



INTERNATIONAL PACIFIC
HALIBUT COMMISSION

IPHC Interim Meeting (IM094) – A Collection of Published Meeting Documents

27-28 November 2018, Seattle, WA

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INTERNATIONAL PACIFIC
HALIBUT COMMISSION

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**DRAFT: AGENDA & SCHEDULE FOR THE 94th SESSION
OF THE IPHC INTERIM MEETING (IM094)**

Date: 27–28 November 2018
Location: Seattle, Washington, USA
Venue: Grand Hyatt Seattle; Room: Princessa
Time: 09:00-17:00 daily
Chairperson: Mr Paul Ryall (Canada)
Vice-Chairperson: Vacant

Notes:

- *All sessions are open to Observers and the general public*
- *All sessions will be webcast. Webcast sessions will also take audience comments and questions as directed by the Chairperson of the Commission.*

**DRAFT: AGENDA FOR THE 94th SESSION
OF THE IPHC INTERIM MEETING (IM094)**

1. **OPENING OF THE SESSION & ELECTION OF A VICE-CHAIRPERSON** (Chairperson)
2. **ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION** (Chairperson)
3. **UPDATE ON ACTIONS ARISING FROM THE 94th ANNUAL MEETING** (D. Wilson)
4. **REPORT OF THE IPHC SECRETARIAT (2018): Draft** (D. Wilson)
5. **FISHERY STATISTICS (2018)** (L. Erikson)
6. **STOCK STATUS OF PACIFIC HALIBUT (2018) AND HARVEST DECISION TABLE**
 - 6.1 Fishery Independent Setline Survey (FISS) design and implementation in 2018 (L. Erikson and T. Geernaert)
 - 6.2 Space-time modelling of survey data (WPUE; FISS expansion results, etc.) (R. Webster)
 - 6.3 Data overview and preliminary stock assessment (2018), and draft harvest decision table (2018) (I. Stewart, A. Hicks, R. Webster & D. Wilson)
 - 6.4 Mortality projections – Using the IPHC mortality projection tool (I. Stewart & D. Wilson)
7. **IPHC SCIENCE AND RESEARCH**
 - 7.1 Report of the 19th Session of the IPHC Research Advisory Board (RAB019) (D. Wilson)

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- 7.2 Report of the 12th and 13th Sessions of the IPHC Scientific Review Board (SRB012 and SRB013) (SRB Chairperson)
 - 7.3 IPHC 5-year Biological and Ecosystem Science research program: update (J. Planas)
 - 7.4 The role of peer review in the IPHC scientific process (D. Wilson)
- 8. MANAGEMENT STRATEGY EVALUATION**
- 8.1 IPHC Management Strategy Evaluation: update (A. Hicks)
 - 8.2 Report of the 12th and 13th Sessions of the IPHC Management Strategy Advisory Board (MSAB012 and MSAB013) (MSAB Co-Chairpersons)
- 9. CONTRACTING PARTY UPDATES (BY AGENCY)**
- 9.1 Canada
 - 9.1.1 Fisheries and Oceans Canada (DFO)
 - 9.2 United States of America
 - 9.2.1 National Oceanic and Atmospheric Administration (NOAA) – Fisheries
 - a) National Marine Fisheries Service (NOAA-Fisheries)
 - b) North Pacific Fishery Management Council (NPFMC)
 - c) Pacific Fishery Management Council (PFMC)
- 10. REGULATORY PROPOSALS FOR THE 2018-19 PROCESS**
- 10.1 IPHC Secretariat regulatory proposals (S. Keith)
 - 10.2 Contracting Party (agency) regulatory proposals (Agency staff)
 - 10.3 Stakeholder regulatory proposals (S. Keith)
 - 10.4 Stakeholder statements (S. Keith)
- 11. IPHC PERFORMANCE REVIEW**
- 11.1 Update on progress regarding the implementation of the 1st IPHC Performance Review recommendations (S. Keith & D. Wilson)
 - 11.2 2nd IPHC Performance Review: Update (D. Wilson)
- 12. FINANCE AND ADMINISTRATION**
- 12.1 Financial Statement for FY2018 (M. Larsen)
 - 12.2 Budget estimates for FY2019 and FY2020 for approval, and tentatively for FY2021 (M. Larsen & D. Wilson)
 - 12.3 Draft: IPHC Financial Regulations (2019) (M. Larsen, S. Keith & D. Wilson)
 - 12.4 Independent auditor's reports: 2017, 2018 (M. Larsen)
 - 12.5 Draft: IPHC Rules of Procedure (2018) (D. Wilson)
 - 12.6 IPHC Memorandum of Understanding, and Agreements (D. Wilson)
- 13. OTHER BUSINESS**
- 13.1 Preparation for 95th Session of the IPHC Annual Meeting (2019) (S. Keith)
 - 13.2 IPHC meetings calendar (2019-21) (S. Keith)
- 14. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 94th SESSION OF THE IPHC INTERIM MEETING (IM094)**
- 14.1 Draft Report (Chairperson and Executive Director)

**DRAFT: SCHEDULE FOR THE 94th SESSION
OF THE IPHC INTERIM MEETING (IM094)**

Tuesday, 27 November 2018		
Time	Agenda item	Lead
09:00-09:10	1. Opening of the Session & Election of a Vice-Chairperson	Chairperson
09:10-09:20	2. Adoption of the agenda and arrangements for the Session	Chairperson
09:20-09:30	3. Update on actions arising from the 94 th Annual Meeting (AM094)	D. Wilson
09:30-10:00	4. Report of the IPHC Secretariat (2018): Draft	D. Wilson
10:00-10:30	5. Fishery statistics (2018)	L. Erikson
10:30-10:45	Break	
10:45-11:15	6. Stock status of Pacific halibut (2018) and harvest decision table	L. Erikson
	6.1 Fishery Independent Setline Survey (FISS) design and implementation in 2018 6.2 Space-time modelling of survey data (WPUE; FISS expansion results; etc.)	R. Webster
11:15-12:30	6.3 Data overview and preliminary stock assessment (2018), and draft harvest decision table (2018)	I. Stewart
	6.4 Mortality projections – Using the IPHC mortality projection tool <i>Public comment and questions (Agenda Item 6)</i>	I. Stewart & D. Wilson
12:30-13:30	Lunch	
13:30-15:30	7. IPHC Science and Research	
	7.1 Report of the 19 th Session of the IPHC Research Advisory Board (RAB019)	D. Wilson
	7.2 Reports of the 12 th and 13 th Sessions of the IPHC Scientific Review Board (SRB012 and SRB013)	SRB Chairperson
	7.3 IPHC 5-year Biological and Ecosystem Science research program: update	J. Planas
	7.4 The role of peer review in the IPHC scientific process <i>Public comment and questions (Agenda Item 7)</i>	D. Wilson
15:30-15:45	Break	
15:45-17:00	8. Management strategy evaluation	
	8.1 IPHC Management Strategy Evaluation: update 8.2 Reports of the 11 th and 12 th Sessions of the IPHC Management Strategy Advisory Board (MSAB011 and MSAB012) <i>Public comment and questions (Agenda Item 8)</i>	A. Hicks MSAB Co-Chairpersons

Wednesday, 28 November 2018		
09:00-10:00	9. Contracting Party (Agency) updates 9.1 Fisheries and Oceans Canada (DFO) 9.2 National Oceanic and Atmospheric Administration (NOAA) – Fisheries <ul style="list-style-type: none"> • National Marine Fisheries Service (NMFS) • North Pacific Fishery Management Council (NPFMC) • Pacific Fishery Management Council (PFMC) <p style="text-align: center;"><i>Public comment and questions (Agenda Item 9)</i></p>	TBD TBD TBD TBD TBD
10:00-10:30	10. Regulatory proposals for the 2018-19 process 10.1 IPHC Secretariat regulatory proposals	S. Keith
10:30-10:45	Break	
10:45-11:30	10. Regulatory proposals for the 2018-19 process (cont.) 10.2 Contracting Party (Agency) regulatory proposals 10.3 Stakeholder regulatory proposals 10.4 Stakeholder statements <p style="text-align: center;"><i>Public comment and questions (Agenda Item 10)</i></p>	Agency staff S. Keith S. Keith
11:30-12:30	11. Performance review 11.1 Update on progress regarding the implementation of the 1 st IPHC Performance Review recommendations 11.2 2 nd IPHC Performance Review: Update <p style="text-align: center;"><i>Public comment and questions (Agenda item 11)</i></p>	S. Keith & D. Wilson D. Wilson
12:30-13:30	Lunch	
13:30-15:30	12. Finance and administration 12.1 Financial Statement for FY2018 12.2 Budget estimates for FY2019 and 2020 for approval, and tentatively for FY2021 12.3 Draft: IPHC Financial Regulations (2019) 12.4 Independent auditor's reports: 2016, 2017, 2018 12.5 Draft: IPHC Rules of Procedure (2018) 12.6 IPHC Memorandum of Understandings, and Agreements	M. Larsen M. Larsen & D. Wilson M. Larsen M. Larsen D. Wilson D. Wilson
15:30-15:45	Break	
15:45-16:00	13. Other business 13.1 Preparation for 95 th Session of the IPHC Annual Meeting (2018) 13.2 IPHC meetings calendar (2019-21)	S. Keith S. Keith
16:00-17:00	14. Review of the draft and adoption of the Report of the 94 th Session of the IPHC Interim Meeting (IM094) 14.1 Draft Report	Chairperson D. Wilson



**DRAFT: LIST OF DOCUMENTS FOR THE 94th SESSION OF THE IPHC
INTERIM MEETING (IM094)**

Last updated: 20 November 2018

Document	Title	Availability
IPHC-2018-IM094-01	Draft: Agenda & Schedule for the 94 th Session of the IPHC Interim Meeting (IM094)	✓ 29 Aug 2018 ✓ 11 Oct 2018 ✓ 14 Oct 2018
IPHC-2018-IM094-02	Draft: List of Documents for the 94 th Session of the IPHC Interim Meeting (IM094)	✓ 29 Aug 2018 ✓ 11 Oct 2018 ✓ 20 Nov 2018
IPHC-2018-IM094-03	Update on actions arising from the 94 th Annual Meeting (AM094) (IPHC Secretariat)	✓ 23 Oct 2018
IPHC-2018-IM094-04	Report of the IPHC Secretariat (2018): Draft (D. Wilson, S. Keith)	✓ 23 Oct 2018
IPHC-2018-IM094-05 Rev_1	Fishery statistics (2018): Draft (L. Erikson)	✓ 27 Oct 2018 ✓ 20 Nov 2018
IPHC-2018-IM094-06	Fishery-independent setline survey design and implementation in 2018, including current and future expansions (L. Erikson, T. Geernaert & E. Soderlund)	✓ 25 Oct 2018
IPHC-2018-IM094-07 Rev_1	Space-time modelling of survey data: Update (R. Webster)	✓ 26 Oct 2018 ✓ 20 Nov 2018
IPHC-2018-IM094-08 Rev_1	Summary of the data, stock assessment, and harvest decision table for Pacific halibut (<i>Hippoglossus stenolepis</i>) at the end of 2018 (I. Stewart, A. Hicks, R. Webster & D. Wilson)	✓ 25 Oct 2018 ✓ 20 Nov 2018
IPHC-2018-IM094-09 Rev_1	Mortality projections – Using the IPHC mortality projection tool (I. Stewart & D. Wilson)	✓ 18 Oct 2018 ✓ 20 Nov 2018
IPHC-2018-IM094-10	IPHC 5-year Biological and Ecosystem Science research program: update (J. Planas)	✓ 24 Oct 2018
IPHC-2018-IM094-11	The role of peer review in the IPHC scientific process (D. Wilson & J Planas)	✓ 28 Oct 2018
IPHC-2018-IM094-12	IPHC Management Strategy Evaluation (MSE): update (A. Hicks & I. Stewart)	✓ 27 Oct 2018
IPHC-2018-IM094-13	Update on progress regarding the implementation of the 1 st IPHC Performance Review recommendations (S. Keith & D. Wilson)	✓ 15 Oct 2018
IPHC-2018-IM094-14	2 nd IPHC Performance Review: update (D. Wilson)	✓ 24 Oct 2018
IPHC-2018-IM094-15	Financial Statement for FY2018 (M. Larsen)	✓ 01 Nov 2018

IPHC-2018-IM094-16	Budget Update for FY2019 and Budget Estimate for 2020 (M. Larsen)	✓ 13 Nov 2018
IPHC-2018-IM094-17	Draft: IPHC Financial Regulations (2018) (M. Larsen, S. Keith & D. Wilson)	✓ 23 Oct 2018
IPHC-2018-IM094-18	Independent auditor's reports: 2017, 2018 (M. Larsen)	✓ 03 Nov 2018
IPHC-2018-IM094-19	Draft: IPHC Rules of Procedure (2019) (D. Wilson)	✓ 25 Oct 2018
IPHC-2018-IM094-20	IPHC Memorandums of Understanding, and Agreements (D. Wilson)	✓ 23 Oct 2018
IPHC-2018-IM094-21	Preparation for the 95 th Session of the IPHC Annual Meeting (2019) (S. Keith)	✓ 15 Oct 2018
IPHC-2018-IM094-22	Draft: IPHC meetings calendar (2019-21) (S. Keith)	✓ 15 Oct 2018
Contracting Party updates (by agency)		
IPHC-2018-IM094-AR01	Canada: Fisheries and Oceans Canada (DFO)	None provided
IPHC-2018-IM094-AR02	USA: NOAA Fisheries (National Marine Fisheries Service)	✓ 30 Oct 2018
IPHC-2018-IM094-AR03	USA: North Pacific Fishery Management Council (NPFMC)	✓ 16 Oct 2018
IPHC-2018-IM094-AR04	USA: Pacific Fishery Management Council (PFMC)	None provided
Regulatory proposals for 2019		
IPHC Secretariat regulatory proposals for 2019		
IPHC-2018-IM094-PropA1	Fishery Limits (Sect. 4) (IPHC Secretariat)	✓ 17 Oct 2018
IPHC-2018-IM094-PropA2	Fishing Periods (Sect. 9) (IPHC Secretariat)	✓ 17 Oct 2018
IPHC-2018-IM094-PropA3	IPHC Fishery Regulations: minor amendments (IPHC Secretariat)	✓ 23 Oct 2018
Contracting Party (Agency) regulatory proposals for 2019		
IPHC-2018-IM094-PropB1	None provided	None provided
Other Stakeholder regulatory proposals for 2019		
IPHC-2018-IM094-PropC1	IPHC Regulatory Area 2A TCEY (P. DePoe)	✓ 26 Oct 2018
IPHC-2018-IM094-PropC2	IPHC Regulatory Area 2A quota program (M. Pettis)	✓ 26 Oct 2018
Reports from IPHC subsidiary bodies (2018/19)		
IPHC-2018-RAB019-R	Report of the 19 th Session of the IPHC Research Advisory Board (RAB019)	✓ 11 Mar 2018
IPHC-2018-SRB012-R	Report of the 12 th Session of the IPHC Scientific Review Board (SRB012)	✓ 21 Jun 2018
IPHC-2018-SRB013-R	Report of the 13 th Session of the IPHC Scientific Review Board (SRB013)	✓ 27 Sept 2018

IPHC-2018-MSAB011-R	Report of the 11 th Session of the IPHC Management Strategy Advisory Board (MSAB011)	✓ 10 May 2018
IPHC-2018-MSAB012-R	Report of the 12 th Session of the IPHC Management Strategy Advisory Board (MSAB012)	✓ 26 Oct 2018
IPHC-2018-PAB023-R	Report of the 23 rd Session of the IPHC Processor Advisory Board (PAB023)	✓ 24 Jan 2018
IPHC-2018-CB088-R	Report of the 88 th Session of the IPHC Conference Board (CB088)	✓ 25 Jan 2018
<i>Information papers</i>		
IPHC-2018-IM094-INF01	Stakeholder Statements on regulatory proposals	✓ 20 Nov 2018
IPHC-2018-IM094-INF02	2018 IPHC Regulatory Proposals referred to a Working Group of IPHC Contracting Parties (IPHC Secretariat)	✓ 25 Oct 2018
IPHC-2018-IM094-INF03	Draft: 2018 IPHC Contracting Party (by agency) Report Template	✓ 30 Oct 2018
IPHC-2018-IM094-INF04	Regulatory Proposal Implementation Notes (IPHC Secretariat)	✓ 20 Nov 2018
IPHC-2018-IM094-INF05	PFMC letter to IPHC (P. Anderson)	✓ 20 Nov 2018



Update on actions arising from the 94th Annual Meeting (AM094)

PREPARED BY: IPHC SECRETARIAT (D. WILSON, S. KEITH; 23 OCTOBER 2018)

PURPOSE

To provide the Commission with an opportunity to consider the progress made during the inter-session period, in relation to the direct requests for action by the Commission during its 94th Annual Meeting (AM094: January 2018).

BACKGROUND

At the 94th Session of the IPHC, Contracting Parties agreed on a series of actions to be taken by Commissioners, Subsidiary Bodies, and IPHC Secretariat on a range of issues as detailed in [Appendix A](#).

DISCUSSION

Noting that best practice governance requires the prompt delivery of core tasks assigned to the IPHC Secretariat by the Commission, at each subsequent session of the Commission and its subsidiary bodies, attempts will be made to ensure that any recommendations for action are carefully constructed so that each contains the following elements:

- 1) a specific action to be undertaken (deliverable);
- 2) clear responsibility for the action to be undertaken (i.e., a specific Contracting Party, the IPHC Secretariat staff, a subsidiary body of the Commission, or the Commission itself);
- 3) a desired time frame for delivery of the action (i.e., by the next session of a subsidiary body, or other date).

This involves numbering and tracking all action items (see [Appendix A](#)) from the Commission, as well as including clear progress updates and document reference numbers.

In addition to the action items detailed in Appendix A, at the 94th Annual Meeting the Commission also tasked the IPHC Secretariat as follows:

Stakeholder regulatory proposals

Para. 61. *The Commission **NOTED** that that a number of these proposals touched on issues raised by stakeholders in previous years and **DEFERRED** action on the following proposals to an IPHC Secretariat led working group, to include appropriate Contracting Party agencies, for further study with a view to investigating possible new solutions. For IPHC-2018-AM094-PropC2, in particular, the working group could consider annual limits and new technologies among possible solutions.*

- IPHC-2018-AM094-PropC2 *Preserving catch on private live-aboard vessels (A. Cooper)*
- IPHC-2018-AM094-PropC4 *Sport Fishing for Halibut - Cleaning Regulations (S. Riehemann)*

- *IPHC-2018-AM094-PropC6 Live-aboard processing exemption (D. Robertson)*
- *IPHC-2018-AM094-PropC Processing halibut greater than four filets (M. Cowart)*
- *IPHC-2018-AM094-PropC11 Long term storage aboard pleasure vessels (L. Thompson)*
- *IPHC-2018-AM094-PropC12 Long term storage on cruising vessels (W. Cornell)*

Progress: A working group met on 25 September 2018. Paper IPHC-2018-IM094-INF02 documents the history of existing regulations and provides comments from the working group on the deferred regulatory proposals.

RECOMMENDATION/S

That the Commission:

- 1) **NOTE** paper IPHC-2018-IM094-03 which provided the Commission with an opportunity to consider the progress made during the inter-sessional period, in relation to the direct requests for action by the Commission during its 94th Annual Meeting (AM094: January 2018).

APPENDICES

Appendix A: [Update on actions arising from the 94th Annual Meeting \(AM094: January 2018\).](#)

APPENDIX A

Update on actions arising from the 94th Annual Meeting (AM094: January 2018)

Action No.	Description	Update
RECOMMENDATIONS		
AM094– Rec.01 (para. 36)	Review of fishery goals and objectives: Commission directive The Commission RECOMMENDED that the draft goals, objectives, and performance metrics, as detailed in Appendix IV, IPHC-2017-MSAB10-R be used for ongoing evaluation in the MSE process, and that they may be refined in the future. The objectives should be evaluated in a hierarchal manner, with conservation as the first priority.	In progress: The MSAB is reviewing the goal and objectives for clarity and completeness, and will report revised goals and objectives at IM094 and AM095.
AM094– Rec.02 (para. 39)	The Commission RECOMMENDED that the IPHC Secretariat consider the setline survey WPUE grid across the fishery as well as other biological factors (e.g. habitat configuration, size distribution in the region etc.) and provide alternatives to the current management areas (e.g. biological regions), and that the MSAB consider additional ways to incorporate biological information into TCEY distribution procedures.	Completed: The SRB has reviewed the Biological Regions defined by the Secretariat and finds these Regions to be the best option for implementing a precautionary approach to the management of Pacific halibut (see paragraph 30 of IPHC-2018-SRB012-R)
AM094– Rec.03 (para. 44)	The Commission RECOMMENDED that long- and mid-term performance metrics for conservation objectives be considered in the MSE process for conservation objectives, and that short-term metrics be included for fishery-related objectives in the MSE process, via the MSAB.	Completed: The MSAB has incorporated these elements into its Program of Work.
AM094– Rec.04 (para. 89)	Evaluation of the IPHC's 32" minimum size limit The Commission NOTED report IPHC-2018-AM094-14, which indicated that the performance of the management procedure is dominated by management decisions other than the size limit, (e.g. removal of the size limit is likely to result in minimal changes in yield) and RECOMMENDED that the size limit remain unchanged.	Completed: No further action required.
REQUESTS		
AM094– Req.01 (para. 31)	Reports of the 10th Session of the IPHC Management Strategy Advisory Board (MSAB10) The Commission REQUESTED that the MSAB look at SPR values consistent with recent estimated SPR values from the assessment model and lower. This would mean expanding the lower range of SPR values to below 40%.	Completed: The MSAB has incorporated these elements into its Program of Work.
AM094– Req.02 (para. 37)	Review of fishery goals and objectives: Commission directive The Commission REQUESTED that the objectives related to distributing the TCEY, as detailed in Circular IPHC-2017-CR022, be presented at MSAB11 for further stakeholder feedback.	Completed: The MSAB has incorporated these elements into its Program of Work.

Action No.	Description	Update
AM094– Req.03 (para. 38)	The Commission REQUESTED that the proposed TCEY distribution methodology of the Harvest Strategy Policy reflect an understanding of both stock distribution and fishery management distribution procedures.	Completed: The MSAB has incorporated these elements into its Program of Work.
AM094– Req.04 (para. 54)	Discussion paper: Frozen-at-sea exemption for head-on requirement (Sect. 13) The Commission REQUESTED that the IPHC Secretariat continue to monitor the volume of catch being landed as frozen head-off product. The IPHC Secretariat shall keep the Commission informed of the annual landings from this sector of the fishery.	Completed: This has been incorporated in the IPHC annual Program of Work.
AM094– Req.05 (para. 62)	Stakeholder regulatory proposals The Commission NOTED that the following proposals were more appropriate for action by the U.S.A. North Pacific Fishery Management Council (NPFMC), and REQUESTED the IPHC notify the proponents that they should communicate their proposals to the NPFMC for its consideration: <ul style="list-style-type: none"> • IPHC-2018-AM094-PropC3 For unguided sport fishing (P. Phillips) • IPHC-2018-AM094-PropC7 Eliminate the requirement for a CHP (S. Riehemann) • IPHC-2018-AM094-PropC16 Reduce daily bag limit for all anglers in Area 2C and 3A in times of low abundance (M. Grove) • IPHC-2018-AM094-PropC17 Recreational sport fishing only allocation (J. Kearns) 	Completed: Notifications sent to each proponent soon after AM094.
AM094– Req.06 (para. 64)	The Commission REQUESTED that an IPHC Secretariat led working group, to include appropriate Contracting Party agencies, review IPHC-2018-AM094-PropC8 over the coming year to determine how best to implement it effectively.	Completed: The IPHC Secretariat has determined that no changes are required to IPHC Fishery Regulations to accommodate the intent of this proposal, and thus it does not need to be re-submitted. There may be domestic regulatory issues with the use of pot gear contemplated in the proposal, which the IPHC Secretariat has referred to the appropriate Contracting Party agencies for comment.
AM094– Req.07 (para. 117)	IPHC Financial Regulations (2018) The Commission ADOPTED the revised IPHC Financial Regulations (2018) by consensus, and REQUESTED that the IPHC Secretariat finalise and publish them accordingly.	Completed: Published on 4 May 2018
AM094– Req.08 (para. 118)	The Commission REQUESTED the IPHC Secretariat review the IPHC Financial Regulations and develop suitable text for consideration at the IM094, which would permit the transfer of funds between the General and Supplemental Funds.	In progress: Will be presented at IM094 for consideration. See paper IPHC-2018-IM094-17.

Action No.	Description	Update
AM094– Req.09 (para. 141)	Review of the draft and adoption of the report of the 94th Session of the IPHC Annual Meeting (AM094) The Commission REQUESTED that the IPHC Secretariat finalise and publish the IPHC <i>Pacific Halibut Fishery Regulations (2018)</i> no later than 28 February 2018, NOTING that only minor editorial and formatting changes are permitted beyond the decisions made by the Commission at the AM094.	Completed : Published on 15 Feb 2018.



Draft: Report of the IPHC Secretariat (2018)

PREPARED BY: IPHC SECRETARIAT (D. WILSON, S. KEITH; 23 OCTOBER 2018)

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1. PURPOSE

To provide the Commission with an update on the activities of the IPHC Secretariat in 2018 (as of 23 October 2018).

2. STAFFING IMPROVEMENTS DURING 2018

Full time regular				
FT Arrivals	Type	Hire Date	Status	Position Title
Caroline Robinson	Full time regular	27 June 2018	Active	Fisheries Data Coordinator (Recreational, Subsistence, & Data Entry)
FT Change				
Edward Henry	Full time regular	16 May 2012	Active (promotion 1 July 2018)	Old: Survey Coordinator (Bait) New: Fisheries Data Coordinator (Bycatch)
Lara Erikson	Full time regular	24 Sept 2001	Active (promotion 1 August 2018)	Old: Fisheries Data Manager New: Branch Manager, Fisheries Statistics and Services
FT Departure				
Jamie Goen	Full time regular	27 June 2016	Departed: 30 April 2018	Branch Manager, Fisheries Statistics and Services

Temporary positions				
Temp/contract	Type	Hire Date	Status	Position Title
Anna Simeon	Temporary full time (2-yr contract ending 28 February 2020)	1 March 2018	Active	Biological Science Laboratory Technician (new position)
Suzanne Dodds	Temporary full time (3.5 month contract)	16 May 2018	Departed: 27 August 2018	Undergraduate Intern
Steven Berukoff	Temporary full-time 2-yr contract ending in October 2020	22 October 2018	Active	MSE Programmer

Current recruitment activities:

Position Title	Reason for vacancy	Status
Survey Coordinator (Gear and Bait)	Vacated by Edward Henry	Hiring action in progress
Fisheries Data Manager	Vacated by Lara Erikson	Hiring action in progress
MSE Researcher	New temporary position (2 years)	Hiring action in progress

3. IPHC MERIT SCHOLARSHIP FOR 2018

The IPHC funds several Merit Scholarships to support university, technical college, and other post-secondary education for students from Canada and the USA connected to the Pacific halibut fishery. Generally, a single new scholarship valued at US\$4000 per year is awarded every two years. The scholarships are renewable annually for the normal four-year period of undergraduate education, subject to maintenance of satisfactory academic performance. A Scholarship Committee of industry and Commission representatives reviews applications and determines recipients based on academic qualifications, career goals, and relationship to the Pacific halibut industry.

The recipient of the 2018 IPHC Merit Scholarship is **Kaia Dahl** of Petersburg, Alaska, who began her studies at Greenville College in Greenville, Illinois this fall.

The list of current recipients and their expected years of receipt are provided below. Note that in 2016 the IPHC Merit Scholarship shifted from an award of US\$2000 per year for four years, with a new recipient selected each year, to an award of US\$4000 per year for four years, with a new recipient selected every other year.

Name	2015	2016	2017	2018	2019	2020	2021
Shalie Dahl (Petersburg, AK, USA)	\$2000	\$2000	\$2000	\$2000	-	-	-
Ysabel Echeverio (Stevensville, MT, USA)	-	\$4000	\$4000	\$4000	\$4000	-	-
Kaia Dahl (Petersburg, AK, USA)	-	-	-	\$4000	\$4000	\$4000	\$4000

4. MEETINGS OF THE COMMISSION AND SUBSIDIARY BODIES DURING 2018

Meetings	No.	Date	Location
Annual Meeting (AM)	94 th	22-26 Jan	Portland, USA
Conference Board (CB)	88 th	23-24 Jan	Portland, USA
Processor Advisory Board (PAB)	23 rd	23-24 Jan	Portland, USA
Finance and Administration Committee (FAC)	94 th	22, 25 Jan	Portland, USA
Research Advisory Board (RAB)	19 th	28 Feb	Seattle, USA
Management Strategy Advisory Board (MSAB)	10 th	9-11 May	Seattle, USA
Scientific Review Board (SRB)	11 th	20-21 June	Seattle, USA
Scientific Review Board (SRB)	12 th	26-28 Sept	Seattle, USA
Work Meeting (WM)	--	20-21 Sept	Bellingham, USA
Management Strategy Advisory Board (MSAB)	11 th	25-26 Oct	Seattle, USA
Interim Meeting (IM)	94 th	28-29 Nov	Seattle, USA

5. IPHC FISHERY REGULATIONS (2018)

In 2018, the Commission adopted **six (6)** fishery regulations in accordance with Article III of the Convention, as follows:

1) **IPHC Pacific halibut fishery regulations, Section 8. Fishing periods**

IPHC-2018-AM094-R, para. 49: *The Commission **ADOPTED** fishing periods for 2017 as provided below, thereby superseding Section 8 of the IPHC halibut fishery regulations:*

- a) *IPHC Regulatory Area 2A (Non-Treaty Direct Commercial): 27 Jun, 11 July, 25 July, 8 August, 22 August, 5 September, 19 September.*
- b) *IPHC Canadian and U.S.A. quota-share fisheries: Opening: 24 March – Closing date: 7 November.*

2) **IPHC Pacific halibut fishery regulations, various sections – minor amendments**

IPHC-2018-AM094-R, para. 52: *The Commission **NOTED** and **ADOPTED** regulatory proposal IPHC-2018-AM094-PropA4 which proposed amendments to ensure clarity and consistency in the IPHC Fishery Regulations [with amendments].*

3) **IPHC Pacific halibut fishery regulations, Section 7. Fishing in IPHC Regulatory Areas 4E and 4D, and Section 11. Commercial Catch Limits**

IPHC-2018-AM094-R, para. 55: *The Commission **NOTED** and **ADOPTED** regulatory proposal IPHC-2018-AM094-PropB1 Rev_1, which proposed IPHC Regulation changes to allow the use of leased Individual Fishing Quota (IFQ) by Community Development Quota (CDQ) organizations in IPHC Regulatory Areas 4B, 4C, 4D and 4E.*

4) **IPHC Pacific halibut fishery regulations, Section 28. Sport Fishing for Pacific Halibut – IPHC Regulatory Areas 2C, 3A, 3B, 4A, 4B, 4C, 4D, 4E**

IPHC-2018-AM094-R, para. 56: *The Commission **NOTED** and **ADOPTED** regulatory proposal IPHC-2018-AM094-PropB2, which proposed a clarification to the IPHC Regulations regarding retention of Pacific halibut caught in the recreational charter fisheries in IPHC Regulatory Areas 2C and 3A.*

5) **IPHC Pacific halibut fishery regulations, Section 28. Sport Fishing for Pacific Halibut – IPHC Regulatory Areas 2C, 3A, 3B, 4A, 4B, 4C, 4D, 4E**

IPHC-2018-AM094-R, para. 63: *The Commission **ADOPTED** the text proposed in IPHC-2018-AM094-23, as modified during the AM094, in response to stakeholder proposal IPHC-2018-AM094-PropC5, which proposed a clarification to the IPHC Regulations regarding filleting of Pacific halibut caught recreationally in Alaska.*

6) **IPHC Pacific halibut fishery regulations, Section 19. Fishing Gear**

IPHC-2018-AM094-R, para. 66: *The Commission **ADOPTED** the text proposed in IPHC-2018-AM094-23 in response to stakeholder proposal IPHC-2018-AM094-C13,*

which proposed a modification to the IPHC Regulations to allow retention of Pacific halibut taken in long-line or single pot gear in the directed Pacific halibut fishery in Alaska, where such gear is permitted by domestic regulation.

6. INTERACTIONS WITH CONTRACTING PARTIES

6.1. CANADA

6.1.1. Fisheries and Oceans Canada (DFO)

a) Areas of conservation concern

The IPHC Secretariat worked with Fisheries and Oceans Canada to clarify restrictions on the IPHC fishery-independent setline survey (FISS) in and near areas of conservation concern, in particular the Marine Protected Areas (MPAs) and Rockfish Conservation Areas (RCAs), both for the standard grid of FISS stations fished each year and for the expansion stations fished in 2018.

6.1.2. Halibut Advisory Board (HAB)

- b) The Executive Director participates as a HAB member, with other Secretariat staff in support. This relationship is expected to continue into the future given the HAB's contributions to the Canadian decision-making process.

5.2 UNITED STATES OF AMERICA

5.2.1 North Pacific Fishery Management Council (NPFMC)

a) Abundance-Based Management of Pacific halibut bycatch (ABM)

The NPFMC's Abundance-Based Management Working Group (ABMWG) continued its work from 2017, with participation of the IPHC Secretariat. The IPHC submitted a letter to the NPFMC in early 2018 ([IPHC to NPFMC 17 January 2018](#)), commenting on the ABMWG's work to date and providing input to its further development. The NPFMC replied to the IPHC's letter in March ([NPFMC to IPHC 6 March 2018](#)), which was noted by the IPHC ([IPHC to NPFMC 29 March 2018](#)).

At its April 2018 meeting, the NPFMC reviewed a discussion paper prepared by the ABMWG and drafted a suite of alternatives for abundance-based Pacific halibut prohibited species catch (PSC) limits for the Bering Sea and Aleutian Islands (BSAI) groundfish fisheries, for preliminary analysis. This preliminary analysis was presented to the NPFMC at its October 2018 meeting, and the NPFMC adopted a number of revisions and clarifications to the alternatives to be examined ([Council motion C6](#)).

The Commission has supported the development of ABM due to its potential effect on the directed Pacific halibut fisheries, and may wish to provide further input to the NPFMC regarding the process, particularly with respect to the ABMWG timeline and the resources dedicated to the task.

5.2.2 Pacific Fishery Management Council (PFMC)

a) IPHC Regulatory Area 2A Catch Sharing Plans / in-season management / IPHC data

The IPHC Secretariat collaborated with NMFS and State agencies to conduct in-season management of the various fisheries identified in the IPHC Regulatory Area 2A Catch Sharing Plan. Date and possession restrictions have been adjusted in season among the various fisheries to meet identified fishery needs while attaining and remaining within the applicable catch limit. Estimates for 2018 will be presented during the IPHC Interim Meeting Agenda Item 5 on fishery statistics (see paper IPHC-2018-IM094-05).

b) Commercial derby fisheries

In 2017, the IPHC Secretariat initiated discussion with the PFMC, as well as with NOAA Fisheries and the relevant State agencies, regarding the management of the directed commercial Pacific halibut fishery in IPHC Regulatory Area 2A, with the goal of moving away from its current derby-style management. The IPHC Secretariat noted concerns over safety and discards, as well as limitations on fishers and processor flexibility. Although no changes to the non-tribal directed Pacific halibut fishery were proposed, the PFMC asked the States and the IPHC to continue investigating options that would move the fishery away from a derby-style fishery. The PFMC reviewed the analysis and alternatives in September 2017 ([Agenda Item G.1.a, IPHC Report 1](#)) and November 2017 ([Agenda Item E.1, Attachment 3](#)), with a view toward continuing the discussion during 2018 for possible changes in 2019. No changes were suggested to the IPHC for the 2018 fishery.

The IPHC Secretariat submitted letters to the PFMC for its June 2018 meeting ([Informational Report 2](#)) and September 2018 meeting (Agenda Item J.1), indicating its expectation that a proposal to change the length of the fishing period for the non-treaty directed commercial Pacific halibut fishery in IPHC Regulatory Area 2A will be considered by the IPHC during its 2018-19 meeting cycle, for potential implementation in 2019. The IPHC asked the PFMC to consider this potential change in the course of its regular review of the Pacific halibut fishery and its Catch Sharing Plan during its September and November 2018 meetings. The IPHC Secretariat attended the September meeting and will attend the November meeting. Recommendations from the PFMC would then be considered by the IPHC as it reviews the proposal ([IPHC-2018-IM094-PropA2](#)) at the 94th Interim Meeting (IM094) and the 95th Annual Meeting (AM095) in January 2019.

7. IPHC COMMUNICATIONS AND OUTREACH

7.1. IPHC Website

We have received positive reviews for the new IPHC website (<http://iphc.int/>), launched on 15 December 2017 as the culmination of a year-long project by the IPHC Secretariat.

The IPHC Secretariat will continue to develop different ways to publish data and statistics for our stakeholders, focusing particularly on the addition of timely and useful visual displays such as our interactive maps and our online fishery-independent setline survey (FISS) data query. New developments to be presented at the IM094, including FISS pages and catch tables.

7.2. Annual Report

The 2017 Annual Report is available for download from the IPHC website at the following link: <http://iphc.int/library/documents/category/annual-reports>. We are now using an accelerated production timeline for the IPHC Annual Report, thereby ensuring users of the report receive the summary information as close to the relevant year as possible. Continued feedback on the content, format and presentation of the Annual Report is welcome.

7.3. Report of Assessment and Research Activities (RARA)

The IPHC [Report of Assessment and Research Activities \(RARA\)](#) was intended to supply progress reports on current projects and monitoring that are underway at the IPHC. In past years, this document included fishery information, monitoring activities, stock assessment, and research reports about the previous year's activities, which are now provided as detailed papers for the Annual Meeting. This allows us to update our documents in real time as data become available, ensuring that Commissioners and stakeholders have access to the most recent information possible for the decision-making process at the Annual Meeting. We are in the process of integrating this remaining RARA material into the new [IPHC Science and Research](#) pages of the website, where it can be updated in near real time, thus eliminating the need for future compendiums of this nature. The RARA will be continued in an abbreviated format in 2019, with the discontinuation of the RARA subsequent to the 95th Session of the IPHC Annual Meeting (AM095).

7.4. News Releases and News Bulletins

The IPHC Secretariat is developing a news bulletin format to report stories and features of interest to the Pacific halibut community. News releases will continue to be used as necessary for some announcements.

In addition, the IPHC Secretariat is moving to fully electronic information distribution. News releases, news bulletins, and similar information will be posted on the IPHC website and distributed via email. As such, stakeholders are encouraged to request that their email addresses be added to IPHC distribution lists at the following link: <https://iphc.int/form/news-letter>. Hard copies of news releases and similar bulletins will be discontinued during 2019.

8. IPHC PUBLICATIONS IN 2018

8.1. *Published peer-reviewed journal papers*

- Drinan DP, **Loher T** & Hauser L (2018) Identification of genomic regions associated with sex in Pacific halibut. *Journal of Heredity* 109(3):326-332.
- Hershberger PK, Gregg JL & **Dykstra CL** (2018) High-prevalence and low-intensity *Ichthyophonus* infections in Pacific halibut. *Journal of Aquatic Animal Health* 30:13-19.
- LeBris A, Fisher JAD, Murphy HM, Galbraith PS, Castonguay M, **Loher T** & Robert D (2018) Migration patterns and putative spawning habitats of Atlantic halibut (*Hippoglossus hippoglossus*) in the Gulf of St. Lawrence revealed by geolocation of pop-up satellite archival tags. *ICES Journal of Marine Science* 1(1):135-147.
- Loher T** & **Soderlund E** (2018) Connectivity between Pacific halibut *Hippoglossus stenolepis* residing in the Salish Sea and the offshore population, demonstrated by pop-up archival tagging. *Journal of Sea Research*. doi: 10.1016/j.seares.2018.09.007.
- Monnahan CC & **Stewart IJ** (2018) The effect of hook spacing on longline catch rates: implications for catch rate standardization. *Fisheries Research*. 198: 150-158.
- Nielsen JK, Rose CS, Lindstrom T, **Loher T**, Drobny P, Seitz AC, Courtney MB & Gauvin J (2018) Characterizing activity and detecting bycatch mortality of Pacific halibut with accelerometer Pop-up Satellite Archival Tags. *Animal Biotelemetry* 6:10. doi: 10.101186/s40317-018-0154-2

8.2. *In press peer-reviewed journal papers*

- Kuriyama PT, Branch TA, **Hicks AC**, Harms JH & Hamel OS (2018) Investigating three sources of bias in hook-and-line surveys: survey design, gear saturation, and multispecies interactions. *Canadian Journal of Fisheries and Aquatic Sciences*. *In press*.
- Stewart IJ** & **Hicks AC** (2018) Inter-annual stability from ensemble modelling. *Canadian Journal of Fisheries and Aquatic Sciences*. *In press*.

8.3. *Submitted peer-review journal papers*

- Loher T**, Martin GB, Geernaert TO & Wischniowski S (*In review*) The importance of geographic trending and scale for inferring fish origins from otolith chemistry in spatially-undersampled populations: *Hippoglossus stenolepis* in the eastern North Pacific. *Marine and Freshwater Research*
- Broell F, **Loher T**, Seitz AC, Taggart C & Nielsen JK (*In review*) Solar illumination affects activity and dive characteristics in a large demersal flatfish during the summer foraging period. *Ecosphere*
- Rose CS, Nielsen JK, Gauvin J, Loher T, Sethi S, Seitz AC, Courtney MB & Drobny P (*In review*) Pacific halibut (*Hippoglossus stenolepis*) survivals after release from trawl catches through expedited sorting: deploying advanced tags in quantity (160) reveals patterns in survival outcomes. *Canadian Journal of Fisheries and Aquatic Sciences*.

9. RECOMMENDATION

That the Commission:

- 1) **NOTE** paper IPHC-2018-IM094-04 which provides the Commission with a draft update on additional activities of the IPHC Secretariat in 2018, not detailed in other papers before the Commission.

APPENDICES

None



Fishery statistics (2018)

PREPARED BY: IPHC SECRETARIAT (L. ERIKSON; 27 OCTOBER; 20 NOVEMBER 2018)

PURPOSE

To provide an overview of the key fishery statistics from fisheries catching Pacific halibut during 2018, including the status of landings compared to fishery limits implemented by the Contracting Parties of the Commission.

BACKGROUND

The International Pacific Halibut Commission (IPHC) estimates all Pacific halibut (*Hippoglossus stenolepis*) removals taken in the IPHC Convention Area and uses this information in its yearly stock assessment (see [IPHC-2018-IM094-08 Rev 1](#)) and other analyses. The data are compiled by the IPHC Secretariat and include data from Federal and State agencies of each Contracting Party. All 2018 data are in net weight (head-off, dressed, ice and slime deducted) and are considered preliminary at this time.

This paper includes Pacific halibut removals for:

- Commercial fisheries, including landings and discard mortality
- Recreational fisheries, including landings and discard mortality
- Subsistence fisheries
- Bycatch in other fisheries (e.g. trawl, pot, longline)
- IPHC Fishery-Independent Setline Survey (FISS) and other research

[Figure 1](#) shows the distribution of Pacific halibut removals (mortality) by these fishery sources in 2018. [Table 1](#) provides estimates of total removals by IPHC Regulatory Area ([Figure 2](#)).

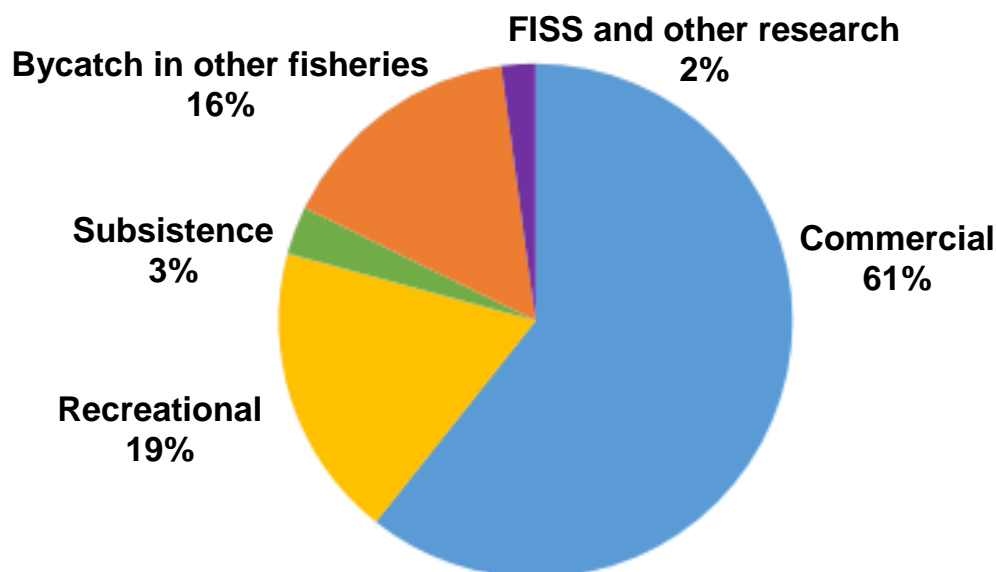


Figure 1. Distribution of Pacific halibut mortality by source in 2018.

Table 1. 2018 estimates of total removals (net weight), including fishery limits and mortality of Pacific halibut by IPHC Regulatory Area. Preliminary as of 20 November 2018. Totals have been rounded.

IPHC Regulatory Area	Fishery limits (net weight)		Mortality (net weight)		Percent %
	Pounds (lb)	Tonnes (t)	Pounds (lb)	Tonnes (t)	
Area 2A (California, Oregon, and Washington)	1,324,000	600.56	1,353,559	613.96	102
Non-treaty directed commercial (south of Pt. Chehalis)	201,845	91.56	203,630	92.36	101
Non-treaty incidental catch in salmon troll fishery	35,620	16.16	34,903	15.83	98
Non-treaty incidental catch in sablefish fishery (north of Pt. Chehalis)	50,000	22.68	43,716	19.83	87
Treaty Indian commercial	389,500	176.67	403,754	183.14	104
Commercial discard mortality	20,000	9.07	20,000	9.07	100
Recreational – Washington	225,366	102.22	222,261	100.82	99
Recreational – Oregon	229,730	104.20	211,450	95.91	92
Recreational – California	30,940	14.03	31,156	14.13	101
Recreational discard mortality	4,000	1.81	4,000	1.81	100
Treaty Indian ceremonial and <u>subsistence</u> (year-round)	27,000	12.25	27,000	12.25	100
Bycatch in other fisheries ¹	110,000	49.90	129,000	58.51	117
IPHC fishery-independent setline survey and research	none	none	22,689	10.29	n/a
Area 2B (British Columbia)	7,050,745	3,198.16	7,163,040	3,249.10	102
Commercial fishery	5,295,995	2,402.22	5,292,558	2,400.66	100
Commercial discard mortality	150,000	68.04	138,000	62.60	92
Recreational fishery	927,990	420.93	802,174	363.86	86
Recreational discard mortality ¹	41,760	18.94	74,000	33.57	177
Recreational fishery (XRQ)	n/a	n/a	16,648	7.55	n/a
Subsistence ¹	405,000	183.70	405,000	183.70	100
Bycatch in other fisheries ¹	230,000	104.33	290,000	131.54	126
IPHC fishery-independent setline survey and research	none	none	144,660	65.62	n/a
Area 2C (southeastern Alaska)	6,336,500	2,874.19	6,331,800	2,872.06	100
Commercial fishery	3,570,000	1,619.32	3,401,415	1,542.86	97
Commercial discard mortality	70,000	31.75	59,000	26.76	84
Metlakatla (Annette Island Reserve)	0	0.00	31,196	14.15	n/a
Guided recreational fishery	810,000	367.41	668,000	303.00	90 ³
Guided recreational discard mortality ²	n/a	n/a	62,000	28.12	n/a
Guided recreational fishery (GAF) ¹	n/a	n/a	64,365	29.20	n/a
Unguided recreational fishery ¹	1,430,000	648.64	1,362,000	617.79	96 ³
Unguided recreational discard mortality ²	n/a	n/a	16,000	7.26	n/a
Subsistence ¹	436,500	197.99	436,500	197.99	100
Bycatch in other fisheries ¹	20,000	9.07	32,000	14.51	160
IPHC fishery-independent setline survey and research	none	none	199,324	90.41	n/a
Area 3A (central Gulf of Alaska)	12,552,500	5,693.72	13,297,195	6,031.51	106
Commercial fishery	7,350,000	3,333.90	7,189,035	3,260.89	98
Commercial discard mortality	320,000	145.15	285,000	129.27	89
Guided recreational fishery	1,790,000	811.93	1,850,000	839.15	104 ³
Guided recreational discard mortality ²	n/a	n/a	17,000	7.71	n/a
Guided recreational fishery (GAF)	n/a	n/a	9,052	4.11	n/a
Unguided recreational fishery ¹	1,860,000	843.68	1,738,000	788.34	95 ³
Unguided recreational discard mortality ²	n/a	n/a	28,000	12.70	n/a
Subsistence ¹	222,500	100.92	222,500	100.92	100
Bycatch in other fisheries ¹	1,010,000	458.13	1,654,000	750.24	164
IPHC fishery-independent setline survey and research	none	none	304,608	138.17	n/a

continued

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Table 1 continued. 2018 estimates of total removals (net weight), including fishery limits and mortality of Pacific halibut by IPHC Regulatory Area. Preliminary as of 20 November 2018. Totals have been rounded.

IPHC Regulatory Area	Fishery limits (net weight)		Mortality (net weight)		Percent %
	Pounds (lb)	Tonnes (t)	Pounds (lb)	Tonnes (t)	
Area 3B (western Gulf of Alaska)	3,274,200	1,485.15	3,199,286	1,451.17	98
Commercial fishery	2,620,000	1,188.41	2,437,783	1,105.76	93
Commercial discard mortality ¹	180,000	81.65	208,000	94.35	116
Recreational fishery ¹	10,000	4.54	2,000	0.91	20
Recreational discard mortality	0	0.00	0	0.00	n/a
Subsistence ¹	14,200	6.44	14,200	6.44	100
Bycatch in other fisheries ¹	450,000	204.12	463,000	210.01	103
IPHC fishery-independent setline survey and research	none	none	74,303	33.70	n/a
Area 4A (eastern Aleutians)	1,748,100	792.92	1,612,756	731.53	92
Commercial fishery	1,370,000	621.42	1,216,519	551.80	89
Commercial discard mortality ¹	60,000	27.22	68,000	30.84	113
Recreational fishery ¹	20,000	9.07	11,000	4.99	55
Recreational discard mortality	0	0.00	0	0.00	n/a
Subsistence ¹	8,100	3.67	8,100	3.67	100
Bycatch in other fisheries ¹	290,000	131.54	275,000	124.74	95
IPHC fishery-independent setline survey and research	none	none	34,137	15.48	n/a
Area 4B (central/western Aleutians)	1,280,300	580.73	1,311,177	594.74	102
Commercial fishery	1,050,000	476.27	1,036,707	470.24	99
Commercial discard mortality ¹	30,000	13.61	19,000	8.62	63
Recreational fishery ¹	0	0.00	0	0.00	n/a
Recreational discard mortality	0	0.00	0	0.00	n/a
Subsistence ¹	300	0.14	300	0.14	100
Bycatch in other fisheries ¹	200,000	90.72	227,000	102.97	114
IPHC fishery-independent setline survey and research	none	none	28,170	12.78	n/a
Area 4CDE (Bering Sea)⁴	3,613,080	1,638.87	4,501,592	2,014.89	125
Commercial fishery	1,580,000	716.68	1,410,070	639.60	89
Commercial discard mortality ¹	20,000	9.07	27,000	12.25	135
Recreational fishery ¹	0	0.00	0	0.00	n/a
Recreational discard mortality	0	0.00	0	0.00	n/a
Subsistence ¹	53,080	24.08	55,689	25.26	105
Bycatch in other fisheries ¹	1,960,000	889.04	2,987,000	1,354.88	152
IPHC fishery-independent setline survey and research	none	none	21,833	9.90	n/a
Totals	37,179,426	16,864.30	38,771,405	17,586.41	104
Commercial fishery	23,512,960	10,665.30	22,701,286	10,297.13	97
Commercial discard mortality	850,000	385.55	825,000	374.21	97
Recreational fishery	7,334,026	3,326.66	7,111,106	3,225.54	97
Recreational discard mortality ⁵	45,760	20.76	78,000	35.38	170
Subsistence ¹	1,166,680	529.20	1,169,289	530.38	100
Bycatch in other fisheries ¹	4,270,000	1,936.84	6,057,000	2,747.41	142
IPHC fishery-independent setline survey and research	none	none	829,724	376.36	n/a

¹ 'Limit' is value from 2017 estimates which were used in setting the TCEY for each IPHC Regulatory Area.

² Limit included in limit listed above.

³ Includes recreational discard mortality.

⁴ Landings in IPHC Regulatory Area 4CDE are combined to meet confidentiality requirements.

⁵ Limit for IPHC Regulatory Areas 2A and 2B only. Recreational discard mortality limits included with recreational fishery limits for all other IPHC Regulatory Areas.

n/a = not available and XRQ = Experimental Quota and GAF = Guided Angler Fish (XRQ and GAF leased from commercial quota).

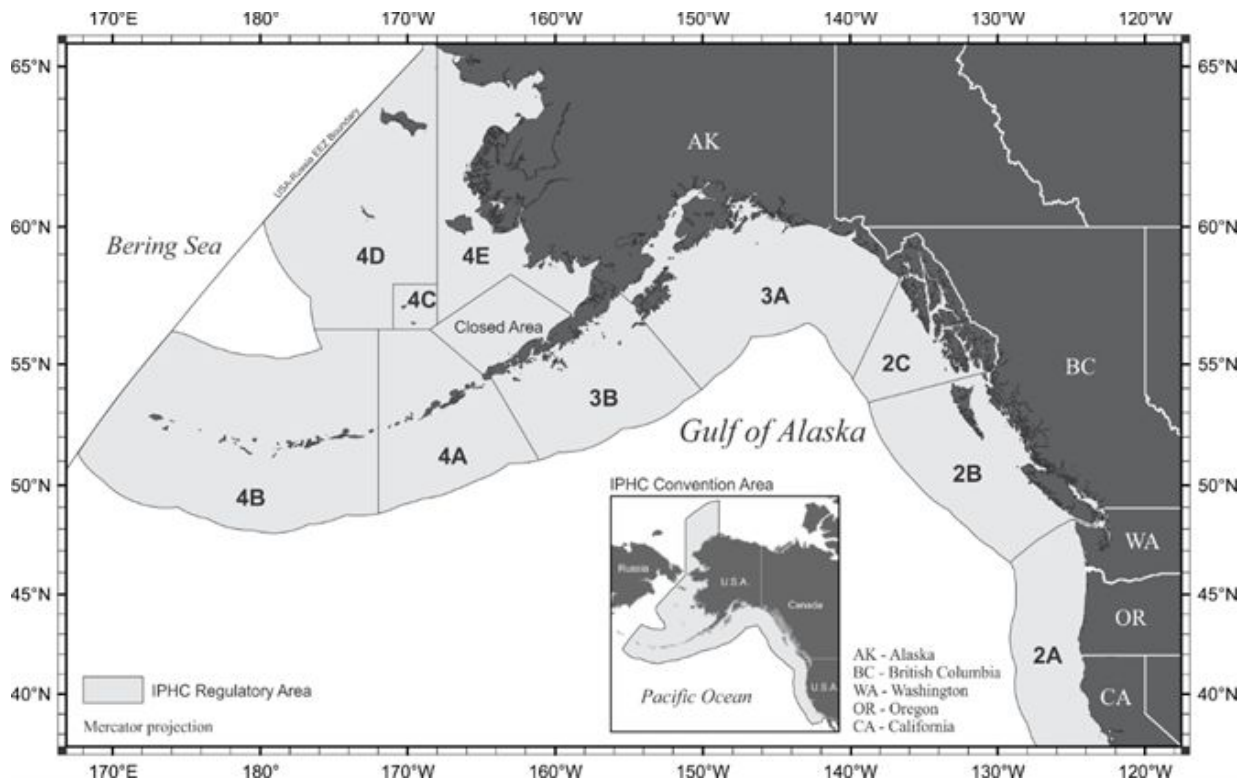


Figure 2. Map of the IPHC Convention Area (insert) and IPHC Regulatory Areas.

DEFINITIONS

Commercial fisheries: include commercial landings and discard mortality. Commercial discard mortality continues to include estimates of sub-legal Pacific halibut (under 32 inches (81.3 cm), also called U32), fish that die on lost or abandoned fishing gear, and fish discarded for regulatory compliance reasons.

Recreational fisheries: include recreational landings (including landings from commercial leasing) and discard mortality.

Subsistence fisheries (formerly called personal use/subsistence): are non-commercial, customary, and traditional use of Pacific halibut for direct personal, family, or community consumption or sharing as food, or customary trade. Subsistence fisheries include:

- i) ceremonial and subsistence (C&S) removals in the IPHC Regulatory Area 2A treaty Indian fishery,
- ii) the sanctioned First Nations Food, Social, and Ceremonial (FSC) fishery conducted in British Columbia,
- iii) federal subsistence fishery in Alaska, USA that uses Alaska Subsistence Halibut Registration Certificate (SHARC), and
- iv) U32 Pacific halibut retained in IPHC Regulatory Areas 4D and 4E by the CDQ fishery for personal use.

Bycatch: incidentally caught Pacific halibut by fisheries targeting other species and that cannot legally be retained, e.g. by the trawl fleet. Bycatch mortality, or bycatch removals, refers only to those Pacific halibut that subsequently die due to capture.

IPHC FISS and Research: includes Pacific halibut landings and removals as a result of the IPHC fishery-independent setline survey and other research.

COMMERCIAL FISHERIES

The IPHC's commercial fisheries span from northern California through to northern and western Alaska in USA and Canada waters of the northeastern Pacific Ocean. The IPHC sets annual limits for the catch of Pacific halibut in each IPHC Regulatory Area. Participants in these commercial fisheries use longline and pot gear to catch Pacific halibut for sale. The commercial Pacific halibut fisheries in IPHC Regulatory Area 2A consisted of the directed commercial fishery with fishing period limits, the incidental Pacific halibut catch during the salmon troll and limited-entry sablefish fisheries, and the treaty Indian fisheries. Farther north, the commercial fisheries consisted of the Individual Vessel Quota (IVQ) fishery in IPHC Regulatory Area 2B, the Individual Fishing Quota (IFQ) system in Alaska, USA, the Community Development Quota (CDQ) fisheries in IPHC Regulatory Areas 4B and 4CDE, and the Metlakatla fishery in IPHC Regulatory Area 2C. All 2018 landing and discard mortality data presented in this document are preliminary.

Commercial Fishing Periods

The Canadian IVQ fishery in IPHC Regulatory Area 2B and the USA IFQ and CDQ fisheries in IPHC Regulatory Areas 2C, 3A, 3B, 4A, 4B, 4C, 4D, and 4E commenced at 12 noon local time on 24 March and closed at 12 noon local time on 7 November 2018 ([Table 2](#)). The IPHC Regulatory Area 2A commercial fisheries, including the treaty Indian commercial fisheries, occurred during the same calendar period (24 March to 7 November 2018). For IPHC Regulatory Area 2A, seven potential 10-hour fishing periods for the non-treaty directed commercial fishery were adopted: 27 June, 11 July, 25 July, 8 August, 22 August, 5 September, and 19 September 2018. All fishing periods began at 0800 and ended at 1800 local time, were further restricted by fishing period limits, and closed for the remainder of the year after the third opening on 25 July when the IPHC Regulatory Area 2A directed commercial fishery allocation was estimated to have been reached.

Table 2. Fishing periods for commercial Pacific halibut fisheries by IPHC Regulatory Area, 2009-18.

IPHC Regulatory Area	Year									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2A Treaty Indian	21 Mar- 15 Jul (117) 21 Mar-9 May	6 Mar-20 Mar (14) 6 Mar-8 Apr	20-22 Mar (2) 1-2 May (19 h) 12-19 Mar 24-28 Mar (13)	24-26 Mar (2) 1 May (13 hrs) 17-19 Mar (55 hrs)	23-25 Mar (48 hrs) 2-4 Apr, 15- 16 Apr, 8 May, 6 Jun, 13 Jul 20 Jul 3 Aug	11-13 Mar (48 hrs) 20-21Mar, 8May 8 May	16-18 Mar (48 hrs) 1-2 Apr	19-21 Mar,20-21 Mar, 21-23 Mar 1-2 Apr 1-2,11-12 May, 18 May-15 Aug, 25 Jul- 2 Aug, 12 Sep-7 Nov	20 Mar, 15-16 Apr 1-2 May 19-20 May, 22-23 May 18-19 Jun 21-22 Jul	24 Mar – 28 Apr (36 hrs) 24 Mar – 28 Apr (37 hrs) 4 May – 23 May (30 hrs)
2A Commercial Directed	24 Jun (10 hrs) 8 Jul (10 hrs)	30 Jun (10 hrs)	29 Jun (10 hrs) 13 Jul (10 hrs)	27 Jun (10 hrs) 11 Jul (10 hrs)	26 Jun (10 hrs) 10 Jul (10 hrs)	25 Jun (10 hrs) 9 Jul (10 hrs)	24 Jun (10 hrs) 8 Jul (10 hrs)	22 Jun (10 hrs) 6 Jul (10 hrs) 20 Jul (10 hrs)	28 Jun (10 hrs) 12 Jul (10 hrs) 26 Jul (10 hrs)	27 Jun (10 hrs) 11 Jul (10 hrs) 25 Jul (10 hrs)
2A Commercial Incidental	Salmon 1 May-15 Nov (199) Sablefish 1 May-31 Oct (184)	Salmon 1 May-16 Jun (45) Sablefish No fishery	Salmon 1 May-28 May (28) 29 Jul-31 Oct (94) Sablefish No fishery	Salmon 1 May-3 Jul (64) Sablefish 1 May-31 Oct (184)	Salmon 1 May-10 Aug (101) Sablefish 1 May-31 Oct (184)	Salmon 1 Apr-11 Sep (163) Sablefish 1 Apr-31 Oct (213)	Salmon 1 Apr-21 Aug (142) Sablefish 1 Apr-31 Aug (152)	Salmon 1 Apr-31 Oct (213) Sablefish 1 Apr-31 Oct (213)	Salmon 1 Apr-3 Aug (124) Sablefish 1 Apr-31 Oct (213)	Salmon 1 May-8 Aug (99) Sablefish 1 Apr-31 Oct (213)
2B	21 Mar-15 Nov (240)	6 Mar-15 Nov (255)	12 Mar-18 Nov (252)	17 Mar-7 Nov (236)	23 Mar-7 Nov (230)	8 Mar-7 Nov (244)	14 Mar-7 Nov (238)	19 Mar-7 Nov (233)	11 Mar-7 Nov (241)	24 Mar-7 Nov (228)
Alaska, USA (2C, 3A, 3B, 4A, 4B, 4CDE)	21 Mar-15 Nov (240)	6 Mar-15 Nov (255)	12 Mar-18 Nov (252)	17 Mar-7 Nov (236)	23 Mar-7 Nov (230)	8 Mar-7 Nov (244)	14 Mar-7 Nov (238)	19 Mar-7 Nov (233)	11 Mar-7 Nov (241)	24 Mar-7 Nov (228)

Commercial Landings

Commercial landings and fishery limits by IPHC Regulatory Area for the 2018 fishing season are shown in [Table 3](#). Commercial fishery limit, as referred to here, is the IPHC commercial fishery limit set by the Contracting Parties following the Annual Meeting. The fishery limits with adjustments from the underage and overage programs from the previous year's quota share programs, and in IPHC Regulatory Area 2B, it also includes relinquishment of quota and quota leasing programs among sectors and the Use of Fish allocation are not presented. Historical landings and fishery limits from 2009 through 2018 are shown in [Table 3](#).

The 2018 commercial fishery landings were spread over nine months of the year ([Table 4](#)). On a month-to-month comparison, April took the lead as the busiest month for total poundage (17%) landed from IPHC Regulatory Area 2B. On a month-to-month comparison, May and August were the busiest months for total poundage (17%) from Alaska, USA.

Table 3. Pacific halibut commercial landings, discard mortality, fishery limits and percent of fishery limit attained (thousands of pounds, net weight) by IPHC Regulatory Area, 2009-18.

IPHC Regulatory Area	Commercial Landings									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2A	485	408	524	556	526	510	551	642	744	686
2B	6,538	6,607	6,612	5,874	5,952	5,776	5,884	6,046	6,131	5,293
2C ¹	4,865	4,390	2,363	2,575	2,912	3,275	3,602	3,877	4,098	3,433
3A	21,399	20,186	14,379	11,735	10,852	7,383	7,722	7,308	7,668	7,189
3B	10,614	9,958	7,218	4,932	4,009	2,815	2,574	2,609	2,997	2,438
4A	2,464	2,265	2,316	1,543	1,207	833	1,336	1,346	1,260	1,217
4B	1,534	1,785	2,022	1,715	1,224	1,091	1,080	1,084	1,050	1,037
4CDE	3,280	3,287	3,414	2,328	1,758	1,243	1,173	1,463	1,621	1,410
Total	51,179	48,886	38,846	31,258	28,440	22,928	23,922	24,375	25,569	22,701
IPHC Regulatory Area	Commercial Discard Mortality									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2A	52	27	25	25	25	21	31	37	19	20
2B	354	302	283	220	211	250	238	229	175	138
2C ¹	304	261	83	95	110	119	121	123	87	59
3A	1,175	1,450	930	593	519	443	521	378	347	285
3B	796	903	770	526	404	326	215	232	234	208
4A	157	138	144	95	70	35	79	54	67	68
4B	18	37	43	38	35	56	36	60	31	19
4CDE	90	95	191	75	56	52	52	65	28	27
Total	2,946	3,213	2,469	1,667	1,430	1,302	1,293	1,178	988	825
IPHC Regulatory Area	Commercial Total Removals									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2A	537	435	549	581	551	531	582	679	763	706
2B	6,892	6,909	6,895	6,094	6,163	6,026	6,122	6,275	6,306	5,447
2C ¹	5,169	4,651	2,446	2,670	3,022	3,394	3,723	4,000	4,185	3,556
3A	22,574	21,636	15,309	12,328	11,371	7,826	8,243	7,686	8,015	7,483
3B	11,410	10,861	7,988	5,458	4,413	3,141	2,789	2,841	3,231	2,646
4A	2,621	2,403	2,460	1,638	1,277	868	1,415	1,400	1,327	1,281
4B	1,552	1,822	2,065	1,753	1,259	1,147	1,116	1,144	1,081	1,056
4CDE	3,370	3,382	3,605	2,403	1,814	1,295	1,225	1,528	1,649	1,437
Total	54,125	52,099	41,315	32,925	29,870	24,230	25,215	25,553	26,557	23,526
IPHC Regulatory Area	Commercial Fishery Limits									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2A	511.2	420	480.7	546.6	539.7	519.6	511.5	642.3	771.3	677
2B	6,712	6,599	6,702	5,953	5,958	5,793	5,974	6,199	6,272	5,296
2C	5,020	4,400	2,330	2,624	2,970	3,319	3,679	3,924	4,212	3,570
3A	21,700	19,990	14,360	11,918	11,030	7,318	7,790	7,336	7,739	7,350
3B	10,900	9,900	7,510	5,070	4,290	2,840	2,650	2,710	3,140	2,620
4A	2,550	2,330	2,410	1,567	1,330	850	1,390	1,390	1,390	1,370
4B	1,870	2,160	2,180	1,869	1,450	1,140	1,140	1,140	1,140	1,050
4CDE	3,460	3,580	3,720	2,464	1,930	1,285	1,285	1,660	1,700	1,580
Total	52,723	49,379	39,693	32,012	29,498	23,064	24,420	25,001	26,364	26,364
IPHC Regulatory Area	Commercial Limits – Percent Attained									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2A	105	104	114	106	102	102	114	106	99	101
2B	103	105	103	102	103	104	102	101	101	100
2C ¹	103	106	105	102	102	102	101	102	99	98
3A	104	108	107	103	103	107	106	105	104	98
3B	105	110	106	108	103	111	105	105	103	93
4A	103	103	102	105	96	102	102	101	95	89
4B	83	84	95	94	87	101	98	100	95	99
4CDE	97	94	97	98	94	101	95	92	97	89
Total	103	106	104	103	101	105	103	102	101	97

¹ In Area 2C, includes the Metlakatla fishery landed catch.

Table 4. The total pounds (thousands, net weight, preliminary) of 2018 commercial landings of Pacific halibut for Alaska, USA and British Columbia, Canada by IPHC Regulatory Area and month.

IPHC Regulatory Area	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Total
2B ¹	468	802	746	653	752	582	612	507	195	5,293
2C ²	315	680	691	413	200	413	393	222	74	3,401
3A ²	321	1,163	1,449	1,071	699	806	871	615	193	7,189
3B ²	-	175 ³	390	277	210	483	538	269	95	2,438
4A ²	-	-	181 ³	153	106	378	288	102	8	1,217
4B ²	-	-	269 ³	156	-	427 ³	128	57	-	1,037
4CDE ²	-	-	49	109	329	555	257	111 ⁴	-	1,410
Alaska, USA Total	636	2,019	3,030	2,180	1,544	3,061	2,476	1,377	370	16,692
Grand Total	1,104	2,821	3,777	2,809	2,296	3,642	3,088	1,884	565	21,984

¹ Based on landings from DFO Fishery Operations System (FOS).

² Based on landings from NOAA Fisheries Restricted Access Management (RAM) Division.

³ Weight combined with the previous months for confidentiality purposes.

⁴ Weight combined with the following month for confidentiality purposes.

n/a = not available

IPHC Regulatory Area 2A (USA: Washington, Oregon, California)

The 2018 IPHC Regulatory Area 2A fisheries and respective fishery limits are listed in [Table 1](#). The total IPHC Regulatory Area 2A removals (not including IPHC FISS and other research) of 686,000 pounds (311 t) was within 1% of the fishery limit. The total directed commercial landings of 203,630 pounds (92 t) were 1% over the fishery limit of 201,845 pounds (92 t) after three 10-hour openers. The fishing period limits by vessel size class for each opening in 2018 are listed in [Table 5](#). At the start of the season on 1 May, the allowable incidental landing ratio of Pacific halibut during the salmon troll fishery was one Pacific halibut per two Chinook (*Oncorhynchus tshawytscha*), plus an “extra” Pacific halibut per landing, and a vessel trip limit of 25 fish. The fishery closed on 14 July and was reopened on 24 July with revised landing restrictions of one Pacific halibut per three Chinook, plus an “extra” Pacific halibut per landing, and a vessel trip limit of 10 fish. The incidental Pacific halibut retention closed on 8 August, with total landings of 34,903 pounds (16 t) which was 2% under the fishery limit (35,620 pounds (16 t)). Incidental Pacific halibut retention during the limited-entry sablefish fishery remained open from 1 April to noon on 31 October. Beginning 1 April, the allowable landing ratio was 140 pounds (0.06 t) (net weight) of Pacific halibut to 1,000 pounds (0.45 t) (net weight) of sablefish, and up to two additional Pacific halibut in excess of the ratio limit. Effective 23 April, the landing ratio was modified to 160 pounds (0.07 t) (net weight) of Pacific halibut to 1,000 pounds (0.45 t) (net weight) of sablefish, and up to two additional Pacific halibut in excess of the ratio limit. The final revision to the landing ratio was made 9 October to 200 pounds (0.09 t) (net weight) of Pacific halibut to 1,000 pounds (0.45 t) (net weight) of sablefish, and up to two additional Pacific halibut in excess of the ratio limit. The total landings of 43,716 pounds (20 t) were 13% under the fishery limit (50,000 pounds (23 t)).

In IPHC Regulatory Area 2A, north of Point Chehalis, the treaty Indian tribes manage the commercial landings by allocating 75% to an open access fishery and 25% to a restricted fishery

with daily and vessel limits. There were two unrestricted, open access fisheries on 24 March to 28 April and 15–16 April and one restricted fishery, including a vessel per day limit of 500 pounds (0.23 t) for the 1-2 May opening. The 2018 tribal commercial season closed to all parties on 7 November, following the late fisheries, with total landings of 403,754 pounds (183 t), 4% over the fishery limit (389,500 pounds (177 t)).

Table 5. The fishing periods and limits (pounds, dressed, head-on with ice/slime) by vessel class used in the 2018 directed commercial fishery in IPHC Regulatory Area 2A.

Vessel Class		Fishing Period (dates) & Limits (lb)	
Letter	Feet	27 June and 11 July	25 July
A	≤25	860	380
B	26-30	1,075	475
C	31-35	1,715	760
D	36-40	4,735	2,100
E	41-45	5,090	2,260
F	46-50	6,095	2,710
G	51-55	6,800	3,025
H	56+	10,225	4,545

IPHC Regulatory Area 2B (British Columbia, Canada)

Under the IVQ fishery in British Columbia, Canada, the number of active Pacific halibut licences (L licences), and First Nations communal commercial licences (FL licences) was 146 in 2018. In addition, Pacific halibut can be landed as incidental catch in other licensed groundfish fisheries. Therefore, Pacific halibut was landed from a total of 224 active licences in 2018, with 78 of these licences from other fisheries. The 2018 commercial landings of 5,293,000 pounds (2,401 t) were less than 1% under the fishery limit (5,296,000 pounds (2,402 t)) ([Table 3](#)).

Commercial trips from IPHC Regulatory Area 2B were delivered into 17 different ports in 2018. The ports of Port Hardy (including Coal Harbour and Port McNeill) and Prince Rupert/Port Edward were the major landing locations, receiving 89% of the commercial landings. Port Hardy received 44% while Prince Rupert received 46% (2,337,000 and 2,437,000 pounds (1,060 and 1,105 t), respectively) of the commercial landings. All of the IVQ landings were landed in IPHC Regulatory Area 2B. The 2018 landings of live Pacific halibut from IPHC Regulatory Area 2B was legally allowed by Fisheries and Oceans Canada (DFO) and resulted in a total landed weight of 89 pounds. Only Canadian vessels landed frozen, head-off Pacific halibut in 2018, and only in Canadian ports: 71 landings (92,148 net lbs; ~41.8 t) reported frozen-at-sea head-off product from 29 vessels.

IPHC Regulatory Areas 2C, 3, and 4 (USA: Alaska)

In Alaska, USA, the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) Restricted Access Management (RAM) allocated Pacific halibut quota share (QS) to recipients by IPHC Regulatory Area. Quota share transfers were permitted with restrictions on the amount of QS a person could hold and the amount that could be fished per vessel. In 2018, RAM reported that 2,330 persons held QS.

The total 2018 landings from the IFQ/CDQ Pacific halibut fishery for the waters off Alaska, USA were 16,692,000 pounds (7,571 t), less than 5% under the fishery limit ([Table 4](#)). By IPHC Regulatory Area, the landings were under the fishery limit by 2% for Area 2C, 2% for Area 3A, 7% for Area 3B, 11% for Area 4A, and 1% for Area 4B. The total combined IPHC Regulatory Area 4CDE commercial landings of 1,410,000 pounds (640 t) were 11% under the combined Area 4CDE fishery limit (1,580,000 pounds (717 t)). The North Pacific Fishery Management Council's Catch Sharing Plan allowed IPHC Regulatory Area 4D CDQ to be harvested in IPHC Regulatory Areas 4D or 4E and Area 4C IFQ and CDQ to be fished in Areas 4C or 4D.

Seward received approximately 14% (2,317,000 pounds (1,051 t)) of the commercial landings of Alaskan catch making it the port that received the greatest number of pounds in 2018. Homer received the second and Kodiak the third largest landing volume at 14% (2,258,000 pounds, 1,024 t) and 12% (2,079,000 pounds, 943 t) of the Alaskan commercial landings, respectively. In Southeast Alaska, the two largest landing volumes were received in Petersburg (1,223,000 pounds (555 t)), Sitka (1,142,000 pounds (518 t)), in that order, and their combined landings represented 14% of the commercial Alaskan landings. The Alaskan QS catch that was landed outside of Alaska, USA was 2%.

The Metlakatla Indian Community (within IPHC Regulatory Area 2C) was authorized by the United States government to conduct a commercial Pacific halibut fishery within the Annette Islands Reserve. There were 14 two-day openings between 23 March and 30 September for total landings of 31,196 pounds (14 t) ([Table 6](#)). This was lower than the 2017 landings, and within the historical landing range that has varied over time from a low of 12,000 pounds (5 t) in 1998 to a high of 126,000 pounds (57 t) in 1996.

Table 6. Metlakatla community fishing periods, number of vessels, and preliminary Pacific halibut landings (net weight) in IPHC Regulatory Area 2C, 2018.

Fishing Period Dates	Landings		Number of Vessels
	(Pounds)	(Tonnes)	
23 – 25 March	1,877	0.85	5
06 – 08 April	748	0.34	4
20 – 22 April	1,645	0.75	6
04 – 06 May	2,552	1.16	8
25 – 27 May	1,087	0.49	6
08 – 10 June	1,519	0.69	5
22 – 24 June	1,588	0.72	5
06 – 08 July	1,535	0.70	4
20 – 22 July	1,999	0.91	4
03 – 05 August	4,320	1.96	7
17 – 19 August	6,882	3.12	12
31 August – 02 September	2,910	1.32	11
14 – 16 September	2,354	1.07	7
28 – 30 September	180	0.08	2
Total	31,196	14.15	14 Openings

Commercial Discard Mortality

Incidental mortality of Pacific halibut in the commercial Pacific halibut fishery is the mortality of all Pacific halibut that do not become part of the landed catch. The three main sources of discard mortality estimate include: 1) fish that are captured and discarded because they are below the legal size limit of 32 inches (81.3 cm), 2) fish that are estimated to die on lost or abandoned fishing gear, and 3) fish that are discarded for regulatory reasons (e.g. the vessels trip limit has been exceeded). The methods that are applied to produce each of these estimates differ due to the amount and quality of information available. Information on lost gear and regulatory discards is collected through logbook interviews and fishing logs received by mail. The ratio of U32 to O32 Pacific halibut (>32 inches in length) is determined from the IPHC fisheries-independent setline survey in most areas and by direct observation in the IPHC Regulatory Area 2B fishery. Different mortality rates are applied to each category: released Pacific halibut have a 16% mortality rate and Pacific halibut mortality from lost gear is 100%.

Pacific halibut discard mortality estimates from the commercial Pacific halibut fishery are summarized by IPHC Regulatory Area in [Table 1](#) and over a series of years in [Table 3](#).

RECREATIONAL FISHERIES

The 2018 recreational removals of Pacific halibut, including discard mortality, was estimated at 7,189,000 pounds (3,261 t), a decrease of the recreational harvest in 2017 by 938,000 pounds (488 t). Changes in harvests varied across areas; in some cases, in response to changes in size restrictions. Recreational fishery limits and landings are detailed by IPHC Regulatory Area in [Table 7](#), and summarized in [Table 1](#).

Table 7. Recreational removals and limits of Pacific halibut (in thousands of pounds, net weight) by IPHC Regulatory Area, 2013-18.

IPHC Regulatory Area	Recreational Retained					
	2013	2014	2015	2016	2017	2018
2A	501	476	445	504	515	465
2B – XRQ Leased	8	5	5	7	8	17
2B	814	913	981	1,021	1,138	802
2B	822	918	986	1,028	1,146	819
2C – GAF Leased	-	54	28	39	41	64
2C – Charter	762	783	768	789	901	668
2C – Noncharter	1,361	1,171	1,327	1,246	1,218	1,362
2C	2,123	2,008	2,123	2,074	2,160	2,094
3A – GAF Leased	-	10	5	9	7	9
3A – Charter	2,514	2,034	2,067	2,004	2,076	1,850
3A – Noncharter	1,452	1,533	1,616	1,538	1,530	1,738
3A	3,966	3,577	3,688	3,551	3,613	3,597
3B	15	7	5	8	1	2
4A	9	9	7	15	6	11
4B and 4CDE	-	-	-	-	-	-
Total	7,428	6,926	7,216	7,125	7,441	6,988
IPHC Regulatory Area	Recreational Discard Mortality					
	2013	2014	2015	2016	2017	2018
2A	4	4	4	4	4	4
2B	45	33	61	66	52	74
2C – Charter	42	46	47	51	41	62
2C – Noncharter	28	16	18	19	15	16
2C	70	62	65	70	56	78
3A – Charter	49	43	36	29	22	17
3A – Noncharter	30	26	37	27	23	28
3A	79	69	73	56	45	44
3B and 4	-	-	-	-	-	-
Total	198	168	177	167	146	155
IPHC Regulatory Area	Recreational Total Removals					
	2013	2014	2015	2016	2017	2018
2A	505	480	449	508	518	469
2B	866	951	1,047	1,094	1,197	893
2C	2,193	2,070	2,188	2,144	2,216	2,172
3A	4,045	3,646	3,761	3,607	3,658	3,642
3B	15	7	5	8	1	2
4A	9	9	7	15	6	11
4B and 4CDE	-	-	-	-	-	-
Total	7,633	7,184	7,456	7,376	8,127	7,189
IPHC Regulatory Area	Recreational Limits					
	2013	2014	2015	2016	2017	2018
2A	418	412	427	464	529	497
2B	1,080	1,057	1,064	1,101	1,118	928
2C	788	761	851	906	915	810
3A	2,734	1,782	1,890	1,814	1,890	1,790
3B and 4	-	-	-	-	-	-
Total	5,020	4,012	4,232	4,285	4,452	4,025
IPHC Regulatory Area	Recreational Limit Percent Attained					
	2013	2014	2015	2016	2017	2018
2A	121	117	105	109	98	96
2B	75	86	92	93	102	86
2C	102	109	96	93	103	90
3A	94	117	111	112	111	104
3B and 4	-	-	-	-	-	-
Total	-	-	-	-	-	-

Recreational Landings*IPHC Regulatory Area 2A (USA: Washington, Oregon, California)*

The 2018 IPHC Regulatory Area 2A recreational allocation was 496,683 pounds (225.3 t) net weight and based on the Pacific Fishery Management Council's Catch Sharing Plan formula, which divides the overall fishery fishery limit among all sectors. The recreational allocation was further subdivided to seven subareas, after 50,000 pounds (22.7 t) was allocated to the incidental Pacific halibut catch in the commercial sablefish fishery in Washington. This subdivision resulted in 225,366 pounds (102.2 t) being allocated to Washington subareas, 229,730 pounds (104.2 t) to Oregon subareas. In addition, California received an allocation of 30,940 pounds (14.0 t). The IPHC Regulatory Area 2A recreational harvest totaled 464,924 pounds (210.9 t), 6% under the recreational allocation ([Table 7](#)).

