



Report of the 24th Session of the IPHC Research Advisory Board (RAB024)

Seattle, Washington, USA, 28 November 2023

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.

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INTERNATIONAL PACIFIC
HALIBUT COMMISSION

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Contact details:

International Pacific Halibut Commission
2320 W. Commodore Way, Suite 300
Seattle, WA, 98199-1287, USA
Phone: +1 206 634 1838
Email: Secretariat@iphc.int
Website: <https://www.iphc.int>

ACRONYMS

ADFG	Alaskan Department of Fish and Game
AI	Artificial Intelligence
CNN	Convolutional Neural Network
FISS	Fishery-Independent Setline Survey
IPHC	International Pacific Halibut Commission
RAB	Research Advisory Board
SRB	Scientific Review Board

DEFINITIONS

A set of working definitions is 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.

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EXECUTIVE SUMMARY

The 24th Session of the International Pacific Halibut Commission (IPHC) Research Advisory Board (RAB024) was held in Seattle, Washington, USA on 28 November 2023. A total of thirteen (13) members attended the Session from the two (2) Contracting Parties, as well as six (6) observers. The meeting was opened by the Chairperson Dr David Wilson, and the Vice-Chairperson Dr Josep Planas.

The following are a subset of the complete recommendations and requests for action from RAB024, which are provided in [Appendix IV](#).

RECOMMENDATIONS

International Pacific Halibut Commission 5-year program of Integrated Research and Monitoring (2022-26)

RAB024-Rec.01 ([para. 11](#)) **NOTING** the substantial potential of incorporating AI techniques to supplement the IPHC Secretariat’s current aging protocol informing on the population age structure and serving as input to the Pacific halibut stock assessment, the RAB **RECOMMENDED** continuing with the proposed project and method validation as part of the IPHC 5-year Program of Integrated Research and Monitoring (2022-26).

Research: Whale depredation mitigation strategies involving longline catch protection devices

RAB024-Rec.02 ([para. 18](#)) The RAB **NOTED** paper [IPHC-2023-RAB024-06](#), that provided a description of an ongoing study designed to identify and test new tools to minimize marine mammal depredation of hook-captured Pacific halibut and **RECOMMENDED** that the IPHC continue efforts towards this goal.

Monitoring: Fishery-independent data - 2023 FISS season: Design and implementation

RAB024-Rec.03 ([para. 24](#)) The RAB **SUPPORTED** an annual FISS design with sufficient coverage across all Biological Regions and **RECOMMENDED** that the IPHC Secretariat continue efforts to obtain supplementary funding for FISS activities that would support this goal.

Monitoring: Fishery-independent data - 2024 FISS design evaluation

RAB024-Rec.04 ([para. 30](#)) The RAB **RECOMMENDED** that any changes in the standardized FISS design, including vessel captain stations and bait changes, be carefully accounted for in the Secretariat’s analytical work and presented to the Commission.

RAB024-Rec.05 ([para. 32](#)) The RAB **RECOMMENDED** maintaining the oceanographic sampling program to provide a continuous source of data on environmental conditions experienced by Pacific halibut.

Guidance on, and Discussion of, other Potential Applied Research Projects

RAB024-Rec.06 ([para. 33](#)) The RAB **RECOMMENDED** continued efforts to obtain supplementary funding to support studies on whale depredation and other fishing technology advances given the correlation between fishing techniques and gear and the viability of Pacific halibut fisheries.

1. OPENING OF THE SESSION

1. The 24th Session of the International Pacific Halibut Commission (IPHC) Research Advisory Board (RAB024) was held in Seattle, Washington, USA on 28 November 2023. A total of thirteen (13) members attended the Session from the two (2) Contracting Parties, as well as six (6) observers. Apologies were received from Mr. Lando Echevario. The list of participants is provided at [Appendix I](#). The meeting was opened by the Chairperson, Dr David Wilson, and Vice-Chairperson, Dr Josep Planas.
2. The RAB **RECALLED** its mandate as stated in the IPHC Rules of Procedure (2023) as follows:

Appendix VII, I.1-2:

“1. The Research Advisory Board (RAB) is composed of members of the Pacific halibut community that shall:

 - a. Suggest research topics to be considered for incorporation in the IPHC integrated research and monitoring activities, as well as to comment upon operational and implementation considerations of those research and monitoring activities;*
 - b. provide the IPHC Secretariat staff (who participate in Sessions of the RAB as Observers) with direct input and advice from industry on current and planned research activities contemplated for inclusion in the IPHC 5-Year program of integrated research and monitoring.*

2. The RAB may also make recommendations to the Scientific Review Board concerning options for new suggest research topics, and current and planned research activities, and their prioritization for its consideration.”

