



Report of the 13th Session of the IPHC Scientific Review Board (SRB013)

Seattle, Washington, U.S.A., 25-27 September 2018

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BIBLIOGRAPHIC ENTRY

IPHC 2018. Report of the 13th Session of the IPHC
Scientific Review Board (SRB013). Seattle, Washington,
U.S.A., 25-27 September 2018.
IPHC-2018-SRB013-R, 17 pp.



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ACRONYMS

AM	Annual Meeting, of the IPHC
CPUE	Catch-per-unit-effort
EBS	Eastern Bering Sea
IM	Interim Meeting, of the IPHC
IPHC	International Pacific Halibut Commission
MSAB	Management Strategy Advisory Board
MSE	Management Strategy Evaluation
NBS	Northern Bering Sea (specifically the US zone north of St. Lawrence Island covered by NMFS Surveys in 2010, 2017, and partially in 2018)
SRB	Scientific Review Board
TCEY	Total Constant Exploitation Yield
TM	Total Mortality
TMq	Total Mortality specified in quota
U.S.A.	United States of America
WPUE	Weight-Per-Unit-Effort

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** (formal); **REQUESTED** (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 (or subsidiary body) 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/members 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 (or subsidiary body) 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.

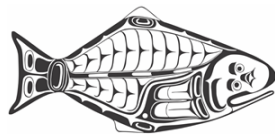


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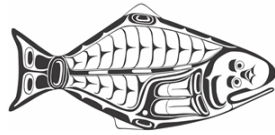
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EXECUTIVE SUMMARY

The 13th Session of the International Pacific Halibut Commission (IPHC) Scientific Review Board (SRB013) was held in Seattle, Washington, U.S.A. from 25 to 27 September 2018. The meeting was opened by the Chairperson, Dr Sean Cox (Canada), and the Executive Director, Dr David Wilson, who welcomed participants to Seattle.

The following are a subset of the complete recommendations/requests arising from the SRB013, which are provided at [Appendix IV](#).

RECOMMENDATIONS

MSE Simulation results

SRB013–Rec.02 ([para. 30](#)) The SRB **RECOMMENDED** a clear separation between the current stock assessment process and MSE process, so that it is understood:

- a) these two processes, including statistics and performance metrics, are distinct and not comparable;
- b) the purpose of the current ensemble stock assessment approach is to develop a decision table to assist the Commission in setting an annual TCEY. This TCEY setting process lacks specificity and how decisions are made is unclear. Furthermore, repeated application of this process is difficult to evaluate relative to Commission objectives;
- c) the purpose of the MSE is to compare alternative management procedures against Commission objectives over a wide range of plausible uncertainties within the operating model and management procedures. Therefore, these procedures by definition must be specific and repeatable.

REQUESTS

Management Strategy Evaluation: update

SRB013–Req.01 ([para. 26](#)) The SRB **REQUESTED** that the MSAB consider listing prioritized objectives used to guide the selection of a management procedure. These could include any combination of short, medium, and long-term objectives, provided Commission objectives be given highest priority. All performance metrics in the MSE must be computed from the operating model. See [paragraph 30](#) for further clarification.

Updates to MSE framework and closed-loop simulations

SRB013–Req.02 ([para. 29](#)) The SRB **REQUESTED** that in future iterations of the MSE, the IPHC Secretariat and MSAB consider:

- a) the use of estimation error in the proxy assessment method with coefficients of variation equal to 0.15, a correlation of 0.5, and autocorrelation equal to 0.2 represents one plausible scenario. A larger error and autocorrelation could be considered in robustness tests or as alternative scenarios;
- b) a management procedure include a constraint on the TMq change to be consistent with the maximum change that has happened historically;
- c) the current conditioned operating model be used to simulate a coast-wide survey index and that such data be used to consider an alternative survey-based management procedure (this may provide a more transparent TMq-setting algorithm than the current SPR based control-rule and help with MSAB deliberations).