Recreational fishery harvest seasons by subareas varied and were managed inseason with fisheries opening on 1 May.

IPHC Regulatory Area 2B (Canada: British Columbia)

IPHC Regulatory Area 2B operated under a 115 cm (45.3 inch) maximum size limit, and one Pacific halibut had to be less than 83 cm (32.7 inch) when attaining the two fish possession limit with an annual limit of six per licence holder. The IPHC Regulatory Area 2B fishery remains open.

British Columbia, Canada and Alaska, USA both have programs that allow recreational harvesters to land fish that is leased from commercial fishery quota share holders for the current season. In Canada, 16,648 pounds (7.6 t) were leased from the commercial quota fishery and landed as recreational harvest.

IPHC Regulatory Areas 2C, 3, and 4 (USA: Alaska)

A reverse slot limit allowing for the retention of Pacific halibut, if ≤ 38 inches (97 cm) or ≥ 80 inches (203 cm) (compared to ≤ 44 inches (112 cm) and ≥ 80 inches (203 cm) in 2017) in total length, was continued by the IPHC for the charter fishery in IPHC Regulatory Area 2C. In IPHC Regulatory Area 3A, charter anglers were allowed to retain two fish, but only one could exceed 28 inches in length, a four fish annual limit with a recording requirement, one trip per calendar day per charter permit, with no charter retention of Pacific halibut on Wednesdays throughout the season and 10 July, 17 July, 24 July, 31 July, 7 August and 14 August.

Similar to British Columbia (Canada), Alaska (USA) has programs that allow recreational harvesters to land fish that is leased from commercial fishery quota share holders for the current season. In IPHC Regulatory Areas 2C and 3A, 64,365 pounds (29.2 t) and 9,052 pounds (4.1 t), respectively, were leased from the commercial quota fisheries in those areas and landed as recreational harvest.

Recreational Discard Mortality

Pacific halibut discarded for any reason suffer some degree of discard mortality, and impacts more of the stock with the increasing use of size restrictions, such as reverse slot limits. Current year estimates from Contracting Parties' agencies of recreational discard mortality have been received from Alaska and Oregon in the USA, and British Columbia, Canada and are provided in [Table 7](#).

SUBSISTENCE FISHERIES

Pacific halibut is taken throughout its range as subsistence harvest by several fisheries. Subsistence fisheries are non-commercial, customary, and traditional use of Pacific halibut for direct personal, family, or community consumption or sharing as food, or customary trade. The primary subsistence fisheries are the treaty Indian Ceremonial and Subsistence fishery in IPHC Regulatory Area 2A off northwest Washington State (USA), the First Nations Food, Social, and Ceremonial (FSC) fishery in British Columbia (Canada), and the subsistence fishery by rural residents and federally-recognized native tribes in Alaska (USA) documented via Subsistence Halibut Registration Certificates (SHARC).

The coastwide subsistence estimate for 2018 is 1,171,800 pounds (531.5 t). Subsistence harvest by IPHC Regulatory Areas from 2009 through 2018 is available in [Table 8](#).

Table 8. Subsistence Pacific halibut fisheries removals (thousands of pounds net weight) by IPHC Regulatory Area, 2009-18.

IPHC Regulatory Area	Subsistence Fishery									
	2009	2010	2011	2012	2013 ¹	2014	2015 ¹	2016	2017 ¹	2018 ¹
2A	30.4	25.3	24.8	32.0	28.5	31.8	33.9	29.6	27.0	27.0
2B	405	405	405	405	405	405	405	405	405	405
2C	457.0	424.8	387.0	396.0	396.0	423.0	423.0	436.5	436.5	436.5
3A	328.5	312.7	266.1	253.5	253.5	241.4	241.4	222.5	222.5	222.5
3B	25.5	23.0	22.0	16.0	16.0	13.4	13.4	14.2	14.2	14.2
4A	33.5	14.5	13.6	9.5	9.5	7.7	7.7	8.1	8.1	8.1
4B	1.2	0.5	0.5	1.7	1.7	0.3	0.3	0.3	0.3	0.3
4C	6.3	10.9	1.6	1.2	1.2	3.4	3.4	4.3	4.3	4.3
4D	0.6	1.2	0.6	0.7	0.7	<0.1	<0.1	<0.1	<0.1	<0.1
4E	8.7	10.1	6.2	8.4	8.4	71.3	71.3	41.4	41.4	41.4
4D/4E (CDQ U32)	10.3	9.5	16.9	20.2	10.0	5.5	4.7	5.5	7.4	10.0
Total	1,307.0	1,237.5	1,144.3	1,144.2	1,130.5	1,202.8	1,204.1	1,167.3	1,166.7	1,169.3

¹ Alaska, USA estimates were carried over for the 2013 estimates from 2012, for the 2015 estimates from 2014 and for the 2017 and 2018 estimates from 2016, with the exception that 4D/4E subsistence harvest in the CDQ fishery were updated.

Estimated subsistence harvests by area

In the commercial Pacific halibut fisheries coastwide, the state and federal regulations require that take-home Pacific halibut caught during commercial fishing be recorded as part of the commercial fishery on the landing records (i.e. State fish tickets or Canadian validation records). This is consistent across areas, including the quota share fisheries in Canada and USA, and as part of fishing period limits and Pacific halibut ratios in the incidental fisheries in IPHC Regulatory Area 2A. Therefore, personal use fish or take-home fish within the commercial fisheries are accounted for as commercial catch and are not included here.

IPHC Regulatory Area 2A (USA: Washington, Oregon, California)

The Pacific Fishery Management Council's Catch Sharing Plan allocates the Pacific halibut fishery limit to commercial, recreational, and treaty Indian users in IPHC Regulatory Area 2A. The treaty tribal fishery limit is further sub-divided into commercial and ceremonial and subsistence (C&S) fisheries. The 2017 final estimate of C&S was 27,000 pounds (12.3 t) and this catch estimate became the 2018 C&S allocation. The estimate of the 2018 catch is not available so it is assumed the treaty tribal C&S allocation was fully harvested.

IPHC Regulatory Area 2B (Canada: British Columbia)

The source of Pacific halibut subsistence harvest in British Columbia is the First Nations FSC fishery. The IPHC receives some logbook and landing data for this harvest from the DFO but those data have not been adequate for the IPHC to make an independent estimate of the FSC fishery harvest. DFO estimated the First Nations FSC harvest to be 300,000 pounds (136.1 t) annually until 2006, and since 2007, the yearly estimate has been provided as 405,000 pounds (183.7 t).

IPHC Regulatory Areas 2C, 3, and 4 (USA: Alaska)

In 2003, the subsistence Pacific halibut fishery off Alaska was formally recognized by the North Pacific Fishery Management Council, and implemented by IPHC and NOAA Fisheries regulations. The fishery allows the customary and traditional use of Pacific halibut by rural residents and members of federally-recognized Alaska, USA native tribes who can retain Pacific halibut for non-commercial use, food, or customary trade. The NOAA Fisheries regulations define legal gear, number of hooks, and daily bag limits, and IPHC regulations set the fishing season. Prior to subsistence fishing, eligible persons registered with NOAA Fisheries Restricted Access Management to obtain a SHARC. The Division of Subsistence at ADFG was contracted by NOAA Fisheries to estimate the subsistence harvest in Alaska, USA through a data collection program. Yearly reports are available at <http://www.fakr.noaa.gov/ram/subsistence/halibut.htm>. Each year, the data collection program included an annual voluntary survey of fishers conducted by mail or phone, with some onsite visits. The 2012 estimate has been carried forward for the 2013 estimate and the 2014 estimate has been used for 2014 through 2015; a new 2016 estimate is used for 2016 through 2018 (Fall and Koster 2017). The 2014 estimates are about 10% higher than in 2012, and are noticeably higher in IPHC Regulatory Area 4E. To collect the 2014 harvest estimates, the ADFG staff conducted face to face interviews in two of the major subsistence harvesting communities within IPHC Regulatory Area 4E rather than relying on mailed returns. Face to face interviews likely resulted in more realistic harvest estimates than the mail survey alone, so it is likely that the IPHC Regulatory Area 4E harvest estimates between 2009 through 2013 were low.

In addition to the SHARC harvest, IPHC regulations allow Pacific halibut less than 32 inches or 81.3 cm in fork length (also called U32) to be retained in the IPHC Regulatory Area 4D and 4E commercial Pacific halibut CDQ fishery, under an exemption requested by the North Pacific Fishery Management Council, as long as the fish are not sold or bartered. The exemption originally applied only to CDQ fisheries in IPHC Regulatory Area 4E in 1998 but was expanded in 2002 to also include IPHC Regulatory Area 4D. The CDQ organizations are required to report to the IPHC the amounts retained during their commercial fishing operations. This harvest is not included in the SHARC program estimate and is reported separately.

Reports for 2018 were received from three organizations: Bristol Bay Economic Development Corporation (BBEDC), Coastal Villages Regional Fund (CVRF), and Norton Sound Economic Development Corporation (NSED). The reports are summarized below, and the reported amounts of retained U32 Pacific halibut are shown in [Table 9](#). A total of 9,989 pounds (4.5 t) of retained U32 Pacific halibut was reported by CDQ organizations, the highest amount since 2013. Generally, annual changes are a reflection of the amount of effort by the local small boat fleets and the availability of fish in their nearshore fisheries.

Table 9. Reported annual amount (pounds, net weight) of U32 (<32 inches in fork length) Pacific halibut retained by Community Development Quota harvesters fishing in IPHC Regulatory Areas 4D and 4E.

Organization	U32 CDQ Landings									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BBEDC	922	2,155	2,752	5,095	3,493	3,456	2,460	3,456	5,261	8,510
CVRF	4,277	3,924	9,909	10,424	5,250	963	0	0	0	0
NSEDC	6,060	3,438	4,206	4,668	1,290	1,114	2,206	2,001	2,119	1,479
Total	11,259	9,517	16,867	20,187	10,033	5,533	4,666	5,457	7,380	9,989

CDQ - Bristol Bay Economic Development Corporation (BBEDC)

BBEDC requires their fishers to record the lengths of retained U32 Pacific halibut in a separate log, which are tabulated by BBEDC at the conclusion of the season. The lengths were converted to weights using the IPHC length/weight relationship and summed to estimate the total retained U32 weight. Pacific halibut were landed by BBEDC vessels primarily at Togiak, with a lesser amount landed in Dillingham and a minor amount landed in Naknek. BBEDC reported 21 harvesters landed 801 U32 Pacific halibut (8,510 pounds; 3.9 t).

CDQ - Coastal Villages Regional Fund (CVRF)

CVRF reported that no Pacific halibut were landed by their fishers or received by their facilities.

CDQ - Norton Sound Economic Development Corporation (NSEDC)

NSEDC required their fishers to offload the U32 Pacific halibut for weighing. Ice was removed but the fish were not washed nor the heads removed. The U32 Pacific halibut were then returned to the harvester. NSEDC reported 147 U32 Pacific halibut weighing 1,479 pounds (0.7 t) were caught in the local CDQ fishery and landed at the Nome plant.

BYCATCH IN OTHER FISHERIES

Bycatch in other fisheries are incidentally caught fish by fisheries targeting other species and that cannot legally be retained. Bycatch mortality, or bycatch removals, refers only to those fish that subsequently die due to capture. The IPHC accounts for bycatch mortality in other fisheries by IPHC Regulatory Area and sector. [Table 10](#) provides these estimates from 2009 through 2018.

Estimates of the bycatch mortality of Pacific halibut in other (non-Pacific halibut) fisheries in 2018 have been projected to total 6,057,000 pounds (2,747.4 t) net weight, representing an increase of approximately 13,000 pounds (5.9 t) from 2017 ([Table 10](#)). In IPHC Regulatory Area 2A, bycatch mortality is projected to have risen by 1%. Estimated bycatch in the IPHC Regulatory Area 2B bottom trawl fishery in 2018 is projected to have increased by 15%. Bycatch trends were varied among Alaskan areas in the USA, with bycatch in IPHC Regulatory Areas 2C, 3A, 4B and 4CDE with the Closed Area projected to be up, while bycatch mortality in IPHC Regulatory Areas 3B and was projected to be down.

Table 10. Bycatch mortality estimates of Pacific halibut (thousands of pounds, net weight) by year, IPHC Regulatory Area, and fishery, for 2008-18. Estimates for 2018 are preliminary.¹

IPHC Regulatory Area and Gear	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
AREA 2A										
Groundfish Trawl	415	299								
IFQ Bottom Trawl			52	60	54	44	55	55	55	56
Other Groundfish Trawl	1	3	2	2	4	3	1	1	2	1
Groundfish Pot			1	1	0	0	1	0	0	0
Hook & Line	97	45	35	53	8	53	23	40	72	72
Shrimp Trawl	0	0	0	1	1	0	0	1	0	0
Total	512	347	90	117	67	100	80	97	129	129
AREA 2B										
Groundfish Bottom Trawl	213	181	232	189	225	245	326	271	252	290
Total	213	181	232	189	225	245	326	271	251	290
AREA 2C										
Crab Pot	7	18	10	21	13	1	1	1	1	1
Groundfish Trawl	0	0	0	0	0	0	0	0	0	0
Hook & Line (non-IFQ)	5	4	3	8	8	8	12	15	5	3
Hook & Line (IFQ)	3	3	3	12	13	9	7	13	13	28
Chatham Str. Sablefish	8	8	8	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Clarence Str. Sablefish	25	25	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total	48	58	49	41	34	17	19	29	17	32
AREA 3A										
Scallop Dredge	9	14	12	10	12	24	24	24	24	24
Groundfish Trawl	2,141	2,030	2,232	1,422	1,336	1,680	1,792	1,493	1,230	1,520
Hook & Line (non-IFQ)	197	111	92	238	216	155	223	210	127	61
Hook & Line (IFQ)	119	119	119	25	31	16	33	26	35	46
Groundfish Pot	5	12	23	29	34	12	25	40	10	3
Pr Wm Sd Sablefish	10	10	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total	2,481	2,296	2,488	1,724	1,630	1,888	2,098	1,793	1,426	1,654
AREA 3B										
Crab Pot	0	0	0	0	0	0	0	0	0	0
Scallop Dredge	4	0	5	4	8	14	0	0	0	0
Groundfish Trawl	865	676	806	989	733	809	537	708	767	430
Hook & Line (non-IFQ)	256	269	172	105	88	115	96	124	93	18
Hook & Line (IFQ)	116	116	116	24	14	18	15	8	17	13
Groundfish Pot	7	36	21	20	44	18	10	31	13	2
Total	1,247	1,097	1,120	1,142	887	974	658	871	890	463

continued...

Table 10 continued. Bycatch mortality estimates of Pacific halibut (thousands of pounds, net weight) by year, IPHC Regulatory Area, and fishery, for 2008-18. Estimates for 2018 are preliminary.¹

IPHC Regulatory Area and Gear	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
AREA 4A										
Scallop Dredge	0	0	0	0	0	0	0	0	0	0
Crab Pot	5	22	14	12	27	0	0	0	0	0
Groundfish Trawl	1,315	800	789	1,314	606	615	483	466	304	235
Hook & Line (non-IFQ)	220	213	145	130	204	160	149	99	89	35
Hook & Line (IFQ)	15	15	15	5	4	3	3	2	2	2
Groundfish Pot	2	7	8	10	32	27	7	5	5	3
Total	1,557	1,058	971	1,472	873	805	642	572	400	275
AREA 4B										
Crab Pot	0	0	1	0	3	0	0	0	0	0
Groundfish Trawl	299	371	402	215	116	101	202	137	193	210
Hook & Line (non-IFQ)	119	65	32	27	6	24	20	5	15	13
Hook & Line (IFQ)	40	40	40	12	10	5	2	2	0	2
Groundfish Pot	1	1	1	1	5	2	0	0	0	2
Total	459	477	476	255	140	132	223	144	207	227
AREA 4CDE+CA										
Scallop Dredge	0	0	0	0	0	0	0	0	0	0
Crab Pot	33	63	49	29	29	0	37	37	37	37
Groundfish Trawl	3,160	3,429	2,496	3,458	4,110	4,205	3,003	2,895	2,441	2,760
Hook & Line (non-IFQ)	821	684	472	768	668	538	384	311	268	190
Hook & Line (IFQ)	5	5	5	1	151	11	0	0	0	0
Groundfish Pot	1	1	2	4	18	13	2	2	2	0
Total	4,021	4,182	3,024	4,260	4,977	4,767	3,425	3,245	2,747	2,987
AREA 4 Subtotal										
Scallop Dredge	1	0	0	0	0	0	0	0	0	0
Crab Pot	39	85	65	41	59	0	37	37	37	37
Groundfish Trawl	4,774	4,600	3,687	4,987	4,832	4,921	3,687	3,499	2,938	3,205
Hook & Line (non-IFQ)	1,160	962	649	925	878	722	552	415	370	238
Hook & Line (IFQ)	60	60	60	18	165	19	5	3	2	4
Groundfish Pot	4	9	11	15	55	42	8	7	7	5
Total	6,037	5,717	4,472	5,987	5,989	5,704	4,290	3,961	3,354	3,489
GRAND TOTAL	10,539	9,695	8,450	9,202	8,832	8,927	7,470	7,021	6,070	6,057

¹Note that some totals may not sum precisely due to rounding.

Estimating Bycatch Mortality

Bycatch of Pacific halibut is estimated because not all fisheries have 100% monitoring and not all Pacific halibut that are discarded are assumed to die. Agencies estimate the amount of bycatch that will not survive, called discard mortality.

The IPHC relies upon information supplied by observer programs run by domestic agencies for bycatch estimates in most fisheries. Non-IPHC research survey information is used to generate estimates of bycatch in the few cases where fishery observations are unavailable. The NOAA-Fisheries operates observer programs off the USA West Coast and Alaska, which monitor the major groundfish fisheries. Data collected by those programs are used to estimate bycatch. Trawl fisheries off British Columbia (BC: Canada) are comprehensively monitored and bycatch information is provided to IPHC by DFO.

Off the USA West Coast, an individual quota (IQ) program was implemented in 2011 for the domestic groundfish trawl fisheries. The program is quite similar to the program for the BC trawl fishery, in that it contains an individual bycatch quota component for managing and reducing Pacific halibut bycatch mortality. Fishery monitoring is required at 100% coverage levels, so all vessels carry an observer to record the vessel's catch. Bycatch is reported to IPHC by NOAA Fisheries (Jannot et al. 2018). Bycatch estimates for the shrimp trawl fishery have been provided by Oregon Department of Fish and Wildlife (ODFW) staff from examinations of Pacific halibut bycatch during gear experiments. Updated estimates were provided by ODFW in 2011.

The amount of information varies for fisheries conducted off BC, Canada. For the trawl fishery, bycatch is managed with an individual bycatch quota program implemented by DFO in 1996. Fishery observers sample the catch on each bottom trawler, collecting data to estimate bycatch and discard mortality. Bycatch in other fisheries, such as the shrimp trawl, sablefish pot, and rockfish hook-and-line fisheries, was largely unknown until the inception of the Integrated Fisheries Management Program in 2006. The program has requirements for full accounting and accountability of all bycatch, and includes 100% at-sea monitoring, either by human observers or electronic monitoring. Estimates of trawl bycatch were provided by DFO staff at the Pacific Biological Station, based on data collected by observers. Reporting of bycatch from the non-trawl programs is being developed with DFO staff and will be provided in future reports.

Estimates of bycatch off Alaska, USA in federally managed fisheries were provided by the NOAA Fisheries Alaska Region. Several fishery programs have a mandatory 100% monitoring requirement, including the CGOARP, the BSAI CDQ fisheries, the AFA pollock cooperatives, and the BSAI A80 fishery cooperatives. NOAA Fisheries Alaska Fisheries Science Center's Annual Deployment Plan (ADP) provides the scientific guidelines which determine how vessels not involved in these full coverage programs are chosen for monitoring, including vessels in the directed Pacific halibut IFQ fishery. Additional details about the ADP can be found in NOAA Fisheries (2017). The NOAA Fisheries projections were provided in metric tons, round weight, and were converted to pounds net weight using $\text{net weight} = \text{round weight} \times 0.75 \times 2,204.62$.

Estimates of Pacific halibut bycatch in scallop dredge and crab fisheries are obtained from the ADFG, but not on an annual basis. The catch estimates are based on fishery data collected by on-board observers. The most recent estimates of 2016 were rolled forward for 2017 and 2018. Work is underway to develop an annual approach to updating these data.

Bycatch Mortality by Area

IPHC Regulatory Area 2A (USA: Washington, Oregon, California)

Groundfish fisheries off Washington, Oregon, and California are managed by the NOAA Fisheries, following advice and recommendations developed by the Pacific Fishery Management Council. The final estimate of bycatch mortality in IPHC Regulatory Area 2A was 129,000 pounds (58.5 t) ([Table 10](#)). As in prior years, the bottom trawl fishery and hook-and-line fishery for sablefish were responsible for the bulk of the bycatch mortality. Pacific halibut bycatch in the trawl IFQ fishery (also called trawl catch shares) in this area are capped at 100,000 pounds (45 t) (net weight) of O32 Pacific halibut. For 2018, the bycatch mortality projection for the trawl IFQ fishery was 56,000 pounds (25.4 t) of Pacific halibut.

IPHC Regulatory Area 2B (Canada: British Columbia)

In Canada, Pacific halibut bycatch in trawl fisheries are capped at 750,000 pounds net weight (453.6 t round weight) by DFO. Non-trawl bycatch is handled under an IFQ system within the directed Pacific halibut fishery cap.

For 2018, bycatch mortality in the BC bottom trawl fishery was projected to be 290,000 pounds (131.5 t) ([Table 10](#)). The reported bycatch mortality data were complete through September. Projections for the full calendar year 2018 were made by extrapolating to the full 12 months.

IPHC Regulatory Areas 2C, 3, and 4 (USA: Alaska)

Groundfish fisheries in Alaska, USA are managed by the NOAA Fisheries, following advice and recommendations developed by the North Pacific Fishery Management Council. The North Pacific Fishery Management Council sets limits on the amount of Pacific halibut bycatch mortality which is allowed to occur annually in the groundfish fisheries, known as the Prohibited Species Catch (PSC) limits. These PSC limits are published in metric tons (t) (round weight) and are shown in [Table 11](#), with their equivalent net weight (millions of pound). If a fishery's PSC limit is reached, the fishery is closed. Certain gear types, e.g., pots or jigs, are exempted from closures due to their low bycatch properties and to encourage their use. Bycatch mortality projected estimates for Alaskan areas in the USA in [Table 10](#) were provided by NOAA Fisheries; projections were made for the full year based on fishery data through 13 October 2018.

Table 11. Pacific halibut bycatch limits in the Alaska, USA groundfish fishery 2009-18.

Geographical Area	Sector	Bycatch Limits (metric tons (t), round weight)									
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Gulf of Alaska	Trawl	2,000	2,000	2,000	2,000	1,973	1,848	1,759	1,706	1,706	1,706
	Fixed Gears	300	300	300	300	300	279	270	266	266	266
Bering Sea/ Aleutian Islands	Trawl	3,625	3,625	3,575	3,525	3,525	3,525	3,525	2,805	2,805	2,805
	Fixed Gears	900	900	900	900	900	900	900	710	710	710
Geographical Area	Sector	Bycatch Limits (millions of pounds, net weight)									
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Gulf of Alaska	Trawl	3.30	3.30	3.30	3.30	3.26	3.06	2.91	2.82	2.82	2.82
	Fixed Gears	0.50	0.50	0.50	0.50	0.50	0.46	0.45	0.44	0.44	0.44
Bering Sea/ Aleutian Islands	Trawl	6.00	6.00	5.90	5.80	5.80	5.80	5.80	4.64	4.64	4.64
	Fixed Gears	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.17	1.17	1.17

IPHC Regulatory Area 2C (USA: Southeast Alaska)

For the federal waters of IPHC Regulatory Area 2C, only bycatch by hook-and-line vessels fishing in the outside waters were reported by NOAA Fisheries. These vessels are primarily

targeting Pacific cod and rockfish (*Sebastes* spp.) in open access fisheries, and sablefish in the IFQ fishery. In aggregate, these fisheries are projected to result in 32,000 pounds (14.5 t) of bycatch mortality in 2018.

Fisheries occurring within state waters and resulting in Pacific halibut bycatch include pot fisheries for red and golden king crab, and tanner crab. Information is provided periodically by ADFG, and the estimate was again rolled forward for 2018.

IPHC Regulatory Area 3 (USA: Eastern, Central and Western Gulf of Alaska)

IPHC Regulatory Area 3 is comprised of Areas 3A and 3B. IPHC tracks bycatch for each IPHC Regulatory Area due to assessment and stock management needs, while groundfish fisheries operate throughout both areas. Trawl fisheries are responsible for the majority of the bycatch in these IPHC Regulatory Areas, with hook-and-line fisheries a distant second ([Table 10](#)) for a projected total of 2,117,000 pounds (960.3 t). State-managed crab and scallop fisheries are also known to take Pacific halibut as bycatch, but at low levels.

IPHC Regulatory Area 3 remains the area where bycatch mortality is estimated most poorly. Observer coverage for most fisheries is relatively low. Tendering, loopholes in trip cancelling, and safety considerations likely result in observed trips not being representative of all trips (observed and unobserved) in many regards (e.g. duration, species composition, etc.). This, plus low coverage, lead to increased uncertainty in these bycatch estimates and to potential for bias.

IPHC Regulatory Area 4 (USA: Bering Sea and Aleutian Islands)

Bycatch mortality for all IPHC Regulatory Areas within Area 4 was projected at 3,489,000 pounds (1,582.6 t), with the groundfish trawl fishery being most of that at 3,205,000 pounds (1,453.8 t).

Hook-and-line fishery bycatch mortality was projected at 242,000 pounds (109.8 t). Pacific cod is the major fishery in this IPHC Regulatory Area with Pacific halibut bycatch, which is conducted in the late winter/early spring and late summer. Almost all of the vessels are required to have 100% observer coverage because of the vessel's size and requirements of their fishery cooperative; very few small vessels fish Pacific cod in this IPHC Regulatory Area. Because of this high level of observer coverage, bycatch estimates for this and other IPHC Regulatory Area 4 fisheries are considered reliable.

Pots are used to fish for Pacific cod and sablefish and fish very selectively. Bycatch rates are quite low and survival is relatively high. Annual bycatch mortality estimates are typically low, usually less than 15,000 pounds (6.8 t).

Within the Bering Sea, bycatch mortality estimates have typically been the highest in IPHC Regulatory Area 4CDE ([Table 10](#)). This is due to the groundfish fisheries which operate in the area, i.e., those for flatfish.

IPHC FISHERY-INDEPENDENT SETLINE SURVEY AND OTHER RESEARCH

The IPHC's FISS provides catch information and biological data on Pacific halibut (*Hippoglossus stenolepis*) that are independently collected from the commercial fishery. Approximately 826,000 pounds (375 t) of Pacific halibut were landed from the FISS in 2018 with the amount landed from each IPHC Regulatory Area documented in [Table 1](#). For additional information on the FISS see [IPHC-2018-IM094-06](#).

RECOMMENDATION/S

That the Commission:

- 1) **NOTE** paper IPhC-2018-IM094-05 which provides preliminary fishery statistics from fisheries catching Pacific halibut during 2018, including the status of removals compared to fishery limits implemented by the Contracting Parties of the Commission.

REFERENCES

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APPENDICES

Nil



Fishery-independent setline survey design and implementation in 2018, including current and future expansions

PREPARED BY: IPHC SECRETARIAT (L.ERIKSON, T. GEERNAERT & E. SODERLUND; 25 OCTOBER 2018)

PURPOSE

To provide an overview of the International Pacific Halibut Commission's (IPHC) fishery-independent setline survey (FISS) design and implementation in 2018, including current and future expansions.

BACKGROUND

The IPHC's FISS provides catch information and biological data on Pacific halibut (*Hippoglossus stenolepis*) that are collected independently from the commercial fishery. These data are collected using standardized methods, bait, and gear during the summer of each year, and provide a comparison with data collected from the commercial fishery. Biological data collected on the FISS (e.g. the size, age, and sex composition of Pacific halibut) are used to monitor changes in biomass, growth, and mortality in the Pacific halibut population. In addition, records of non-target species caught during FISS operations provide insight into bait competition, rate of bait attacks, and serve as an index of abundance over time, making them valuable to the assessment, management, and avoidance of non-target species.

The IPHC has carried out the FISS annually in the years 1963 to 1987 and from 1992 to 2018. Historical information regarding previous FISS operations has been presented in [IPHC Annual Reports](#); [IPHC Report of Assessment and Research Activities](#) documents 1993-2017; and [IPHC Technical Reports](#) 18 and 58. The majority of the current FISS station design and sampling protocols have been standardized since 1998.

Beginning in 2017 and with key updates made for 2018, interactive views of some of the FISS results were provided via the IPHC website and can be found here:

<https://iphc.int/data/setline-survey-catch-per-unit-effort>.

MATERIALS AND METHODS

The IPHC's FISS design encompasses nearshore and offshore waters of the IPHC Convention Area ([Figure 1](#)). The current FISS station layout has been in place since 1998 (with some additions in 2006 (Bering Sea), and in 2011 (IPHC Regulatory Area 2A).

The IPHC Regulatory Areas are divided into 31 regions, each requiring between 10 and 46 charter days to survey ([Table 1](#)). FISS stations were located at the intersections of a 10 nmi by 10 nmi square grid within the depth range occupied by Pacific halibut during summer months (20-275 fm [37-503 m] in most areas). [Figure 2](#) depicts the 2018 FISS station positions (including expansion stations), charter region divisions, and IPHC Regulatory Areas surveyed.

Thirteen extra stations in southeast Alaska and eight rockfish (*Sebastes spp.*) index stations in the Washington charter region are fished on a different layout than the FISS and are not included in the IPHC stock assessment dataset.

Fishing vessels are chosen through a competitive bid process each year where up to 3 regions per vessel are awarded and 10-15 vessels are chosen.

The 2018 FISS chartered thirteen (13) commercial longline vessels (four Canadian and nine USA) during a combined 88 trips and 806 charter days (Table 1). Of the 1,496 FISS stations planned for the 2018 FISS season, 1,458 (97.5%) were effectively completed. Seven expansion stations were dropped because they were either too deep or too shallow once prospected. The remaining 31 stations were rated ineffective because of whale depredation (new parameters for 2018, n=18), sand flea damage (n=7), shark depredation (n=1), pinniped depredation (n=1) and gear issues (n=4). Otoliths were removed from 13,290 fish coastwide. Approximately 818,246 pounds (371 t) of Pacific halibut, 85,716 pounds (39 t) of Pacific cod, and 51,337 pounds (23 t) of rockfish were landed from the FISS stations.

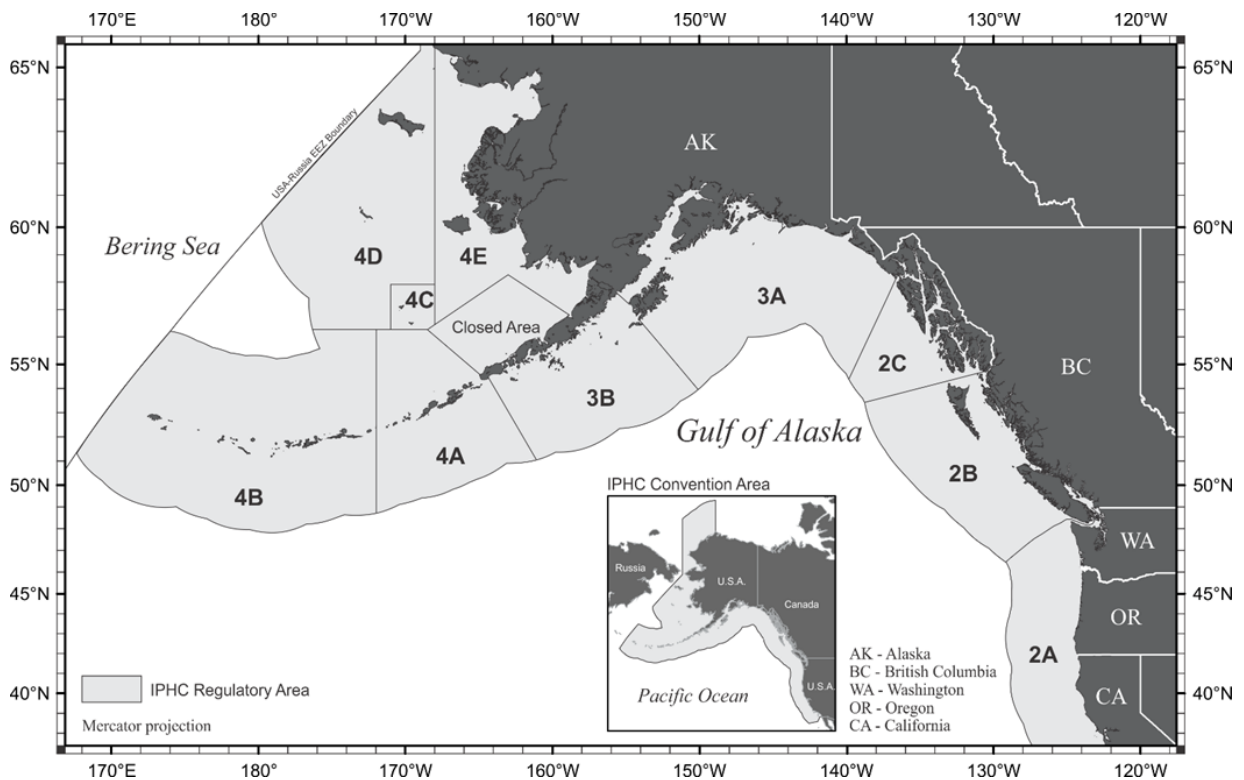


Figure 1. Map of the IPHC Convention Area (insert) and IPHC Regulatory Areas.

Table 1. Effort and catch summary by FISS charter region and vessel for all 2018 stations.

IPHC Regulatory Area	Charter Region	Vessel	ADF&G or VRN ¹	Charter Days ²	Planned Stations	Effective Stations ³	Pacific halibut Sold (lb) ⁴	Pacific halibut Sold (t)	Average Price USD/lb ⁵	Average Price USD/kg
2A	Oregon	<i>Pacific Surveyor</i>	-	34	47	46	7,902	4	\$8.08	\$17.82
2A	Washington	<i>Pacific Surveyor</i>	-	35	83	83 ⁶	12,975	6	\$6.07	\$13.39
2A	Puget Sound	<i>Pacific Surveyor</i>	-	12	14	13	392	<1	\$5.00	\$11.02
2B	Charlotte Inside	<i>Free to Wander</i>	29155	21	48	46	25,953	12	\$6.46	\$14.24
2B	Charlotte North	<i>Free to Wander</i>	29155	23	40	38	31,076	14	\$6.46	\$14.25
2B	Goose Is.	<i>Bold Pursuit</i>	20875	25	58	57	21,005	10	\$6.59	\$14.53
2B	St. James	<i>Pender Isle</i>	27282	27	57	57	47,841	22	\$6.02	\$13.26
2B	Vancouver Inside	<i>Vanisle</i>	21912	26	41	41	1,357	1	\$6.61	\$14.58
2B	Vancouver Outside	<i>Vanisle</i>	21912	29	58	57	17,428	8	\$6.48	\$14.29
2C	Ketchikan	<i>Vanisle</i>	21912	29	51	49	43,829	20	\$6.38	\$14.06
2C	Ommaney	<i>Predator</i>	33133	31	55	50	102,603	47	\$5.89	\$12.99
2C	Sitka	<i>Predator</i>	33133	33	59	58	52,892	24	\$6.12	\$13.49
3A	Albatross	<i>Saint Nicholas</i>	45399	25	45	44	24,502	11	\$4.75	\$10.48
3A	Fairweather	<i>Vanisle</i>	21912	24	49	47	33,955	15	\$5.31	\$11.71
3A	Gore Pt.	<i>Clyde</i>	55803	21	45	45	24,686	11	\$5.67	\$12.50
3A	Portlock	<i>Predator</i>	33133	22	46	44	28,721	13	\$5.60	\$12.34
3A	PWS	<i>Vansee</i>	19307	21	45	45	60,398	27	\$6.57	\$14.50
3A	Seward	<i>Clyde</i>	55803	23	48	47	30,433	14	\$5.60	\$12.36
3A	Shelikof	<i>Saint Nicholas</i>	45399	32	45	42	24,695	11	\$6.20	\$13.68
3A	Yakutat	<i>Seymour</i>	17530	24	51	48	69,303	31	\$6.33	\$13.95
3B	Chignik	<i>Polaris</i>	19266	19	45	45	13,799	6	\$4.53	\$9.99
3B	Sanak	<i>Kema Sue</i>	41033	29	48	47	7,888	4	\$4.31	\$9.50
3B	Semidi	<i>Clyde</i>	55803	22	47	47	16,744	8	\$5.26	\$11.61
3B	Shumagin	<i>Polaris</i>	19266	18	44	44	17,259	8	\$4.21	\$9.28
3B	Trinity	<i>Saint Nicholas</i>	45399	39	47	45	18,614	8	\$5.64	\$12.43
4A, Closed	4A Edge	<i>Norcoaster</i>	38173	36	57	57	9,160	4	\$4.15	\$9.14
4A, 4C	Unalaska	<i>Kema Sue</i>	41033	30	66	62	24,977	11	\$4.08	\$9.00
4D, 4C	4D Edge	<i>Kema Sue</i>	41033	37	68	65	20,462	9	\$4.47	\$9.86
4B	Adak	<i>Norcoaster</i>	38173	32	45	45	15,810	7	\$4.28	\$9.43
4B	Attu	<i>Norcoaster</i>	38173	27	44	44	11,587	5	\$1.54	\$3.39
Total		13 Vessels		806	1496	1458	818,246	371	\$5.75	\$12.68

¹ ADF&G or VRN stands for Alaska Department of Fish and Game vessel number or Vessel Registration Number in Canada.

² Days are estimated - some vessels fished two charter regions in one day.

³ Stations that did not meet setting parameters or deemed ineffective are excluded.

⁴ Net weight (head-off, dressed, washed). Poundage may not sum to correct total because of rounding errors.

⁵ Gross price.

⁶ Includes eight Rockfish Index stations.

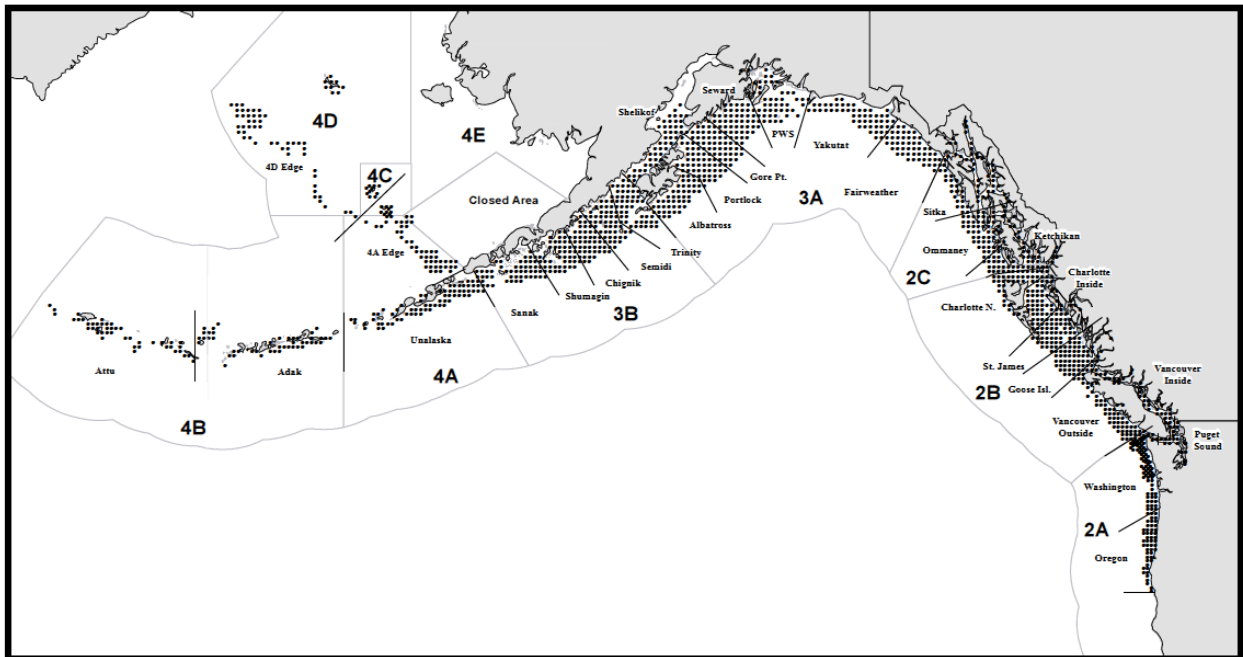


Figure 2. 2018 FISS station positions, charter region divisions, and IPHC Regulatory Areas.

Expansion stations

Since 2014, the IPHC has been sampling expansion FISS stations in one or two IPHC Regulatory Areas each year ([Figure 3](#)). Commercial fishery data and other sources have shown the presence of Pacific halibut down to depths of 732 m (400 fm) and in waters shallower than 37 m (20 fm). The IPHC has been undertaking a sequence of expansions since 2014 (following a 2011 pilot), with FISS stations added to the standard grid to cover habitat not previously sampled.

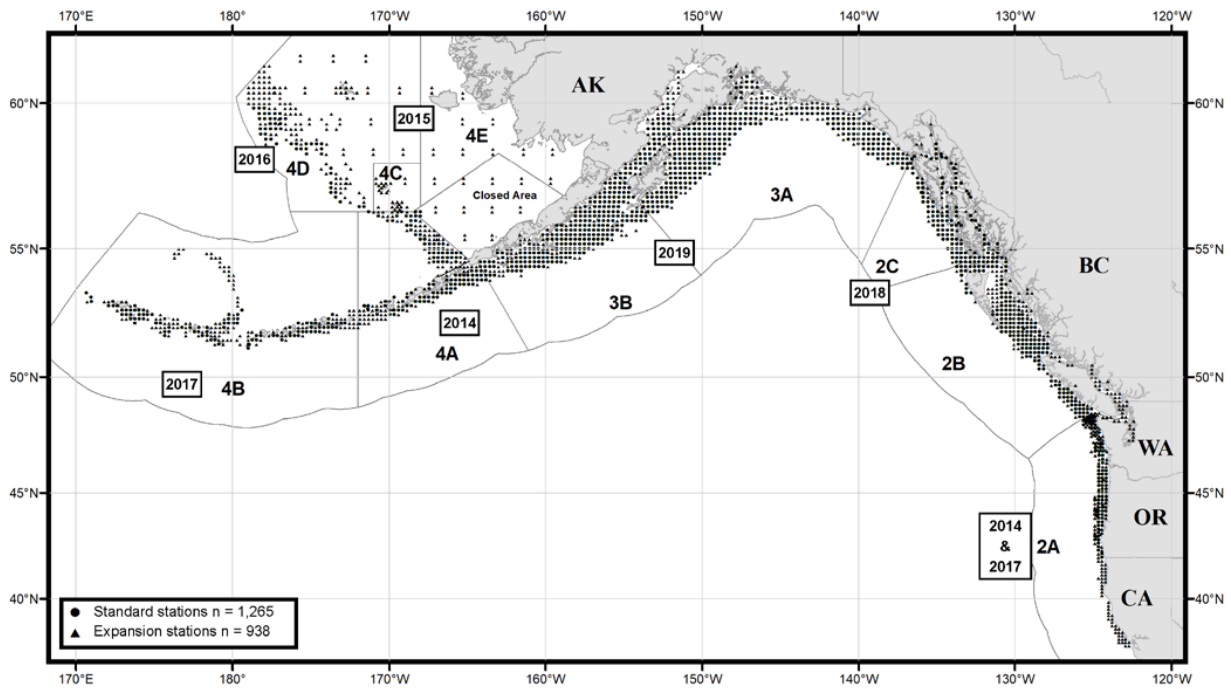


Figure 3. FISS expansion stations planned for 2014-19.

2018 Expansion in IPHC Regulatory Area 2B

The FISS expansion in IPHC Regulatory Area 2B included an additional 136 new stations (129 expansion and seven extra) that were added to the existing 166 FISS stations (standard) in IPHC Regulatory Area 2B. These included stations as shallow as 9 fathoms (17 m) and as deep as 399 fathoms (732 m) ([Figure 4](#)). To help manage this expansion, the historical Charlotte and Vancouver charter regions were divided into four new regions identified as Charlotte Inside, Charlotte North, Vancouver Inside and Vancouver Outside ([Table 2](#)).

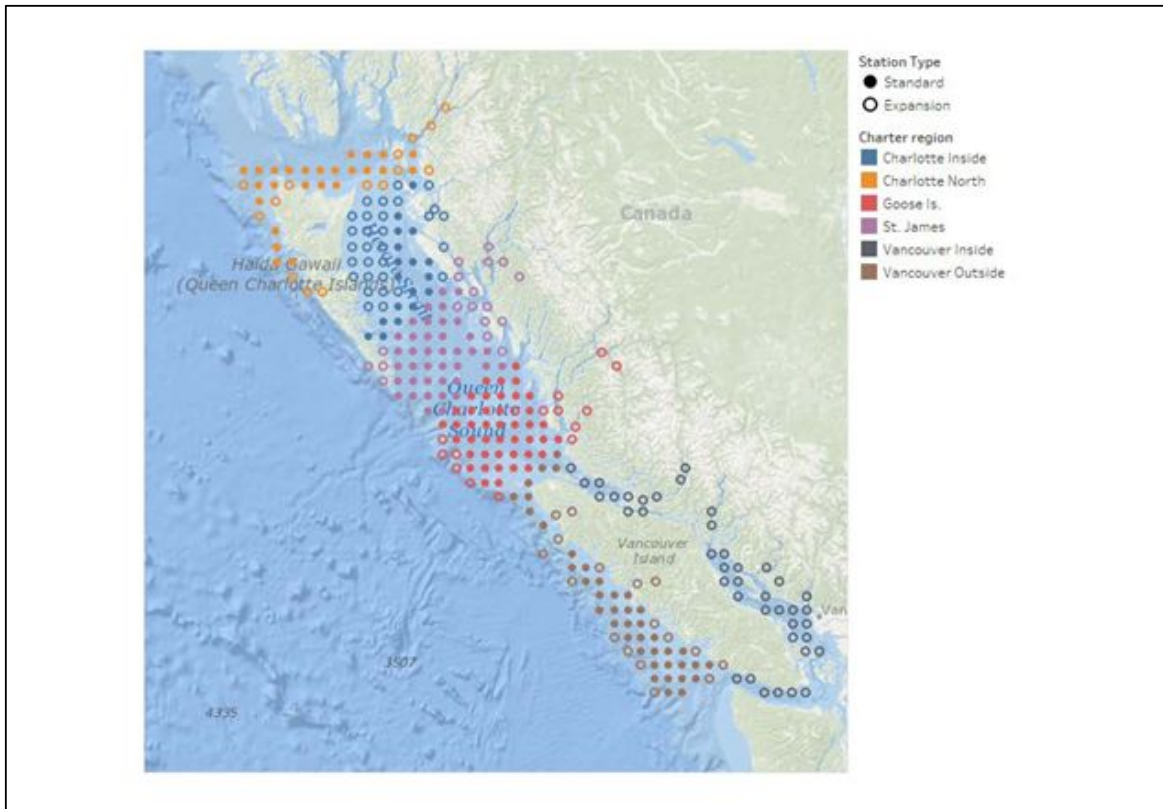


Figure 4. 2018 IPHC FISS stations in IPHC Regulatory Area 2B by charter region.

Table 2. IPHC Regulatory Area 2B FISS charter regions and count by station type.

Charter Region	Total Stations	Expansion	Extra ²	Standard
Charlotte Inside	48	29	1	18
Charlotte North	40	14	1	25
Goose Islands	58	14	1	43
St. James	57	18	0	39
Vancouver Inside	41	39	2	0
Vancouver Outside	58	15	2	41
Total	302¹	129	7	166

¹ six stations were not permitted because of habitat closures.

² extra stations are added between grid stations that are far apart from each other, typically up fjords and channels.

2018 Expansion in IPHC Regulatory Area 2C (USA)

The FISS expansion in IPHC Regulatory Area 2C included 121 of the existing FISS stations (standard) with an additional 44 new stations (40 expansion and four extra), including stations as shallow as 9 fathoms (17 m) and as deep as 436 fathoms (797 m) (Figure 5). The expansion stations were divided into the existing FISS charter regions (Table 3).

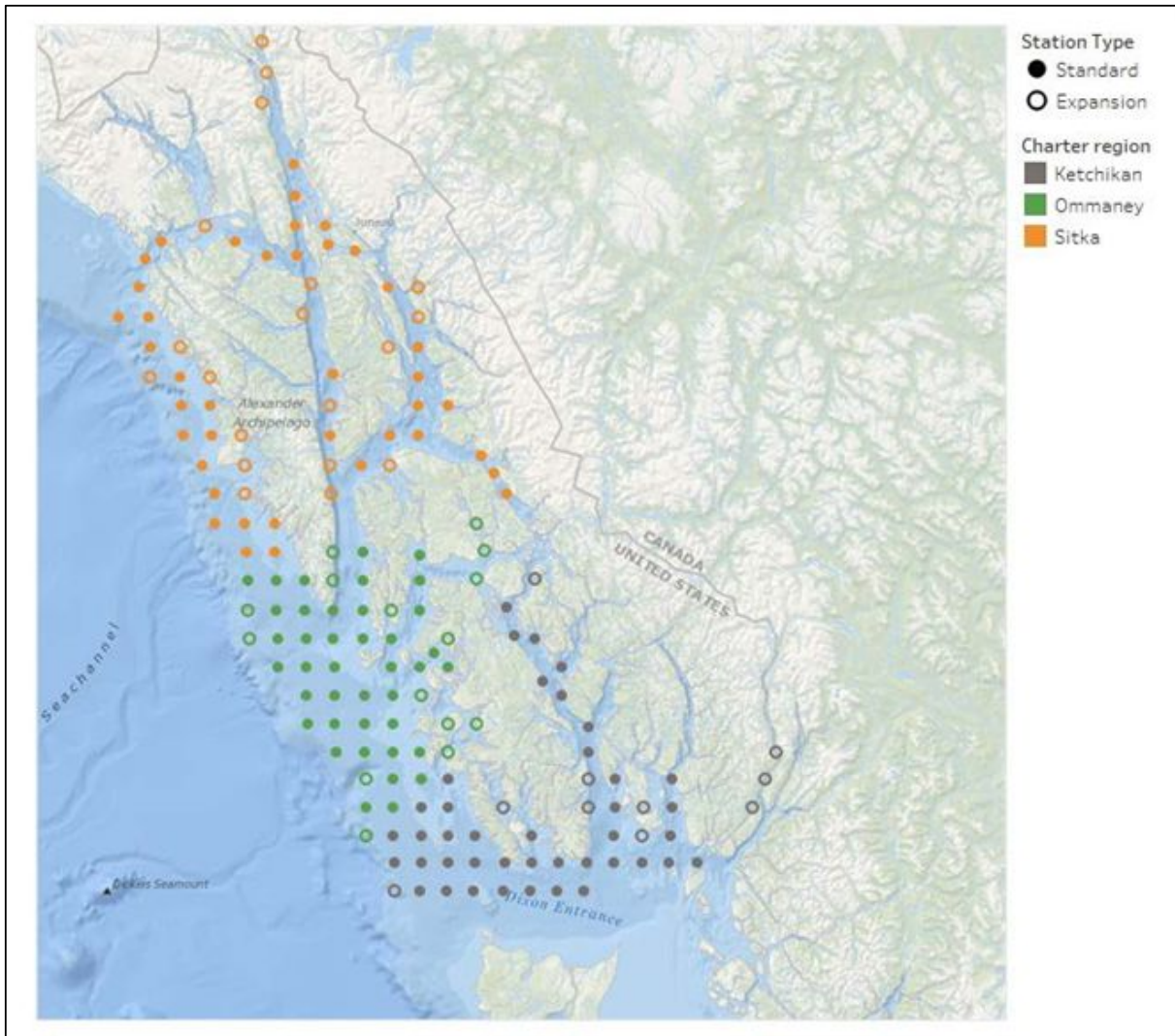


Figure 5. 2018 FISS stations in IPHC Regulatory Area 2C by charter region.

Table 3. IPHC Regulatory Area 2C FISS charter regions and count by station type.

Charter Region	Total station count	Expansion	New extra stations ²	Legacy
Ketchikan	51	9	1	41
Ommaney	55	14	1	40
Sitka	59	17	2	40
Total	165 ¹	40	4	121

¹ three stations in Glacier Bay were not fished because of permitting

² extra stations are added between grid stations that are far apart from each other, typically up fjords and channels.

Future Expansions

As shown in [Figure 3](#), one more year remains to complete the FISS expansions for each IPHC Regulatory Area. In 2019, the IPHC will be continuing with the FISS expansion into IPHC Regulatory Areas 3A and 3B, as approved by the Commission in 2014. The IPHC has begun vetting the proposed FISS stations with the respective State and Federal agencies. In some cases, this also involves special permitting requirements. There are 95 expansion stations planned in 2019 for IPHC Regulatory Area 3A and 65 for IPHC Regulatory Area 3B ([Figure 6](#)).

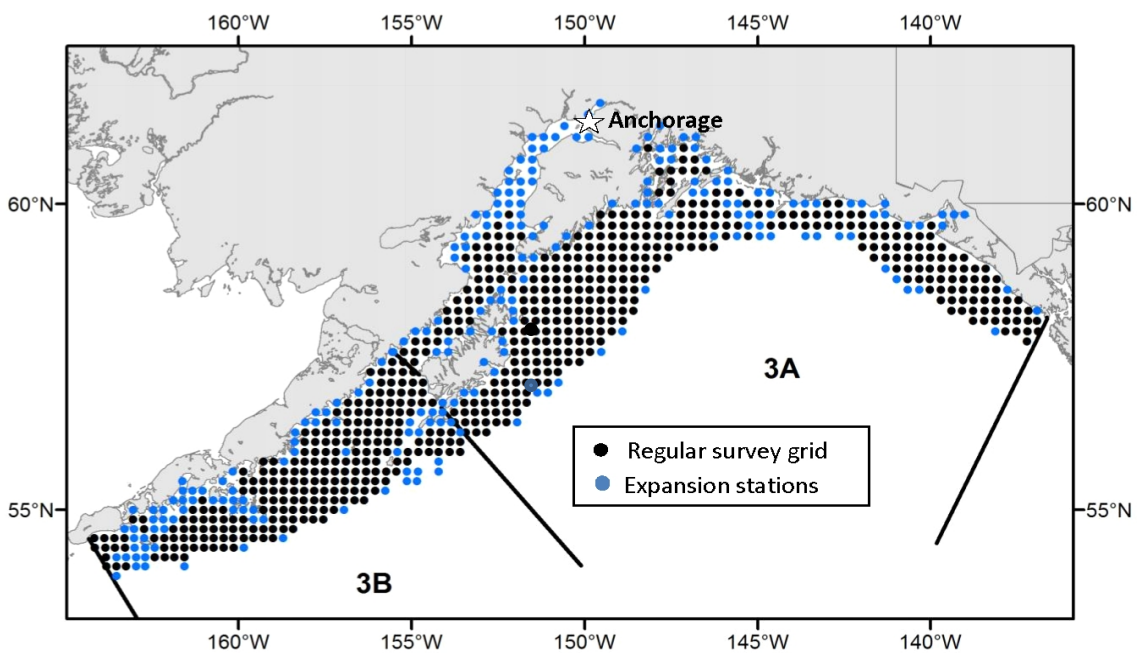


Figure 6. Proposed 2019 IPHC Regulatory Areas 3A and 3B FISS stations.

Sampling protocols

Sea samplers collected data according to protocols established in the 2018 FISS Manual.

Bait purchase

The minimum quality requirement for FISS bait is No. 2 semi-bright (Alaska Seafood Marketing Institute grades A through E), headed and gutted, and individually quick-frozen chum salmon. The IPHC secures most of the bait needed to supply FISS operations at the end of the previous salmon season. In August 2017, staff began arranging bait purchases for the 2018 FISS. Approximately 345,000 pounds (157 t) of chum salmon were utilized from three suppliers in the United States of America. Bait usage is based on 0.37 pounds per hook resulting in approximately 259 pounds per 7 skate station. Bait quality was monitored and documented throughout the season and found to meet the standard as described above.

RESULTS AND REVENUE

Beginning in 2017 and with key updates made for 2018, interactive views of some of the FISS results were provided via the IPHC website and can be found here: <https://iphc.int/data/setline-survey-catch-per-unit-effort>.

As in previous years, legal-sized Pacific halibut that were caught on FISS stations and sacrificed in order to obtain biological data were retained and sold. This helps to offset costs of the FISS program. FISS vessels also retained for sale incidentally captured rockfish (*Sebastes spp.*) and Pacific cod (*Gadus macrocephalus*). These species were retained because they rarely survive the barotrauma resulting from capture. Most vessel contracts provided the vessel a lump sum payment, along with a 10% share of the Pacific halibut proceeds and a 50% share of the incidental catch proceeds. The *R/V Pacific Surveyor* received no share of Pacific halibut or bycatch proceeds. The IPHC does not retain proceeds from the sale of incidentally captured rockfish and Pacific cod. Instead, for retained bycatch captured in USA waters, proceeds are divided equally between the vessel (for handling expenses) and the state management agency. In Canada, Fisheries and Oceans Canada (DFO) receives all proceeds from sales of retained bycatch captured in Canadian waters, subsequent to abovementioned deduction of the predetermined vessel bycatch processing fees.

Vessels chartered by the IPHC delivered fish to 26 different ports ([Table 4](#)). Fish sales were awarded based on the objectives of obtaining a fair market price and distributing sales among buyers and ports. When awarding sales, the Commission considered the price offered, the number of years that a buyer had been buying and marketing Pacific halibut, how fish were graded at the dock (including the determination of No. 2 and chalky Pacific halibut), and the promptness of settlements following deliveries. Obtaining fair market value was the main consideration in awarding fish sales. However, sales were sometimes awarded to buyers not offering the highest prices, thereby meeting the goal of distributing sales among qualified buyers. Individual sales were evaluated after each event to ensure that the buyer was meeting IPHC standards.

A summary of landings and prices from the FISS is provided by species and IPHC Regulatory Area in [Table 5](#). Average prices decreased from \$6.53/lb in 2017 to \$5.74/lb in 2018.

Table 4. FISS Pacific halibut landings by port, 2018¹.

Offload Port	Trips	Pounds	Tonnes	Total USD	Average Price (USD/lb)	Average Price (USD/kg)
Prince Rupert	7	112,551	51	\$ 726,271	\$6.45	\$14.23
Seward	6	108,140	49	\$ 689,407	\$6.38	\$14.05
Sitka	4	71,434	32	\$ 395,172	\$5.53	\$12.20
Homer	7	61,941	28	\$ 377,985	\$6.10	\$13.45
Kodiak	17	70,888	32	\$ 375,386	\$5.30	\$11.67
Yakutat	4	61,599	28	\$ 344,615	\$5.59	\$12.33
Port Hardy	7	50,593	23	\$ 316,812	\$6.26	\$13.81
Petersburg	2	42,326	19	\$ 266,162	\$6.29	\$13.86
Juneau/Auke Bay	2	34,004	15	\$ 209,416	\$6.16	\$13.58
Cordova	1	23,215	11	\$ 149,524	\$6.44	\$14.20
St Paul	5	33,584	15	\$ 143,152	\$4.26	\$9.40
Sand Point	4	31,058	14	\$ 134,910	\$4.34	\$9.58
Dutch Harbor	7	28,903	13	\$ 119,864	\$4.15	\$9.14
Adak	5	27,397	12	\$ 83,780	\$3.06	\$6.74
Alitak	3	15,727	7	\$ 76,741	\$4.88	\$10.76
Newport	4	6,624	3	\$ 53,500	\$8.08	\$17.81
Ucluelet/Barkley Sd	1	8,092	4	\$ 52,364	\$6.47	\$14.27
Tofino	2	8,014	4	\$ 51,952	\$6.48	\$14.29
Ketchikan	1	8,842	4	\$ 45,792	\$5.18	\$11.42
Westport	2	6,298	3	\$ 36,245	\$5.76	\$12.69
Astoria	1	2,600	1	\$ 21,092	\$8.11	\$17.88
Neah Bay	1	3,869	2	\$ 19,514	\$5.04	\$11.14
Charleston	1	1,487	1	\$ 12,067	\$8.11	\$17.89
Bellingham	1	392	<1	\$ 1,938	\$4.94	\$10.90
Vancouver, B.C.	1	222	<1	\$ 1,561	\$7.03	\$15.50
Nanaimo/French Creek	1	175	<1	\$ 1,181	\$6.75	\$14.87
Grand Total		819,975	372	\$ 4,706,403	\$5.74	\$12.65

¹ Net weight (head-off, dressed, washed).² Prices based on net weight.**Table 5.** FISS landings (total pounds and price) of Pacific halibut by IPHC Regulatory Area in 2018¹.

IPHC Regulatory Area	2A	2B	2C	3A	3B	4A	4B	4CDE	Total Weight and Average Price
Pounds	21,269	144,660	199,324	298,421	74,303	34,137	27,397	20,462	819,974
Tonnes	10	66	90	135	34	15	12	9	372
Price USD/lb	\$6.79	\$6.34	\$6.06	\$5.92	\$4.84	\$4.05	\$3.06	\$4.47	\$5.74
Price USD/kg	\$14.93	\$13.94	\$13.33	\$13.01	\$10.64	\$8.91	\$6.73	\$9.84	\$12.65

¹ Net weight (head-off, dressed, washed).

FISS timing

Each year, the months of June, July, and August are targeted for FISS fishing. On a coastwide basis, FISS vessel activity was highest in intensity at the beginning of the FISS season and

declined early in August as boats finished their charter regions (Figure 7). All FISS activity was completed by mid-September.

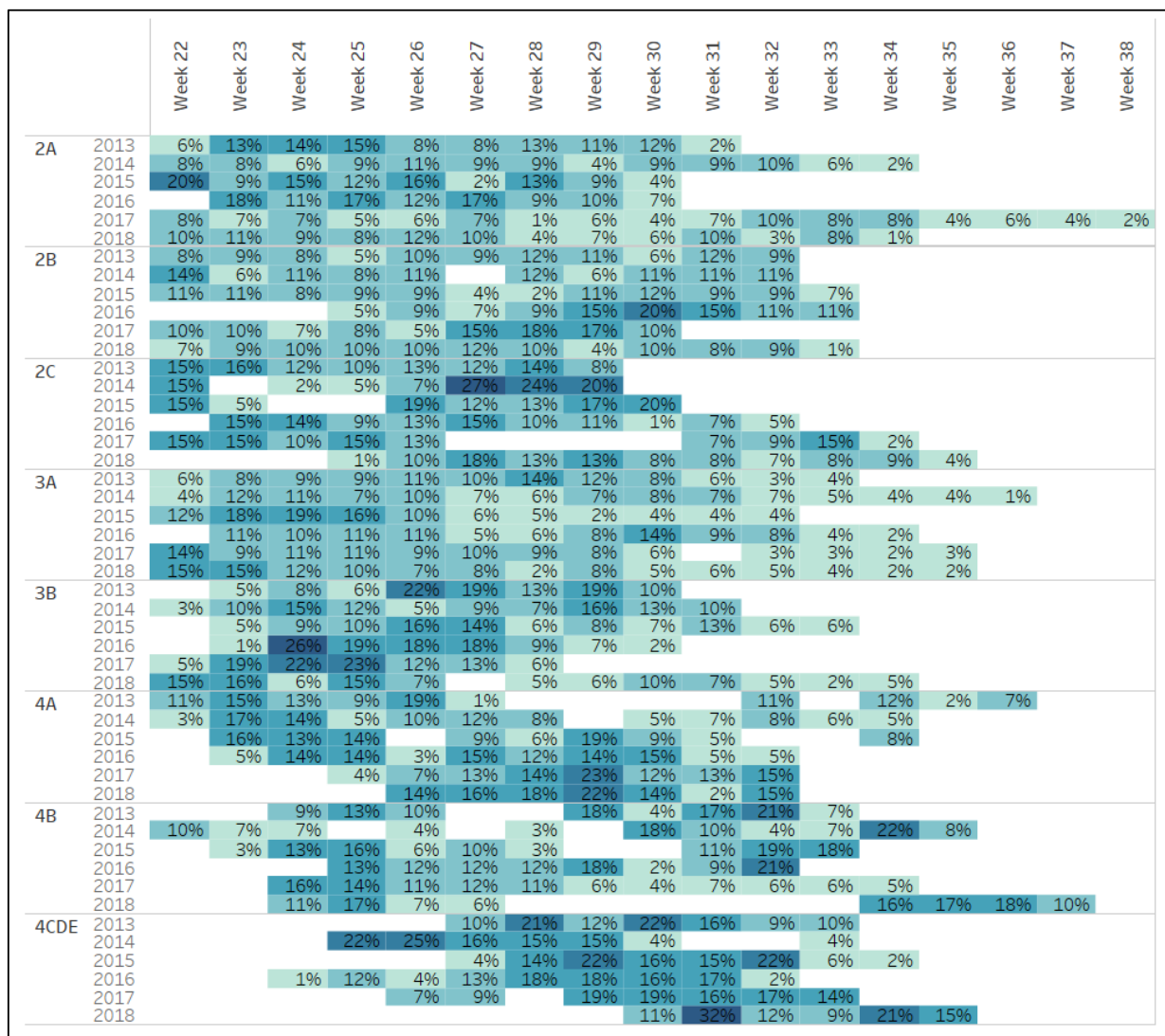


Figure 7. Percent of the total FISS stations completed by IPHC Regulatory Area during each week of the year. Week 22 begins in late May or early June depending on the year.

RECOMMENDATION/S

That the Commission NOTE paper IPHC-2018-IM094-06 which provided an overview of the IPHC’s FISS design and implementation in 2018, including current and future expansions.

REFERENCES

Nil

APPENDICES

Nil



Space-time modelling of survey data: Update

PREPARED BY: IPHC SECRETARIAT (R. WEBSTER; 26 OCTOBER 2018, 20 NOVEMBER 2018)

PURPOSE

To provide the Commission with a summary of the results of the 2018 space-time modelling of Pacific halibut survey data (which includes data from other fishery-independent surveys), as well as the detailed results of the IPHC fishery-independent setline survey (FISS) expansions in IPHC Regulatory Areas 2A, 2B and 2C conducted in 2018.

BACKGROUND

The IPHC's fishery-independent setline survey (FISS, or "setline survey") of the Pacific halibut stock has been undertaken annually using a 10 nmi fixed grid design since 1998, within depths of 37-503 m (20-275 fm). This design ensures that, on average, all habitat types within the area covered by the setline survey are sampled in proportion to their occurrence, while fishing the same fixed stations each year reduces uncertainty in any estimates of trends in density indices derived from the setline survey data.

The setline survey design has been augmented each year since 2014 with expansion stations that fill in historical gaps in coverage. These gaps include waters in depths from 18-37 m (10-20 fm) and 503-732 m (275-400 fm), along with other previously unsurveyed regions within 37-503 m in each IPHC Regulatory Area. Typically, expansions have taken place in one or two IPHC Regulatory Areas each year:

- 2014: Regulatory Areas 2A and 4A;
- 2015: Regulatory Area 4CDE eastern Bering Sea flats;
- 2016: Regulatory Area 4CDE shelf edge;
- 2017: Regulatory Areas 2A and 4B; and
- 2018: Regulatory Areas 2B and 2C.

In addition to the planned expansions in 2018, setline survey stations were added off the north Washington coast (Regulatory Area 2A) in both 2017 and 2018 in an *ad hoc* expansion that doubled the station density in that region.

INTRODUCTION

In most Regulatory Areas, the IPHC setline survey grid has historically been fished in waters within the 37-503 m (20-275 fm) depth range. Information from commercial fishery data and other fishery-independent sources showed the presence of Pacific halibut down to depths of 732 m (400 fm) and in waters shallower than 37 m. Further, most IPHC Regulatory Areas had gaps in coverage within the standard 37-503 m depth range. The incomplete coverage of Pacific halibut habitat by the historical setline survey had the potential to create bias in estimates of the weight per unit effort (WPUE) and numbers per unit effort (NPUE) density indices used in the stock assessment and management strategy evaluation analyses. For this reason, the IPHC has been undertaking a sequence of setline survey expansions since 2014 (following a 2011 pilot), with stations added to the standard grid to cover all depths (from 0 to 732 m) and habitats not previously sampled in our setline survey. The expansions have involved adding stations to one or two Regulatory Areas each year, and reverting to the historically fished stations for those areas in subsequent years.

In 2018, setline survey expansions took place in Regulatory Areas 2B and 2C. In addition, the *ad hoc* densified grid off the north Washington Coast was repeated after having been fished in 2017 during a hypoxic event. The waters of the Salish Sea in Regulatory Area 2A were also surveyed in 2018 (as they were in 2011, 2014 and 2017), in order to supplement the new expansion FISS stations in the Straits of Juan de Fuca and Georgia within Regulatory Area 2B and provide full coverage of the Salish Sea for the first time.

As in 2016 and 2017, estimates of mean WPUE and NPUE are produced through space-time modelling of Pacific halibut fishery-independent survey data. In 2018, the IPHC's Scientific Review Board (SRB) undertook a review of the space-time model for the third year since its introduction in 2016. The SRB again endorsed its use for the 2018 analysis, as follows:

IPHC-2018-SRB013-R, Para. 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."

In IPHC Regulatory Areas 2A, 2B, 2C and 4B, only IPHC setline survey data are used in the modelling, while models for Regulatory Areas 4A and 4CDE include calibrated data from the NOAA-Fisheries (National Marine Fisheries Service; NMFS) and Alaska Department of Fish and Game (ADFG) fishery-independent trawl surveys. These supplementary data sources are important, due to incomplete coverage of the Bering Sea by the IPHC setline survey. Data from NMFS sablefish longline survey also provide limited information on Pacific halibut density in deeper waters in Regulatory Areas 3A and 3B, although the use of sablefish survey data will be discontinued following completion of setline survey expansions with more complete and comparable data for those Regulatory Areas in 2019. In 2018, NMFS fished an *ad hoc* northern expansion of the annual Bering Sea trawl survey, and ADFG's previously triennial Norton Sound trawl survey was fished for the second consecutive year. Data from both of these sources were included in the modelling (as have previous data from these surveys), improving estimates of Pacific halibut density indices in the northern Bering Sea, and therefore in Regulatory Area 4CDE as a whole.

SPACE-TIME MODELLING RESULTS

No changes were made to the space-time modelling methods in 2018. Along with this year's new survey data, a small amount of additional data were included in the models from a 1995 IPHC random stratified setline survey in IPHC Regulatory Area 2A.

Figure 1 shows time series estimates for O32 WPUE (most comparable to fishery catch-rates) over the 1993-2018 period used in the 2018 space-time modelling. Biological Regions 2, 3 and 4 all showed modest declines from 2017 to 2018, while Region 4B was estimated to have a 12% increase. Estimated declines from 2017 to 2018 in the NPUE index (Figure 2) of all sizes of Pacific halibut captured by the survey were greatest in Region 2, with Region 4B again showing a small increase. As in 2017, we also modelled the WPUE of all sizes of Pacific halibut captured by the survey, and Figure 3 shows a comparison of space-time model estimates of mean all sizes WPUE and O32 WPUE. It is notable that in all Biological Regions except Region 4B, the two time series converge during 2017 and 2018, a consequence of fewer small (U32) Pacific halibut being captured on the setline survey in the last two years. Space-time model results by IPHC Regulatory Area are shown in the figures in [Appendix A](#).

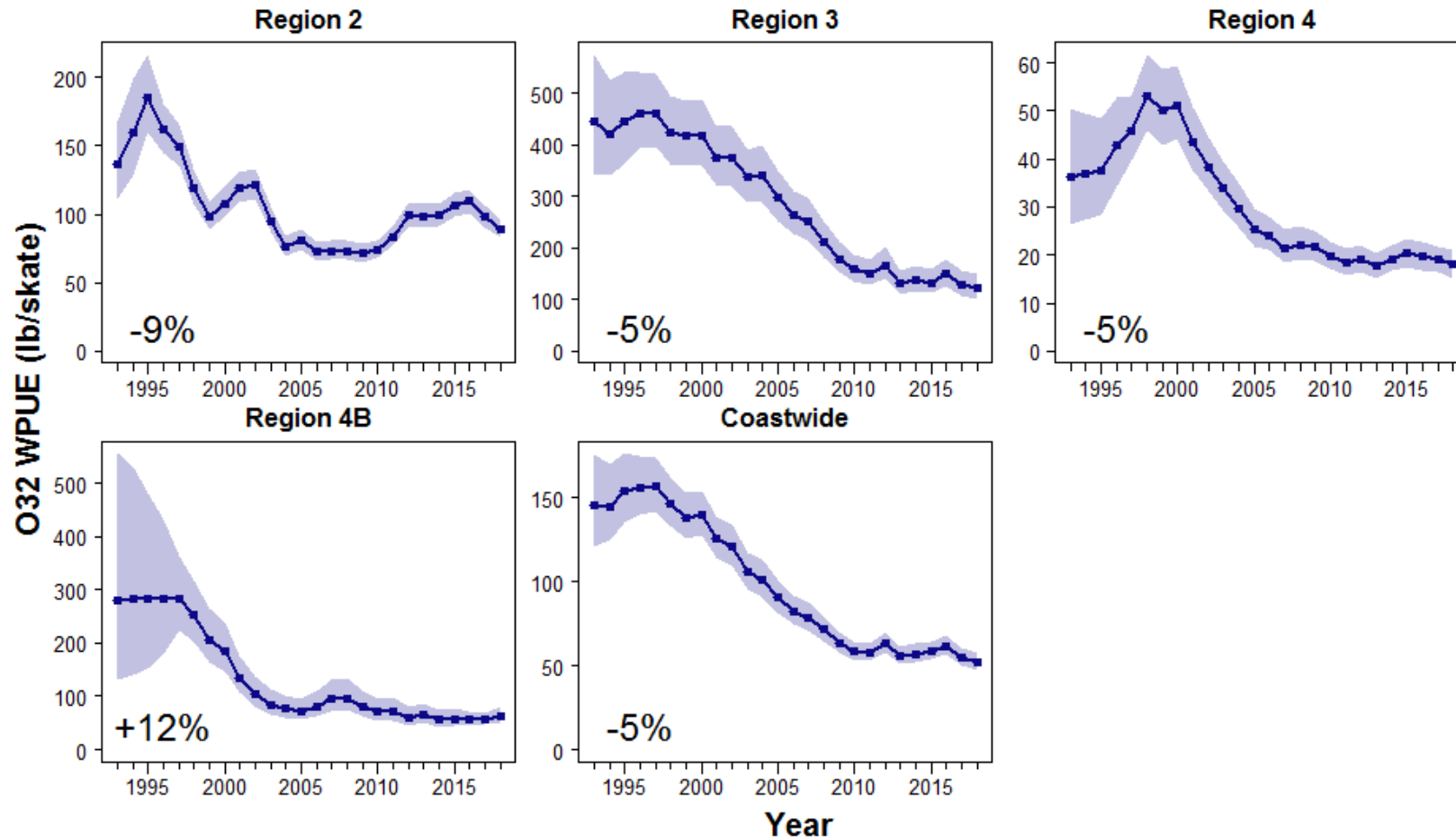
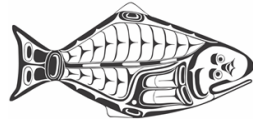


Figure 1. Space-time model output for O32 WPUE for 1993-2018 for Biological Regions. Filled circles denote the posterior means of O32 WPUE for each year. Shaded regions show posterior 95% credible intervals, which provide a measure of uncertainty: the wider the shaded interval, the greater the uncertainty in the estimate. Numeric values in the lower left-hand corners are estimates of the change in mean O32 WPUE from 2017 to 2018.

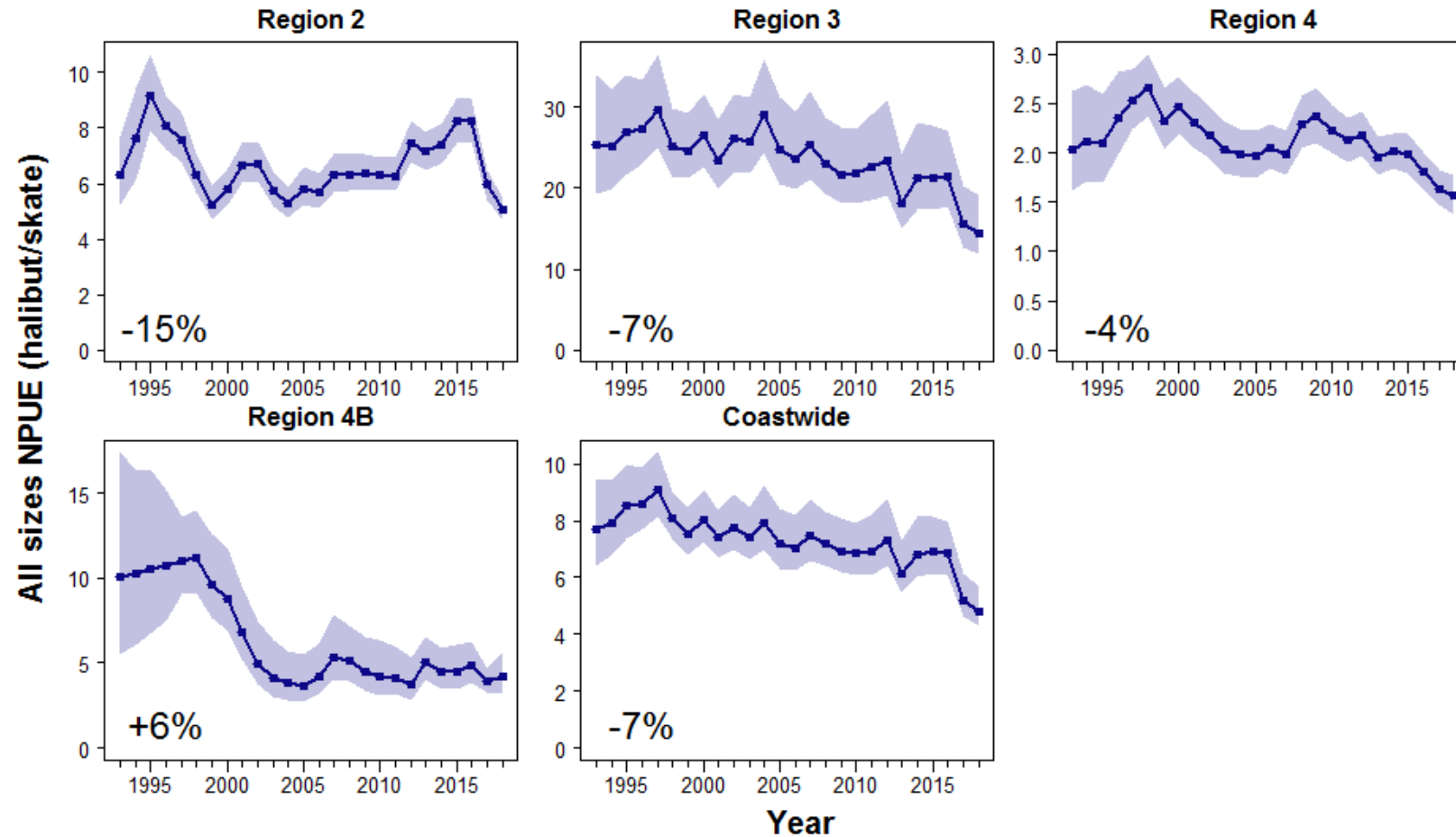


Figure 2. Space-time model output for all sizes NPUE for 1993-2018 for Biological Regions. Filled circles denote the posterior means of all sizes NPUE for each year. Shaded regions show posterior 95% credible intervals, which provide a measure of uncertainty: the wider the shaded interval, the greater the uncertainty in the estimate. Numeric values in the lower left-hand corners are estimates of the change in mean all sizes NPUE from 2017 to 2018.

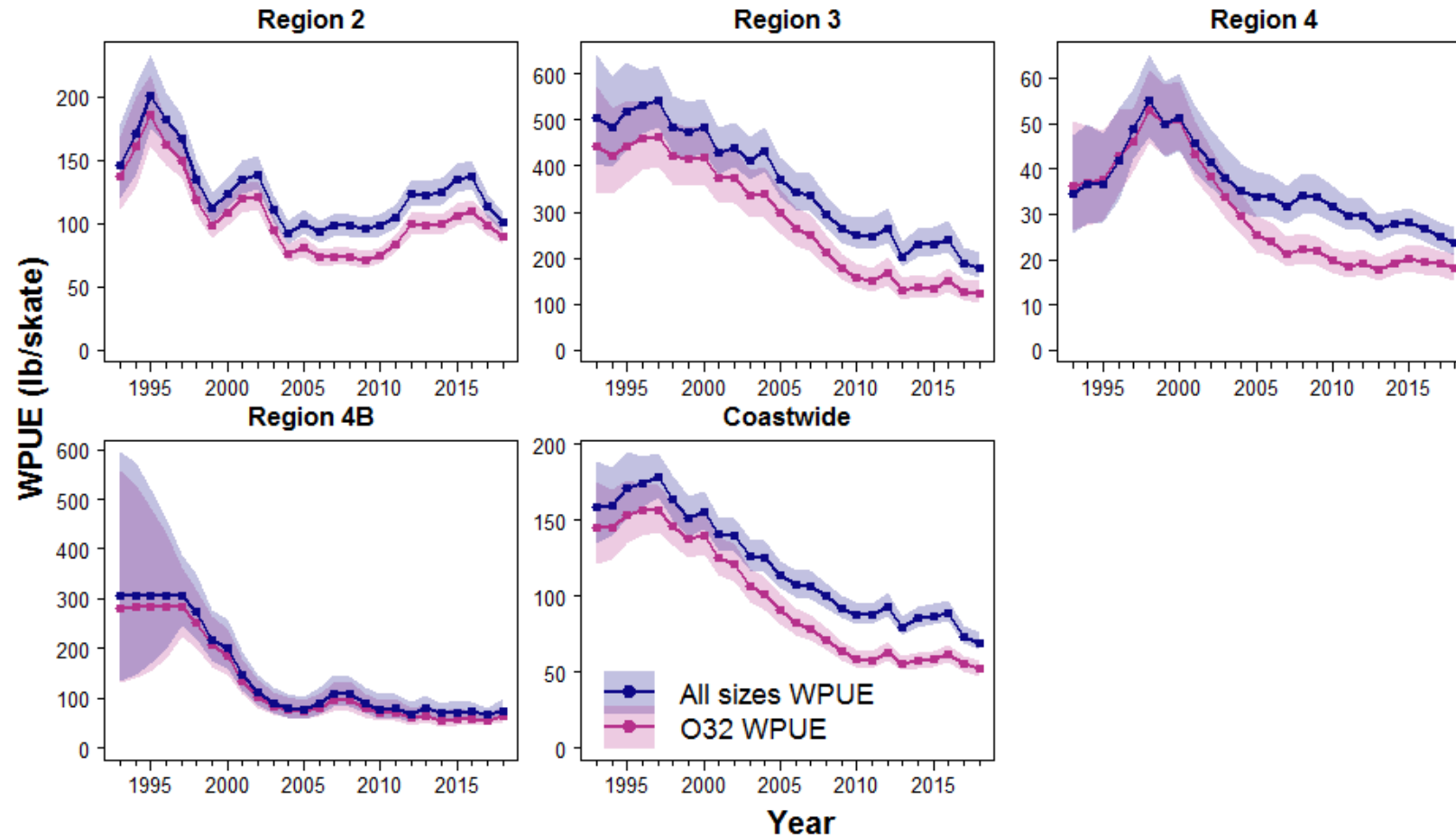


Figure 3. Comparison of space-time model output for O32 and all sizes WPUE for 1993-2018 for Biological Regions. Filled circles denote the posterior means for each year. Shaded regions show posterior 95% credible intervals, which provide a measure of uncertainty: the wider the shaded interval, the greater the uncertainty in the estimate.



