general, a higher fishing intensity (lower SPR) results in a higher TCEY and higher variability, but outcomes may differ across MPs.
51. The MSAB **NOTED** that elements to reduce variability (e.g. constraints and averaging stock distribution) that have been investigated in the past were not included in these MPs.
52. The MSAB **NOTED** that constraints and smoothers were potentially beneficial elements to reduce variability and **RECALLED** the following paragraph from the report of the 13th Session of the IPHC Management Strategy Advisory Board (MSAB013):
- ([IPHC-2019-MSAB-013-R](#), para 50): The MSAB NOTED that:*
- only management procedures with constraints on change in mortality limits satisfied the catch stability objective;*
 - management procedures that utilized a slow-up fast-down approach, a maximum change of 15% (up or down), and a multi-year limit were ranked highly among management procedures;*
 - management procedures with a maximum change (up or down) between 15 and 20% were not evaluated but may be highly ranked;*
 - some constrained management procedures with a 30:20 control rule and an SPR of 43% met objectives for biological sustainability, catch stability, and maintaining the biomass, at least 80% of the time, above the fishery trigger of SB30%.*
53. The MSAB **RECOMMENDED** that future evaluations of size limits, multi-year assessments, and other management procedures include elements that reduce inter-annual variability in the coastwide and area-specific TCEY. For example:



- a) Constraints on the change in the coastwide TCEY (e.g. a maximum of 15% in either direction);
- b) Averaging the stock distribution over recent years (e.g. 3 years).

5. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 17TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB017)

54. The report of the 17th Session of the IPHC Management Strategy Advisory Board ([IPHC-2022-MSAB017-R](#)) was **ADOPTED** on 20 October 2022, including the consolidated set of recommendations and/or requests arising from MSAB017, provided at [Appendix V](#).

APPENDIX I

**LIST OF PARTICIPANTS FOR THE 17TH SESSION OF THE IPHC MANAGEMENT STRATEGY
ADVISORY BOARD (MSAB017)**

Officers

Co-Chairperson (Canada)	Co-Chairperson (United States of America)
Mr Adam Keizer : adam.keizer@dfo-mpo.gc.ca	Dr. Pete Hulson : pete.hulson@noaa.gov

MSAB Members

Canada	United States of America
Mr Chuck Ashcroft : chuckashcroft@telus.net	Mr Forrest Braden : forrest@seagoalaska.org
Mr Angus Grout : rommel@telus.net	Ms Karla Bush : karla.bush@alaska.gov
Mr Robert Hauknes : robert_hauknes@hotmail.com	Ms Angel Drobnica : adrobnica@apicda.com
Ms Ann-Marie Huang : Ann-Marie.Huang@dfo-mpo.gc.ca	Mr Dan Falvey : myriadfisheries@gmail.com
Mr Adam Keizer : adam.keizer@dfo-mpo.gc.ca	Mr James Johnson : jj.deepseafishermensunion@gmail.com
Mr Jim Lane : jim.lane@nuuchahnulth.org	Ms. Heather Hall : Heather.Hall@dfw.wa.gov
Mr Chris Sporer : chris.sporer@phma.ca	Dr. Pete Hulson : pete.hulson@noaa.gov
	Mr. Kurt Iverson : kurt.iverson@noaa.gov
	Mr Jeff Kauffman : jeff@spfishco.com
	Mr Tom Marking : tmmarking@gmail.com
	Mr Scott Mazzone : smazzone@quinault.org
	Mr Per Odegaard : vanscodegaard@hotmail.com
	Ms Peggy Parker : peggyparker616@gmail.com
	Mr Joe Petersen : jpetersen@nwifc.org
	Ms Sarah Webster : sarah.webster@alaska.gov
Absentees	Absentees
Mr Brad Mirau : brad@aerotrading.ca	

Commissioners

Canada	United States of America
	Jon Kurland : jon.kurland@noaa.gov

Observers

Canada	United States of America
Felicia Cull (DFO-MPO)	Lynn Mattes (ODFW)
	Austin Flanigan (unknown affiliation)
	Brianna Bowman King (ADFG)