1. OPENING OF THE SESSION

1. The 13th Session of the International Pacific Halibut Commission (IPHC) Scientific Review Board (SRB012) was held in Seattle, Washington, U.S.A. from 25 to 27 September 2018. The list of participants is provided at [Appendix I](#). The meeting was opened by the Chairperson, Dr Sean Cox (Canada), and the Executive Director, Dr David Wilson, who welcomed participants to Seattle.
2. The SRB **RECALLED** its mandate, as detailed in the IPHC Rules of Procedure (2017), as follows:

Appendix VIII, Sect I, para 1. *“The Scientific Review Board’s (SRB) main objective is to provide an independent scientific review of Commission science products and programs, and to support and strengthen the stock assessment process. The SRB shall review modeling and evaluation used by the Management Strategy Advisory Board, and review research proposals from the Research Advisory Board and the IPHC Secretariat. The SRB will prepare reports to the Commission summarising findings, recommendations, and documentation of any divergent views for all of its reviews.”*

2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

3. The SRB **ADOPTED** the Agenda as provided at [Appendix II](#). The documents provided to the SRB are listed in [Appendix III](#). Participants were reminded that all documents for the meeting were published on the IPHC website, 30 days prior to the Session: <https://iphc.int/venues/details/13th-session-of-the-iphc-scientific-review-board-srb013>.
4. The SRB **AGREED** that for future SRB meetings, an agenda item be added to provide for an update from the Science Advisors from each Contracting Party. The intent would be to allow the advisors to highlight specific science advice needs from their respective Commissioners.

3. IPHC PROCESS

3.1 *Update on the actions arising from the 12th Session of the SRB (SRB012)*

5. The SRB **NOTED** paper IPHC-2018-SRB013-03, which provided an opportunity to consider the progress made during the inter-sessional period, on the recommendations/requests arising from the SRB012.
6. The SRB **AGREED** to consider and revise as necessary, the actions arising that are either in progress or pending, and for these to be combined with any new actions arising from the SRB013 into a consolidated list for future reporting.

3.2 *Outcomes of the 2018 IPHC Work Meeting (WM2018)*

7. The SRB **NOTED** that the Commission met on 19-20 September 2018 for its annual Work Meeting with IPHC Secretariat staff to prepare for the upcoming IPHC Interim and Annual Meetings. During the 2018 Work Meeting, the Commission reviewed the report of the 12th Session of the Scientific Review Board (SRB012) and requested several actions from the SRB regarding its previous comments on elements of the IPHC Management Strategy Evaluation process:
 - a) *The SRB is REQUESTED to comment more specifically on short-, medium-, and long-term performance metrics, and provide clarity on paragraph 28a in IPHC-2018-SRB012-R.*



IPHC-2018-SRB012-R. Para. 28a:

*“With respect to the above two excerpts from IPHC-2017-SRB011-R, the SRB **AGREED** to the following clarifications:*

- a) IPHC-2017-SRB011-R, paragraph 24 simply recognizes that perfect knowledge simulation will under-represent short- and medium-term risks to both the stock and fisheries that result from persistent stock assessment errors. The SRB also **NOTED** that IPHC-2017-SRB011-R paragraph 24 does not imply concatenating short-term projections from the ensemble assessment model with long-term projections from the MSE.”*

IPHC-2017-SRB011-R. Para. 24:

*“The SRB **NOTED** that the current simulation framework is not yet adequate for evaluating short-term and medium-term outcomes because it assumes perfect knowledge about stock size and parameters in all future years. The SRB looks forward to SRB012 where we expect to see the implications of uncertainty in annual assessments and parameters.”*