2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

3. The RAB **ADOPTED** the Agenda as provided at [Appendix II](#). The documents provided to the RAB are listed in [Appendix III](#).

3. IPHC PROCESS

3.1 Update on the actions arising from the 23rd Session of the RAB (RAB023)

4. The RAB **NOTED** paper [IPHC-2023-RAB024-03](#), that provided an opportunity to consider the progress made during the inter-sessional period, in relation to the recommendations and requests of the 23rd Session of the IPHC Research Advisory Board (RAB023).
5. **NOTING** a potential issue raised regarding bycatch being caught in Alaskan State waters leading to closures of areas to longline fishing gear by ADFG, the RAB **REQUESTED** that the IPHC Secretariat investigate and share outcomes with the RAB intersessionally, and at RAB025.
6. The RAB **AGREED** to consider the actions arising from RAB023 and revise as necessary, and for these to be combined with any new actions arising from RAB024.

3.2 Outcomes of the 99th Session of the IPHC Annual Meeting (AM099)

7. The RAB **NOTED** paper [IPHC-2023-RAB024-04](#), that provided the outcomes of the 99th Session of the IPHC Annual Meeting (AM099) relevant to the mandate of the RAB.

4. SEASON OVERVIEW – 2023: RAB MEMBERS

8. The RAB **NOTED** the following key 2023 fishery updates provided by RAB members:
 - a) Habitat impacts due to non-halibut fisheries on Pacific halibut catch rates and recruitment represent a source of concern;
 - b) Fish prices are low and there are difficulties finding buyers. Noted differences in price for commercial versus FISS offloads due to the sale of U32 fish;
 - c) Several reports on spotty fishing during 2023 and concerns regarding localized depletion in IPHC Regulatory Area 4D;
 - d) Additional research is desirable on migration and influence of environmental effects due to changing ocean conditions;

- e) There were supportive comments on the continued collection of water profiler data, and encouragement that this information continue to be disseminated via the IPHC website: <https://www.iphc.int/data/water-column-profiler-data/>;
- f) Commercial catch rates were much lower than expected in all IPHC Regulatory Areas except 2A in 2023;
- g) Depredation remains an issue coastwide, with IPHC Regulatory Area 4A, 4CDE edge and 3A again being highlighted by some RAB members;
- h) Catches in the charter sector remained high in IPHC Regulatory Area 2C and decreased in 3A, but required substantial searching to obtain those rates;
- i) Small fish (24-32 inches) were being seen in numbers in IPHC Regulatory Areas 2A, 2B, 2C, and 3A.
- j) There was interest in understanding the effects of habitat disturbance due to fishing effects including bottom contact from “mid-water trawl” gear in all areas.

5. INTERNATIONAL PACIFIC HALIBUT COMMISSION 5-YEAR PROGRAM OF INTEGRATED RESEARCH AND MONITORING (2022-26)

- 9. The RAB **NOTED** paper [IPHC-2023-RAB024-05](#), that provided the RAB with the IPHC 5-year Program of Integrated Research and Monitoring (2022-26).
- 10. The RAB **NOTED** the update provided on the investigation of the use of artificial intelligence (AI) for determining the age of Pacific halibut from images of collected otoliths. The IPHC Secretariat is in the process of creating a database comprising images with expert-provided labels for aging use. This database will be utilized to train and test a Convolutional Neural Network (CNN), a type of AI model renowned for its efficacy in image classification tasks.
- 11. **NOTING** the substantial potential of incorporating AI techniques to supplement the IPHC Secretariat’s current aging protocol informing on the population age structure and serving as input to the Pacific halibut stock assessment, the RAB **RECOMMENDED** continuing with the proposed project and method validation as part of the IPHC 5-year Program of Integrated Research and Monitoring (2022-26).

