



Peer review process for IPHC science products

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PURPOSE

To provide the Commission with an opportunity to consider options for further improving the peer review process for IPHC science products.

BACKGROUND

2011: In response to calls from the international community for a review of the performance of Regional Fisheries Management Organizations (RFMOs), the International Pacific Halibut Commission (IPHC) agreed in 2011 to implement a process of Performance Review.

2012: In 2012, the contractor published a report outlining 12 recommendations (containing 39 parts) to improve the functioning of the IPHC, two of which focused on the need for regular, independent peer review of the IPHC's science products. Those two recommendations were as follows:

RESEARCH

4. Develop Strategic Approach to Research

4.3 Consider periodic peer review. As the Commission moves forward, it should consider the need for periodic peer review of its long-term and annual research plan.....

STOCK ASSESSMENT

5. Strengthen Stock Assessment Process

5.1 Foster regular peer review of stock assessment model and outputs, as well as the associated apportionment process.

An *ad hoc* peer review was convened in October 2012 to review improvements to the stock assessment pending the development of a formal process.

2013: Subsequently, the IPHC formed the Scientific Review Board (SRB) which first met in 2013. The current mandate of the SRB is detailed in the IPHC Rules of Procedure (2017) as follows:

Appendix VIII. Para 1

I. Terms of reference

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.

2014-2016: The SRB proceeded to meet 6 times over this period, including a full, detailed review of the stock assessment in 2015, and annual reviews of stock assessment updates made.

2017: Noting the rapidly advancing and expanding IPHC research programs, stock assessment and Management Strategy Evaluation, in November 2017 at its 93rd Interim Meeting (IM093), the Commission made the following observations:

IPHC-2017-IM093-R, para 47: *The Commission **CONSIDERED** the recommendations made by the SRB11 and provided comment or endorsement as specified below.*

- a) *Ideally, the Commission would like to see the SRB undertake a detailed review of the annual Pacific halibut stock assessment, including consideration of the most recent fishery-dependent and fishery-independent data prior to the Interim Meeting each year. However, due to the compressed timeline of data availability and subsequent meetings, it was indicated that this is not feasible. A comprehensive annual review of the stock assessment could be based on the previous year's data, and would require an extended SRB session mid-year.*
- b) *The current review structure includes a detailed review of model configurations contributing to the stock assessment ensemble on a periodic basis, whenever major changes are made (recently 2012 and 2015). This is consistent with the 1st Performance Review of the IPHC and international best practice, but could be extended to include additional independent peer reviewers (beyond the SRB), as detailed below. Currently, small data and model revisions are reviewed at the mid-year SRB meeting, and finalized during the October meeting. No changes, other than updating the most recent data available, are made subsequent to that SRB review. The SRB, through a teleconference in December, has the opportunity to clarify any remaining issues prior to the Annual Meeting.*
- c) *As indicated in the 1st Performance Review of the IPHC and to align with international best practice, the IPHC Stock Assessment should also undergo a periodic (every 3-5 years) external peer review.*

2018: At the 2018 session of the IPHC Work Meeting (WM2018; September 2018), the Commission provided an informal directive to the IPHC Secretariat to provide a paper for consideration at IM094 that outlines the current scientific peer review process and areas for potential improvement.

Subsequently, at the 13th Session of the IPHC Scientific Review Board (SRB013), the board made the following observations and recommendation:

IPHC-2018-SRB013-R, 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.*

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

DISCUSSION

The IPHC currently has three (3) core science streams:

- 1) Stock assessment (and associated inputs)
- 2) Management Strategy Evaluation
- 3) 5-year Biological and Ecosystem Sciences research program

The SRB meets twice-annually for 2.5 to 3 days to peer review the above three core science streams. While early meetings of the SRB were focused solely on reviewing the stock assessment inputs, modelling and results, in recent years the IPHC Secretariat's scientific output, in terms of volume and complexity have increased substantially.