- i. SRB013 response:** The SRB **AGREED** that current simulations will provide more realistic performance metrics by including estimation error in harvest control rule components. The improved simulations can then be used to evaluate management procedures.
 - ii. SRB013 response:** The SRB **NOTED** that there is a distinction between the operating model (used for simulations to test performance of management strategies) and the assessment model (used for creating the annual decision table). See also [paragraphs 26 and 30](#) of this report.
- b) The SRB is REQUESTED to clarify paragraphs 30 and 31 of IPHC-2018-SRB012-R, and address any potential contradictions between the two (i.e. provide clear updated text):**

IPHC-2018-SRB012-R. Para. 30:

*“The SRB **NOTED** the discussion about the need to preserve biocomplexity as an objective under the biological sustainability goal, but recognized that biocomplexity is not an appropriate concept because it is poorly defined and not understood for Pacific halibut, especially over large spatial scales. Further, the terms “preserve” and “preservation” should be “conserve” and “conservation” as most fisheries management is about conservation.”*

- i. SRB013 response:** The SRB **AGREED** that the terms biocomplexity, preserve, and preservation, are not well defined or are inappropriate for the concept of conserving the spatial population structure in a fisheries management context, which may be a more appropriate phrase to describe this concept.

IPHC-2018-SRB012-R. Para. 31:

*“NOTING paragraph 30, the SRB **AGREED** that the defined Bioregions (i.e. 2,3,4, and 4b described in paper IPHC-2018-SRB012-08) are presently the best option for implementing a precautionary approach given uncertainty about spatial population structure and dynamics of Pacific halibut. Better options may arise with additional biological data (e.g. see Section 7).”*

- ii. SRB013 response:** The SRB **AGREED** that the intent of paragraph 30 from IPHC-2018-SRB012-R is to support the current Bioregions to conserve population structure. Future research may lead to different definitions of bioregions.



3.3 *SRB annual workflow*

8. The SRB **RECALLED** that the core purpose of the SRB013 is to review progress on the IPHC scientific program, and to provide guidance for the delivery of products to the Commission at its Interim Meeting in November 2018, and Annual Meeting in January 2019.

4. IPHC FISHERY-INDEPENDENT SETLINE SURVEY (FISS)

4.1 *Methods for spatial setline survey modelling – results to date for 2018*

9. The SRB **NOTED** paper IPHC-2018-SRB013-04, which summarized preliminary IPHC setline survey data inputs to space-time modelling in 2018, and described plans for the remainder of the year.
10. **NOTING** that this is the sixth review of the space-time modelling approach, the SRB reiterated its **ENDORSEMENT** of the approach as cutting-edge and could be widely used. Thus there is a pressing need to publish the space-time modelling approach used for the fishery-independent setline survey data in a peer-reviewed scientific journal.
11. The SRB **NOTED** the presentation of the expanded setline survey stations undertaken in 2018 and that preliminary indications are that the coverage is vastly improved and this further reduced uncertainty about setline survey catch rates.
12. **NOTING** that the expanded setline survey stations increased the cost of the setline survey, the SRB **AGREED** that a cost-benefit analyses may be required for the pending setline survey rationalisation (e.g. setline survey station density).
13. The SRB **NOTED** the clarification that the Northern Bering Seas (NBS) application does not differ from the Eastern Bering Seas (EBS): they apply the same calibration curve to data from both surveys. Estimation of station-level WPUE indices in Norton Sound does differ, as we do not have complete individual Pacific halibut length data required for application of the calibration curve.

5. PACIFIC HALIBUT STOCK ASSESSMENT: 2018

14. The SRB **NOTED** paper IPHC-2018-SRB013-05, which provided a summary of updates to data sources and modelling for the 2018 stock assessment and harvest strategy analyses.
15. The SRB **NOTED** the timeline for stock assessment development/updating, beginning with the final data sets available on 9 November 2018, and including the opportunity to hear preliminary results on 20 November 2018, the IM094, the optional SRB conference call in mid-December, and the final assessment results available for the AM095, commencing on 28 January 2019.
16. The SRB **NOTED** that past recommendations from the SRB (e.g. bias corrections for terminal CPUE and parsing out tribal and non-tribal catch rates) have been incorporated in presentations of stock assessment results. The SRB further **NOTED** the responsiveness of the IPHC Secretariat to constituent requests.