RESULTS OF THE IPHC FISHERY-INDEPENDENT SETLINE SURVEY (FISS) EXPANSIONS

In IPHC Regulatory Area 2B, expansion stations were added to large areas of previously unsurveyed habitat (Figure 4), including the region east of Haida Gwaii, the fjords and coastal waters of the British Columbia mainland, and the Straits of Georgia and Juan de Fuca (Salish Sea). In newly surveyed regions, higher than average catch rates were found at stations near Haida Gwaii and around the north BC coast and fjords, while Pacific halibut catch was near zero in the Strait of Georgia.

Overall, the average catch rate was lower over the entire expanded setline survey than on the historically fished stations: raw, unadjusted O32 WPUE was 72.1 lb/skate over all 2018 stations, but 82.0 lb/skate for those previously fished. On its own, this does not imply the previous space-time model estimates were biased, as that depends on what the model had predicted in newly surveyed areas. However, because most of the Strait of Georgia in particular was far from observed data in prior years, the predictions there approached the Regulatory Area 2B mean (after allowing for year and depth effects). The new information showing very low densities in the Strait of Georgia means that these predictions were likely too high, resulting in positive bias in previous estimates of density indices for IPHC Regulatory Area 2B. The new information from the expanded survey has allowed this bias to be corrected in estimates of WPUE and NPUE indices (Appendix B, Figures B.1 and B.2). The uncertainty in the estimates also decreased, as shown by the narrower 95% posterior credible intervals for the revised estimates. With the new expansion data, coefficients of variation (CVs) for both mean O32 WPUE and all sizes NPUE now range from 6-10% for the period of the current 10 nmi grid design (1998 onwards), compared to CVs of 9-12% for estimates obtained in 2017 prior to the expansion.

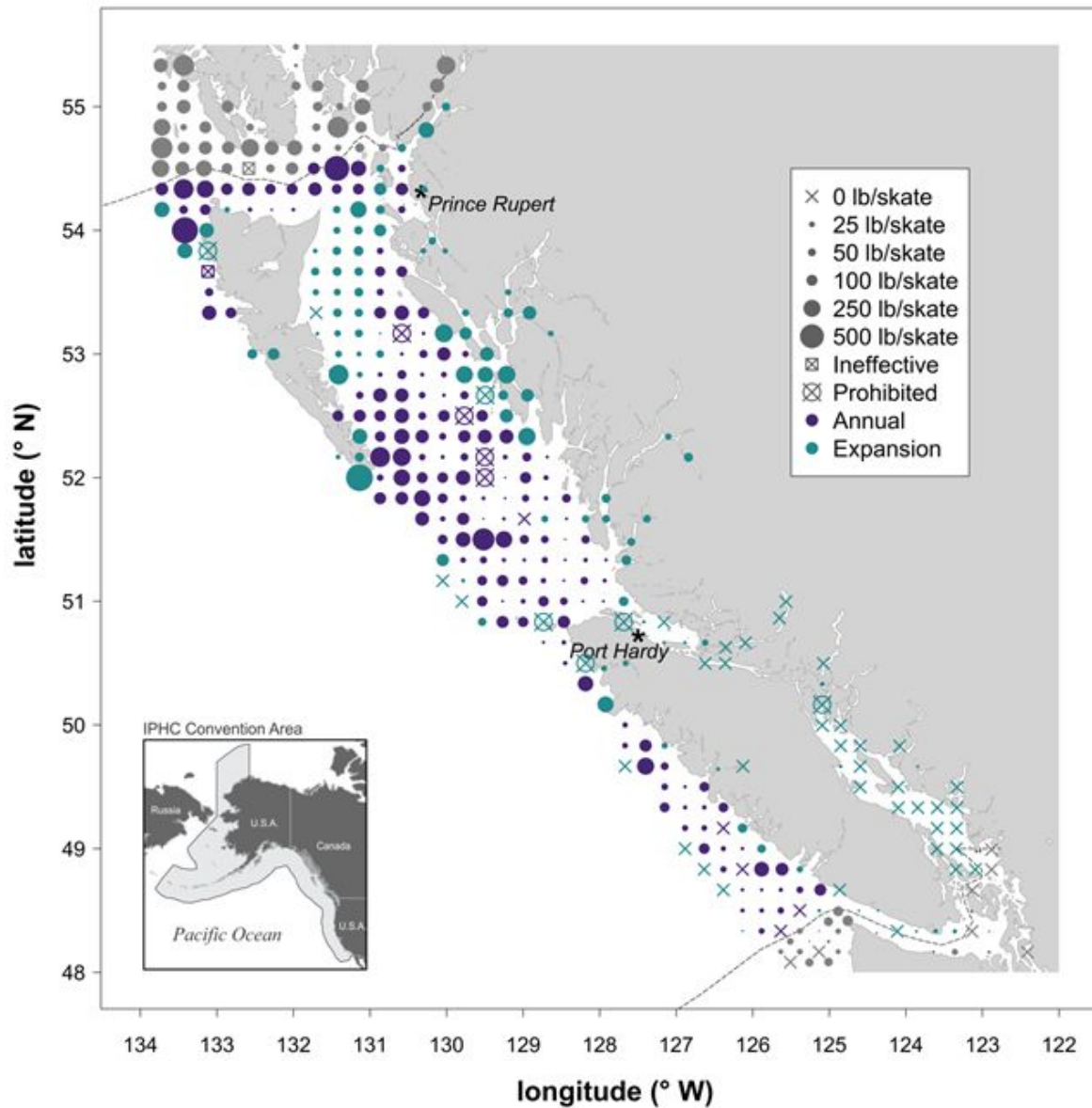


Figure 4. Map of setline survey station locations in IPHC Regulatory Area 2B. For circular symbols, the area of the circle is proportional to raw, unadjusted O32 WPUE. Gray symbols denote setline survey stations that are counted as being outside of Regulatory Area 2B.

There were no large gaps in historical setline survey coverage in IPhC Regulatory Area 2C, and the 2018 expansion stations were spread throughout the area (Figure 5). As with Regulatory Area 2B, mean raw, unadjusted O32 WPUE was lower on the full set of 2018 stations (195.4 lb/skate) than on the subset of previously fished stations (215.9 lb/skate). Unlike in Regulatory 2B, space-time model estimates for prior years were able to accurately predict catches at newly surveyed locations: revised 2018 estimates are generally very close to those estimated in 2017 (Figures B.3 and B.4), with only some evidence of a small negative bias in the absence of expansion data for O32 WPUE (Figure B.3, 2018 estimates slightly higher in most years). For recent years, there is some divergence between the two estimates of the time series for all sizes NPUE (Figure B.4). This is most likely due to the influence of the very low value of the estimated all sizes NPUE index in 2018 on prior years, through the strong correlation between successive years' Pacific halibut density at each station location in Regulatory Area 2C (the estimate of the temporal correlation parameter is 0.95).

Inclusion of data from the expansion stations has greatly reduced uncertainty in the estimates of density indices in Regulatory Area 2C, with much narrower 95% intervals from the 2018 modelling than from the 2017 modelling conducted prior to the expansion (Figures B.3 and B.4). CVs for the period from 1998 onwards have been reduced from 8.1-8.5% to 5.6-6.7% for O32 WPUE with the addition of the expansion data and to 6.5-9.7% from over 13% in all years for total NPUE. One reason for this is the improvement in the data informing the estimates of depth covariate parameters (defining the relationship between catch rates and depth) in the model. Prior to 2018, we used NMFS sablefish longline survey data help index Pacific halibut in deeper waters. Estimated density indices from that survey were generally close to zero. The six expansion stations in waters deeper than 503 m (275 ftm) had mean O32 WPUE of 73 lb/skate, much lower than the overall average for Regulatory 2C, but not close to zero. Some of the predictions at more remote locations in Regulatory Area 2C inlets, particularly in Lynn Canal in the north, had very high uncertainty in previous modelling, and having direct observations in these inlets also contributed to reducing overall uncertainty.

In 2017, setline survey catches off the north Washington Coast were affected by a large hypoxic zone present during the period of the setline survey. This was not the case in 2018 (Figure 6), allowing for a clearer comparison of the *ad hoc* dense grid stations with the annually fished stations. The raw, unadjusted mean O32 WPUE on annually fished stations within the region covered by the dense grid was 26.4 lb/skate in 2018, while the mean on the dense grid expansion stations was 28.0 lb/skate. Addition of the dense grid expansion stations had no meaningful effect on space-time model estimates of O32 WPUE in Regulatory Area 2A (Figure B.5): differences between estimates made with and without the dense grid expansion data were very small relative to the overall uncertainty in the estimates.

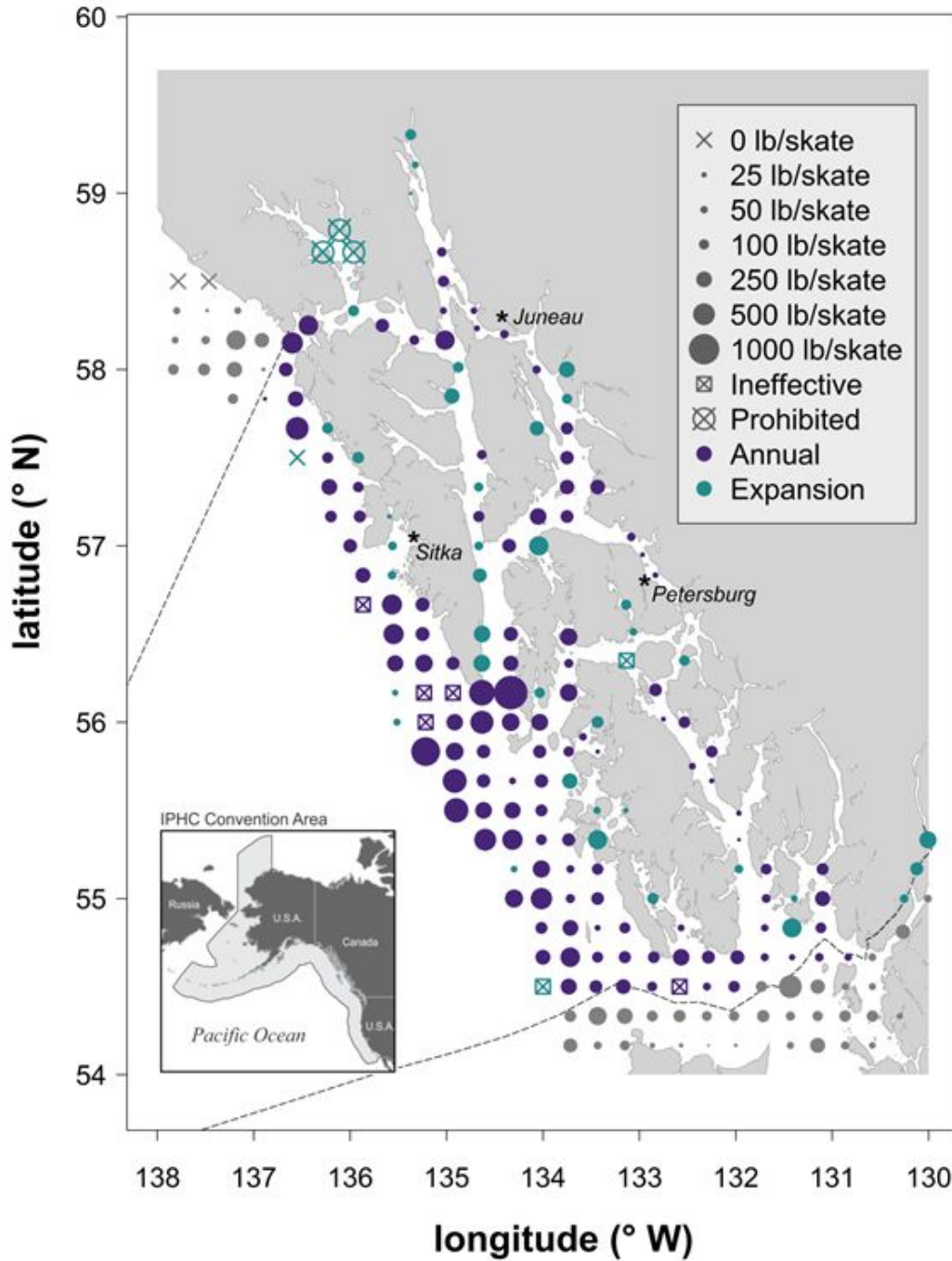


Figure 5. Map of setline survey station locations in Regulatory Area 2C in 2018. For circular symbols, the area of the circle is proportional to raw, unadjusted O32 WPUE. Gray symbols denote survey stations counted as outside of Regulatory Area 2C.

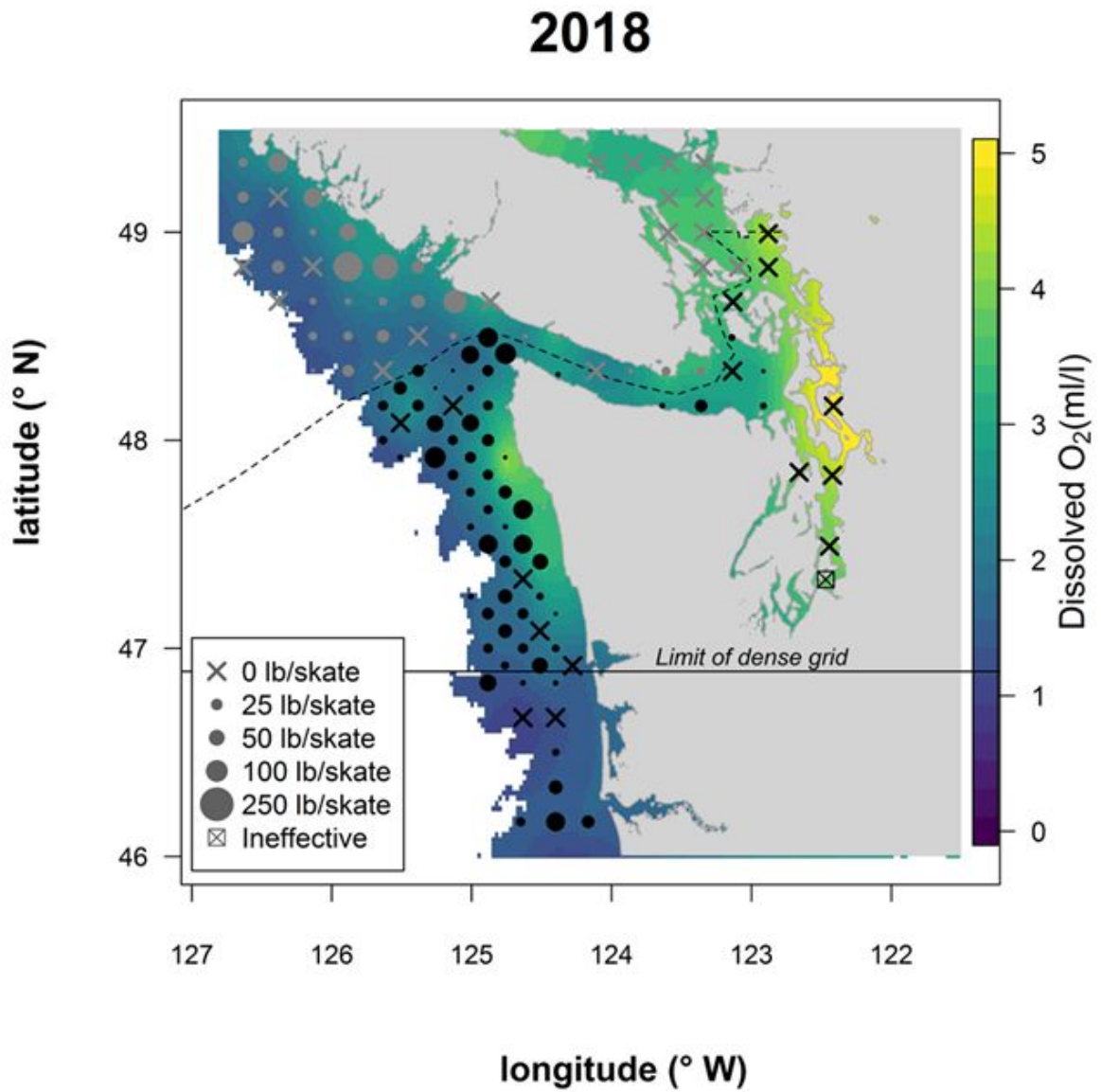


Figure 6. Map of dissolved oxygen in northern Regulatory Area 2A in 2018, with symbols showing raw, unadjusted O32 WPUE from the 2018 setline survey. Gray symbols denote setline survey stations outside of Regulatory Area 2A.

OTHER SPACE-TIME MODELLING WORK IN 2018

At the 12th Session of the IPHC SRB meeting (IPHC–2018–SRB012–R) in June 2018, results were reviewed from two analyses exploring changes to the setline survey data analysis methods, or the space-time model inputs. In the first, data from Regulatory Area 2B were analysed to determine if the use of counts of all species on 20-hooks per skate were sufficient for accurate estimation of the hook competition standardisation adjustment factors, given the change to applying these at the station level in 2016 instead of the Regulatory Area level, as done in prior years. Regulatory Area 2B has a 100% hook counts, allowing us to compare model output from the use of 20 and 100% counts. No meaningful differences were found, and the conclusion was that the use of 20-hook counts on IPHC setline surveys was sufficient.

The second analysis looked at the effect of including environmental covariate data (specifically, bottom temperature and dissolved oxygen) on estimates of the O32 WPUE index for space-time models for Regulatory Area 2A. While there was strong evidence of relationships between WPUE and dissolved oxygen, the inclusion of this variable in the models did not have a meaningful effect on estimates of the indices or associated estimates of uncertainty. The SRB stated the following in their June 2018 review:

IPHC–2018–SRB012–R, Para 10. *“The SRB AGREED that, while dissolved oxygen (DO) levels improved space-time model fits to setline survey data, the results were not compelling or widespread enough (i.e. small effect size estimates) to warrant routine inclusion in the stock assessment process or WPUE/NPUE standardization. DO results could be reported at annual meetings.”*

APPENDIX A
Space-time modelling results by IPHC Regulatory Area

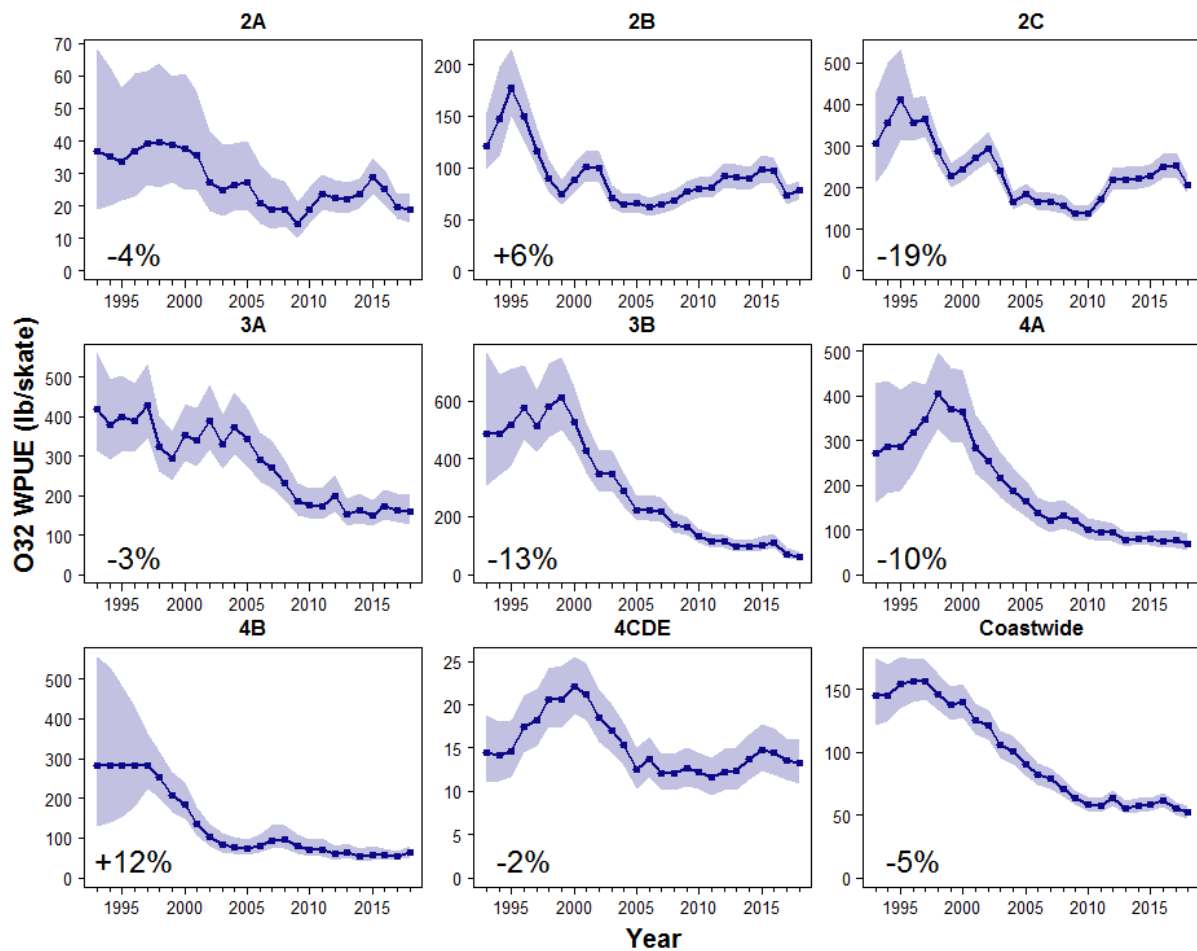


Figure A.1. Space-time model output for O32 WPUE for 1993-2018. Filled circles denote the posterior means of O32 WPUE for each year. Shaded regions show posterior 95% credible intervals, which provide a measure of uncertainty: the wider the shaded interval, the greater the uncertainty in the estimate. Numeric values in the lower left-hand corners are estimates of the change in mean O32 WPUE from 2017 to 2018.

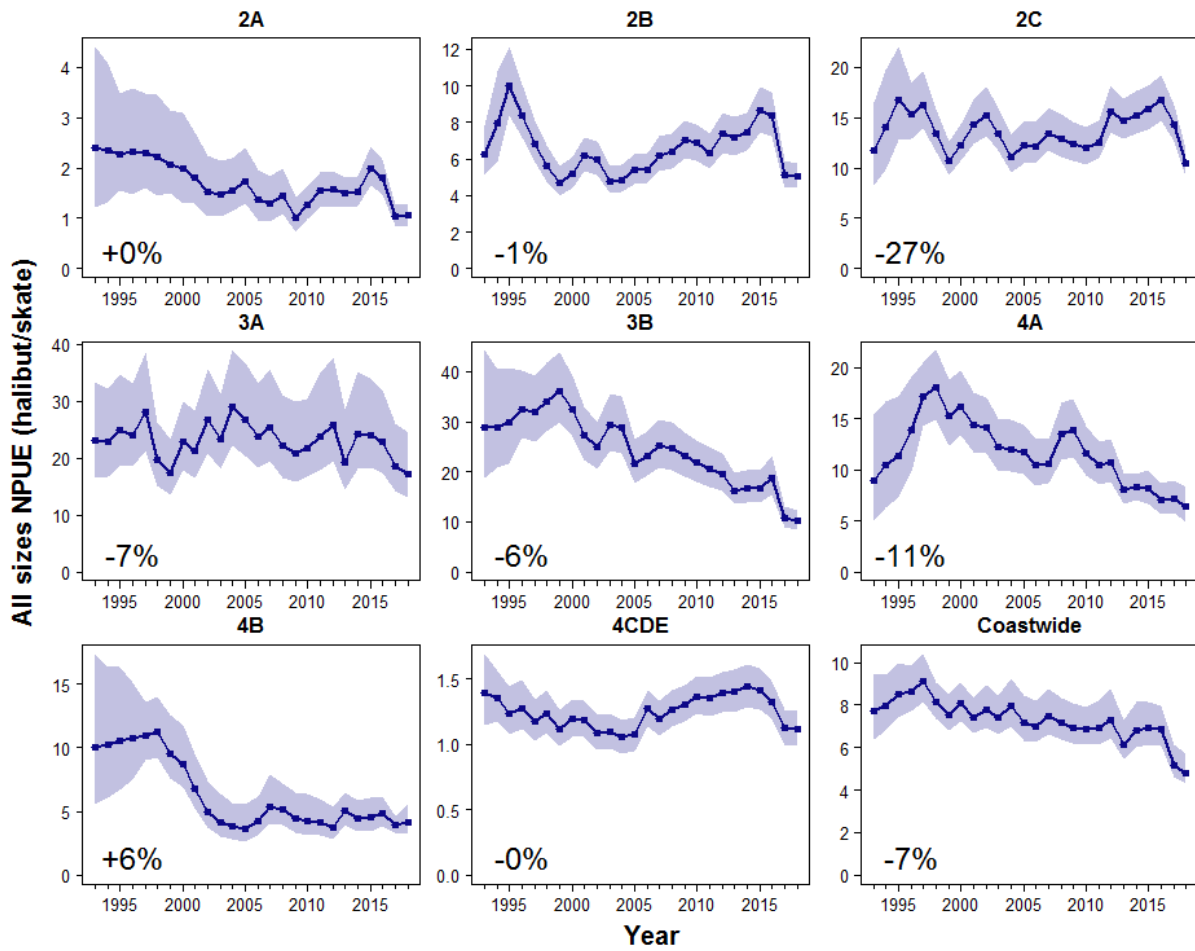


Figure A.2. Space-time model output for total NPUE for 1993-2018. Filled circles denote the posterior means of total NPUE for each year. Shaded regions show posterior 95% credible intervals, which provide a measure of uncertainty: the wider the shaded interval, the greater the uncertainty in the estimate. Numeric values in the lower left-hand corners are estimates of the change in mean total NPUE from 2017 to 2018.

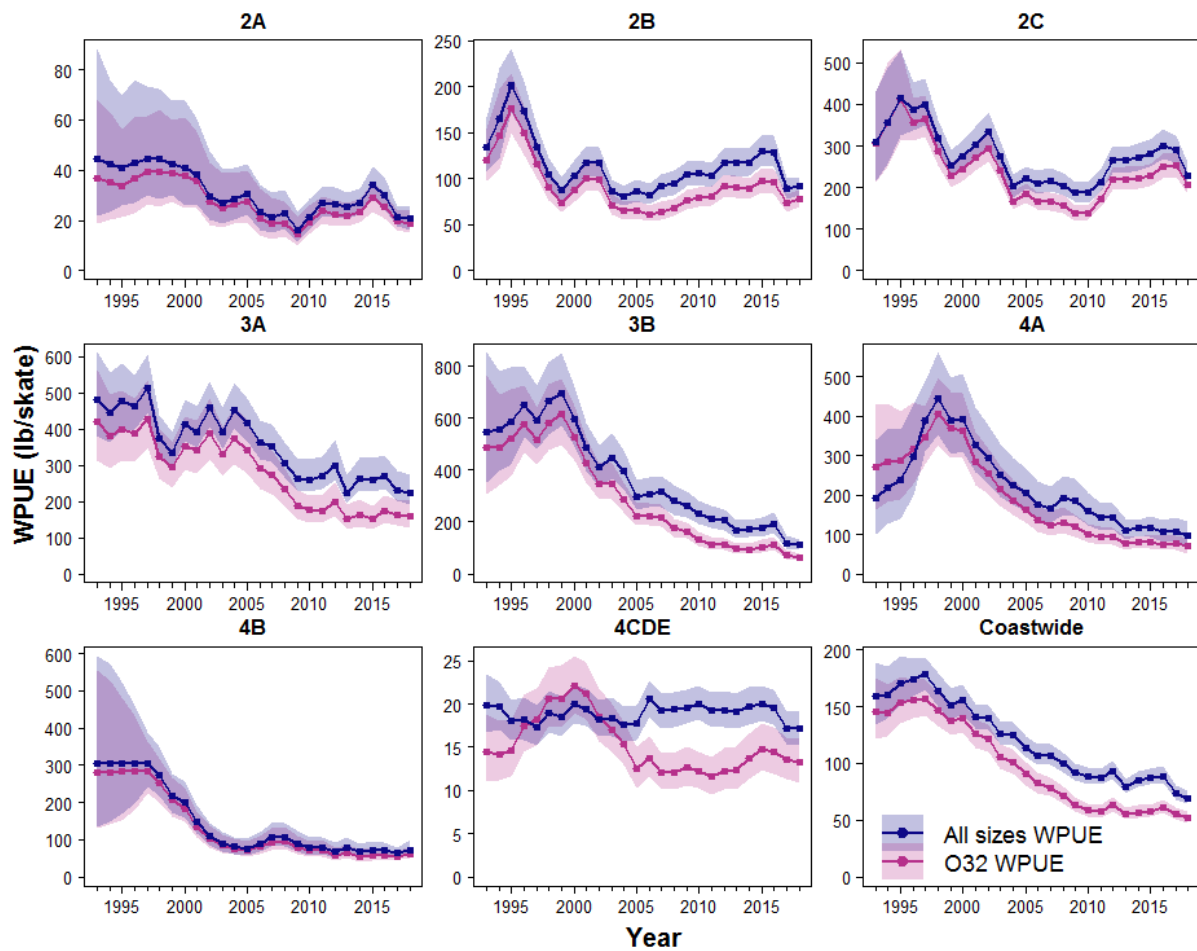


Figure A.3. Comparison of space-time model output for O32 and total WPUE for 1993-2018. Filled circles denote the posterior means for each year. Shaded regions show posterior 95% credible intervals, which provide a measure of uncertainty: the wider the shaded interval, the greater the uncertainty in the estimate.

APPENDIX B

The effect of setline survey expansions on space-time modelling results by IPHC Regulatory Area

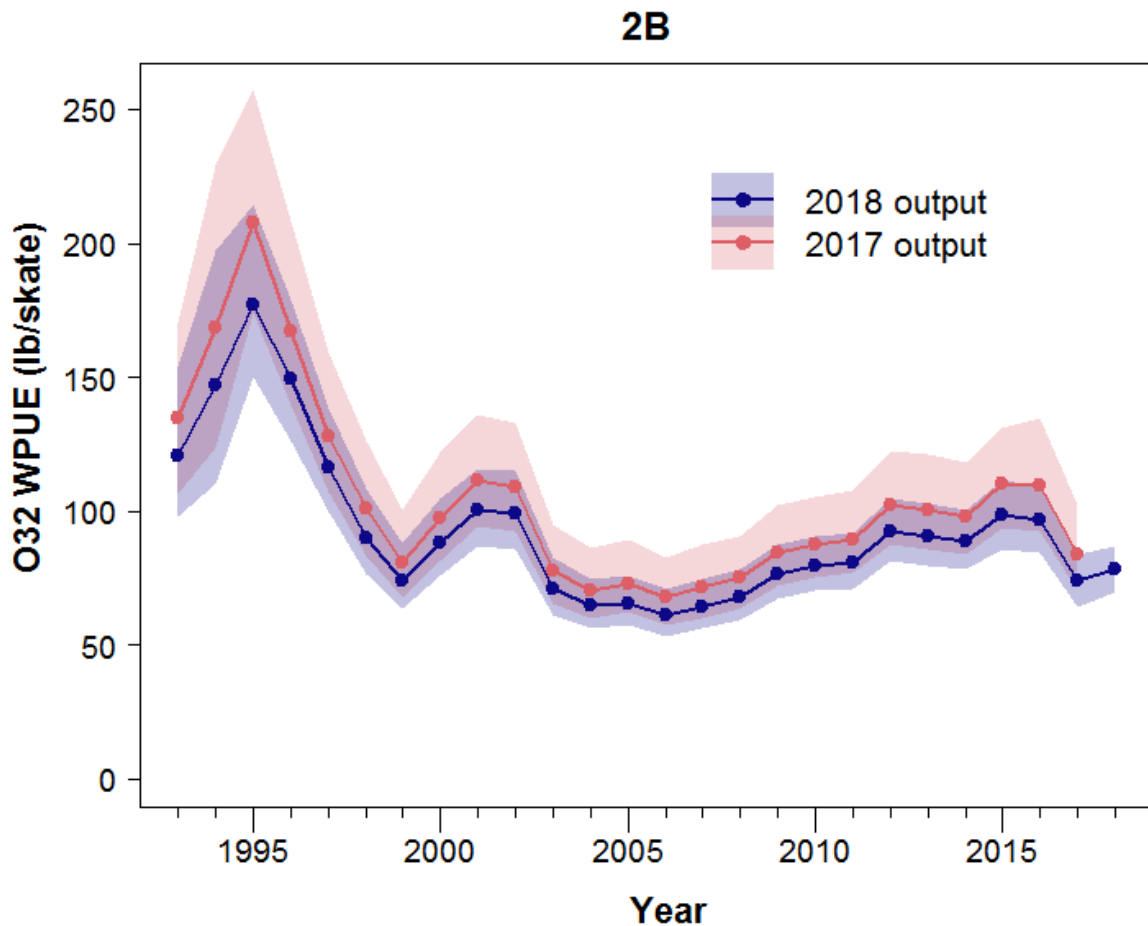


Figure B.1. Time series of posterior means of average O32 WPUE in Regulatory Area 2B from space-time modelling undertaken in 2018, compared with model output from 2017 modelling. The shaded regions show 95% posterior credible intervals.

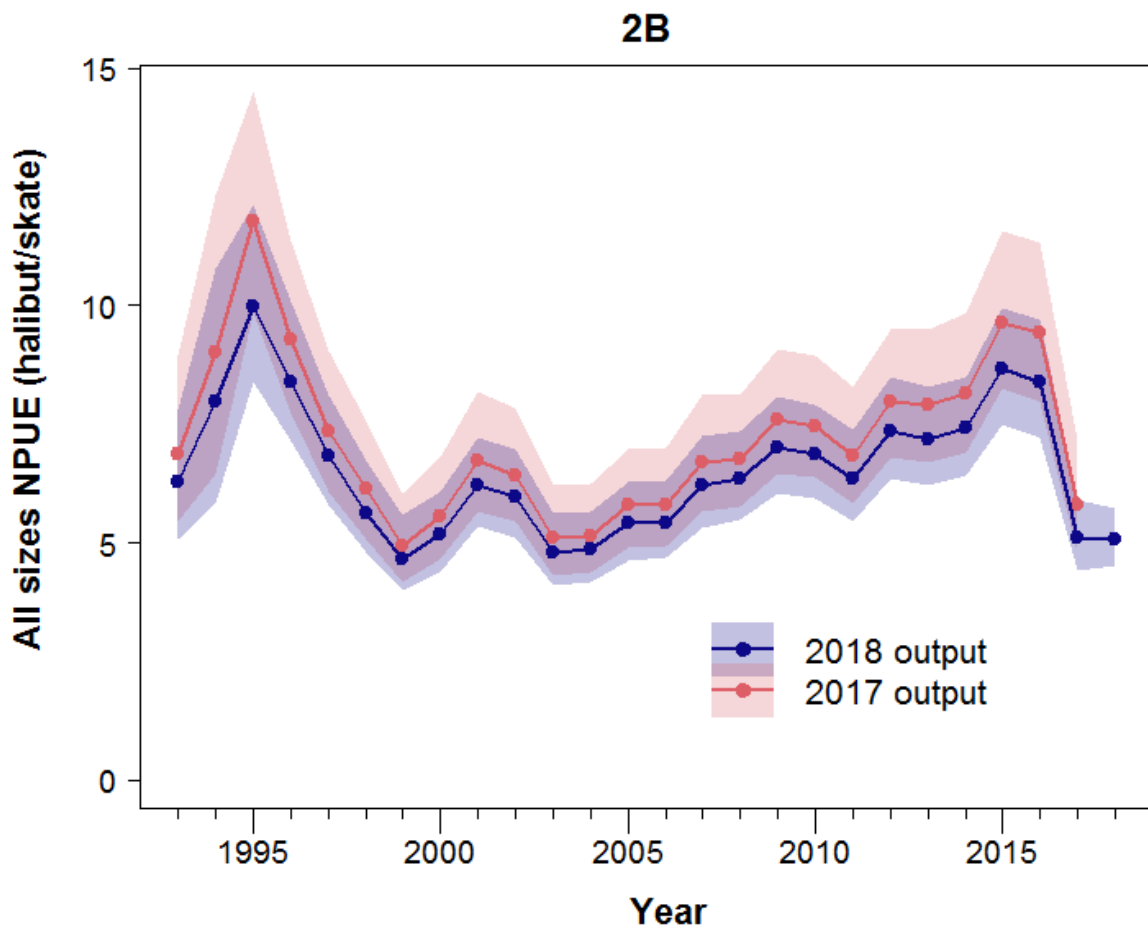


Figure B.2. Time series of posterior means of average all sizes NPUE in Regulatory Area 2B from space-time modelling undertaken in 2018, compared with model output from 2017 modelling. The shaded regions show 95% posterior credible intervals.

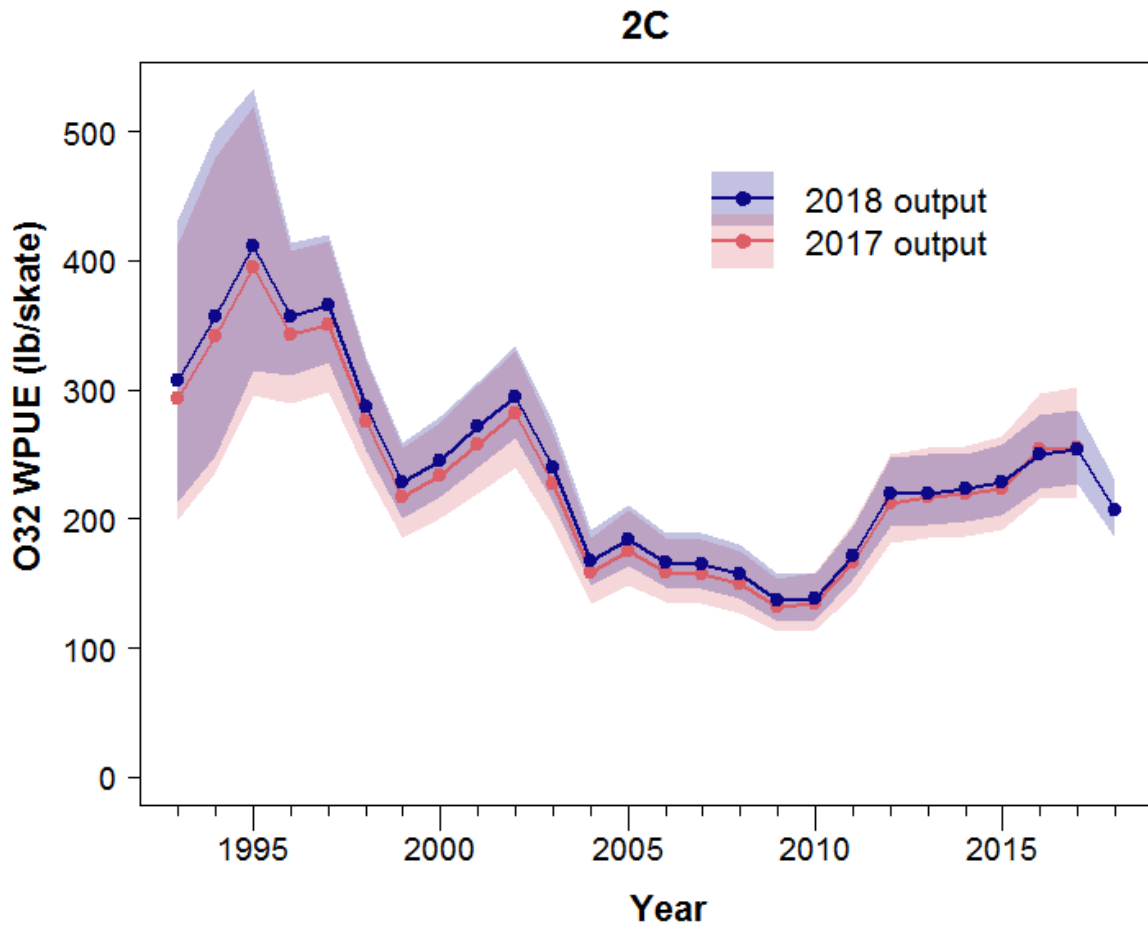


Figure B.3. Time series of posterior means of average O32 WPUE in Regulatory Area 2C from space-time modelling undertaken in 2018, compared with model output from 2017 modelling. The shaded regions show 95% posterior credible intervals.

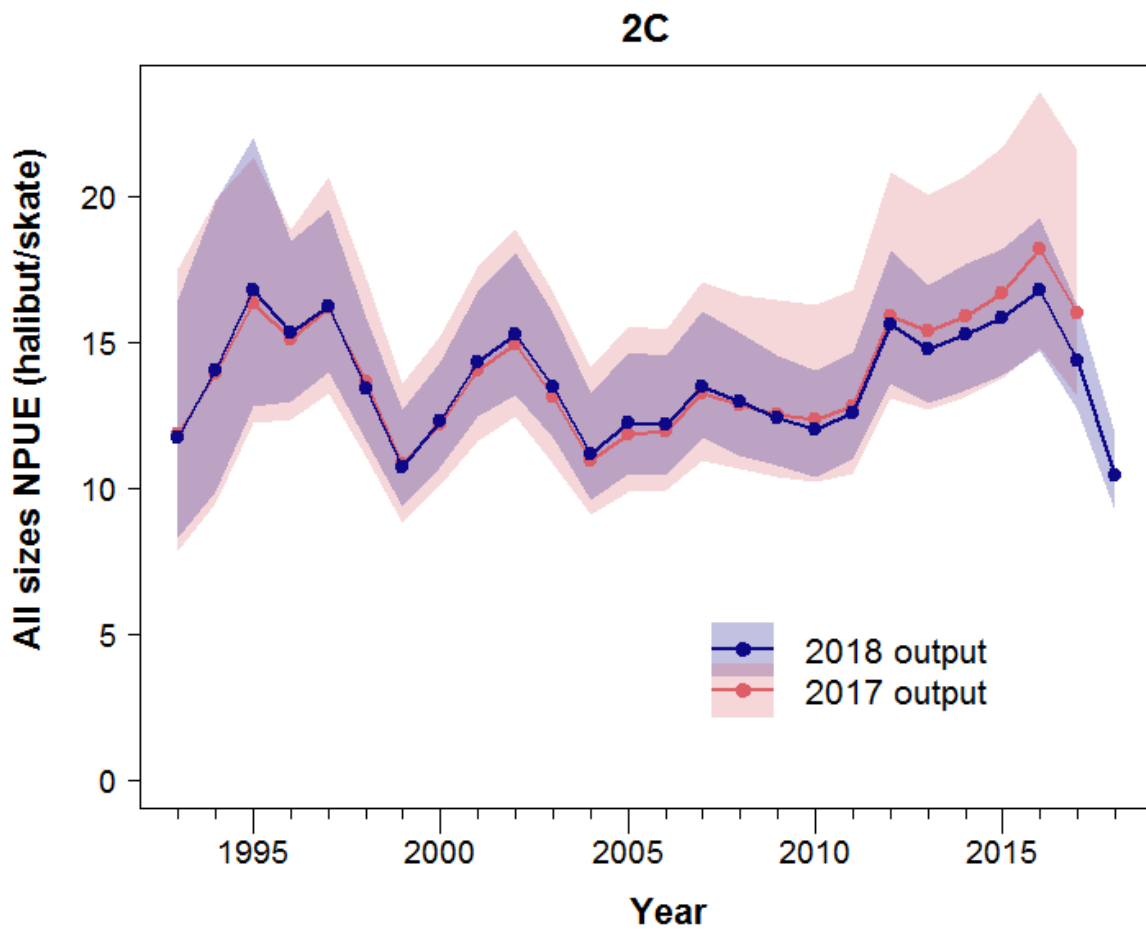


Figure B.4. Time series of posterior means of average all sizes NPUE in Regulatory Area 2C from space-time modelling undertaken in 2018, compared with model output from 2017 modelling. The shaded regions show 95% posterior credible intervals.

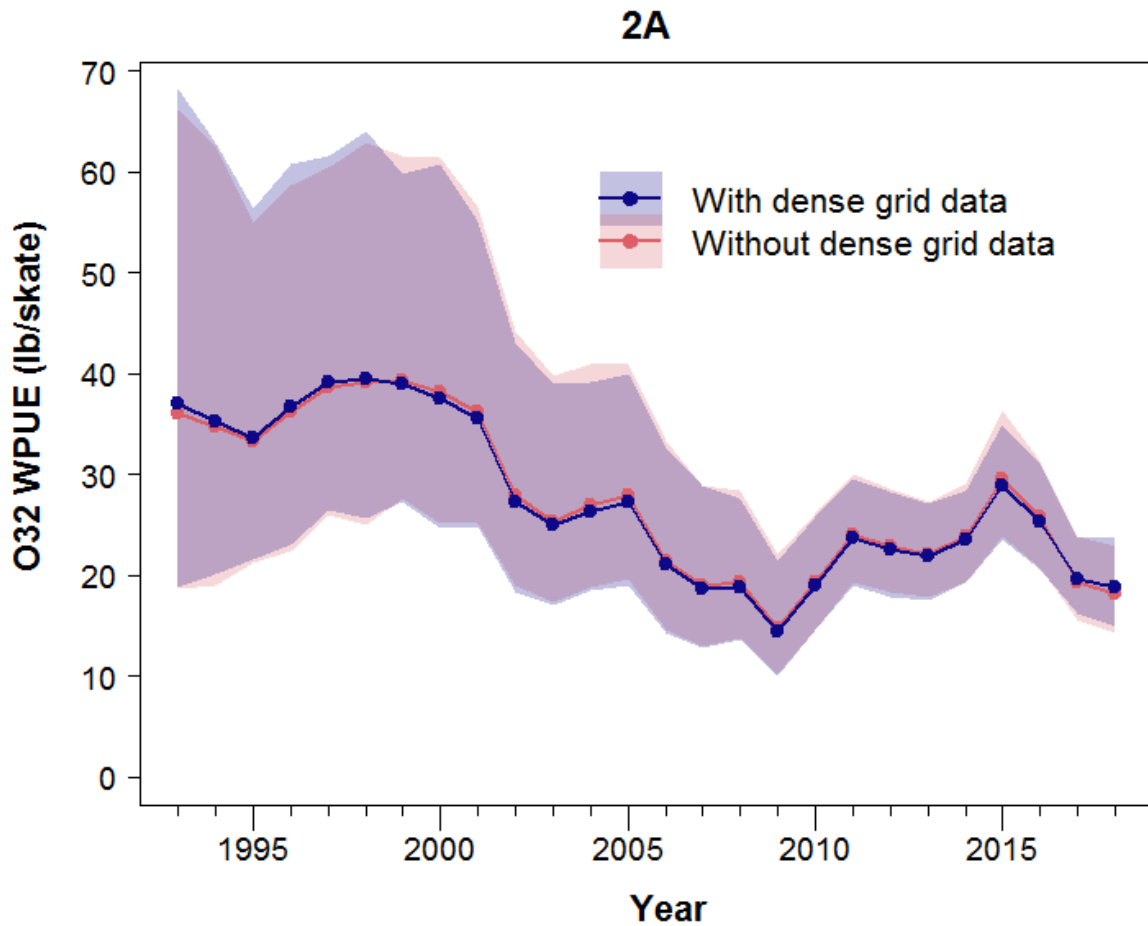


Figure B.5. Time series of posterior means of average O32 WPUE in Regulatory Area 2A from space-time modelling undertaken in 2018, comparing results from models including and excluding data from the ad hoc dense grid expansion off the north Washington coast. The shaded regions show 95% posterior credible intervals.



**Summary of the data, stock assessment, and harvest decision table for Pacific halibut
(*Hippoglossus stenolepis*) at the end of 2018**

PREPARED BY: IPHC SECRETARIAT (I. STEWART, A. HICKS, R. WEBSTER, AND D. WILSON; 20 NOVEMBER 2018)

PURPOSE

To provide the Commission with a summary of the data, stock assessment, and harvest decision table at the end of 2018.

INTRODUCTION

In 2018 the International Pacific Halibut Commission (IPHC) undertook its annual coastwide stock assessment of Pacific halibut (*Hippoglossus stenolepis*) using a range of updated data sources. This summary provides an overview of the data sources available for the Pacific halibut stock assessment and related analyses including the population trends and biological stock distribution based on the IPHC fishery-independent setline survey and the results of the 2018 stock assessment. Alternative mortality projections can be evaluated via the online mortality projection tool (<https://iphc.int/data/projection-tool>).

STOCK AND MANAGEMENT

The stock assessment reports the status of the Pacific halibut (*Hippoglossus stenolepis*) resource in the IPHC Convention Area. As in recent stock assessments, the resource is modelled as a single stock extending from northern California to the Aleutian Islands and Bering Sea, including all inside waters of the Strait of Georgia and Puget Sound, but excludes known extremities in the western Bering Sea within the Russian Exclusive Economic Zone (Figure 1).

The Pacific halibut fishery has been managed by the IPHC since 1923. Catch limits for each of eight management Regulatory Areas¹ are set each year by the Commission. The stock assessment provides a summary of recently collected data, and model estimates of stock size and trend. Specific management information is summarized via a decision table reporting the estimated risks associated with alternative management actions and mortality tables projecting detailed summaries for fisheries in each Regulatory Area indicated by the IPHC's interim management procedure, as well as other alternatives.

¹ The IPHC recognizes sub-Areas 4C, 4D, 4E and the Closed Area for use in domestic catch agreements but manages the combined Area 4CDE.

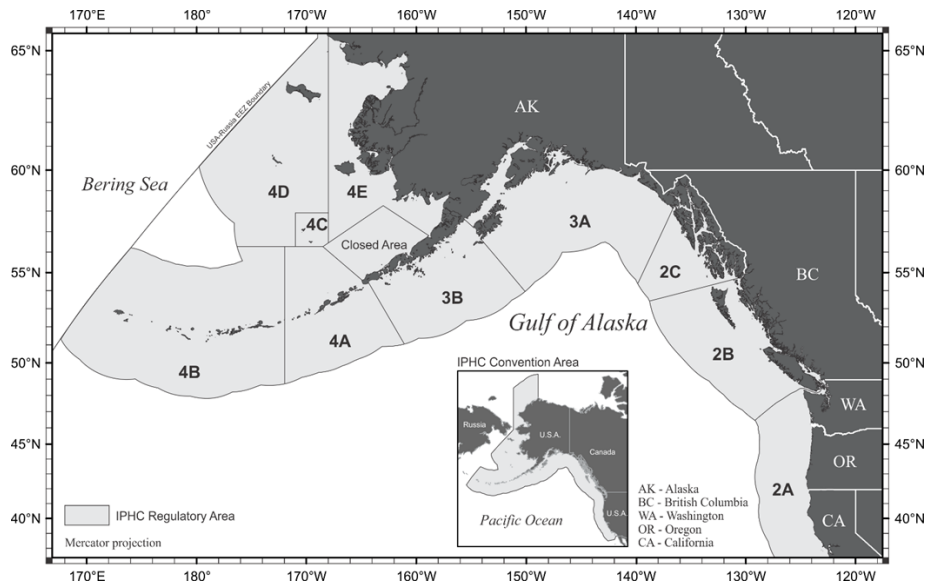


FIGURE 1. IPHC Regulatory Areas and the Pacific halibut geographical range within the territorial waters of Canada and the United States of America.

DATA

Historical mortality

Known Pacific halibut mortality consist of target commercial fishery landings and discard mortality (including research), recreational fisheries, subsistence, and bycatch mortality in fisheries targeting other species (where Pacific halibut retention is prohibited). Over the period 1919-2018 removals have totaled 7.2 billion pounds (~3.3 million metric tons, t), ranging annually from 34 to 100 million pounds (16,000-45,000 t) with an annual average of 63 million pounds (~29,000 t; Figure 2). Annual removals were above this long-term average from 1985 through 2010, were relatively stable near 42 million pounds (~19,000 t) from 2014-17 and decreased by 8% in 2018.

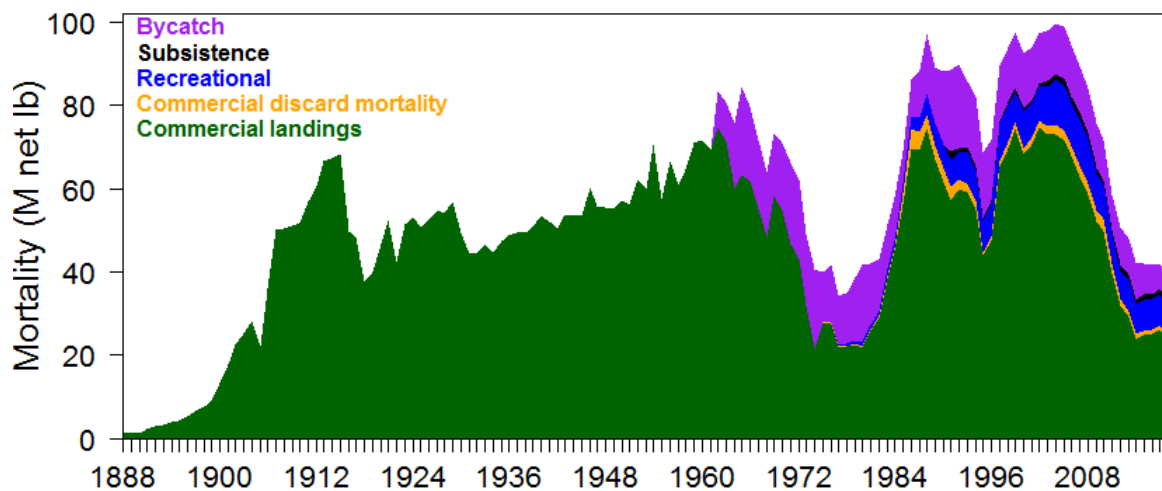


FIGURE 2. Summary of estimated historical mortality by source (colors), 1888-2018.

2018 Fishery and IPHC fishery-independent setline survey (FISS) statistics

Coastwide commercial Pacific halibut fishery landings in 2018 were approximately 23.5 million pounds (~10,660 t), a low for the last decade. Bycatch mortality was estimated to be 6.1 million pounds in 2018 (~2,750 t)², the lowest level in the estimated time series, beginning with the arrival of foreign fishing fleets in 1962, and 99.8% of the magnitude estimated for 2017. The total recreational mortality was estimated to be 7.2 million pounds (~3,260 t), down 5% from 2017. Mortality from all sources in 2018 was estimated to be 38.7 million pounds (~17,570 t).

Data are initially compiled by IPHC Regulatory Area, and then aggregated to four biological Regions: Region 2 (Areas 2A, 2B, and 2C), Region 3 (Areas 3A, 3B), Region 4 (4A, 4CDE) and Region 4B and then coastwide (Figure 1). In addition to the aggregate mortality (including all sizes of Pacific halibut), the assessment includes data from both fishery dependent and fishery independent sources as well as auxiliary biological information, with the most spatially complete data available since the late-1990s. Primary sources of information for this assessment include modelled indices of abundance (**IPHC-2018-IM094-07**) from the IPHC's annual fishery-independent setline survey (FISS; in numbers and weight), commercial Catch-Per-Unit-Effort (weight), and biological summaries from both sources (length-, weight-, and age-composition data).

All data sources are reprocessed each year to include new information from the terminal year, as well as any additional information for or changes made to the entire time-series. For 2018, additional data included: a revised index of abundance reflecting the FISS sampling and expansion and space-time modelling of these data conducted in 2018, logbook records from the 2017-18 directed commercial fishery, as well as age-frequency observations from both sources. Since 2015, individual Pacific halibut weights collected during port sampling of commercial fishery landings are used to describe the commercial fishery. (1993-97 and 2017). All mortality estimates (including changes to the existing time-series were new estimates have become available) were extended to include 2018. All available information was finalized on 9 November 2018 in order to provide adequate time for analysis and modeling. As has been the case in all years, some data are incomplete (i.e. commercial fishery logbook and age information), or include projections for the remainder of 2017 (i.e. mortality estimates for ongoing fisheries or for fisheries where final estimation is still pending).

The 2018 FISS detailed a coastwide aggregate NPUE (modelled via the space-time methodology) which was showed a second consecutive year of decrease, down 7% from 2017, with individual Biological Regions ranging from a 6% increase (Region 4B) to a 15% decrease (Region 2; Figure 3). The WPUE of legal (O32) Pacific halibut, the most comparable metric to observed commercial fishery catch rates was 5% lower than the 2017 estimate at the coastwide level, constituting the lowest value in the time series. Individual IPHC Regulatory Areas varied from a 12% increase (Regulatory Area 4B) to a 19% decrease (Regulatory Area 2C; Figure 4). The FISS sampling associated with the expansion in Region 2 (Regulatory Areas 2A, 2B, and 2C) revised the estimated relative catch-rates in this region compared to the rest of the coast, and reduced the variability about the estimates by approximately 48%.

² The IPHC receives preliminary estimates of the current year's bycatch mortality in from the NOAA-Fisheries National Marine Fisheries Service Alaska Regional Office, Northwest Fisheries Science Center, and Fisheries and Oceans Canada in late October.

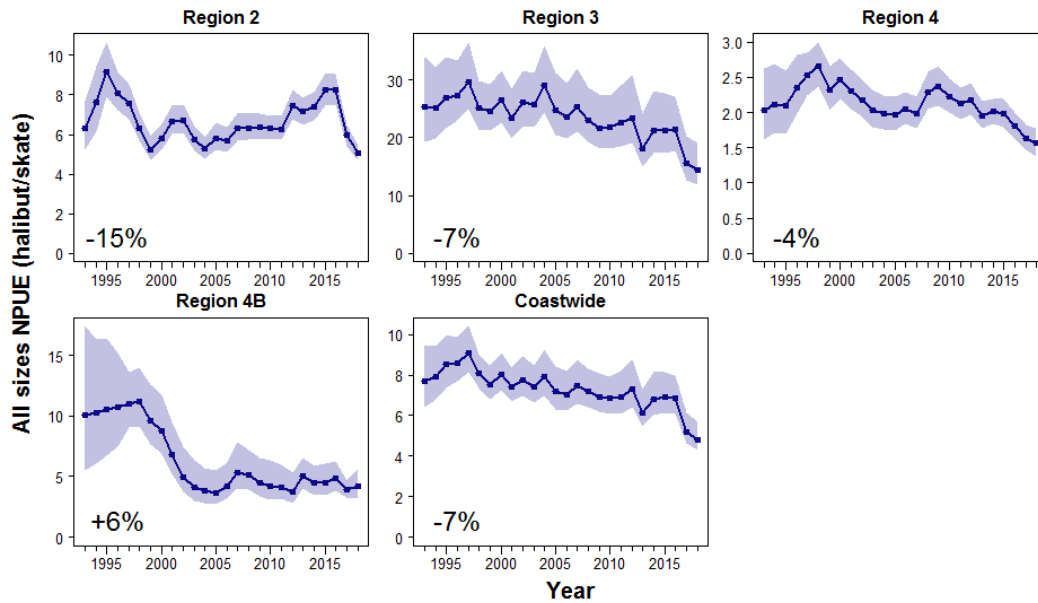


FIGURE 3. Trends in FISS NPUE by Biological Region, 1993-2018. Percentages indicate the change from 2017 to 2018. Shaded zones indicate approximate 95% credible intervals.

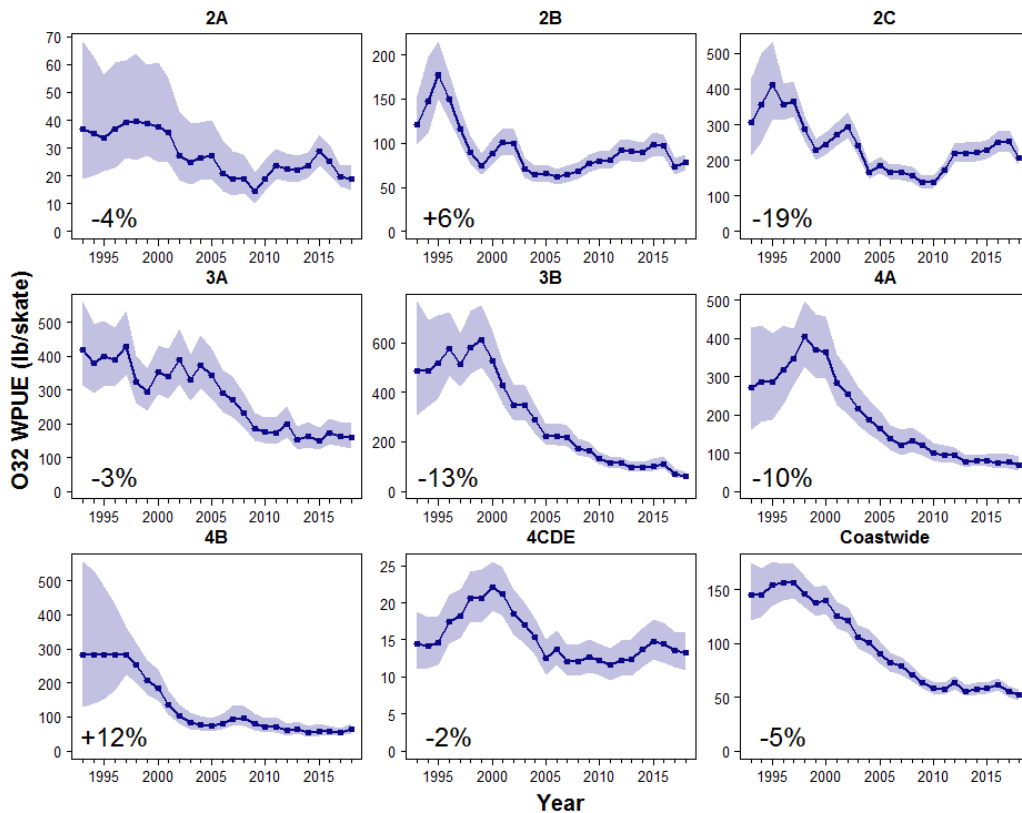


FIGURE 4. Trends in FISS legal (O32) WPUE by IPHC Regulatory Area, 1993-2018. Percentages indicate the change from 2017 to 2018. Shaded zones indicate approximate 95% credible intervals.

Commercial fishery WPUE (based on extensive, but incomplete logbook records available for this assessment) decreased 11% at the coastwide level with most fisheries, gears and areas decreasing from the 2017 estimates. A bias correction for each IPHC Regulatory Area based on the last six years of resulting from additional logbooks available after the assessment deadline in early November resulted in an estimate of a 13% decrease coastwide and negative trends for all Regulatory Areas except Area 2A (+5%) and 4B (+2%). In addition to reporting tribal and non-tribal commercial fishery trends in Regulatory Area 2A separately, catch-rates reported for snap gear and fixed-hook gear are also delineated for comparison (Figure 5).

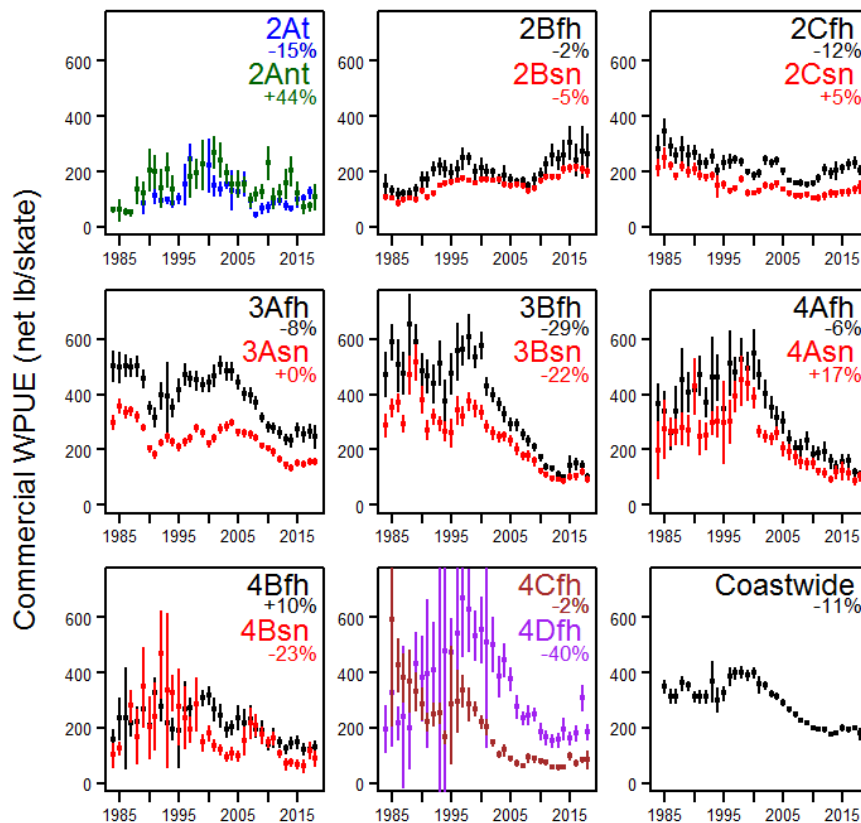


FIGURE 5. Trends in commercial fishery WPUE by Regulatory Area and fishery or gear, 1984-2018. The tribal fishery in 2A is denoted by “2At”, nontribal by “2Ant”, fixed hook catch rates by “fh” and snap gear catch rates by “sn” for IPHC Regulatory Areas 2B-4D. Percentages indicate the change from 2017 to 2018 uncorrected for bias due to incomplete logbooks (see text above). Vertical lines indicate approximate 95% confidence intervals.

Biological information from both the commercial fishery and FISS continue to show the 2005 year-class as the largest contributor (in number) to the fish encountered. Relatively weak cohorts have been observed in the age-frequency data from 2006-10. In 2018, the FISS encountered an increased number of 6-7 year-old Pacific halibut (the 2011 and 2012 year-classes), although the apparent strength of these cohorts varied spatially. At the coastwide level, individual size-at-age continues to be very low relative to the rest of the time-series and there has been little apparent change over the last several years.

Biological stock distribution

Trends over the last five years indicate that population distribution (measured via all Pacific halibut captured on the FISS) has been relatively stable among biological Regions (Figure 6, Table 1), with approximately half of the stock occurring in Region 3, one quarter in Region 2 and one quarter in Regions 4 and 4B. Both Regions 4 and 4B appear to be increasing slowly over this period. Over a decadal time-period (setline survey data prior to 1993 is insufficient to provide stock distribution estimates) there has been an increasing proportion of the coastwide stock occurring in Region 2 and a decreasing proportion occurring in Region 3. It is unknown to what degree either of these periods corresponds to historical distributions (before the mid-1990s) or to the average distribution likely to occur in the absence of fishing mortality. In 2018, the proportion of the stock estimated to be located in Region 2 decreased, and all other Regions increased.

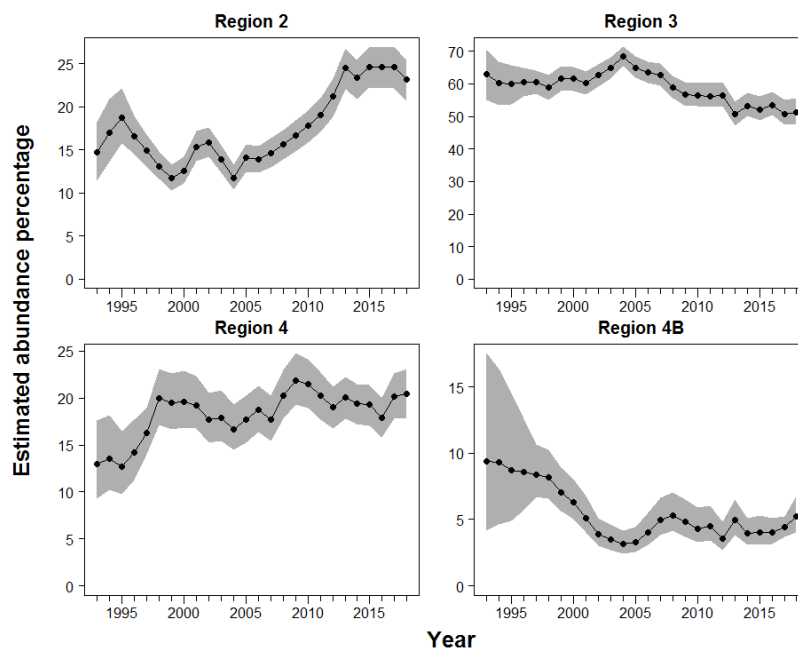


FIGURE 6. Estimated stock distribution (1993-2017) based on setline survey catch of O32 (black series) and all sizes (blue series) of Pacific halibut. Shaded zones indicate approximate 95% credible intervals.

TABLE 1. Recent regional stock distribution estimates based on modelling of all Pacific halibut captured by the IPHC fishery-independent setline survey.

Year	Region 2 (2A, 2B, 2C)	Region 3 (3A, 3B)	Region 4 (4A, 4CDE)	Region 4B
2014	23.4%	53.3%	19.4%	4.0%
2015	24.6%	52.1%	19.3%	4.0%
2016	24.6%	53.5%	17.9%	4.0%
2017	24.6%	50.8%	20.2%	4.4%
2018	23.1%	51.2%	20.4%	5.2%

STOCK ASSESSMENT

Consistent with the analyses from 2015-17, this stock assessment is implemented using the generalized software stock synthesis (Methot Jr and Wetzel 2013). The analysis consists of an ensemble of four equally weighted models: two long time-series models, reconstructing historical dynamics back to the beginning of the modern fishery, and two short time-series models incorporating data only from 1996 to the present, a time-period for which estimates of all sources of mortality and survey indices are available for all regions. For each time-series length, there are two models: one fitting to coastwide aggregate data, and one fitting to data disaggregated into the four geographic regions. This combination of models includes uncertainty in the form of alternative hypotheses about several important axes of uncertainty, including: natural mortality rates (estimated in the long time-series models, fixed in the short time-series models), environmental effects on recruitment (estimated in the long time-series models), the stock-recruitment relationship (specified in the long time-series models, freely estimated in the short time-series models), and other model parameters.

As has been the case since 2012, the results of this stock assessment are based on the approximate probability distributions derived from the ensemble of models, thereby incorporating the uncertainty within each model (parameter or estimation uncertainty) as well as the uncertainty among models (structural uncertainty). This approach reduces the potential for abrupt changes in management quantities as improvements and additional data are added to individual models, and provides a more realistic perception of uncertainty than any single model, and therefore a stronger basis for risk assessment. For 2018, the four models were again equally weighted; work-to-date on retrospective and predictive performance continues to suggest that each can be considered approximately equally plausible. Within-model uncertainty from each model was propagated through to the ensemble results via the maximum likelihood estimates and an asymptotic approximation to their variance. Point estimates in this stock assessment correspond to median values from the ensemble: with the simple probabilistic interpretation that there is an equal probability above or below the reported value.

BIOMASS AND RECRUITMENT TRENDS

The results of the 2018 stock assessment indicate that the Pacific halibut stock declined continuously from the late 1990s to around 2011 (Figure 7). That trend is estimated to have been largely a result of decreasing size-at-age, as well as somewhat weaker recruitment strengths than those observed during the 1980s. Since the estimated female spawning biomass (SB) stabilized near 190 million pounds (~86,200 t) in 2011, the stock is estimated to have increased gradually to 2016. The SB at the beginning of 2019 is estimated to be 199 million pounds (~90,300 t), with an approximate 95% confidence interval ranging from 125 to 287 million pounds (~56,700-130,200 t; Figure 8). Comparison with previous stock assessments indicates that the 2017 results are very close to estimates from the 2012 through 2017 assessments, all of which lie very close to the median estimate (Figure 9.). The 2018 SB estimate from the 2018 stock assessment is only 1% larger the estimate from the 2017 stock assessment. However, the uncertainty is larger as the effects of the revised time-series in Region 2 influenced each of the individual models differently, and resulted in a greater difference in the magnitude of the terminal year's estimated spawning biomass.

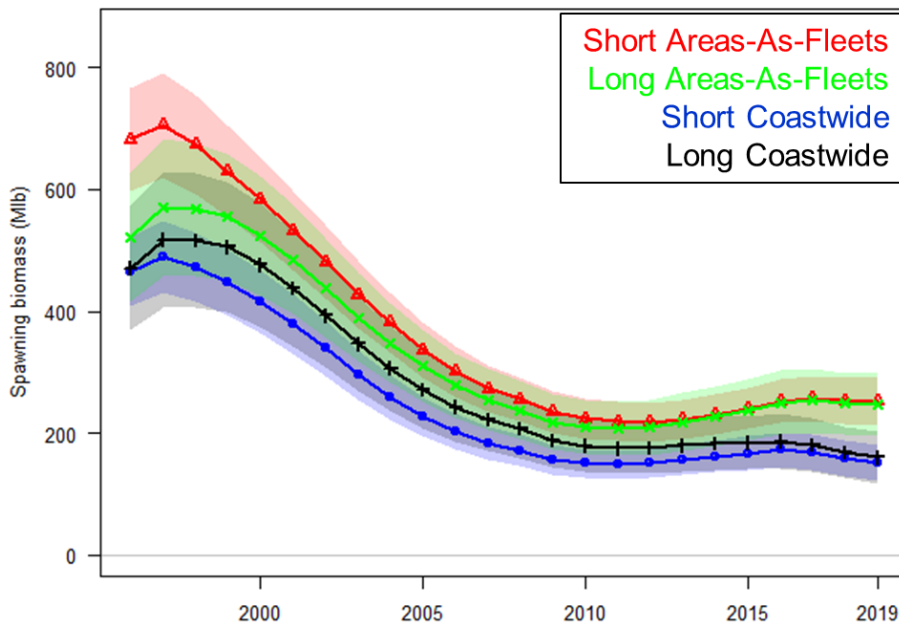


FIGURE 7. Estimated spawning biomass trends (1996-2019) based on the four individual models included in the 2018 stock assessment ensemble. Series indicate the maximum likelihood estimates; shaded intervals indicate approximate 95% credible intervals.

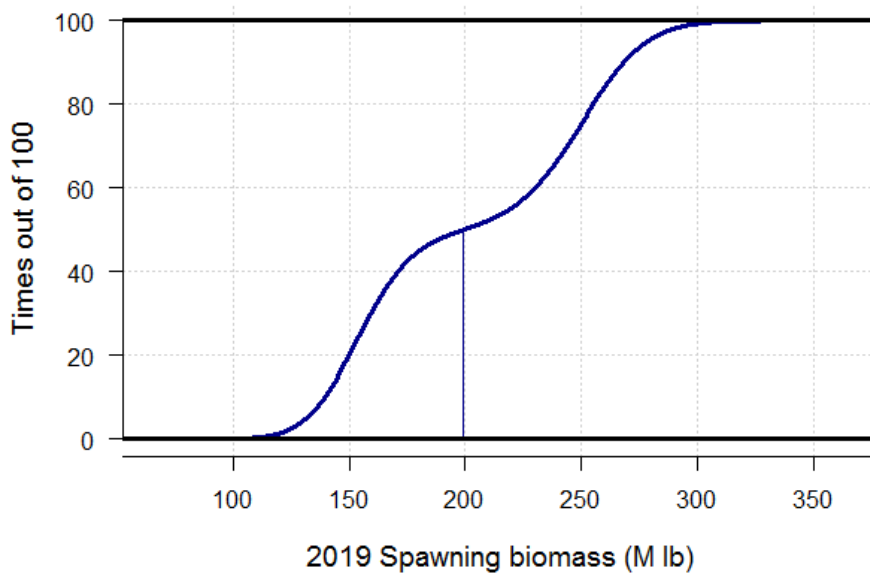


FIGURE 8. Cumulative distribution of the estimated spawning biomass at the beginning of 2019. Curve represents the estimated probability that the biomass is less than or equal to the value on the x-axis; vertical line represents the median (199 million pounds; ~90,300 t).

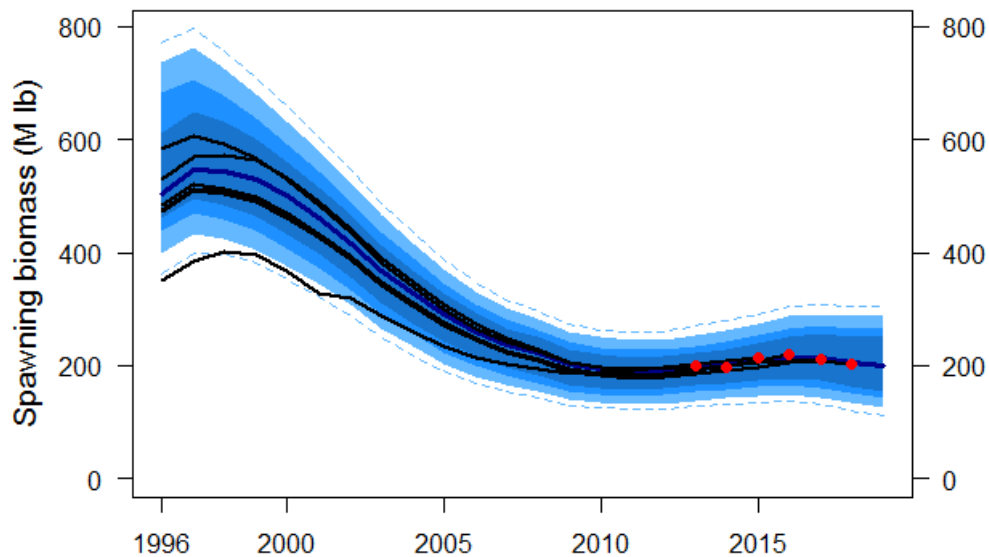


FIGURE 9. Retrospective comparison among recent IPHC stock assessments. Black lines indicate estimates of spawning biomass from assessments conducted from 2012-2017 with the terminal estimate shown as a point, the shaded distribution denotes the 2018 ensemble: the dark blue line indicates the median (or “50:50 line”) with an equal probability of the estimate falling above or below that level; colored bands moving away from the median indicate the intervals containing 50/100, 75/100, and 95/100 estimates; dashed lines indicating the 99/100 interval.

Based on the two long time-series models, average Pacific halibut recruitment is estimated to be higher (70 and 56% for the coastwide and AAF models respectively) during favorable Pacific Decadal Oscillation (PDO) regimes, a widely used indicator of productivity in the north Pacific. Historically, these regimes included positive conditions prior to 1947, poor conditions from 1947-77, positive conditions from 1978-2006, and poor conditions from 2007-13. Annual averages from 2014 through October 2018 have been positive; however, many other environmental indicators, current and temperature patterns have been anomalous relative to historical periods and therefore historical patterns of productivity related to the PDO may not be relevant to the most recent few years. Pacific halibut recruitment estimates show the largest recent cohorts in 1999 and 2005. Cohorts from 2006 through 2010 are estimated to be smaller than those from 1999-2005 which results in a high probability of decline in both the stock and fishery yield as these recruitments become increasingly important to the age range over which much of the harvest and spawning takes place. Based on age data from the 2018 survey, this assessment estimated the 2011 and 2012 year-classes to be similar to those in 2000-04, and higher than estimated in previous assessments, which resulted in a reduction in fishing intensity estimated for 2018 and projected for the next several years.

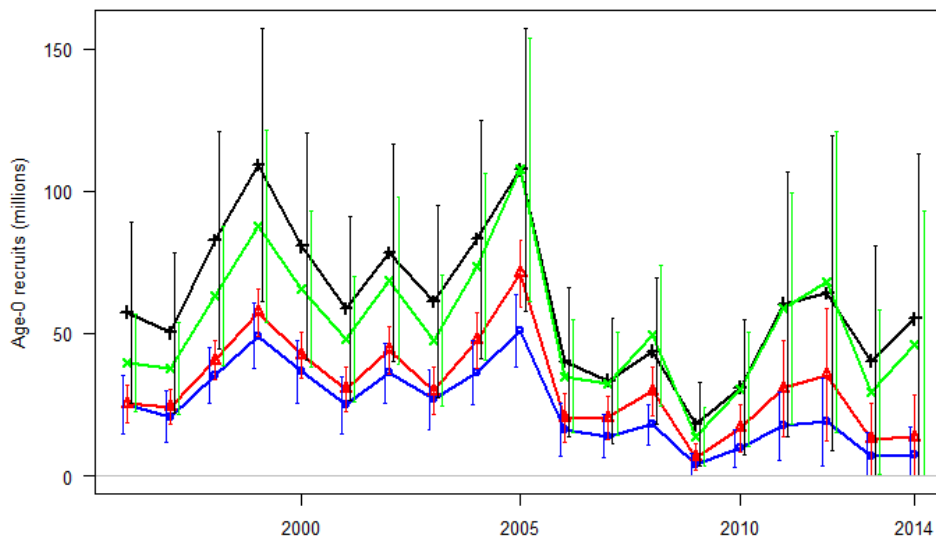


FIGURE 10. Estimated age-0 recruitment trends (1996-2014) based on the four individual models included in the 2018 stock assessment ensemble. Series indicate the maximum likelihood estimates; vertical lines indicate approximate 95% credible intervals.