5.1 Research

5.1.1 Description of IPHC Biological and Ecosystem Sciences Research (Core research streams)

- 12. The RAB **NOTED** paper [IPHC-2023-RAB024-06](#), that provided a description of the biological and ecosystem science research projects conducted and planned by the IPHC Secretariat and contemplated within the Five-year Program of Integrated Research and Monitoring (2022-26).
- 13. The RAB **NOTED** that the main objectives of the Biological and Ecosystem Science Research at the IPHC are to:
 - a) identify and assess critical knowledge gaps in the biology of the Pacific halibut;
 - b) understand the influence of environmental conditions; and
 - c) apply the resulting knowledge to reduce uncertainty in current stock assessment models.

Mapping of Pacific halibut juvenile habitat

- 14. The RAB **NOTED** that the IPHC Secretariat is working towards generating a map of Pacific halibut juvenile habitat by compiling existing data sources in order to guide future studies investigating potential juvenile Pacific halibut movement to and from nursery areas.

Refining the genetic population structure of Pacific halibut throughout Convention Waters

15. The RAB **NOTED** paper [IPHC-2023-RAB024-06](#), that provided a description of the studies conducted by IPHC Secretariat on population genomics.

Reproductive assessment of the female Pacific halibut population

16. The RAB **NOTED** paper [IPHC-2023-RAB024-06](#), that provided a description of the studies designed to update maturity schedules and estimate fecundity in female Pacific halibut and the limited geographic extent of the maturity samples collected in 2023 due to the reduction FISS stations in Biological Regions other than 2 and 3.

Discard mortality rates and post-release survival in the guided recreational Pacific halibut fishery

17. The RAB **NOTED** paper [IPHC-2023-RAB024-06](#), that provided a description of an ongoing study designed to improve our knowledge on discard mortality rates in the Pacific halibut charter recreational fishery.

Whale depredation mitigation strategies involving longline catch protection devices

18. The RAB **NOTED** paper [IPHC-2023-RAB024-06](#), that provided a description of an ongoing study designed to identify and test new tools to minimize marine mammal depredation of hook-captured Pacific halibut and **RECOMMENDED** that the IPHC continue efforts towards this goal.

5.2 Monitoring**5.2.1 Fishery-dependent data**

19. The RAB **NOTED** the ongoing discussions regarding e-logbooks being developed for the fleet in Alaska, USA, and while some concerns were raised, Canadian RAB members highlighted the benefits of e-logbooks used by the Canadian fleet and encouraged information sharing among RAB members over the coming year. Thus, the RAB **REQUESTED** that the IPHC Secretariat keeps the fleet informed regarding preserving data confidentiality arising from the use of electronic logbooks.

5.2.2 Fishery-independent data**5.2.2.1 2023 FISS season: Design and implementation**

20. The RAB **NOTED** paper [IPHC-2023-RAB024-07](#), that provided an overview of the IPHC Fishery-Independent Setline Survey (FISS) design and implementation in 2023.
21. The RAB **NOTED** that the FISS continues to experience challenges with vessel recruitment primarily due to logistical issues involving increased sablefish quota, vessel size, etc.
22. The RAB **ACKNOWLEDGED** that the FISS tender specifications now allow for both fixed and snap gear vessels to participate coastwide, noting that data from snap gear vessels continue to be adjusted in order to compare to fixed gear data.
23. The RAB **ACKNOWLEDGED** that the reason some charter areas were being fished with eight (8) skates was to ensure sufficient positive revenue was being obtained to offset the revenue deficit expected in other charter areas. The overall aim being revenue neutrality.
24. The RAB **SUPPORTED** an annual FISS design with sufficient coverage across all Biological Regions and **RECOMMENDED** that the IPHC Secretariat continue efforts to obtain supplementary funding for FISS activities that would support this goal.

5.2.2.2 2024 FISS design evaluation

25. The RAB **NOTED** paper [IPHC-2023-RAB024-08](#), that provided proposed designs for the IPHC's Fishery-Independent Setline Survey (FISS) for the 2024-28 period, and an evaluation of those designs.
26. The RAB **AGREED** that a FISS design based on blocks of stations in the core IPHC Regulatory Areas, rather than a randomised design, would be more operationally efficient and may be more attractive to potential charter vessel operators, as there would be less transit time between randomly selected stations.