5.1 *Data source development*

17. The SRB **NOTED** that the 2018 stock assessment would include a routine update of standard data sources, including the space-time model results based on the 2018 IPHC fishery-independent setline survey expansion stations in IPHC Regulatory Areas 2A, 2B, and 2C.



5.2 Modelling updates

18. The SRB **NOTED** that preliminary model results (without the addition of 2018 data) suggest a decline in the FISS results for 2018 of 7-10%, and that these predictions are consistent with preliminary IPHC fishery-independent setline survey results available as of SRB 2018.
19. The SRB **AGREED** that presentation of detailed (snap and fixed-hook) commercial fishery CPUE data could be a helpful addition for understanding fishery performance, and that data mapping tools should be explored for 2018 to help synthesize the relative status and trend of the various sources of fishery and survey information.
20. The SRB **NOTED** that:
- a) the 2019 stock assessment, to be reported in SRB014, will include a full analysis, including detailed documentation, and review (the first since the 2015 stock assessment);
 - b) two key data sets will be included in 2019: sex-specific 2017 commercial fishery age-compositions and a revised FISS time-series based on the space-time model and including improved criteria for exclusion of stations experiencing whale depredation;
 - c) the 2019 stock assessment will utilize a newly available version of the stock synthesis software (3.30.12), and therefore will, likely include exploration of previously unavailable features and parameterizations relevant to the Pacific halibut stock assessment.
21. **NOTING** that the Commission has asked the IPHC Secretariat to develop a paper for consideration at the 94th Session of the IPHC Interim Meeting, that outlines both the current IPHC peer review process and areas for potential improvement, the SRB **RECOMMENDED** the following:
- a) Pacific halibut stock assessment and peer review cycle, noting that the intention is for the SRB to undertake annual peer review of stock assessment updates, and a peer review of the full stock assessment, independent of the SRB, occurs once every three years, that would then feed into the SRB process ([Table 1](#)).
 - b) One option for the IPHC to consider would be for external reviewer(s) conduct a desktop review prior to SRB014 and send the review directly to the Commission. This would supplement the review from the SRB.

Table 1. IPHC stock assessment peer review timeline 2018-26.

Year	2018	2019	2020	2021	2022	2023	2024	2025	2026
Stock assessment	Update	Full assessment	Update	Update	Full assessment	Update	Update	Full assessment	Update
Peer review	SRB	External & SRB	SRB	SRB	External & SRB	SRB	SRB	External & SRB	SRB

6. MANAGEMENT STRATEGY EVALUATION: UPDATE

22. The SRB **NOTED** paper IPHC-2018-SRB013-06 which provided an update on the progress of the IPHC Management Strategy Evaluation (MSE) process in 2018. The SRB appreciated the progress made by the IPHC Secretariat and MSAB in developing objectives and an initial operating model, and the suite of candidate management procedures that have been applied.
23. The SRB **NOTED** that all readers of this report need to understand that an MSE process is iterative and that the first iteration is still underway. Typically, the iterative process involves refining the operating



model, defining robustness tests, developing management procedures, and exploring performance with stakeholders. This process is usually on a specified timeline. The SRB uses the word “preliminary” in subsequent paragraphs with this in mind.

24. The SRB **NOTED** the IPHC MSE program of work indicates that results on scale will be reported to the Commission at its 95th Annual Meeting (AM095) in January 2019 and results on distribution and scale will be reported to the Commission at its 97th Annual Meeting (AM097) in January 2021 ([Fig. 1](#)).