HARVEST POLICY AND OTHER REFERENCE POINTS

A comparison of the median 2019 ensemble SB to reference levels specified by the IPHC's interim management procedure suggests that the stock is currently at 43% of unfished levels (approximate 95% credible range = 27-63%). The probability that the stock is below the $SB_{30\%}$ level is estimated to be 11%, with less than a 1% chance that the stock is below $SB_{20\%}$ (Table 2). Consistent with the interim management procedure (while improvements are ongoing via the MSE process), estimates of spawning biomass are compared to equilibrium values representing poor recruitment regimes and relatively large size-at-age.

Alternative reference points include the spawning biomass estimated to have occurred at the lowest point in the historical time-series (1974-78), as well as the spawning biomass that would be estimated to occur at present (given recent recruitment and biology) in the absence of fishing (dynamic SB_0 ; **IPHC-2018-IM094-12**). The two long time-series models provide a comparison with SB levels estimated to have occurred during the historically low stock sizes of the 1970s: the AAF model suggests that recent stock sizes are at 114% of those levels, and the coastwide model at 185%. The estimates of current spawning biomass relative to the dynamic reference point range from 27-43% among the four stock assessment models, with an average value of 37%. Relatively large differences among models reflect both the uncertainty in historical dynamics as well as the importance of spatial patterns in the data and population processes, for which all of the models represent only simple approximations.

TABLE 2. Status summary of Pacific halibut in the IPHC Convention Area at the end of 2018.

Indicators	Values	Trends	Status
Total mortality 2018: Retained mortality 2018: Average mortality 2014-18:	38.74 Mlbs, 17,572 t ¹ 31.81 Mlbs, 14,427 t 41.39 Mlbs, 18,772 t	Mortality decreased from 2017 to 2018	2018 MORTALITY NEAR 100-YEAR LOW
SPR ₂₀₁₈ : P(SPR<46%): P(SPR<limit):	49% (28-62%) ² 34% Limit not specified	Fishing intensity decreased from 2017 to 2018	FISHING INTENSITY BELOW REFERENCE LEVEL³
SB ₂₀₁₉ (Mlb): SB ₂₀₁₉ /SB ₀ : P(SB ₂₀₁₉ <SB ₃₀): P(SB ₂₀₁₉ <SB ₂₀):	199 Mlbs (125–287) 43% (27-63%) 11% <1%	SB decreased from 2017 to 2018	NOT OVERFISHED⁴
Biological stock distribution	See Table 1 and Figure 6	Distribution stable 2014-18	REGION 2 ABOVE, REGION 3 BELOW HISTORICAL VALUES

¹ Weights in this document are reported as 'net' weights, head and guts removed; this is approximately 75% of the round (wet) weight).

² Ranges denote approximate 95% credible intervals from the stock assessment ensemble.

³ Status determined relative to the IPHC's interim reference Spawning Potential Ratio level of 46%.

⁴ Status determined relative to the IPHC's interim management procedure biomass limit of SB₂₀%.

MAJOR SOURCES OF UNCERTAINTY

This stock assessment includes uncertainty associated with estimation of model parameters, treatment of the data sources (e.g. short and long time-series), natural mortality (fixed vs. estimated), approach to spatial structure in the data, and other differences among the models included in the ensemble. This results in a broad representation of uncertainty in stock levels and projections relative to analyses for many other species. Although this is an improvement over the use of a single assessment model, there are important sources of uncertainty that are not included.

The 2018 stock assessment results highlight two important sources of current uncertainty: the relative strength of the 2011 and 2012 year-classes, and the scale of the recent biomass. The combination of new data available in 2018 and different responses among the models comprising the stock assessment ensemble have resulted in greater uncertainty in current and projected biomass and fishing intensity than seen in recent years. Specifically, this assessment draws inference regarding the 2011 and 2012 year-classes largely from the age data collected in the 2018 FISS; these estimates will become more certain with additional years of data. The scale of the biomass was positively affected by the FISS expansion data collected in 2018, translated through the space-time modeling, and resulting in much greater precision of the

historical time-series. Although all future setline surveys will improve our understanding of stock trends, the expansion in 2019 will complete the coastwide effort and will likely have a greater effect on the historical time-series than subsequent surveys.

As has been the case in previous assessments, there are other uncertainties in the modelling and current understanding of the Pacific halibut resource. The sex-ratio of the commercial catch (not sampled due to the dressing of fish at sea), serves to set the scale of the estimated female abundance in tandem with assumptions regarding natural mortality. It is anticipated that genetic analysis of all Pacific halibut sampled from the commercial landings in 2017 will allow an estimate of the sex-ratio at age from 2017 to be available for the 2019 stock assessment. Although it will likely take several years to generate enough information on the sex ratio of the landings to strongly inform the stock assessment models, this represents a crucial step toward addressing this source of uncertainty for future stock analyses. The uncertainty in the sex-ratio of the historical time-series will remain. The treatment of spatial dynamics and movement rates among Regulatory Areas, which are represented via the coastwide and AAF approaches, has large implications for the current stock trend, as evidenced by the different results among the four models comprising the stock assessment ensemble. Further, movement rates for adult and younger Pacific halibut (roughly ages 0-6, which were not well-represented in the PIT-tagging study), particularly to and from Region 4 (and especially to and from the Eastern Bering Sea), are important and uncertain components in understanding and delineating between the distribution of recruitment among biological Regions, and other factors influencing stock distribution and productivity. Additional important contributors to assessment uncertainty (and potential bias) include factors influencing recruitment, size-at-age, and some estimated components of the fishery removals. The link between Pacific halibut recruitment strengths and environmental conditions remains poorly understood, and although correlation with the Pacific Decadal Oscillation is currently useful, it may not remain so in the future. Therefore, recruitment variability remains a substantial source of uncertainty in current stock estimates due to the lack of mechanistic understanding and the lag between birth year and direct observation in the fishery and survey data (6-10 years). Reduced size-at-age relative to levels observed in the 1970s has been the most important driver of recent decade's stock trends, but its cause also remains unknown. The historical record suggests that size-at-age changes relatively slowly; therefore, although projection of future values is highly uncertain, near-term values are unlikely to be substantially different than those currently observed. Data suggest that the decreasing trend in size-at-age has slowed and coastwide values have been relatively stable over the last decade. Like most stock assessments, mortality estimates are assumed to be accurate. Therefore uncertainty due to bycatch mortality estimation (observer sampling and representativeness), discard mortality rates, and any other unreported sources of removals in either directed or non-directed fisheries (e.g., whale depredation) could create bias in this assessment. Ongoing research and data collection programs on these topics may help to inform our understanding of these processes in the long-term, but in the near future it appears likely that a high degree of uncertainty in both stock scale and trend will continue to be an integral part of the annual management process.

OUTLOOK

Stock projections were conducted using the integrated results from the stock assessment ensemble, summaries of the 2018 directed fisheries and other sources of mortality. The harvest decision table (Table 3) provides a comparison of the relative risk (in times out of 100), using stock and fishery metrics (rows), against a range of alternative harvest levels for 2019 (columns).

The block of rows entitled “Stock Trend” provides for evaluation of the risks to short-term trend in spawning biomass, independent of all harvest policy calculations. The remaining rows portray risks relative to the spawning biomass reference points (“Stock Status”) and fishery performance relative to the approach identified in the interim management procedure. The alternatives (columns) provided include several coarsely spaced levels of mortality intended for evaluation of stock dynamics including:

- No mortality (useful to evaluate the stock trend due solely to population processes),
- A 10 million pound (~4,500 t) 2019 Total Constant Exploitation Yield (TCEY³)
- A 50 million pound (~22,700 t) 2019 TCEY
- A 60 million pound (~27,200 t) 2019 TCEY
- The mortality consistent with the “Reference” SPR ($F_{46\%}$) level.
- The mortality consistent with the catch limits set in 2018 (“*status quo*”).

A grid of alternative TCEY values corresponding to SPR values from 40% to 50% (encompassing both the Reference and *status quo* levels) is also provided.

For each row of the decision table, the total mortality of all sizes and from all sources, the coastwide TCEY and the associated level of fishing intensity projected for 2019 (median value with the 95% credible interval below; measured via the Spawning Potential Ratio) are reported. Fishing intensity reflects the relative reduction in equilibrium (long-term) spawning biomass per recruit from all sources and sizes of removals, reported as $F_{x\%}$, (where x = the SPR) for comparison to other management processes in both nations where harvest rate targets and limits are commonly reported in these units. Additional alternatives (columns), as well as harvest decision tables created around a differing “reference” SPR can be produced during the IPHCs annual process as needed, such that all 2019 management alternatives under consideration can be compared in terms projected mortality and risk.

The stock is projected to decrease over the period from 2019-21 for all TCEYs greater than 20 million pounds (~9,070 t), corresponding to an SPR of 64% (a 51/100 probability of decrease from 2019 to 2021; Table 3, Figure 11); that result is an indication of near-term projected surplus production. At the *status quo* TCEY (37.2 million lb, ~16,900 t), which corresponds to an estimated SPR of 48% the probability of at least a 5% decrease in stock size increases from 30% (2020) to 79% (2022). At the reference level (and SPR of 46%) those probabilities increase to 37 and 86%. The reference level corresponds to a 87/100 (87%) chance of stock decline through 2020. There is a one third chance (<34/100) that the stock will decline below the threshold reference point (SB30%) in projections for all the levels of fishing intensity up to and SPR of 40% evaluated over three years.

³ The TCEY corresponds approximately to the mortality comprised of Pacific halibut greater than 26 inches (66 cm) in length.

TABLE 3. Harvest decision table for 2018. Columns correspond to yield alternatives and rows to risk metrics. Values in the table represent the probability, in “times out of 100” (or percent chance) of a particular risk.

2019 Alternative		No removals		Status quo				Reference SPR=46%								F _{39%} F _{34%}	
		0.0	11.7	36.1	37.6	39.0	40.4	41.8	43.1	44.3	45.5	46.8	48.3	49.9	51.8	61.8	
Total mortality (M lb)		0.0	10.0	34.3	35.8	37.2	38.6	40.0	41.3	42.5	43.7	45.0	46.5	48.1	50.0	60.0	
TCEY (M lb)		0.0	10.0	34.3	35.8	37.2	38.6	40.0	41.3	42.5	43.7	45.0	46.5	48.1	50.0	60.0	
2019 Fishing intensity		F _{100%}	F _{78%}	F _{50%}	F _{49%}	F _{48%}	F _{47%}	F _{46%}	F _{45%}	F _{44%}	F _{43%}	F _{42%}	F _{41%}	F _{40%}	F _{39%}	F _{34%}	
Fishing intensity interval		--	56-87%	28-64%	27-63%	26-62%	25-61%	25-60%	24-59%	23-59%	23-58%	22-57%	22-56%	21-55%	17-54%	17-49%	
Stock Trend (spawning biomass)	in 2020	is less than 2019	1	3	73	77	81	84	87	90	92	93	95	96	97	98	>99
		is 5% less than 2019	<1	<1	22	26	30	34	37	39	41	43	45	48	50	54	78
	in 2021	is less than 2019	1	7	87	90	93	94	96	97	98	98	99	99	99	>99	>99
		is 5% less than 2019	<1	1	53	57	61	65	69	73	77	80	83	87	90	93	99
	in 2022	is less than 2019	1	12	91	93	94	96	97	98	98	99	99	99	>99	>99	>99
		is 5% less than 2019	<1	3	71	76	79	83	86	88	90	92	93	95	96	97	>99
Stock Status (Spawning biomass)	in 2020	is less than 30%	5	7	16	17	17	18	18	19	19	20	20	21	21	22	25
		is less than 20%	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1
	in 2021	is less than 30%	3	7	23	24	25	25	26	27	27	27	28	29	29	30	33
		is less than 20%	<1	<1	1	1	1	1	1	2	2	2	3	3	4	4	10
	in 2022	is less than 30%	2	8	28	28	29	29	30	30	31	31	32	33	33	35	41
		is less than 20%	<1	<1	4	4	5	6	7	8	9	10	12	13	15	17	24
Fishery Trend (TCEY)	in 2020	is less than 2019	0	<1	34	40	45	51	56	60	63	66	69	73	77	81	95
		is 10% less than 2019	0	<1	27	29	33	37	42	47	51	54	58	62	66	70	95
	in 2021	is less than 2019	0	<1	41	46	51	56	60	64	67	70	73	77	81	85	97
		is 10% less than 2019	0	<1	31	35	39	44	49	53	56	59	63	66	71	75	97
	in 2022	is less than 2019	0	<1	45	50	54	58	62	66	69	72	76	79	83	87	98
		is 10% less than 2019	0	<1	36	40	45	49	53	56	60	62	66	69	73	77	98
Fishery Status (Fishing intensity)	in 2019	is above F _{46%}	0	<1	30	35	40	46	50	56	59	62	65	69	72	76	92

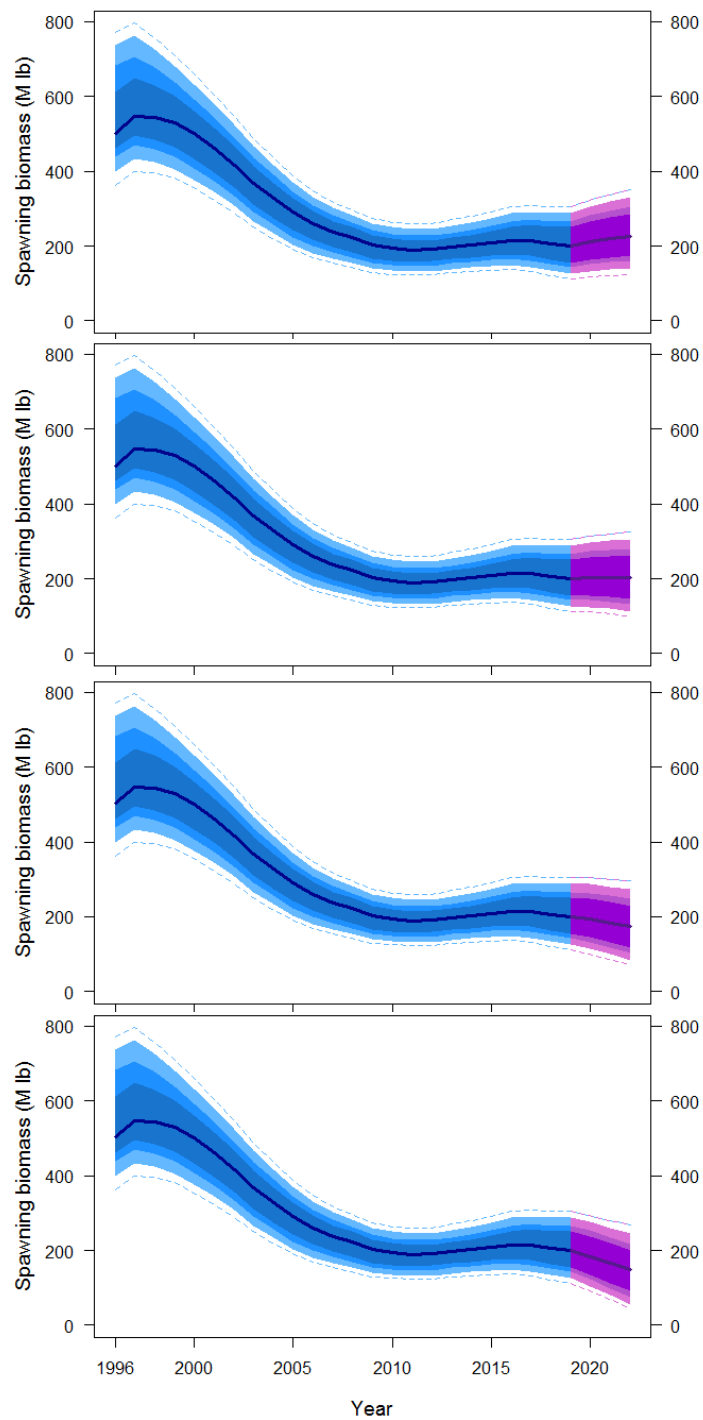


FIGURE 11. Three-year projections of stock trend under alternative levels of mortality: no fishing mortality (upper panel), a TCEY of 20 million lb (~9,070 t; second panel), the Reference SPR=46% (40 million pounds, ~18,150 t; third panel) and a TCEY of 60 million pounds (~27,200 t; lower panel).

SCIENTIFIC ADVICE

Sources of mortality: In 2018, total mortality was near the lowest values estimated over the last 100 years (34 million pounds; ~15,420 t), down from 2017. In 2018, 82% of the total mortality was retained compared to 83% in 2017.

Fishing intensity: The 2018 mortality from all sources corresponds to a point estimate of SPR = 49% (there is a 34% chance that fishing intensity exceeded the IPHC's reference level of 46%; Table 2). The Commission does not currently have a coastwide limit fishing intensity reference point.

Stock status (spawning biomass): Current female spawning biomass is estimated to be 199 million pounds (90,300 t), which corresponds to an 11% chance of being below the IPHC threshold (trigger) reference point of SB_{30%}, and less than a 1% chance of being below the IPHC limit reference point of SB_{20%}. Therefore, the stock is considered to be '**not overfished**'. Projections indicate that the reference fishing intensity is likely to result in declining biomass levels in the near future (Figure 11).

Stock distribution: Regional stock distribution has been stable within estimated credibility intervals over the last five years (Figure 6). Region 2 currently represents a greater proportion, and Region 3 a lesser proportion of the coastwide stock than observed in previous decades.

RESEARCH PRIORITIES

Research priorities for the stock assessment and related analyses can be delineated into two broad categories: gaps in biological understanding and technical development.

Biological understanding: During the last several years, the IPHC Secretariat has developed a comprehensive five-year research program (IPHC-2018-IM094-10). The development of these research priorities has been closely tied to the needs of the stock assessment and harvest strategy policy analyses, such that each of the IPHC's ongoing projects (e.g. determining the sex-ratio of the commercial landings, updating estimates of the maturity schedule for Pacific halibut, better understanding of recruitment processes and stock structure, etc.) will provide data, and hopefully knowledge, about key biological and ecosystem processes that can then be incorporated directly into analyses supporting the management of Pacific halibut.

Technical development: The development of the IPHC's stock assessment, Management Strategy Evaluation (MSE), and harvest strategy policy methods is ongoing, and responds to new developments in the data or analyses necessary each year. New approaches are tested, reported to the IPHC's Scientific Review Board (SRB; generally in June), refined (and reviewed again in October, as needed), and ultimately incorporated in the development of the best scientific information available for the annual management process. During 2019, a full stock assessment analysis, including evaluation of the data processing, modelling methods and ensemble components will undergo independent peer review via the SRB. Technical research priorities for that review include:

- 1) Maintaining consistency and coordination between MSE, and stock assessment data, modelling and methodology.

- 2) Continued refinement of the ensemble of models used in the stock assessment.
- 3) Continued development of weighting approaches for models included in the ensemble, potentially including fit to the survey index of abundance, retrospective, and predictive performance.
- 4) Exploration of methods for better including uncertainty in discard mortality and bycatch estimates in the assessment (now evaluated only via alternative catch tables or model sensitivity tests) in order to better include these sources uncertainty in the decision table.
- 5) Bayesian methods for fully integrating parameter uncertainty may provide improved uncertainty estimates within the models contributing to the assessment, and a more natural approach for combining the individual models in the ensemble.

RECOMMENDATION/S

That the Commission:

- a) **NOTE** paper IPHC-2018-IM094-08 Rev_1 which provides a summary of data, the stock assessment and the harvest decision table for 2019.



Mortality projections - Using the IPHC mortality projection tool

PREPARED BY: IPHC SECRETARIAT (I. STEWART, D. WILSON; 12, 18 OCTOBER; 20 NOVEMBER 2018)

PURPOSE

To provide an introduction and usage guide for the IPHC's web-based mortality projection tool (<https://iphc.int/data/projection-tool>).

BACKGROUND

Each year, for the IPHC Interim and Annual Meetings, a large number of catch tables are produced which illustrate the projected mortality associated with various mortality limits proposed by the Commission and individual stakeholders.

In an attempt to provide greater transparency to all user groups, the IPHC Secretariat have developed a web-based, interactive tool to provide all participants in the process the ability to create alternative projection tables as is necessary for discussion and decision making, without having to rely directly on the IPHC Secretariat during peak information sharing periods.

In addition, alternative levels of projected bycatch are available as two options: 1) previous year's bycatch levels, and 2) full regulatory bycatch (i.e. maximum bycatch given Prohibited Species Catch limits and other restrictions combined with the previous year's bycatch for fisheries that do not have limits).

THE MORTALITY PROJECTION TOOL

The Tool is divided into five components:

- 1) Inputs
- 2) Summary results
- 3) Biological distribution
- 4) Detailed sector mortality information
- 5) Graphics

A brief description of each of these is provided below, noting all key features and any changes from previously available projection tables.

Inputs

The first section of the table provides the user with four places to input information (Fig. 1):

- 1) The unit of measurement¹.
- 2) The '*Coastwide distributed mortality limit*' (TCEY). This value represents the total of all mortality on the stock except bycatch of Pacific halibut less than 26 inches² ("U26"; 66cm).
- 3) The percent of the *Coastwide distributed mortality limit* (TCEY) assigned to each IPHC Regulatory Area. Although the percentages describing the distribution of the '*Coastwide distributed mortality limit*' among IPHC Regulatory Areas, are intended to sum to 100%, if they do not they are automatically rescaled so that the sum of the distributed mortality limits by IPHC Regulatory Area will exactly match the total input.

¹ Net weight represents the weight with the head and entrails removed; this is approximately 75% of the round (wet) weight.

² There is currently no survey with which to determine the stock distribution of Pacific halibut less than 26 inches, and these fish are capable of movement to other IPHC Regulatory Areas prior to entering the directed fisheries.

This is indicated to the user through red highlighting (instead of grey) appearing for the total.

- 4) The level of projected bycatch.

Inputs

Select weight units **Millions of net pounds**

Enter coastwide distributed mortality limit (TCEY) **40.00**

	2A	2B	2C	3A	3B	4A	4B	4CDE	Total	
Enter <u>distributed</u> mortality limit %	1.9%	12.3%	15.7%	40.9%	7.4%	5.5%	4.9%	11.5%	100.0%	
					Region 2		Region 3		Region 4	
Total by Region					29.9%		48.3%		17.0%	

Select bycatch option: **Previous year's bycatch**

Fig. 1. Example of the “Inputs” section of the mortality projection tool. Only the cells in yellow can be modified by the user.

Summary Results

From the user-defined inputs, the projected ‘Coastwide total mortality limit’ (all projected mortality³), and the Spawning Potential Ratio (SPR) are updated automatically (Fig. 2). These values can then be compared directly with the Decision Table for an evaluation of the relative risk associated with the input limits. The total mortality limit and the distributed mortality limit (TCEY) are then provided for each IPHC Regulatory Area.

Summary results

Projected coastwide SPR **46%**

	2A	2B	2C	3A	3B	4A	4B	4CDE	Total
Total mortality limits	0.78	4.93	6.26	16.74	3.09	2.32	1.96	5.72	41.78
Distributed mortality limits (TCEYs)	0.78	4.91	6.26	16.35	2.97	2.21	1.95	4.59	40.00

Fig. 2. Example of the “Summary” section of the mortality projection tool.

Biological Distribution

This section references the most recent stock distribution information by Biological Region. The distributed mortality limits for each Biological Region are provided for comparison with the biological stock distribution. These two values are then used to project a harvest rate by Biological Region, standardized such that Region 3 (Regulatory Areas 3A and 3B) is always equal to a value of 1.0⁴ and the other Regions (2, 4 and 4B) are relative to that value.

³ Mortality that is not subject to Catch Sharing Plans (CSPs) is projected to be equal to the most recent year of actual data; this includes subsistence, non-CSP recreational mortality, and bycatch mortality.

⁴ The harvest rates by Biological Region are relative, therefore the rates could be standardized to any Region and the choice to standardize to Biological Region 3 is arbitrary.

Detailed sector mortality information

This section provides the level of detail that has been historically reported in the annual mortality tables. It reflects the specific Catch Sharing Plans (CSPs) in place in Regulatory Areas 2A, 2B, 2C, 3A, and 4CDE allocating the mortality among fishery sectors and (for IPHC Regulatory Area 4CDE) among sub-Areas.

There are two changes to this table relative to the tables produced for and during the 2018 Annual Meeting (AM094):

- 1) Projected U26 directed commercial Pacific halibut discard mortality has been combined with O26 discard mortality. This change was agreed to during the AM094 and represents only a 0.1% addition to the TCEY.
- 2) Projected recreational discard mortality in IPHC Regulatory Area 2B has been moved from the FCEY to the non-FCEY section (with no change to the TCEY or calculation of the 85%:15% allocation in that agreement) in order to better reflect the details of that allocation agreement.

Graphics

This section provides a series of graphical results updated to reflect the inputs made by the user. These, or very similar, graphics have been previously available in as part of meeting documents and/or associated presentation material.

Fig. 3 uses previously calculated projections for a range of SPR values to illustrate the coastwide stock trend associated with the inputs to the sheet. Importantly, not all possible SPR values are available, so the closest value available is reported. The value reported above the figure is updated and should be checked to ensure it is consistent with the value reported in the "Inputs" section; all values associated with columns in the Decision table, as well as some additional values are available.

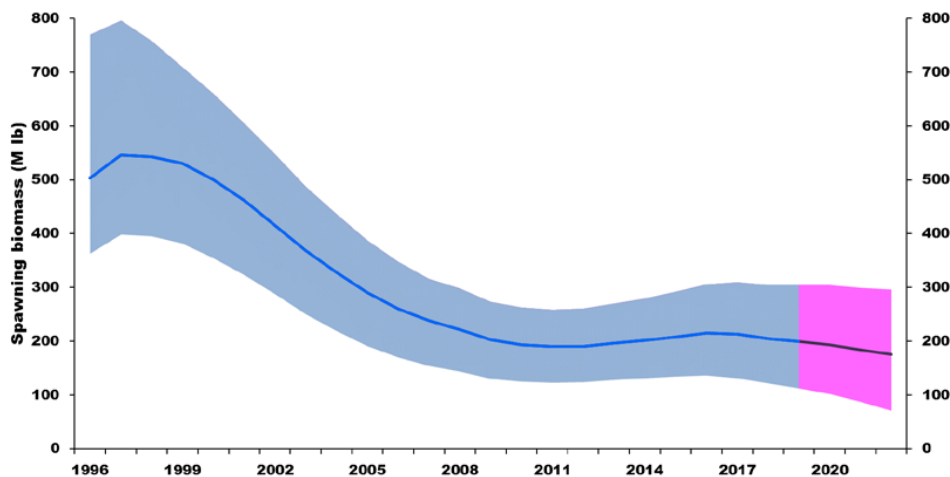


Fig. 3. Estimated (blue) and projected (pink) female spawning biomass, with an approximate 95% credible interval (shaded region) from the stock assessment ensemble.

Fig. 4. provides a comparison of the projected fishing intensity relative to recent estimates.

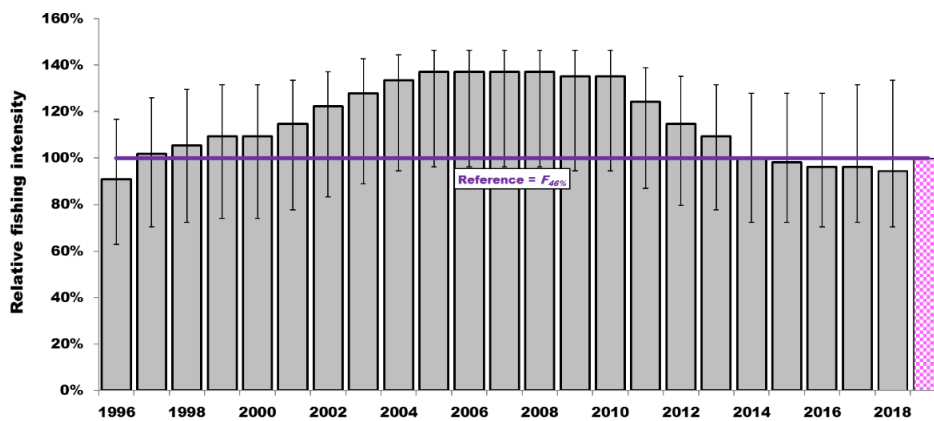


Fig. 4. Estimated (grey) and projected (hatched) fishing intensity relative to the SPR=46% ‘handrail’. Error bars (whiskers) represent an approximate 95% credible interval from the stock assessment ensemble.

Fig. 5 provides a graphical display of the relative harvest rates by Biological Region.

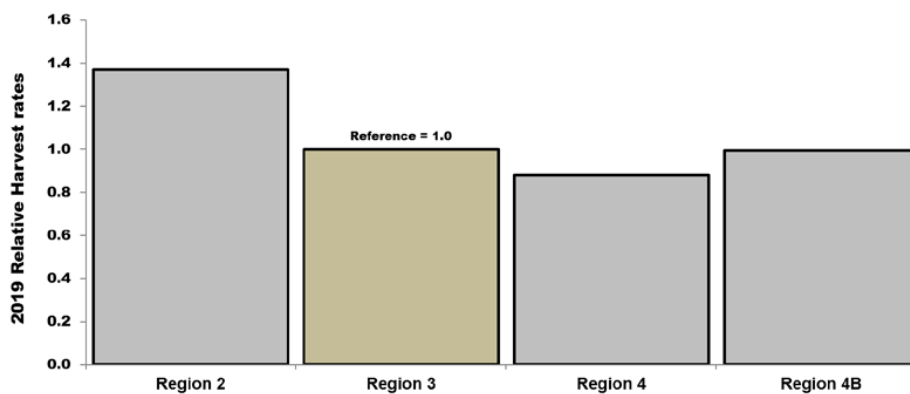


Fig. 5. Relative harvest rates, based on the IPHC fishery-independent setline survey and distributed mortality by Biological Region.

Fig. 6 and Fig. 7 provide the detailed CSP information (allocation) in both absolute values (millions of net pounds; Fig. 6) and relative values (percent of the projected mortality within each IPHC Regulatory Area; Fig. 7).

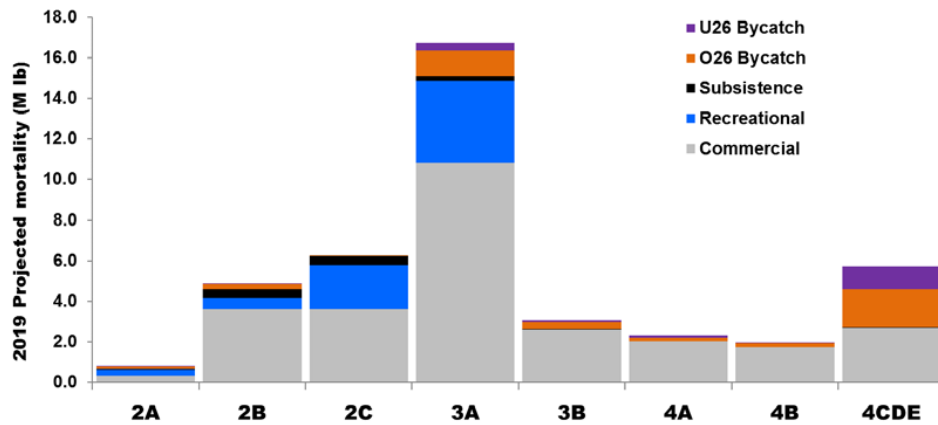


Fig. 6. Projected mortality by fishery sector and IPHC Regulatory Area.

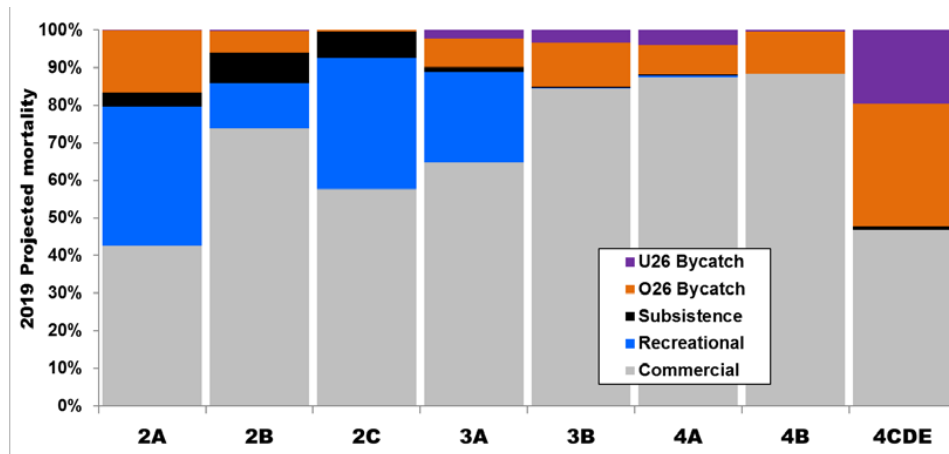


Fig. 7. Relative projected mortality by fishery sector within IPHC Regulatory Areas.

UPDATE SCHEDULE

The current tool (as of **20 November 2018**) uses the information available for the 94th Session of the IPHC Interim Meeting (IM094), with the default inputs set to match the space-time. This tool will be updated on 29 December 2018 and again in early January 2019, in order to include the final end-of-year 2018 mortality estimates from various fisheries, for use during the 95th Session of the IPHC Annual Meeting (AM095) in 2019.



IPHC 5-year Biological and Ecosystem Science Research Program: update

PREPARED BY: IPHC SECRETARIAT (J. PLANAS, 24 OCTOBER 2018)

PURPOSE

To provide the Commission with a description of the new and continuing research projects proposed by the IPHC Secretariat and contemplated within the Five-Year Biological and Ecosystem Science Research Plan.

BACKGROUND

Since its inception, the IPHC has had a long history of research activities devoted to describing and understanding the biology of the Pacific halibut (*Hippoglossus stenolepis*). At the present time, the main objectives of the Biological and Ecosystem Science Research Program at IPHC are to:

- 1) identify and assess critical knowledge gaps in the biology of the Pacific halibut;
- 2) understand the influence of environmental conditions; and
- 3) apply the resulting knowledge to reduce uncertainty in current stock assessment models.

The primary biological research activities at the IPHC that follow Commission objectives are identified and described in the [Five-Year Research Plan for the period 2017-21](#). These activities can be summarized in five broad categories: 1) Migration, 2) Reproduction, 3) Growth and Physiological Condition, 4) Discard Mortality Rates (DMRs) and Survival, and 5) Genetics and Genomics, and have been selected for their important management implications, as follows. The studies conducted on Migration are aimed at further understanding reproductive migration and identification of spawning times and locations as well as larval and juvenile dispersal. The studies conducted on Reproduction are aimed at providing information on the sex ratio of the commercial catch and to improve current estimates of maturity. The studies conducted on Growth are aimed at describing the role of some of the factors responsible for the observed changes in size-at-age and to provide tools for measuring growth and physiological condition in Pacific halibut. The proposed work on DMRs is aimed at providing updated estimates of DMRs in both the longline and the trawl fisheries. The studies conducted on Genetics and Genomics are aimed at describing the genetic structure of the Pacific halibut population and at providing the means to investigate rapid adaptive changes in response to fishery-dependent and fishery-independent influences.

In this document, we present an outline of the new and continuing projects proposed by the IPHC Secretariat for the coming year.

DISCUSSION

For FY2019, three new projects are proposed that cover specific research needs ([Appendix I](#)).

Project 2019-01 ("Integrating migration and genetics research to refine Pacific halibut population structure, distribution and movement") proposes performing studies to improve

our understanding of spawning site contributions to nursery areas in relation to year-class and recruit survival and strength, as well as of the relationship between nursery origin and adult distribution and abundance over temporal and spatial scales through the application of genetic, otolith microchemical approaches to address management-relevant questions on population structure, distribution and movement.

Project 2019-02 (“Whale detection methods relevant for Pacific halibut”) proposes testing electronic monitoring-based methods to detect whale presence in the directed longline Pacific halibut fishery. This study will be performed in conjunction with a Bycatch Reduction Engineering Program (BREP-NOAA)-funded study in which IPHC is a collaborating partner ([Appendix II](#)).

Project 2019-03 (“Adult Pacific halibut captive holding studies”) proposes performing studies on captive adult Pacific halibut to establish or validate measures or protocols required for other ongoing projects, such as (1) determining the permanence of individual tail markings for tracking individual movement rates, (2) calibrating measures of fat content for condition factor determinations and of stable isotope (C^{13} and N^{15}) ratios for inferring growth and dietary information and (3) calibrating O^{18} otolith signatures with environmental temperature.

In addition to the new projects proposed, thirteen continuing projects are in place. These include projects aimed at the development of tools for sex identification (**621.16**) and at producing accurate reproductive maturity estimations (**674.11**), projects monitoring the Pacific halibut population for mercury and *Ichthyophonus* contamination (**642.00**, **661.11**), projects conducting migration-related research involving the use of wire and satellite tagging, estimating larval abundance and distribution over time and oceanographic and environmental conditions information and tail imaging recognition (**650.21**, **650.22**, **670.11**, **675.11**), projects working on the identification of markers for growth-related studies (**673.14**) and on the relationship between temperature history and growth (**673.15**). Furthermore, continuing projects also include projects investigating condition factor indices in wire-tagged fish (**672.12**) and characterizing the discard mortality rates in the longline fishery (**672.13**) and, finally, conducting work related to the sequencing of the Pacific halibut genome (**673.13**) ([Appendix I](#)). An update on progress on continuing projects is provided below:

Project 621.16 (“Development of genetic sexing techniques”) has as its main objective the identification of molecular markers for sex in order to provide a genetic method for sex identification in settings in which direct observations of sex cannot be obtained (i.e. fish at commercial offloads). In addition, this project intended to provide genetic validation of the physical marking of sex at sea (Project 621.15, IPHC-2017-WM2017-10). Three single nucleotide polymorphisms (SPNs) were identified to be associated with sex and molecular assays were developed for two of the identified SNPs. These assays were estimated to have an accuracy of 97.5% in a comparison between assayed sex and visually-determined sex in a sample of 199 fish, based on an assumption that no process or recording errors existed within the visually-determined data (Drinan et al., 2018). The assay was subsequently used to evaluate the accuracy of commercial sex-marking at sea and is now being applied to provide sex information from biological samples (i.e. fin clips) collected from sampled fish from the commercial catch.

Projects 642.00 (“Assessment of mercury and other contaminants”) and **661.11 (“Ichthyophonus incidence monitoring”)** represent the continuation of projects monitoring the prevalence of heavy metal contamination and *Ichthyophonus* infection in the Pacific halibut

population, respectively. Tissue samples for monitorization of these two parameters have been collected in IPHC's fishery-independent setline survey in 2018.

A total of four projects are continuing migration-related studies, two of which involve tagging. First, **Project 650.21**: ("**Investigation of Pacific halibut dispersal on Bowers Ridge via Pop-up Archival Transmitting (PAT) tags**") involved a study of the migratory behavior of O32 Pacific halibut residing in summer on Bowers Ridge in IPHC Regulatory Area 4B, at both seasonal and interannual time scales. The primary goal of the project is to evaluate relative connectivity between Bowers Ridge, the western Aleutian Islands, and the broader eastern Pacific Ocean. Results will be placed in the context of data obtained from prior satellite-tagging experiments in which more than 200 O32 Pacific halibut have been tagged in the eastern Bering Sea and Aleutian Islands region. As part of the 22 fish (13 female; 8 male; 1 of unknown sex) that were successfully tagged on Bowers Ridge in July of 2017, 6 fish were tagged with PAT tags programmed to detach and report in July of 2018 (i.e., after 365 days at liberty). To date, broadcasts have been received from all tagged fish and satellite data is being analyzed. Second, **Project 650.22** ("**Larval connectivity**") is aimed at investigating the movement and connectivity of Pacific halibut larvae both within and between the Gulf of Alaska and the Bering Sea. Larval abundance and distribution in the Gulf of Alaska and the Bering Sea are being modeled over time and over oceanographic and environmental conditions. Third, **Project 670.11**: "**Wire tagging of halibut on NMFS trawl and setline surveys**" involves the tagging of U32 Pacific halibut in order to further understand coastwide migratory and growth patterns of young Pacific halibut. In 2018, Pacific halibut were tagged again on the NMFS trawl survey (Gulf of Alaska and Bering Sea) and on the IPHC's fishery-independent setline survey. Finally, **Project 675.11** ("**Tail pattern recognition**") is the continuation of a pilot study conducted in 2017 that investigated the identification of individual fish by way of photographic recognition of tail patterns to complement migratory studies. Various pattern-recognition software have been used to examine uniqueness and longevity of patterns in both the blind and colored side of the tail, showing relative promise for identifying the same individuals over time. Cameras have been deployed on several vessels during the fisheries-independent setline survey in 2018 and tail images of wire tagged U32 fish are being collected and used to create a database of tail images

Project 672.12 ("**Condition Factors for Tagged U32 Fish**") continues the study of the relationship between the physiological condition of fish and migratory performance as assessed by tagging in U32 fish in order to better understand the potential use of quantitative physiological indicators in predicting migratory performance. Fat level determinations, blood parameters and biometrical measures are being evaluated for all tagged U32 fish.

Project 672.13 ("**Discard mortality rates and injury classification profile by release method**") is continuing to investigate the relationship between three hook release methods (careful shake, gangion cut and hook stripper) in the longline fishery and associated injuries with the physiological condition of fish and with post-release survival in order to update current estimates of discard mortality rates in the directed longline Pacific halibut fishery. Furthermore, this project is also conducting investigations on the applicability and accuracy of electronic monitoring in capturing release methods and fish condition in vessels without observer coverage. This project has received funding from a grant from the Saltonstall-Kennedy NOAA grant program under project number NA17NMF4270240 ([Appendix II](#)).

Project 673.13 ("**Sequencing the Pacific halibut genome**") aims at characterizing for the first time the genome of the Pacific halibut and provide genomic resolution to genetic markers for

sex, reproduction and growth that are currently being investigated. Sequencing efforts and being continued and existing and future available sequencing data will be incorporated in a database constructed for this species.

Project 673.14 ("Identification and validation of markers for growth in Pacific halibut") has continued efforts to identify and validate molecular and biochemical markers that are characteristic of specific growth patterns and that will be used to identify different growth trajectories in the Pacific halibut population and evaluate potential effects of environmental influences on growth trajectories. Initial studies have involved evaluating molecular responses of white skeletal muscle to temperature- and density-induced growth manipulations in juvenile Pacific halibut in captivity. A set of potential applicable molecular markers for growth are currently being validated for their use in detecting growth trajectories using muscle samples from adult Pacific halibut. The results of this study will contribute to our understanding of the possible role of somatic growth variation in the observed changes in size-at-age in the Pacific halibut population. This project has also received funding from a grant from the North Pacific Research Board under project number 1704 ([Appendix II](#)).

Project 673.15 ("Influence of thermal history on growth") is designed to study the thermal profile experienced by fish at sea as assessed by electronic archival tagging and otolith microchemistry in order to investigate the relationship between growth patterns (or productivity) and spatial and temporal variability in environmental conditions for growth. This study will allow us to relate temperature histories that are experienced by individual fish to the growth patterns that they display, examine spatial and temporal trends in rearing conditions and growth, and to extend thermal analyses to untagged Pacific halibut via otolith microchemical analyses. In addition, the data are expected to provide information regarding dispersal of U32 halibut, both seasonally and ontogenically.

Project 674.11 ("Full characterization of the annual reproductive cycle in adult female Pacific halibut") aims at fully characterizing the annual reproductive cycle of female and male Pacific halibut in order to advance our understanding of sexual maturation in this species and to improve maturity assessments and maturity-at-age estimates. Sample collection in the Portlock area in the central Gulf of Alaska began in September 2017 and continuing on a monthly basis through its successful completion in August 2018 on chartered vessels (please see below for a full description). A variety of biological measures and samples are being collected for physiological analyses of reproductive parameters throughout an entire annual reproductive cycle. The results of this project will greatly assist in improving our estimates of the actual spawning biomass.

RECOMMENDATION/S

That the Commission:

- 1) **NOTE** paper IPHC-2018-IM094-10 which outlined the research projects proposed by the IPHC Secretariat and provided an overview of the Five-Year Research Program.
- 2) **ENDORSE** the proposed new and continuing research projects.

APPENDICES

[Appendix I](#): Summary of research projects proposed for FY2019.

[Appendix II](#): Summary of current awarded research grants.

APPENDIX I**Summary of research projects proposed for FY2019**

Project #	Project Name	Priority	Budget (\$US)	External funding FY2019 (\$US)	Management implications
<i>New Projects</i>					
2019-01	Migration and genetics	High	105,092	-	Population structure, distribution and movement
2019-02	Whale detection methods	High	7,511	7,511	Mortality estimation
2019-03	Adult captive holding studies	High-Medium	63,183	-	Changes in biomass/migration
<i>Continuing Projects</i>					
621.16	Development of genetic sexing techniques	High	18,000	-	Sex composition of commercial catch
642.00	Assessment of mercury and other contaminants	Medium	6,300	-	Environmental effects
650.21	Investigation of halibut dispersal in Area 4B	High	1,000	-	Spawning areas
650.22	Larval connectivity	High	-	-	Larval and juvenile distribution
661.11	<i>Ichthyophonus</i> incidence monitoring	Medium	-	-	Environmental effects
670.11	Wire tagging of halibut on NMFS trawl and setline surveys	High	14,300	-	Juvenile and adult distribution
672.12	Condition factors for tagged U32 Fish	High	-	-	DMR estimates
672.13	Discard mortality rates and injury classification profile by release method	High	75,056	30,719	DMR estimates
673.13	Sequencing the Pacific halibut genome	High	39,500	-	Population changes
673.14	Identification and validation of markers for growth	High	84,360	74,118	Changes in biomass/size-at-age
673.15	Influence of thermal history on growth	High	115,319	-	Changes in biomass/size-at-age
674.11	Full characterization of the annual reproductive cycle	High	103,827	-	Maturity assessment
675.11	Tail pattern recognition	High-medium	3,900	-	Juvenile and adult distribution
Total - New Projects (\$US)			\$175,786		
Total - Continuing Projects (\$US)			\$461,562		
Overall Total (all projects) (\$US)			\$637,348		
External Funding (for FY2019) (\$US)				\$112,175	
Net total (\$US)			\$525,000		

APPENDIX II**Summary of current awarded research grants**

Project #	Grant agency	Project name	PI	Partners	IPHC Budget (\$US)	Management implications	Grant period
1	Saltonstall-Kennedy NOAA	Improving discard mortality rate estimates in the Pacific halibut by integrating handling practices, physiological condition and post-release survival (Award No. NA17NMF4270240)	Planas (lead PI) Dykstra Loher Stewart Hicks	Alaska Pacific University	\$286,121	Bycatch estimates	September 2017 – August 2019
2	North Pacific Research Board	Somatic growth processes in the Pacific halibut (<i>Hippoglossus stenolepis</i>) and their response to temperature, density and stress manipulation effects (NPRB Award No. 1704)	Planas (lead PI) Rudy Loher	AFSC-NOAA-Newport, OR	\$131,891	Changes in biomass/size-at-age	September 2017 – August 2019
3	Bycatch Reduction Engineering Program - NOAA	Adapting Towed Array Hydrophones to Support Information Sharing Networks to Reduce Interactions Between Sperm Whales and Longline Gear in Alaska	ALFA	IPHC, University of Alaska Southeast, AFSC-NOAA	TBD	Whale Depredation	September 2018 – August 2019
4	Bycatch Reduction Engineering Program - NOAA	Use of LEDs to reduce Pacific halibut catches before trawl entrapment	Pacific States Marine Fisheries Commission	IPHC, NMFS	TBD	Bycatch reduction	September 2018 – August 2019
Total awarded (\$)					\$418,012		



Peer review

PREPARED BY: IPHC SECRETARIAT (D. WILSON & J. PLANAS, 28 OCTOBER 2018)

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.

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

1. 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 2014, 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), 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 2014). 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 once every three years 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 terms of reference for this peer review are currently in development by the IPHC Secretariat and SRB and shall be provided to the Commission at the AM095 for potential endorsement. 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 external expert shall be contracted on the basis of the proposal already before the Commission ([Appendix I](#)).

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. This, 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 Annual Meeting (AM095) in January 2019.

RECOMMENDATION/S

That the Commission **NOTE** paper IPHC-2018-IM094-11 which provide the Commission with an opportunity to consider options for further improving the peer review process for Commission science products.

APPENDICES

Appendix II: Peer review role of the IPHC advisory bodies, the Research Advisory Board (RAB) and the Scientific Review Board (SRB), on overseeing and contributing to the development, selection and progress of research topics.

Appendix I
MSE CONSULTANT ANNOUNCEMENT: DRAFT

DRAFT ANNOUNCEMENT

IPHC Job Reference Number 2018-xx

**Advertisement for the position of
Management Strategy Evaluation 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. This will be a temporary contract position of approximately 14 days in duration, with travel to and accommodation in Seattle provided.

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/management-strategy-advisory-board>.

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

The consultant will be expected to spend at least one week at the IPHC offices in Seattle sometime during October 2018 to October 2019. Ideally, the consultant would also be able to join a portion of a Management Strategy Advisory Board (MSAB) meeting. The consultant will provide advice on and contribute to a subset of the following topics.

- Review the current IPHC MSE process and simulation framework
- Advance IPHC's generalized framework for closed-loop simulations through contributions to programming design and the computer code
- Contribute to the develop additional operating models and methods to characterize uncertainty, including integrating over multiple operating models
- Contribute to the develop methods to account for area-specific dynamics, fisheries, and management
- Assist with developing and defining reference points
- Expand methods to engage with stakeholders and managers in the MSE process to explain the benefits of MSE as well as define goals and objectives
- Improve methods to communicate the results of the simulations and the trade-offs between various management procedures
- Assist with defining goals, objectives, and performance metrics for evaluation

The consultant will collaborate with our Quantitative Sciences Branch staff. The main goal of this collaboration will be to improve and make further progress on the current MSE process and framework being used at the IPHC.

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

- Knowledge and experience with the MSE process
- Experience fitting data to age-structured population dynamics models
- Proficiency in R and ADMB, and possibly C++, TMB, or other similar programming languages and applications
- Skill in writing computer programs for simulating fish populations
- Experience interacting with fishery stakeholders and managers
- Ability to collaborate with other scientists
- Proficiency in writing scientific reports and papers
- Ability to clearly communicate complex concepts, models, and results through discussion and oral presentation

Expression of Interest

Please submit a statement of interest and a proposed consultancy budget (daily rate), excluding travel and associated costs, to **XXXXXXX** by **XXXXXXX**. The IPHC is an International Governmental Organization and as such will consider applicants regardless of nationality. Due to the nature of the work and the organization, a background check is also a condition of employment. Candidates will be selected for an interview based on meeting basic qualifications and additional demonstrated experience. For more information about this position, please email admin@iphc.int.

DRAFT: Request for Proposals

Management Strategy Evaluation Consultant

Issued: dd mmmm 2019
Submissions due: dd mmm 2019

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SECTION 1: SCHEDULE

Mmm 2019	RFP distributed
Mmm 2019	Deadline for written questions on RFP via emailed to secretariat@iphc.int
Mmm 2019	IPHC post responses to written questions
Mmm 2019	Deadline for proposals via emailed to secretariat@iphc.int
Mmm 2019	Select consultant and finalize contract
Mmm 2019	Begin work

SECTION 2: BACKGROUND AND CONTRACTOR QUALIFICATIONS

Background

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. This will be a temporary contract position of approximately 14 days in duration, with travel to and accommodation in Seattle provided.

The International Pacific Halibut Commission (IPHC) is currently developing a Management Strategy Evaluation (MSE) to evaluate alternative harvest strategies 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/management-strategy-advisory-board>.

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.

Contractor Qualifications

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

- Knowledge and experience with the MSE process
- Experience fitting data to age-structured population dynamics models
- Proficiency in R and ADMB, and possibly C++, TMB, or other similar programming languages and applications
- Skill in writing computer programs for simulating fish populations
- Experience interacting with fishery stakeholders and managers
- Ability to collaborate with other scientists
- Proficiency in writing scientific reports and papers
- Ability to clearly communicate complex concepts, models, and results through discussion and oral presentation

SECTION 3: PROPOSAL SUBMISSION INSTRUCTIONS

Proposals conforming to the requirements set out below must be received at the IPHC via electronic submissions to secretariat@iphc.int. Receipt may be confirmed by calling the Seattle office at 206.634.1838 ext. 7661. Proposals must be valid for a period of at least ninety (90) days from the closing deadline.

Notices:

- The International Pacific Halibut Commission ('Commission') reserves the right to waive irregularities and to reject any or all bids.
- The Commission is not obligated to accept the lowest bid or any bid received, and will contract according to its best interests.
- The Commission reserves the right to negotiate with the selected bidder in the event that the price exceeds available funds. This includes the right to negotiate a different or smaller work package.
- Any bid may be withdrawn prior to the proposal submission deadline.
- Any bid received after the proposal submission deadline may not be considered.

- Modifications to bids already submitted will be accepted if submitted prior to the submission deadline. Modifications must be submitted as complete packages.

Proposal Documentation

The following information must accompany all proposals:

- RFP Title
- Detailed bid sheet, broken down by task and including agreed scope, flat or hourly rate, travel, and on-site/off-site rates
- Detailed description of how the contractor proposes to accomplish the task requirements
- Resumes for all proposed consultants
- References
- Project Examples

SECTION 4: SCOPE AND TASKS

The consultant will be expected to spend at least one week at the IPHC offices in Seattle sometime during 2019. Ideally, the consultant would also be able to join a portion of a Management Strategy Advisory Board (MSAB). The consultant will provide advice on and contribute to the following topics.

- Review the current IPHC MSE process and simulation framework
- Advance IPHC's generalized framework for closed-loop simulations through contributions to programming design and the computer code
- Assist with the development of additional operating models and methods to characterize uncertainty, including integrating over multiple operating models
- Develop methods to account for area-specific dynamics, fisheries, and management
- Assist with developing and defining reference points

The consultant may also provide advice on and contribute to the following additional topics

- Expand methods to engage with stakeholders and managers in the MSE process to explain the benefits of MSE as well as define goals and objectives
- Improve methods to communicate the results of the simulations and the trade-offs between various management procedures
- Assist with defining goals, objectives, and performance metrics for evaluation
- Provide a presentation to the MSAB in May or October (can possibly be done remotely) on their experience with MSE or other concepts related to MSE

Project Deliverables

Deliverables include

- A succinct written review of the IPHC MSE process, including the schedule of meetings, engagement with stakeholders, the simulation framework, 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

- A brief presentation given to the MSAB on experiences with MSE or another topic related to MSE that may be of interest

SECTION 5: BUDGET

14 days at US\$1,000 per day = US\$14,000

Travel to Seattle for 7 nights, DSA and hotel. Estimate US\$10,000

Total: US\$24,000

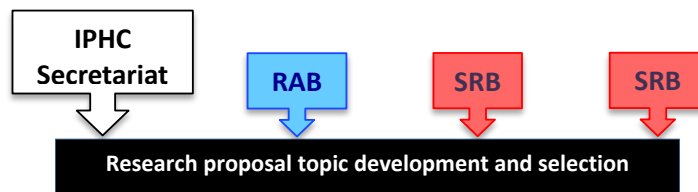
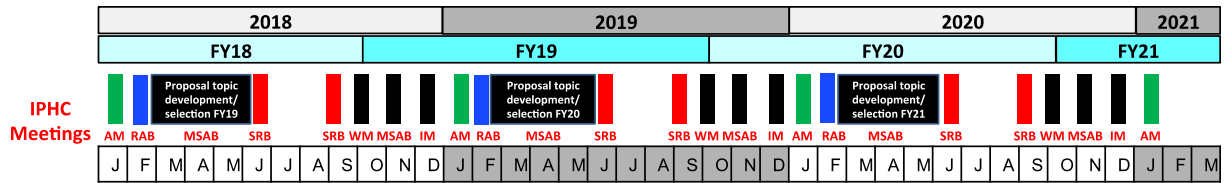
SECTION 6: EVALUATION

Submissions will be rated based on the following factors:

- Responsiveness to the requirements set forth in this Request for Proposal
- Relevant qualifications and past experience
- Samples of work
- Cost

Appendix II

Peer review role of the Research Advisory Board (RAB) and the Scientific Review Board (SRB) in overseeing and contributing to the development, selection and progress of research topics





IPHC Management Strategy Evaluation (MSE): update

PREPARED BY: IPHC SECRETARIAT (A. HICKS & I. STEWART; 27 OCTOBER 2018)

1 PURPOSE

To provide an update on the progress of the IPHC Management Strategy Evaluation process to investigate fishing intensity, and to present results of the closed-loop simulations (as of 27 October 2018).

2 INTRODUCTION

At the 93rd Session of the IPHC Annual Meeting (AM093 in 2017) Commissioners supported a revised harvest strategy policy that separates the scale and distribution of fishing mortality (Figure 1). Furthermore, the Commission identified an interim “hand-rail” or reference for harvest advice based on a status-quo SPR, which uses the average estimated coastwide SPR for the years 2014–16 from the 2016 stock assessment, resulting in an SPR of 46%. The justification for using an average SPR from recent years is that this corresponds to fishing intensities that have resulted in a stable or slightly increasing stock, indicating that, in the short-term, this may provide an appropriate fishing intensity that will result in a stable or increasing female spawning biomass.

The 2017 stock assessment updated the population estimates and determined that the SPR resulting from actual total mortality from all sources in 2017 was 40%, instead of the 45% adopted by Commissioners at AM093. This was an example of estimation error and something that is inherent in the process due to uncertainty in the data. The SPR of 40% was well within the confidence bounds for SPR reported in the 2017 stock assessment (30-59%) and was most likely less than the adopted SPR because of the updated estimation of recent below average recruitment. The estimation error may easily go either way (above or below the adopted value).

This document (IPHC-2018-IM094-12) focuses on the coastwide simulations and includes the following topics:

1. goals and objectives,
2. simulation framework
3. simulation results,
4. a brief description of topics related to distributing the TCEY, and
5. a review of the five-year work plan.

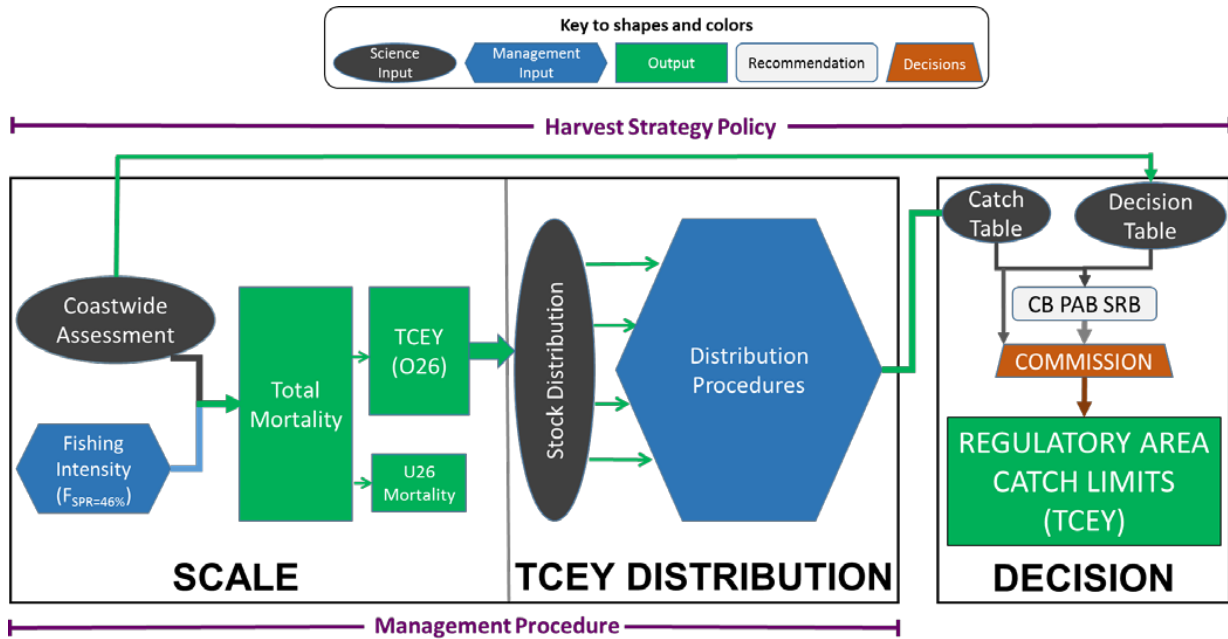


Figure 1. A pictorial description of the interim IPHC harvest strategy policy showing the separation of scale and distribution of fishing mortality. The “decision step” is when policy and decision making (not a procedure) influences the final mortality limits.

3 GOALS AND OBJECTIVES

Defining goals and objectives is a necessary part of a management strategy evaluation (MSE) which should be revisited often to make sure that they are inclusive and relevant. The MSAB originally developed five goals with multiple objectives for each. Performance metrics have also been developed from the goals and objectives by defining a measurable outcome, a probability (i.e. level of risk), and time-frame over which it is desired to achieve that outcome. Management procedures will be evaluated by determining which ones meet the objective (via the performance metric).

At MSAB011, these five goals and linked objectives were discussed. It was determined that the goal “serve consumer needs” was not necessary at this time as it would be captured under the goal of “fishery sustainability and stability,” and MSAB members appointed an *ad hoc* working group to refine the objectives ([IPHC-2018-MSAB011-R](#), paragraph 20). This *ad hoc* working group met via webinar on June 26 to discuss and refine the objectives so that they reflect the current objectives of the MSAB and Commission, as well as to reduce redundant objectives, and clarify and simply the objectives for evaluation. There is also an ongoing discussion of objectives related to distributing the stock, although the *ad hoc* working group did not directly address this. These refinements were discussed at MSAB012, and the current goals and objectives used to evaluate the management procedures related to coastwide scale are presented in Appendix I, along some preliminary objectives for distribution of the TCEY.

The four goals are 1) biological sustainability, 2) optimize directed fishery opportunities, 3) minimize discard mortality, and 4) minimize bycatch mortality. General objectives (broad objectives that are often referred to as means objectives) are defined for each of these goals, except minimize bycatch mortality, which is not being specifically addressed in the MSE at this time. Measurable objectives (more specific objectives often referred to as

ends objectives) are defined for each general objective and have a measurable outcome and time-frame associated with them. Three measurable objectives are prioritized for evaluation: the biological sustainability objective of maintaining the spawning biomass above 20% at least 90% of the time in the long-term is prioritized over limit annual changes in the coastwide TCEY to no more than 15% at least 75% of the time in the short-term and maximize (or optimize) the average coastwide TCEY in the short-term (Appendix Ia). This prioritization aligns well with a Commission directive from the 2018 Work Meeting.

*The Commission **RECOMMENDED** that the MSAB:*

While it is recognized that the MSAB has spent considerable time and effort in developing objectives for evaluating management procedures, for the purpose of expediting a recommendation on the level of the coast-wide fishing intensity, and noting SRB11–Rec.02 to develop an objectives hierarchy, the MSAB is requested to evaluate management procedure performance against objectives that prioritize long-term conservation over short-/medium-term (e.g., 3-8 years) catch performance. Where helpful in accelerating progress on scale, the MSAB is requested to constrain objectives to (1) maintain biomass above a limit to avoid critical stock sizes, (2) maintain a minimum average catch, and (3) limit catch variability.

Various statistics of interest (performance metrics reported for secondary evaluation) were used to understand the results and further rank management procedures when the primary objectives were met similarly (Appendix Ib).

The concept of biological regions (Figure 2) was also discussed at MSAB011 and followed up at SRB012. 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 dynamic of Pacific halibut” ([IPHC-2018-SRB012-R](#), paragraph 31). Additional data collected and analyzed in the future may provide guidance on redefining biological regions that best represent spatial diversity and meet management needs.

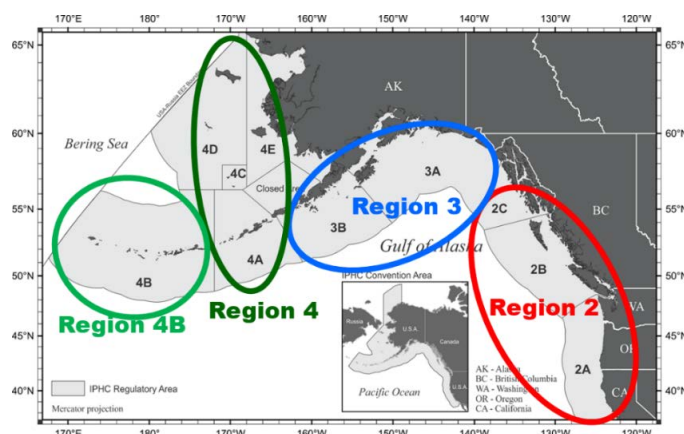


Figure 2. Four biological Regions. They are overlaid on IPHC Regulatory Areas with Region 2 comprised of 2A, 2B, and 2C, Region 3 comprised of 3A and 3B, Region 4 comprised of 4A and 4CDE, and Region 4B comprised solely of 4B.

From this discussion on biological regions, the goal of preserving biocomplexity was considered. The SRB noted that biocomplexity is “poorly defined and not understood for Pacific halibut” ([IPHC-2018-SRB012-R](#), paragraph 30). Additionally, “preserve” is not the appropriate term, because conservation is typically the goal of fisheries

management. Therefore, conserving spatial population structure was defined by the MSAB as a general objective, but does not have measurable objectives associated with it at this time (Appendix Ib).

The MSAB agreed that the Commission should review and provide guidance on the revised goals to be presented at AM095 ([IPHC-2018-MSAB011-R](#), paragraph 34), as shown in Appendix I.

3.1 PERFORMANCE METRICS

Goals and objectives are translated into performance metrics to evaluate the management procedures. Many performance metrics have been developed by defining a measurable outcome, a probability (i.e. level of risk), and time-frame over which it is desired to achieve that outcome. Management procedures can then be evaluated by determining which ones meet various objectives (via the performance metrics). Some performance metrics have been defined by the MSAB that are called statistics of interest, and even though they are associated with various objectives, they are secondary to the evaluation of the management procedure. Some of the primary performance metrics and statistics of interest being reported are described in Table 1.

Table 1. Primary performance metrics and statistic of interest for the long-term to evaluate the management procedures. Primary metrics are the main performance metrics for the evaluation.

<i>Primary Metrics</i>	
Performance metric	Description
P(SB > SB _{Lim})	Times out of 100 that the stock biomass (status) is above the limit. The limit is defined as 20% of the biomass if no fishing had occurred.
P(AAV > 15%)	Times out of 100 that the average annual variability (AAV) is greater than 15%. AAV can be thought of as the average change in the Total Mortality quota (TMq) from year to year.
Median TM	Median coastwide Total Mortality (TM) limit. The TM is greater than this value in half of the simulations.

Table 2: Statistics of interest for the long-term to evaluate the management procedures. Primary metrics are the main performance metrics for the evaluation and the statistics of interest are intended to supplement and inform that evaluation.

<i>Secondary Metrics</i>	
Statistic of interest	Description
Median realized SPR	The realized SPR after reductions by the control rule. The SPR was greater than this value in half of the simulations, but will always be less than or equal to the procedural (input) SPR.
Median SB	The median biomass expected in the long-term
Median # females	The median number of females expected in the long term.
Median AAV	The Median Average Annual Variability, which can be thought of as the average change in the TM from year to year. The AAV is greater than this value in half of the simulations.
P(\downarrow TM > 15%)	Times out of 100 that the TM decreases by more than 15% compared to the previous year.
AAV SB<SB _{Trig}	The average annual variability when the stock status is below the fishery trigger (often referred to as 'on the ramp').
Probability SB<30% in a year	Times out of 100 for a given year that the estimated spawning biomass (status) is less than 30% of the unfished equilibrium biomass given recent stock conditions.
Probability SB<30% in at least 1 of 10 years	Times out of 100 that at least 1 year of a 10 year period will have a spawning biomass (status) less than 30% of the unfished equilibrium biomass given recent stock conditions.
Probability commercial allocation = 0 in a year	Times out of 100 for a given year that the allocation for the commercial fishery would be zero. This can occur because the control rule closes the directed fishery, or because after allocation to bycatch, subsistence, and recreational fisheries, there is no catch limit left for the commercial fishery.
Probability commercial allocation = 0 in at least 1 of 10 years	Times out of 100 in at least 1 year of a 10 year period that the allocation for the commercial fishery would be zero. This can occur because the control rule closes the directed fishery, or because after allocation to bycatch, subsistence, and recreational fisheries, there is no catch limit left for the commercial fishery.
5 th and 75 th percentile of TM	The 5 th and 75 th percentiles of the Total Mortality limit from the simulations. This means that 5 out of 100 are less than or equal the 5 th percentile and 25 out of 100 are greater than or equal to the 75 th percentile.
Probability TM<34 Mlbs in a year	Times out of 100 for a given year that the Total Mortality quota (TM) would be set below a minimum value. The minimum TM has not been determined, and is currently an <i>ad hoc</i> value of 34 Mlbs, which is the minimum Total Mortality observed (TM) since 1906.
Probability TM<34 Mlbs in at least 1 of 10 years	Times out of 100 in at least 1 year of a 10 year period that the Total Mortality quota (TM) would be set below a minimum value. The minimum TM has not been determined, and is currently an <i>ad hoc</i> value of 34 Mlbs, which is the minimum Total Mortality observed (TM) since 1906.
Probability Directed < 50.6 Mlbs* in a year	Times out of 100 that the TM is less than 50.6 Mlbs, which is 70% of the average TM from 1993 to 2012, in a year.
Probability Directed < 50.6 Mlbs* in at least 1 of 10 years	Times out of 100 that the TM is less than 50.6 Mlbs, which is 70% of the average TM from 1993 to 2012, in at least 1 year in a 10 year period.

4 CLOSED-LOOP SIMULATION FRAMEWORK

The framework of the closed-loop simulations is a map to how the simulations will be performed (Figure 3). There are four main modules to the framework:

1. The **Operating Model (OM)** is a representation of the population and the fishery. It produces the numbers-at-age, accounting for mortality and any other important processes. It also incorporates uncertainty in the processes and may be composed of multiple models to account for structural uncertainty.
2. **Management Procedure**
 - a. **Monitoring (data generation)** is the code that simulates the data from the operating model that is used by the estimation model. It can introduce variability, bias, and any other properties that are desired.
 - b. The **Estimation Model (EM)** is analogous to the stock assessment and simulates estimation error in the process. Using the data generated, it produces an annual estimate of stock size and status and provides the advice for setting the catch levels for the next time step. However, simplifications may be necessary to keep simulation times within a reasonable amount.
 - c. **Harvest Rule** is the application of the estimation model output along with the scale and distribution management procedures (Figure 1) to produce the catch limit for that year.

4.1 OPERATING MODEL

For the simulations to investigate a coastwide fishing intensity, the stock synthesis (Methot and Wetzel 2013) assessment software was used as an operating model. This platform is currently used for the stock assessment, and the operating model was comprised of the two coastwide assessment models (short and long time-series) currently used in the ensemble. For future MSE evaluations (in particular, investigating the Distribution component of the harvest policy) a more complex operating model will be developed that can provide outputs by defined areas or regions and can account for migration between these areas. This model has been referred to as a multi-area model.

The current stock assessment ensemble, composed of four different assessment models, includes a cross between coastwide or fleets-as-areas structuring of the data, and the length of the time series. Using an areas-as-fleets model would require generating data and distributing catch to four areas of the coast, which would involve many assumptions. In addition, without a multi-area model, there would not be feedback from migration and productivity of harvesting in different areas. Therefore, only the two coastwide models were used, but with additional variability. These models are structured to use five general sources of removals (these are aggregated for modelling purposes and do not necessarily correspond to specific fisheries or sectors): the directed commercial halibut fishery (including research landings), commercial discard mortality (previously known as wastage), bycatch (from non-halibut-target fisheries), recreational, and subsistence. The TCEY was distributed to each source in an ad hoc manner using current available information and guided by the MSAB.

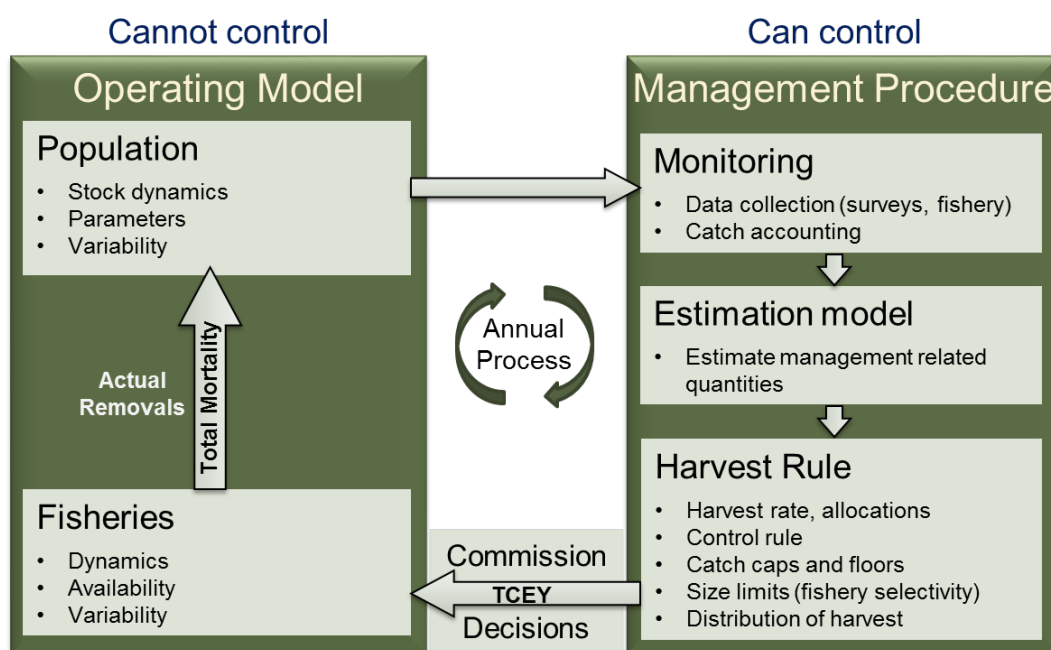


Figure 3. Diagram of the relationship between the four modules in the framework. The simulations run each module on an annual time-step, producing output that is used in the next time-step. See text for a description of operating model, monitoring, estimation model, and harvest rule.

4.1.1 Conditioning the Operating Model

The operating model (OM) should be a reasonable depiction of reality with an appropriate level of uncertainty, which is accomplished through a process called conditioning. The operating model (OM) consists of two Stock Synthesis, or SS (Methot and Wetzel 2013), models parameterized similarly to the short and long coastwide assessment models for Pacific halibut (Stewart 2015 appendix of RARA). Each SS model is conditioned by fitting to the same data used in the 2017 stock assessment (Stewart & Hicks 2018, documents 08-10). In order to evaluate and choose management procedures that are robust to uncertainty in the population, many assumptions in the assessment model were freed up to characterize a wider range of possibilities in the future. Table 3 shows the parameters that were different from the assessment models. Estimating natural mortality in both models and estimating steepness were the only processes changed from the assessment model when conditioning.

Table 3. Parameter estimation in the assessment and operating model.

Parameter	Assessment	OM
Natural Mortality (M)	Some estimated	All estimated without priors
Recruitment (lognormal devs)	Variability fixed at 0.6 (long) 0.9 (short)	Same as assessment
Steepness (h)	Fixed at 0.75	Estimated variability based on long model centered around 0.75 for both.

Overall, the individual operating models mimic the assessment well, but with additional uncertainty. The presence of a slightly higher median spawning biomass in the individual operating models is not a concern because the MSE is focused on ranking procedures and is not meant to predict the exact quantities. The most important aspect is to characterize variability and the dynamics of the stock to ensure that the evaluation of management procedures is robust to potential future scenarios. When comparing the combined operating model to the ensemble assessment, the median spawning biomass trajectories are similar, but the variability in the operating model is much greater than the ensemble assessment (Figure 4).

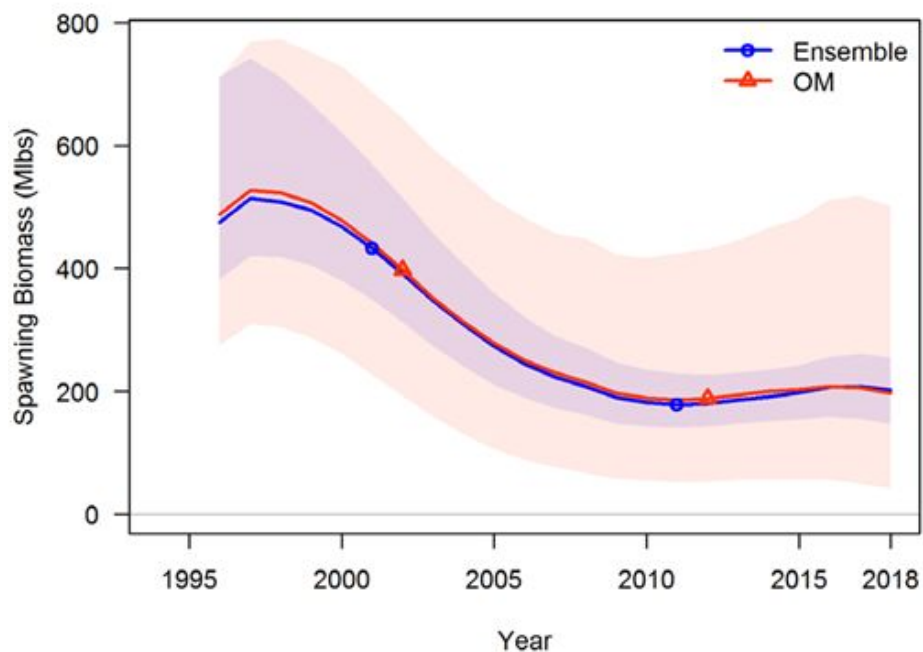


Figure 4. The conditioned operating model (red) compared to the stock assessment ensemble (blue) with 95% confidence intervals on each.

4.1.2 Simulating Forward with the Operating Model

The short and long coastwide models make up the operating model and incorporate variability associated with estimated parameters describing stock and fishery dynamics. Variability from other sources (e.g., weight-at-age, recruitment regimes, and allocation to fishery sectors) was introduced when projecting into the future. Descriptions of these procedures are provided in [IPHC-2017-MSAB010-09 Rev1](#), and updates to the procedures are described in [IPHC-2018-MSAB012-07 Rev 1](#). An overview of major sources of variability are shown in Table 4.

4.2 MANAGEMENT PROCEDURE

The elements of the management procedure are described in reverse order because it is easier to understand the decisions made for modelling them since they are dependent on each other. Therefore, the harvest rule is presented first, followed by the estimation model, and finishing with monitoring.

Table 4. Processes and associated variability in the operating model (OM). TM refers to total mortality.

Process	Uncertainty
Natural Mortality (M)	Estimate appropriate uncertainty when conditioning OM
Recruitment	Random, lognormal deviations
Size-at-age	Annual and cohort deviations in size-at-age with bounds
Steepness	Estimate appropriate uncertainty when conditioning OM
Regime Shifts	Autocorrelated indicator based on properties of the PDO for regime shift
TM to sectors	Allocating of TM to sectors with variability

4.2.1 Harvest Rule

The generalized management procedure to evaluate is shown in Figure 1, but the focus will be on the Scale portion to produce results for the MSAB to evaluate before AM095 in 2019. Specifically, the portion of the management procedure being evaluated is a harvest control rule (Figure 5) that is responsive to stock status and consists of a procedural SPR determining fishing intensity, a fishery trigger based on stock status that determines when the fishing intensity begins to be linearly reduced (note that this may differ from the biological threshold), and a fishery limit that determines when there is theoretically no fishing intensity (this may differ from the biological limit). For these simulations, the two coastwide models were used, thus mortality only needed to be distributed to the five coastwide sources of mortality (directed commercial, discard mortality, bycatch mortality, recreational, and subsistence).

Simulations have been used in the past to evaluate a range of SPR values from 25% to 60% and trigger values of 30% and 40% (IPHC-2017-MSAB10-09 Rev 1). Those simulations provided insight into how those different levels of SPR would meet the objectives defined by the MSAB, but few values of SPR below 40% were tested. Future simulations will use a finer resolution of SPR values ranging from 30% to 56% and fishery trigger points of 30% and 40% (with the addition of 45% if time allows).

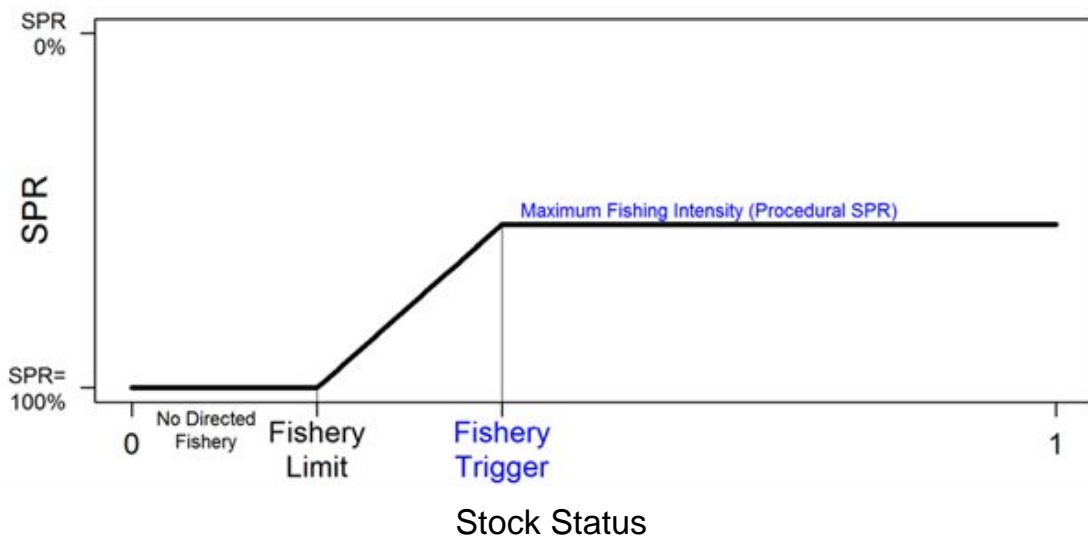


Figure 5. A harvest control rule responsive to stock status that is based on Spawning Potential Ratio (SPR) to determine fishing intensity, a fishery trigger level of stock status that determines when the fishing intensity begins to be linearly reduced, and a fishery limit based on stock status that determines when there is theoretically no fishing intensity (SPR=100%). In reality, it is likely that only the directed fishery would cease. The Procedural SPR and the Fishery Trigger (in blue) are the two values to be evaluated.