-
27. The RAB **AGREED** that where feasible, the use of a single Setline Survey Specialist (Field) on charter vessels may be a short-term action to make cost savings.
 28. The RAB **NOTED** that the use of vessel captain stations on the FISS would be a change from the current representative sampling design and did not support this option moving forward.
 29. The RAB **NOTED** the planned use of pink salmon as bait on 50% of 2024 FISS stations, and that this is a deviation from the standardized use of chum salmon in previous years.
 30. The RAB **RECOMMENDED** that any changes in the standardized FISS design, including vessel captain stations and bait changes, be carefully accounted for in the Secretariat’s analytical work and presented to the Commission.
 31. **NOTING** that FISS landings and sale includes U32 fish, and that this may have been a factor in the reduced prices for Pacific halibut in 2023, the RAB **REQUESTED** the IPHC Secretariat undertake an analysis of IPHC FISS prices versus commercial vessel prices received in 2023 and share the findings with the RAB and Commission.
 32. The RAB **RECOMMENDED** maintaining the oceanographic sampling program to provide a continuous source of data on environmental conditions experienced by Pacific halibut.

6. GUIDANCE ON, AND DISCUSSION OF, OTHER POTENTIAL APPLIED RESEARCH PROJECTS

33. The RAB **RECOMMENDED** continued efforts to obtain supplementary funding to support studies on whale depredation and other fishing technology advances given the correlation between fishing techniques and gear and the viability of Pacific halibut fisheries.

7. OTHER BUSINESS

7.1 IPHC Meeting Calendar (2024)

34. The RAB **AGREED** that the placement of the RAB meeting in November, before the Pacific Marine Expo and prior to the Interim Meeting, is optimal. In addition, it was felt that a meeting of 1.5 days would allow a more robust discussion and report development. The half day could overlap the Fish Expo, allowing RAB member to transition by midday.

8. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 24TH SESSION OF THE IPHC RESEARCH ADVISORY BOARD (RAB024)

35. The Report of the 24th Session of the Research Advisory Board (RAB024) ([IPHC-2023-RAB024-R](#)) was **ADOPTED** on 28 November 2023, including the consolidated set of recommendations and requests arising from RAB024 provided at [Appendix IV](#).

APPENDIX I
LIST OF PARTICIPANTS

RAB Officers

Chairperson	Vice-Chairperson
Dr David T. Wilson Executive Director, International Pacific Halibut Commission Email: david.wilson@iphc.int	Dr Josep Planas Branch Manager: Biological and Ecosystem Sciences Branch, International Pacific Halibut Commission Email: josep.planas@iphc.int

RAB Members

Canada	United States of America
Ms Tiare Boyes Email: tiare@leewardltd.com	Ms Grace Allan Email: gdallan18@gmail.com
Mr Angus Grout Email: rommel@telus.net	Mr Kevin Bennett Email: kevin.bennett6@gmail.com
	Mr Steve Daniels Email: steve@highlinerlodge.com
	Mr Brian Dafforn Email: briandafforn@gmail.com
	Mr Jim Hubbard Email: kruzof@ak.net
	Mr Scott Mazzone Email: smazzone@quinault.org
	Mr Shawn McManus shawn.mcmanus@yahoo.com
	Mr Al Pazar Email: alpazar@gmail.com
	Mr Brian Richie Email: brianandrewritchie@gmail.com
	Mr Alex Rodriguez Email: north40nm@yahoo.com
	Ms Lauren Wild Email: lawild@alaska.edu
Absent	
	Mr Lando Echevario Email: lechevario@yahoo.com

Observers

Participant	Organisation	Email
Mr Peter Allan	Fisherman	wildfins@alaska.net
Mr Colin Blackie	Aquatic Sciences Technician	colinblackie@gmail.com
Mr Patrick Lane	Sea Lanes Inc	patrickhlane907@gmail.com
Ms Lynn Mattes	Oregon Department of Fish & Wildlife	lynn.mattes@odfw.oregon.gov
Mr Tom Meyer	National Oceanic and Atmospheric Administration	meyer@noaa.gov
Mr Brett Roth	Fisherman	alaskabrett@yahoo.com