IPHC Secretariat

Participant	Title	Email
Dr David Wilson	Executive Director	david.wilson@iphc.int
Dr Allan Hicks	Quantitative Scientist	allan.hicks@iphc.int
Dr Ian Stewart	Quantitative Scientist	ian.stewart@iphc.int
Dr Barbara Hutniczak	Fisheries Policy and Economics Branch Manager	barbara.hutniczak@iphc.int
Dr Jason Jannot	Fisheries Data Services Branch Manager	jason.jannot@iphc.int
Dr Josep Planas	Branch Manager	josep.planas@iphc.int
Ms Andrea Keikkala	Assistant Director	andrea.keikkala@iphc.int



Ms Lorissa Burkhalter	Administrative Specialist	lorissa.burkhalter@iphc.int
Ms Tara Coluccio	Administrative Specialist/Communications	tara.coluccio@iphc.int
Mr Claude Dykstra	Research Biologist	clauded.dykstra@iphc.int
Mr Edward Henry	Communications Specialist	edward.henry@iphc.int
Mr Tyler Jack	Setline Survey Specialist	tyler.jack@iphc.int
Mr Colin Jones	Setline Survey Specialist	colin.jones@iphc.int
Ms Rebecca Kuklok	Administrative Specialist (Accounting)	rebecca.kuklok@iphc.int
Ms Rachel Rillera	Setline Survey Specialist	rached.rillera@iphc.int
Ms Lauri Sadorus	Research Biologist	lauri.sadorus@iphc.int
Ms Monica Thom	Port Operations Coordinator	monica.thom@iphc.int
Ms Ola Wietecha	Administrative Specialist	ola.wietecha@iphc.int



APPENDIX II
AGENDA FOR THE 17TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD
(MSAB017)

Date: 18-20 October 2022

Location: Electronic

Venue: Adobe Connect

Time: 12:30-17:00 (18th), 09:00-17:00 (19-20th) PDT

Co-Chairpersons: Mr. Adam Keizer (Canada) & Dr. Pete Hulson (U.S.A.)

1. OPENING OF THE SESSION

2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

- *IPHC-2022-MSAB017-01: Agenda & Schedule for the 17th Session of the Management Strategy Advisory Board (MSAB017)*
- *IPHC-2022-MSAB017-02: List of Documents for the 17th Session of the Management Strategy Advisory Board (MSAB017)*

3. IPHC PROCESS

3.1. Election of Co-Chairpersons (IPHC Secretariat)

3.2. MSAB Membership & Rules of Procedure

- *IPHC-2022-MSAB017-03 Rev_1: MSAB Membership & Rules of Procedure (D. Wilson)*

3.3. Update on the actions arising from the 16th Session of the MSAB (MSAB016)

- *IPHC-2022-MSAB017-04: Update on the actions arising from the 16th Session of the MSAB (MSAB016) (A. Hicks)*

3.4. Outcomes of Sessions of the IPHC Scientific Review Board

- *IPHC-2022-MSAB017-05: Outcomes of the 19th and 20th Sessions of the IPHC Scientific Review Board (SRB019; SRB020) (D. Wilson)*

3.5. Outcomes of the 98th Session of the IPHC Annual Meeting (AM098), and Special Sessions of the Commission (A. Hicks, D. Wilson)

- *IPHC-2022-MSAB017-06: Outcomes of the 98th Session of the IPHC Annual Meeting (AM098), and Special Sessions (A. Hicks, D. Wilson)*

4. MANAGEMENT STRATEGY EVALUATION

4.1. MSE framework to investigate management procedures for Pacific halibut fisheries (A. Hicks)

- *IPHC-2022-MSAB017-07: MSE framework to investigate management procedures for Pacific halibut fisheries (A. Hicks & I. Stewart)*

4.2. Primary MSE goals and objectives, performance metrics, and MSE Explorer (A. Hicks)

- *IPHC-2022-MSAB017-08: Primary MSE goals, objectives, and performance metrics (A. Hicks)*