4.2.2 Estimation Model

Previously, results were presented with No Estimation Model (called Perfect Information at that time). However, this was for reference of how good a management could possibly perform. Although useful for reference, appropriately accounting for the error in an estimation model will provide more realistic performance of the management procedures and should be used in the evaluation. Here, estimation error is simulated due to time constraints and the amount of time it takes to perform a single simulation, by adding error to the estimated stock status (used in the harvest control rule to determine when the fishing intensity is reduced) and in the resulting Total Mortality. Coefficients of variation on stock status and total mortality were fixed at 15% with a correlation of 0.5. Autocorrelation (the persistence of errors in a specific direction) was fixed at 0.4. Other levels of error were simulated to determine how sensitive the results are to the assumed estimation error.

Overall, this method is a suitable approximation to understand the effects of estimation error and provide results that would be typical when using the current assessment paradigm.

4.2.3 Monitoring (Data Generation)

With the simplified incorporation of estimation error, the generation of data was not required. However, if a stock assessment were simulated, there would be many sources of data to generate.

4.3 SUMMARY OF THE FRAMEWORK

A summary of the major specifications for each component is provided below, with the components listed in a specific order where the next component is dependent on the decisions for the previous components.

- 1) Operating Model
 - a) Stock synthesis, based on coastwide assessment models (short and long models).
 - b) Five fleets, as in the assessment models (commercial, discards, bycatch, sport, personal use).
 - c) Fishing mortality assigned to sectors based on historical information (with variability).
 - d) Uncertainty incorporated through parameter uncertainty, model uncertainty, a simulated variability in future weight-at-age and recruitment.
- 2) Management Procedure
 - a) Estimation Models
 - i) Perfect Information (as a reference if we knew population values exactly when applying the harvest rule).
 - ii) Simulate error in total mortality ($cv=0.15$) and spawning biomass ($cv=0.15$), with autocorrelation (0.4), from the simulated time-series to mimic an unbiased stock assessment.
 - b) Data Generation
 - i) Not needed at this time.
 - c) Harvest Rule
 - i) Coastwide fishing intensity (F_{SPR}) using a procedural SPR (30% to 56%).
 - ii) A fishing trigger to reduce the fishing intensity (increase SPR) when stock status is below a specified level (25%, 30%, and 40%).
 - iii) A fishing limit to cease directed fishing when the stock status is less than a specified value (20% and 10%).

5 SIMULATION RESULTS

Using the simulation framework described above and in previous documents, many test cases were first investigated to better understand the dynamics of the simulations as well as verify that the results are as expected. Simulations with no fishing produce trajectories of female spawning biomass that increased and ranged from 200 Mlbs to 1,500 Mlbs (91,000 t to 680,000 t). This range of variability in the spawning biomass was due to the variability in weight-at-age and recruitment regimes. Simulations holding weight-at-age at low or high levels and the recruitment regime at a negative or positive phase showed that high weight-at-age with high recruitment produced very large spawning biomasses, and vice versa. However, high weight-at-age with low recruitment, and low weight-at-age with high recruitment overlapped at spawning biomasses between 300 Mlbs and 1,000 Mlbs (136,000 t to 454,000 t).

Table 5 and Table 6 show some long-term performance metrics for the main runs requested at MSAB011 (IPHC-2018-MSAB011-R). Table 7 shows the same long-term performance metrics for a control rule of 25:10. Short-term performance metrics produced the same rankings for these management procedures because the current spawning biomass is likely to be above the fishery trigger (e.g., 30%) and are not shown. For long-term results with a control rule the probability that the stock is below 20% of the dynamic unfished equilibrium biomass is less than 1% for all cases. This is a result of the control rule limiting the fishing intensity as the stock approaches this threshold, even with estimation error present, and since dynamic relative spawning biomass is a measure of the effect of fishing, reducing the fishing intensity reduces the risk of dropping below this threshold. It is rare that the estimation persists such that fishing intensity remains high and the stock falls below the 20% threshold. The outcome of this reduction in fishing intensity can be seen in the average annual variability (AAV), which is a measure of the change in the catch limit from year to year. At fishing intensities greater than that associated with an SPR of 40% (i.e., SPR values less than 40%) the probability that the AAV is greater than 15% is more than 0.90. This probability declines to 0.61 at an SPR of 56%. The median AAV's range from 16% to 23% when using a 25:10 control rule (Table 7), 16% to 42% when using a 30:20 control rule (Table 6) and from 21% to 46% when using a 40:20 control rule (Table 5). The 40:20 showed higher variability in the catch limit even though the slope is not as steep because the reduction in fishing intensity occurs more often given the 40% trigger value. The absolute value of the Total Mortality catch limit was highly variable for a given SPR (Figure 6). In summary, long-term performance metrics showed little risk of falling below the 20% dynamic biomass threshold, high variability in catches that increased with higher fishing intensities (i.e. lower SPR), and median Total Mortality limits that increased slightly with greater fishing intensity.



Table 5. Long-term performance metrics for an estimation error CV of 0.15, autocorrelation of 0.4, a 30:20 control rule, and a range of input SPRs from 0.3 to 0.56. P(all ...) is the probability of that the event occurs in a given year, and P(any ...) is the probability that the event occurs in at least 1 year out of a 10 year period. Primary performance metrics are noted in regular text while statistics of interest are labeled in italics. Median TM is smoothed over the range of SPRs to produce more realistic results and account for Monte Carlo error that results naturally with a small number of simulations for a highly variable quantity.

Input Control Rule	30:20	30:20	30:20	30:20	30:20	30:20	30:20	30:20	30:20	30:20	30:20
Input SPR	56%	48%	46%	44%	42%	40%	38%	36%	34%	32%	30%
<i>Median relative SPR</i>	56.3%	49.0%	47.4%	45.9%	44.5%	43.5%	42.7%	42.5%	42.4%	42.4%	42.6%
Biological Sustainability											
<i>Median average dRSB</i>	50.2%	41.6%	39.7%	37.9%	36.5%	35.0%	33.9%	32.9%	31.7%	31.0%	30.4%
P(all dRSB<20%)	0.002	0.002	0.003	0.004	0.003	0.002	0.002	0.005	0.006	0.004	0.004
P(any dRSB _y <20%)	0.002	0.003	0.004	0.005	0.004	0.002	0.002	0.006	0.009	0.008	0.011
<i>P(all dRSB<30%)</i>	0.002	0.023	0.031	0.065	0.094	0.142	0.191	0.253	0.338	0.405	0.470
<i>P(any dRSB_y<30%)</i>	0.003	0.044	0.07	0.149	0.202	0.307	0.402	0.545	0.676	0.789	0.867
Fishery Sustainability											
P(all AAV > 15%)	0.606	0.689	0.722	0.771	0.813	0.847	0.905	0.927	0.958	0.988	0.993
<i>P(all TM < 34 Mlbs)</i>	0.507	0.455	0.448	0.436	0.426	0.432	0.425	0.439	0.457	0.458	0.465
<i>P(any TM < 34 Mlbs)</i>	0.662	0.627	0.633	0.641	0.661	0.681	0.718	0.758	0.81	0.862	0.891
Median average TM	33.9	37.3	38.0	38.6	39.2	39.7	40.1	40.6	41.0	41.4	41.7
<i>P(all decrease TM > 15%)</i>	0.221	0.236	0.244	0.261	0.273	0.285	0.302	0.319	0.336	0.352	0.365
<i>P(any decrease TM > 15%)</i>	0.921	0.932	0.94	0.946	0.958	0.967	0.974	0.982	0.992	0.992	0.997
<i>median AAV TM</i>	16.3%	17.5%	18.4%	19.4%	21.1%	23.9%	26.8%	30.2%	33.1%	37.3%	41.8%
Rankings (lower is better)											
P(<20%) ¹	1	2	3	4	5	6	7	8	9	10	11
P(AAV > 15%) ²	1	2	3	4	5	6	7	8	9	10	11
Maximum catch (TM) ³	11	10	9	8	7	6	5	4	3	2	1

¹ This ranking is determined using P(any dRSB < 20%) and the objective to maintain RSB above 20% at least 90% of the time. Note that all procedures meet this objective.

² This ranking is determined using P(all AAV >15%) and the objective to maintain AAV below 15%.at least 75% of the time. Note that no procedures meet this objective.

³ This ranking is determined using a smoothed relationship for Median average TM to account for variability in the simulations. Note that the highest fishing intensity meets this objective, although the yield curve begins to flatten at those low SPR values.

Table 6. Long-term performance metrics for an estimation error CV of 0.15, autocorrelation of 0.4, a 40:20 control rule, and a range of input SPRs from 0.3 to 0.56. P(all ...) is the probability of that the event occurs in a given year, and P(any ...) is the probability that the event occurs in at least 1 year out of a 10 year period. Primary performance metrics are noted in regular text while statistics of interest are labeled in italics. Median TM is smoothed over the range of SPRs to produce more realistic results and account for Monte Carlo error that results naturally with a small number of simulations for a highly variable quantity.

Input Control Rule	40:20	40:20	40:20	40:20	40:20	40:20	40:20	40:20	40:20	40:20	40:20
Input SPR	56%	48%	46%	44%	42%	40%	38%	36%	34%	32%	30%
<i>Median relative SPR</i>	55.4%	51.3%	50.4%	49.6%	49.1%	48.6%	48.3%	48.1%	47.9%	47.9%	47.7%
Biological Sustainability											
<i>Median average dRSB</i>	47.2%	43.9%	42.6%	41.5%	40.4%	39.5%	38.6%	37.8%	37.1%	36.4%	35.8%
P(all dRSB<20%)	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.002
P(any dRSB _y <20%)	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.003
<i>P(all dRSB<30%)</i>	0.008	0.006	0.008	0.007	0.007	0.014	0.018	0.028	0.044	0.059	0.083
<i>P(any dRSB_y<30%)</i>	0.011	0.007	0.011	0.015	0.022	0.036	0.052	0.102	0.16	0.214	0.309
Fishery Sustainability											
P(all AAV > 15%)	0.788	0.88	0.921	0.948	0.974	0.985	0.986	0.994	0.994	0.996	0.998
<i>P(all TM < 34 Mlbs)</i>	0.483	0.459	0.460	0.463	0.465	0.468	0.470	0.476	0.479	0.488	0.495
<i>P(any TM < 34 Mlbs)</i>	0.693	0.711	0.735	0.756	0.778	0.801	0.819	0.836	0.856	0.869	0.889
Median average TM	35.6	37.1	37.5	37.9	38.2	38.7	39.0	39.3	39.5	39.7	39.9
<i>P(all decrease TM > 15%)</i>	0.275	0.289	0.310	0.326	0.337	0.349	0.362	0.372	0.381	0.386	0.390
<i>P(any decrease TM > 15%)</i>	0.953	0.973	0.981	0.994	0.996	0.997	0.998	0.998	0.998	0.998	0.999
<i>median AAV TM</i>	21.1%	23.2%	25.9%	28.2%	30.9%	33.5%	36.0%	39.3%	41.9%	43.6%	46.2%
Rankings (lower is better)											
P(<20%) ¹	1	2	3	4	5	6	7	8	9	10	11
P(AAV > 15%) ²	1	2	3	4	5	6	7	8	9	10	11
Maximum catch (TM) ³	11	10	9	8	7	6	5	4	3	2	1

¹ This ranking is determined using P(any dRSB < 20%) and the objective to maintain RSB above 20% at least 90% of the time. Note that all procedures meet this objective.

² This ranking is determined using P(all AAV >15%) and the objective to maintain AAV below 15%.at least 75% of the time. Note that no procedures meet this objective.

³ This ranking is determined using a smoothed relationship for Median average TM to account for variability in the simulations. Note that the highest fishing intensity meets this objective, although the yield curve appears to flatten at those low SPR values.

Table 7. Long-term performance metrics for an estimation error CV of 0.15, autocorrelation of 0.4, a 25:10 control rule, and a range of input SPRs from 0.3 to 0.56. P(all ...) is the probability of that the event occurs in a given year, and P(any ...) is the probability that the event occurs in at least 1 year out of a 10 year period. Primary performance metrics are noted in regular text while statistics of interest are labeled in italics. Median TM is smoothed over the range of SPRs to produce more realistic results and account for Monte Carlo error that results naturally with a small number of simulations for a highly variable quantity. Blank columns indicate that those management procedures were not simulated.

Input Control Rule	25:10	25:10	25:10	25:10	25:10	25:10	25:10	25:10	25:10	25:10	25:10
Input SPR	56%	48%	46%	44%	42%	40%	38%	36%	34%	32%	30%
<i>Median relative SPR</i>	56.3%		46.5%		42.9%	41.3%	39.8%	38.4%	37.3%	36.6%	36.1%
Biological Sustainability											
<i>Median average dRSB</i>	50.3%		39.3%		35.3%	33.3%	31.6%	29.9%	28.6%	27.5%	26.5%
P(all dRSB<20%)	0.002		0.004		0.005	0.008	0.010	0.011	0.022	0.032	0.048
P(any dRSB _y <20%)	0.003		0.006		0.007	0.014	0.021	0.030	0.060	0.099	0.144
<i>P(all dRSB<30%)</i>	0.008		0.080		0.222	0.312	0.406	0.513	0.626	0.723	0.801
<i>P(any dRSB_y<30%)</i>	0.008		0.140		0.351	0.470	0.597	0.749	0.856	0.935	0.969
Fishery Sustainability											
P(all AAV > 15%)	0.600		0.647		0.692	0.728	0.765	0.816	0.851	0.902	0.935
	0		0		0	0	0	0	0	0	0
<i>P(all TM < 34 Mlbs)</i>	0.500		0.435		0.420	0.413	0.410	0.410	0.410	0.417	0.423
<i>P(any TM < 34 Mlbs)</i>	0.654		0.593		0.592	0.589	0.600	0.619	0.643	0.682	0.716
Median average TM	34.4		38.2		39.7	40.4	41.0	41.4	41.8	42.1	42.4
<i>P(all decrease TM > 15%)</i>	0.219		0.227		0.239	0.249	0.259	0.274	0.293	0.309	0.326
<i>P(any decrease TM > 15%)</i>	0.927		0.934		0.941	0.950	0.953	0.964	0.974	0.976	0.985
<i>median AAV TM</i>	16.4%		16.9%		17.8%	18.5%	19.6%	20.9%	22.7%	25.4%	28.3%
Rankings (lower is better)											
P(<20%) ¹	1	2	3	4	5	6	7	8	9	10	11
P(AAV > 15%) ²	1	2	3	4	5	6	7	8	9	10	11
Maximum catch (TM) ³	11	10	9	8	7	6	5	4	3	2	1

¹ This ranking is determined using P(any dRSB < 20%) and the objective to maintain RSB above 20% at least 90% of the time. Note that all procedures, except SPR=0.30 meet this objective.

² This ranking is determined using P(all AAV >15%) and the objective to maintain AAV below 15%.at least 75% of the time. Note that no procedures meet this objective.

³ This ranking is determined using a smoothed relationship for Median average TM to account for variability in the simulations. Note that the highest fishing intensity meets this objective, although the yield curve begins to flatten at those low SPR values.

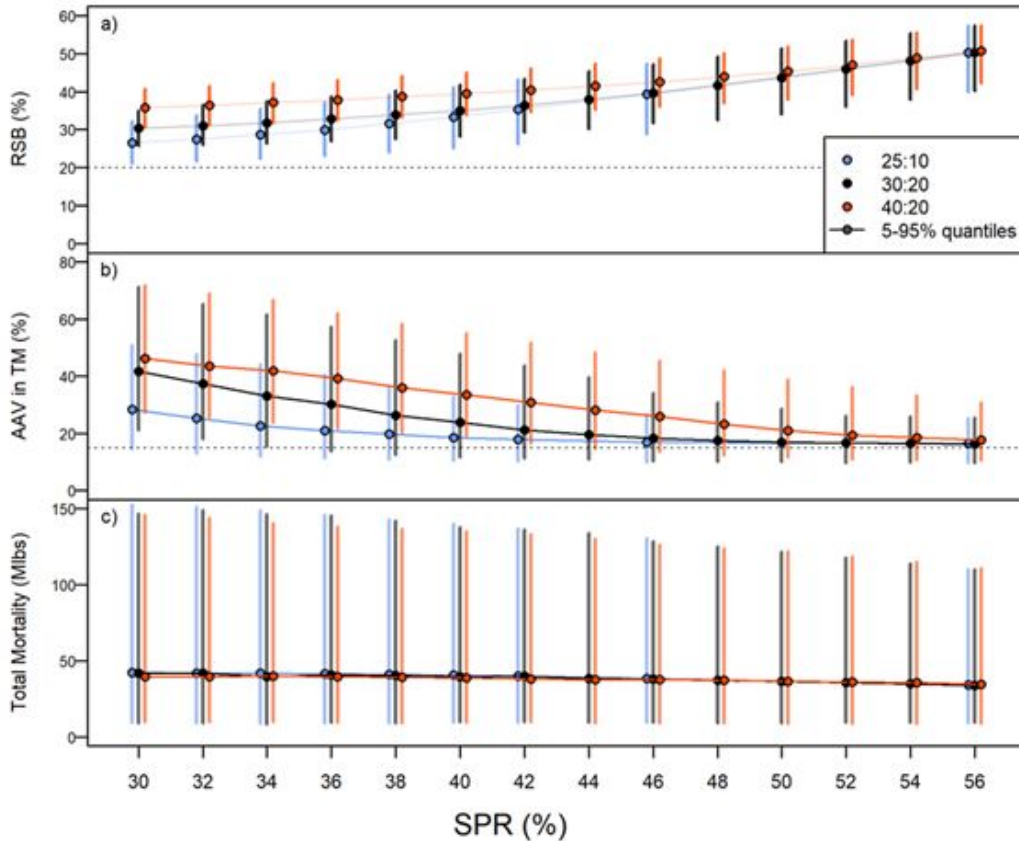


Figure 6. Select long-term performance metrics (dynamic relative spawning biomass, AAV of TM, and Total Mortality (Mlbs)) for a range of SPR values from 0.3 to 0.56 and control rules 40:20, 30:20, and 25:10. The points are the median values from the 1000 simulations and the vertical bars are the 90% intervals (i.e., 5th and 95th percentiles from the 1000 simulations).

6 DISTRIBUTING THE TCEY

A considerable amount of discussion related to a description of the harvest strategy policy occurred at previous MSAB meetings. Figure 1 shows an updated depiction of the harvest strategy policy with terms describing the various components. These terms are defined in the IPHC glossary¹, but of note for this paper are TCEY distribution, stock distribution, and distribution procedures. The management procedure is the sequence of elements including the assessment, fishing intensity, stock distribution, and distribution procedures. The goal of the MSAB is to define a management procedure that will be used to output O26 mortality limits (TCEY) for each Regulatory Area that meet the long-term objectives of managers and stakeholders. The “decision” step on the right of Figure 1 is where a deviation from the management procedure may occur due to input from other sources and decisions of the Commissioners that may reflect current biological, environmental, social, and economic conditions.

¹ <https://iphc.int/the-commission/glossary-of-terms-and-abbreviations>

In 2017, the Commission agreed to move to an SPR-based management procedure to account for the mortality of all sizes and from all fisheries. The procedure uses a coastwide fishing intensity based on spawning potential ratio (SPR), which defines the “scale” of the coastwide catch. This eliminates the use of EBio and area-specific absolute harvest rates. Therefore, there are currently two inputs to the current management procedure for distributing the TCEY among IPHC Regulatory Areas: 1) the current estimated stock distribution and 2) relative target harvest rates.

6.1 STOCK DISTRIBUTION

The IPHC uses a space-time model to estimate annual Weight-Per-Unit-Effort (WPUE) for use in estimating the annual stock distribution of Pacific halibut (Webster 2018). Briefly, observed WPUE is fitted with a model that accounts for correlation between setline survey stations over time (years) and space (within Regulatory Areas). Competition for hooks by Pacific halibut and other species, the timing of the setline survey relative to annual fishery mortality, and observations from other fishery-independent surveys are also accounted for in the approach. This fitted model is then used to predict WPUE (relative density) of Pacific halibut for every setline survey station in the design (including all setline survey expansion stations), regardless of whether it was fished in a particular year. These predictions are then averaged within each IPHC Regulatory Area, and combined among IPHC Regulatory Areas, weighting by the “geographic extent” (calculated area within the survey design depth range) of each IPHC Regulatory Area. It is important to note that this produces relative indices of abundance and biomass, but does not produce an absolute measure of abundance or biomass because it is weight-per-unit-effort scaled by the geographic extent of each IPHC Regulatory Area. These indices are useful for determining trends in stock numbers and biomass, and are also useful to estimate the geographic distribution of the stock.

6.2 USING RELATIVE HARVEST RATES

The distribution of the TCEY for 2018 was shifted from the estimated stock distribution to account for additional factors related to productivity and paucity of data in each IPHC Regulatory Area. Previously, this was accomplished by applying different harvest rates in western areas (16.125% in IPHC Regulatory Areas 3B, 4A, 4B, and 4CDE)) and eastern areas (21.5% in IPHC Regulatory Areas 2A, 2B, 2C, and 3A). However, with the elimination of EBio and the use of SPR-based fishing intensity to determine the coastwide scale, the TCEY, rather than the esoteric concept of exploitable biomass, was distributed. Therefore, an absolute measure of harvest rate is not necessary, but it may still be desired to shift the distribution of the TCEY away from the estimated stock distribution to account for other factors. Consistent with the previous approach, relative harvest rates were used with a ratio of 1.00:0.75, being equal to the ratio between 21.5% and 16.125%. This application shifted the target TCEY distribution away from the stock distribution by moving more TCEY into IPHC Regulatory Areas 2A, 2B, 2C, and 3A and less TCEY from IPHC Regulatory Areas 3B, 4A, 4B, and 4CDE (Table 8), thus harvesting at a higher rate in eastern IPHC Regulatory Areas.

Table 8. IPHC Regulatory Area stock distribution estimated from the 2017 space-time model O32 WPUE, IPHC Regulatory Area-specific relative target harvest rates, and resulting 2018 target TCEY distribution based on the IPHC’s 2018 interim management procedure (reproduced from Table 1 in IPHC-2018-AM094-11 Rev_1).

	2A	2B	2C	3A	3B	4A	4B	4CDE	Total
O32 stock distribution	1.7%	11.3%	16.6%	35.6%	10.0%	6.6%	4.8%	13.3%	100.0%
Relative harvest rates	1.00	1.00	1.00	1.00	0.75	0.75	0.75	0.75	--
Target TCEY Distribution	1.9%	12.4%	18.2%	38.9%	8.2%	5.4%	3.9%	10.9%	100.0%

6.3 REDEFINING THE DISTRIBUTION OF THE TCEY

TCEY distribution is the part of the management procedure for distributing the TCEY among Regulatory Areas and is composed of a purely scientific component to distribute the TCEY in proportion to its estimated biomass in each

area (stock distribution) and steps to further modify the distribution of the TCEY based on additional considerations (distribution procedures). Those two components are described below.

6.3.1 Stock Distribution

Emerging understanding of Pacific halibut diversity across the geographic range of the Pacific halibut stock indicates that IPHC Regulatory Areas should only be considered as management units and do not represent relevant sub-populations (Seitz et al. 2017). Balancing the removals against the current stock distribution is likely to protect against localized depletion of spatial and demographic components of the stock that may produce differential recruitment success under changing environmental and ecological conditions. Biological Regions, defined earlier and shown in Figure 2, are considered by the IPHC Secretariat, and supported by the SRB, to be the best option for biologically-based areas to meet management needs.

The overarching conservation goal for Pacific halibut is to maintain a healthy coastwide stock. However, given the wide geographic range of the Pacific halibut stock, there likely is stock structure that we do not fully understand, and this stock structure may be important to coastwide stock health. Therefore, conservation objectives relate to where harvesting occurs, with an objective to retain viable spawning activity in all portions of the stock. One method for addressing this objective is to distribute the fishing mortality relative to the distribution of observed stock biomass. This requires defining appropriate areas for which the distribution is to be conserved. Splitting the coast into many small areas for conservation objectives can result in complications including being cumbersome to determine if conservation objectives are met, being difficult to accurately determine the proportion of the stock in that area, being subject to inter-annual variability in estimates of the proportion, forcing arbitrary delineation among areas with evidence of strong stock mixing, and not being representative of biological importance. Therefore, Biological Regions represent the most logical scale over which to consider conservation objectives related to distribution of the fishing mortality. Adjusting the distribution of the TCEY among Biological Regions to account for additional considerations, and further distributing the TCEY to IPHC Regulatory Areas would be done through steps defined in the Distribution Procedures component (Figure 1).

In addition to using Biological Regions for stock distribution, the “all sizes” WPUE from the space-time model (Figure 7), which is largely composed of O26 Pacific halibut (due to selectivity of the setline gear), is more congruent with the TCEY (O26 catch levels) than O32 WPUE. Therefore, when distributing the TCEY to Biological Regions, the estimated proportion of “all sizes” WPUE from the space-time model should be used for consistency.

6.3.2 Distribution Procedures

Distribution Procedures contains the steps of further modifying the distribution of the TCEY among Biological Regions and then distributing the TCEY among IPHC Regulatory Areas within Biological Regions. Modifications at the Biological Region or IPHC Regulatory Area level may be based on differences in production between areas, observations in each area relative to other areas (e.g., WPUE), uncertainty of data or mortality in each area, defined allocations, or national shares. Data may be used as indicators of stock trends in each Region or IPHC Regulatory Area, and are included in the Distribution Procedures component because they may be subject to certain biases and include factors that may be unrelated to biomass in that Biological Region or IPHC Regulatory Area. For example, commercial WPUE is a popular source of data used to indicate trends in a population, but may not always be proportional to biomass. Types of data to be used may include fishery WPUE, survey observations (not necessarily the IPHC fishery-independent setline survey), age-compositions, size-at-age, and environmental observations.

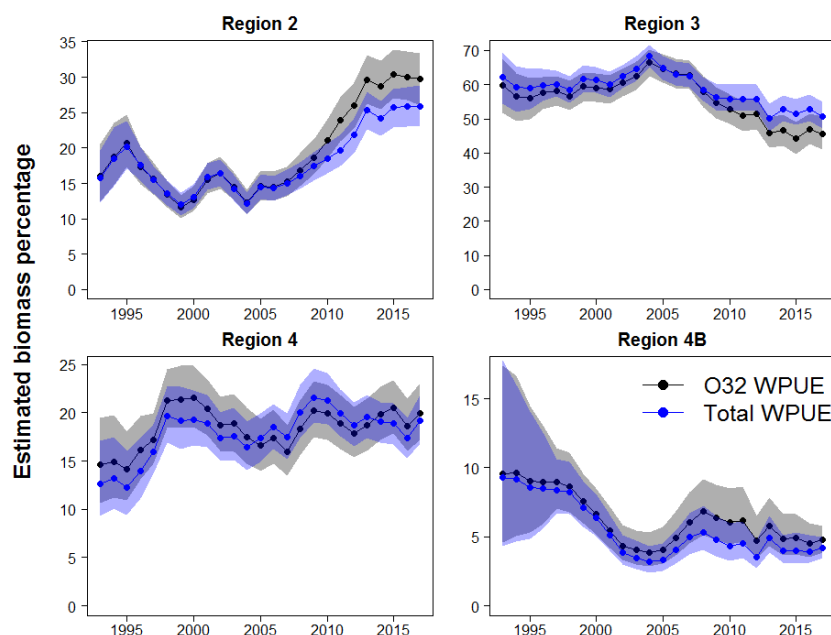


Figure 7. Estimated stock distribution (1993-2017) based on estimate WPUE from the space-time model of O32 (black series) and all sizes (blue series) of Pacific halibut. Shaded zones indicate 95% credible intervals.

The steps in the Distribution Procedures may consider conservation objectives, but they will mainly be developed with respect to fishery objectives. Yield and stability in catch levels are two important fishery objectives that often contradict each other (i.e. higher yield often results in less stability). Additionally, area-specific fishery objectives may be in conflict across IPHC Regulatory Areas. Pacific halibut catch levels are defined for each IPHC Regulatory Area and quota is accounted for by those Regulatory Areas. Therefore, IPHC Regulatory Areas are the appropriate scale to consider fishery objectives.

6.4 A SUMMARY OF THE MANAGEMENT PROCEDURE FOR DISTRIBUTING TCEY ACROSS THE COAST

The harvest strategy policy begins with the coastwide TCEY determined from the stock assessment and fishing intensity determined from a target SPR (Figure 1). When distributing the TCEY among regions, stock distribution occurs first to distribute the harvest in proportion to biomass and satisfy conservation objectives, and then is followed by adjustments across Regions and Regulatory Area based on distribution procedures to further encompass conservation objectives and consider fishery objectives. The key to these adjustments is that they are relative adjustments such that the overall fishing intensity (target SPR) is maintained (i.e. a zero sum game). Otherwise, the procedure is broken and it is uncertain if the defined objectives will be met.

A framework for a management procedure that ends with the TCEY distributed among IPHC Regulatory Areas and would encompass conservation and fishery objectives is described below.

1. **Coastwide Target Fishing Intensity:** Determine the coastwide total mortality using a target SPR that is most consistent with IPHC objectives defined by the Commission. Separate the total mortality in ≥ 26 inches (O26) and under 26 inches (U26) components. The O26 component is the coastwide TCEY.
 - 1.1. Target SPR is scheduled for evaluation at the 2019 Annual Meeting. The current interim target SPR is 46%.
2. **Regional Stock Distribution:** Distribute the coastwide TCEY to four (4) biologically-based Regions using the proportion of the stock estimated in each Biological Region for all sizes of Pacific halibut using information from the IPHC setline survey and the IPHC space-time model.
 - 2.1. Four Regions (2, 3, 4, and 4B) are defined above (Figure 2).
3. **Regional Allocation Adjustment:** Adjust the distribution of the TCEY among Biological Regions to account for other factors.
 - 3.1. For example, relative target harvest rates are part of a management/policy decision that may be informed by data and observations. This may include evaluation of recent trends in estimated quantities (such as fishery-independent WPUE), inspection of historical trends in fishing intensity, recent or historical fishery performance, and biological characteristics of the Pacific halibut observed in each Biological Region. The IPHC Secretariat may be able to provide Yield-Per-Recruit (YPR) and/or surplus production calculations as further supplementary information for this discussion. The regional relative harvest rates may also be determined through negotiation, which is simply an allocation agreement for further Regional adjustment of the TCEY.
4. **Regulatory Area Allocation:** Apply IPHC Regulatory Area allocation percentages within each Biological Region to distribute the Region-specific TCEY's to Regulatory Areas.
 - 4.1. This part represents a management/policy decision, and may be informed by data, based on past or current observations, or defined by an allocation agreement. For example, recent trends in estimated all sizes WPUE from the setline survey or fishery, age composition, or size composition may be used to distribute the TCEY to IPHC Regulatory Areas. Inspection of historical trends in fishing intensity or catches by IPHC Regulatory Area may also be used. Finally, agreed upon percentages are also an option. This allocation to IPHC Regulatory Areas may be a procedure with multiple adjustments using different data, observations, or agreements

The four steps described above would be contained within the IPHC Harvest Strategy Policy as part of the Management Procedure, and are pre-determined steps that have a predictable outcome. The decision making process would then occur (Figure 1).

5. **Seasonal Regulatory Area Adjustment:** Adjust individual Regulatory Area TCEY limits to account for other factors as needed. This is the policy part of the harvest strategy policy and occurs as a final step where other objectives are considered (e.g. economic, social, etc.).
 - 5.1. Departing from the target SPR may be a desired outcome for a particular year (short-term, tactical decision making based on current trends estimated in the stock assessment), but would deviate from the management procedure and the long-term management objectives. Departures from the management procedure may result in unpredictable outcomes, but could also take advantage of current situations.

6.4.1 Potential Elements of the Management Procedures Related to Distribution

The MSAB012 report ([IPHC-2018-MSAB012-R](#)) listed ten potential tools for use in developing distribution procedures. Each of these potential tools is discussed below.

Relative harvest rates. This was discussed above in the context of Regional Allocation Adjustment and Regulatory Area Allocation. The relative harvest rates may be justified by productivity differences, for example, or they may simply be allocation agreements between areas.

O32:O26 ratios. This tool is an indicator of the proportion of the TCEY that is under the size limit. This ratio or quantifying of Pacific halibut in these size ranges would give insight into the encounter rate with undersized Pacific halibut, and there may be objectives defined that are related to minimizing encounters with these undersized fish. Using this ratio to adjust allocation percentages could change the mortality on undersized Pacific halibut. This could occur in the Regional Allocation Adjustment or Regulatory Area Allocation steps.

Trends in setline survey WPUE by IPHC Regulatory Area. This tool applies to the Regulatory Area Allocation step and may be a useful method to inform the distribution to Regulatory Area. However, the Biological Regions are areas where it is likely that within-year movement may occur, and minimal movement occurs between Regions within a year. For this reason, trends from the survey within a Regulatory Area may be inconsistent with the location of Pacific halibut when the fisheries occur. In other words, Pacific halibut may occur anywhere in the Biological Region within a year, but are unlikely to move out of that Region in that year, thus the timing of the survey and the fishery are important to consider.

Trends in modelled setline survey WPUE by biological region. Using trends from the setline survey index that is already used to distribute TCEY to Biological Regions (Regional Stock Distribution) may result in some contradictions. The potential benefit may be that the trend is indicative of what may occur in the future and potentially be a closer representation of stock distribution in the year when the fishery would occur.

Trends in fishery CPUE. Using trends in fishery CPUE to satisfy fishery objectives may be useful in that it is a more direct representation of what the fishery observes. However, fishery CPUE is subject to uncertainty and possibly bias which makes it inappropriate for biological objectives. Therefore, it is not useful for regional stock distribution, but is useful for Regulatory Area Allocation.

Limiting the amount of change for area-specific catch limits. Limiting the change in catch limits could reduce large swings in area-specific catch limits that may be a result of various uncertainties in the estimation and distribution processes. However, these algorithms can slow down a sometimes-necessary response when a trend is occurring. For example, if the stock is trending downwards it may be necessary to reduce catch levels, or if the stock is increasing quickly, it may be reasonable to increase catch levels. These algorithms can be beneficial if the correct level is used.

Percentage allocation with a floor (i.e. minimums of 1.5 Milbs in 2A and 1.7 Milbs in 4CDE). A simple method is to agree on pre-determined allocation percentages. However, there are often minimum amounts that a sector needs to be profitable. Defining percentage allocations can be very useful when agreed upon, and minimum amounts may also be useful. But, when the total catch to be allocated is small, there may not be enough to satisfy the minimum amounts. Therefore, agreements must be in place on where catch may be taken (i.e., the percentage allocation declines) when minimum levels are enacted.

Stair-step allocations. This method would simply assign a fixed catch limit to a Regulatory Area when the abundance/biomass of Pacific halibut in that Regulatory Area is within a specified range. Ranges would be

identified such that at low abundance, the catch limit would be reduced. This would allow for stability except during times when the abundance crosses a threshold to a new level.

A maximum SPR with catch distribution by IPHC Regulatory Area determined from the modelled survey WPUE. This is interpreted to be a tool similar to status quo where a SPR determines the TCEY and is distributed directly to Regulatory Areas based on survey WPUE. However, status quo also adjusts that distribution with relative harvest rates shifting TCEY to Eastern areas.

Coastwide TCEY target and maximum calculated; distribution by target, but with ability to adjust TCEY up to the maximum. This tool is interpreted to consist of a default SPR which would determine a coastwide TCEY, but also contain a higher fishing intensity (smaller SPR) that would determine a maximum TCEY. This could be viewed similar to the U.S. OFL and ABC concept, where an overfishing limit (OFL) is calculated and an ABC (allowable biological catch) is determined that is less than the OFL, except that in the U.S. system, the difference between ABC and OFL is to account for scientific uncertainty. This tool suggests that the TCEY could exceed the target when necessary, but not exceed the maximum. The danger of this is that it does not guarantee that the TCEY would not be set at the maximum every year, thus making this tool moot. Some clear guidelines would have to be included regarding under what circumstances the default could be exceeded.

There are many other tools that could be used and the MSAB will be discussing them throughout 2019.

7 PROGRAM OF WORK

This Program of Work ([IPHC-2018-MSAB011-10](#)) is a description of activities related to the MSE and the Management Strategy Advisory Board (MSAB) that the IPHC Secretariat will engage in for the next five years. It describes each of the priority tasks, lists some of the resources needed for each task, and provides a timeline for each task. However, this work plan is flexible and may be changed throughout this period with the guidance of the MSAB, Science Review Board (SRB) members, and Commission. The order of the tasks in this work plan represents the sequential development of each task, and many subsequent tasks are dependent on the previous tasks.

7.1 MANAGEMENT STRATEGY EVALUATION (MSE)

Management Strategy Evaluation (MSE) is a process to evaluate alternative management strategies. This process involves the following

1. defining fishery goals and objectives with the involvement of stakeholders and managers,
2. identifying management procedures to evaluate,
3. simulating a halibut population with those management procedures,
4. evaluating and presenting the results in a way that examines trade-offs,
5. applying a chosen management procedure, and
6. repeating this process in the future in case of changes in objectives, assumptions, or expectations.

Figure 9 shows these different components and that the process is not necessarily a sequential process, but there may be movement back and forth between components as learning progresses. The involvement of stakeholders and managers in every component of the process is extremely important to guide the MSE and evaluate the outcomes.

7.2 BACKGROUND

Many important tasks have been completed or started and much of the work proposed will use past accomplishments to further the Management Strategy Evaluation (MSE) process. The past accomplishments include:

1. Familiarization with the MSE process.
2. Defining goals for the halibut fishery and management.
3. Developing objectives and performance metrics from those goals.
4. Development of an interactive tool (the Shiny application).
5. Discussions about coast-wide (single-area) and spatial (multiple-area) models.
6. Presentation of preliminary results investigating fishing intensity.
7. Discussions of ideas for distributing the TCEY to Regulatory Areas.

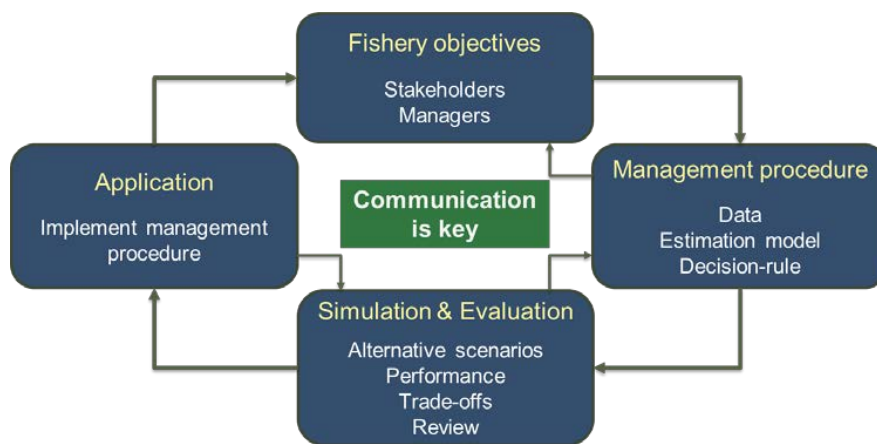


Figure 8. A depiction of the Management Strategy Evaluation (MSE) process showing the iterative nature of the process with the possibility of moving either direction between most components.

Management Strategy Evaluation is a process that can develop over many years with many iterations. It is also a process that needs monitoring and adjustments to make sure that management procedures are performing adequately. Therefore, the MSE work for Pacific halibut fisheries will be ongoing as new objectives are addressed, more complex models are built, and results are updated. This time will include continued consultation with stakeholders and managers via the MSAB meetings, defining and refining goals and objectives, developing and coding models, running simulations, reporting results, and making decisions. Along the way, there will be useful outcomes that may be used to improve existing management, and will influence recommendations for future work.

A detailed program of work has been developed for the next two years, with results for decision-making being presented to the Commission at the Annual Meetings in 2019 and 2021 (Table 9). More specifically, an evaluation of “Scale” (coastwide fishing intensity and the harvest control rule) will be presented at AM095 in January 2019. An evaluation of the entire harvest strategy depicted in Figure 1 (Scale and Distribution) will be completed in late 2020 and presented to the Commission for decision-making at AM097 in January 2021.

The evaluations delivered at AM097 will shape the IPHC harvest policy, but other aspects will become of interest and MSE work will continue afterwards.

Table 9. Timeline for MSE work in 2018–21.

May 2018 MSAB Meeting
Review Goals
Look at results of SPR
Review Performance Metrics
Identify Scale MP's
Review Framework
Identify Preliminary Distribution MP's
October 2018 MSAB Meeting
Review Goals
Complete results of SPR
Review Performance Metrics
Identify Scale MP'S
Verify Framework
Identify Distribution MP's
Annual Meeting 2019
Recommendation on Scale
Present possible distribution MP's
May 2019 MSAB Meeting
Evaluate additional Scale MP's
Review Goals
Spatial Model Complexity
Identify MP's (Distn Scale)
Review Framework
October 2019 MSAB Meeting
Review Goals
Spatial Model Complexity
Identify MP's (Distn Scale)
Review Framework
Review multi-area model development
Annual Meeting 2020
Update on progress
May 2020 MSAB Meeting
Review Goals
Review multi-area model
Review preliminary results
October 2020 MSAB Meeting
Review Goals
Review preliminary results
Annual Meeting 2021
Presentation of first complete MSE product to the Commission
Recommendations on Scale and Distribution MP

MSE TASKS FOR THE NEXT 5 YEARS

- Task 1. Verify that goals are still relevant and further define objectives.
- Task 2. Develop performance metrics to evaluate objectives.
- Task 3. Identify realistic management procedures of interest to evaluate with a closed-loop simulation framework. This includes management procedures related to coastwide scale (e.g., SPR) and to distributing the TCEY.
- Task 4. Design a closed-loop simulation framework and code a computer program to extend the current simulation framework.
- Task 5. Develop educational and visualization tools that will engage stakeholders and Commissioners, as well as facilitate communication and evaluation.
- Task 6. Further the development of operating models to include multiple areas and additional structural uncertainty.

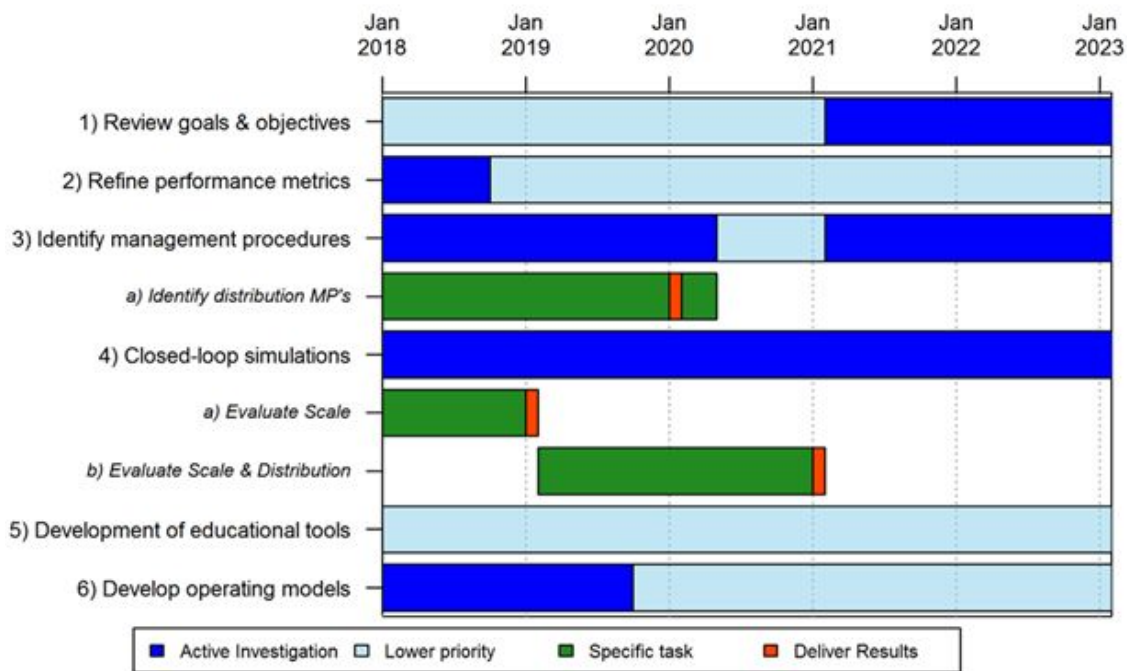


Figure 9. Gantt chart for the five-year program of work. Tasks are listed as rows. Dark blue indicates when the major portion of the main tasks work will be done. Light blue indicates when preliminary or continuing work on the main tasks will be done. Dark green indicates when the work on specific sub-topics will be done. The orange color shows when results will be presented at an Annual Meeting.

8 RECOMMENDATIONS

That the Commission:

- 1) **NOTE** paper IPhC-2018-IM094-12 which provides an update on the MSE including goals and objectives, the simulation framework, results for management procedures consisting of a range of SPR values from 0.56 to 0.30 and three control rules: 25:10, 30:20, and 40:20, a distribution framework, possible elements of management procedures related to distribution, and a 5-year program of work.
- 2) **RECOMMEND** additional goals and objectives, as well as prioritization of these goals and objectives for the evaluation of results.
- 3) **NOTE** the performance metrics reported for various management procedures and the priority objectives as well as the statistics of interest.
- 4) **NOTE** the results of the MSE simulations including that all management procedures for SPR values greater than or equal to 0.32 (lower fishing intensities) met the priority biological objective, but did not meet the catch stability objective. At SPR values less than 0.40 (higher fishing intensities) the yield curve was flattening and there was less difference between median total mortality.
- 5) **RECOMMEND** additional management procedures to evaluate using the coastwide MSE framework.
- 6) **NOTE** the distribution framework and the potential elements of management procedures that may be useful to distribute the TCEY.
- 7) **NOTE** the 5-year program of work and the delivery dates January 2019 for coastwide results and January 2021 for Scale and Distribution components of the management procedure for potential adoption by the Commission and subsequent implementation.

9 APPENDICES

APPENDIX IA: Primary objectives and associated performance metrics.

APPENDIX IB: Additional objectives and associated performance metrics.



APPENDIX IA
PRIMARY OBJECTIVES AND ASSOCIATED PERFORMANCE METRICS

Primary objectives for the evaluation of Management Procedures (MPs) on coastwide scale

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRIC
1.1. KEEP BIOMASS ABOVE A LIMIT TO AVOID CRITICAL STOCK SIZES Biomass Limit	Maintain a minimum female spawning stock biomass above a biomass limit reference point at least 90% of the time	$SB < \text{Spawning Biomass Limit } (SB_{Lim})$ $SB_{Lim}=20\%$ spawning biomass	<i>Long-term</i>	0.10	$P(SB < SB_{Lim})$
2.1. LIMIT CATCH VARIABILITY	Limit annual changes in the coastwide TCEY	Average Annual Variability (AAV) > 15%	Short-term	0.25	$P(AAV > 15\%)$
2.2. MAXIMIZE DIRECTED FISHING YIELD	<i>Maximize average TCEY coastwide</i>	<i>Median coastwide TCEY</i>	<i>Short-term</i>	<i>STATISTIC OF INTEREST</i>	<i>Median \overline{TCEY}</i>

APPENDIX IB
ADDITIONAL OBJECTIVES AND ASSOCIATED PERFORMANCE METRICS

GOAL: Biological Sustainability

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRIC
<i>REPORT A METRIC THAT IS BASED ON NUMBERS OF PACIFIC HALIBUT</i>	<i>An absolute measure</i>	<i>Number of mature female halibut</i>	<i>Long-term</i>	<i>STATISTIC OF INTEREST</i>	<i>Median Number of Mature Females</i>
<i>REPORT A METRIC INDICATING THE SPAWNING BIOMASS EXPECTED TO BE ABOVE 50% OF THE TIME (I.E., AN IMPLIED TARGET)</i>	<i>An absolute measure</i>	<i>Spawning Biomass</i>	<i>Long-term</i>	<i>STATISTIC OF INTEREST</i>	<i>Median \bar{SB}</i>
<i>REPORT A METRIC THAT GIVES AN INDICATION HOW OFTEN THE BIOMASS IS BELOW THE FISHERY TRIGGER</i>	<i>Maintain a biomass that is above the biomass limit and not on the ramp a high percentage of the time</i>	<i>B < Spawning Biomass Limit (Fishery Trigger)</i> <i>Fishery Trigger=30% spawning biomass</i>	<i>Long-term</i>	<i>STATISTIC OF INTEREST</i>	<i>$P(SB < Fish_{Trig})$</i>
<i>CONSERVE SPATIAL POPULATION STRUCTURE</i>					

GOAL: Optimize directed fishing opportunities.

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRIC	
2.1. LIMIT CATCH VARIABILITY	Limit annual changes in the coastwide TCEY	AAV	Long-term	STATISTIC OF INTEREST	AAV and variability	
		<i>Change in TCEY > 15% in any year</i>	Short-term	STATISTIC OF INTEREST	$\frac{TCEY_{i+1} - TCEY_i}{TCEY_i}$	
	Limit annual changes in the TCEY for each Regulatory Area	Average Annual Variability by Regulatory Area (AAV _A) > 15%	Long-term	0.25		$P(AAV > 15\%)$
		AAV _A	Long-term	STATISTIC OF INTEREST	AAV and variability	
	Gain insight into the additional variability in the TCEY when on the ramp	<i>Change in TCEY by Regulatory Area > 15% in any year</i>	Short-term	STATISTIC OF INTEREST		$\frac{TCEY_{i+1} - TCEY_i}{TCEY_i}$
		AAV while on the ramp	Long-term	STATISTIC OF INTEREST	AAV given estimated SB < SB _{Trig}	
		<i>Percent of time “on the ramp” (estimated stock status is below the fishery trigger; SB_{trig})</i>	Long-term	STATISTIC OF INTEREST		$P(\widehat{SB} < SB_{Trig})$
		<i>SB_{Trig} to be evaluated (e.g., 30% or 40%)</i>				

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRIC
2.2. MAXIMIZE DIRECTED FISHING YIELD	Maintain TCEY above a minimum level coastwide	Coastwide TCEY < TCEY _{min}	Long-term Short-term	?? ??	$P(TCEY < TCEY_{min})$
	Maximize high yield (TCEY) opportunities coastwide	Coastwide TCEY > 50.6 Mlbs (70% of 1993-2012 average)	Long-term Short-term	STATISTIC OF INTEREST	$P(TCEY < 50.6 \text{ Mlbs})$
	Present the range of coastwide TCEY that would be expected	Range of coastwide TCEY	Long-term Short-term	STATISTIC OF INTEREST	5 th and 75 th percentiles of TCEY
	Maximize average TCEY by Regulatory Area	Median coastwide TCEY	Long-term Short-term	STATISTIC OF INTEREST	Median \overline{TCEY}
	Maintain TCEY above a minimum level by Regulatory Area	TCEY _A < TCEY _{A,min}	Long-term Short-term	?? ??	$P(TCEY < TCEY_{min})$
	Maximize high yield (TCEY) opportunities by Regulatory Area	TCEY _A > 50.6 Mlbs (70% of 1993-2012 average)	Long-term Short-term	STATISTIC OF INTEREST	$P(TCEY < 50.6 \text{ Mlbs})$
	Present the range of TCEY by Regulatory Area that would be expected	Range of TCEY by Regulatory Area	Long-term Short-term	STATISTIC OF INTEREST	5 th and 75 th percentiles of TCEY
MINIMIZE POTENTIAL FOR NO CATCH LIMIT FOR THE DIRECTED COMMERCIAL FISHERY	Minimize fishery closures	Directed commercial allocation = 0	Long-term Short-term	STATISTIC OF INTEREST	$P(\text{Directed Mort} = 0)$

GOAL: Minimize Discard Mortality

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRICS
3.1. HARVEST EFFICIENCY	Discard mortality is a small percentage of the longline fishery annual catch limit	>10% of annual catch limit	Long-term Short-term	0.25	$P(DM > 10\%FCEY)$
<i>ABSOLUTE MEASURE</i>	<i>Absolute</i>	<i>Discard Mortality (DM)</i>	<i>Long-term Short-term</i>	<i>NA</i>	<i>Median \overline{DM}</i>

GOAL: Minimize Bycatch Mortality

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRICS



UPDATE ON PROGRESS REGARDING THE IMPLEMENTATION OF THE 1ST IPHC PERFORMANCE REVIEW RECOMMENDATIONS

PREPARED BY: IPHC SECRETARIAT (S. KEITH & D. WILSON; 15 OCTOBER 2018)

PURPOSE

To provide the Commission with an opportunity to review the current status of implementation for each of the recommendations arising from the Report of the 1st IPHC Performance Review Panel (PRIPHC01).

BACKGROUND

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. The IPHC contracted with CONCUR, Inc., a U.S.-based firm, to undertake the review. CONCUR performed its work independently of IPHC Commissioners and staff, and concluded its report to the Commission in April 2012.

In undertaking the Performance Review, the contractor relied on the following approaches to assess the Commission's work and practices, track effectiveness, and gauge the need for revised approaches:

- 1) Conducting a set of 43 in-depth interviews with a representative and diverse set of stakeholders;
- 2) Observing the 2011 Interim and 2012 Annual Meetings and reviewing Commission background materials;
- 3) Reviewing practices at other regional fishery management organizations; and
- 4) Drawing on its professional judgment and experience.

In 2012, the contractor published a report outlining 12 recommendations (containing 39 parts) to improve the functioning of the IPHC ([McCreary & Brooks, CONCUR, Inc. 2012](#)).

In January 2014, the Commission issued a Progress Report, documenting the Commission's response to the 1st IPHC Performance Review ([PERFORMANCE REVIEW 2012: A Progress Report](#)). At Interim and Annual Meetings since then, Contracting Parties have noted the status of implementation of each of the recommendations arising from the report of the 1st IPHC Performance Review.

DISCUSSION

The Recommendations arising from the 1st Performance Review of the IPHC are provided at [Appendix A](#), with responsibilities, updates, timelines for implementation, and proposed priorities, incorporated for the Commission's consideration. All but one of the original recommendations have now been completed.

RECOMMENDATIONS

That the Commission **NOTE** paper IPHC-2018-IM094-13 which details the status of each of the recommendations from the 1st IPHC Performance Review (PRIPHC01).

APPENDICES

[Appendix A](#): Update on progress regarding the implementation of the 1st IPHC Performance Review recommendations

APPENDIX A

UPDATE ON PROGRESS REGARDING THE IMPLEMENTATION OF THE 1ST IPHC PERFORMANCE REVIEW RECOMMENDATIONS

RECOMMENDATION	RESPONSIBILITY	UPDATE/STATUS	WORKPLAN / TIMELINE	PRIORITY
GOVERNANCE				
<p>1. Adopt clear and comprehensive protocols / rules of procedure</p> <p>1.1 Update and expand the existing Rules of Procedure for the Commission, Secretariat and each current stakeholder body (PAG, Conference Board and RAB).</p>	<i>Commission, IPHC Staff, Advisory Bodies</i>	<p>Completed: The Commission's Rules of Procedure were updated in 2017 and incorporate a requirement for review and revision every two (2) years. They contained formal process for each of its subsidiary bodies (IPHC Rules of Procedure (2017)). Further revisions to the Rules of Procedure will be provided to the Commission at IM094 and AM095 for potential adoption.</p>	2013-2014 - 2016/2017	High
<p>2. Improve Commission transparency</p> <p>2.1 Conduct the bulk of the Commission's deliberations at the Interim and Annual meetings in public.</p>	<i>Commission</i>	<p>Completed: The Commission decided to treat all meetings as open unless specifically closed (meetings pertaining to personnel or financial discussions are expected to be closed). This would include the opportunity for attendees and web audience participants to engage the Commission in two-way dialogue during the meeting.</p> <p>These changes were put into effect on a trial basis for the 2012-13 public meeting cycle. The agendas for those meetings were changed to incorporate more time for public comment and discussion, and the web broadcast was modified to allow submission of comments and questions from the on-line audience.</p> <p>In addition, more meeting materials and updates were posted, and posted earlier, at the IPHC website than had been previous practice. This greatly increased the information available to the public before, during, and after the meetings.</p> <p>The Commission also directed the CB and PAB to open their meetings to the public.</p>	2012 +	High

RECOMMENDATION	RESPONSIBILITY	UPDATE/STATUS	WORKPLAN / TIMELINE	PRIORITY
2.2 The Commission should retain the flexibility to conduct Commission-only retreats to foster candid deliberations on its own internal mechanisms and effectiveness.	<i>Commission</i>	Completed: The Commissioners meet daily at the Annual and Interim Meetings for brief planning Sessions. In addition, the Commissioners meet once per year for a 1.5 to 2-day closed Work Meeting to plan for the Interim and Annual Sessions.	2013 +	High
2.3 Discussion summaries from any in camera sessions – whether as part of the Interim/Annual meeting cycle or as a separate retreat – should be produced and made available (within four to six weeks) to any interested party. Exceptions should be made for those items (i.e., personnel and contractual matters) appropriately deemed confidential.		Completed: Commission reports are now draft, adopted and published within 2 weeks of the close of the session.	2013 + 2016 +	High
2.4 Refrain from taking policy actions in executive session. Aside from personnel matters, contractual issues and/or pending litigation, the Commission should refrain from taking policy actions in executive session.	<i>Commission</i>	Completed: The Commissioners reserve the right to hold closed Sessions when discussing sensitive matters. However, wherever possible, the rationale for making decisions in closed session is communicated during public sessions, as noted in the IPHC Circular series.	2013 +	High
3. Revisit Stakeholder Engagement Structure 3.1 Adopt a multi-step process over the next two years to transition the current stakeholder advisory arrangement into a unified, integrated body.	<i>Commission; IPHC Secretariat</i>	Completed: The Commission assessed that it would be better served by retaining the current CB, PAB, and RAB structures, and decided against consolidating its subsidiary bodies into one.	2013 +	Medium

RECOMMENDATION	RESPONSIBILITY	UPDATE/STATUS	WORKPLAN / TIMELINE	PRIORITY
RESEARCH				
4. Develop Strategic Approach to Research		Completed: The IPHC Secretariat continues to refine the Commission's research planning and execution, to include clear linkage between the 5-Year Research Plan and annual planning. In addition, the annual research planning process has been revised to add rigor and strengthen its connection to long-term research goals and priorities.		High
4.1 Develop a strategic Five Year Research Plan that links research projects to Commission objectives, with an accompanying and predictable budget. The Research Plan should address the specific organizing questions that structure the research, as well as the timeline of projects and deliverables. The Research Plan should also address specific objectives of cooperative research. Some specific topics to address may include size at age, migration, and impacts of bycatch, but these should be revised and confirmed as the Research Plan is drafted.				
4.2 Bolster and formalize RAB. The RAB currently lacks any written Protocols/Rules of Procedure nor does it have any formal composition. Consistent with the steps outlined above to have clear guidelines and balanced participation, we recommend the Commission take steps to formally establish the RAB with associated objectives, participation criteria and other operational aspects.		Completed: IPHC Rules of Procedure (2017) adopted at the 93 rd Session of the Commission.		High
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. We also recommend it expand commitments to pursue cooperative research.		Completed: The IPHC Scientific Review Board (SRB) was formalized in the IPHC Rules of Procedure (2017) and contain peer review elements by independent experts in a range of fields covering IPHC research and assessment activities.		Medium
STOCK ASSESSMENT				
5. Strengthen Stock Assessment Process				

RECOMMENDATION	RESPONSIBILITY	UPDATE/STATUS	WORKPLAN / TIMELINE	PRIORITY
5.1 Foster regular peer review of stock assessment model and outputs, as well as the associated apportionment process. 5.2 Ensure adequate time and predictable process for stakeholder and Commissioner discussion of proposed changes to the assessment model and the associated apportionment methodology.	<i>IPHC Secretariat</i>	Completed: The Commission has instituted the SRB as a regular ongoing peer-review mechanism, and has adopted a regular sequence of annual SRB meetings to support the assessment, the management strategy evaluation, and the research program. As an indication of the state of IPHC science, IPHC scientists are regularly invited to present and instruct on assessment modeling and methods at international conferences.		
5.3 Augment Secretariat assessment staff.	<i>IPHC Secretariat</i>	Completed: Since the 1 st Performance Review, the Secretariat has hired top-level assessment and harvest policy scientists. The Commission has also brought in the services of graduate interns at appropriate points in the analytical process, and has budgeted for programming support of the management strategy evaluation		
CONVENTION				
6. Expand Commission Composition		Completed: Aside from incremental improvements to the Commissioner orientation process incorporating the feedback and experience of new Commissioners, the Commission has indicated that it does not intend to take further action on this recommendation.		
6.1 Add alternates to broaden representation on Commission.		Completed: The Commission has decided that it does not anticipate any expansion of the Commission at this time, which is a matter for the Contracting Parties and would require renegotiation of the Convention governing the IPHC.		
6.2 Articulate Commissioner recruitment criteria. 6.3 Press national government for more timely appointments. 6.4 Incorporate continuity as a consideration in revising Commission appointments.		Completed: This is a matter for the Contracting Parties. The Commission notes that the Contracting Parties are cognizant of the need for timely appointments and succession planning, and that the Commission will make all possible effort with both Canada and the United States of America to ensure timely appointments, as well as to facilitate smooth transitions through succession planning.		
6.5 Revise Rules of Procedure to accommodate alternates.		Completed: IPHC Rules of Procedure (2017) adopted at the 93 rd Session of the Commission.		

RECOMMENDATION	RESPONSIBILITY	UPDATE/STATUS	WORKPLAN / TIMELINE	PRIORITY
PLANNING				
<p>7. Build Long-Term Strategic Plan</p> <p>7.1 Articulate Overarching Goals and Objectives. Develop a concise statement of goals and objectives that takes the Commission forward over the next decade and beyond.</p> <p>7.2 Identify implementation strategies to fulfill Overarching Goals and Objectives. Develop an Annual Plan and budget that fits within the framework of the longer-term strategic plan.</p> <p>7.3 Identify milestones and performance measures to track progress.</p> <p>7.4 Consider budgetary implications of priorities identified in the strategic planning process.</p>		<p>In progress: The Commission postponed action on this recommendation until after higher-priority activities were complete.</p> <p>The Secretariat began work on this recommendation during 2017-18 and will initially consider this an internal planning document.</p>		
ADVICE				

RECOMMENDATION	RESPONSIBILITY	UPDATE/STATUS	WORKPLAN / TIMELINE	PRIORITY
<p>8. Structure Staff Advice to Strengthen the Delineation Between Scientific Analysis and Policy Options</p> <p>8.1 Clarify the respective roles and responsibilities of Commissioners and staff for each step of the analysis and policy development cycle.</p> <p>8.2 Present options for Commission consideration.</p>		<p>Completed: The Commission noted that the approach to delineation between science advice and policy options should follow accepted national and international best practices, and that as a first step towards implementation, an approach should be developed for risk-based harvest advice.</p> <p>The Commission has adopted a new structure for harvest advice proposed by the IPHC Secretariat, including a decision-table presentation format to support risk-based decision-making. This new advice structure clearly separates the scientific analysis from the management decisions, and was thoroughly examined and revised as part of the stock assessment review by outside scientific reviewers.</p> <p>The Commission also decided to implement the MSE process to better inform its policy analysis and choices, and chartered the MSAB in 2013 to oversee the MSE process and to advise the Commission and IPHC Secretariat on the development and evaluation of candidate objectives and strategies for managing the fishery.</p>		
LEADERSHIP				
<p>9. Commissioners Should Seek and Take Advantage of Opportunities to Model and Exert Leadership</p> <p>9.1 Take an active role in articulating a vision for the IPHC and engaging in actions to carry out that vision.</p> <p>9.2 Exercise and model a stance of principled negotiation in deliberations over Commission matters.</p> <p>9.3 Provide clear guidance to Commission executive staff on functions ranging from conducting assessments, to developing options for catch limits, to providing advice to member governments and other organizations.</p>		<p>Completed: The Commissioners agreed that their role is to exercise leadership with regard to the work of the IPHC, and as such are demonstrating leadership through key initiatives. The Commission intends to continue to lead and make progress on key initiatives, as determined in consultation with stakeholders.</p>		
COMMISSION STRUCTURE				

RECOMMENDATION	RESPONSIBILITY	UPDATE/STATUS	WORKPLAN / TIMELINE	PRIORITY
<p>10. Elevate the Importance of Tribes and First Nations</p> <p>10.1 Ensure any revamping of the Commission structure, including but not limited to the industry advisors, RAB and Commissioner seats, accommodates tribal and First Nations participation along with other interested parties.</p> <p>10.2 Actively include First Nations and tribal scientists in structured peer reviews of the current assessment and apportionment methodologies, in particular when considering implementation of Recommendation #5.</p> <p>10.3 Ensure that Commission recommendations and consultations by national sections are consistent with the spirit and letter of U.S. and Canadian law and any associated rights of tribes and First Nations.</p>		<p>Completed: The Commission notes the importance of Tribes and First Nations within the domestic processes of Canada and the United States of America, and that issues pertaining to Pacific halibut and these groups are domestic responsibilities of the two Governments. The Commission noted that the Contracting Parties consult directly with the Tribes and First Nations.</p> <p>The Commission also stressed that the Tribes and First Nations have a very important existing participatory role in Commission processes, along with other stakeholders, and that it continues to value their participation, and to consider the interests of the Tribes and First Nations in its actions.</p> <p>The Commission notes that the effort to define roles and responsibilities (in response to recommendation #1) should help articulate the current avenues of engagement and the relationship of the IPHC to U.S.A. and Canadian domestic processes.</p> <p>The Commission welcomes suggestions on how its interaction with Tribes and First Nations can be facilitated and improved.</p>		
MEETING CYCLE				
<p>11. Strengthen Interim and Annual Meeting process</p>		<p>Completed: Beginning with the 2012 Interim Meeting and the 2013 Annual Meeting, the Commission decided to open both meetings to the public as much as possible, including steps noted in the sub-items below. The Commission instituted these changes on a trial basis for the 2012-13 meeting cycle, and solicited feedback from the on-site and web audiences, noting that development of appropriate and workable formats and procedures for public participation is an iterative process. All IPHC meetings are now open the public as determined in the IPHC Rules of Procedure (2017).</p>		
<p>11.1 Add a third meeting to the Annual Meeting cycle.</p>		<p>Completed: The Commission decided not to add the proposed third meeting to the annual cycle at present, but rather, continue with an information 'Work Meeting' as the third meeting to discuss with staff and direct activities accordingly, prior to formal discussion at the Interim Meeting and Annual Meeting.</p>		

RECOMMENDATION	RESPONSIBILITY	UPDATE/STATUS	WORKPLAN / TIMELINE	PRIORITY
11.2 Foster stronger internal preparation for public meetings	<i>IPHC Secretariat</i>	Completed: The Secretariat continues to refine its internal processes and timelines in order to develop and publish meeting materials as far in advance of the meeting as possible.		
11.3 Provide meeting materials as early as possible, even if that means posting materials in batches on-line rather than waiting until a comprehensive set of back-up documents can be produced in a single comprehensive package.	<i>IPHC Secretariat</i>	Completed: These were clarified in the IPHC Rules of Procedure (2017), including deadlines of papers to be published 30 days prior to the commencement of a meeting.		
11.4 Expand the existing “Navigating the IPHC Meeting This Week” document to flesh out meeting objectives and protocols.	<i>IPHC Secretariat</i>	Completed: Meeting handouts are reviewed each year with an eye to making them more informative and useful for meeting participants.	2012 +	
11.5 Increase opportunities for public comment.		Completed: The Commission has opened all sessions at the Interim and Annual meetings to the public, both in person and via a webcast. Only human resources discussions are now held in private.		
11.6 Make greater use of webinars to streamline meetings.	<i>IPHC Secretariat</i>	Completed: All IPHC meetings are now webcast. Only human resources discussions are held in private. The webcasts at both meetings have been expanded to include the ability for the web audience to submit questions or comments during the proceedings.		
COMMUNICATION				
12. Improve Communications				
12.1 Improve timeliness and use of meeting summaries – both in real-time and post-meeting.	<i>IPHC Secretariat</i>	Completed: IPHC Rules of Procedure (2017) adopted at the 93 rd Session of the Commission. Meeting reports are now being published soon after a Session closes.		
12.2 Develop agreed upon written policy to guide staff comment – in writing or in testimony – on policies under consideration before other bodies.	<i>IPHC Secretariat</i>	Completed: The Secretariat has developed an internal process for comment, testimony, or written inputs to outside organizations or meetings, including internal and external briefing notes.		

RECOMMENDATION	RESPONSIBILITY	UPDATE/STATUS	WORKPLAN / TIMELINE	PRIORITY
12.3 Improve outreach to and discussions with non-traditional constituencies such as bycatch users and sport fishermen.	<i>IPHC Secretariat</i>	Completed: The IPHC Commissioners and Secretariat have continued to reach out to users of the Pacific halibut resource outside the commercial fishery. The Commission is extensively engaged with the North Pacific Fishery Management Council on bycatch issues, at both the scientific and the management levels. This process has will be ongoing.		
12.4 Explore opportunities to make better use of technologies – including from RSS feeds to social media forms such as Twitter and/or Facebook – to keep interested stakeholder apprised of recent IPHC-related news.	<i>IPHC Secretariat</i>	Completed: The IPHC Secretariat has developed a robust social media protocol and makes extensive use of Facebook and Twitter to reach stakeholders. The “live tweeting” of the Annual Meeting has become the favored means for news organizations to gather data for their reporting.		



2nd IPHC Performance Review (PRIPHC02): Update

PREPARED BY: IPHC SECRETARIAT (D. WILSON; 24 OCTOBER 2018)

PURPOSE

To provide the Commission with an update on progress regarding the 2nd Performance Review of the IPHC (PRIPHC02) and an opportunity to direct the IPHC Secretariat regarding its completion.

BACKGROUND

At the 93rd Session of the IPHC Annual Meeting (AM093) in January 2017, the Commission noted paper [IPHC-2017-AM093-18](#), which outlined planning for the 2nd IPHC Performance Review, and provided the following direction to the IPHC Secretariat:

[AM093](#)–Rec.13 (para. 153) *The Commission **RECOMMENDED** that the IPHC Secretariat finalise the draft performance review terms of reference and criteria to conduct the review, and implement the 2nd Performance Review throughout 2017, for presentation to the Commission at its 94th Annual Meeting in 2018.*

At the 94th Session of the IPHC Annual Meeting (AM094 in January 2018, the Commission adopted Terms of Reference, criteria, process and budget to conduct the 2nd Performance Review of the IPHC:

[Terms of Reference, criteria, process, and budget to conduct the 2nd Performance review of the IPHC](#) (Adopted 26 January 2018)

Also at the AM094, the Commission agreed to defer the 2nd IPHC Performance Review until FY2019 (1 Oct. 2018 to 30 Sept. 2019), due to budget limitations in the current financial year (para. 94 of [IPHC-2018-AM094-R](#)).

The “*Terms of Reference and Criteria to Conduct the 2nd Performance Review of the IPHC*,” includes six specific criteria for the review. Criteria 1, “*Legal analysis of the Convention to ensure its adequacy relative to current global best practice principles of fisheries management*,” is the foundation element, upon which the rest of the review will rest.

DISCUSSION

It is proposed to hold two (2) Panel meetings in 2019, one in April and a second in September.

1st Meeting PRIPHC02: USA – Seattle or Alaska

Option 1: 25-26 April 2019

Option 2: 30 April – 1 May 2019

2nd Meeting PRIPHC02: Canada - Victoria, Vancouver or Ottawa

Option 1: 4-5 September 2018

Option 2: 11-12 September 2018

Composition of the Review Panel:

Chairperson: An independent Chairperson with legal fisheries background and a good understanding of Regional Fisheries Management Organisations (RFMO). The Chairperson should not be directly affiliated with any IPHC Contracting Party.

Contracting Parties: 1 representative of each IPHC Contracting Party.

Science Advisor: A science expert not affiliated with the IPHC Contracting Parties, and with expertise on groundfish and the ecosystems affected by Pacific halibut fisheries.

RFMOs: At least two members from other Regional Fisheries Management Organisations: e.g. Inter-American Tropical Tuna Commission (IATTC), North Pacific Fisheries Commission (NPFCA), North Pacific Anadromous Fish Commission (NPAFC).

NGOs: Two Non-Governmental Organisations: e.g. PEW Charitable Trust, Birdlife International (BLI).

IPHC Secretariat: The IPHC Secretariat will not be a part of the Review Panel but it will act as a facilitator of its activities, providing access to information and facilities that the Review Panel will require to conduct its work.

Report of the PRIPHC02:

The IPHC Secretariat will undertake and complete the 2nd Performance Review in 2019, with the intention of presenting the final report and associate recommendations at the 95th Interim Meeting in November 2019, and for final adoption at the AM096 in January 2020.

RECOMMENDATIONS

That the Commission:

- 1) **NOTE** paper IPHC-2018-IM094-14 which outlines progress on the 2nd IPHC Performance Review (PRIPHC02).

APPENDICES

Nil.



Financial Statement for FY2018

PREPARED BY: IPHC SECRETARIAT (M. LARSEN; 01 NOVEMBER 2018)

PURPOSE

1. To provide the Commission with a draft end of year financial statement for FY2018 (financial period: 1 October 2017 to 30 September 2018).

STATUS OF CONTRIBUTIONS TO THE AUTONOMOUS BUDGET IN FY2018: INCOME

2. For FY2018, the IPHC saw a nominal increase in the General account carryover (+\$22K) and a decrease in the Supplemental carryover (-\$684K) (**Tables 1 and 2 respectively**). This General carryover is higher than anticipated due to lower expenses. The Supplemental carryover is lower due to lower halibut process and catch rates. The coast-wide price of \$5.73/lb was significantly lower than projections (\$6.31/lb). The lower prices were primarily due to frozen inventory from the 2017 fishing period available through most of 2018. With certificate of deposit rates moving up in 2018 the interest earned is near expectations. With more changes likely from the US Federal Reserve it is likely rates will continue their slow rise.
3. Items of interest regarding income are:
 - a) **Pacific halibut Prices** – In FY2018 the IPHC saw Pacific halibut prices start low and slowly strengthen throughout the summer in fresh market ports. The prices in fresh-market ports (Prince Rupert, Homer, Seward, SE Alaska) were substantially higher than the frozen-market ports. Prince Rupert landings averaged \$6.45/lb with the most FISS landings (726,270 lbs). South-East Alaska ports averaged \$6.06/lb. Lower prices persisted in western Gulf of Alaska and Bering Sea ports with the fish primarily going to the frozen market.
 - b) **U.S.A. Contribution** – In FY2018, the U.S. Government appropriated **\$4.2M** to the IPHC (**Table 1**). The U.S.A. contributions included funding for pension deficits and headquarters lease costs.
 - c) **Canada Contribution** – In FY2018, the Canadian government contributed **\$0.956M** to the IPHC (**Table 1**). The Canadian contributions included **\$848,720** for general contributions (which has been unchanged since 2003), as well as a separate amount of **\$107,315** to cover pension deficit payments.

EXPENDITURES FOR FY2018

4. For FY2018 expenses were 91% of the projected budget (**Table 4**). IPHC Secretariat salaries and benefits were near expectations along with the related office expenses. Items of interest include:
 - a) Office Secretariat payroll were in line with projections (+0.5%) (**Table 4-1**). IPHC Secretariat staff received a 2.11% COLA increase, and step raises occurred where appropriate. The IPHC Fishery-independent setline survey payroll was slightly lower than projected due to fewer weather/non-fishing days than expected.

- b) Higher totals for B.C. Worker's Compensation program (BC WorkSafe) are a result of hiring more Canadian employees (port and survey) than anticipated (**Table 4-1 row 72441**). These mandatory costs (1.4% of salary) are much less than USA salaried employees (7.65% of salary for FICA) and represent program savings.
- c) Overall meeting and travel costs were less than budgeted (**Table 4-2 Travel**). Interim Meeting costs have increased due to the Seattle meeting market (high demand) and the larger meeting spaces needed for public sessions (**Table 4-2 row 83211**). Annual Meeting costs have increased due to additional services required (**Table 4-2 row 83212**).
- d) Office and storage lease costs were as projected (**Table 4-3 rows 82111, 82123**). The issue of payment from the University of Washington for lease costs (\$76,382) is unresolved at this time.
- e) Legal fees decreased with no major activity. Legal fees are split into general legal fees (**Table 4-3 row 85941**) and personnel legal fees (**Table 4-1 row 75311**).
- f) General Liability renewal was higher than expected (**Table 4-3 row 85212**).
- g) Lower than anticipated vessel costs (contracts, revenue share) resulted in most of the savings seen in the FISS program (**Table 7.1**)

EXTRA-BUDGETARY FUNDS

- 5. The IPHC continued to receive a grant for costs associated to the implementation of the extended sampling in Alaska, U.S.A. The IPHC is also receiving grants from the North Pacific Research Board (NPRB) and Saltonstall-Kennedy (SK) (Table 1). The Commission also received funds from the Department of Fisheries and Oceans, Canada and Washington Department of Fish and Wildlife for additional work completed on the IPHC fishery-independent setline surveys in 2018 (**Table 6**).

RECOMMENDATION/S

- 6. That the Commission **NOTE** paper IPHC-2018-IM094-15 which includes the Financial Statement and supporting documentation for the financial period 01 October 2017 to 30 September 2018 (FY2018).