IPHC Secretariat

Participant	Title	Email
Dr David Wilson	Executive Director	david.wilson@iphc.int
Ms Andrea Keikkala	Assistant Director	andrea.keikkala@iphc.int
Dr Barbara Hutniczak	Fisheries Regulations & Data Services Branch Manager	barbara.hutniczak@iphc.int
Dr Josep Planas	Biological and Ecosystem Sciences Branch Manager	josep.planas@iphc.int
Dr Allan Hicks	Quantitative Scientist (MSE)	allan.hicks@iphc.int
Dr Ian Stewart	Quantitative Scientist (Stock Assessment)	ian.stewart@iphc.int
Dr Raymond Webster	Quantitative Scientist (Biometrician)	ray.webster@iphc.int
Ms Lorissa Burkhalter	Administrative Specialist	lorissa.burkhalter@iphc.int
Mr Kevin Coll	Setline Survey Specialist	kevin.coll@iphc.int
Ms Tara Coluccio	Senior Administrative Specialist	tara.coluccio@iphc.int
Mr Claude Dykstra	Research Biologist (Mortality & Survival)	clauded.dykstra@iphc.int
Ms Joan Forsberg	Otolith Laboratory Technician (Snr)	joan.forsberg@iphc.int
Mr Tyler Jack	Setline Survey Specialist	tyler.jack@iphc.int
Mr Andrew Jasonowicz	Research Biologist (Genetics)	andy.jasonowicz@iphc.int
Mr Colin Jones	Research Biologist (Life History)	colin.jones@iphc.int
Mr. Tom Kong	Fisheries Data Specialist (HQ-GIS)	tom.kong@iphc.int
Ms Kelsey Magrane	Fisheries Data Specialist (HQ)/Otolith Technician	kelsey.magrane@iphc.int
Ms Rachel Rillera	Setline Survey Specialist	rached.rillera@iphc.int
Ms Crystal Simchick	Biological Science Laboratory Technician	crystal.simchick@iphc.int
Ms Kimberly Sawyer Van Vleck	Fisheries Data Specialist (HQ)/Otolith Technician	kimberly.sawyer.vanvleck@iphc.int
Ms Huyen Tran	Fisheries Data Coordinator	huyen.tran@iphc.int
Ms Kayla Ualesi	Setline Survey Coordinator	kayla.ualesi@iphc.int
Ms Ola Wietecha	Administrative Specialist	ola.wietecha@iphc.int

APPENDIX II**AGENDA FOR THE 24TH SESSION OF THE IPHC RESEARCH ADVISORY BOARD (RAB024)****Date:** 28 November 2023**Location:** Seattle, Washington, USA**Venue:** IPHC HQ office**Time:** 09:00-17:00**Chairperson:** Dr David T. Wilson (Executive Director)**Vice-Chairperson:** Dr Josep V. Planas (Biological & Ecosystem Sciences Branch Manager)

- 1. OPENING OF THE SESSION** (Chairperson)
- 2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION** (Chairperson)
- 3. IPHC PROCESS** (Chairperson)
 - 3.1 Update on the actions arising from the 23rd Session of the RAB (RAB023)
 - 3.2 Outcomes of the 99th Session of the IPHC Annual Meeting (AM099)
- 4. SEASON OVERVIEW – 2023: RAB MEMBERS**
- 5. INTERNATIONAL PACIFIC HALIBUT COMMISSION 5-YEAR PROGRAM OF INTEGRATED RESEARCH AND MONITORING (2022-26)**
 - 5.1 RESEARCH**
 - 5.1.1 Biology and ecology**
 - Description of IPHC Biological and Ecosystem Sciences Research (Core research streams)
 - 5.2 MONITORING**
 - 5.2.1 Fishery-dependent data**
 - 5.2.2 Fishery-independent data**
 - 2023 FISS season: Design and implementation (K. Ualesi)
 - IPHC Fishery-Independent Setline Survey (FISS)
 - 2024 FISS design evaluation (R. Webster)
- 6. GUIDANCE ON, AND DISCUSSION OF, OTHER POTENTIAL APPLIED RESEARCH PROJECTS** (Chairperson & Vice-Chairperson)
- 7. OTHER BUSINESS**
- 8. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 24th SESSION OF THE IPHC RESEARCH ADVISORY BOARD (RAB024)** (Chairperson)