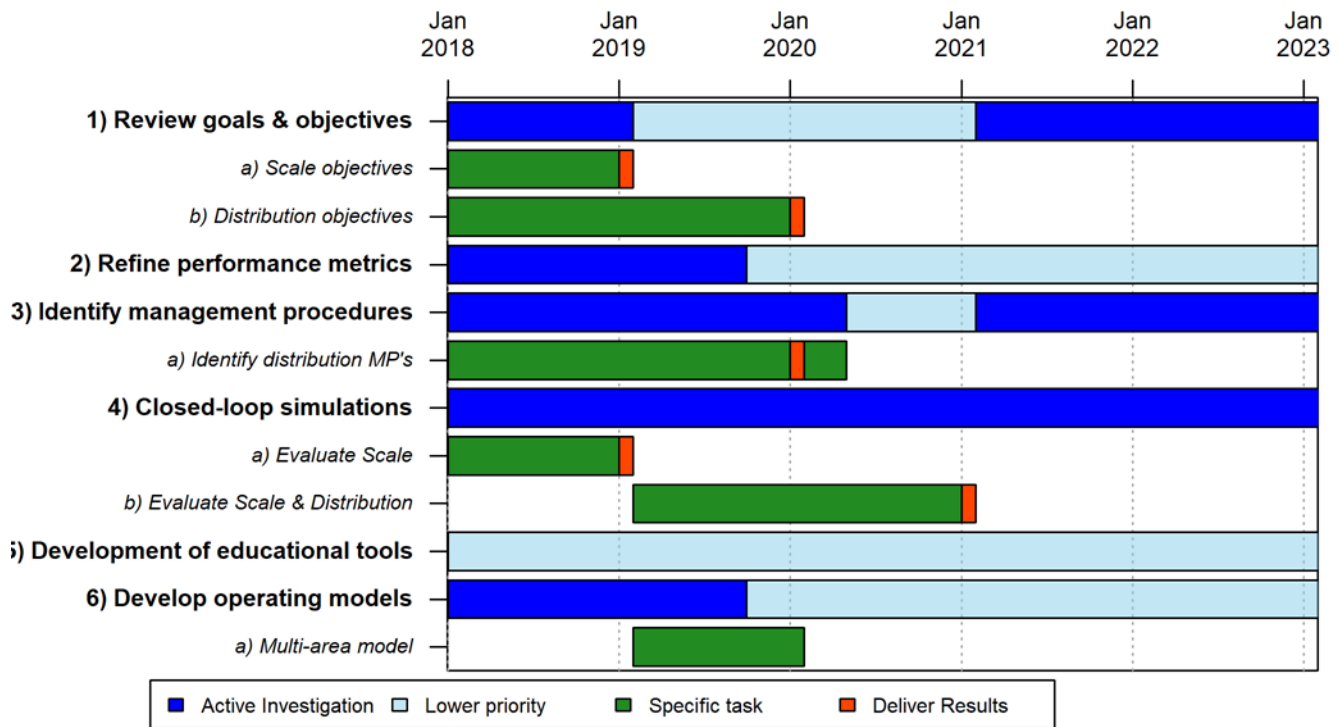


Fig. 1. Gantt chart for the IPHC MSE 5-year Program of Work. Tasks are listed as rows. Dark blue indicates when the major portion of the main tasks work will be done. Light blue indicates when preliminary or continuing work on the main tasks will be done. Dark green indicates when the work on specific sub-topics will be done. The orange colour shows when results will be presented at an Annual Meeting.

25. The SRB **NOTED** that the current IPHC MSE goals and objectives are useful to evaluate harvest strategies using the three primary performance metrics and additional statistics of interest. Further refinements to the fishery related objectives may be made at MSAB012, and reported to the SRB for review.
26. The SRB **REQUESTED** that the MSAB consider listing prioritized objectives used to guide the selection of a management procedure. These could include any combination of short, medium, and long-term objectives, provided Commission objectives be given highest priority. All performance metrics in the MSE must be computed from the operating model. See [paragraph 30](#) for further clarification.