APPENDICES

Appendix I: FY2018 Financial Statements – Interim Meeting (ver. 1.0)

Financial Statements
International Pacific Halibut Commission
Interim Meeting
FY2018 - 1 Oct. 2017 to 30 Sept. 2018

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TABLE 1. General I & E
International Pacific Halibut Commission
Income and Expenses

% of Year				100%
INCOME	Actual	Budget	% of Budget	
General				
Carry over from Prior FY	\$ 1,972,231	\$ 1,972,231	100%	
Member Contributions				
US Contribution - General	\$ 4,200,000	\$ 4,200,000	100%	
CDN Contribution - General	\$ 848,720	\$ 848,720	100%	
CDN Contribution - Pension	\$ 107,315	\$ 107,315	100%	
Grants & Contracts				
NMFS Grant - Port Sampling	\$ 452,397	\$ 452,397	100%	
NBRB Grant - Growth Markers	\$ 29,052	\$ 57,773	50%	
SK Grant - DMR Classification	\$ 183,751	\$ 255,402	72%	
Research Income				
DMR Classification	\$ 183,447	\$ 125,000	147%	
Reproductive Cycle	\$ 43,260	\$ 195,428	22%	
Misc. Income				
Interest	\$ 5,326	\$ 5,000	107%	
Other income	\$ -	\$ -	0%	
FY Income Sub-total	\$ 6,053,268	\$ 6,247,035	97%	
TOTAL GENERAL FUND Income & Carryover	\$ 8,025,499	\$ 8,219,266	98%	
EXPENSES				
Personnel	\$ 4,512,489	\$ 4,786,543	94%	
Programs	\$ 432,027	\$ 481,035	90%	
Administration	\$ 1,097,080	\$ 1,187,396	92%	
Supplies	\$ 323,777	\$ 551,181	59%	
Prior Fiscal Year	\$ 6,205	\$ -	0%	
FY Expense Sub-total	\$ 6,371,577	\$ 7,006,154	91%	
General Fund FISS Expenses to Supplemental	\$ (340,434)	\$ (302,597)	113%	
TOTAL GENERAL FUND Net Expenses	\$ 6,031,143	\$ 6,703,557	90%	
	Fiscal Year Net Gain/Loss	\$ 22,125	\$ (456,522)	
GENERAL FUND CARRYOVER	1,994,356	1,515,709		

Note: Report reflects approved General and Supplemental account changes for FY2018

TABLE 2. Supplemental I & E

International Pacific Halibut Commission Income and Expenses - Supplemental

Income	Actual	Budget	%	Notes
Supplemental				
Carryover from prior FY	\$ 2,243,312	\$ 2,243,312	100%	
Current Year Income				
Fish Sales				
Sale of Halibut - FIS survey	\$ 4,706,877	\$ 5,712,112	82%	
Sale of Bycatch - FIS survey	\$ 95,745	\$ 56,351	170%	
Grants and Contracts				
DFO - Rockfish Contract	\$ 34,820	\$ 34,520	101%	Area 2B rockfish sampling
WDFW - Rockfish Contract	\$ 11,580	\$ 11,580	100%	Area 2A rockfish sampling
Other Income				
Misc. Income	\$ -	\$ -	n/a	
Interest	\$ 865	\$ 1,125	77%	
Internal Transfers				
Rollover from Reserve	\$ 8,003	\$ 10,000	80%	Transfer of funds in excess of reserve limit
Current Year Income	\$ 4,857,890	\$ 5,825,688	83%	
Supplemental Total	\$ 7,109,205	\$ 8,069,000	88%	
Expenses				
Supplemental				
Personnel	\$ 615,042	\$ 629,294	98%	
Programs	\$ 207,532	\$ 183,550	113%	
Administration	\$ 3,538,323	\$ 3,811,588	93%	
Equipment & Supplies	\$ 839,358	\$ 927,640	90%	
Prior FY Expenses	\$ 1,307	\$ -	n/a	
Sub-Total	\$ 5,201,563	\$ 5,552,072	94%	
General Fund Expenses	\$ 340,434	\$ 302,597	113%	
Total Expenses	\$ 5,541,997	\$ 5,854,669	95%	
Fiscal Year Net Gain/Loss	\$ (684,106)	\$ (28,981)		
SUPPLEMENTAL FUND CARRYOVER	\$ 1,567,209	\$ 2,214,331	71%	

TABLE 3. Restricted Accounts

Fund Balances

Fund Balances		Cash Balances	
Leave Liability (30)			
Beginning Balance	\$ 117,972	Bank - Cash	\$ 118,031
Interest Earned	\$ 59	Treasury Bills	\$ -
Leave Expenses	\$ -	T-bill Money Market	\$ -
Funds Transferred	\$ -	Certificate of Deposit	\$ -
Fund Balance	\$ 118,031	Cash Balance	\$ 118,031
Medical Annuitants (40)			
Beginning Balance	\$ 746,322	Bank - Cash	\$ 247,054
Interest Earned	\$ 10,031	Treasury Bills	\$ -
Medical Expenses	\$ (93,291)	T-bill Money Market	\$ -
Bank Fees	\$ -	Certificate of Deposit	\$ 350,000
Funds Transferred	\$ -		
Fund Balance	\$ 663,063	Cash Balance	\$ 597,054
Reserve Account (50)			
Beginning Balance	\$ 1,000,000	Bank - Cash	\$ 516,087
Interest Earned	\$ 8,003	Treasury Bills	\$ -
Expenses	\$ -	T-bill Money Market	\$ -
Reserve Transfer	\$ (8,003)	Certificate of Deposit	\$ 500,000
Fund Balance	\$ 1,000,000	Cash Balance	\$ 1,016,087
Scholarship Account (60)			
Beginning Balance	\$ 247,489	Bank - Cash	\$ 26,797
Interest Earned	\$ 3,970	Bank - Money Market	\$ -
Scholarship Expenses	\$ (10,000)	Treasury Bills	\$ -
Bank Fees	\$ (150)	T-bill Money Market	\$ -
		Certificate of Deposit	\$ 240,000
Fund Balance	\$ 241,309	Cash Balance	\$ 266,797
Total Fund Balance	\$ 2,022,402	Total Cash Balance	\$ 1,997,969
Restricted Funds			
Interest Earned	\$ 22,063		
Expenses	\$ 103,441		
Net Income	\$ (81,378)		
Funds Transferred	\$ (8,003)		

TABLE 4. General Operations
International Pacific Halibut Commission
 General Account Fiscal Year Actuals and Budgets

Period	[12-2018]
% of Year	100%

Personnel	10 Administration	20 Scientific	30 Statistics	40 Field Experiments	60 Other Research	Actuals	Budget	% of Budget
Related Expenses	\$ 2,246	\$ 1,962	\$ 6,360	\$ -	\$ -	\$ 10,568	\$ 37,700	28%
Salaries	\$ 549,735	\$ 2,097,021	\$ 309,914	\$ -	\$ 49,287	\$ 3,005,957	\$ 3,235,312	93%
Benefits	\$ 557,798	\$ 659,486	\$ 52,124	\$ -	\$ 18,206	\$ 1,287,615	\$ 1,261,902	102%
Taxes	\$ 37,541	\$ 157,907	\$ 17,152	\$ -	\$ -	\$ 212,600	\$ 226,429	94%
Other	\$ 6,319	\$ -	\$ -	\$ -	\$ -	\$ 6,319	\$ 25,200	25%
Contracted	\$ -	\$ -	\$ 1,134	\$ -	\$ -	\$ -	\$ -	0%
Subtotal	\$ 1,151,393	\$ 2,914,414	\$ 380,323	\$ -	\$ 67,493	\$ 4,512,489	\$ 4,786,543	94%
Programs								
Meetings & Conferences	\$ 175,840	\$ 40,107	\$ -	\$ -	\$ -	\$ 215,946	\$ 232,650	93%
Travel	\$ 53,623	\$ 17,916	\$ 36,317	\$ -	\$ 37,411	\$ 145,267	\$ 152,350	95%
Communications	\$ 20,529	\$ -	\$ 2,437	\$ -	\$ 22,577	\$ 45,543	\$ 54,285	84%
Publications	\$ 22,745	\$ 2,525	\$ -	\$ -	\$ -	\$ 25,270	\$ 41,750	61%
Subtotal	\$ 272,736	\$ 60,548	\$ 38,754	\$ -	\$ 59,989	\$ 432,027	\$ 481,035	90%
Administration								
Contracts	\$ 50,714	\$ 109,388	\$ 29,109	\$ -	\$ 392,992	\$ 582,202	\$ 612,411	95%
Maintenance	\$ 103,786	\$ 34,880	\$ -	\$ -	\$ -	\$ 138,665	\$ 155,642	89%
Facility Rentals	\$ 269,477	\$ -	\$ 5,491	\$ -	\$ -	\$ 274,968	\$ 284,801	97%
Training & Education	\$ 17,953	\$ 14,168	\$ 24,876	\$ -	\$ -	\$ 56,997	\$ 94,192	61%
Fees	\$ 19,627	\$ -	\$ 4,938	\$ -	\$ 19,682	\$ 44,247	\$ 40,350	110%
Subtotal	\$ 461,557	\$ 158,435	\$ 64,414	\$ -	\$ 412,673	\$ 1,097,080	\$ 1,187,396	92%
Supplies & Equipment								
Equipment	\$ 5,359	\$ 163,751	\$ -	\$ -	\$ 1,929	\$ 171,039	\$ 117,790	145%
Supplies	\$ 13,551	\$ 17,255	\$ 1,203	\$ -	\$ 120,729	\$ 152,737	\$ 433,391	35%
Subtotal	\$ 18,910	\$ 181,006	\$ 1,203	\$ -	\$ 122,658	\$ 323,777	\$ 551,181	59%
Prior FY Expenses	\$ 6,205	\$ -	\$ -	\$ -	\$ -	\$ 6,205	\$ -	0%
Grand Total	\$ 1,910,801	\$ 3,314,404	\$ 484,693	\$ -	\$ 662,813	\$ 6,371,577	\$ 7,006,154	91%
Budget	\$ 1,899,337	\$ 3,491,057	\$ 596,244	\$ -	\$ 1,019,516	\$ 7,006,154		
% of Budget	101%	95%	81%	n/a	65%	91%		

TABLE 4-1. Personnel Summary

Period	[12-2018]
% of Year	100%

Item	10 Administration	20 Scientific	30 Statistics	40 Field Exp.	60 Other Prgms	Operations Actuals	Budget	% of Budget
Personnel Related Expenses								
Vehicle Mileage Reimbursed	\$ -	\$ -	\$ 3,665	\$ -	\$ -	\$ 3,665	\$ 9,350	39%
Hiring Expenses	\$ 2,007	\$ -	\$ 1,134	\$ -	\$ -	\$ 3,141	\$ 19,000	17%
Employee Separation Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,000	0%
Gear Allowance	\$ 239	\$ 1,962	\$ 1,561	\$ -	\$ -	\$ 3,762	\$ 4,350	86%
Subtotal	\$ 2,246	\$ 1,962	\$ 6,360	\$ -	\$ -	\$ 10,568	\$ 37,700	28%
Salaries								
Full-Time Salary	\$ 549,735	\$ 2,097,021	\$ -	\$ -	\$ -	\$ 2,646,756	\$ 2,633,398	101%
Part-Time Salary	\$ -	\$ -	\$ 290,923	\$ -	\$ -	\$ 290,923	\$ 317,307	92%
AK Cola	\$ -	\$ -	\$ 14,651	\$ -	\$ -	\$ 14,651	\$ 17,863	82%
Temporary Pay	\$ -	\$ -	\$ -	\$ -	\$ 49,287	\$ 49,287	\$ 234,562	21%
Hourly Pay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,500	0%
Sea Duty Pay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
Port Duty Pay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,900	0%
On-Call Duty Pay	\$ -	\$ -	\$ 4,340	\$ -	\$ -	\$ 4,340	\$ 2,700	161%
Performance Bonus	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,000	0%
Subtotal	\$ 549,735	\$ 2,097,021	\$ 309,914	\$ -	\$ 49,287	\$ 3,005,957	\$ 3,226,230	93%
Benefits								
Medical Benefits	\$ 212,440	\$ 402,014	\$ 43,059	\$ -	\$ 1,384	\$ 542,571	\$ 644,332	84%
Pension	\$ 18,242	\$ 37,205	\$ -	\$ -	\$ -	\$ 55,448	\$ 71,144	78%
403(b) - ER Base	\$ 28,400	\$ 122,877	\$ -	\$ -	\$ -	\$ 151,278	\$ 152,406	99%
403(b) - ER Match	\$ 17,966	\$ 77,473	\$ -	\$ -	\$ -	\$ 95,439	\$ 87,089	110%
Pension Amortization	\$ 256,890	\$ -	\$ -	\$ -	\$ -	\$ 256,890	\$ 233,014	110%
Life Insurance	\$ 2,516	\$ 10,374	\$ 1,967	\$ -	\$ -	\$ 14,857	\$ 15,607	95%
AD&D	\$ 271	\$ 1,112	\$ 234	\$ -	\$ -	\$ 1,617	\$ 1,673	97%
BC Workers Comp.	\$ -	\$ -	\$ 1,963	\$ -	\$ -	\$ 1,963	\$ 183	1072%
AFLAC (Accident/Cancer)	\$ 15,231	\$ 8,430	\$ 2,438	\$ -	\$ -	\$ 26,099	\$ 13,093	199%
Tuition Benefit	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,597	0%
Housing Allowance	\$ -	\$ -	\$ 500	\$ -	\$ -	\$ 500	\$ 4,500	11%
Travel/Accident Insurance	\$ 5,841	\$ -	\$ -	\$ -	\$ -	\$ 5,841	\$ 6,000	97%
Vessel P&I	\$ -	\$ -	\$ -	\$ -	\$ 16,822	\$ 16,822	\$ -	n/a
Subtotal	\$ 557,798	\$ 659,486	\$ 52,124	\$ -	\$ 18,206	\$ 1,171,288	\$ 1,261,902	93%
Taxes								
Social Security	\$ 37,541	\$ 157,907	\$ 17,152	\$ -	\$ -	\$ 212,600	\$ 226,429	94%
Subtotal	\$ 37,541	\$ 157,907	\$ 17,152	\$ -	\$ -	\$ 212,600	\$ 226,429	94%
Personnel Related Fees								
Legal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,000	0%
Consultation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,000	0%
COBRA TPA	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,000	0%
Defined Benefit Plan TPA	\$ 2,997	\$ -	\$ -	\$ -	\$ -	\$ 2,997	\$ 5,000	60%
Section 125/132 TPA	\$ 3,322	\$ -	\$ -	\$ -	\$ -	\$ 3,322	\$ 3,200	104%
Subtotal	\$ 6,319	\$ -	\$ -	\$ -	\$ -	\$ 6,319	\$ 25,200	25%
Contracted								
Contracted Employees	\$ -	\$ -	\$ 1,134	\$ -	\$ -	\$ 1,134	\$ -	n/a
Subtotal	\$ -	\$ -	\$ 1,134	\$ -	\$ -	\$ 1,134	\$ -	n/a
Grand Total	\$ 1,151,393	\$ 2,914,414	\$ 380,323	\$ -	\$ 67,493	\$ 4,397,296	\$ 4,777,460	92%
Budget	\$ 1,066,334	\$ 3,076,685	\$ 457,599	\$ -	\$ 185,924	\$ 4,786,543		
% of Budget	108%	95%	83%	n/a	36%	92%		

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Table 4-2. Programs

Period	[12-2018]
% of Year	100%

Item	10 Administration	20 Scientific	30 Statistics	40 Field Exp.	60 Other Research	Operations Actuals	Budget	% of Budget
Meetings & Conferences								
Interim Meeting	\$ 13,439	\$ -	\$ -	\$ -	\$ -	\$ 13,439	\$ 12,000	112%
Annual Meeting	\$ 79,467	\$ -	\$ -	\$ -	\$ -	\$ 79,467	\$ 55,000	144%
Research Advisory Board	\$ 4,963	\$ -	\$ -	\$ -	\$ -	\$ 4,963	\$ 5,500	90%
Scholarship Committee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 750	0%
MSAB Meetings	\$ 35,917	\$ -	\$ -	\$ -	\$ -	\$ 35,917	\$ 40,000	90%
SRB Meetings	\$ 25,201	\$ -	\$ -	\$ -	\$ -	\$ 25,201	\$ 35,000	72%
U.S. Council	\$ 4,713	\$ -	\$ -	\$ -	\$ -	\$ 4,713	\$ 15,000	31%
HAB - Canada	\$ 323	\$ -	\$ -	\$ -	\$ -	\$ 323	\$ 1,500	22%
Workshops/WorkMeeting	\$ 21	\$ -	\$ -	\$ -	\$ -	\$ 21	\$ 5,000	0%
Scientific Meeting & Symposia	\$ -	\$ 40,107	\$ -	\$ -	\$ -	\$ 40,107	\$ 44,400	90%
Scientific Meeting Support	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ 6,000	33%
Local & Trade Show	\$ 9,794	\$ -	\$ -	\$ -	\$ -	\$ 9,794	\$ 10,000	98%
Subtotal	\$ 175,840	\$ 40,107	\$ -	\$ -	\$ -	\$ 215,946	\$ 230,150	94%
Travel								
General Travel - Staff	\$ 6,862	\$ 17,916	\$ 6,341	\$ -	\$ 37,411	\$ 68,531	\$ 70,190	98%
On Job Training Travel	\$ -	\$ -	\$ 21,926	\$ -	\$ -	\$ 21,926	\$ 20,000	110%
Follow-up Travel	\$ -	\$ -	\$ 8,049	\$ -	\$ -	\$ 8,049	\$ 10,000	80%
General Travel - Director	\$ 46,760	\$ -	\$ -	\$ -	\$ -	\$ 46,760	\$ 50,160	93%
Subtotal	\$ 53,623	\$ 17,916	\$ 36,317	\$ -	\$ 37,411	\$ 145,267	\$ 150,350	97%
Communications								
Phone Tolls	\$ 6,218	\$ -	\$ -	\$ -	\$ -	\$ 6,218	\$ 7,000	89%
Long Distance	\$ 1,308	\$ -	\$ 347	\$ -	\$ -	\$ 1,655	\$ 1,375	120%
Reimbursed Communications	\$ 800	\$ -	\$ 180	\$ -	\$ -	\$ 980	\$ 7,670	13%
Internet Service	\$ 2,422	\$ -	\$ -	\$ -	\$ -	\$ 2,422	\$ 2,500	97%
Postage	\$ 4,511	\$ -	\$ 609	\$ -	\$ -	\$ 5,120	\$ 12,100	42%
Mail Prep Services	\$ 3,329	\$ -	\$ -	\$ -	\$ -	\$ 3,329	\$ 16,890	20%
Express Mail	\$ 1,881	\$ -	\$ 1,301	\$ -	\$ 2,863	\$ 6,044	\$ 2,000	302%
Heavy Shipping	\$ 61	\$ -	\$ -	\$ -	\$ 19,715	\$ 19,775	\$ 4,750	416%
Subtotal	\$ 20,529	\$ -	\$ 2,437	\$ -	\$ 22,577	\$ 45,543	\$ 54,285	84%
Publications								
Annual Report	\$ 19,148	\$ -	\$ -	\$ -	\$ -	\$ 19,148	\$ 14,000	137%
Regulations	\$ 3,023	\$ -	\$ -	\$ -	\$ -	\$ 3,023	\$ 5,000	60%
IPHC Publications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,000	0%
External Journals	\$ -	\$ 2,525	\$ -	\$ -	\$ -	\$ 2,525	\$ 4,000	63%
Misc. Printing	\$ 574	\$ -	\$ -	\$ -	\$ -	\$ 574	\$ 2,000	29%
Logbooks	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,750	0%
Subtotal	\$ 22,745	\$ 2,525	\$ -	\$ -	\$ -	\$ 25,270	\$ 41,750	61%
Grand Total	\$ 272,736	\$ 60,548	\$ 38,754	\$ -	\$ 59,989	\$ 432,027	\$ 476,535	91%
Budget	\$ 298,410	\$ 70,200	\$ 53,895	\$ -	\$ 58,530	\$ 481,035		
% of Budget	91%	86%	72%	n/a	102%	90%		

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TABLE 4-3. Administration

Period	[12-2018]
% of Year	100%

Item	10 Administration	20 Scientific	30 Statistics	40 Field Exp.	60 Other Research	Operations Actuals	Budget	% of Budget
Contracts								
Leased Vehicle Fees	\$ 5,952	\$ -	\$ 17,457	\$ -	\$ -	\$ 23,409	\$ 21,250	110%
Software Leases	\$ 30,683	\$ 10,770	\$ 2,738	\$ -	\$ -	\$ 44,191	\$ 47,773	93%
Vendor Contracts	\$ 14,079	\$ 98,617	\$ 8,914	\$ -	\$ 392,992	\$ 514,602	\$ 453,388	114%
Subtotal	\$ 50,714	\$ 109,388	\$ 29,109	\$ -	\$ 392,992	\$ 582,202	\$ 522,411	111%
Maintenance								
Copier Maintenance	\$ 2,711	\$ -	\$ -	\$ -	\$ -	\$ 2,711	\$ 2,000	136%
Equipment Maintenance	\$ -	\$ 34,880	\$ -	\$ -	\$ -	\$ 34,880	\$ 43,952	79%
Vehicle Maintenance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 250	0%
Building Maintenance	\$ 82,814	\$ -	\$ -	\$ -	\$ -	\$ 82,814	\$ 91,440	91%
Building Utilities	\$ 18,260	\$ -	\$ -	\$ -	\$ -	\$ 18,260	\$ 18,000	101%
Subtotal	\$ 103,786	\$ 34,880	\$ -	\$ -	\$ -	\$ 138,665	\$ 155,642	89%
Facility Rentals								
Field Office Rental	\$ -	\$ -	\$ 5,491	\$ -	\$ -	\$ 5,491	\$ 8,100	68%
Archival Storage Rental	\$ 4,665	\$ -	\$ -	\$ -	\$ -	\$ 4,665	\$ 4,000	117%
Bait Storage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
Office Lease	\$ 251,986	\$ -	\$ -	\$ -	\$ -	\$ 251,986	\$ 258,898	97%
Storage Lease	\$ 12,826	\$ -	\$ -	\$ -	\$ -	\$ 12,826	\$ 13,803	93%
Subtotal	\$ 269,477	\$ -	\$ 5,491	\$ -	\$ -	\$ 274,968	\$ 284,801	97%
Training & Education								
Field Staff Orientation	\$ -	\$ -	\$ 22,781	\$ -	\$ -	\$ 22,781	\$ 21,300	107%
Management Training	\$ 2,871	\$ -	\$ -	\$ -	\$ -	\$ 2,871	\$ 16,000	18%
Skill Training	\$ -	\$ 14,168	\$ 2,095	\$ -	\$ -	\$ 16,263	\$ 32,892	49%
Journals & Memberships	\$ 22	\$ -	\$ -	\$ -	\$ -	\$ 22	\$ 4,500	0%
Professional Journals	\$ 15,060	\$ -	\$ -	\$ -	\$ -	\$ 15,060	\$ 19,500	77%
Subtotal	\$ 17,953	\$ 14,168	\$ 24,876	\$ -	\$ -	\$ 56,997	\$ 94,192	61%
Fees								
Audit	\$ 2,125	\$ -	\$ -	\$ -	\$ -	\$ 2,125	\$ 8,000	27%
Bank Charges	\$ 2,756	\$ -	\$ -	\$ -	\$ -	\$ 2,756	\$ 8,000	34%
Vehicle Insurance	\$ 3,379	\$ -	\$ 4,938	\$ -	\$ -	\$ 8,317	\$ 9,850	84%
General Liability Insurance	\$ 6,079	\$ -	\$ -	\$ -	\$ -	\$ 6,079	\$ 5,500	111%
Bonding	\$ 494	\$ -	\$ -	\$ -	\$ -	\$ 494	\$ 500	99%
Customs	\$ 1,334	\$ -	\$ -	\$ -	\$ -	\$ 1,334	\$ 1,000	133%
Legal Fees	\$ 2,714	\$ -	\$ -	\$ -	\$ -	\$ 2,714	\$ 7,500	36%
Vessel Revenue Share	\$ -	\$ -	\$ -	\$ -	\$ 19,682	\$ 19,682	\$ -	n/a
Agency Revenue Share	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
Subtotal	\$ 19,627	\$ -	\$ 4,938	\$ -	\$ 19,682	\$ 44,247	\$ 40,350	110%
Grand Total	\$ 461,557	\$ 158,435	\$ 64,414	\$ -	\$ 412,673	\$ 1,097,080	\$ 1,097,396	100%
Budget	\$ 509,593	\$ 263,743	\$ 80,750	\$ -	\$ 333,310	\$ 1,187,396		
% of Budget	91%	60%	80%	n/a	12-FY2018	124%	92%	

11/1/2018 11:21 AM

TABLE 4-4. Supplies & Equipment

Period [12-2018]
% of Year 100%

Item	10 Administration	20 Scientific	30 Statistics	40 Field Exp.	60 Other Research	Operations Actuals	Budget	% of Budget
Equipment								
Computer Equipment - Replace	\$ -	\$ 7,312	\$ -	\$ -	\$ -	\$ 7,312	\$ 7,400	99%
Computer Equipment - Long Term	\$ -	\$ 95,920	\$ -	\$ -	\$ -	\$ 95,920	\$ 107,600	89%
Field Equipment - Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 37,561	0%
Field Equipment - non-Capital	\$ -	\$ -	\$ -	\$ -	\$ 1,929	\$ 1,929	\$ -	n/a
Scientific Equipment - Capital	\$ -	\$ 60,519	\$ -	\$ -	\$ -	\$ 60,519	\$ 50,000	121%
Scientific Equipment - non-Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 229	0%
Office Equipment - Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
Office Equipment - non-Capital	\$ 5,359	\$ -	\$ -	\$ -	\$ -	\$ 5,359	\$ 5,000	107%
SubTotal	\$ 5,359	\$ 163,751	\$ -	\$ -	\$ 1,929	\$ 171,039	\$ 207,790	82%
Supplies								
Supplies	\$ 13,551	\$ 17,255	\$ 1,203	\$ -	\$ 117,045	\$ 149,054	\$ 378,441	39%
Tag Recoveries	\$ -	\$ -	\$ -	\$ -	\$ 910	\$ 910	\$ 17,150	5%
Bait	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 37,800	0%
Gear Replacement	\$ -	\$ -	\$ -	\$ -	\$ 2,774	\$ 2,774	\$ -	n/a
SubTotal	\$ 13,551	\$ 17,255	\$ 1,203	\$ -	\$ 120,729	\$ 152,737	\$ 433,391	35%
Grand Total	\$ 18,910	\$ 181,006	\$ 1,203	\$ -	\$ 122,658	\$ 323,777	\$ 641,181	50%
Budget	\$ 25,000	\$ 170,429	\$ 4,000	\$ -	\$ 441,752	\$ 551,181		
% of Budget	76%	106%	30%	n/a	28%	59%		

TABLE 5-1. Catch Effort Program

Catch Effort Program

Dept. 30	51-53			1 WA/OR/CA			64			61-63			2 Canada			82			71-92			3 Alaska			81			Grand Total	FY2018 Budget	% of Budget
	Ports	General	Total	Ports	General	Total	Ports	General	Total	Ports	General	Total	Ports	General	Total	Ports	General	Total	Ports	General	Total	Ports	General	Total						
Salaries and Benefits																														
70511																														
	Vehicle Mileage Reimbursed	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 467	\$ -	\$ -	\$ 467	\$ 3,198	\$ -	\$ 3,198	\$ -	\$ -	\$ 3,198	\$ -	\$ -	\$ 3,198	\$ 3,665	\$ 9,350	39%								
70521	Hiring Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,134	\$ -	\$ 1,134	\$ -	\$ -	\$ 1,134	\$ 1,134	\$ 9,000	13%									
70531	Gear Allowance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 291	\$ -	\$ 291	\$ 1,269	\$ -	\$ 1,269	\$ -	\$ -	\$ 1,269	\$ -	\$ -	\$ 1,269	\$ 1,561	\$ 2,250	69%									
72221	Part-Time Salary	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 66,426	\$ -	\$ 66,426	\$ 224,497	\$ -	\$ 224,497	\$ -	\$ -	\$ 224,497	\$ -	\$ -	\$ 224,497	\$ 290,923	\$ 317,307	92%									
72222	AK Cola	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 14,651	\$ -	\$ 14,651	\$ -	\$ -	\$ 14,651	\$ -	\$ -	\$ 14,651	\$ 14,651	\$ 17,863	82%								
72241	Hourly	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 500	0%								
72252	Port Duty	\$ 478	\$ 347	\$ 825	\$ 128	\$ -	\$ 128	\$ -	\$ 128	\$ 3,387	\$ -	\$ 3,387	\$ -	\$ -	\$ 3,387	\$ -	\$ -	\$ 3,387	\$ 4,340	\$ 10,900	40%									
72261	Performance Bonus	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,500	0%								
7241x	Medical	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,057	\$ -	\$ 10,057	\$ 33,002	\$ -	\$ 33,002	\$ -	\$ -	\$ 33,002	\$ -	\$ -	\$ 33,002	\$ 43,059	\$ 57,780	75%									
72431	Life Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 367	\$ -	\$ 367	\$ 1,600	\$ -	\$ 1,600	\$ -	\$ -	\$ 1,600	\$ -	\$ -	\$ 1,600	\$ 1,967	\$ 2,029	97%									
72432	AD&D	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 43	\$ -	\$ 43	\$ 191	\$ -	\$ 191	\$ -	\$ -	\$ 191	\$ -	\$ -	\$ 191	\$ 234	\$ 217	108%									
72441	BC Workers Comp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,963	\$ -	\$ 1,963	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,963	\$ 183	1073%									
72433	AFLAC Coverage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 536	\$ -	\$ 536	\$ 1,902	\$ -	\$ 1,902	\$ -	\$ -	\$ 1,902	\$ -	\$ -	\$ 1,902	\$ 2,438	\$ 4,063	60%									
72453	Housing Allowance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ -	\$ 500	\$ -	\$ -	\$ 500	\$ -	\$ -	\$ 500	\$ 500	\$ 4,500	11%									
72511	Social Security	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,152	\$ -	\$ 17,152	\$ -	\$ -	\$ 17,152	\$ -	\$ -	\$ 17,152	\$ 17,152	\$ 20,158	85%									
	Subtotal - Salary and Benefits	\$ 478	\$ 347	\$ 825	\$ 79,519	\$ -	\$ 79,519	\$ 296,882	\$ -	\$ 296,882	\$ 383,586	\$ -	\$ 383,586	\$ 457,599	84%															
Programs																														
83111	General Travel - Staff	\$ 828	\$ -	\$ 828	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,484	\$ 1,029	\$ 5,513	\$ 6,341	\$ 14,000	45%															
83112	On Job Training Travel	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,364	\$ 8,364	\$ -	\$ 13,563	\$ 13,563	\$ 21,926	\$ 20,000	110%																
83113	Follow-up Travel	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,000	\$ 1,000	\$ -	\$ 7,049	\$ 7,049	\$ 8,049	\$ 10,000	80%																
81312	Long Distance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 89	\$ 89	\$ -	\$ 258	\$ 258	\$ 347	\$ 625	56%																
81313	Comm Allow - Port	\$ -	\$ -	\$ -	\$ 100	\$ -	\$ 100	\$ 100	\$ -	\$ 80	\$ 80	\$ 180	\$ 4,170	4%																
81411	USPS Postage	\$ -	\$ 67	\$ 67	\$ -	\$ -	\$ 369	\$ 369	\$ -	\$ 173	\$ 173	\$ 609	\$ 2,100	29%																
81412	Express Mail	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 637	\$ 637	\$ -	\$ 663	\$ 663	\$ 1,301	\$ 1,250	104%																
81712	Logbooks	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,750	0%																
	Subtotal - Programs	\$ 828	\$ 67	\$ 895	\$ 100	\$ 10,459	\$ 10,559	\$ 4,564	\$ 22,736	\$ 27,300	\$ 38,754	\$ 53,895	72%																	
Administration																														
82611	Leased Vehicle Fees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,457	\$ -	\$ 17,457	\$ 17,457	\$ 17,250	101%															
85611	Software Leases	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,738	\$ 2,738	\$ 2,738	\$ 4,800	57%																
85931	Vendor Contracts	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,914	\$ 8,914	\$ 8,914	\$ 15,200	59%																
82121	Field Office Rental	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,491	\$ -	\$ 5,491	\$ 8,100	68%																
85411	Field Staff Orientation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,594	\$ 4,594	\$ -	\$ 18,187	\$ 18,187	\$ 22,781	\$ 21,300	107%																
85422	Skill Training	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,095	\$ 2,095	\$ -	\$ -	\$ -	\$ 2,095	\$ 8,500	25%																
85211	Vehicle Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,938	\$ -	\$ 4,938	\$ 5,600	88%																
85214	Customs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a																
	Subtotal - Administration	\$ -	\$ -	\$ -	\$ -	\$ 6,689	\$ 6,689	\$ 27,886	\$ 29,839	\$ 57,725	\$ 64,414	\$ 80,750	80%																	
Supplies and Equipment																														
81121	Supplies	\$ -	\$ 89	\$ 89	\$ -	\$ 39	\$ 39	\$ -	\$ 1,075	\$ 1,075	\$ 1,203	\$ 4,000	30%																	
	Subtotal - Supplies and Equipment	\$ -	\$ 89	\$ 89	\$ -	\$ 39	\$ 39	\$ -	\$ 1,075	\$ 1,075	\$ 1,203	\$ 4,000	30%																	
99999	Prior Fiscal Year Expense	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 92	\$ 92	\$ 92	\$ -	n/a																	
Catch Effort Program Totals		\$ 1,306	\$ 503	\$ 1,809	\$ 79,619	\$ 17,187	\$ 96,806	\$ 329,332	\$ 53,741	\$ 383,073	\$ 488,048	\$ 596,244	82%																	

TABLE 5-2. Port Expenses

Catch Effort Program - by ports

Port ID	61	71	72	73	81	82	83	89	91	92	AK Total	
	Bellingham	Petersburg	Sitka	Juneau	Seward	Homer	Kodiak	Sandpoint	Dutch Harbor	St. Praul		
U.S Ports												
72221	Part-Time Salary	\$ 3,665	\$ 36,409	\$ 32,396	\$ 29,215	\$ 29,522	\$ 38,103	\$ 29,213	\$ -	\$ 25,975	\$ -	\$ 224,497
72222	AK Cola	\$ -	\$ 2,321	\$ 2,142	\$ 2,096	\$ 2,110	\$ 2,331	\$ 2,077	\$ -	\$ 1,573	\$ -	\$ 14,651
72241	Hourly	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
72252	Port Duty	\$ -	\$ 87	\$ 87	\$ 478	\$ 608	\$ 478	\$ -	\$ -	\$ 955	\$ 695	\$ 3,387
	Medical	\$ 3,354	\$ 4,421	\$ 4,038	\$ 4,427	\$ 3,838	\$ 4,201	\$ 4,885	\$ -	\$ 3,838	\$ 528	\$ 33,002
72431	Life Insurance	\$ -	\$ 237	\$ 223	\$ 223	\$ 235	\$ 243	\$ 217	\$ -	\$ 201	\$ 21	\$ 1,600
72432	AD&D	\$ 18	\$ 25	\$ 24	\$ 24	\$ 25	\$ 26	\$ 23	\$ -	\$ 19	\$ 7	\$ 191
72441	BC Workers Comp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
72433	Industrial Insurance	\$ 179	\$ 238	\$ 238	\$ 238	\$ 238	\$ 238	\$ 238	\$ -	\$ 238	\$ 58	\$ 1,902
72453	Housing Allowance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ -	\$ 500
72511	Social Security	\$ 280	\$ 2,782	\$ 2,475	\$ 2,232	\$ 2,255	\$ 2,911	\$ 2,232	\$ -	\$ 1,984	\$ -	\$ 17,152
	Salary and Benefits	\$ 7,495	\$ 46,519	\$ 41,623	\$ 38,932	\$ 38,832	\$ 48,530	\$ 38,885	\$ -	\$ 35,284	\$ 780	\$ 296,882
83111	General Travel - Staff	\$ 63	\$ -	\$ -	\$ -	\$ 1,747	\$ -	\$ -	\$ -	\$ -	\$ 2,674	\$ 4,484
83112	Travel - Training	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
81313	Comm Allow - Port	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80	\$ -	\$ 80
82611	Leased Vehicle Fees	\$ -	\$ -	\$ -	\$ 5,982	\$ -	\$ -	\$ 5,416	\$ -	\$ 6,060	\$ -	\$ 17,457
70511	Vehicle Mileage Reimbursed	\$ 101	\$ 247	\$ 1,211	\$ -	\$ -	\$ 1,639	\$ -	\$ -	\$ -	\$ -	\$ 3,198
82121	Field Office Rental	\$ -	\$ -	\$ 3,016	\$ -	\$ -	\$ 2,475	\$ -	\$ -	\$ -	\$ -	\$ 5,491
85211	Vehicle Insurance	\$ -	\$ -	\$ -	\$ 1,581	\$ -	\$ -	\$ 1,812	\$ -	\$ 1,545	\$ -	\$ 4,938
70531	Gear Allowance	\$ 63	\$ -	\$ 207	\$ -	\$ 138	\$ 216	\$ 200	\$ -	\$ 193	\$ 252	\$ 1,269
	Total	\$ 7,722	\$ 46,767	\$ 46,057	\$ 46,495	\$ 40,717	\$ 52,860	\$ 46,313	\$ -	\$ 43,162	\$ 3,706	\$ 333,800

Port ID	00	51	52	53	61	62	63						
	Aging	Tribal (2A)	Newport (2A)	Washington (2A)	Area 2A Total	Vancouver	Port Hardy	Prince Rupert	Cdn Total	US Total	Grand Total	Budget	% of Actuals
72221	Part-Time Salary	-	-	-	-	\$ 2,444	\$ 29,777	\$ 34,205	\$ 66,426	\$ 224,497	\$ 290,923	\$ 325,239	89%
72222	AK Cola	-	-	-	-	\$ -	\$ -	\$ -	\$ -	\$ 14,651	\$ 14,651	\$ 18,309	80%
72241	Hourly	-	-	-	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 500	0%
72252	Port Duty	347	-	478	478	\$ -	\$ 64	\$ 64	\$ 128	\$ 3,865	\$ 4,340	\$ -	n/a
	Medical	-	-	-	-	\$ 1,113	\$ 4,472	\$ 4,472	\$ 10,057	\$ 33,002	\$ 43,059	\$ 60,668	71%
72431	Life Insurance	-	-	-	-	\$ 54	\$ 150	\$ 163	\$ 367	\$ 1,600	\$ 1,967	\$ 2,080	95%
72432	AD&D	-	-	-	-	\$ 7	\$ 15	\$ 21	\$ 43	\$ 191	\$ 234	\$ 367	64%
72441	BC Workers Comp.	-	-	-	-	\$ -	\$ 903	\$ 1,060	\$ 1,963	\$ -	\$ 1,963	\$ 620	317%
72433	Industrial Insurance	-	-	-	-	\$ 60	\$ 238	\$ 238	\$ 536	\$ 1,902	\$ 2,438	\$ 4,063	60%
72453	Housing Allowance	-	-	-	-	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ 500	\$ 4,500	11%
72511	Social Security	-	-	-	-	\$ -	\$ -	\$ -	\$ -	\$ 17,152	\$ 17,152	\$ 20,657	83%
	Salary and Benefits	347	-	478	478	\$ 3,677	\$ 35,619	\$ 40,223	\$ 79,519	\$ 297,359	\$ 377,226	\$ 437,003	86%
83111	General Travel - Staff	-	227	601	828	\$ -	\$ -	\$ -	\$ -	\$ 5,312	\$ 5,312	\$ 10,000	53%
83112	Travel - Training	-	-	-	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,500	0%
81313	Comm Allow - Port	-	-	-	-	\$ -	\$ -	\$ 100	\$ 100	\$ 80	\$ 180	\$ 6,360	3%
82611	Leased Vehicle Fees	-	-	-	-	\$ -	\$ -	\$ -	\$ -	\$ 17,457	\$ 17,457	\$ 17,250	101%
70511	Vehicle Mileage Reimbursed	-	-	5	5	\$ -	\$ -	\$ 467	\$ 467	\$ 3,203	\$ 3,670	\$ 9,350	39%
82121	Field Office Rental	-	-	-	-	\$ -	\$ -	\$ -	\$ -	\$ 5,491	\$ 5,491	\$ 8,100	68%
85211	Vehicle Insurance	-	-	-	-	\$ -	\$ -	\$ -	\$ -	\$ 4,938	\$ 4,938	\$ 5,600	88%
70531	Gear Allowance	-	-	-	-	\$ -	\$ 157	\$ 135	\$ 291	\$ 1,269	\$ 1,561	\$ 2,650	59%
	Total	347	227	1,079	5	\$ 3,677	\$ 35,776	\$ 40,925	\$ 80,378	\$ 333,800	\$ 414,525	\$ 497,813	83%

TABLE 6-1. Research (1)

		Department 60		Period [12-2018]		% of Year 100%										
		6	1	1												
On-going Projects		621	642	650	661	675	650	669	670							
Object	Item	621-16-00 Genetic Sex ID - Genome	642-00-00 ADEC/EPA Contaminants	650-18-00 Archival Tag - Geomag	661-11-00 Ichthyophonus Prevalance	673.13 Genome Sequencing	675.11 Tail Patterns	650.21 Area 4B PAT Tags	672.12 Condition Factor	669.11 Weights-at-sea	670-11-00 NMFS Trawl Tagging	On-going Projects		Sub-Total		
Personnel																
Personnel Subtotal		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Programs																
83111	General Travel - Staff	\$ -	\$ -	\$ -	\$ -	\$ 153	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153	
	Travel	\$ -	\$ -	\$ -	\$ -	\$ 153	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153	
81412	Express Mail	\$ 46	\$ -	\$ -	\$ 42	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10	\$ 98		
81413	Heavy Shipping	\$ -	\$ 158	\$ -	\$ 150	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 67	\$ 375		
	Communications	\$ 46	\$ 158	\$ -	\$ 192	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 77	\$ 473		
Programs Subtotal		\$ 46	\$ 158	\$ -	\$ 192	\$ 153	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 77	\$ 626		
Administration																
85931	Vendor Contracts	\$ 15,636	\$ -	\$ -	\$ 1,267	\$ -	\$ -	\$ 1,314	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,218		
	Contracts & Leases	\$ 15,636	\$ -	\$ -	\$ 1,267	\$ -	\$ -	\$ 1,314	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,218		
Administration Subtotal		\$ 15,636	\$ -	\$ -	\$ 1,267	\$ -	\$ -	\$ 1,314	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,218		
Supplies & Equipment																
81121	Supplies	\$ 1,427	\$ 1,392	\$ -	\$ 1,127	\$ 565	\$ 1,565	\$ 80	\$ -	\$ -	\$ 8,013	\$ -	\$ 14,168			
81122	Tag Recoveries	\$ -	\$ -	\$ 300	\$ -	\$ -	\$ -	\$ 300	\$ -	\$ -	\$ 10	\$ -	\$ 610			
	Supplies	\$ 1,427	\$ 1,392	\$ 300	\$ 1,127	\$ 565	\$ 1,565	\$ 380	\$ -	\$ -	\$ 8,023	\$ -	\$ 14,778			
Supplies & Equipment Subtotal		\$ 1,427	\$ 1,392	\$ 300	\$ 1,127	\$ 565	\$ 1,565	\$ 380	\$ -	\$ -	\$ 8,023	\$ -	\$ 14,778			
99999	Prior FY	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
Total		\$ 17,109	\$ 1,550	\$ 300	\$ 2,586	\$ 718	\$ 1,565	\$ 1,694	\$ -	\$ -	\$ 8,100	\$ -	\$ 33,621			
Income																
Total Income		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
	Budget	\$ 23,928	\$ 8,600	\$ 800	\$ 8,755	\$ 32,500	\$ 3,900	\$ 6,800	\$ 9,116	\$ 7,645	\$ 12,840	\$ -	\$ 114,884			
	Percent	71%	18%	38%	30%	2%	40%	25%	0%	0%	63%	29%				

TABLE 6-2. Other Research (2)

Department	60	Period	[12-2018]
		% of Year	100%

On-going Projects

Item	On-going Projects Total	673.14 Growth markers	672.13 DMR Classification	650 650.22 Larval connectivity	674 674.11 Reproductive Cycle	673.15 Thermal growth history	(Deferred) Whale detection	(Deferred) Captive holding	Projects Sub-Total	Grand Total
Personnel										
Temporary	\$ -	\$ -	\$ 17,035	\$ -	\$ 32,252	\$ -	\$ -	\$ -	\$ 49,287	\$ 49,287
Salary Totals	\$ -	\$ -	\$ 17,035	\$ -	\$ 32,252	\$ -	\$ -	\$ -	\$ 49,287	\$ 49,287
Medical	\$ -	\$ -	\$ 265	\$ -	\$ 1,119	\$ -	\$ -	\$ -	\$ 1,384	\$ 1,384
Tuition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Vessel P&I	\$ -	\$ -	\$ 4,037	\$ -	\$ 12,785	\$ -	\$ -	\$ -	\$ 16,822	\$ 16,822
Benefit Totals	\$ -	\$ -	\$ 4,302	\$ -	\$ 13,904	\$ -	\$ -	\$ -	\$ 18,206	\$ 18,206
Personnel Subtotal	\$ -	\$ -	\$ 21,337	\$ -	\$ 46,156	\$ -	\$ -	\$ -	\$ 67,493	\$ 67,493
Programs										
General Travel - Staff	\$ 153	\$ 920	\$ 10,362	\$ -	\$ 25,976	\$ -	\$ -	\$ -	\$ 37,258	\$ 37,411
Travel	\$ 153	\$ 920	\$ 10,362	\$ -	\$ 25,976	\$ -	\$ -	\$ -	\$ 37,258	\$ 37,411
Express Mail	\$ 98	\$ 100	\$ 2,535	\$ -	\$ 130	\$ -	\$ -	\$ -	\$ 2,765	\$ 2,863
Heavy Shipping	\$ 375	\$ -	\$ 15,958	\$ -	\$ 75	\$ 3,307	\$ -	\$ -	\$ 19,340	\$ 19,715
Communications	\$ 473	\$ 100	\$ 18,493	\$ -	\$ 205	\$ 3,307	\$ -	\$ -	\$ 22,104	\$ 22,577
External Journals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Publications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Programs Subtotal	\$ 626	\$ 1,020	\$ 28,854	\$ -	\$ 26,181	\$ 3,307	\$ -	\$ -	\$ 59,363	\$ 59,989
Administration										
Vendor Contracts	\$ 18,218	\$ -	\$ 60,678	\$ 1,314	\$ 286,549	\$ 26,233	\$ -	\$ -	\$ 374,774	\$ 392,992
Contracts & Leases	\$ 18,218	\$ -	\$ 60,678	\$ 1,314	\$ 286,549	\$ 26,233	\$ -	\$ -	\$ 374,774	\$ 392,992
Vessel Revenue Share	\$ -	\$ -	\$ 19,544	\$ -	\$ 138	\$ -	\$ -	\$ -	\$ 19,682	\$ 19,682
Fees	\$ -	\$ -	\$ 19,544	\$ -	\$ 138	\$ -	\$ -	\$ -	\$ 19,682	\$ 19,682
Administration Subtotal	\$ 18,218	\$ -	\$ 80,222	\$ 1,314	\$ 286,687	\$ 26,233	\$ -	\$ -	\$ 394,456	\$ 412,673
Supplies & Equipment										
Field Equipment - Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Field Equipment - non-Capital	\$ -	\$ -	\$ 1,929	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,929	\$ 1,929
Equipment	\$ -	\$ -	\$ 1,929	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,929	\$ 1,929
Supplies	\$ 14,168	\$ 2,351	\$ 4,969	\$ 80	\$ 2,152	\$ 93,325	\$ -	\$ -	\$ 102,877	\$ 117,045
Tag Recoveries	\$ 610	\$ -	\$ -	\$ 300	\$ -	\$ -	\$ -	\$ -	\$ 300	\$ 910
Bait	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Gear Replacement	\$ -	\$ -	\$ 2,774	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,774	\$ 2,774
Supplies	\$ 14,778	\$ 2,351	\$ 7,743	\$ 380	\$ 2,152	\$ 93,325	\$ -	\$ -	\$ 105,951	\$ 120,729
Supplies & Equipment Subtotal	\$ 14,778	\$ 2,351	\$ 9,672	\$ 380	\$ 2,152	\$ 93,325	\$ -	\$ -	\$ 107,880	\$ 122,658
Prior FY	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 33,621	\$ 3,371	\$ 140,085	\$ 1,694	\$ 361,176	\$ 122,865	\$ -	\$ -	\$ 629,191	\$ 662,813
Income										
Other Federal Grant	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Halibut Sales	\$ -	\$ -	\$ 182,927	\$ -	\$ 43,065	\$ -	\$ -	\$ -	\$ 225,992	\$ 225,992
Bycatch Sales - P_Cod	\$ -	\$ -	\$ 519	\$ -	\$ 196	\$ -	\$ -	\$ -	\$ 715	\$ 715
Total Income	\$ -	\$ -	\$ 183,447	\$ -	\$ 43,260	\$ -	\$ -	\$ -	\$ 226,707	\$ 226,707
Budget	\$ 114,884	\$ 47,773	\$ 381,439	\$ 20,000	\$ 319,416	\$ 136,004	\$ -	\$ -	\$ 904,632	\$ 1,019,516
Percent	29%	7%	37%	8%	113%	90%	n/a	n/a	70%	65%

TABLE 7. Supp. Operations
International Pacific Halibut Commission
 Supplemental Account Fiscal Year Actuals and Budgets

Period	[12-2018]
% of Year	100%

Personnel	50 SSA Surveys	Budget	% of Budget
Related Expenses	\$ 398	\$ 12,086	3%
Salaries	\$ 517,225	\$ 523,553	99%
Benefits	\$ 56,389	\$ 53,718	105%
Taxes	\$ 41,428	\$ 39,936	104%
Other	\$ -	\$ -	n/a
Contracted	\$ -	\$ -	n/a
Subtotal	\$ 615,042	\$ 629,294	98%
Programs			
Meetings & Conferences	\$ -	\$ -	n/a
Travel	\$ 96,769	\$ 100,900	96%
Communications	\$ 110,763	\$ 82,650	134%
Publications	\$ -	\$ -	n/a
Subtotal	\$ 207,532	\$ 183,550	113%
Administration			
Contracts	\$ 2,892,457	\$ 3,059,070	95%
Maintenance	\$ 36,358	\$ 40,000	91%
Facility Rentals	\$ 10,824	\$ 20,000	54%
Training & Education	\$ 49,121	\$ 52,000	94%
Fees	\$ 549,563	\$ 640,518	86%
Subtotal	\$ 3,538,323	\$ 3,811,588	93%
Supplies & Equipment			
Equipment	\$ -	\$ 1,400	0%
Supplies	\$ 839,358	\$ 926,240	91%
Subtotal	\$ 839,358	\$ 927,640	90%
Prior FY Expenses	\$ 1,307	\$ -	n/a
Grand Total	\$ 5,201,563	\$ 5,552,072	94%
Budget	\$ 5,552,072		
% of Budget	94%		

TABLE 7-1. FISS Summary

F.I.S.S. Program Totals

	Actual	Budget	% of Budget
Total Pounds Landed	647,089	905,502	71%
Average Net Price	\$7.27	\$6.31	116%
Net Halibut Proceeds	\$4,706,877	\$5,712,112	82%
WPUE (Landed Fish)	83	85	97%
Net Bycatch Proceeds	\$95,745	\$56,351	170%
Vessel Expenses	(\$4,891,102)	(\$5,201,785)	94%
Office Expenses	(\$253,182)	(\$293,845)	86%
Trawl Survey	(\$49,997)	(\$56,142)	89%
Prior Year	(\$1,307)	\$0	n/a
Net Proceeds	(\$392,966)	\$216,692	-181%

Period	[12-2018]
% of Year	100%

Reg. Area Totals

	2A All Regions	2B All Regions	2C All Regions	3A All Regions	3B All Regions	4A All Regions	4B All Regions	4D 4D Edge	Totals
Net Halibut proceeds	\$ 144,355	\$ 917,032	\$ 1,207,328	\$ 1,765,368	\$ 359,269	\$ 138,197	\$ 83,780	\$ 91,548	\$ 4,706,877
Bycatch proceeds	\$ 1,404	\$ 31,840	\$ 26,445	\$ 10,172	\$ 17,847	\$ 2,891	\$ 5,146	\$ -	\$ 95,745
Vessel expenses	\$ 310,703	\$ 737,588	\$ 446,757	\$ 870,736	\$ 473,283	\$ 153,323	\$ 291,826	\$ 181,474	\$ 3,465,689
Net Per Reg Area	(\$164,944)	\$211,284	\$787,016	\$904,804	(\$96,167)	(\$12,235)	(\$202,900)	(\$89,926)	\$1,336,933
Pounds Halibut Landed	22,730	144,660	199,324	298,421	74,303	34,137	27,397	20,462	821,434
Average Price	\$ 6.35	\$ 6.34	\$ 6.06	\$ 5.92	\$ 4.84	\$ 4.05	\$ 3.06	\$ 4.47	\$ 5.73

Vessel Expenses

	2A All Regions	2B All Regions	2C All Regions	3A All Regions	3B All Regions	4A All Regions	4B All Regions	4D 4D Edge	Totals
% Completed	100%	100%	100%	100%	100%	100%	100%	100%	
Contract	\$ 296,100	\$ 586,690	\$ 269,180	\$ 682,987	\$ 483,000	\$ 120,000	\$ 270,000	\$ 163,700	\$ 2,871,657
Revenue Share	\$ 1,441	\$ 115,152	\$ 147,159	\$ 181,863	\$ 59,217	\$ 16,715	\$ 11,530	\$ 9,155	\$ 542,230
Running bonus	\$ -	\$ -	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,000
Dockside Monitoring	\$ -	\$ 3,530	\$ 1,803	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,333
Bait	\$ -	\$ -	\$ 2,760	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,760
Ice	\$ 773	\$ 4,345	\$ 934	\$ 2,332	\$ -	\$ -	\$ 1,424	\$ 886	\$ 10,695
Gear Expenses	\$ -	\$ 15,972	\$ 14,104	\$ 16,162	\$ 13,559	\$ 3,849	\$ -	\$ 4,792	\$ 68,438
Staff Salaries	\$ -	\$ -	\$ -	\$ 1,944	\$ -	\$ -	\$ 2,475	\$ -	\$ 4,419
Sea Duty Pay	\$ -	\$ -	\$ 1,911	\$ 651	\$ -	\$ 8,238	\$ 2,490	\$ -	\$ 13,290
Medical	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BC Worker's Comp	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Payroll Taxes	\$ -	\$ -	\$ -	\$ 134	\$ -	\$ -	\$ 189	\$ -	\$ 323
Vessel P&I	\$ 6,646	\$ 267	\$ 5,309	\$ 13,932	\$ 12,315	\$ 3,171	\$ 357	\$ 3,828	\$ 45,825
Travel Expenses	\$ 3,162	\$ 11,833	\$ 7,110	\$ 27,546	\$ 21,032	\$ 8,012	\$ 11,221	\$ 3,868	\$ 93,785
Customs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Misc. Expenses	\$ 1,132	\$ 7,444	\$ 315	\$ 3,783	\$ -	\$ -	\$ -	\$ -	\$ 12,673
Gear Allowance	\$ -	\$ 163	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163
Total Vessel Expenses	\$309,255	\$745,396	\$452,585	\$931,334	\$589,123	\$159,985	\$299,686	\$186,228	\$ 3,673,591

Office Expenses

	Actuals	Budget	Percent
Hiring Expenses	\$ 235	\$ 2,000	12%
Gear Assistant	\$ -	\$ 5,598	0%
Training - personnel costs	\$ -	\$ 7,200	0%
Temporary Staff benefits	\$ -	\$ 1,025	0%
Bonus Program	\$ -	\$ 1,500	0%
Worker's Comp	\$ -	\$ -	n/a
Payroll taxes	\$ -	\$ 979	0%
Survey Supplies	\$ 24,701	\$ 28,800	86%
Agency bycatch share	\$ -	\$ 28,747	0%
Communications	\$ 2,927	\$ 3,150	93%
Postage	\$ -	\$ -	n/a
Express Shipping	\$ 573	\$ 1,000	57%
Shipping	\$ 107,264	\$ 78,500	137%
Bait Storage	\$ 10,824	\$ 20,000	54%
Equipment Maintenance	\$ 36,358	\$ 40,000	91%
Contract - Profiler Data	\$ 20,800	\$ 20,800	100%
Survey Equipment	\$ -	\$ 1,400	0%
Staff Travel	\$ 379	\$ 3,842	10%
Sea Sampler train/debrief	\$ 49,121	\$ 52,000	94%
Total Office Expenses	\$ 253,182	\$ 296,541	85%

Unallocated Expenses

81151	Bait	\$ 720,091
72511	Payroll Taxes	\$ 41,105
72231	Salary	\$ 452,123
72433	Accident Indem.	\$ 603
70531	Gear Allowance	\$ -
7241x	Medical	\$ 9,962

NMFS Trawl Survey (P604)

Category	Actuals	Budget	Percent	
72231	Temporary Salary	\$ 47,392	\$ 47,328	100%
72411	Medical Insurance	\$ -	\$ 750	0%
72433	Industrial Insurance	\$ -	\$ 143	0%
72511	Payroll Tax	\$ -	\$ 3,621	0%
Personnel Total	\$47,392	\$ 51,842	91%	
83111	Travel	\$ 2,605	\$ 3,000	87%
81312	Communications	\$ -	\$ 400	0%
81412	Express Mail	\$ -	\$ -	n/a
Programs Total	\$2,605	\$ 3,400	77%	
85411	Staff Orientation	\$ -	\$ -	n/a
Administration	\$0	\$ -	n/a	
81121	Field Supplies	\$ -	\$ 300	0%
70531	Gear Allowance	\$ -	\$ 900	0%
Supplies Total	\$0	\$ 1,200	0%	
Trawl Survey Total	\$49,997	\$ 56,442	89%	

Personnel	Fiscal Year Budget		
	Actuals	Budget	Percent
Personnel Related Expenses			
Gear Allowance	\$ 163	\$ 10,086	2%
Hiring Expenses	\$ 235	\$ 2,000	12%
Salaries			
Sea Samplers	\$ 503,934	\$516,455	98%
Sea Duty	\$ 13,290	\$0	n/a
Office Staff	\$ -	\$ 5,598	0%
On-Call Duty Pay	\$ -	\$ -	n/a
Performance Bonus	\$ -	\$ 1,500	0%
Benefits			
Temp. Staff Benefits	\$ -	\$ 1,025	0%
Field Staff Benefits	\$ 9,962	\$ 14,442	69%
Industrial Insurance	\$ 603	\$ 143	421%
BC Workers Comp	\$ -	\$ -	n/a
Vessel P & I	\$ 45,825	\$ 38,108	120%
Payroll Taxes			
Sea Samplers	\$ 41,428	\$ 38,958	106%
Office Staff	\$ -	\$ 978	0%
Total	\$ 615,440	\$ 629,293	98%
Programs			
Travel			
Travel	\$ 96,769	\$ 100,900	96%
Communications			
Phone Communications	\$ 2,927	\$ 3,150	93%
Communications Allowance	\$ -	\$ -	n/a
Postage	\$ -	\$ -	n/a
Express Shipping	\$ 573	\$ 1,000	57%
Shipping	\$ 107,264	\$ 78,500	137%
Total	\$ 207,532	\$ 183,550	113%
Administration			
Rentals & Contracts			
Lump Sum (vessels)	\$ 2,871,657	\$ 3,037,852	95%
Contracts	\$ 20,800	\$ 21,218	98%
Facility Rentals			
Bait Storage	\$ 10,824	\$ 20,000	54%
Training			
Staff Orientation	\$ 49,121	\$ 52,000	94%
Skill Training	\$ -	\$ -	n/a
Fees			
Revenue Share	\$ 542,230	\$ 602,639	90%
Running Bonus	\$ 2,000	\$ 2,000	100%
Agency Bycatch Share	\$ -	\$ 28,175	0%
Customs	\$ -	\$ -	n/a
Equipment Maintenance	\$ 36,358	\$ 40,000	91%
Dockside Monitoring	\$ 5,333	\$ 7,704	69%
Total	\$ 3,538,323	\$ 3,811,588	93%
Survey Bait and Supplies			
Supplies			
Survey Equipment	\$ -	\$ 1,400	0%
Survey Gear	\$ 24,701	\$ 28,800	86%
Survey Bait	\$ 722,851	\$ 754,712	96%
Ice	\$ 10,695	\$ 13,700	78%
Gear Replacement	\$ 68,438	\$ 101,027	68%
Misc. Expenses	\$ 12,673	\$ 28,000	45%
Total	\$ 839,358	\$ 927,640	90%
SSA Survey Total	\$ 5,201,961	\$ 5,552,072	94%
Prior FY			
Prior FY	\$ 1,307	\$ -	
Survey Total			
Survey Total	\$ 5,201,961	\$ 5,552,072	94%



Budget Update for FY2019 and Budget Estimate for 2020

PREPARED BY: IPHC SECRETARIAT (M. LARSEN; 13 NOVEMBER 2018)

PURPOSE

1. To provide the Commission with an updated current (FY2019) budget (financial period: 1 October 2018 to 30 September 2019), as well as the budget estimates for FY2020.

PROPOSED CONTRIBUTIONS TO THE AUTONOMOUS BUDGET IN FY2019: INCOME (US\$)

2. For FY2019, the IPHC anticipates an increase in General Account income and an increase in expenses. The net result is a projected use of **\$787K** in carryover funds to balance overall income and expenses (**Table 1**).
3. For FY2019, the IPHC anticipates an increase in Supplemental Account income and an increase in expenses related to the IPHC fishery-independent setline survey (FISS) design which includes expansions in IPHC Regulatory Areas 3a and 3B and a gear comparison study in IPHC Regulatory Area 2C. The net result is a projected use of **\$299K** in carryover funds to balance overall income and expenses (**Table 1**).
4. The FY2019 proposed budget is in line with trends seen in 2018. A number of items of interest regarding income are:
 - a) **U.S.A. Contribution** – In FY2019, indications are that the U.S. Government will appropriate **\$4.4M** to the IPHC (**Table 1**). As currently constructed, the U.S.A. contributions included funding for pension deficits and headquarters lease costs.
 - b) **Canadian Contribution** – In FY2019, the Canadian government contribution is at **\$957,970 (USD)** (**Table 1**). The Canadian contributions includes **\$848,720** for general contributions (as proposed at the AM094 meeting), as well as a separate amount of **\$111,250** to cover pension deficit payments.
 - c) **Fish Sales** – In FY2018, the IPHC saw prices decrease coast-wide. We anticipate a stabilization in the Pacific halibut market with price projections at 95% of 2018 prices in most areas. Total sales from the IPHC fishery-independent setline survey (FISS) program and related research programs is expected to be **\$6.2M** (**Table 9**).

PROPOSED EXPENDITURES FOR THE FY2019 BUDGET (US\$)

5. For FY2019 expenses are anticipated to be 3% higher than the FY2018 budget (**Table 4**).
6. Items of interest include:
 - a) **Office Staff Payroll** – The IPHC currently has multiple short-term contracts (2-year contracts) either recently filled or pending:
 - a. Quantitative Sciences Branch – 2 x contract positions (2 years)
 - i. Researcher (Management Strategy Evaluation)
 - ii. Programmer (Management Strategy Evaluation)
 - b. Fisheries Policy and Economics Branch

- i. Fisheries Economist – The budget includes a two-year commitment beginning in FY2019. The position will be used to evaluate fisheries values related to the Pacific halibut in the commercial, sport and MSE frameworks.
- b) **Personnel Benefits** – The IPHC anticipates higher than average increases in health care costs due to uncertainties with the Affordable Care Act. Current projections include a 17% increase for FY2019 (**Table 4-1**). Other benefit and insurance costs are stable with the exception of the employer pension payments (both per employee and deficit payments) resulting from the triennial valuation of the plan.
- c) **Performance Review** – Paper IPHC-2018-IM094-14 described the proposed performance review. FY2019 budget of \$60,000.
- d) **I.T. Initiatives** – The IPHC is planning a series of additional information technology projects for FY2019 and beyond. These include:
 - a. Website redesign: Phase II
 - b. Sharepoint/Office 365 Design
 - c. Data Warehouse Development
 - d. Security Analysis
- e) **IPHC fishery-independent Setline Survey (FISS) Regulatory Area 3A/3B Expansion**– For 2019 the IPHC will expand the FISS in Regulatory Areas 3A and 3B. The FISS is integrated into the Regulatory Area 3A and 3C regions. This will complete the full cycle of expansions once completed in 2019 (**Table 9-2**).
- f) **FISS Gear Comparison Study** – For FY2019 the IPHC will complete a gear comparison study in Regulatory Area 2C between fixed and snap gear. The results will be used to a) determine if snap gear can be used for the FISS program and b) determine how to integrate snap gear into the stock assessment process.

EXTRA-BUDGETARY FUNDS

- 7. The IPHC will continue to receive a grant for costs associated to the implementation of the extended sampling in Alaska from NOAA-Fisheries (National Marine Fisheries Service). Included in FY2019 budget are two continuing grants to support the Discard Mortality and Growth Marker projects (**Table 1**). The Commission will also receive funds from the Fisheries and Oceans Canada, and Washington Department of Fish and Wildlife for additional work being conducted on the fisheries-independent surveys in 2019 (**Table 9**).

PROPOSED EXPENDITURES FOR THE FY2020 BUDGETS (US\$)

- 1. **FY2020 INCOME AND EXPENSES** – The IPHC budget for FY2020 has a proposed \$760K USD in expenses above the projected income for the fiscal year. This will reduce the carryover to \$447K. The primary changes in the income are based on a change in Canadian contribution to \$874,182K and \$4.532M for the USA and completion of grants. The contribution change is a proposed increase of 3% annual increase from FY2019 for both members. Change in income (and expenses) for the FISS program is based on a projected redesign of the FISS. Other general cost assumptions include a 2.5% increase

in salaries (based on cost of living and step increases) and a 8% increase in health care costs.

RECOMMENDATION/S

- 1) That the Commission:
 - a. **NOTE** and **APPROVE** IPHC-2018-IM094-16 and Appendix I which provide the Commission with the updated FY2019 budget (financial period: 1 October 2018 to 30 September 2019) according to IPHC Financial Regulations (2018), Regulation 5.9.
 - b. **NOTE** paper IPHC-2018-IM094-16 and Appendix II which provide the Commission with the draft FY2020 budget (financial period: 1 October 2019 to 30 September 2020).

APPENDICES

Appendix I: FY2019 Proposed Updated Financial Budget – Interim Meeting (ver. 1.6)

Appendix II: FY2020 Proposed Financial Budget – Interim Meeting (ver. 0.8)

APPENDIX I

TABLE 1. IPHC Income & Expense

International Pacific Halibut Commission
 General Operations
 Income and Expenses - FY2019 Budget

INCOME	FY 2019
US Contributions	\$ 4,400,000
CDN Contributions	\$ 848,720
CDN Pension Funding	\$ 111,250
Interest	\$ 5,000
Grants and Contracts	
NMFS - Port Sampling	\$ 447,551
NPRB - Growth Markers	\$ 102,839
SK - DMR Classification	\$ 102,370
Whale Detection	\$ 7,511
TOTAL INCOME	\$ 6,025,241
EXPENSES	
Operations	
Personnel	\$ 5,235,428
Programs	\$ 429,835
Administration	\$ 1,191,967
Supplies	\$ 333,610
TOTAL EXPENSES	\$ 7,190,840
FISS COST RECOVERY	-\$ 378,425
OPERATIONS FISCAL YEAR NET	\$ (787,174)
PRIOR YEAR OPERATIONS CARRYOVER	\$ 1,994,356
GENERAL ACCOUNT CARRYOVER \$ 1,207,182	

Version	Date	Comments
0.9		Interim Meeting Draft
1.0		Annual Meeting Draft
1.1		Annual Meeting Final
1.2		Annual Meeting - Approved
1.3	1 Oct. 2018	Updates and format change (no net expense changes)
1.4	22 Oct. 2018	Formatting and naming changes
1.5	7 Nov. 2018	Salary/Benefit updates - including Fisheries Economist (\$44,412)
1.6	8 Nov. 2018	Sequester funds to contingency account

TABLE 2. Operations

International Pacific Halibut Commission
Fiscal Year Actuals and Budgets

Year	2019
-------------	-------------

Personnel	10	20	30	40	60	Operations Total	Prior Year		% of Actuals	% of Budget
	Administration	Science	FSSB	Special Projects	Research		Actuals	Budget		
Related Expenses	\$ 15,300	\$ 1,800	\$ 16,430	\$ -	\$ -	\$ 33,530	\$ 10,568	\$ 37,700	317%	89%
Salaries	\$ 579,572	\$ 2,361,969	\$ 334,088	\$ -	\$ 119,500	\$ 3,395,129	\$ 3,005,957	\$ 3,235,312	113%	105%
Benefits	\$ 544,521	\$ 841,258	\$ 114,622	\$ -	\$ 41,095	\$ 1,541,496	\$ 1,287,614	\$ 1,261,901	120%	122%
Taxes	\$ 40,683	\$ 179,708	\$ 19,682	\$ -	\$ -	\$ 240,073	\$ 212,600	\$ 226,429	113%	106%
Other	\$ 25,200	\$ -	\$ -	\$ -	\$ -	\$ 25,200	\$ 6,319	\$ 25,200	399%	100%
Contracted	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,134	\$ -	0%	n/a
Subtotal	\$ 1,205,276	\$ 3,384,736	\$ 484,821	\$ -	\$ 160,595	\$ 5,235,428	\$ 4,524,191	\$ 4,786,542	116%	109%
Programs										
Meetings	\$ 154,500	\$ -	\$ -	\$ -	\$ -	\$ 154,500	\$ 170,803	\$ 169,250	90%	91%
Travel	\$ 77,200	\$ 57,000	\$ 46,000	\$ -	\$ 29,370	\$ 209,570	\$ 190,410	\$ 212,200	110%	99%
Communications	\$ 17,450	\$ 300	\$ 4,515	\$ -	\$ 11,000	\$ 33,265	\$ 45,543	\$ 54,285	73%	61%
Publications	\$ 25,000	\$ 5,000	\$ -	\$ -	\$ 2,500	\$ 32,500	\$ 25,270	\$ 41,750	129%	78%
Subtotal	\$ 274,150	\$ 62,300	\$ 50,515	\$ -	\$ 42,870	\$ 429,835	\$ 432,025	\$ 477,485	99%	90%
Administration										
Contracts	\$ 299,664	\$ -	\$ 34,050	\$ -	\$ 254,307	\$ 588,021	\$ 582,202	\$ 522,411	101%	113%
Maintenance	\$ 155,685	\$ -	\$ -	\$ -	\$ 1,000	\$ 156,685	\$ 138,665	\$ 155,642	113%	101%
Facility Rentals	\$ 284,882	\$ -	\$ 5,700	\$ -	\$ -	\$ 290,582	\$ 274,968	\$ 284,801	106%	102%
Training & Education	\$ 23,500	\$ 20,250	\$ 22,300	\$ -	\$ -	\$ 66,050	\$ 56,997	\$ 94,192	116%	70%
Fees	\$ 34,750	\$ -	\$ 5,600	\$ -	\$ 2,694	\$ 43,044	\$ 43,501	\$ 40,350	99%	107%
Contingencies	\$ 39,295	\$ -	\$ 8,290	\$ -	\$ -	\$ 47,585	\$ 746	\$ -	6380%	n/a
Subtotal	\$ 837,776	\$ 20,250	\$ 75,940	\$ -	\$ 258,001	\$ 1,191,967	\$ 1,097,080	\$ 1,097,396	109%	109%
Supplies & Equipment										
Equipment	\$ 18,300	\$ 229	\$ 10,000	\$ -	\$ 800	\$ 29,329	\$ 171,039	\$ 207,790	17%	14%
Supplies	\$ 21,500	\$ 6,827	\$ 4,000	\$ -	\$ 271,954	\$ 304,281	\$ 152,738	\$ 433,391	199%	70%
Subtotal	\$ 39,800	\$ 7,056	\$ 14,000	\$ -	\$ 272,754	\$ 333,610	\$ 323,777	\$ 551,181	103%	61%
Prior FY Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,205	\$ -	0%	n/a
Grand Total	\$ 2,357,002	\$ 3,474,342	\$ 625,276	\$ -	\$ 734,220	\$ 7,190,840	\$ 6,383,278	\$ 7,006,154	113%	103%
Prior FY Actuals	\$ 1,913,047	\$ 3,316,366	\$ 491,053	\$ -	\$ 662,813	\$ 6,383,279				
Prior FY Budget	\$ 1,899,337	\$ 3,491,057	\$ 596,244	\$ -	\$ 1,019,516	\$ 7,006,154				
% of Actuals	123%	105%	127%	n/a	111%	113%				
% of Budget	124%	100%	105%	n/a	72%	103%				

TABLE 3. Personnel Summary

Item	10 Administration	2x Science	30 FSSB	40 Special Projects	60 Research	Operations Budget	Prior Fiscal Year		% of Actuals	% of Budget
							Actuals	Budget		
Personnel Related Expenses										
70511 Vehicle Mileage Reimbursed	\$ -	\$ -	\$ 5,000	\$ -	\$ -	\$ 5,000	\$ 3,665	\$ 9,350	136%	53%
70521 Hiring Expenses	\$ 10,000	\$ -	\$ 9,000	\$ -	\$ -	\$ 19,000	\$ 3,141	\$ 19,000	605%	100%
70522 Employee Separation Expenses	\$ 5,000	\$ -	\$ 300	\$ -	\$ -	\$ 5,300	\$ -	\$ 5,000	n/a	106%
70531 Gear Allowance	\$ 300	\$ 1,800	\$ 2,130	\$ -	\$ -	\$ 4,230	\$ 3,762	\$ 4,350	112%	97%
Subtotal	\$ 15,300	\$ 1,800	\$ 16,430	\$ -	\$ -	\$ 33,530	\$ 10,568	\$ 37,700	317%	89%
Salaries										
72211 Salary - Full-Time	\$ 572,072	\$ 2,150,607	\$ -	\$ -	\$ -	\$ 2,722,679	\$ 2,646,756	\$ 2,633,398	103%	103%
72221 Part-Time Salary	\$ -	\$ -	\$ 314,471	\$ -	\$ -	\$ 314,471	\$ 290,923	\$ 317,307	108%	99%
72222 AK Cola	\$ -	\$ -	\$ 17,616	\$ -	\$ -	\$ 17,616	\$ 14,651	\$ 17,863	120%	99%
72231 Temporary Pay	\$ -	\$ 208,662	\$ -	\$ -	\$ 119,500	\$ 328,162	\$ 49,287	\$ 243,644	666%	135%
72241 Hourly Pay	\$ 5,000	\$ -	\$ 500	\$ -	\$ -	\$ 5,500	\$ -	\$ 5,500	n/a	100%
72251 Sea Duty Pay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a	n/a
72252 Port Duty Pay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,900	n/a	0%
72253 On-Call Duty Pay	\$ -	\$ 2,700	\$ -	\$ -	\$ -	\$ 2,700	\$ 4,340	\$ 2,700	62%	100%
72261 Performance Bonus	\$ 2,500	\$ -	\$ 1,500	\$ -	\$ -	\$ 4,000	\$ -	\$ 4,000	n/a	100%
Subtotal	\$ 579,572	\$ 2,361,969	\$ 334,088	\$ -	\$ 119,500	\$ 3,395,129	\$ 3,005,957	\$ 3,235,312	113%	105%
Benefits										
7241x Medical Benefits	\$ 168,579	\$ 519,239	\$ 60,719	\$ -	\$ 15,524	\$ 764,060	\$ 658,898	\$ 644,332	116%	119%
72311 Pension	\$ 25,831	\$ 52,793	\$ -	\$ -	\$ -	\$ 78,624	\$ 55,448	\$ 71,144	142%	111%
72421 403(b) - Base Contribution	\$ 29,281	\$ 134,991	\$ 3,949	\$ -	\$ 2,034	\$ 170,254	\$ 151,278	\$ 152,406	113%	112%
72422 403(b) - Matching Contribution	\$ 20,915	\$ 96,422	\$ 22,427	\$ -	\$ 1,453	\$ 141,216	\$ 95,439	\$ 87,089	148%	162%
72312 Pension Shortfall Contributions	\$ 278,848	\$ -	\$ -	\$ -	\$ -	\$ 278,848	\$ 256,890	\$ 233,014	109%	120%
72431 Life Insurance	\$ 3,075	\$ 11,740	\$ 16,019	\$ -	\$ 2,864	\$ 33,698	\$ 14,857	\$ 15,607	227%	216%
72432 AD&D Insurance	\$ 323	\$ 1,254	\$ 215	\$ -	\$ 19	\$ 1,812	\$ 1,617	\$ 1,673	112%	108%
72441 BC Workers Compensation	\$ -	\$ -	\$ 186	\$ -	\$ -	\$ 186	\$ 1,963	\$ 183	9%	101%
72433 AFLAC Insurance	\$ 6,670	\$ 24,820	\$ 5,107	\$ -	\$ 724	\$ 37,321	\$ 28,062	\$ 28,357	133%	132%
72452 Tuition Benefit	\$ 5,000	\$ -	\$ -	\$ -	\$ 18,477	\$ 23,477	\$ -	\$ 17,597	n/a	133%
72453 Housing Allowance Benefit	\$ -	\$ -	\$ 6,000	\$ -	\$ -	\$ 6,000	\$ 500	\$ 4,500	1200%	133%
72461 Travel & Accident Insurance	\$ 6,000	\$ -	\$ -	\$ -	\$ -	\$ 6,000	\$ 5,841	\$ 6,000	103%	100%
72462 Vessel P&I Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 16,822	\$ -	0%	n/a
Subtotal	\$ 544,521	\$ 841,258	\$ 114,622	\$ -	\$ 41,095	\$ 1,541,496	\$ 1,287,614	\$ 1,261,901	120%	122%
Taxes										
72511 Social Security	\$ 40,683	\$ 179,708	\$ 19,682	\$ -	\$ -	\$ 240,073	\$ 212,600	\$ 226,429	113%	106%
Subtotal	\$ 40,683	\$ 179,708	\$ 19,682	\$ -	\$ -	\$ 240,073	\$ 212,600	\$ 226,429	113%	106%
Other										
75311 Legal Fees	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ -	\$ 5,000	n/a	100%
75312 Consultation	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ 10,000	\$ -	\$ 10,000	n/a	100%
75411 Cobra TPA	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ -	\$ 2,000	n/a	100%
75413 Section 125/132 Plan TPA	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 2,997	\$ 5,000	167%	100%
75412 Defined Benefit TPA	\$ 3,200	\$ -	\$ -	\$ -	\$ -	\$ 3,200	\$ 3,322	\$ 3,200	96%	100%
Subtotal	\$ 25,200	\$ -	\$ -	\$ -	\$ -	\$ 25,200	\$ 6,319	\$ 25,200	399%	100%
Contracted										
75511 Contracted Employees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,134	\$ -	0%	n/a
Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,134	\$ -	0%	n/a
Grand Total	\$ 1,205,276	\$ 3,384,736	\$ 484,821	\$ -	\$ 160,595	\$ 5,235,428	\$ 4,524,191	\$ 4,786,542	116%	109%
Prior FY Actuals	\$ 1,153,639	\$ 2,916,376	\$ 386,683	\$ -	\$ 67,493	\$ 4,524,191				
Prior FY Budget	\$ 1,066,334	\$ 3,076,685	\$ 457,599	\$ -	\$ 185,924	\$ 4,786,543				
% of Actuals	104%	116%	125%	n/a	238%	116%				
% of Budget	113%	110%	106%	n/a	86%	109%				

TABLE 4. Programs

Item	1x Administration	2x Science	30 FSSB	40 Special Projects	60 Research	Operations Budget	Prior Fiscal Year		% of Actuals	% of Budget	
							Actuals	Budget			
IPHC Meetings											
83211	Interim Meeting	\$ 14,000	\$ -	\$ -	\$ -	\$ -	\$ 14,000	\$ 13,439	\$ 12,000	104%	117%
83212	Annual Meeting	\$ 65,000	\$ -	\$ -	\$ -	\$ -	\$ 65,000	\$ 79,467	\$ 55,000	82%	118%
83221	RAB Meetings	\$ 5,500	\$ -	\$ -	\$ -	\$ -	\$ 5,500	\$ 4,963	\$ 5,500	111%	100%
83222	MSAB Meetings	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ 40,000	\$ 35,917	\$ 40,000	111%	100%
83223	SRB Meetings	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000	\$ 25,201	\$ 35,000	99%	71%
83241	WorkMeeting	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 21	\$ 5,000	24108%	100%
83251	Scientific Meeting Support	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ 6,000	0%	0%
83261	Local & Trade Show	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,794	\$ 10,000	0%	0%
83271	Scholarship Committee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 750	n/a	0%
Subtotal		\$ 154,500	\$ -	\$ -	\$ -	\$ -	\$ 154,500	\$ 170,803	\$ 169,250	90%	91%
Travel											
83231	Contracting Party Meetings	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 5,036	\$ 16,500	99%	30%
83242	Scientific Conferences	\$ -	\$ 40,000	\$ -	\$ -	\$ 5,250	\$ 45,250	\$ 40,107	\$ 44,400	113%	102%
83111	General Travel - Secretariat	\$ 22,200	\$ 17,000	\$ 14,000	\$ -	\$ 24,120	\$ 77,320	\$ 68,531	\$ 71,140	113%	109%
83112	Port Travel	\$ -	\$ -	\$ 32,000	\$ -	\$ -	\$ 32,000	\$ 29,975	\$ 30,000	107%	107%
83121	General Travel - Director	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000	\$ 46,760	\$ 50,160	107%	100%
Subtotal		\$ 77,200	\$ 57,000	\$ 46,000	\$ -	\$ 29,370	\$ 209,570	\$ 190,410	\$ 212,200	110%	99%
Communications											
81311	Phone Tolls	\$ 7,000	\$ -	\$ -	\$ -	\$ -	\$ 7,000	\$ 6,218	\$ 7,000	113%	100%
81312	Long Distance	\$ 750	\$ -	\$ 625	\$ -	\$ -	\$ 1,375	\$ 1,655	\$ 1,375	83%	100%
81313	Reimbursed Communications	\$ 500	\$ -	\$ 540	\$ -	\$ -	\$ 1,040	\$ 980	\$ 7,670	106%	14%
82211	Internet Service	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ 2,500	\$ 2,422	\$ 2,500	103%	100%
81411	Postage	\$ 3,000	\$ -	\$ 2,100	\$ -	\$ -	\$ 5,100	\$ 5,120	\$ 12,100	100%	42%
81412	Express Mail	\$ 950	\$ 300	\$ 1,250	\$ -	\$ 11,000	\$ 13,500	\$ 3,329	\$ 16,890	406%	80%
81413	Heavy Shipping	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,044	\$ 2,000	0%	0%
81511	Mailing Services	\$ 2,750	\$ -	\$ -	\$ -	\$ -	\$ 2,750	\$ 19,775	\$ 4,750	14%	58%
Subtotal		\$ 17,450	\$ 300	\$ 4,515	\$ -	\$ 11,000	\$ 33,265	\$ 45,543	\$ 54,285	73%	61%
Publications											
81911	Annual Report	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ 20,000	\$ 19,148	\$ 14,000	104%	143%
81912	Regulations	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ 3,000	\$ 3,023	\$ 5,000	99%	60%
81931	IPHC Publications	\$ -	\$ 5,000	\$ -	\$ -	\$ -	\$ 5,000	\$ -	\$ 15,000	n/a	33%
81932	External Journals	\$ -	\$ -	\$ -	\$ -	\$ 2,500	\$ 2,500	\$ 2,525	\$ 4,000	99%	63%
81711	Misc. Printing	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ 574	\$ 2,000	349%	100%
81712	Logbooks	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,750	n/a	0%
Subtotal		\$ 25,000	\$ 5,000	\$ -	\$ -	\$ 2,500	\$ 32,500	\$ 25,270	\$ 41,750	129%	78%
Grand Total		\$ 274,150	\$ 62,300	\$ 50,515	\$ -	\$ 42,870	\$ 429,835	\$ 432,025	\$ 477,485	99%	90%
Prior FY Actuals		\$ 272,736	\$ 60,548	\$ 38,754	\$ -	\$ 59,989	\$ 432,027				
Prior FY Budget		\$ 295,210	\$ 69,850	\$ 53,895	\$ -	\$ 58,530	\$ 477,485				
% of Actuals		101%	103%	130%	n/a	71%	99%				
% of Budget		93%	89%	94%	n/a	73%	90%				