This has resulted in the SRB being unable to review all key science products in adequate detail to be considered a thorough peer review of key products. Thus, there is a clear need for the IPHC to re-evaluate both the SRB and its peer review practices.

Options:

The IPHC Secretariat puts forth a range of options for improving the peer review process as follows (*Note – this is a work in progress and feedback received at IM094, will be incorporated into a final proposal for potential endorsement at AM095 in January 2019*).

Stream 1 - Stock assessment (and associated inputs):

- 1) The SRB shall continue to act as the primary peer review mechanism on an annual basis of the Pacific halibut stock assessment, and its associated data input series.
- 2) Noting that the stock assessment will be undertaken in full every 3 years, with stock assessment updates being undertaken in the intervening years (Table 1), an external peer reviewer/s shall be contracted periodically to undertake a full review of the assessment, its inputs, model structure, and outputs. This external peer review shall be submitted both to the Commission and the SRB for consideration. The draft terms of reference for this peer review will be developed by the IPHC Secretariat, in consultation with the SRB, for implementation in early 2019. The first such review shall occur in the 1st half of 2019, on the previous year's assessment.

Stream 2 - Management Strategy Evaluation:

- 1) The SRB shall continue to act as the primary peer review mechanism, on an annual basis, of both the IPHC Secretariat's MSE work and that of the MSAB, as prescribed in the IPHC Rules of Procedure.
- 2) In addition, an external expert shall be hired for a short period (~2 weeks) in each of the years 2019 and 2020, to undertake a peer review of the work completed to date, as well as the program of work moving forward. The draft terms of reference for this peer review were developed by the IPHC Secretariat and SRB and are provided at [Appendix I](#) for potential endorsement.

Stream 3 - Five-year Biological and Ecosystem Sciences Research Program:

- 1) The SRB shall continue to act as the primary peer review mechanism, on an annual basis, of the IPHC Secretariat's five-year BESRP projects and products. Acting as a separate peer review mechanism, the Research Advisory Board (RAB) complements the SRB review by reviewing ongoing or proposed research aspects that are of direct interest to the Pacific halibut fishery. Furthermore, the RAB provides the IPHC with inputs of a practical nature and that directly impinge on the Pacific halibut commercial and/or recreational fisheries. The inputs of the RAB and SRB are incorporated into the IPHC Secretariat's annual research proposal development and selection process ([Appendix II](#)).
- 2) If, in the future, key products are being delivered of a scale too large/complex for the SRB to adequately review, the Commission may wish to consider periodic external peer review of those products. At this point, we feel this is not necessary for this science stream.

Generic options:

- 1) SRB: Noting the increased demands on the SRB, it is proposed that the duration of each SRB meeting be increased, so that it may consider a greater range of products being produced. It must be noted however that not all experts may be available, or needed for the extended sessions. Thus, the structure of the meetings could be modified so that review of each of the above science streams is compartmentalised, thereby allowing SRB members to attend sections of the SRB meeting in which they have specific technical expertise. For example:
 - a. Day 1-2: Stream 1 peer review
 - b. Day 3: Stream 2 peer review
 - c. Day 4: Stream 3 peer review
- 2) This may also require the addition of additional SRB members on an ad-hoc basis to review specific science stream products. This would require a modification to the IPHC Rules of Procedure.
- 3) Publication in peer reviewed journals: As a final peer review mechanism, all core science products shall be submitted to peer reviewed journals for potential publication. This would not only provide an ongoing series of journal publications, but by default act as a mechanism to validate the IPHC peer review processes detailed in the text above.

The intention of the IPHC Secretariat is to further consider the options initially described above, and others that may be proposed, and present a refined version of the paper to the 95th Session of the IPHC Annual Meeting (AM095) in January 2019.