6.1 Updates to MSE framework and closed-loop simulations

27. The SRB **AGREED** that the current conditioned operating model, described in paper IPHC-2018-SRB013-06, be used in a preliminary evaluation of harvest strategies and that this approach be used to present interim coast-wide management procedure performance to the upcoming MSAB012 meeting.
28. The SRB **AGREED** that the improvements and additions to the preliminary simulation framework, including updated allocation of the Total Mortality to bycatch and discard mortality, variable selectivity



as a function of weight-at-age, can be used in the closed-loop simulations, including the current algorithm for simulating weight-at-age.

29. The SRB **REQUESTED** that in future iterations of the MSE, the IPHC Secretariat and MSAB consider:
- the use of estimation error in the proxy assessment method with coefficients of variation equal to 0.15, a correlation of 0.5, and autocorrelation equal to 0.2 represents one plausible scenario. A larger error and autocorrelation could be considered in robustness tests or as alternative scenarios;
 - a management procedure include a constraint on the TMq change to be consistent with the maximum change that has happened historically;
 - the current conditioned operating model be used to simulate a coast-wide survey index and that such data be used to consider an alternative survey-based management procedure (this may provide a more transparent TMq-setting algorithm than the current SPR based control-rule and help with MSAB deliberations).

6.2 MSE Simulation results

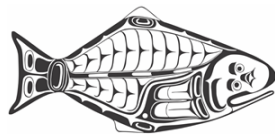
30. The SRB **RECOMMENDED** a clear separation between the current stock assessment process and MSE process, so that it is understood:
- these two processes, including statistics and performance metrics, are distinct and not comparable;
 - the purpose of the current ensemble stock assessment approach is to develop a decision table to assist the Commission in setting an annual TCEY. This TCEY setting process lacks specificity and how decisions are made is unclear. Furthermore, repeated application of this process is difficult to evaluate relative to Commission objectives;
 - the purpose of the MSE is to compare alternative management procedures against Commission objectives over a wide range of plausible uncertainties within the operating model and management procedures. Therefore, these procedures by definition must be specific and repeatable.

6.3 Distribution procedures

31. The SRB **REAFFIRMED** that defined Bioregions (i.e. 2,3,4, and 4b described in paper IPHC-2018-SRB012-08) are presently the best option for implementing a precautionary approach given uncertainty about spatial population structure and dynamics of Pacific halibut. Better options may arise in the future should additional biological data become available.
32. The SRB **NOTED** the procedures and considerations for distributing the TCEY, which includes Regional Stock Distribution, Regional Allocation Adjustment, and a Regulatory Area Allocation.
33. The SRB **NOTED** a separation of scientific and management elements in procedures to distribute the TCEY.

7. BIOLOGICAL AND ECOSYSTEM SCIENCE RESEARCH UPDATES

34. The SRB **AGREED** that conversations between the SRB and the IPHC Secretariat on details of the biological research program should occur prior to SRB014.
35. The SRB **NOTED** that the IPHC Secretariat has established dedicated academic funding programs through which IPHC-funded university students may participate in research activities, though the Commission deferred its fiscal implementation until 2019.



36. The SRB **NOTED** that the IPHC Secretariat is following up on the SRB suggestion to hire a life history modeller and that this action is subject to broader IPHC budgetary considerations.

7.1 Biological research updates

37. The SRB **NOTED** paper IPHC-2018-SRB013-07 which provided an update on the progress of the Biological and Ecosystem Science research program.
38. The SRB **AGREED** that the primary biological research activities at the IPHC should continue to follow Commission objectives, and are identified and described in the 5-Year Research Plan for the period 2017-21, including focusing on studies of migration, reproduction, growth, discard mortality and genetics.
39. The SRB **NOTED** that the biological research activities should help to define hypotheses associated with processes that affect plausible states of nature for the assessment and MSE process (e.g. climate effects on growth and recruitment).
40. The SRB **NOTED** that the IPHC Secretariat has been responsive in focusing research outcomes to management objectives required for stock assessment and MSE work, and that this work is leading to peer-reviewed journal publications.
41. The SRB **REQUESTED** that specific research topics, analysis and results be addressed in depth at subsequent SRB meetings, and that at SRB014, a presentation focused on population genetics and migration as they relate to the stock assessment and MSE work be provided. For example, how does this work identify alternative hypotheses for movement and population structure that can be considered in the MSE process and the stock assessment.

8. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 13TH SESSION OF THE IPHC SCIENTIFIC REVIEW BOARD (SRB013)

42. The report of the 13th Session of the IPHC Scientific Review Board (IPHC-2018-SRB013-R) was **ADOPTED** on 27 September 2018, including the consolidated set of recommendations and/or requests arising from SRB013, provided at [Appendix IV](#).

APPENDIX I
LIST OF PARTICIPANTS FOR THE 13TH SESSION OF THE
IPHC SCIENTIFIC REVIEW BOARD (SRB013)

SRB Members

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APPENDIX II
AGENDA FOR THE 13TH SESSION OF THE
IPHC SCIENTIFIC REVIEW BOARD (SRB013)

Date: 25–27 September 2018

Location: Seattle, Washington, U.S.A.

Venue: IPHC Board Room, Salmon Bay

Time: 12:00-17:00 (25th), 09:00-17:00 (26th), 09:00-14:00 (the 27th)

Chairperson: Dr Sean Cox (Simon Fraser University)

Vice-Chairperson: Nil

- 1. OPENING OF THE SESSION**
- 2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION**
- 3. IPHC PROCESS**
 - 3.1. Update on the actions arising from the 12th Session of the SRB (SRB012) (D. Wilson)
 - 3.2. Outcomes of the 2018 IPHC Work Meeting (WM2018) (D. Wilson)
 - 3.3. SRB annual workflow (D. Wilson)
- 4. IPHC FISHERY-INDEPENDENT SETLINE SURVEY (FISS)**
 - 4.1. Methods for spatial setline survey modelling – results to date for 2018 (R. Webster)
- 5. PACIFIC HALIBUT STOCK ASSESSMENT: 2018**
 - 5.1. Data source development (I. Stewart)
 - 5.2. Modelling updates (I. Stewart)
- 6. MANAGEMENT STRATEGY EVALUATION: UPDATE**
 - 6.1. Updates to MSE framework and closed-loop simulations (A. Hicks)
 - 6.2. MSE Simulation results (A. Hicks)
 - 6.3. Distribution procedures (A. Hicks)
- 7. BIOLOGICAL AND ECOSYSTEM SCIENCE RESEARCH UPDATES**
 - 7.1. Biological research updates (J. Planas)
 - 7.2. Review of discussions on long-term research plans incorporating new research topics (J. Planas).
- 8. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 13TH SESSION OF THE IPHC SCIENTIFIC REVIEW BOARD (SRB013)**



APPENDIX III
LIST OF DOCUMENTS FOR THE 13TH SESSION OF THE
IPHC SCIENTIFIC REVIEW BOARD (SRB013)

Document	Title	Availability
IPHC-2018-SRB013-01	Agenda & Schedule for the 13 th Session of the Scientific Review Board (SRB013)	✓ 27 June 2018 ✓ 26 August 2018
IPHC-2018-SRB013-02	List of Documents for the 13 th Session of the Scientific Review Board (SRB013)	✓ 27 June 2018 ✓ 26 August 2018
IPHC-2018-SRB013-03	Update on the actions arising from the 12 th Session of the SRB (SRB012) (IPHC Secretariat)	✓ 26 August 2018
IPHC-2018-SRB013-04	Update on inputs to space-time modelling of survey data for 2018 (R. Webster)	✓ 24 August 2018
IPHC-2018-SRB013-05	Data sources and modelling update for the 2018 stock assessment (I. Stewart)	✓ 24 August 2018
IPHC-2018-SRB013-06	Management Strategy Evaluation: Update for 2018 (A. Hicks)	✓ 27 August 2018
IPHC-2018-SRB013-07	Report on current biological research activities and progress on discussions regarding new research topics (J. Planas)	✓ 25 August 2018
<i>Information papers</i>		
IPHC-2018-SRB013-INF01	Research project summary	✓ 25 August 2018
IPHC-2018-SRB013-INF02	Research project location summary	✓ 25 August 2018