TABLE 5. Administration

Item	1x Administration	2x Science	30 FSSB	40 Special Projects	60 Research	Operations Budget	Prior Fiscal Year Actuals	Prior Fiscal Year Budget	% of Actuals	% of Budget
Contracts										
82611 Leased Vehicle Fees	\$ 4,000	\$ -	\$ 17,250	\$ -	\$ -	\$ 21,250	\$ 23,409	\$ 21,250	91%	100%
85611 Software Leases	\$ 40,339	\$ -	\$ 4,800	\$ -	\$ -	\$ 45,139	\$ 44,191	\$ 47,773	102%	94%
85931 Vendor Contracts	\$ 255,325	\$ -	\$ 12,000	\$ -	\$ 254,307	\$ 521,632	\$ 514,602	\$ 453,388	101%	115%
Subtotal	\$ 299,664	\$ -	\$ 34,050	\$ -	\$ 254,307	\$ 588,021	\$ 582,202	\$ 522,411	101%	113%
Maintenance										
82612 Copier Maintenance	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ 2,711	\$ 2,000	74%	100%
82613 Equipment Maintenance	\$ 41,252	\$ -	\$ -	\$ -	\$ 1,000	\$ 42,252	\$ 34,880	\$ 43,952	121%	96%
82614 Vehicle Maintenance	\$ 250	\$ -	\$ -	\$ -	\$ -	\$ 250	\$ -	\$ 250	n/a	100%
82615 Building Maintenance	\$ 94,183	\$ -	\$ -	\$ -	\$ -	\$ 94,183	\$ 82,814	\$ 91,440	114%	103%
82212 Building Utilities	\$ 18,000	\$ -	\$ -	\$ -	\$ -	\$ 18,000	\$ 18,260	\$ 18,000	99%	100%
Subtotal	\$ 155,685	\$ -	\$ -	\$ -	\$ 1,000	\$ 156,685	\$ 138,665	\$ 155,642	113%	101%
Facility Rentals										
82121 Field Office Rental	\$ -	\$ -	\$ 5,700	\$ -	\$ -	\$ 5,700	\$ 5,491	\$ 8,100	104%	70%
82122 Archival Storage Rental	\$ 4,000	\$ -	\$ -	\$ -	\$ -	\$ 4,000	\$ 4,665	\$ 4,000	86%	100%
82131 Bait Storage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a	n/a
82111 Office Lease	\$ 266,665	\$ -	\$ -	\$ -	\$ -	\$ 266,665	\$ 251,986	\$ 258,898	106%	103%
82123 Storage Lease	\$ 14,217	\$ -	\$ -	\$ -	\$ -	\$ 14,217	\$ 12,826	\$ 13,803	111%	103%
Subtotal	\$ 284,882	\$ -	\$ 5,700	\$ -	\$ -	\$ 290,582	\$ 274,968	\$ 284,801	106%	102%
Training & Education										
85411 Port Staff Training	\$ -	\$ -	\$ 21,300	\$ -	\$ -	\$ 21,300	\$ 22,781	\$ 21,300	93%	100%
85421 Management Training	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,871	\$ 16,000	0%	0%
85422 Professional Development	\$ 8,000	\$ 20,000	\$ 1,000	\$ -	\$ -	\$ 29,000	\$ 16,263	\$ 32,892	178%	88%
81811 Journals & Memberships	\$ 500	\$ 250	\$ -	\$ -	\$ -	\$ 750	\$ 22	\$ 4,500	3409%	17%
81812 Professional Journals	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ 15,000	\$ 15,060	\$ 19,500	100%	77%
Subtotal	\$ 23,500	\$ 20,250	\$ 22,300	\$ -	\$ -	\$ 66,050	\$ 56,997	\$ 94,192	116%	70%
Fees										
85911 Audit	\$ 8,000	\$ -	\$ -	\$ -	\$ -	\$ 8,000	\$ 2,125	\$ 8,000	376%	100%
85921 Bank Charges	\$ 8,000	\$ -	\$ -	\$ -	\$ -	\$ 8,000	\$ 2,756	\$ 8,000	290%	100%
85211 Vehicle Insurance	\$ 4,250	\$ -	\$ 5,600	\$ -	\$ -	\$ 9,850	\$ 8,317	\$ 9,850	118%	100%
85212 General Liability Insurance	\$ 5,500	\$ -	\$ -	\$ -	\$ 214	\$ 5,714	\$ 6,079	\$ 5,500	94%	104%
85213 Bonding	\$ 500	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ 494	\$ 500	101%	100%
85214 Customs	\$ 1,000	\$ -	\$ -	\$ -	\$ -	\$ 1,000	\$ 1,334	\$ 1,000	75%	100%
85941 Legal Fees	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ 7,500	\$ 2,714	\$ 7,500	276%	100%
85932 Vessel Revenue Share	\$ -	\$ -	\$ -	\$ -	\$ 2,480	\$ 2,480	\$ 19,682	\$ -	13%	n/a
Subtotal	\$ 34,750	\$ -	\$ 5,600	\$ -	\$ 2,694	\$ 43,044	\$ 43,501	\$ 40,350	99%	107%
Contingencies										
67111 Realized Gain/loss	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 746	\$ -	0%	n/a
67211 Budget Contingency	\$ 39,295	\$ -	\$ 8,290	\$ -	\$ -	\$ 47,585	\$ -	\$ -	n/a	n/a
Subtotal	\$ 39,295	\$ -	\$ 8,290	\$ -	\$ -	\$ 47,585	\$ 746	\$ -	6380%	n/a
Grand Total	\$ 837,776	\$ 20,250	\$ 75,940	\$ -	\$ 258,001	\$ 1,191,967	\$ 1,097,080	\$ 1,097,396	109%	109%
Prior FY Actuals	\$ 461,557	\$ 158,435	\$ 64,414	\$ -	\$ 412,673	\$ 1,097,080				
Prior FY Budget	\$ 509,593	\$ 173,743	\$ 80,750	\$ -	\$ 333,310	\$ 1,097,396				
% of Actuals	182%	13%	118%	n/a	63%	109%				
% of Budget	164%	12%	94%	n/a	77%	109%				

TABLE 6. Supplies & Equipment

Item	1x	2x	30	40	60	Budget	Prior Fiscal Year		% of	% of
	Administration	Science	FSSB	Special Projects	Research		Actuals	Budget	Actuals	Budget
Equipment										
82811 Computer Equipment - Replace	\$ 7,400	\$ -	\$ -	\$ -	\$ -	\$ 7,400	\$ 7,312	\$ 7,400	101%	100%
82812 Computer Equipment - Long Term	\$ 5,900	\$ -	\$ -	\$ -	\$ -	\$ 5,900	\$ 95,920	\$ 107,600	6%	5%
82831 Field Equipment - Capital	\$ -	\$ -	\$ -	\$ -	\$ 800	\$ 800	\$ -	\$ 37,561	n/a	2%
82821 Field Equipment - non-Capital	\$ -	\$ -	\$ 10,000	\$ -	\$ -	\$ 10,000	\$ 1,929	\$ -	518%	n/a
82832 Scientific Equipment - Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 60,519	\$ 50,000	0%	0%
82822 Scientific Equipment - non-Capital	\$ -	\$ 229	\$ -	\$ -	\$ -	\$ 229	\$ -	\$ 229	n/a	100%
82833 Office Equipment - Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a	n/a
82823 Office Equipment - non-Capital	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 5,359	\$ 5,000	93%	100%
SubTotal	\$ 18,300	\$ 229	\$ 10,000	\$ -	\$ 800	\$ 29,329	\$ 171,039	\$ 207,790	17%	14%
Supplies										
81121 Supplies	\$ 21,500	\$ 6,827	\$ 4,000	\$ -	\$ 157,128	\$ 189,455	\$ 25,578	\$ 378,441	741%	50%
81122 Tag Recoveries	\$ -	\$ -	\$ -	\$ -	\$ 31,725	\$ 31,725	\$ 910	\$ 17,150	3486%	185%
81123 Fish Tags - Wire	\$ -	\$ -	\$ -	\$ -	\$ 8,575	\$ 8,575	\$ 5,825	\$ -	147%	n/a
81124 Fish Tags - Archival	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a	n/a
81125 Fish Tags - Satellite	\$ -	\$ -	\$ -	\$ -	\$ 64,710	\$ 64,710	\$ 117,652	\$ -	55%	n/a
81151 Bait	\$ -	\$ -	\$ -	\$ -	\$ 9,380	\$ 9,380	\$ -	\$ 37,800	n/a	25%
81152 Ice	\$ -	\$ -	\$ -	\$ -	\$ 436	\$ 436	\$ -	\$ -	n/a	n/a
81153 Gear Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,774	\$ -	0%	n/a
81154 Misc. Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a	n/a
SubTotal	\$ 21,500	\$ 6,827	\$ 4,000	\$ -	\$ 271,954	\$ 304,281	\$ 152,738	\$ 433,391	199%	70%
Grand Total	\$ 39,800	\$ 7,056	\$ 14,000	\$ -	\$ 272,754	\$ 333,610	\$ 323,777	\$ 641,181	103%	52%
Prior FY Actuals	\$ 18,910	\$ 181,006	\$ 1,203	\$ -	\$ 122,658	\$ 323,777				
Prior FY Budget	\$ 25,000	\$ 170,429	\$ 4,000	\$ -	\$ 441,752	\$ 641,181				
% of Actuals	210%	4%	1164%	n/a	222%	103%				
% of Budget	159%	4%	350%	n/a	62%	52%				

TABLE 7. Statistics Detail

Catch Effort Program

		51-53			61-63			71-92			Grand Total		2018	% of	FY2018	% of
		00 64			00 82			00 81				Actuals	Actuals	Budget	Budget	
		WA/OR/CA			Canada			Alaska								
		Ports	General	Total	Ports	General	Total	Ports	General	Total						
Related Expenses																
7112	7112	Vehicle Mileage Reimbursed	\$ -	\$ -	\$ -	\$ 1,850	\$ -	\$ 1,850	\$ 3,150	\$ -	\$ 3,150	\$ 5,000	\$ 3,665	136%	\$ 9,350	53%
5511	5511	Hiring Expenses	\$ -	\$ -	\$ -	\$ -	\$ 3,000	\$ 3,000	\$ -	\$ 6,000	\$ 6,000	\$ 9,000	\$ 1,134	794%	\$ 9,000	100%
5521	5521	Employee Separation Expenses	\$ -	\$ -	\$ -	\$ -	\$ 200	\$ 200	\$ -	\$ 100	\$ 100	\$ 300	\$ -	n/a	\$ -	n/a
8225	8225	Gear Allowance	\$ 200	\$ -	\$ 200	\$ 350	\$ -	\$ 350	\$ 1,580	\$ -	\$ 1,580	\$ 2,130	\$ 1,561	136%	\$ 2,650	80%
		Subtotal - Related Expenses	\$ 200	\$ -	\$ 200	\$ 2,200	\$ 3,200	\$ 5,400	\$ 4,730	\$ 6,100	\$ 10,830	\$ 16,430	\$ 6,360	258%	\$ 21,000	78%
Salaries and Benefits																
5121	5121	Part-Time Salary	\$ -	\$ -	\$ -	\$ 56,854	\$ -	\$ 56,854	\$ 257,618	\$ -	\$ 257,618	\$ 314,471	\$ 290,923	108%	\$ 325,484	97%
5122	5122	AK Cola	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,616	\$ -	\$ 17,616	\$ 17,616	\$ 14,651	120%	\$ 18,309	96%
5123	5123	Port Premium Pay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a	\$ -	n/a
5131	5131	Temporary	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a	\$ -	n/a
5132	5132	Hourly	\$ 500	\$ -	\$ 500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ -	n/a	\$ 500	100%
5142	5142	Port Duty	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,340	0%	\$ -	n/a
5251	5251	Performance Bonus	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ 500	\$ -	\$ 1,000	\$ 1,000	\$ 1,500	\$ -	n/a	\$ 1,500	100%
	521x	Medical Benefits	\$ -	\$ -	\$ -	\$ 12,969	\$ -	\$ 12,969	\$ 47,750	\$ -	\$ 47,750	\$ 60,719	\$ 43,059	141%	\$ 60,669	100%
		403(b) Base Contribution	\$ -	\$ -	\$ -	\$ 3,980	\$ -	\$ 3,980	\$ 18,447	\$ -	\$ 18,447	\$ 22,427	\$ -	n/a	\$ -	n/a
		403(b) Match Contribution	\$ -	\$ -	\$ -	\$ 2,843	\$ -	\$ 2,843	\$ 13,176	\$ -	\$ 13,176	\$ 16,019	\$ -	n/a	\$ -	n/a
5231	5231	Life Insurance	\$ -	\$ -	\$ -	\$ 344	\$ -	\$ 344	\$ 3,605	\$ -	\$ 3,605	\$ 3,949	\$ 1,967	201%	\$ 2,082	190%
5232	5232	AD&D	\$ -	\$ -	\$ -	\$ 37	\$ -	\$ 37	\$ 178	\$ -	\$ 178	\$ 215	\$ 234	92%	\$ 439	49%
5241	5241	BC Workers Comp.	\$ -	\$ -	\$ -	\$ 186	\$ -	\$ 186	\$ -	\$ -	\$ -	\$ 186	\$ 1,963	9%	\$ 620	30%
5242	5242	AFLAC Insurance	\$ -	\$ -	\$ -	\$ 1,094	\$ -	\$ 1,094	\$ 4,013	\$ -	\$ 4,013	\$ 5,107	\$ 2,438	209%	\$ 4,669	109%
5254	5254	Housing Allowance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,000	\$ -	\$ 6,000	\$ 6,000	\$ 500	1200%	\$ 4,500	133%
5311	5311	Social Security	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19,682	\$ -	\$ 19,682	\$ 19,682	\$ 17,152	115%	\$ 20,657	95%
		Subtotal - Salary and Benefits	\$ 500	\$ -	\$ 500	\$ 78,307	\$ 500	\$ 78,807	\$ 388,085	\$ 1,000	\$ 389,085	\$ 468,391	\$ 377,227	124%	\$ 439,429	107%
Programs																
6211	6211	General Travel - Staff	\$ 4,000	\$ -	\$ 4,000	\$ -	\$ -	\$ -	\$ 7,000	\$ 3,000	\$ 10,000	\$ 14,000	\$ 6,341	221%	\$ 14,000	100%
6212	6212	On Job Training Travel	\$ 2,500	\$ -	\$ 2,500	\$ -	\$ 9,000	\$ 9,000	\$ -	\$ 20,500	\$ 20,500	\$ 32,000	\$ 21,926	146%	\$ 21,000	152%
6213	6213	Follow-up Travel	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,049	0%	\$ 11,000	0%
6312	6312	Long Distance	\$ -	\$ -	\$ -	\$ -	\$ 200	\$ 200	\$ -	\$ 425	\$ 425	\$ 625	\$ 347	180%	\$ 625	100%
6313	6313	Comm Allow - Port	\$ -	\$ -	\$ -	\$ 540	\$ -	\$ 540	\$ -	\$ -	\$ -	\$ 540	\$ 180	300%	\$ 6,360	8%
6321	6321	USPS Postage	\$ -	\$ 100	\$ 100	\$ -	\$ 1,000	\$ 1,000	\$ -	\$ 1,000	\$ 1,000	\$ 2,100	\$ 609	345%	\$ 2,100	100%
6323	6323	Express Mail	\$ -	\$ 50	\$ 50	\$ -	\$ 200	\$ 200	\$ -	\$ 1,000	\$ 1,000	\$ 1,250	\$ 1,301	96%	\$ 1,250	100%
6418	6418	Logbooks	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a	\$ 1,750	0%
		Subtotal - Programs	\$ 6,500	\$ 150	\$ 6,650	\$ 540	\$ 10,400	\$ 10,940	\$ 7,000	\$ 25,925	\$ 32,925	\$ 50,515	\$ 38,753	130%	\$ 58,085	87%
Administration																
7111	7111	Leased Vehicle Fees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,250	\$ -	\$ 17,250	\$ 17,250	\$ 17,457	99%	\$ 17,250	100%
7121	7121	Software Leases	\$ -	\$ -	\$ -	\$ -	\$ 1,800	\$ 1,800	\$ -	\$ 3,000	\$ 3,000	\$ 4,800	\$ 2,738	175%	\$ 4,800	100%
7131	7131	Vendor Contracts	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,000	\$ 12,000	\$ 12,000	\$ 8,914	135%	\$ 15,250	79%
7311	7311	Field Office Rental	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,700	\$ -	\$ 5,700	\$ 5,700	\$ 5,491	104%	\$ 8,100	70%
7411	7411	Field Staff Orientation	\$ -	\$ 300	\$ 300	\$ -	\$ 4,000	\$ 4,000	\$ -	\$ 17,000	\$ 17,000	\$ 21,300	\$ 22,781	93%	\$ 21,300	100%
7422	7422	Skill Training	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ 500	\$ -	\$ 500	\$ 500	\$ 1,000	\$ 2,095	48%	\$ 8,500	12%
7513	7513	Vehicle Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,600	\$ -	\$ 5,600	\$ 5,600	\$ 4,938	113%	\$ 5,600	100%
		Contingencies	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,250	\$ -	n/a	\$ -	n/a
		Subtotal - Administration	\$ -	\$ 300	\$ 300	\$ -	\$ 6,300	\$ 6,300	\$ 28,550	\$ 32,500	\$ 61,050	\$ 75,900	\$ 64,414	118%	\$ 80,800	94%
Supplies and Equipment																
8122	8122	Field Equipment - Non-Capital	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 5,000	\$ -	\$ 5,000	\$ 5,000	\$ 10,000	\$ -	n/a	\$ -	n/a
8142	8142	Office Equipment - Non-Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a	\$ -	n/a
8211	8211	Supplies	\$ -	\$ 400	\$ 400	\$ -	\$ 800	\$ 800	\$ -	\$ 2,800	\$ 2,800	\$ 4,000	\$ 1,203	333%	\$ 4,000	100%
		Subtotal - Supplies and Equipment	\$ -	\$ 400	\$ 400	\$ -	\$ 5,800	\$ 5,800	\$ -	\$ 7,800	\$ 7,800	\$ 14,000	\$ 1,203	1164%	\$ 4,000	350%
9999	9999	Prior Fiscal Year Expense	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 92	0%	\$ -	n/a
		Catch Effort Program Totals	\$ 7,200	\$ 850	\$ 8,050	\$ 81,047	\$ 26,200	\$ 107,247	\$ 428,365	\$ 73,325	\$ 501,690	\$ 625,236	\$ 488,049	128%	\$ 603,314	104%

TABLE 7.1 Statistics Ports

Dept		Catch Effort Program - by ports											
30	Grant ID	81	81	81	81	81	81	81	81	81	81	81	
	Port ID	61	71	72	73	81	82	83	89	91	92		
U.S Ports		Bellingham	Petersburg	Sitka	Juneau	Seward	Homer	Kodiak	Sandpoint	Dutch Harbor	St. Paul	AK Total	
5121	Part-Time Salary	\$ -	\$ 37,403	\$ 34,371	\$ 36,392	\$ 36,392	\$ 37,403	\$ 33,361	\$ -	\$ 31,340	\$ 10,956	\$ 257,618	
5122	AK Cola	\$ -	\$ 2,558	\$ 2,350	\$ 2,489	\$ 2,489	\$ 2,558	\$ 2,281	\$ -	\$ 2,143	\$ 749	\$ 17,616	
5132	Hourly	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
521x	Medical Benefits	\$ -	\$ 6,485	\$ 6,485	\$ 6,485	\$ 6,485	\$ 10,407	\$ 2,562	\$ -	\$ 6,485	\$ 2,358	\$ 47,750	
5222	403(b) Base Contribution	\$ -	\$ 2,797	\$ 2,570	\$ 2,722	\$ 2,722	\$ 2,797	\$ 2,495	\$ -	\$ 2,344	\$ -	\$ 18,447	
5223	403(b) Match Contribution	\$ -	\$ 1,998	\$ 1,836	\$ 1,944	\$ 1,944	\$ 1,998	\$ 1,782	\$ -	\$ 1,674	\$ -	\$ 13,176	
5231	Life Insurance	\$ -	\$ 242	\$ 222	\$ 235	\$ 235	\$ 242	\$ 216	\$ -	\$ 203	\$ 2,010	\$ 3,605	
5232	AD&D	\$ -	\$ 26	\$ 24	\$ 25	\$ 25	\$ 26	\$ 23	\$ -	\$ 22	\$ 8	\$ 178	
5241	BC Workers Comp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
5242	AFLAC	\$ -	\$ 547	\$ 547	\$ 547	\$ 547	\$ 547	\$ 547	\$ -	\$ 547	\$ 182	\$ 4,013	
5254	Housing Allowance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,000	\$ -	\$ 6,000	
5311	Social Security	\$ -	\$ 2,858	\$ 2,626	\$ 2,780	\$ 2,780	\$ 2,858	\$ 2,549	\$ -	\$ 2,394	\$ 837	\$ 19,682	
	Salary and Benefits	\$ -	\$ 54,913	\$ 51,031	\$ 53,619	\$ 53,619	\$ 58,835	\$ 45,815	\$ -	\$ 53,151	\$ 17,100	\$ 388,085	
6211	General Travel - Staff	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 7,000	
6313	Comm Allow - Port	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
7111	Leased Vehicle Fees	\$ -	\$ -	\$ -	\$ 4,000	\$ 4,000	\$ -	\$ 5,000	\$ -	\$ 4,250	\$ -	\$ 17,250	
7112	Vehicle Mileage Reimbursed	\$ -	\$ 500	\$ 1,150	\$ -	\$ -	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ 3,150	
7311	Field Office Rental	\$ -	\$ -	\$ 2,400	\$ -	\$ -	\$ 3,300	\$ -	\$ -	\$ -	\$ -	\$ 5,700	
7513	Vehicle Insurance	\$ -	\$ -	\$ -	\$ 1,100	\$ 1,200	\$ -	\$ 1,000	\$ 1,200	\$ 1,100	\$ -	\$ 5,600	
8225	Gear Allowance	\$ -	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200	\$ 180	\$ -	\$ 200	\$ 200	\$ 1,580	
	Total	\$ 2,000	\$ 55,613	\$ 54,781	\$ 58,919	\$ 59,019	\$ 63,835	\$ 51,995	\$ 1,200	\$ 58,701	\$ 22,300	\$ 428,365	
	Grant ID	64	64	64	64		82	82	82				
	Port ID	00	51	52	53		61	62	63				
	Aging/General	Tribal (2A)	Newport (2A)	Washington (2A)	Area 2A Total	Vancouver	Port Hardy	Prince Rupert	Cdn Total	US Total	Grand Total		
5121	Part-Time Salary	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 26,059	\$ 30,795	\$ 56,854	\$ 257,618	\$ 314,471		
5122	AK Cola	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,616	\$ 17,616		
5132	Hourly	\$ -	\$ -	\$ 500	\$ 500	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ 500		
521x	Medical Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,485	\$ 6,485	\$ 12,969	\$ 47,750	\$ 60,719		
5222	403(b) Base Contribution	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,824	\$ 2,156	\$ 3,980	\$ 18,447	\$ 22,427		
5223	403(b) Match Contribution	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,303	\$ 1,540	\$ 2,843	\$ 13,176	\$ 16,019		
5231	Life Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 158	\$ 186	\$ 344	\$ 3,605	\$ 3,949		
5232	AD&D	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17	\$ 20	\$ 37	\$ 178	\$ 215		
5241	BC Workers Comp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 85	\$ 101	\$ 186	\$ -	\$ 186		
5242	Industrial Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 547	\$ 547	\$ 1,094	\$ 4,013	\$ 5,107		
5254	Housing Allowance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,000	\$ 6,000		
5311	Social Security	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19,682	\$ 19,682		
	Salary and Benefits	\$ -	\$ -	\$ 500	\$ 500	\$ -	\$ 36,478	\$ 41,829	\$ 78,307	\$ 388,585	\$ 466,891		
6211	General Travel - Staff	\$ -	\$ -	\$ 4,000	\$ 4,000	\$ -	\$ -	\$ -	\$ -	\$ 11,000	\$ 11,000		
6212	On Job Training Travel	\$ -	\$ 2,500	\$ -	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ 2,500	\$ 2,500		
6313	Comm Allow - Port	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
7111	Leased Vehicle Fees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 270	\$ 270	\$ 540	\$ -	\$ 540		
7112	Vehicle Mileage Reimbursed	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 350	\$ 1,500	\$ 1,850	\$ 3,150	\$ 5,000		
7311	Field Office Rental	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,700	\$ 5,700		
7513	Vehicle Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,600	\$ 5,600		
8225	Gear Allowance	\$ -	\$ -	\$ 200	\$ 200	\$ -	\$ 200	\$ 150	\$ 350	\$ 1,780	\$ 2,130		
	Total	\$ -	\$ 2,500	\$ 4,700	\$ 7,200	\$ -	\$ 37,298	\$ 43,749	\$ 81,047	\$ 435,565	\$ 516,611		

TABLE 8-1 Research (2019)

FY2019 BUDGET RESEARCH

On-going Projects

Object Code	Item	621-16-00 Genetic Sex ID - Genome	642-00-00 ADEC/EPA Contaminants	673.13 2017-03-00 Genome Sequencing	675.11 2017-07-00 Tail Patterns	650.21 2017-05-00 Area 4B PAT Tags	670-11-00 NMFS Trawl Tagging	On-going Projects Sub-Total
PROGRAMS								
<i>Travel</i>								
83111	General Travel - Staff	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Travel	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Communications</i>								
81412	Express Mail	\$ -	\$ 2,600	\$ 2,000	\$ -	\$ -	\$ -	\$ 4,600
	Communications	\$ -	\$ 2,600	\$ 2,000	\$ -	\$ -	\$ -	\$ 4,600
	Programs Subtotal	\$ -	\$ 2,600	\$ 2,000	\$ -	\$ -	\$ -	\$ 4,600
Administration								
<i>Contracts & Fees</i>								
85931	Vendor Contracts			\$ 35,000	\$ -	\$ -	\$ -	\$ 35,000
	Contracts & Leases	\$ -	\$ -	\$ 35,000	\$ -	\$ -	\$ -	\$ 35,000
	Administration Subtotal	\$ -	\$ -	\$ 35,000	\$ -	\$ -	\$ -	\$ 35,000
Supplies & Equipment								
<i>Supplies</i>								
81121	Supplies	\$ 18,000	\$ 3,700	\$ 2,500	\$ 3,100	\$ -	\$ 8,575	\$ 35,875
81122	Tag Recoveries	\$ -	\$ -	\$ -	\$ -	\$ 1,000	\$ 5,725	\$ 6,725
81151	Bait	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Supplies	\$ 18,000	\$ 3,700	\$ 2,500	\$ 3,100	\$ 1,000	\$ 14,300	\$ 42,600
<i>Equipment</i>								
82831	Field Equipment - Capital	\$ -	\$ -		\$ 800		\$ -	\$ 800
	Equipment	\$ -	\$ -	\$ -	\$ 800	\$ -	\$ -	\$ 800
	Supplies & Equipment Subtotal	\$ 18,000	\$ 3,700	\$ 2,500	\$ 3,900	\$ 1,000	\$ 14,300	\$ 43,400
	Total	\$ 18,000	\$ 6,300	\$ 39,500	\$ 3,900	\$ 1,000	\$ 14,300	\$ 83,000
Income								
	Total Income	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	FY2018 Actuals	\$ 17,109	\$ 1,550	\$ 718	\$ 1,565	\$ 1,694	\$ 8,100	\$ 30,736
	FY2018 Budget	\$ 23,928	\$ 8,600	\$ 32,500	\$ 3,900	\$ 6,800	\$ 12,840	\$ 88,568

TABLE 8-2 Research (2019)

**FY2019 BUDGET
RESEARCH**

New Projects

Object Code	Item	60	60	60	60	60	Migration and genetics	Whale detection	Captive holding	Projects Total
		Ongoing Projects Subtotal	673.14 2017-06-00 Growth markers	672.13 2017-02-00 DMR Classification	674.11 2017-04-00 Reproductive Cycle	675.13 Thermal growth history				
PERSONNEL										
<i>Salaries</i>										
72231	Temporary	\$ -	\$ 29,058	\$ 1,662	\$ 32,000	\$ 3,780	\$ 53,000	\$ -	\$ -	\$ 119,500
	Salary	\$ -	\$ 29,058	\$ 1,662	\$ 32,000	\$ 3,780	\$ 53,000	\$ -	\$ -	\$ 119,500
<i>Benefits</i>										
72411	Medical	\$ -	\$ 4,716	\$ 49	\$ -	\$ 110	\$ 10,649	\$ -	\$ -	\$ 15,524
72421	403(b) - ER Base	\$ -	\$ 2,034	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,034
72422	403(b) - ER Match	\$ -	\$ 1,453	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,453
72431	Life Insurance	\$ -	\$ 174	\$ 1,345	\$ -	\$ -	\$ 1,345	\$ -	\$ -	\$ 2,864
72432	AD&D	\$ -	\$ 19	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19
72433	AFLAC Insurance	\$ -	\$ 724	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 724
72452	Tuition	\$ -	\$ -	\$ -	\$ 18,477	\$ -	\$ -	\$ -	\$ -	\$ 18,477
	Benefits	\$ -	\$ 9,120	\$ 1,394	\$ 18,477	\$ 110	\$ 11,994	\$ -	\$ -	\$ 41,095
	Personnel Subtotal	\$ -	\$ 38,178	\$ 3,056	\$ 50,477	\$ 3,890	\$ 64,994	\$ -	\$ -	\$ 160,595
PROGRAMS										
<i>Meetings & Conferences</i>										
83242	Scientific Meeting & Symposia	\$ -	\$ 5,250	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,250
	Meetings & Conferences	\$ -	\$ 5,250	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,250
<i>Travel</i>										
83111	General Travel - Staff	\$ -	\$ 5,000	\$ 9,500	\$ 1,750	\$ 3,500	\$ 700	\$ -	\$ 3,670	\$ 24,120
	Travel	\$ -	\$ 5,000	\$ 9,500	\$ 1,750	\$ 3,500	\$ 700	\$ -	\$ 3,670	\$ 24,120
<i>Communications</i>										
81412	Express Mail	\$ 4,600	\$ -	\$ 500	\$ 1,500	\$ 3,900	\$ 500	\$ -	\$ -	\$ 11,000
	Communications	\$ 4,600	\$ -	\$ 500	\$ 1,500	\$ 3,900	\$ 500	\$ -	\$ -	\$ 11,000
<i>Publications</i>										
81932	External Journals	\$ -	\$ 833	\$ 833	\$ 834	\$ -	\$ -	\$ -	\$ -	\$ 2,500
	Publications	\$ -	\$ 833	\$ 833	\$ 834	\$ -	\$ -	\$ -	\$ -	\$ 2,500
	Programs Subtotal	\$ 4,600	\$ 11,083	\$ 10,833	\$ 4,084	\$ 7,400	\$ 1,200	\$ -	\$ 3,670	\$ 42,870
<i>Administration</i>										
<i>Contracts & Fees</i>										
85931	Vendor Contracts	\$ 35,000	\$ 54,153	\$ 97,651	\$ 23,000	\$ 14,400	\$ 6,592	\$ 7,511	\$ 16,000	\$ 254,307
85932	Vessel Revenue Share	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,480	\$ 2,480
	Contracts & Leases	\$ 35,000	\$ 54,153	\$ 97,651	\$ 23,000	\$ 14,400	\$ 6,592	\$ 7,511	\$ 18,480	\$ 256,787
<i>Insurance</i>										
85212	General Liability Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 214	\$ 214
	Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 214	\$ 214
<i>Lease & Maintenance</i>										
82613	Equipment Maintenance	\$ -	\$ -	\$ 500	\$ 500	\$ -	\$ -	\$ -	\$ -	\$ 1,000
	Lease & Maintenance	\$ -	\$ -	\$ 500	\$ 500	\$ -	\$ -	\$ -	\$ -	\$ 1,000
	Administration Subtotal	\$ 35,000	\$ 54,153	\$ 98,151	\$ 23,500	\$ 14,400	\$ 6,592	\$ 7,511	\$ 18,694	\$ 258,001
Supplies & Equipment										
<i>Supplies</i>										
81121	Supplies	\$ 35,875	\$ 8,500	\$ 33,500	\$ 24,600	\$ 64,629	\$ 26,831	\$ -	\$ 36,478	\$ 230,413
81122	Tag Recoveries	\$ 6,725	\$ -	\$ -	\$ -	\$ 25,000	\$ -	\$ -	\$ -	\$ 31,725
81151	Bait	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,475	\$ 3,905	\$ -	\$ 9,380
81153	Gear Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 436	\$ -	\$ 436
	Supplies	\$ 42,600	\$ 8,500	\$ 33,500	\$ 24,600	\$ 89,629	\$ 32,306	\$ 40,819	\$ -	\$ 271,954
<i>Equipment</i>										
82831	Field Equipment - Capital	\$ 800	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 800
	Equipment	\$ 800	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 800
	Supplies & Equipment Subtotal	\$ 43,400	\$ 8,500	\$ 33,500	\$ 24,600	\$ 89,629	\$ 32,306	\$ 40,819	\$ -	\$ 272,754
	Total	\$ 83,000	\$ 111,914	\$ 145,540	\$ 102,661	\$ 115,319	\$ 105,092	\$ 7,511	\$ 63,183	\$ 734,220
Income										
4021	US Federal Grant	\$ -	\$ 102,839	\$ 102,370	\$ -	\$ -	\$ -	\$ 7,511	\$ -	\$ 212,720
	Total Income	\$ -	\$ 102,839	\$ 102,370	\$ -	\$ -	\$ -	\$ 7,511	\$ -	\$ 212,720
	Net	\$ 83,000	\$ 9,075	\$ 43,170	\$ 102,661	\$ 115,319	\$ 105,092	\$ -	\$ 63,183	\$ 521,500
	FY2018 Actuals	\$ 30,736	\$ 3,371	\$ 140,085	\$ 361,176	\$ 122,865	\$ -	\$ -	\$ -	\$ 658,233
	FY2018 Budget	\$ 88,568	\$ 47,773	\$ 381,439	\$ 319,416	\$ 136,004	\$ -	\$ -	\$ -	\$ 973,200

TABLE 9. Supplemental I & E

International Pacific Halibut Commission Income and Expenses - Supplemental

Income	Budget	Prior Year	% Notes
Supplemental			
Carryover from prior FY	\$ 1,567,209	\$ 2,243,312	70%
Current Year Income			
Fish Sales			
Sale of Halibut - FIS survey	\$ 6,110,811	\$ 4,706,877	130%
Sale of Bycatch - FIS survey	\$ 56,351	\$ 95,745	59%
Grants and Contracts			
DFO - Rockfish Contract	\$ 34,820	\$ 34,820	100% Area 2B rockfish sampling
WDFW - Rockfish Contract	\$ 11,580	\$ 11,580	100% Area 2A rockfish sampling
Other Income			
Misc. Income	\$ -	\$ -	n/a
Interest	\$ 1,125	\$ 865	130%
Internal Transfers			
Rollover from Reserve	\$ 10,000	\$ 8,003	125% Transfer of funds in excess of reserve limit
Current Year Income	\$ 6,224,687	\$ 4,857,890	128%
Supplemental Total	\$ 7,791,895	\$ 7,109,205	110%
Expenses			
Supplemental			
Personnel	\$ 637,608	\$ 615,042	104%
Programs	\$ 194,570	\$ 207,532	94%
Administration	\$ 4,068,297	\$ 3,538,323	115%
Equipment & Supplies	\$ 1,245,231	\$ 839,358	148%
Prior FY Expenses	\$ -	\$ 1,307	0%
Sub-Total	\$ 6,145,706	\$ 5,201,563	118%
General Fund Expenses	\$ 378,425	\$ 340,434	111%
Total Expenses	\$ 6,524,131	\$ 5,541,997	118%
Fiscal Year Net Gain/Loss	\$ (299,444)	\$ (684,106)	
SUPPLEMENTAL FUND CARRYOVER	\$ 1,267,765	\$ 1,567,209	81%

TABLE 9.1 Operations
International Pacific Halibut Commission
Fiscal Year Totals and Budgets

Personnel	FIS Program Total	Prior Fiscal Year		% of Actuals	% of Budget
		Actuals	Budget		
Related Expenses	\$ 10,278	\$ 398	\$ 12,086	2581%	85%
Salaries	\$ 541,819	\$ 517,225	\$ 523,553	105%	103%
Benefits	\$ 17,696	\$ 56,389	\$ 53,718	31%	33%
Taxes	\$ 41,449	\$ 41,428	\$ 39,936	100%	104%
Other	\$ 34,644	\$ -	\$ -	n/a	n/a
Contracted	\$ 2,000	\$ -	\$ -	n/a	n/a
Subtotal	\$ 637,608	\$ 615,440	\$ 629,294	104%	101%
Programs					
Meetings & Conferences	\$ -	\$ -	\$ -	n/a	n/a
Travel	\$ 111,920	\$ 96,769	\$ 100,900	116%	111%
Communications	\$ 82,650	\$ 110,763	\$ 82,650	75%	100%
Publications	\$ -	\$ -	\$ -	n/a	n/a
Subtotal	\$ 194,570	\$ 207,532	\$ 183,550	94%	106%
Administration					
Contracts	\$ 3,277,513	\$ 2,892,457	\$ 3,059,070	113%	107%
Maintenance	\$ 40,000	\$ 36,358	\$ 40,000	110%	100%
Facility Rentals	\$ 20,000	\$ 10,824	\$ 20,000	185%	100%
Training & Education	\$ 52,000	\$ 49,121	\$ 52,000	106%	100%
Fees	\$ 678,783	\$ 549,563	\$ 640,518	124%	106%
Subtotal	\$ 4,068,297	\$ 3,538,323	\$ 3,811,588	115%	107%
Supplies & Equipment					
Equipment	\$ 32,400	\$ -	\$ 1,400	n/a	2314%
Supplies	\$ 1,212,831	\$ 839,358	\$ 926,240	144%	131%
Subtotal	\$ 1,245,231	\$ 839,358	\$ 927,640	148%	134%
Prior FY Expenses	\$ -	\$ 1,307	\$ -	0%	n/a
Grand Total	\$ 6,145,706	\$ 5,201,961	\$ 5,552,072	118%	111%

TABLE 9.2 FIS Reg. Areas

FIS Cost/Revenue Projections

FIS Program Totals		Assumptions	% Prior Yr.	
			Rate/Amt	Actual
Total Pounds Landed	1,062,578	Price	\$5.75	101%
Net Halibut Proceeds	\$6,110,811	WPUE	96	113%
Net Bycatch proceeds	\$56,351	Vessel Costs	\$5,764,424	111%
Vessel Expenses	(\$5,764,424)	Personnel COLA	2.10%	
Office Expenses	(\$324,845)			
Trawl Survey	(\$56,437)			
Net Proceeds	\$21,456			

Reg. Area Totals	2A	2B	2C	3A	3B	4A	4B	4D	Totals
	All Regions	All Regions	All Regions	All Regions	All Regions	All Regions	All Regions	All Regions	
Net Halibut proceeds	\$103,385	\$678,635	\$2,036,539	\$2,461,939	\$462,249	\$142,429	\$138,769	\$86,867	\$6,110,811
Bycatch proceeds	\$1,069	\$14,358	\$14,179	\$11,274	\$8,664	\$4,088	\$1,883	\$837	\$56,351
Office Expenses (prorated)	(\$21,895)	(\$34,948)	(\$48,843)	(\$97,475)	(\$62,737)	(\$25,895)	(\$18,737)	(\$14,316)	(\$324,845)
Vessel expenses	(\$433,362)	(\$567,280)	(\$897,616)	(\$1,656,920)	(\$1,050,855)	(\$462,062)	(\$425,887)	(\$270,441)	(\$5,764,424)
Net Per Reg Area	(\$350,804)	\$90,765	\$1,104,259	\$718,819	(\$642,680)	(\$341,441)	(\$303,972)	(\$197,053)	\$77,893

Hal. Sale Proceeds	2A	2B	2C	3A	3B	4A	4B	4D	Totals
	All Regions	All Regions	All Regions	All Regions	All Regions	All Regions	All Regions	All Regions	
Number of charters regions	2	4	3	8	5	2	2	1	27
Number of stations	103.0	164.3	229.7	458.4	295.0	121.8	88.1	67.3	1,528
Standard skates fished	823.7	1150.4	1607.8	3208.6	2065.1	934.8	704.9	538.6	11,034
Average WPUE	17	93	210	123	49	39	49	37	96
Total pounds sold	17,582	106,658	336,253	412,930	98,425	36,388	34,307	20,034	1,062,578
Avg. price per pound	\$5.88	\$6.36	\$6.06	\$5.96	\$4.70	\$3.91	\$4.04	\$4.34	\$ 5.75
Less fish sale taxes	\$0	\$0	\$0	\$8,332	\$16,765	\$4,923	\$4,292	\$2,687	\$6,999
Net Halibut Proceeds	\$103,385	\$678,635	\$2,036,539	\$2,461,939	\$462,249	\$142,429	\$138,769	\$86,867	\$6,110,811

Vessel Expenses	2A	2B	2C	3A	3B	4A	4B	4D	Totals
	All Regions	All Regions	All Regions	All Regions	All Regions	All Regions	All Regions	All Regions	
Charter days	49	82	111	231	153	51	53	38	768
Sea Sampler salary	\$ 22,721	\$ 52,763	\$ 70,166	\$ 146,689	\$ 96,614	\$ 33,684	\$ 34,677	\$ 24,384	\$ 481,698
Sea Sampler benefits	\$ 673	\$ 1,564	\$ 2,080	\$ 4,348	\$ 2,864	\$ 998	\$ 1,028	\$ 723	\$ 14,278
Payroll taxes	\$ 1,738	\$ 4,036	\$ 5,368	\$ 11,222	\$ 7,391	\$ 2,577	\$ 2,653	\$ 1,865	\$ 36,850
Vessel P&I	\$ 2,408	\$ 2,857	\$ 1,254	\$ 9,711	\$ 7,259	\$ 3,004	\$ 5,504	\$ 2,646	\$ 34,644
Travel Expenses	\$ 3,600	\$ 9,420	\$ 9,900	\$ 28,800	\$ 21,600	\$ 13,440	\$ 13,440	\$ 6,720	\$ 106,920
Lump sum payments	\$ 303,503	\$ 289,906	\$ 424,400	\$ 860,158	\$ 641,251	\$ 292,535	\$ 276,750	\$ 167,793	\$ 3,256,295
Vessel share halibut/bycatch revenue	\$ 10,804	\$ 78,364	\$ 210,743	\$ 251,831	\$ 50,557	\$ 16,287	\$ 14,818	\$ 9,105	\$ 642,509
Running bonus	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ -	\$ -	\$ -	\$ 2,000
Dockside Monitoring Fees	\$ -	\$ 3,178	\$ 2,921	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,099
Misc. expenses	\$ 2,000	\$ 4,000	\$ 3,000	\$ 8,000	\$ 5,000	\$ 2,000	\$ 3,000	\$ 1,000	\$ 28,000
Bait inc. storage	\$ 74,971	\$ 104,708	\$ 146,338	\$ 292,046	\$ 187,969	\$ 85,087	\$ 64,158	\$ 49,020	\$ 1,004,297
Ice	\$ 1,200	\$ 2,400	\$ 1,800	\$ 4,800	\$ 3,000	\$ 1,200	\$ 600	\$ 600	\$ 16,200
Longline gear maint./replace	\$ 9,350	\$ 13,059	\$ 18,251	\$ 36,424	\$ 23,443	\$ 10,612	\$ 8,002	\$ 6,114	\$ 125,256
Gear Allowance	\$ 394	\$ 1,026	\$ 1,393	\$ 2,891	\$ 1,908	\$ 637	\$ 657	\$ 472	\$ 9,378
Total Vessel Expenses	\$ 433,362	\$ 567,280	\$ 897,616	\$ 1,656,920	\$ 1,050,855	\$ 462,062	\$ 425,887	\$ 270,441	\$ 5,764,424

Office Expenses	
Category	All Regions
Temporary Staff Salary	\$5,598
Sea Sampler Training Salary	\$7,200
Temporary Staff benefits	\$1,025
Performance Bonus	\$1,500
Payroll taxes	\$978
Hiring Expenses	\$2,000
Communications	\$2,750
Express Shipping	\$1,000
Bait & Gear Shipping	\$78,500
Profiler Equipment (non-capital)	\$32,400
Profiler Maintenance	\$40,000
Bait Storage	\$20,000
Profiler Contract	\$21,218
Sea Sampler train/debrief	\$52,000
Agency bycatch share	\$28,175
Survey Team Travel	\$2,000
Survey gear/supplies	\$28,500
Total Office Expenses	\$324,845

NMFS Trawl Survey (P604)	
Category	Budget
Temporary	\$47,323
Medical	\$750
Industrial Ins.	\$143
Payroll Taxes	\$3,620
Personnel Total	\$51,837
Travel	\$3,000
Communications	\$400
Programs Total	\$3,400
Field Supplies	\$300
Gear Allowance	\$900
Supplies Total	\$1,200
Trawl Survey Total	\$56,437

Detailed Expenses	
Personnel	Expense
Personnel Related Expenses	
Gear Allowance	\$ 10,278
Salaries	
Sea Samplers	\$ 536,221
Temporary Personnel	\$ 5,598
Benefits	
Sea Samplers Medical	\$ 15,028
Office Staff Medical	\$ 1,025
Industrial Insurance	\$ 143
Performance Bonus	\$ 1,500
Payroll Taxes	
Sea Samplers	\$ 40,470
Office Staff	\$ 978
Other	
Vessel P&I	\$ 34,644
Hiring Expenses	\$ 2,000
Total	\$ 647,886
Programs	
Travel	
Travel Expenses	\$ 111,920
Communications	
Phone Communications	\$ 3,150
Express Shipping	\$ 1,000
Shipping	\$ 78,500
Sub Total	\$ 82,650
Total	\$ 194,570
Administration	
Rentals & Contracts	
Lump Sum Contracts	\$ 3,256,295
Other Contracts	\$ 21,218
Gear Maintenance	
	\$ 40,000
Bait Storage	
	\$ 20,000
Training	
	\$ 52,000
Fees	
Revenue Share	\$ 642,509
Agency Bycatch Share	\$ 28,175
Running Bonus	\$ 2,000
Dockside Monitoring	\$ 6,099
Total	\$ 4,068,297
Supplies & Equipment	
Supplies	
Survey Gear	\$ 28,800
Survey Bait	\$ 1,004,297
Ice	\$ 16,200
Gear Replacement	\$ 125,256
Misc. Expenses	\$ 28,000
Equipment	
Field Equipment	\$ 32,400
Total	\$ 1,234,953
FIS Program Total	\$ 6,145,706

APPENDIX II

TABLE 1. IPHC Income & Expense

International Pacific Halibut Commission
 General Operations
 Income and Expenses - FY2020 Budget

INCOME	FY 2020
US Contributions	\$ 4,532,000
CDN Contributions	\$ 874,182
CDN Pension Funding	\$ 111,250
Interest	\$ 5,000
Grants and Contracts	
NMFS - Port Sampling	\$ 449,562
TOTAL INCOME	\$ 5,971,994
EXPENSES	
Operations	
Personnel	\$ 5,425,628
Programs	\$ 420,747
Administration	\$ 958,306
Supplies	\$ 324,497
TOTAL EXPENSES	\$ 7,129,178
FISS COST RECOVERY	-\$ 397,346
OPERATIONS FISCAL YEAR NET	\$ (759,838)
PRIOR YEAR OPERATIONS CARRYOVER	\$ 1,207,082
GENERAL ACCOUNT CARRYOVER \$ 447,244	

Version Date
0.8

Comments
AM094 Interim Meeting Draft

TABLE 2. Operations

International Pacific Halibut Commission
Fiscal Year Actuals and Budgets

Year	2020
-------------	-------------

Personnel	10 Administration	20 Science	30 FSSB	40 Special Projects	60 Research	Operations Total	FY2019 Budget	% of Budget
Related Expenses	\$ 15,300	\$ 1,800	\$ 16,430	\$ -	\$ -	\$ 33,530	\$ 33,530	100%
Salaries	\$ 590,364	\$ 2,507,009	\$ 340,813	\$ -	\$ 117,000	\$ 3,555,187	\$ 3,395,129	105%
Benefits	\$ 545,468	\$ 864,513	\$ 120,355	\$ -	\$ 29,077	\$ 1,559,412	\$ 1,541,496	101%
Taxes	\$ 41,449	\$ 190,770	\$ 20,079	\$ -	\$ -	\$ 252,299	\$ 240,073	105%
Other	\$ 25,200	\$ -	\$ -	\$ -	\$ -	\$ 25,200	\$ 25,200	100%
Contracted	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
Subtotal	\$ 1,217,781	\$ 3,564,093	\$ 497,677	\$ -	\$ 146,077	\$ 5,425,628	\$ 5,235,428	104%
Programs								
Meetings	\$ 154,500	\$ -	\$ -	\$ -	\$ -	\$ 154,500	\$ 154,500	100%
Travel	\$ 82,200	\$ 57,000	\$ 46,000	\$ -	\$ 12,000	\$ 197,200	\$ 209,570	94%
Communications	\$ 17,450	\$ 300	\$ 4,515	\$ -	\$ 9,782	\$ 32,047	\$ 33,265	96%
Publications	\$ 25,000	\$ 5,000	\$ -	\$ -	\$ 7,000	\$ 37,000	\$ 32,500	114%
Subtotal	\$ 279,150	\$ 62,300	\$ 50,515	\$ -	\$ 28,782	\$ 420,747	\$ 429,835	98%
Administration								
Contracts	\$ 160,612	\$ -	\$ 34,050	\$ -	\$ 111,500	\$ 306,162	\$ 588,021	52%
Maintenance	\$ 158,510	\$ -	\$ -	\$ -	\$ -	\$ 158,510	\$ 156,685	101%
Facility Rentals	\$ 293,308	\$ -	\$ 5,700	\$ -	\$ -	\$ 299,008	\$ 290,582	103%
Training & Education	\$ 26,000	\$ 18,750	\$ 22,300	\$ -	\$ -	\$ 67,050	\$ 66,050	102%
Fees	\$ 34,750	\$ -	\$ 5,600	\$ -	\$ -	\$ 40,350	\$ 43,044	94%
Contingencies	\$ 78,935	\$ -	\$ 8,290	\$ -	\$ -	\$ 87,225	\$ 47,585	183%
Subtotal	\$ 752,116	\$ 18,750	\$ 75,940	\$ -	\$ 111,500	\$ 958,306	\$ 1,191,967	80%
Supplies & Equipment								
Equipment	\$ 18,300	\$ 229	\$ 10,000	\$ -	\$ 22,481	\$ 51,010	\$ 29,329	174%
Supplies	\$ 21,500	\$ 6,827	\$ 4,000	\$ -	\$ 241,160	\$ 273,487	\$ 304,281	90%
Subtotal	\$ 39,800	\$ 7,056	\$ 14,000	\$ -	\$ 263,641	\$ 324,497	\$ 333,610	97%
Prior FY Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
Grand Total	\$ 2,288,847	\$ 3,652,199	\$ 638,132	\$ -	\$ 550,000	\$ 7,129,178	\$ 7,190,840	99%
FY2019 Budget	\$ 2,357,002	\$ 3,474,342	\$ 625,276	\$ -	\$ 734,220	\$ 7,190,840		
% of Budget	97%	105%	102%	n/a	75%	99%		

TABLE 3. Personnel Summary

Item	10 Administration	2x Science	30 FSSB	40 Special Projects	60 Research	Operations Budget	FY2019 Budget	% of Budget
Personnel Related Expenses								
70511 Vehicle Mileage Reimbursed	\$ -	\$ -	\$ 5,000	\$ -	\$ -	\$ 5,000	\$ 5,000	100%
70521 Hiring Expenses	\$ 10,000	\$ -	\$ 9,000	\$ -	\$ -	\$ 19,000	\$ 19,000	100%
70522 Employee Separation Expenses	\$ 5,000	\$ -	\$ 300	\$ -	\$ -	\$ 5,300	\$ 5,300	100%
70531 Gear Allowance	\$ 300	\$ 1,800	\$ 2,130	\$ -	\$ -	\$ 4,230	\$ 4,230	100%
Subtotal	\$ 15,300	\$ 1,800	\$ 16,430	\$ -	\$ -	\$ 33,530	\$ 33,530	100%
Salaries								
72211 Salary - Full-Time	\$ 582,864	\$ 2,191,178	\$ -	\$ -	\$ -	\$ 2,774,042	\$ 2,722,679	102%
72221 Part-Time Salary	\$ -	\$ -	\$ 320,841	\$ -	\$ -	\$ 320,841	\$ 314,471	102%
72222 AK Cola	\$ -	\$ -	\$ 17,972	\$ -	\$ -	\$ 17,972	\$ 17,616	102%
72231 Temporary Pay	\$ -	\$ 313,131	\$ -	\$ -	\$ 117,000	\$ 430,131	\$ 328,162	131%
72241 Hourly Pay	\$ 5,000	\$ -	\$ 500	\$ -	\$ -	\$ 5,500	\$ 5,500	100%
72251 Sea Duty Pay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
72252 Port Duty Pay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
72253 On-Call Duty Pay	\$ -	\$ 2,700	\$ -	\$ -	\$ -	\$ 2,700	\$ 2,700	100%
72261 Performance Bonus	\$ 2,500	\$ -	\$ 1,500	\$ -	\$ -	\$ 4,000	\$ 4,000	100%
Subtotal	\$ 590,364	\$ 2,507,009	\$ 340,813	\$ -	\$ 117,000	\$ 3,555,187	\$ 3,395,129	105%
Benefits								
7241x Medical Benefits	\$ 168,579	\$ 533,417	\$ 65,576	\$ -	\$ 10,600	\$ 778,172	\$ 764,060	102%
72311 Pension	\$ 25,831	\$ 52,793	\$ -	\$ -	\$ -	\$ 78,624	\$ 78,624	100%
72421 403(b) - Base Contribution	\$ 29,833	\$ 139,961	\$ 4,031	\$ -	\$ -	\$ 173,825	\$ 170,254	102%
72422 403(b) - Matching Contribution	\$ 21,309	\$ 99,972	\$ 22,887	\$ -	\$ -	\$ 144,169	\$ 141,216	102%
72312 Pension Shortfall Contributions	\$ 278,848	\$ -	\$ -	\$ -	\$ -	\$ 278,848	\$ 278,848	100%
72431 Life Insurance	\$ 3,075	\$ 12,240	\$ 16,348	\$ -	\$ -	\$ 31,663	\$ 33,698	94%
72432 AD&D Insurance	\$ 323	\$ 1,309	\$ 220	\$ -	\$ -	\$ 1,851	\$ 1,812	102%
72441 BC Workers Compensation	\$ -	\$ -	\$ 186	\$ -	\$ -	\$ 186	\$ 186	100%
72433 AFLAC Insurance	\$ 6,670	\$ 24,820	\$ 5,107	\$ -	\$ -	\$ 36,597	\$ 37,321	98%
72452 Tuition Benefit	\$ 5,000	\$ -	\$ -	\$ -	\$ 18,477	\$ 23,477	\$ 23,477	100%
72453 Housing Allowance Benefit	\$ -	\$ -	\$ 6,000	\$ -	\$ -	\$ 6,000	\$ 6,000	100%
72461 Travel & Accident Insurance	\$ 6,000	\$ -	\$ -	\$ -	\$ -	\$ 6,000	\$ 6,000	100%
72462 Vessel P&I Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
Subtotal	\$ 545,468	\$ 864,513	\$ 120,355	\$ -	\$ 29,077	\$ 1,559,412	\$ 1,541,496	101%
Taxes								
72511 Social Security	\$ 41,449	\$ 190,770	\$ 20,079	\$ -	\$ -	\$ 252,299	\$ 240,073	105%
Subtotal	\$ 41,449	\$ 190,770	\$ 20,079	\$ -	\$ -	\$ 252,299	\$ 240,073	105%
Other								
75311 Legal Fees	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 5,000	100%
75312 Consultation	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ 10,000	\$ 10,000	100%
75411 Cobra TPA	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ 2,000	100%
75413 Section 125/132 Plan TPA	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 5,000	100%
75412 Defined Benefit TPA	\$ 3,200	\$ -	\$ -	\$ -	\$ -	\$ 3,200	\$ 3,200	100%
Subtotal	\$ 25,200	\$ -	\$ -	\$ -	\$ -	\$ 25,200	\$ 25,200	100%
Contracted								
75511 Contracted Employees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
Grand Total	\$ 1,217,781	\$ 3,564,093	\$ 497,677	\$ -	\$ 146,077	\$ 5,425,628	\$ 5,235,428	104%
FY2019 Budget	\$ 1,205,276	\$ 3,384,736	\$ 484,821	\$ -	\$ 160,595	\$ 5,235,428		
% of Budget	101%	105%	103%	n/a	91%	104%		

TABLE 4. Programs

Item	1x Administration	2x Science	30 FSSB	40 Special Projects	60 Research	Operations Budget	FY2019 Budget	% of Budget	
IPHC Meetings									
83211	Interim Meeting	\$ 14,000	\$ -	\$ -	\$ -	\$ -	\$ 14,000	\$ 14,000	100%
83212	Annual Meeting	\$ 65,000	\$ -	\$ -	\$ -	\$ -	\$ 65,000	\$ 65,000	100%
83221	RAB Meetings	\$ 5,500	\$ -	\$ -	\$ -	\$ -	\$ 5,500	\$ 5,500	100%
83222	MSAB Meetings	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ 40,000	\$ 40,000	100%
83223	SRB Meetings	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000	\$ 25,000	100%
83241	WorkMeeting	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 5,000	100%
83251	Scientific Meeting Support	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
83261	Local & Trade Show	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
83271	Scholarship Committee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
	Subtotal	\$ 154,500	\$ -	\$ -	\$ -	\$ -	\$ 154,500	\$ 154,500	100%
Travel									
83231	Contracting Party Meetings	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 5,000	100%
83242	Scientific Conferences	\$ -	\$ 40,000	\$ -	\$ -	\$ 7,500	\$ 47,500	\$ 45,250	105%
83111	General Travel - Secretariat	\$ 22,200	\$ 17,000	\$ 14,000	\$ -	\$ 4,500	\$ 57,700	\$ 77,320	75%
83112	Port Travel	\$ -	\$ -	\$ 32,000	\$ -	\$ -	\$ 32,000	\$ 32,000	100%
83121	General Travel - Director	\$ 55,000	\$ -	\$ -	\$ -	\$ -	\$ 55,000	\$ 50,000	110%
	Subtotal	\$ 82,200	\$ 57,000	\$ 46,000	\$ -	\$ 12,000	\$ 197,200	\$ 209,570	94%
Communications									
81311	Phone Tolls	\$ 7,000	\$ -	\$ -	\$ -	\$ -	\$ 7,000	\$ 7,000	100%
81312	Long Distance	\$ 750	\$ -	\$ 625	\$ -	\$ -	\$ 1,375	\$ 1,375	100%
81313	Reimbursed Communications	\$ 500	\$ -	\$ 540	\$ -	\$ -	\$ 1,040	\$ 1,040	100%
82211	Internet Service	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ 2,500	\$ 2,500	100%
81411	Postage	\$ 3,000	\$ -	\$ 2,100	\$ -	\$ -	\$ 5,100	\$ 5,100	100%
81412	Express Mail	\$ 950	\$ 300	\$ 1,250	\$ -	\$ 9,782	\$ 12,282	\$ 13,500	91%
81413	Heavy Shipping	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
81511	Mailing Services	\$ 2,750	\$ -	\$ -	\$ -	\$ -	\$ 2,750	\$ 2,750	100%
	Subtotal	\$ 17,450	\$ 300	\$ 4,515	\$ -	\$ 9,782	\$ 32,047	\$ 33,265	96%
Publications									
81911	Annual Report	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ 20,000	\$ 20,000	100%
81912	Regulations	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ 3,000	\$ 3,000	100%
81931	IPHC Publications	\$ -	\$ 5,000	\$ -	\$ -	\$ -	\$ 5,000	\$ 5,000	100%
81932	External Journals	\$ -	\$ -	\$ -	\$ -	\$ 7,000	\$ 7,000	\$ 2,500	280%
81711	Misc. Printing	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ 2,000	100%
81712	Logbooks	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
	Subtotal	\$ 25,000	\$ 5,000	\$ -	\$ -	\$ 7,000	\$ 37,000	\$ 32,500	114%
	Grand Total	\$ 279,150	\$ 62,300	\$ 50,515	\$ -	\$ 28,782	\$ 420,747	\$ 429,835	98%
	FY2019 Budget	\$ 274,150	\$ 62,300	\$ 50,515	\$ -	\$ 42,870	\$ 429,835		
	% of Budget	102%	100%	100%	n/a	67%	98%		

TABLE 5. Administration

Item	1x Administration	2x Science	30 FSSB	40 Special Projects	60 Research	Operations Budget	FY2019 Budget	% of Budget
Contracts								
82611 Leased Vehicle Fees	\$ 4,000	\$ -	\$ 17,250	\$ -	\$ -	\$ 21,250	\$ 21,250	100%
85611 Software Leases	\$ 40,339	\$ -	\$ 4,800	\$ -	\$ -	\$ 45,139	\$ 45,139	100%
85931 Vendor Contracts	\$ 116,273	\$ -	\$ 12,000	\$ -	\$ 111,500	\$ 239,773	\$ 521,632	46%
Subtotal	\$ 160,612	\$ -	\$ 34,050	\$ -	\$ 111,500	\$ 306,162	\$ 588,021	52%
Maintenance								
82612 Copier Maintenance	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ 2,000	100%
82613 Equipment Maintenance	\$ 41,252	\$ -	\$ -	\$ -	\$ -	\$ 41,252	\$ 42,252	98%
82614 Vehicle Maintenance	\$ 250	\$ -	\$ -	\$ -	\$ -	\$ 250	\$ 250	100%
82615 Building Maintenance	\$ 97,008	\$ -	\$ -	\$ -	\$ -	\$ 97,008	\$ 94,183	103%
82212 Building Utilities	\$ 18,000	\$ -	\$ -	\$ -	\$ -	\$ 18,000	\$ 18,000	100%
Subtotal	\$ 158,510	\$ -	\$ -	\$ -	\$ -	\$ 158,510	\$ 156,685	101%
Facility Rentals								
82121 Field Office Rental	\$ -	\$ -	\$ 5,700	\$ -	\$ -	\$ 5,700	\$ 5,700	100%
82122 Archival Storage Rental	\$ 4,000	\$ -	\$ -	\$ -	\$ -	\$ 4,000	\$ 4,000	100%
82131 Bait Storage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
82111 Office Lease	\$ 274,665	\$ -	\$ -	\$ -	\$ -	\$ 274,665	\$ 266,665	103%
82123 Storage Lease	\$ 14,644	\$ -	\$ -	\$ -	\$ -	\$ 14,644	\$ 14,217	103%
Subtotal	\$ 293,308	\$ -	\$ 5,700	\$ -	\$ -	\$ 299,008	\$ 290,582	103%
Training & Education								
85411 Port Staff Training	\$ -	\$ -	\$ 21,300	\$ -	\$ -	\$ 21,300	\$ 21,300	100%
85421 Management Training	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
85422 Professional Development	\$ 10,500	\$ 18,500	\$ 1,000	\$ -	\$ -	\$ 30,000	\$ 29,000	103%
81811 Journals & Memberships	\$ 500	\$ 250	\$ -	\$ -	\$ -	\$ 750	\$ 750	100%
81812 Professional Journals	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ 15,000	\$ 15,000	100%
Subtotal	\$ 26,000	\$ 18,750	\$ 22,300	\$ -	\$ -	\$ 67,050	\$ 66,050	102%
Fees								
85911 Audit	\$ 8,000	\$ -	\$ -	\$ -	\$ -	\$ 8,000	\$ 8,000	100%
85921 Bank Charges	\$ 8,000	\$ -	\$ -	\$ -	\$ -	\$ 8,000	\$ 8,000	100%
85211 Vehicle Insurance	\$ 4,250	\$ -	\$ 5,600	\$ -	\$ -	\$ 9,850	\$ 9,850	100%
85212 General Liability Insurance	\$ 5,500	\$ -	\$ -	\$ -	\$ -	\$ 5,500	\$ 5,714	96%
85213 Bonding	\$ 500	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ 500	100%
85214 Customs	\$ 1,000	\$ -	\$ -	\$ -	\$ -	\$ 1,000	\$ 1,000	100%
85941 Legal Fees	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ 7,500	\$ 7,500	100%
85932 Vessel Revenue Share	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,480	0%
Subtotal	\$ 34,750	\$ -	\$ 5,600	\$ -	\$ -	\$ 40,350	\$ 43,044	94%
Contingencies								
67111 Realized Gain/loss	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
67211 Budget Contingency	\$ 78,935	\$ -	\$ 8,290	\$ -	\$ -	\$ 87,225	\$ 47,585	183%
Subtotal	\$ 78,935	\$ -	\$ 8,290	\$ -	\$ -	\$ 87,225	\$ 47,585	183%
Grand Total	\$ 752,116	\$ 18,750	\$ 75,940	\$ -	\$ 111,500	\$ 958,306	\$ 1,191,967	80%
FY2019 Budget	\$ 837,776	\$ 20,250	\$ 75,940	\$ -	\$ 258,001	\$ 1,191,967		
% of Budget	90%	93%	100%	n/a	43%	80%		

TABLE 6. Supplies & Equipment

Item	1x Administration	2x Science	30 FSSB	40 Special Projects	60 Research	Operations Budget	FY2019 Budget	% of Budget
Equipment								
82811 Computer Equipment - Replace	\$ 7,400	\$ -	\$ -	\$ -	\$ -	\$ 7,400	\$ 7,400	100%
82812 Computer Equipment - Long Term	\$ 5,900	\$ -	\$ -	\$ -	\$ -	\$ 5,900	\$ 5,900	100%
82831 Field Equipment - Capital	\$ -	\$ -	\$ -	\$ -	\$ 22,481	\$ 22,481	\$ 800	2810%
82821 Field Equipment - non-Capital	\$ -	\$ -	\$ 10,000	\$ -	\$ -	\$ 10,000	\$ 10,000	100%
82832 Scientific Equipment - Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
82822 Scientific Equipment - non-Capital	\$ -	\$ 229	\$ -	\$ -	\$ -	\$ 229	\$ 229	100%
82833 Office Equipment - Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
82823 Office Equipment - non-Capital	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 5,000	100%
SubTotal	\$ 18,300	\$ 229	\$ 10,000	\$ -	\$ 22,481	\$ 51,010	\$ 29,329	174%
Supplies								
81121 Supplies	\$ 21,500	\$ 6,827	\$ 4,000	\$ -	\$ 155,749	\$ 188,076	\$ 189,455	99%
81122 Tag Recoveries	\$ -	\$ -	\$ -	\$ -	\$ 12,126	\$ 12,126	\$ 31,725	38%
81123 Fish Tags - Wire	\$ -	\$ -	\$ -	\$ -	\$ 8,575	\$ 8,575	\$ 8,575	100%
81124 Fish Tags - Archival	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
81125 Fish Tags - Satellite	\$ -	\$ -	\$ -	\$ -	\$ 64,710	\$ 64,710	\$ 64,710	100%
81151 Bait	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,380	0%
81152 Ice	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 436	0%
81153 Gear Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
81154 Misc. Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
SubTotal	\$ 21,500	\$ 6,827	\$ 4,000	\$ -	\$ 241,160	\$ 273,487	\$ 304,281	90%
Grand Total	\$ 39,800	\$ 7,056	\$ 14,000	\$ -	\$ 263,641	\$ 324,497	\$ 333,610	97%
FY2019 Budget	\$ 39,800	\$ 7,056	\$ 14,000	\$ -	\$ 272,754	\$ 333,610		
% of Budget	100%	100%	100%	n/a	97%	97%		

TABLE 7. Statistics Detail

Catch Effort Program

		51-53			61-63			71-92			Grand		FY2019	
		00			00			82			00		81	
		WA/OR/CA			Canada			Alaska			Total		% of	
		Ports	General	Total	Ports	General	Total	Ports	General	Total	Total	Budget	Budget	
Related Expenses														
7112	7112	Vehicle Mileage Reimbursed	\$ -	\$ -	\$ -	\$ 1,850	\$ -	\$ 1,850	\$ 3,150	\$ -	\$ 3,150	\$ 5,000	\$ 5,000	100%
5511	5511	Hiring Expenses	\$ -	\$ -	\$ -	\$ -	\$ 3,000	\$ 3,000	\$ -	\$ 6,000	\$ 6,000	\$ 9,000	\$ 9,000	100%
5521	5521	Employee Separation Expenses	\$ -	\$ -	\$ -	\$ -	\$ 200	\$ 200	\$ -	\$ 100	\$ 100	\$ 300	\$ 300	100%
8225	8225	Gear Allowance	\$ 200	\$ -	\$ 200	\$ 350	\$ -	\$ 350	\$ 1,580	\$ -	\$ 1,580	\$ 2,130	\$ 2,130	100%
		<i>Subtotal - Related Expenses</i>	\$ 200	\$ -	\$ 200	\$ 2,200	\$ 3,200	\$ 5,400	\$ 4,730	\$ 6,100	\$ 10,830	\$ 16,430	\$ 16,430	100%
Salaries and Benefits														
5121	5121	Part-Time Salary	\$ -	\$ -	\$ -	\$ 58,021	\$ -	\$ 58,021	\$ 262,820	\$ -	\$ 262,820	\$ 320,841	\$ 314,471	102%
5122	5122	AK Cola	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,972	\$ -	\$ 17,972	\$ 17,972	\$ 17,616	102%
5123	5123	Port Premium Pay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
5131	5131	Temporary	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
5132	5132	Hourly	\$ 500	\$ -	\$ 500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ 500	100%
5142	5142	Port Duty	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
5251	5251	Performance Bonus	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ 500	\$ -	\$ 1,000	\$ 1,000	\$ 1,500	\$ 1,500	100%
	521x	Medical Benefits	\$ -	\$ -	\$ -	\$ 14,007	\$ -	\$ 14,007	\$ 51,569	\$ -	\$ 51,569	\$ 65,576	\$ 60,719	108%
		403(b) Base Contribution	\$ -	\$ -	\$ -	\$ 4,061	\$ -	\$ 4,061	\$ 18,826	\$ -	\$ 18,826	\$ 22,887	\$ 22,427	102%
		403(b) Match Contribution	\$ -	\$ -	\$ -	\$ 2,901	\$ -	\$ 2,901	\$ 13,447	\$ -	\$ 13,447	\$ 16,348	\$ 16,019	102%
5231	5231	Life Insurance	\$ -	\$ -	\$ -	\$ 351	\$ -	\$ 351	\$ 3,680	\$ -	\$ 3,680	\$ 4,031	\$ 3,949	102%
5232	5232	AD&D	\$ -	\$ -	\$ -	\$ 38	\$ -	\$ 38	\$ 182	\$ -	\$ 182	\$ 220	\$ 215	102%
5241	5241	BC Workers Comp.	\$ -	\$ -	\$ -	\$ 186	\$ -	\$ 186	\$ -	\$ -	\$ -	\$ 186	\$ 186	100%
5242	5242	AFLAC Insurance	\$ -	\$ -	\$ -	\$ 1,094	\$ -	\$ 1,094	\$ 4,013	\$ -	\$ 4,013	\$ 5,107	\$ 5,107	100%
5254	5254	Housing Allowance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,000	\$ -	\$ 6,000	\$ 6,000	\$ 6,000	100%
5311	5311	Social Security	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 20,079	\$ -	\$ 20,079	\$ 19,682	\$ 19,682	102%
		<i>Subtotal - Salary and Benefits</i>	\$ 500	\$ -	\$ 500	\$ 80,659	\$ 500	\$ 81,159	\$ 398,588	\$ 1,000	\$ 399,588	\$ 481,247	\$ 468,391	103%
Programs														
6211	6211	General Travel - Staff	\$ 4,000	\$ -	\$ 4,000	\$ -	\$ -	\$ -	\$ 7,000	\$ 3,000	\$ 10,000	\$ 14,000	\$ 14,000	100%
6212	6212	On Job Training Travel	\$ 2,500	\$ -	\$ 2,500	\$ -	\$ 9,000	\$ 9,000	\$ -	\$ 20,500	\$ 20,500	\$ 32,000	\$ 32,000	100%
6213	6213	Follow-up Travel	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
6312	6312	Long Distance	\$ -	\$ -	\$ -	\$ -	\$ 200	\$ 200	\$ -	\$ 425	\$ 425	\$ 625	\$ 625	100%
6313	6313	Comm Allow - Port	\$ -	\$ -	\$ -	\$ 540	\$ -	\$ 540	\$ -	\$ -	\$ -	\$ 540	\$ 540	100%
6321	6321	USPS Postage	\$ -	\$ 100	\$ 100	\$ -	\$ 1,000	\$ 1,000	\$ -	\$ 1,000	\$ 1,000	\$ 2,100	\$ 2,100	100%
6323	6323	Express Mail	\$ -	\$ 50	\$ 50	\$ -	\$ 200	\$ 200	\$ -	\$ 1,000	\$ 1,000	\$ 1,250	\$ 1,250	100%
6418	6418	Logbooks	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
		<i>Subtotal - Programs</i>	\$ 6,500	\$ 150	\$ 6,650	\$ 540	\$ 10,400	\$ 10,940	\$ 7,000	\$ 25,925	\$ 32,925	\$ 50,515	\$ 50,515	100%
Administration														
7111	7111	Leased Vehicle Fees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,250	\$ -	\$ 17,250	\$ 17,250	\$ 17,250	100%
7121	7121	Software Leases	\$ -	\$ -	\$ -	\$ -	\$ 1,800	\$ 1,800	\$ -	\$ 3,000	\$ 3,000	\$ 4,800	\$ 4,800	100%
7131	7131	Vendor Contracts	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,000	\$ 12,000	\$ 12,000	\$ 12,000	100%
7311	7311	Field Office Rental	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,700	\$ -	\$ 5,700	\$ 5,700	\$ 5,700	100%
7411	7411	Field Staff Orientation	\$ -	\$ 300	\$ 300	\$ -	\$ 4,000	\$ 4,000	\$ -	\$ 17,000	\$ 17,000	\$ 21,300	\$ 21,300	100%
7422	7422	Skill Training	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ 500	\$ -	\$ 500	\$ 500	\$ 1,000	\$ 1,000	100%
7513	7513	Vehicle Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,600	\$ -	\$ 5,600	\$ 5,600	\$ 5,600	100%
		Contingencies	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,250	\$ 8,250	100%
		<i>Subtotal - Administration</i>	\$ -	\$ 300	\$ 300	\$ -	\$ 6,300	\$ 6,300	\$ 28,550	\$ 32,500	\$ 61,050	\$ 75,900	\$ 75,900	100%
Supplies and Equipment														
8122	8122	Field Equipment - Non-Capital	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 5,000	\$ -	\$ 5,000	\$ 5,000	\$ 10,000	\$ 10,000	100%
8142	8142	Office Equipment - Non-Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
8211	8211	Supplies	\$ -	\$ 400	\$ 400	\$ -	\$ 800	\$ 800	\$ -	\$ 2,800	\$ 2,800	\$ 4,000	\$ 4,000	100%
		<i>Subtotal - Supplies and Equipment</i>	\$ -	\$ 400	\$ 400	\$ -	\$ 5,800	\$ 5,800	\$ -	\$ 7,800	\$ 7,800	\$ 14,000	\$ 14,000	100%
9999	9999	Prior Fiscal Year Expense	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
		Catch Effort Program Totals	\$ 7,200	\$ 850	\$ 8,050	\$ 83,399	\$ 26,200	\$ 109,599	\$ 438,868	\$ 73,325	\$ 512,193	\$ 638,092	\$ 625,236	102%

TABLE 7.1 Statistics Ports

Dept		Catch Effort Program - by ports												
30	Grant ID	81	81	81	81	81	81	81	81	81	81	81		
	Port ID	61	71	72	73	81	82	83	89	91	92			
		Bellingham	Petersburg	Sitka	Juneau	Seward	Homer	Kodiak	Sandpoint	Dutch Harbor	St. Paul		AK Total	
U.S Ports														
5121	Part-Time Salary	\$ -	\$ 38,171	\$ 35,077	\$ 37,140	\$ 37,140	\$ 38,171	\$ 34,046	\$ -	\$ 31,983	\$ 11,095	\$ -	\$ 262,820	
5122	AK Cola	\$ -	\$ 2,610	\$ 2,399	\$ 2,540	\$ 2,540	\$ 2,610	\$ 2,328	\$ -	\$ 2,187	\$ 759	\$ -	\$ 17,972	
5132	Hourly	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
521x	Medical Benefits	\$ -	\$ 7,003	\$ 7,003	\$ 7,003	\$ 7,003	\$ 10,926	\$ 3,081	\$ -	\$ 7,003	\$ 2,547	\$ -	\$ 51,569	
5222	403(b) Base Contribution	\$ -	\$ 2,855	\$ 2,623	\$ 2,778	\$ 2,778	\$ 2,855	\$ 2,546	\$ -	\$ 2,392	\$ -	\$ -	\$ 18,826	
5223	403(b) Match Contribution	\$ -	\$ 2,039	\$ 1,874	\$ 1,984	\$ 1,984	\$ 2,039	\$ 1,819	\$ -	\$ 1,709	\$ -	\$ -	\$ 13,447	
5231	Life Insurance	\$ -	\$ 247	\$ 227	\$ 240	\$ 240	\$ 247	\$ 220	\$ -	\$ 207	\$ 2,051	\$ -	\$ 3,680	
5232	AD&D	\$ -	\$ 26	\$ 24	\$ 26	\$ 26	\$ 26	\$ 24	\$ -	\$ 22	\$ 8	\$ -	\$ 182	
5241	BC Workers Comp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
5242	AFLAC	\$ -	\$ 547	\$ 547	\$ 547	\$ 547	\$ 547	\$ 547	\$ -	\$ 547	\$ 182	\$ -	\$ 4,013	
5254	Housing Allowance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,000	\$ -	\$ -	\$ 6,000	
5311	Social Security	\$ -	\$ 2,916	\$ 2,680	\$ 2,837	\$ 2,837	\$ 2,916	\$ 2,601	\$ -	\$ 2,444	\$ 848	\$ -	\$ 20,079	
	Salary and Benefits	\$ -	\$ 56,415	\$ 52,454	\$ 55,095	\$ 55,095	\$ 60,337	\$ 47,211	\$ -	\$ 54,494	\$ 17,489	\$ -	\$ 398,588	
6211	General Travel - Staff	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 7,000	
6313	Comm Allow - Port	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
7111	Leased Vehicle Fees	\$ -	\$ -	\$ -	\$ 4,000	\$ 4,000	\$ -	\$ 5,000	\$ -	\$ 4,250	\$ -	\$ -	\$ 17,250	
7112	Vehicle Mileage Reimbursed	\$ -	\$ 500	\$ 1,150	\$ -	\$ -	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,150	
7311	Field Office Rental	\$ -	\$ -	\$ 2,400	\$ -	\$ -	\$ 3,300	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,700	
7513	Vehicle Insurance	\$ -	\$ -	\$ -	\$ 1,100	\$ 1,200	\$ -	\$ 1,000	\$ 1,200	\$ 1,100	\$ -	\$ -	\$ 5,600	
8225	Gear Allowance	\$ -	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200	\$ 180	\$ -	\$ 200	\$ 200	\$ -	\$ 1,580	
	Total	\$ 2,000	\$ 57,115	\$ 56,204	\$ 60,395	\$ 60,495	\$ 65,337	\$ 53,391	\$ 1,200	\$ 60,044	\$ 22,689	\$ -	\$ 438,868	
	Grant ID	64	64	64	64		82	82	82					
	Port ID	00	51	52	53		61	62	63					
		Aging/General	Tribal (2A)	Newport (2A)	Washington (2A)	Area 2A Total	Vancouver	Port Hardy	Prince Rupert	Cdn Total	US Total	Grand Total		
5121	Part-Time Salary	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 26,594	\$ 31,427	\$ 58,021	\$ 262,820	\$ 320,841		
5122	AK Cola	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,972	\$ 17,972		
5132	Hourly	\$ -	\$ -	\$ 500	\$ -	\$ 500	\$ -	\$ -	\$ -	\$ -	\$ 500	\$ 500		
521x	Medical Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,003	\$ 7,003	\$ 14,007	\$ 51,569	\$ 65,576		
5222	403(b) Base Contribution	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,862	\$ 2,200	\$ 4,061	\$ 18,826	\$ 22,887		
5223	403(b) Match Contribution	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,330	\$ 1,571	\$ 2,901	\$ 13,447	\$ 16,348		
5231	Life Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 161	\$ 190	\$ 351	\$ 3,680	\$ 4,031		
5232	AD&D	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17	\$ 20	\$ 38	\$ 182	\$ 220		
5241	BC Workers Comp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 85	\$ 101	\$ 186	\$ -	\$ 186		
5242	Industrial Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 547	\$ 547	\$ 1,094	\$ 4,013	\$ 5,107		
5254	Housing Allowance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,000	\$ 6,000		
5311	Social Security	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 20,079	\$ 20,079		
	Salary and Benefits	\$ -	\$ -	\$ 500	\$ -	\$ 500	\$ -	\$ 37,599	\$ 43,060	\$ 80,659	\$ 399,088	\$ 479,747		
6211	General Travel - Staff	\$ -	\$ -	\$ 4,000	\$ -	\$ 4,000	\$ -	\$ -	\$ -	\$ -	\$ 11,000	\$ 11,000		
6212	On Job Training Travel	\$ -	\$ 2,500	\$ -	\$ -	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ 2,500	\$ 2,500		
6313	Comm Allow - Port	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 270	\$ 270	\$ 540	\$ -	\$ 540		
7111	Leased Vehicle Fees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,250	\$ 17,250		
7112	Vehicle Mileage Reimbursed	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 350	\$ 1,500	\$ 1,850	\$ 3,150	\$ 5,000		
7311	Field Office Rental	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,700	\$ 5,700		
7513	Vehicle Insurance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,600	\$ 5,600		
8225	Gear Allowance	\$ -	\$ -	\$ 200	\$ -	\$ 200	\$ -	\$ 200	\$ 150	\$ 350	\$ 1,780	\$ 2,130		
	Total	\$ -	\$ 2,500	\$ 4,700	\$ -	\$ 7,200	\$ -	\$ 38,419	\$ 44,980	\$ 83,399	\$ 446,068	\$ 529,467		

TABLE 8.1 Research (2020)

**FY2020 BUDGET
OTHER RESEARCH**

		<i>Department</i>				
On-going Projects		60	60	60		
		673.13				
Object Code	Item	621-16-00 Genetic Sex ID - Genome	642-00-00 ADEC/EPA Contaminants	2017-03-00 Genome Sequencing	670-11-00 NMFS Trawl Tagging	On-going Projects Sub-Total
PROGRAMS						
<i>Travel</i>						
83111	General Travel - Staff	\$ -	\$ -		\$ -	\$ -
	Travel	\$ -	\$ -		\$ -	\$ -
<i>Communications</i>						
81412	Express Mail	\$ -	\$ 2,782		\$ -	\$ 2,782
	Communications	\$ -	\$ 2,782		\$ -	\$ 2,782
	Programs Subtotal	\$ -	\$ 2,782		\$ -	\$ 2,782
Administration						
<i>Contracts & Fees</i>						
85931	Vendor Contracts			\$ 20,000	\$ -	\$ 20,000
	Contracts & Leases	\$ -	\$ -	\$ 20,000	\$ -	\$ 20,000
	Administration Subtotal	\$ -	\$ -	\$ 20,000	\$ -	\$ 20,000
Supplies & Equipment						
<i>Supplies</i>						
81121	Supplies		\$ 3,959	\$ 1,500	\$ 9,175	\$ 14,634
81122	Tag Recoveries	\$ -	\$ -	\$ -	\$ 6,126	\$ 6,126
81151	Bait	\$ -	\$ -	\$ -	\$ -	\$ -
	Supplies	\$ -	\$ 3,959	\$ 1,500	\$ 15,301	\$ 20,760
<i>Equipment</i>						
82831	Field Equipment - Capital	\$ -	\$ -	\$ -	\$ -	\$ -
82832	Scientific Equipment - Capital	\$ -	\$ -		\$ -	\$ -
	Equipment	\$ -	\$ -		\$ -	\$ -
	Supplies & Equipment Subtotal	\$ -	\$ 3,959	\$ 1,500	\$ 15,301	\$ 20,760
	Total	\$ -	\$ 6,741	\$ 21,500	\$ 15,301	\$ 43,542
Income						
	Total Income	\$ -	\$ -		\$ -	\$ -

TABLE 9. Supplemental I & E

International Pacific Halibut Commission
Income and Expenses - Supplemental

Income	Budget	Prior Year	%	Notes
Supplemental				
Carryover from prior FY	\$ 1,267,765	\$ 1,567,209	81%	
Current Year Income				
Fish Sales				
Sale of Halibut - FIS survey	\$ 4,848,231	\$ 6,110,811	79%	
Sale of Bycatch - FIS survey	\$ 56,351	\$ 56,351	100%	
Grants and Contracts				
DFO - Rockfish Contract	\$ 34,820	\$ 34,820	100%	Area 2B rockfish sampling
WDFW - Rockfish Contract	\$ 11,580	\$ 11,580	100%	Area 2A rockfish sampling
Other Income				
Misc. Income	\$ -	\$ -	n/a	
Interest	\$ 1,125	\$ 1,125	100%	
Internal Transfers				
Rollover from Reserve	\$ 10,000	\$ 10,000	100%	Transfer of funds in excess of reserve limit
Current Year Income	\$ 4,962,106	\$ 6,224,687	80%	
Supplemental Total	\$ 6,229,871	\$ 7,791,895	80%	
Expenses				
Supplemental				
Personnel	\$ 500,629	\$ 637,608	79%	
Programs	\$ 194,570	\$ 194,570	100%	
Administration	\$ 2,922,396	\$ 4,068,297	72%	
Equipment & Supplies	\$ 921,905	\$ 1,245,231	74%	
Prior FY Expenses	\$ -	\$ -	n/a	
Sub-Total	\$ 4,539,500	\$ 6,145,706	74%	
General Fund Expenses	\$ 397,346	\$ 378,425	105%	
Total Expenses	\$ 4,936,847	\$ 6,524,131	76%	
Fiscal Year Net Gain/Loss	\$ 25,260	\$ (299,444)		
SUPPLEMENTAL FUND CARRYOVER	\$ 1,293,024	\$ 1,267,765	102%	

TABLE 9.1 Operations
International Pacific Halibut Commission
Fiscal Year Totals and Budgets

Personnel	<i>FIS Program Total</i>	<i>Prior Fiscal Year Budget</i>	<i>% of Budget</i>
Related Expenses	\$ 7,770	\$ 10,278	76%
Salaries	\$ 417,984	\$ 541,819	77%
Benefits	\$ 14,025	\$ 17,696	79%
Taxes	\$ 31,975	\$ 41,449	77%
Other	\$ 34,644	\$ 34,644	100%
Contracted	\$ 2,000	\$ 2,000	100%
Subtotal	\$ 500,629	\$ 637,608	79%
Programs			
Meetings & Conferences	\$ -	\$ -	n/a
Travel	\$ 111,920	\$ 111,920	100%
Communications	\$ 82,650	\$ 82,650	100%
Publications	\$ -	\$ -	n/a
Subtotal	\$ 194,570	\$ 194,570	100%
Administration			
Contracts	\$ 2,258,194	\$ 3,277,513	69%
Maintenance	\$ 40,000	\$ 40,000	100%
Facility Rentals	\$ 20,000	\$ 20,000	100%
Training & Education	\$ 52,000	\$ 52,000	100%
Fees	\$ 552,202	\$ 678,783	81%
Subtotal	\$ 2,922,396	\$ 4,068,297	72%
Supplies & Equipment			
Equipment	\$ 32,400	\$ 32,400	100%
Supplies	\$ 889,505	\$ 1,212,831	73%
Subtotal	\$ 921,905	\$ 1,245,231	74%
Prior FY Expenses	\$ -	\$ -	n/a
Grand Total	\$ 4,539,500	\$ 6,145,706	74%

TABLE 9.2 FIS Reg. Areas

FIS Cost/Revenue Projections

FIS Program Totals		Assumptions	Rate/Amt	% Prior Yr. Actual
Total Pounds Landed	828,769	Price	\$5.85	102%
Net Halibut Proceeds	\$4,848,231	WPUE	105	123%
Net Bycatch proceeds	\$56,351	Vessel Costs	\$4,158,219	80%
Vessel Expenses	(\$4,158,219)	Personnel COLA	2.10%	
Office Expenses	(\$324,845)			
Trawl Survey	(\$56,437)			
Net Proceeds	\$365,081			

Reg. Area Totals	2A All Regions	2B All Regions	2C All Regions	3A All Regions	3B All Regions	4A All Regions	4B All Regions	4D All Regions	Totals
Net Halibut proceeds	\$51,692	\$841,649	\$1,282,683	\$2,303,189	\$183,748	\$72,451	\$69,384	\$43,434	\$4,848,231
Bycatch proceeds	\$1,069	\$14,358	\$14,179	\$11,274	\$8,664	\$4,088	\$1,883	\$837	\$56,351
Office Expenses (prorated)	(\$15,170)	(\$60,097)	(\$42,593)	(\$132,447)	(\$33,695)	(\$17,942)	(\$12,982)	(\$9,919)	(\$324,845)
Vessel expenses	(\$228,423)	(\$696,391)	(\$574,298)	(\$1,610,069)	(\$436,420)	(\$244,686)	(\$226,342)	(\$141,591)	(\$4,158,219)
Net Per Reg Area	(\$190,832)	\$99,519	\$679,971	\$571,947	(\$277,703)	(\$186,089)	(\$168,057)	(\$107,239)	\$421,517

Hal. Sale Proceeds	2A All Regions	2B All Regions	2C All Regions	3A All Regions	3B All Regions	4A All Regions	4B All Regions	4D All Regions	Totals
Number of charters regions	2	4	3	8	5	2	2	1	27
Number of stations	51.5	203.9	144.5	449.5	114.3	60.9	44.1	33.7	1,102
Standard skates fished	411.8	1427.6	1011.8	3146.2	800.4	480.4	352.4	269.3	7,900
Average WPUE	17	93	210	123	49	39	49	37	105
Total pounds sold	8,791	132,313	211,800	391,102	39,085	18,507	17,154	10,017	828,769
Avg. price per pound	\$5.88	\$6.36	\$6.06	\$5.89	\$4.70	\$3.91	\$4.04	\$4.34	\$
Less fish sale taxes	\$0	\$0	\$0	\$8,279	\$6,664	\$2,500	\$2,146	\$1,343	\$20,932
Net Halibut Proceeds	\$51,692	\$841,649	\$1,282,683	\$2,303,189	\$183,748	\$72,451	\$69,384	\$43,434	\$4,848,231

Vessel Expenses	2A All Regions	2B All Regions	2C All Regions	3A All Regions	3B All Regions	4A All Regions	4B All Regions	4D All Regions	Totals
Charter days	35	102	70	223	59	25	26	19	560
Sea Sampler salary	\$ 17,505	\$ 64,880	\$ 44,833	\$ 141,859	\$ 39,348	\$ 18,068	\$ 18,565	\$ 12,805	\$ 357,863
Sea Sampler benefits	\$ 519	\$ 1,923	\$ 1,329	\$ 4,205	\$ 1,166	\$ 536	\$ 550	\$ 380	\$ 10,607
Payroll taxes	\$ 1,339	\$ 4,963	\$ 3,430	\$ 10,852	\$ 3,010	\$ 1,382	\$ 1,420	\$ 980	\$ 27,377
Vessel P&I	\$ 2,408	\$ 2,857	\$ 1,254	\$ 9,711	\$ 7,259	\$ 3,004	\$ 5,504	\$ 2,646	\$ 34,644
Travel Expenses	\$ 3,600	\$ 9,420	\$ 9,900	\$ 28,800	\$ 21,600	\$ 13,440	\$ 13,440	\$ 6,720	\$ 106,920
Lump sum payments	\$ 151,751	\$ 359,924	\$ 267,104	\$ 841,009	\$ 248,650	\$ 146,268	\$ 138,375	\$ 83,896	\$ 2,236,976
Vessel share halibut/bycatch revenue	\$ 5,635	\$ 94,665	\$ 135,358	\$ 235,956	\$ 22,707	\$ 9,289	\$ 7,880	\$ 4,762	\$ 516,251
Running bonus	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ -	\$ -	\$ -	\$ 2,000
Dockside Monitoring Fees	\$ -	\$ 3,941	\$ 1,835	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,776
Misc. expenses	\$ 2,000	\$ 4,000	\$ 3,000	\$ 8,000	\$ 5,000	\$ 2,000	\$ 3,000	\$ 1,000	\$ 28,000
Bait inc. storage	\$ 37,486	\$ 129,938	\$ 92,092	\$ 286,369	\$ 72,854	\$ 43,727	\$ 32,079	\$ 24,510	\$ 719,055
Ice	\$ 1,200	\$ 2,400	\$ 1,800	\$ 4,800	\$ 3,000	\$ 1,200	\$ 1,200	\$ 600	\$ 16,200
Longline gear maint./replace	\$ 4,675	\$ 16,206	\$ 11,486	\$ 35,716	\$ 9,086	\$ 5,454	\$ 4,001	\$ 3,057	\$ 89,680
Gear Allowance	\$ 305	\$ 1,273	\$ 877	\$ 2,793	\$ 740	\$ 318	\$ 329	\$ 236	\$ 6,870
Total Vessel Expenses	\$ 228,423	\$ 696,391	\$ 574,298	\$ 1,610,069	\$ 436,420	\$ 244,686	\$ 226,342	\$ 141,591	\$ 4,158,219

Office Expenses	All Regions
Category	All Regions
Temporary Staff Salary	\$5,598
Sea Sampler Training Salary	\$7,200
Temporary Staff benefits	\$1,025
Performance Bonus	\$1,500
Payroll taxes	\$978
Hiring Expenses	\$2,000
Communications	\$2,750
Express Shipping	\$1,000
Bait & Gear Shipping	\$78,500
Profiler Equipment (non-capital)	\$32,400
Profiler Maintenance	\$40,000
Bait Storage	\$20,000
Profiler Contract	\$21,218
Sea Sampler train/debrief	\$52,000
Agency bycatch share	\$28,175
Survey Team Travel	\$2,000
Survey gear/supplies	\$28,500
Total Office Expenses	\$324,845

NMFS Trawl Survey (P604)	
Category	Budget
Temporary	\$47,323
Medical	\$750
Industrial Ins.	\$143
Payroll Taxes	\$3,620
Personnel Total	\$51,837
Travel	\$3,000
Communications	\$400
Programs Total	\$3,400
Field Supplies	\$300
Gear Allowance	\$900
Supplies Total	\$1,200
Trawl Survey Total	\$56,437

Detailed Expenses	
Personnel	Expense
Personnel Related Expenses	
Gear Allowance	\$ 7,770
Salaries	
Sea Samplers	\$ 412,387
Temporary Personnel	\$ 5,598
Benefits	
Sea Samplers Medical	\$ 11,357
Office Staff Medical	\$ 1,025
Industrial Insurance	\$ 143
Performance Bonus	\$ 1,500
Payroll Taxes	
Sea Samplers	\$ 30,997
Office Staff	\$ 978
Other	
Vessel P&I	\$ 34,644
Hiring Expenses	\$ 2,000
Total	\$ 508,399
Programs	
Travel	
Travel Expenses	\$ 111,920
Communications	
Phone Communications	\$ 3,150
Express Shipping	\$ 1,000
Shipping	\$ 78,500
Sub Total	\$ 82,650
Total	\$ 194,570
Administration	
Rentals & Contracts	
Lump Sum Contracts	\$ 2,236,976
Other Contracts	\$ 21,218
Gear Maintenance	
	\$ 40,000
Bait Storage	
	\$ 20,000
Training	
	\$ 52,000
Fees	
Revenue Share	\$ 516,251
Agency Bycatch Share	\$ 28,175
Running Bonus	\$ 2,000
Dockside Monitoring	\$ 5,776
Total	\$ 2,922,396
Supplies & Equipment	
Supplies	
Survey Gear	\$ 28,800
Survey Bait	\$ 719,055
Ice	\$ 16,200
Gear Replacement	\$ 89,680
Misc. Expenses	\$ 28,000
Equipment	
Field Equipment	\$ 32,400
Total	\$ 914,135
FIS Program Total	\$ 4,539,500



DRAFT: IPHC Financial Regulations (2019)

PREPARED BY: IPHC SECRETARIAT (M. LARSEN, S. KEITH, D. WILSON; 23 OCTOBER 2018)

PURPOSE

To provide the Commission with the opportunity to consider proposed amendments to the IPHC Financial Regulations.