APPENDIX III**LIST OF DOCUMENTS FOR THE 24TH SESSION OF THE IPHC RESEARCH ADVISORY BOARD (RAB024)**

Document	Title	Availability
IPHC-2023-RAB024-01	Agenda & Schedule for the 24 th Session of the IPHC Research Advisory Board (RAB024)	✓ 26 Jun 2023
IPHC-2023-RAB024-02	List of Documents for the 24 th Session of the IPHC Research Advisory Board (RAB024)	✓ 26 Jun 2023 ✓ 27 Oct 2023 ✓ 30 Oct 2023
IPHC-2023-RAB024-03	Update on the actions arising from the 23 rd Session of the RAB (RAB023) (D. Wilson & J. Planas)	✓ 26 Oct 2023
IPHC-2023-RAB024-04	Outcomes of the 99 th Session of the IPHC Annual Meeting (AM099) (D. Wilson)	✓ 26 Oct 2023
IPHC-2023-RAB024-05	International Pacific Halibut Commission 5-Year program of integrated research and monitoring (2022-26): Updates (D. Wilson, J. Planas, I. Stewart, A. Hicks, R. Webster, & B. Hutniczak)	✓ 27 Oct 2023
IPHC-2023-RAB024-06	Report on current and future biological and ecosystem science research activities (J. Planas, C. Dykstra, A. Jasonowicz, C. Jones)	✓ 26 Oct 2023
IPHC-2023-RAB024-07	IPHC Fishery-independent setline survey (FISS) design and implementation in 2023 (K. Ualesi, R. Rillera, T. Jack, & K. Coll)	✓ 29 Oct 2023
IPHC-2023-RAB024-08	2024-26 FISS Design evaluation (R. Webster, I. Stewart, K. Ualesi, & D. Wilson)	✓ 28 Oct 2023

APPENDIX IV

**CONSOLIDATED SET OF RECOMMENDATIONS OF THE 24TH SESSION OF THE IPHC
RESEARCH ADVISORY BOARD (RAB024)**

RECOMMENDATIONS

International Pacific Halibut Commission 5-year program of Integrated Research and Monitoring (2022-26)

RAB024-Rec.01 ([para. 11](#)) **NOTING** the substantial potential of incorporating AI techniques to supplement the IPHC Secretariat’s current aging protocol informing on the population age structure and serving as input to the Pacific halibut stock assessment, the RAB **RECOMMENDED** continuing with the proposed project and method validation as part of the IPHC 5-year Program of Integrated Research and Monitoring (2022-26).

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REQUESTS

IPHC Process: Update on the actions arising from the 23rd Session of the RAB (RAB023)

RAB024-Req.01 ([para. 5](#)) **NOTING** a potential issue raised regarding bycatch being caught in Alaskan State waters leading to closures of areas to longline fishing gear by ADFG, the RAB **REQUESTED** that the IPHC Secretariat investigate and share outcomes with the RAB intersessionally, and at RAB025.

Monitoring: Fishery-dependent data

RAB024-Req.02 ([para. 19](#)) The RAB **NOTED** the ongoing discussions regarding e-logbooks being developed for the fleet in Alaska, USA, and while some concerns were raised, Canadian RAB members highlighted the benefits of e-logbooks used by the Canadian fleet and encouraged information sharing among RAB members over the coming year. Thus, the

RAB **REQUESTED** that the IPHC Secretariat keeps the fleet informed regarding preserving data confidentiality arising from the use of electronic logbooks.

Monitoring: Fishery-independent data - 2024 FISS design evaluation

RAB024-Req.03 ([para. 31](#)) **NOTING** that FISS landings and sale includes U32 fish, and that this may have been a factor in the reduced prices for Pacific halibut in 2023, the RAB **REQUESTED** the IPHC Secretariat undertake an analysis of IPHC FISS prices versus commercial vessel prices received in 2023 and share the findings with the RAB and Commission.