APPENDIX IV

**CONSOLIDATED SET OF RECOMMENDATIONS AND REQUESTS OF THE 13TH SESSION OF THE
IPHC SCIENTIFIC REVIEW BOARD (SRB013)**

RECOMMENDATIONS

Pacific halibut stock assessment: 2018 - Modelling updates

SRB013–Rec.01 ([para. 21](#)) **NOTING** that the Commission has asked the IPHC Secretariat to develop a paper for consideration at the 94th Session of the IPHC Interim Meeting, that outlines both the current IPHC peer review process and areas for potential improvement, the SRB **RECOMMENDED** the following:

- a) Pacific halibut stock assessment and peer review cycle, noting that the intention is for the SRB to undertake annual peer review of stock assessment updates, and a peer review of the full stock assessment, independent of the SRB, occurs once every three years, that would then feed into the SRB process ([Table 1](#)).
- b) One option for the IPHC to consider would be for external reviewer(s) conduct a desktop review prior to SRB014 and send the review directly to the Commission. This would supplement the review from the SRB.

MSE Simulation results

SRB013–Rec.02 ([para. 30](#)) The SRB **RECOMMENDED** a clear separation between the current stock assessment process and MSE process, so that it is understood:

- a) these two processes, including statistics and performance metrics, are distinct and not comparable;
- b) the purpose of the current ensemble stock assessment approach is to develop a decision table to assist the Commission in setting an annual TCEY. This TCEY setting process lacks specificity and how decisions are made is unclear. Furthermore, repeated application of this process is difficult to evaluate relative to Commission objectives;
- c) the purpose of the MSE is to compare alternative management procedures against Commission objectives over a wide range of plausible uncertainties within the operating model and management procedures. Therefore, these procedures by definition must be specific and repeatable.

REQUESTS

Management Strategy Evaluation: update

SRB013–Req.01 ([para. 26](#)) The SRB **REQUESTED** that the MSAB consider listing prioritized objectives used to guide the selection of a management procedure. These could include any combination of short, medium, and long-term objectives, provided Commission objectives be given highest priority. All performance metrics in the MSE must be computed from the operating model. See [paragraph 30](#) for further clarification.



Updates to MSE framework and closed-loop simulations

SRB013–Req.02 ([para. 29](#)) The SRB **REQUESTED** that in future iterations of the MSE, the IPHC Secretariat and MSAB consider:

- a) the use of estimation error in the proxy assessment method with coefficients of variation equal to 0.15, a correlation of 0.5, and autocorrelation equal to 0.2 represents one plausible scenario. A larger error and autocorrelation could be considered in robustness tests or as alternative scenarios;
- b) a management procedure include a constraint on the TMq change to be consistent with the maximum change that has happened historically;
- c) the current conditioned operating model be used to simulate a coast-wide survey index and that such data be used to consider an alternative survey-based management procedure (this may provide a more transparent TMq-setting algorithm than the current SPR based control-rule and help with MSAB deliberations).

Biological research updates

SRB013–Req.03 ([para. 41](#)) The SRB **REQUESTED** that specific research topics, analysis and results be addressed in depth at subsequent SRB meetings, and that at SRB014, a presentation focused on population genetics and migration as they relate to the stock assessment and MSE work be provided. For example, how does this work identify alternative hypotheses for movement and population structure that can be considered in the MSE process and the stock assessment.