4.3. Results investigating size limits and multi-year stock assessments for Pacific halibut fisheries (A. Hicks)

- *IPHC-2022-MSAB017-09: Results investigating size limits and multi-year stock assessments for Pacific halibut fisheries (A. Hicks & I. Stewart)*

5. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 17TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB017)



APPENDIX III
LIST OF DOCUMENTS FOR THE 17TH SESSION OF THE MANAGEMENT STRATEGY ADVISORY BOARD (MSAB017)

Document	Title	Availability
IPHC-2022-MSAB017-01	Agenda & Schedule for the 17 th Session of the IPHC Management Strategy Advisory Board (MSAB017)	✓ 6 Jul 2022 ✓ 12 Oct 2022
IPHC-2022-MSAB017-02	List of Documents for the 17 th Session of the IPHC Management Strategy Advisory Board (MSAB017)	✓ 16 Sept 2022 ✓ 12 Oct 2022
IPHC-2022-MSAB017-03 Rev_1	MSAB Membership & Rules of Procedure (D. Wilson)	✓ 16 Sept 2022 ✓ 12 Oct 2022
IPHC-2022-MSAB017-04	Update on the actions arising from the 16 th Session of the MSAB (MSAB016) (A. Hicks)	✓ 16 Sept 2022
IPHC-2022-MSAB017-05	Outcomes of Session of the IPHC Scientific Review Board (SRB020; SRB021) (IPHC Secretariat)	✓ 16 Sept 2022
IPHC-2022-MSAB017-06	Outcomes of the 98 th Session of the IPHC Annual Meeting (AM098), and Special Sessions (IPHC Secretariat)	✓ 16 Sept 2022
IPHC-2022-MSAB017-07	MSE Framework to investigate management procedures for Pacific halibut (A. Hicks & I. Stewart)	✓ 16 Sept 2022
IPHC-2022-MSAB017-08	Primary MSE goals, objectives, and performance metrics. (A. Hicks)	✓ 16 Sept 2022
IPHC-2022-MSAB017-09	Results investigating size limits and multi-year stock assessments for Pacific halibut fisheries (A. Hicks & I. Stewart)	✓ 16 Sept 2022
<i>Information papers</i>		
Nil to-date	Nil to-date	-



APPENDIX IV
MSAB MEMBERSHIP
(as of 18 October 2022)

Commission appointed members

Membership category	Member	Canada	U.S.A.	Current Term commencement	Current Term expiration
Commercial harvesters (6-8)					
1	Sporer, Chris	CDN Commercial		9-May-17	31-Dec-22
2	Hauknes, Robert	CDN Commercial		9-May-17	31-Dec-22
3	Grout, Angus	CDN Commercial		3-Dec-19	31-Dec-22
4	Vacant	CDN Commercial			Vacant
5	Kauffman, Jeff		USA Commercial	9-May-19	8-May-23
6	Odegaard, Per		USA Commercial	9-May-17	31-Dec-22
7	Falvey, Dan		USA Commercial	9-May-17	31-Dec-22
8	Johnson, James		USA Commercial	17-Apr-19	16-Apr-23
Recreational/ Sport fisheries (2-4)					
1	Ashcroft, Chuck	CDN Sportfishing		17-Apr-19	16-Apr-23
2	Vacant	CDN Sportfishing			Vacant
3	Marking, Tom		USA Sportfishing (CA)	9-May-19	8-May-23
4	Braden, Forrest		USA sportfishing (AK)	17-Apr-19	16-Apr-23
Processors (2-4)					
1	Parker, Peggy	US/CDN Processing	US/CDN Processing	9-May-19	8-May-23
2	Mirau, Brad	CDN Processing		9-May-19	8-May-23
3	Vacant	CDN Processing			Vacant
4	Vacant		USA Processing		Vacant
5	Drobnica, Angel		USA Processing	17-Apr-19	16-Apr-23
First Nations / Tribal / Agency appointments					
Membership category	Member	Canada	U.S.A.	Current Term commencement	Current Term expiration
First Nations/ Tribal fisheries (2-4)					
1	Lane, Jim	CDN First Nations		9-May-17	31-Dec-22
2	Vacant	CDN First Nations			Vacant
3	Mazzone, Scott		USA Treaty Tribes	9-May-19	8-May-23
4	Peterson, Joseph		USA Treaty Tribes	7-May-20	31-Dec-22