RECOMMENDATION/S

That the Commission:

- a) **NOTE** paper IPHC-2019-AM095-15 which provide the Commission with an opportunity to consider options for further improving the peer review process for Commission science products.
- b) **RECOMMEND** that the IPHC Secretariat develop terms of reference for a consultant to undertake a peer review of the IPHC Pacific halibut stock assessment, for implementation in early 2019. The terms of reference and budget shall be endorsed by the Commission inter-sessionally.
- c) **RECOMMEND** that the IPHC Secretariat finalise terms of reference for a expert/consultant to undertake a peer review of the IPHC Pacific halibut MSE, for

implementation in early November 2019 and July 2020. The terms of reference and budget shall be endorsed by the Commission inter-sessionally.

APPENDICES

Appendix I: IPHC MSE peer review – external expert/consultant

Appendix II: Current and proposed IPHC peer review roles in overseeing and contributing to the development, selection and progress of assessment, MSE, and research topics

Appendix I**IPHC MSE PEER REVIEW – EXTERNAL EXPERT/CONSULTANT****DRAFT ANNOUNCEMENT****IPHC Job Reference Number 2019-xx****Advertisement for the position of
Management Strategy Evaluation Peer Reviewer: Consultant**

The International Pacific Halibut Commission (IPHC) is seeking a qualified expert in Management Strategy Evaluation (MSE) to advise the development of an ongoing MSE for the Pacific halibut fishery, and act in the role of external peer reviewer. This will be a temporary contract position of approximately 24 days in duration, with travel to and accommodation in Seattle provided. The 24 days will be split into two distinct periods of activity, one in late 2019, and again in mid 2020.

The International Pacific Halibut Commission (IPHC) is currently developing a Management Strategy Evaluation (MSE) to evaluate alternative harvest policies for Pacific halibut. A Management Strategy Advisory Board (MSAB) was formed in 2013 and has been meeting twice a year since then (May and October). It is comprised of stakeholders and managers from all sectors with an interest in the directed fishery for Pacific halibut. More information and meeting materials can be found at <https://iphc.int/library/documents/meeting-documents/iphc-meeting-index>.

The IPHC manages the Pacific halibut resource for the governments of Canada and the United States of America, with offices in Seattle, Washington, U.S.A.

Principal duties, scope and tasks

The consultant will be expected to spend at least one week at the IPHC offices in Seattle sometime during October 2019 and June 2020. The consultant will provide advice on and contribute to a subset of the following topics, both in terms of peer review and technical contribution.

- Review the goals and objectives used to evaluate management procedures
- Review the IPHC MSE closed-loop simulation framework
- Review the operating model and how it is conditioned to mimic the Pacific halibut population
- Review tools and methods used to communicate simulation results for the evaluation of management procedures.
- Evaluate the process of soliciting objectives from stakeholders and managers, and creating performance metrics from those objectives.
- Assist with developing and defining reference points

- Comment and advise on methods to communicate results of the simulations, the trade-offs between various management procedures, and the ranking of management procedures.

Project Deliverables

Deliverables include

- A succinct written review of the IPHC MSE process, evaluating results, and any other aspects identified;
- A report summarizing contributions made by the consultant to the simulation framework and other aspects of the MSE framework

Qualifications and Experience

Education: Ph.D. degree in a relevant scientific discipline related to quantitative sciences and natural resource management. M.S. degree may be considered with exceptional experience.

Professional experience: Five or more years of experience in fisheries management strategy evaluation. Specific qualifications considered are as follows.

- Knowledge and experience with the MSE process
- Experience developing and conditioning operating models
- Proficiency in R and ADMB, and possibly C++, or other similar programming languages and applications
- Skill in writing computer programs for simulating fish populations
- Experience interacting with and soliciting objectives from fishery stakeholders and managers
- Ability to collaborate with other scientists
- Proficiency in writing scientific reports and papers
- Ability to communicate complex concepts, models, and results, especially those related to simulation, through discussion and oral presentation

Appendix II

Current and proposed IPHC peer review roles in overseeing and contributing to the development, selection and progress of assessment, MSE, and research topics