Membership category	Member	Canada	U.S.A.	Current Term commencement	Current Term expiration
Government Agencies (4-8)					
1	Keizer, Adam	DFO		9-May-19	8-May-23
2	Huang, Ann-Marie	CDN Science Advisor		10-May-18	31-Dec-22
3	Vacant	DFO			Vacant
4	Iverson, Kurt		NOAA-Fisheries	13-Oct-22	12-Oct-26
5	Hulson, Pete		USA Science Advisor	13-Jul-22	12-Jul-26
6	Hall, Heather		PFMC	17-Oct-22	16-Oct-26
7	Bush, Karla		NPFMC	25-Oct-21	24-Oct-23
8	Webster, Sarah		ADFG	24-Sep-19	31-Dec-22



APPENDIX V

CONSOLIDATED SET OF RECOMMENDATIONS AND REQUESTS OF THE 17TH SESSION OF THE
IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB017)

RECOMMENDATIONS

Results investigating size limits and multi-year stock assessments for Pacific halibut fisheries

- MSAB017-Rec.1 ([para. 41](#)) If the Commission wishes for further evaluation of size limits, the MSAB **RECOMMENDED** that the evaluation include the consideration of impacts of alternative size limits specific to IPHC Regulatory Areas, alternate distribution procedures (e.g. all-sizes stock distribution), and the development of additional metrics related to value and efficiency of the commercial fishery.
- MSAB017-Rec.2 ([para. 49](#)) If the Commission wishes for further evaluation of multi-year assessments the MSAB **RECOMMENDED** further evaluation of the multi-year assessments to understand the drivers of inter-annual variability in the TCEY and changes in the TCEY specific to assessment years and non-assessment years.
- MSAB017-Rec.3 ([para. 53](#)) The MSAB **RECOMMENDED** that future evaluations of size limits, multi-year assessments, and other management procedures include elements that reduce inter-annual variability in the coastwide and area-specific TCEY. For example:
- a) Constraints on the change in the coastwide TCEY (e.g. a maximum of 15% in either direction);
 - b) Averaging the stock distribution over recent years (e.g. 3 years).

REQUESTS

MSAB Membership & Rules of Procedure

- MSAB017-Req.1 ([para. 12](#)) **NOTING** the proposed amendments to the MSAB Terms of Reference and Rules of Procedure, the MSAB **REQUESTED** the Commission note the following comments:
- a) Membership continuity through various aspects of the Program of Work is desirable;
 - b) Term limits should be staggered, wherever feasible, to facilitate continuity within the Board;
 - c) Continuity would be well served by first term limits remaining at four (4) years, with subsequent terms at two (2) years, and without a limit on the number of terms that could be served by an individual board member. Some members expressed that term renewal limits were not supported as they would likely undercut consistency, member expertise, and contributions to the MSE process;
 - d) Should the Commission decide to limit the number of terms a member may serve, it should consider more than two (2) terms as a limit;
 - e) Should the number of term limits be implemented, the Commission is requested to clarify how current members would be impacted, noting some have been on the board for greater than 10-13 years.



MSAB017-Req.2 ([para. 17](#)) The MSAB **REQUESTED** the following minor amendments to the MSAB Rules of Procedure be incorporated in the current update:

- a) Review terminology throughout and ensure consistency, e.g.: Fisheries vs fishery; Session vs meeting;
- b) Para. 3: Change ‘employees’ to ‘board members’ at the end of para. 3;
- c) Para. 7: Co-Chairpersons: no limit to the number of co-chairperson terms.

Primary MSE goals and objectives, performance metrics, and MSE Explorer

MSAB017-Req.3 ([para. 28](#)) The MSAB **NOTED** that objective 2.1 is stated as a target that has also been interpreted as a threshold and **REQUESTED** clarification from the Commission.