BACKGROUND

In accordance with Regulation 19, paragraph 1 of the IPHC Financial Regulations (2018), which states:

“1. These Financial Regulations should be reviewed for their consistency and appropriateness at least biennially.”,

at the 94th Session of the IPHC Annual Meeting, the Commission was advised that further revisions to the Financial Regulations may be required to encompass potential changes to the reporting requirements for not-for-profit organisations by the Financial Accounting Standards Board ([FASB](#)). The IPHC follows the accounting recommendations of the FASB for not-for-profit organisations as a best practice to safeguard its not-for-profit tax status in the USA.

The FASB has since issued new rules for not-for-profits: *“Presentation of Financial Statements of Not-for-Profit Entities”*, the first major set of changes since 1993. The [new rules](#) are designed to:

1. Simplify and clarify the treatment of net assets in financial statements
2. Clarify cash on hand/available assets
3. Ensure consistency in the reporting of investment expenses and investment returns

DISCUSSION

Provided at **Appendix I** are proposed revisions to the IPHC Financial Regulations (2018), which incorporate the recommendations from the FASB.

RECOMMENDATIONS

That the Commission **NOTE** paper IPHC-2018-IM094-17, which proposed revisions to the IPHC Financial Regulations.

APPENDICES

Appendix I: DRAFT: International Pacific Halibut Commission Financial Regulations (2019)

INTERNATIONAL PACIFIC HALIBUT COMMISSION
FINANCIAL REGULATIONS
(2019)

INTERNATIONAL PACIFIC



HALIBUT COMMISSION

Commissioners

Canada	United States of America
Paul Ryall	Chris Oliver
Neil Davis	Robert Alverson
Peter DeGreef	Richard Yamada

Executive Director

David T. Wilson, Ph.D.



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Regulation 1 – Definitions

For the purpose of these Financial Regulations, the following definitions apply:

Convention: the Convention between Canada and the United States of America and for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea, signed at Ottawa, Canada on 2 March 1953, as amended by the Protocol Amending the Convention, signed at Washington 29 March 1979, and includes the regulations promulgated thereunder.

Commission: the International Pacific Halibut Commission provided for by Article III, paragraph 1 of the Convention.

Contracting Parties: Consisting of the two Members, Canada and the United States of America (3 Commissioners from each Party).

Executive Director: the Director of the Commission.

Pacific halibut: fish of the species *Hippoglossus stenolepis*.

Rules of Procedure: The Rules of Procedure (~~2017~~2019, or subsequent revision) of the Commission.

Session: Any meeting of the Commission or its subsidiary bodies

Regulation 2 – Authority, Purpose, and Scope

1. **Authority:** These Financial Regulations consist of regulations adopted by the International Pacific Halibut Commission, hereinafter referred to as “the Commission,” pursuant to the *Convention between Canada and the United States of America for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea*, hereinafter referred to as “the Convention,” signed first in 1923 and revised several times since, most recently in 1953, as amended by the Protocol signed by both countries, hereinafter referred to as “the Contracting Parties,” in 1979.
2. **Purpose:** The purpose of this document is to provide the regulations to govern the financial administration of the International Pacific Halibut Commission and established pursuant to the Commission’s Rules of Procedure (~~2017~~, or any subsequent revision).
3. **Scope:** The IPHC Secretariat, Commission and ~~the Finance and Administration Committee.~~ All subsidiary bodies shall operate under the Rules of Procedure of the Commission *mutatis mutandis*, except where specific provisions are laid down in the Convention or in these Financial Regulations.

Regulation 3 – Finance and Administration Committee

1. The Commission shall designate a Finance and Administration Committee (FAC) composed from among current Commissioners, tasked with reviewing and making recommendations on financial matters. The FAC recommendations shall be considered and approved by the Commission subject to Article III, Paragraph 1 of the Convention.
2. In addition to general oversight of financial matters and other duties specified in these Regulations, the FAC shall carry out the following duties on behalf of the Commission:
 - a) Overseeing the financial reporting style and methodology;
 - b) Overseeing accounting policies and practices;
 - c) Approving the hiring, performance, and independence of the external auditor;
 - d) Discussing financial risk management policies and practices with the IPHC Secretariat.

Regulation 4 – Fiscal Year and Currency

1. The fiscal year shall be the period from 1 October to the following 30 September, both dates inclusive. Funds may be held in either U.S. (USD) or Canadian (CAD) dollars. All monetary figures in these Regulations are expressed in U.S. dollars, and all financial accounting of the Commission shall be in U.S. dollars.

Regulation 5 – Budget

1. Annual budget estimates shall cover income and expenditures for the fiscal year to which they relate.
2. Annual budget estimates shall be divided into categories corresponding to programs and departments. Each category shall be accompanied by such information, annexes and explanatory statements as may be requested on behalf of the Commission, and such further annexes or statements as the Executive Director may deem necessary and useful.
3. The Executive Director shall prepare and submit to the FAC, Contracting Parties, and Commissioners, no later than 30 days before the Commission's Interim Meeting, budget estimates for the next three fiscal years.



4. At the Commission's Interim Meeting, the FAC shall review income and expenses for the prior fiscal year, and review and recommend changes to the budget estimates for the next three fiscal years.
5. At its regular Annual Meeting, the Commission shall review income and expenses for the prior fiscal year, review and adopt a budget for the next two fiscal years, and review the budget estimates for the subsequent fiscal year. The Commission may amend or adjust the budgets as necessary to reflect changing priorities or contingencies.
6. In preparing budget estimates for consideration of the Commission, the Executive Director shall fully take into account any unobligated funds carried over from previous years' national contributions, and any other income, which may be available for expenditure in the year for which the budget estimates are prepared.
7. The Executive Director shall assess the Contracting Parties on the basis of the budget adopted by the Commission and in accordance with Article III, Paragraph 1 of the Convention.
8. Should either of the Contracting Parties not approve its assessment in whole or in part, the Executive Director shall forthwith notify the other Contracting Party and, after consulting with the Chairperson of the Commission, shall recommend revisions to the budget as may appear necessary.
9. Any revisions to a budget or supplementary estimates shall be prepared by the Executive Director and submitted to the Chairperson for approval. Subject to consultation with the other Commissioners, the Chairperson may approve the revisions, obtain the Commissioners' approval through the established procedures for interim voting, or call a special meeting to collect a vote. After approval, the estimates shall be acted upon in the same manner as regular budgets or estimates.
10. The Executive Director may, in any fiscal year, transfer funds in an amount not exceeding 1% of the total budget (including any unobligated funds carried over from previous year/s, as described in ~~Rule-Regulation~~ 5, paragraph 6) between categories within the current years' budget. The Chairperson of the Commission may, in any fiscal year, authorize the Executive Director to transfer funds in an amount exceeding 1% of the total budget between categories.

Regulation 6 – Publication of Budget

1. A summary of the budget of the Commission shall be available at the Commission's website and by other electronic communication means approved by the Commission.



Regulation 7 – National Contributions

1. The receipt of national contributions from the Contracting Parties shall constitute an authorization to the Executive Director to incur obligations and make payments for the purposes and up to the amounts authorized by the Commission.
2. The Executive Director may use existing funds to incur obligations before a budget is approved or before national contributions are voted, when such obligations are necessary for the continued effective functioning of the Commission and provided such obligations do not exceed the scale of such requirements as authorized in the most recent approved budget. The Executive Director must obtain approval for significant deviations from this level of spending from the Commission.

Regulation 8 – Provision of Funds

1. The Commission operations shall be financed by national contributions in U.S. dollars made by the Contracting Parties, in accordance with Article III, Paragraph 1 of the Convention. Pending the receipt of such contributions, the operations may be financed from the General and Supplementary Accounts as described in Regulation 7.2.
2. After the Commission has adopted a budget, revisions to a budget, or a supplementary budget, the Executive Director shall:
 - a) Transmit to the Contracting Parties such documents and information as may be required by the government departments responsible for approving national contributions and appropriating the funds;
 - b) Request that the funds be remitted in accordance with procedures agreed upon by each of the Contracting Parties.
3. Funds shall remain available for twelve (12) months following the end of the fiscal year to which the funds relate, to discharge obligations incurred during that fiscal year.
4. At the end of the twelve-month period, any obligation incurred in the prior year which remains unliquidated shall be cancelled, or where the obligation remains a valid charge, transferred as an obligation against current-year funds. Any balance in funds shall be accounted for in accordance with the provisions of Regulations 5.10 and 10.7.



Regulation 9 – Other Income

1. The Commission may receive revenue from the sales of fish harvested during the course of research or other scientific operations, pursuant to Article III, Paragraph 2 of the Convention. Revenue from the sale of fish related to the IPHC’s Fishery-Independent Setline Survey (FISS) shall be credited to the Supplemental Fund. Revenue from the sale of fish for Pacific halibut research or operations not related to the IPHC’s Fishery-Independent Setline Survey (FISS) shall be credited to the General Fund.
2. The Commission may receive, on occasion, monies in addition to those received from the Contracting Parties to fund the Commission’s annual budget. Such funds may be from contracted or granted research agreements or from private organizations or other government agencies for the purpose of funding Pacific halibut research or operations. Funds related to the IPHC’s Fishery-Independent Setline Survey (FISS) shall be credited to the Supplemental Fund. Funds received for Pacific halibut research or operations not related to the IPHC’s Fishery-Independent Setline Survey (FISS) shall be credited to the General Fund.

Regulation 10 - Funds

1. All monetary holdings shall be subject to the Funds and Investment Policy of the Commission (provided at [Appendix I](#)), which will include the approved purposes, limits, and specific rules of use for each fund.
2. There shall be established a General Fund and a Supplemental Fund for the purposes of accounting for the income and expenditures of the Commission. Other funds may be established by the Commission as necessary.
3. The General Fund shall be a national contributions fund and shall be used to support the general operations and administrative expenditures of the Commission (For historical purposes, note that at times in the past the General Fund was known as the “Appropriations Fund.”).
4. The following monies shall be credited to the General Fund:
 - a) Contributions received from the Contracting Parties;
 - b) Receipts from the sale of surplus Commission property purchased from the General Fund;
 - c) Interest income earned by the General Fund;
 - d) Receipts from the sale of fish related to Pacific halibut research or operations;
 - e) Receipts from grants and contracts related to Pacific halibut research or operations.

5. The Supplemental Fund shall be a working capital fund and shall be used to support the IPHC's Fishery-Independent Setline Survey (FISS) and approved research.
6. The following monies shall be credited to the Supplemental Fund:
 - a) Receipts from the sale of fish related to the IPHC's Fishery-Independent Setline Survey (FISS);
 - b) Receipts from the sales of surplus Commission property purchased from the Supplemental Fund;
 - c) Interest income earned by the Supplemental Fund;
 - d) Receipts from grants and contracts fish related to the IPHC's Fishery-Independent Setline Survey (FISS) ;
 - e) Any other income not specified elsewhere in these Regulations or in the Funds and Investment Policy.
7. The Executive Director may transfer funds from the Supplemental Fund to the General Fund temporarily to the extent necessary to finance expenditures pending receipt of national contributions from the Contracting Parties as described in Regulation 7.2.
8. The Executive Director may transfer funds between the General Fund and other established funds as allowed by the approved budget and defined purposes, limits, and rules of use for each fund.
9. Previous year's surplus and unobligated funds shall be retained in the General and Supplemental Fund based on the stated fund policy in this section. Surplus and unobligated funds shall be reviewed and approved by the Finance and Administration Committee on an annual basis, in conjunction with approval of the previous year's expenses.

Regulation 11 – Custody of Funds

1. The Executive Director shall designate the bank or banks in which the funds of the Commission shall be kept and shall report the identity of the bank or banks so designated to the Commission.

Regulation 12 – Internal Controls

1. The Executive Director shall be accountable to the Commission for the proper management of the Commission's financial resources in accordance with the Commission's Rules of Procedure (201~~97~~, or any subsequent revision) and these Regulations.



-
2. No obligations shall be incurred until allotments or other appropriate authorizations have been made in writing under the authority of the Executive Director.
 3. The Executive Director shall:
 - a) Establish detailed financial procedures to ensure effective financial administration and the exercise of economy;
 - b) Sign on behalf of the Commission for all financial and ordinary business matters of the Commission;
 - c) Cause all payments to be made on the basis of supporting vouchers and other documents and ensure that services or goods contracted for have been received;
 - d) Designate in writing the Commission's Secretariat staff who may receive monies, incur obligations, sign on behalf of the Commission, and make payments on behalf of the Commission.
 4. The Executive Director may, after full investigation, authorize the writing off of losses of cash, stores, and other assets, provided that a statement explaining the losses shall be submitted to the Commission and the Auditors with the annual accounts.
 5. The Executive Director may, with the approval of the Chairperson of the Commission, authorize the transfer of surplus stores or assets to charitable organizations or to scientific societies associated with the Commission. The record of all such transfers shall be submitted to the Auditors with the annual accounts.
 6. For the issuance of purchase orders and contracts in excess of \$50,000 and all vessel charter agreements the Executive Director shall obtain the approval of the Chairperson or Vice-Chairperson.
 7. In the case of unforeseen conditions, the Executive Director may deviate from approved total budget levels at the discretion of the Chairperson.

Regulation 13 - Reporting

1. The Executive Director shall maintain such accounting records as are necessary for each fiscal year and shall submit to the Contracting Parties annual accounting records for the fiscal year to which they relate, including the following:
 - a) Outstanding obligations at the beginning and end of the year;
 - b) Unobligated funds at the beginning and end of the year;
 - c) Income and expenditures of all funds;



-
- d) The status of all funds, including:
- i. The original budgeted funding for the year;
 - ii. The national contributions as modified by any transfers;
 - iii. Credits, if any, other than national contributions;
 - iv. The amounts charged against those national contributions and other credits;
 - v. The status of the General and Supplemental Accounts, and of all other accounts which have been established;
 - vi. Statement regarding qualitative and quantitative information related to liquid assets available to meet cash needs for general expenditures for the next fiscal year.
 - vi.vii. Such other information as may be appropriate to indicate the current financial position of the Commission.

Regulation 14 – External Audit

1. The accounts of the Commission shall be audited annually by external auditors recommended by the FAC and appointed by the Commission. The Auditors shall be appointed for a term of three (3) years, and may be reappointed to multiple terms.
2. The annual accounts shall be submitted by the Executive Director to the Auditors appointed by the Commission not later than sixty (60) days after the end of a fiscal year.
3. The Auditors shall perform such an audit as they deem necessary to determine:
 - a) That the financial statements are in accord with the books and records of the Commission;
 - b) That the financial transactions reflected in the statements are in accordance with these Financial Regulations;
 - c) That the monies on deposit and on hand are vouched for by the Commission's depositories or by actual count.
 - d) Equity proportions for the Contracting Parties based on their contributions to the joint expenses shared by them under Article III, Paragraph 1 of the Convention.
4. The Auditors shall be sole judges as to the acceptance in whole or in part of certifications by the Executive Director or delegated Secretariat staff, and they may proceed to detailed examination and verifications of such financial records as they choose.



5. The Auditors, in addition to certifying the correctness of the accounts, may make such observations as they deem desirable with respect to the efficiency of the financial procedures, the accounting system, the internal financial controls, and in general, the financial consequences of administrative practices.
6. The Auditors shall have no power to disallow items in the accounts, but shall draw to the attention of the Executive Director for appropriate action any transaction with respect to which they entertain doubt as to legality or propriety.
7. The Auditors shall prepare a report on the accounts certified, and shall discuss their report with the Executive Director prior to submission to the Commission. The Auditors shall submit their report to the Commission not later than three (3) months following the end of the fiscal year to which the accounts relate.
8. The Commission may request the Auditors to perform certain specific examinations and issue separate reports on the results.

Regulation 15 – Bonding

1. The Executive Director and such other members of the IPHC Secretariat as may be deemed necessary shall be bonded in United States currency by a reputable bonding company in amounts determined by the Commission. The cost of the premiums for bonding shall be assumed by the Commission.

Regulation 16 – Insurance

1. The Commission may take out suitable insurance policies with reputable financial institutions against normal risks to its assets, operations, and personnel.

Regulation 17 – Delegation of Authority

1. The Executive Director may delegate to other members of the IPHC Secretariat or the Commission such of his powers as he or she considers necessary for the effective implementation of these Regulations.



Regulation 18 – Interpretation

1. The Chairperson may rule, after such consultation with the Commissioner's as the Chairperson deems necessary, in cases of doubt as to the interpretation and application of any of these Regulations.

Regulation 19 – General Provisions

1. These Financial Regulations should be reviewed for their consistency and appropriateness at least biennially.
2. These Financial Regulations may be amended from time to time by vote of the Commission in accordance with the voting procedure noted in Rule 11 of the IPHC Rules of Procedure (201~~97~~, or any subsequent revision), provided such amendment is not inconsistent with the provisions of the Convention.
3. Copies of superseded Financial Regulations shall be archived by the Executive Director.
4. These Financial Regulations were adopted by consensus on ~~dd22 January mmmm 2018~~2019, and supersede those previously adopted by the Commission on ~~17-22 September January~~ 201~~8~~4.



APPENDIX I

IPHC FUNDS AND INVESTMENT POLICY

I. Introduction

This statement of funds and investment policy was adopted by the International Pacific Halibut Commission (IPHC) on ~~17-22 September~~ ~~January 2018~~2014, pursuant to the Commission's Financial Regulations, to define the various funds held by the Commission and issue guidelines for their management. These policies supersede any previous funds and investment policies.

II. Responsibilities

Finance and Administration Committee (FAC).

As constituted by the Commission's Financial Regulations, the FAC is responsible for monitoring the management of the Commission's financial assets.

The FAC shall review this funds and investment policy annually, to ensure it is consistent with the mission of the IPHC and accurately reflects current financial conditions. The FAC shall recommend any changes in this policy to the Commission.

Executive Director

The Executive Director is the Commission's fiduciary. As specified by the Commission's Financial Regulations, the Executive Director is accountable to the Commission for the proper management of the Commission's financial resources.

The Executive Director is authorized to delegate certain responsibilities to other members of the IPHC Secretariat. With Commission approval, the Executive Director may also delegate certain responsibilities to professional financial experts in various fields. These professional financial services include, but are not limited to, investment management, investment custodian, and additional specialists. In particular, it is anticipated that the services of a registered investment manager may be engaged to manage portions of the Reserve and/or Endowment Funds if the total funds exceed \$10 million USD.

Professional Financial Services

The following procedure shall be used to engage or replace professional financial services, using the example of an investment manager:

1. If the FAC deems it necessary, the Executive Director will recommend the hiring or replacing of an investment manager to the FAC.



2. The Administrative Officer will nominate prospective candidates and send a request for proposal to each candidate.
3. The Administrative Officer, Assistant Director, and Executive Director will review proposals and interview candidates to determine appropriate investment manager(s) and pass their findings to the FAC.
4. The FAC will make the hiring recommendation to the Commissioners, who shall have the final approval.

III. Suitable and Authorized Investments

For the purposes of managing investment risk the following investment vehicles will be permitted by this policy:

- **Interest-Bearing Savings Account** – Federally insured (FDIC/NCUA) institutional saving account. Institution defined as state or federally chartered bank or credit union.
- **Certificate of Deposit (CD)** – Federally insured (FDIC/NCUA) institutional time deposit. Institution defined as state or federally chartered bank or credit union. Aggregate investments per entity must be at or below insurable limit.
- **Money Market Mutual Funds** – Mutual Fund investing in short-term debt securities and U.S. treasury obligations for preservation of capital and maintaining liquidity. Funds include, but are not limited to, Wells Fargo Government Money Market (WFGXX) and Wells Fargo Advantage Money Market (WMMXX)
- **Interest Bearing Checking Account** – Federally insured (FDIC/NCUA) institutional checking account. Institution defined as state or federally chartered bank or credit union.
- **U.S. Treasury Obligations** – Direct obligations of the United States Treasury whose payment is guaranteed by the United States. Direct obligations include, but are not limited to, U.S. Treasury Bills, U.S. Treasury Notes, U.S. Treasury Bonds, U.S. Treasury Inflation-Protected Securities (TIPS), and Zero Coupon Securities (STRIPS).
- **U.S. Agency Obligations** – U.S. Government Agencies, Government-Sponsored Enterprises (GSE's), Corporations, or Instrumentalities of the U.S. Government. U.S. U.S. Agency Obligations include, but are not limited to, Federal National Mortgage Association ((FNMA), Federal Home Loan Mortgage Corporation (FHLMC), Federal Home Loan Bank (FHLB), and Federal Farm Credit Bureau (FFCB). Agency obligations that have been securitized in collateralized mortgage trusts are prohibited.
- **Mutual Funds (U.S. Government-Backed Only)** – Investments are limited to mutual funds consisting of 100% U.S. Government Obligations. Funds include, but are not limited to, Wells Fargo 100% Treasury (WFTXX) and Wells Fargo Advantage Treasury Plus (PIVXX).
- **Corporate Paper** – Unsecured short-term promissory notes issues by corporations, municipalities, and sovereigns for a specific maturity at a stated rate of interest. To be eligible for purchase, the rating of the note must be at least P1 by Moody's Investor Service and/or A1 by Standard & Poor's Corporation.



IV. Authorized IPHC Funds

For the purposes of managing investment risk and to optimize investment returns within acceptable risk parameters, the following funds will be created and held as separate investments, with separate regulations and rules for each pool of funds. The Executive Director will recommend the dollar amounts to be held in each fund. The specific policies for managing each of these funds are detailed in the subsequent sections of this document.

Operating Fund Pool

- General (Fund 10)
- Supplemental (Fund 20)

Restricted Fund Pool

- Leave Liability (Fund 30)
- Annuitant Medical (Fund 40)
- Reserve (Fund 50)

Endowment Fund Pool

- Scholarship (Fund 60)

V. Operating Fund Pool

Purpose

The purpose of the Operating Fund Pool accounts is to provide sufficient cash to meet the day-to-day financial obligations of the IPHC in a timely manner. Requirements for credits to and expenditures from the two funds in this pool are specified in the Financial Regulations.

Fund Descriptions and Rules

General Fund (Fund 10)

The General Fund is an appropriations fund and shall be used to support the general operations and administrative expenditures of the Commission. Prior to 2014, the General Fund was known as the “Appropriations Fund.”

Supplemental Fund (Fund 20)

The Supplemental Fund is a working capital fund and shall be used to support the Fisheries-Independent Setline Survey (FISS) and associated research.

Investment Guidelines

Objectives

The investment objectives of the Operating Fund are:

- Preservation of capital
- Liquidity
- Optimization of investment return within the constraints of the first two objectives

Allowable Investments

Operating Fund Pool funds may be invested as follows:

- Interest-bearing savings account
- Certificates of deposit;
- Money market mutual funds;
- Interest-bearing checking accounts;
- U.S. Treasury obligations;
- U.S. agency obligations;
- Mutual funds (U.S. Government-backed only).

Maturity

Investments should be scheduled in such a way to assure adequate cash flow.

- The maturities on investments for the Operating Fund Pool shall be 18 months or less.
- The weighted average for maturity shall be less than nine months.

Reporting

The Executive Director or his/her designee shall prepare the following reports for presentation on at least an annual basis to the FAC including:

- Schedule of investments (issue and rate)
- Interest income year to date
- Weighted average for maturity

VI. Restricted Fund Pool

Purpose

The purpose of the Restricted Fund Pool accounts is to meet the specific expense needs for each account and to improve the return on funds held for expenditure for up to five years. Unless otherwise stated all restricted funds are reported as 'without donor restrictions' rather than 'temporarily restricted'.

Fund Descriptions and Rules

Leave Liability Fund (Fund 30)

The purpose of the Leave Liability Fund is to provide funds for outstanding leave liabilities that may be cashed out by employees upon retirement or resignation. Funds are maintained within the account to account for projected leave liabilities within the next 24 months. This is estimated by projecting retirements and staff turnover. Interest earned is retained in the account. Requests are made at the IPHC Annual Meeting for additional funds to provide adequate funding to meet the purpose of the account.

Medical Annuitant Fund (Fund 40)

The IPHC provides paid medical premiums (private and government) for IPHC retirees. The Medical Annuitant Fund provides the funds to pay these premiums. Funds are maintained within the account to meet obligations stated in the triennial actuarial valuation. The actuarial valuation report will be conducted by a reputable third party actuarial firm and include future assets and liabilities based on economic and demographic assumptions. Expense of the valuation will be charged against the fund. Interest earned is retained in the account. Requests are made at the IPHC Annual Meeting for additional funds to replenish the account.

Reserve (Fund 50)

The Reserve Fund provides the funds to respond to unforeseen contingencies that cannot be met by the Operating Fund Pool accounts alone.

Account Guidelines

- The fund is limited to a maximum of \$1.0 million USD
- Interest credited to the Reserve Fund in a fiscal year will be transferred to the Supplemental Fund at the beginning of the following fiscal year, if the balance exceeds the maximum
- The Reserve Fund shall be maintained at a minimum of \$500,000 USD unless through specific action by the Commission
- No more than 50% of the Reserve Fund may be utilized within a fiscal year without voted approval of the Commission
- The ordered priorities for use of the Reserve Fund will be 1) core staff costs; 2) ongoing administrative and operations costs related to fishery monitoring and assessment; 3) research costs



- Subject to annual confirmation by the Commission, the Executive Director may withdraw funds from the Reserve Fund, up to, but not exceeding the limit of the Executive Director's discretionary spending authority in any fiscal year.
- Proposals for use of the Reserve Fund will be submitted to the Commission by the Executive Director. Such proposals must identify the circumstances that require Reserve Funds; measures or circumstances that will avoid additional requirements from the Reserve Fund; and, measures or circumstances that will result in replenishment of the Reserve Fund
- Proposals for use of the Reserve Fund will be reviewed by the FAC and recommendation for their approval forwarded to the Chair of the Commission. Upon recommendation of the Commission, the Commission, approve the Executive Director's proposals for use of the Reserve Fund.

Investment Guidelines

Objectives

- Preservation of capital
- Liquidity
- To optimize the investment return within the constraints above

Allowable Investments

Restricted Fund Pool funds may be invested as follows:

- Interest-bearing savings account
- Certificates of deposit;
- Money market mutual funds;
- Interest-bearing checking accounts;
- U.S. Treasury obligations;
- U.S. agency obligations;
- Mutual funds (U.S. Government-backed only).

Maturity

Investments should be scheduled in such a way to assure adequate cash flow to meet anticipated expense needs.

- The maturities on investments for the Restricted Fund Pool shall be 60 months or less.
- The weighted average for maturity shall be less than 36 months.

Reporting

The Executive Director or his/her designee shall prepare the following reports for presentation on at least an annual basis to the FAC including:

- Schedule of investments (issue and rate)
- Interest income year to date (net of related internal and external investment returns)
- Weighted average for maturity

VII. Endowment Fund Pool

Purpose

The purpose of the Endowment Fund Pool account(s) is to provide permanent funding for the specific fund(s) within the pool. The assets within each fund shall be managed in such a way as to facilitate the fund's stated objective. At the discretion of the Commissioners the principal may be used if necessary, but must be refunded within 12 months. Requests are made during the annual budget process if it becomes necessary for additional funds to augment or replenish the account(s).

Fund Descriptions and Rules

Scholarship Fund (Fund 60)

The Scholarship Fund provides endowment funds for the annual undergraduate scholarship awarded each year by the IPHC. The principal is maintained at a minimum level of \$260,000 and is required to produce \$8,000 in annual earnings on a long-term basis. Earnings are retained in the account and may be used for the fund's endowed activities.

~~Scholarship awards and the amount of the award are subject to the rules and actions of the Scholarship committee.~~

Account Guidelines

- The principal endowment level is currently \$260,000
- In the event the principal is below the endowment level, funds should be authorized by the Commission to replenish the account
- Currently the award provides an annually renewal scholarship of \$4,000 USD, payable directly to the award winner
- IPHC will award up to one new scholarship every other year
- Each scholarship is renewable for three additional years (can be non-consecutive years)
- Renewal is dependent on 1) sufficient academic progress (maintaining a 3.0 GPA) and 2) continued undergraduate status

Investment Guidelines

Objectives

- Preservation of capital
- Sufficient growth of capital to meet stated objective
- Control and understanding of potential risk
- To optimize the investment return within the constraints above



Allowable Investments

Endowment Fund Pool funds may be invested as follows:

- Interest-bearing savings account
- Certificates of deposit;
- Money market mutual funds;
- Interest-bearing checking accounts;
- U.S. Treasury obligations;
- U.S. agency obligations;
- Corporate paper (not to exceed 20% of the fund's assets);
- Mutual funds that invest solely in securities allowed in this section.

Maturity

Investments should be scheduled in such a way to assure adequate cash flow to meet anticipated expense needs.

- The maturities on investments for the Endowment Funds shall be 10 years or less.
- The weighted average for maturity shall be less than 5 years.

Reporting

The Executive Director or his/her designee shall prepare the following reports for presentation on at least an annual basis to the FAC including:

- Schedule of investments (issue and rate)
- Interest income year to date (net of related internal and external investment returns)
- Weighted average for maturity



IPHC Audits 2017, 2018

PREPARED BY: IPHC SECRETARIAT (M. LARSEN; 3 NOVEMBER 2018)

PURPOSE

To provide the Commission with an update on progress on the IPHC financial audit for 2017, and dates for the 2018 audit.

STATUS UPDATES

FY2017 Audit – The FY2017 Audit documents were submitted to our auditor on 24 October 2018. The auditor has indicated that it is anticipated that the audit will commence in December 2018, though the finalisation will depend on any detailed review required by the auditor. The deadline for papers for the 95th Session of the IPHC Annual Meeting (AM095) is 29 December 2018.

FY2018 Audit – The FY2018 Audit documents are due to the auditor no later than 29 November 2018. It is anticipated the audit will be completed in January 2019, and as such, may require an inter-sessional decision by the Commission.

RECOMMENDATIONS

That the Commission **NOTE** paper IPHC-2018-IM094-18 which outlines progress and deadlines on the IPHC financial audits for FY2017 and FY2018.

APPENDICES

Nil.



DRAFT: IPHC Rules of Procedure (2019)

PREPARED BY: IPHC SECRETARIAT (D. WILSON, 25 OCTOBER 2018)

PURPOSE

To provide the Commission with an opportunity to consider proposed amendments to the IPHC Rules of Procedure.

BACKGROUND

In accordance with Rule 19, paragraph 1 of the IPHC Rules of Procedure (2017), which states:

“1. These Rules of Procedure should be reviewed for their consistency and appropriateness at least biennially.”

at the 2018 session of the IPHC Work Meeting (WM2018), the Commission provided an informal directive to the IPHC Secretariat to further review the terms of reference for each of its subsidiary bodies, to more clearly differentiate their mandates, with the intention of reducing or eliminating overlap.

DISCUSSION

Provided at **Appendix I** are proposed revisions to the IPHC Rules of Procedure (2017), which incorporate administrative amendments intended to further modernise the IPHC’s governance procedures.

The Terms of Reference and Rules of Procedure of all subsidiary bodies of the Commission have also been revised in an attempt to provide a clearer mandate for each, thereby reducing overlap.

Finally, a code of conduct for officers and members of the Commission has been proposed.

RECOMMENDATION/S

That the Commission **NOTE** paper IPHC-2018-IM094-19 which proposed revisions to the IPHC Rules of Procedure.

APPENDICES

Appendix I: DRAFT: International Pacific Halibut Commission Rules of Procedure (2019)

APPENDIX I

INTERNATIONAL PACIFIC HALIBUT COMMISSION
RULES OF PROCEDURE
(2019)

INTERNATIONAL PACIFIC



HALIBUT COMMISSION

Commissioners

Canada	United States of America
Paul Ryall	Chris Oliver
Neil Davis	Robert Alverson
Peter DeGreef	Richard Yamada

Executive Director

David T. Wilson, Ph.D.



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Rule 1 – Definitions

For the purpose of these Rules of Procedure, the following definitions apply:

Convention: the Convention between Canada and the United States of America for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea, signed at Ottawa, Canada on 2 March 1953, as amended by the Protocol Amending the Convention, signed at Washington 29 March 1979, and includes the regulations promulgated thereunder.

Commission: the International Pacific Halibut Commission provided for by Article III, paragraph 1 of the Convention.

Contracting Parties: Consisting of the two Members, Canada and the United States of America (3 Commissioners from each Party).

Delegation: the delegates and their alternates, experts and/or advisers from each Contracting Party.

Executive Director: the Director of the Commission.

Members: the representatives of a Contracting Party as specified in Article III of the Convention.

Observer: the representative of an Observer Nation, Observer Intergovernmental Organisation or Observer Non-Governmental Organisation.

Pacific halibut: fish of the species *Hippoglossus stenolepis*.

Session: Any meeting of the Commission or its subsidiary bodies

Rule 2 – Authority, Purpose and Scope

1. **Authority:** These Rules of Procedure consist of rules and regulations adopted by the International Pacific Halibut Commission, hereinafter referred to as “the Commission,” pursuant to the *Convention between Canada and the United States of America for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea*, hereinafter referred to as “the Convention,” signed first in 1923 and revised several times since, most recently in 1953, as amended by the Protocol signed by both countries, hereinafter referred to as “the Contracting Parties,” in 1979.
2. **Purpose:** The purpose of this document is to provide the rules of procedure for the internal organization and operation of the Commission, and to establish the procedure by which a network of subsidiary bodies shall operate.



3. **Scope:** All subsidiary bodies shall operate under the Rules of Procedure of the Commission *mutatis mutandis*, except where specific provisions are laid down in the Convention or in these Rules of Procedure.

Rule 3 – Representation

1. The Commission shall be composed of not more than six Commissioners, three from each of the Contracting Parties, pursuant to Article III, Paragraph 1 of the Convention. Commissioners shall be appointed through the national process of the Contracting Party they represent, and they shall serve as long a term and be reappointed as many times as the Contracting Party decides.
2. The Contracting Parties shall provide documentation of Commissioner appointments, which the Executive Director shall keep on file.

Rule 4 – Advisors to the Commission

1. Each Contracting Party may appoint Scientific and Financial Advisors and/or other experts to assist its Commissioners in their areas of expertise. Except at such meetings as the Commission shall decide otherwise, Commissioners may be accompanied by one or more of these advisors and/or experts.

Rule 5 – Seat of the Commission

1. Unless otherwise agreed by the Contracting Parties, the seat of the Commission shall be at Seattle, Washington, U.S.A. The legislation implementing the Convention in the United States, the Northern Pacific Halibut Act of 1982, stipulates that the U.S. will provide facilities for the Commission on or near the campus of the University of Washington, without regard to the cost-sharing provisions in the Convention.
2. The Executive Director and the Staff of the Secretariat, hereinafter referred to as the “Secretariat,” shall be based at the seat of the Commission.



Rule 6 – Sessions of the Commission

1. The Commission may alternate its regular Sessions of the Annual Meeting and its Interim Meeting between Canada and the United States of America, and may hold other meetings as it may determine necessary.
2. Meetings of the Commission may be open to Observers and the general public.
3. Meetings of the Commission shall be available via electronic communication means approved by the Commission, unless the Commission otherwise decides.
4. Meetings with representatives of the Pacific halibut fishing industry may be held annually at the seat of the Commission or at any other place that the Commission shall determine, and arrangements for such meetings shall be determined by the Chairperson in consultation with the Executive Director.
5. Invitations to meetings of the Commission shall be prepared by the Executive Director and issued no later than **90 days** in advance of the date fixed for the opening of the Session.

Rule 7 – Credentials

1. At each Session of the Commission's Annual Meeting and Interim Meeting, the Executive Director shall receive a *Letter of Credentials* of each delegation issued by, or on behalf of, the competent authority, indicating clearly the Commissioners, as well as the list of advisors and experts who will be part of the delegation. Such *Letter of Credentials* shall conform to the standard set out in [Appendix I](#). The Executive Director shall report to the Commission the *Letter of Credentials* received.

Rule 8 – Order of Business

1. A provisional agenda for each Session of the Commission shall be prepared by the Executive Director in consultation with the Chairperson and Vice-Chairperson. It shall be transmitted by the Executive Director with the invitation sent in accordance with [Rule 6.5](#) and with an indication of the relevant documents to all Official Contacts referred to in [Rule 3](#) and [Rule 4](#), and to Observers referred to in [Rule 12](#).
2. Any Contracting Party of the Commission, the Chairperson, or the Executive Director may, at least **45 days** before the date fixed for the opening of the meeting, request the inclusion of

supplementary items in the provisional agenda. A request for a supplementary item on the provisional agenda shall be accompanied by a memorandum and any relevant documents on the proposed supplementary item.

3. At the beginning of a Session, the Commission shall adopt its agenda on the basis of the provisional agenda and any supplementary items. At that time, any Contracting Party or the Executive Director may request placement of additional items of an urgent nature on the agenda. Such items shall be included on the agenda subject to the approval of the Commission. If any Contracting Party of the Commission indicates to the Chairperson that they are not in a position to take a decision on such supplementary items of an urgent nature at that meeting, the Chairperson shall direct that the decision may be taken intersessionally, or deferred until the next Session of the Commission.

Working documents/papers

4. Any documents to be discussed at a Session of the Commission shall be submitted to the Executive Director no less than **30 days** before the date fixed for the opening of the Session, unless otherwise decided by the Commission. Documents received later than 30 days in advance of the Session shall be deemed as Information Papers only.

Regulatory Proposals

5. New regulatory proposals or amendments to existing regulations (including catch limit proposals) shall be submitted to the Executive Director no less than **30 days** before the date fixed for the opening of the Session at which they are to be considered. The Executive Director shall make the proposals available on the public access area of the IPHC website no later than one (1) business day after receipt.
6. The Executive Director shall not accept any new Regulatory Proposals or amendments to existing Regulations if received after the deadline stated in [Rule 8.5](#). Regulatory Proposals received later than **30 days** in advance of the Session shall be deemed as Information Papers only.

Rule 9 – Selection of Chairperson and Vice-Chairperson

1. The Commission shall elect from its Commissioners, a Chairperson and Vice-Chairperson, each of whom shall be elected for a term of one year and shall serve until the day following the election of their successors. The Chairperson and Vice-Chairperson shall be from different Contracting Parties. Each year these offices shall rotate between the Contracting Parties.

Rule 10 – Functions of Chairperson and Vice-Chairperson

1. The powers and duties of the Chairperson shall be:
 - a) To preside at all Sessions of the Commission;
 - b) To rule on all points of order raised at the meetings of the Commission, subject to the right of any Commissioner to request that any ruling of the Chairperson shall be submitted to the Commission for decision by vote;
 - c) To call for votes and announce the results of the vote to the Commission;
 - d) To approve on behalf of the Commission the publication of a report of the proceedings of each annual or other Session of the Commission for transmission to the Contracting Parties, Commissioners, and others approved by the Commission, including the general public via the Commission's website or other electronic communication means approved by the Commission, as an authoritative record of what transpired;
 - e) Generally, to make such decisions and give directions to the Executive Director, especially in the interval between the meetings of the Commission, to carry out the business of the Commission efficiently and in accordance with its decisions;
 - f) To take such other actions on behalf of the Commission as may be assigned by decision of the Commission.
2. The Vice-Chairperson shall act as Chairperson if the office of the Chairperson becomes vacant, or the Chairperson is unable to act, or the Chairperson requests the Vice-Chairperson temporarily to perform the duties of the Chairperson, until such time as the Chairperson is able to resume carrying out his/her functions or a new Chairperson is elected. Temporarily performing the duties of Chairperson by the Vice-Chairperson shall not affect the rotation of offices in the succeeding year.



Rule 11 – Decision making

Decision-making at Sessions of the Commission

1. As a general rule, decision-making in the Commission should be by consensus. For the purposes of these rules, “consensus” means the absence of any formal objection made at the time the decision was taken.
2. If it appears to the Chairperson that all efforts to reach a decision by consensus have been exhausted, decisions will be made in accordance with Article III, paragraph 1 of the Convention.
3. Each Commissioner shall be entitled to one vote, and in accordance with Article III, Paragraph 1 of the Convention, all decisions of the Commission shall be made by a concurring vote of at least two of the Commissioners of each Contracting Party. At meetings, a public vote shall be taken by show of hands or roll call of the Commissioners, whether in person or via electronic communication, on each issue.
4. Between Sessions of the Commission or in the case of emergency, a vote of the Commissioners may be called by the Chairperson and taken by mail, telephone, or electronic communication. Such decisions shall be duly recorded in the Commission's records by the Executive Director. Copies of such decisions shall be forwarded promptly to the Contracting Parties and to the Commissioners by the Executive Director and a record of the vote will be accessible to the public.

Intersessional decision-making

5. In case of the need for adoption of an emergency measure between Sessions, or where a decision needs to be taken intersessionally, the Chairperson may propose that a decision be taken by electronic means.
6. When a decision is to be taken by electronic means, the Executive Director shall transmit the proposed decision to the Official Contacts of each Contracting Party.
7. Commissioners shall promptly acknowledge receipt of any proposed decision by electronic means. If no acknowledgement is received from any particular Commissioner within one week of the date of transmittal, the Executive Director will retransmit the proposed decision, and will use all reasonable means to ensure that it has been received.
8. Members shall have **30 days** to respond, unless a longer period is specified by the Executive Director in the transmittal.
9. If no reply from a Commissioner reaches the Executive Director within the period established under [Rule 11.8](#), that decision shall be deferred to the next session of the Commission.



10. The Executive Director shall promptly ascertain and transmit the decision to all Commissioners. The date of that transmittal shall be the 'date of notification'.

Rule 12 – Observers and the general public

1. In accordance with [Rule 6.2](#), all sessions of the Commission and its subsidiary bodies may be open to Observers and the general public, and/or made available to the public via electronic means approved by the Commission, unless the Commission decides otherwise. Release of information shall be subject to any rules relating to the confidentiality of certain data and other commercially sensitive information that the Commission may decide.
2. The Commission may, upon their request, invite the following Observers in their official capacity:
 - a) Any State or any other entity that has jurisdiction over waters adjacent to the Convention Area;
 - b) Other States with an interest in the work of the Commission that are not Contracting Parties of the Commission, invited by the Commission;
 - c) Other regional fisheries management organisations and other relevant governmental or intergovernmental organisations, invited by the Commission;
 - d) Non-governmental organisations having special competence in the field of activity of the Commission, to attend such of its meetings as the Commission may specify.
3. Any Observer to a meeting of the Commission, or of the general public, may submit memoranda as either Regulatory Proposals, Position Statements or Information Papers, no later than **30 days** prior to the commencement of the session.
4. Observers and the general public may participate in the deliberations of the Commission and its subsidiary bodies during the Observer and public testimony periods, but shall not be entitled to participate in the taking of decisions.
5. The Commission may enter into agreements or arrangements with other inter-governmental organisations and institutions, especially those active in the fisheries sector, which might contribute to the work and further the objectives of the Commission. Such agreements or arrangements may provide that these organisations or institutions may be represented as Observers in the Sessions of the Commission.



Rule 13 – Functions of Executive Director and Assistant Director

1. The Commission shall appoint an Executive Director who shall be the ex-officio Secretary of the Commission, and whose tenure and rate of remuneration shall be determined by the Commission, in general agreement with U.S. Civil Service guidelines. The duties of the Executive Director shall be:
 - a) To sign on behalf of the Commission all official communications to the Contracting Parties, unless signed by the Chairperson or otherwise directed by the Commission;
 - b) To receive and transmit to the Commissioners communications from the Contracting Parties as required;
 - c) To keep the records of meetings and to prepare reports thereof for transmission to the Contracting Parties, Commissioners, and others concerned, including Observers and the general public via the Commission's website or other electronic communication means approved by the Commission, after approval by the Chairperson;
 - d) To maintain the official files of the Commission, including documentation of Commissioner appointments and records of voting actions taken;
 - e) To perform such other duties and functions as are set forth in these Rules or as may be assigned to the Executive Director by the decision of the Commission or the Chairperson;
 - f) To be responsible for the development and periodic review of the IPHC Employee Manual and associated Staff Regulations contained within, in line with international best practice;
 - g) To appoint members of the Staff to the positions established by the Commission, grant promotions and in-grade increases, manage the Staff's activities, and enforce Staff regulations;
 - h) To fix the rate of remuneration of the Staff in general agreement with U.S. Civil Service guidelines;
 - i) To be responsible to the Commission for the management of its office and for the budgeting, receipt, and disbursement of all monies received by the Commission, pursuant to the IPHC Financial Regulations established by the Commission;
 - j) To make all necessary arrangements and prepare agendas for Commission meetings;
 - k) To direct the scientific investigation program approved by the Commission;

- l) As requested by the Commission, to recommend structure and/or membership for the subsidiary bodies established by the Commission;
 - m) To facilitate communication between the Commission and its subsidiary bodies as well as communication among the subsidiary bodies themselves.
2. The Commission shall appoint an Assistant Director, and if the position of Executive Director becomes vacant or the Executive Director is unable to act or is absent, then the duties and responsibilities of the Executive Director shall be performed by the Assistant Director.
 3. In fulfilling their functions, the Executive Director and the Staff shall not act in any manner that is incompatible with the objectives and provisions of the Convention, these Rules, or the Staff Regulations contained within the Employee Manual, nor shall they use their position to benefit financially from Commission activities. They shall also maintain as confidential, while they are employed by the Commission and thereafter, any confidential information they obtain or to which they have access during their employment.

Rule 14 – Subsidiary Bodies

1. The Commission may establish or dissolve subsidiary bodies to assist its work, as it deems necessary. At the Commission's request, the Executive Director may make recommendations concerning subsidiary body structure and/or membership.
2. All subsidiary bodies shall operate under the Rules of Procedure of the Commission *mutatis mutandis*, except where specific provisions are laid down in the Convention or in these Rules of Procedure.
- 2.3. Officers and Members of the Commission's subsidiary bodies shall operate in accordance with the IPHC Code of Conduct, as provided at Appendix II.
- 3.4. Members of the Commission's subsidiary bodies, acting as individuals and/or representatives, shall be responsible for communicating Commission activities to relevant stakeholders, and shall receive IPHC correspondence on their behalf.
- 4.5. Each subsidiary body may propose modifications of their Rules of Procedure, as necessary for the conduct of its meetings and for the exercise of its functions and duties, in accordance with the Commission's Rules of Procedure and subject to the Commission's approval.
- 5.6. Pursuant to [Rule 14.1](#), the Commission establishes the following Committees which will act as advisory bodies to the Commission:

a) Finance and Administration Committee (FAC)

~~b) Scholarship Committee (SC)~~

~~6.7.~~ Pursuant to [Rule 14.2](#), the terms of reference, and Rules of Procedure outlined in the following Appendices shall govern the procedures to be applied to the Committees:

a) [Appendix III](#) - Finance and Administration Committee (FAC)

~~b) [Appendix III](#) - Scholarship Committee (SC)~~

~~7.8.~~ Pursuant to [Rule 14.1](#), the Commission establishes the following Boards which will act as subsidiary bodies to the Commission:

a) Conference Board (CB)

b) Management Strategy Advisory Board (MSAB)

c) Processor Advisory Board (PAB)

d) Research Advisory Board (RAB)

e) Scientific Review Board (SRB)

~~8.9.~~ Pursuant to [Rule 14.2](#), the terms of reference, and Rules of Procedure outlined in the following Appendices shall govern the procedures to be applied to the Boards:

a) [Appendix IV](#) - Conference Board (CB)

b) [Appendix V](#) - Management Strategy Advisory Board (MSAB)

c) [Appendix VI](#) - Processor Advisory Board (PAB)

d) [Appendix VII](#) - Research Advisory Board (RAB)

e) [Appendix VIII](#) - Scientific Review Board (SRB)

~~9.10.~~ Documents prepared for, and submitted to, the subsidiary bodies of the Commission shall be made available to the general public via the Commission's website and/or other electronic communication means approved by the Commission.

~~10.11.~~ Individuals may serve on more than one subsidiary body.

~~11.12.~~ The Commission may defray the travel and living expenses of subsidiary body members at such meetings as it deems necessary, and may provide honoraria on occasion. The amount of

such expenses and the number of representatives whose expenses may be defrayed shall be the decision of the Commission, upon recommendation of the Executive Director.

Rule 15 – Reports and Records

1. A report shall be adopted at the end of each Session of the Commission, and shall be recorded in accordance with instructions of the Commission.
2. The report shall embody the Commission's decisions and recommendations, including, when requested, a statement of minority views.
3. Copies of final reports prescribed in [Rule 15.1](#) and [Rule 15.2](#) shall be forwarded by the Executive Director to the Contracting Parties and to the Commissioners no later than **15 days** after the close of the Session.
4. The Commission shall publish additional reports from time to time as it may deem desirable.
5. All reports published by the Commission shall be available at the Commission's website or by other electronic communication means approved by the Commission.

Rule 16 – Privileges and Immunities

1. The legal personality, privileges and immunities which the Commission and its Secretariat shall enjoy in the territory of a Contracting Party shall be determined by that Contracting Party.

Rule 17 – Grievances

1. The Commission shall sit as a body to hear grievances from Staff members regarding personnel actions instituted by the Executive Director, where other levels of internal review prescribed by the IPHC Employee Manual have not led to resolution. The Commission shall render its decision on a grievance hearing within **90 days**, which shall constitute a final decision on the grievance. The Commission's decision is not subject to appeal.
2. The Commission may instruct the Executive Director to undertake other personnel actions where the Commission deems that a grievance hearing is not appropriate.



Rule 18 – Dissolution of the Commission

1. Upon dissolution of the Commission, all assets of the Commission will be divided according to the assigned equity proportions determined by the most recent financial audit approved by the Commission and returned to the international fisheries divisions of the U.S. State Department and the Canadian Department of Fisheries and Oceans, to be used in the interest of the general public for the management of the international fisheries resources of the two Contracting Parties.

Rule 19 – General Provisions

1. These Rules of Procedure should be reviewed for their consistency and appropriateness at least biennially.
2. These Rules of Procedure may be amended from time to time by vote of the Commission in accordance with the voting procedure noted in [Rule 11](#), provided such amendment is not inconsistent with the provisions of the Convention.
3. Copies of superseded Rules of Procedure shall be archived by the Executive Director.
4. These Rules of Procedure were adopted by consensus on **27 January 2017**, and supersede those previously adopted by the Commission on **17 September 2014**.



Appendix I Letter of Credentials

Dear IPHC Executive Director,

Upon instructions of [...relevant authority...] I wish to inform you that [... name of the IPHC Contracting Party...] will participate in the 93rd Session of the International Pacific Halibut Commission (IPHC) Annual Meeting (AM093) and will be represented by the following delegation:

Commissioners

[..Title and Name...] – Lead Commissioner

[..Title and Name...] – Commissioner

[..Title and Name...] – Commissioner

Advisors

[..Title and Name...] – Scientific Advisor

[..Title and Name...] – Financial Advisor

[..Title and Name...] – Legal Advisor

[..Title and Name...] –Other.... Advisor

[Title and Name], Lead Commissioner or, in his/her absence, either of the two other Commissioners, is authorized to fully take part in the proceedings of the Session and take, on behalf of the [... name of the IPHC Contracting Party...], any action or any decision required in relation with this Session.

.....Signature.....

[on behalf of]

Appendix II
IPHC Code of Conduct for Officers and Members

I. Application

1. This Code of Conduct (Code) applies to all IPHC officers and members. The Code is designed to be a useful guide for officers and members as they carry out their ethical responsibilities.

II. Standards

2. The Code provides aspirational ethical standards. While adherence to the aspirational ethical standards is not easily measured, conducting themselves in accordance with these ethical standards is an expectation that officers and members have of themselves as professionals. Among the aspirational ethical concepts this Code embraces are those of respect, responsibility, fairness, and honesty.
3. **Respect:** Respect is demonstrating a high regard for oneself, others, and the resources entrusted to them. Those resources may include people, time, money, reputation, the safety of others, and natural or environmental resources. An environment of respect engenders trust, confidence, and performance excellence by fostering mutual cooperation — an environment where diverse perspectives and views are encouraged and valued.
4. **Responsibility:** Responsibility is taking ownership for the decisions one makes or fails to make, the actions one takes or fails to take, and the consequences that result.
5. **Fairness:** Fairness is making decisions and acting impartially and objectively. An officer's or member's conduct must be free from competing self-interest, prejudice, and favoritism.
6. **Honesty:** Honesty is understanding the truth and acting in a truthful manner both in one's communications and in one's conduct.

III. Responsibilities

7. IPHC officers and members shall perform all duties associated with their positions diligently, impartially, conscientiously, in a civil manner and to the best of their ability. In the performance of their duties they must:

- a. be able to express views clearly and concisely and be prepared to negotiate to achieve acceptable outcomes and compromises where necessary;
- b. be respectful towards other officers and members;
- c. act in the best interests of the resource as a whole;
- d. be prepared to observe confidentiality and exercise tact and discretion when dealing with sensitive issues;
- e. contribute to discussion in an objective and impartial manner and avoid pursuing personal agendas or self-interest;
- f. be prepared to make the necessary commitment of time to ensure that they are fully across matters which are the subject of consideration at a meeting;
- g. with the exception of the Conference Board, and the Processor Advisory Board, during the course of a meeting, disclose all interests, pecuniary or otherwise, in matters being considered or about to be considered by the meeting before those matters are discussed and abide by the decisions of a meeting in relation to their participation in discussions relating to those matters;
- h. have confidence and authority of their stakeholder group to undertake their functions as an officer or member and be prepared to consult with members of their stakeholder group as necessary to effectively contribute to discussions.

8. Confidentiality and non-disclosure

- a. In general, officers and members are able to consult with their constituents before and after meetings. However, officers and members must not disclose confidential IPHC- information.
- b. All information received from IPHC, and not otherwise publicly available, is confidential. Officers and members may receive confidential information and are required to follow the IPHCs instructions as to its use. These instructions include taking measures for the prevention of loss, theft, corruption, and unapproved copying or other duplication.

9. Public comment

- a. Officers and members, as members of the community, have the right to make public comment and to enter into public debate on political issues. However, there are some circumstances in which public comment is inappropriate, in particular where there is an implication that the public comment, although made in a private capacity, is in some way an official comment of the IPHC. Officers and members should avoid making public statements about matters relating to the IPHC unless it is made clear that they are speaking as a private citizen.

10. Conflict of Interest

- h-a. Officers and members may have conflicts of interest (actual or perceived) during the course of their duties. All interests in the matter being considered, not limited to pecuniary gain, must be declared. If there is any doubt as to the relevance of an interest, an officer or member must declare it so that any potential conflicts can be considered. IPHC subsidiary bodies are made up of relevant experts, so there is an expectation that members, in maintaining their expertise, may have some interest relevant to the resource. Having knowledge or a point of view about the fishery or the applicable science does not of itself create a conflict.

i.b. Examples of interests that officers and members must declare (with the exception of the Conference Board, and Processor Advisory Board) include but are not limited to:

- i. a financial or economic interest such as the ownership or control of concessions, businesses or assets related to the resource;
- ii. any employment by a business or organisation relevant to the resource;
- iii. any membership of a group or organisation relevant to the resource;
- iv. projects or campaigns that the officer/member or the officer/member's organisation/group has or has planned that are relevant to the resource;
- v. a direct family member or close associate having such an interest.

c. Any of these interests may or might reasonably appear to be thought to impair the ability of the officer or member to perform their duties properly and objectively in relation to the matter being considered.

d. Determining if a conflict of interest exists should be undertaken by the IPHC or subsidiary on a case by case basis and may evolve or become evident during a discussion. The process for declaring and dealing with a conflict of interest is outlined in the section below.

2.11. Managing conflicts of interest

a. Conflicts of interests should be disclosed as soon as they become known recorded either in the meeting report, or in the files of the IPHC Secretariat.

b. The disclosure must include:

- i. the nature and extent of the interest
- ii. how the interest relates to the issues under discussion.

c. Unless the IPHC or subsidiary bodies decides otherwise, the officer or member making the disclosure must leave the meeting while deliberations and decisions are made about the matter where a conflict exists. This includes any discussions about



- decisions to allow the officer or member to be present during deliberations on the matter in conflict. The decision that is made about them remaining in any deliberations or recommendation making is made without them present. This should then be recorded in the meeting report.
- d. If the IPHC or subsidiary body decides at any time that a conflict of interest exists and that this conflict is likely to interfere with the meetings consideration of a particular issue(s), the IPHC or subsidiary body may:
- i. decide that the officer or member who has disclosed the conflict of interest should participate in the discussions concerning the issue, but not in formalising the advice/recommendations (in such cases, the officer or member should be asked to retire from the meeting while the decision about their participation is made); or
 - ii. ask to hear the officer's or member's views on the issue and then require him/her to retire from the meeting while it is discussed by the other officers/members and the advice/recommendation is formalised.
- e. Where an officer or member considers that another officer or member may have a conflict of interest which has not been previously declared, that officer or member who raised the matter should alert the Chairperson of the body and seek to have it clarified.
- f. Documents for all IPHC meetings are published no less than 30 days prior to each session. Thus, officers and members are responsible for making a decision as to the need to disclose any relevant interest and its nature prior to the meeting. Once disclosed other officers or members should then discuss the nature of the interest, decide if there is any conflict of interest, and what action should be taken when that item is discussed

Appendix III
Finance and Administration Committee (FAC) – Terms of Reference and Rules of Procedure

I. Terms of reference

1. The Finance and Administration Committee (FAC) shall advise the Commission on such matters of an administrative and financial character as are remitted to it by the Commission and shall annually:
 - a) examine the operating budget for the current year;
 - b) examine the draft budget for the ensuing and following year.
2. The FAC may draw to the attention of the Commission any matter of an administrative or financial character.
3. The FAC may appoint from amongst its members a smaller, informal group to give preliminary consideration, in consultation with the Executive Director, to matters before it.
4. The FAC shall prepare a report of each meeting of the Committee for transmission to the Commission.

II. Rules of Procedure

5. The procedures of the FAC shall be governed *mutatis mutandis* by the Rules of Procedure of the Commission.



Appendix III
Scholarship Committee (SC) — Terms of Reference and Rules of Procedure

I. — Terms of reference

1. — ~~The International Pacific Halibut Commission funds Merit Scholarships to support university, technical college, and other post-secondary education. The scholarship fund has been established to assist the further education of students from the Contracting Parties, connected to the Pacific halibut fishery and its industry. Generally, a single new scholarship valued at \$4,000 (US) per year is awarded every two years. The scholarships are renewable annually for the normal four year period of undergraduate education, subject to maintenance of satisfactory academic performance.~~
2. — ~~The Scholarship Committee (SC) shall be composed of industry and Commission representatives and shall review applications received, and determine recipients based on academic qualifications, career goals, and relationship to the Pacific halibut industry.~~
3. — ~~The SC may draw to the attention of the Commission any matter relating to the IPHC Scholarship fund.~~
4. — ~~The SC may appoint from amongst its members a smaller, informal group to give preliminary consideration, in consultation with the Executive Director, to matters before it.~~
5. — ~~The SC shall prepare a report of each meeting of the Committee for transmission to the Commission.~~

II. — Rules of Procedure

6. — ~~The procedures of the SC shall be governed *mutatis mutandis* by the Rules of Procedure of the Commission.~~

Appendix IV Conference Board (CB) – Terms of Reference and Rules of Procedure

I. Terms of reference

1. The Conference Board (CB) is an ~~advisory subsidiary~~ body to the Commission on which individuals representing ~~Canadian and American Pacific halibut harvester organizations and associations commercial, sport, subsistence, Tribal/First Nations Pacific halibut harvesters~~, and other interested parties ~~may be represented. The Board shall will:~~

a) ~~provide a forum for the discussion of strategic management and policy matters relevant to Pacific halibut to assist the flow of information among stakeholder groups;~~

~~a)b)~~ advise the Commission on matters relating to conservation measures and Pacific halibut management. ~~Advice provided by the CB should be evidence-based and address biological, economic, and wider ecological factors affecting the performance of fisheries catching Pacific halibut and explain how their recommendations assist the IPHC pursue its objectives;~~

c) ~~. The CB shall also~~ review ~~IPHC Secretariat IPHC Staff~~ reports and recommendations, regulatory ~~and catch limit~~ proposals received by the Commission, and provide its advice concerning these items to the Commission at its Annual Meeting, or on other occasions as requested.

~~1.2.~~ The CB Chairperson and Vice-Chairperson shall communicate with the Commission and the other IPHC ~~advisory subsidiary~~ bodies on the ~~Board's CB's~~ behalf. The Commission's Executive Director may facilitate this communication.

II. Representation

~~2.3.~~ ~~Conference Board (CB)~~ members are Pacific halibut harvester organizations and associations from each Contracting Party and include commercial, guided sport/~~recreational~~, unguided sport/recreational, subsistence, and First Nations/Tribal interests. ~~Other interested parties may be represented.~~ Members are responsible for

designating their individual delegate(s) and no delegate may vote on behalf of more than one ~~Conference Board~~CB member.

~~3.4.~~ The ~~Conference Board~~CB regulates its membership by accrediting members at the beginning of each ~~IPHC Annual Meeting~~CB session. Accreditation is documented using the Accreditation Questionnaire provided at [Annex 1](#). The ~~Conference Board~~CB members shall compose nationals from Canada and the United States of America.

~~4. Conference Board~~CB ~~members may be re-accredited for successive meetings. Conference Board~~CB ~~members seeking re-accreditation are encouraged to notify the IPHC Secretariat at least two weeks before the beginning of the annual Conference Board~~CB ~~meeting. Potential Conference Board~~CB ~~members seeking accreditation for the first time are encouraged to notify the IPHC Secretariat at least two weeks before the beginning of the Annual Meeting of the Conference Board Session in which they wish to attend.~~

5. Organizations and delegates serve without compensation from the Commission.

III. Officers

Co-Chairperson/s and Vice-Chairperson/s

6. The ~~Conference Board (CB)~~ is Co-Chaired by two members, one from each of the two Contracting Parties. The Co-Chairpersons convene and adjourn meetings and preside over them, ensuring that meetings are conducted in an orderly and businesslike manner.

7. The Co-Chairpersons present the ~~Conference Board's~~CB's decisions, recommendations, and advice to the Commission.

8. The Co-Chairpersons may appoint a Secretary, or one of the Co-Chairpersons may fulfill secretarial duties, including accepting the services of the IPHC Secretariat.

9. The Co-Chairpersons may be supported by up to two Vice-Chairpersons, as the ~~Conference~~CB~~Board~~ may desire, one from each of the two Contracting Parties.

Terms of office and election

10. Co-Chairpersons are elected for terms of one (1) year, with no limit to the number of terms that individuals may serve.
11. ~~Conference Board (CB)~~ members of each Contracting Party elect the Co-Chairperson from their ~~country Contracting Party~~ at the beginning of each annual meeting of the ~~Conference CB Board~~. The newly elected Co-Chairpersons will then serve until the beginning of the next Session of the ~~Conference Board CB~~.
12. If a Co-Chairperson becomes unable to serve during the annual ~~Conference Board CB~~ meeting, his/her Contracting Party shall elect another member as Co-Chairperson. If a Co-Chairperson becomes unable to serve sometime after the completion of the Session, the office will remain vacant until the Contracting Party members elects a replacement at the beginning of the next Session.

IV. Sessions of the Conference Board

13. **Time and place:** The ~~Conference Board CB~~ typically meets once each year, in conjunction with the IPHC Annual Meeting.
14. **Agenda:** The agenda for the ~~Conference Board (CB)~~ will be proposed by the Co-Chairpersons and approved by the membership at the beginning of the Session. ~~Following the initial public session(s) of the IPHC Annual Meeting, t~~The ~~Conference Board CB~~ typically meets ~~separately from the Commission~~ to discuss the issues and proposals under consideration. The ~~Conference Board CB~~ may call on the IPHC Secretariat or other organizations to clarify or provide more information during its deliberations. ~~The Conference Board's recommendations and advice are presented to the Commission at a later session of the Annual Meeting of the Commission.~~
15. **Conduct of meetings:** Parliamentary procedure according to Roberts Rules of Order will be used as a guideline in the conduct of ~~Conference Board (CB)~~ meetings, unless otherwise specified in the ~~Commission's IPHC~~ Rules of Procedure. The ~~CB Conference Board~~ may

set up its own subgroups or committees to consider specific issues or to produce specific documents or other products.

16. **Decision-making:** Each accredited ~~Conference Board~~CB member shall have one vote.
 - a) Following a vote on any issue the Co-Chairpersons shall announce the result by ~~Contracting Party-national-section~~, which shall be recorded in the record of the meeting. When it is clear that the vote reflects differences of opinion within a ~~national-Contracting Partysection~~ the Co-Chairpersons shall ensure that minority viewpoints are summarized and reported to the Commission.
 - b) Decisions regarding the ~~Board's-CB's~~ recommendations for catch limits and fishery regulations, must be made by a recorded vote of members present.
 - c) Other decisions may be made by voice vote of ~~Conference Board~~CB members present, unless the Co-Chairpersons decide that a recorded vote is necessary.

V. **Intersessional process and ad-hoc working groups**

17. During the ~~annual Conference Board (CB meeting)Annual Meeting~~, ad-hoc working groups may be created to work on issues or projects, or to represent the ~~Conference Board'sCB's~~ interests, ~~between Sessions~~.
18. The work of such ad-hoc working groups may not exceed the mandate approved for them by the ~~Conference BoardCB at its Annual Meeting~~.
19. Completed documents and other work materials from the ~~Conference Board'sCB's~~ ad-hoc working groups should be posted for public access on the Commission web-site.
20. Decisions requiring a vote, regarding or resulting from work ~~between-undertaken inter-sessionally~~Annual Meetings, may only be made at the ~~annual CB meeting~~Annual Meeting.

VI. **Reports and Records**

21. A report shall be adopted at the end of each Session of the CB.

21.22. The report shall embody the CB's recommendations, including, when requested, a statement of minority views.

- a) If requested, divergent views within a Contracting Party will be documented in minority reports by accredited organizations of the minority.
- b) Participants requesting the inclusion of a minority report must provide the Co-Chairpersons with a clear and concise serviceable draft in an electronic version "word document" within one hour of the conclusion of the ~~IPHC Annual Meeting~~ CB meeting ~~Conference Board session.~~
- c) Draft minority reports are limited only to information and material discussed during the ~~Conference Board~~ CB session.
- d) The Co-Chairpersons reserve the right to edit draft minority reports for accuracy and brevity. All attendant documents shall be considered part of the Report.

23. A copy of the final report from each CB meeting shall be forwarded by the Executive Director to the Contracting Parties and to the Commissioners no later than 15 days after the close of the Session.

24. All reports shall be available on the Commission's website.

~~22. The Conference Board (CB) typically shall documents its proceedings with a Report delivered by the Co-Chairpersons to the Commission, during the Annual Meeting Thursday morning session.~~

~~23. The Conference Board CB Report will include the decisions, recommendations, and advice adopted at the meeting, and will describe both areas of consensus and difference.~~

~~24. Decisions or actions taken by the Conference Board CB which are not included in the Conference Board Report may be documented in minutes.~~

~~25. Completed Reports or other documents prepared and discussed at Conference Board CB meetings will be presented to the Commission and made available to the public via the IPHC website.~~



Annex 1
IPHC CONFERENCE BOARD ACCREDITATION QUESTIONNAIRE

1. **NAME AND ADDRESS OF ORGANIZATION:**

Mailing Address

City	State/Province	Zip/Postal Code	Telephone
FAX	E-mail		

2. **NAME AND TITLE OF OFFICERS:**

3. **PRIMARY PURPOSE OF ORGANIZATION (GENERALLY, WHO DO YOU REPRESENT?)**

4. **DATE ORGANIZATION WAS FORMED:**

5. **DATE OF LAST MEETING:**

6. **HOW MANY MEMBERS IN YOUR ORGANIZATION?**

8. **NAMES OF DELEGATES:** _____

9. **HAVE YOUR DELEGATES EVER VOTED ON THE CONFERENCE BOARD? YES __ NO
WHAT YEAR?**

9. **ENCLOSE ANY OTHER PERTINENT INFORMATION OR RECOMMENDATIONS
REGARDING PARTICIPATION ON THE PACIFIC HALIBUT CONFERENCE BOARD.**

Authorized Signature

Date of Application



Appendix V
Management Strategy Advisory Board (MSAB) – Terms of Reference and Rules of Procedure

I. Terms of reference

1. The Management Strategy Advisory Board (MSAB), on which individuals representing harvesters (commercial, sport, and subsistence), fisheries managers, processors, IPHC Secretariat, science advisors and other experts as required may be represented. The primary role of the MSAB is to oversee and advise the IPHC Secretariat on the Management Strategy Evaluation (MSE) process.
2. 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.

II. Representation

3. The MSAB will include the following interests (in alphabetical order): harvesters (commercial, sport, and subsistence), fisheries managers, processors, IPHC Staff, science advisors and other experts as required may be represented.
 - a) Harvesters: Commercial fisheries (6-8)
 - b) First Nations/Tribal fisheries (2-4)
 - c) Government agencies (incl. domestic management representatives and science advisors to each Contracting Party) (4-8)
 - d) Processors (2-4)
 - e) Recreational/Sport fisheries (2-4)

Efforts will be made to ensure representation is distributed from throughout IPHC Regulatory Areas.

4. The term of MSAB members will be four years, and members may serve additional terms at the discretion of the IPHC. Member terms have a staggered expiry such that no more than half of the member terms expire at a given time. Member continuity on the MSAB is key to the success of the MSE process. However, MSAB members serve at the discretion of the IPHC.

III. Officers

5. The MSAB will be co-chaired, one from the United States of America and one from Canada. Co-Chairpersons will be appointed by the MSAB.
6. The Co-Chairpersons will:
 - a) convene and adjourn meetings and preside over them, ensuring that meetings are conducted in an orderly, efficient, transparent, and respectful manner. ~~They may, with concurrence of~~

~~the MSAB, arrange for facilitation of the meetings by a third party, subject to sufficient financial resources from the IPHC;~~

- b) present the MSAB's decisions, recommendations, and advice to the Commission;
 - c) Promote interactive dialogue, and enable all perspectives to be heard within the constraints of the time available;
 - d) Support bringing issues to closure by ensuring that there is clarity on the topics being discussed, a summation of the collective advice of MSAB, and acknowledgement of any outstanding issues or concerns; and
 - e) Identify areas where there are conflicts and support processes through which those conflicts can be addressed.
7. The term of the Co-Chairpersons will be two years, and they may serve additional terms at the discretion of the MSAB.

IV. Sessions of the MSAB

- 8. **Time and Place:** The MSAB normally meets twice per year. The MSAB may meet more or less frequently as business requires.
- 9. **Agenda:** As per the Commission's Rules of Procedure.

V. Intersessional process and ad-hoc working groups

~~10. **Steering Committee:** The Steering Committee, consisting of appointed MSAB members and the Co Chairs, will develop draft agendas based on the advice of the MSAB and in alignment with the Commission's objectives.~~

- ~~a) At the direction of the MSAB, the Steering Committee may also undertake additional technical work in the form of an ad hoc working group.~~
- ~~b) Steering Committee members will be appointed by the MSAB.~~



~~e) — The term of Steering Committee membership will be two years, and they may serve additional terms at the discretion of the MSAB.~~

~~11.10.~~ **Ad-Hoc Working Groups:** If the MSAB determines it is necessary, the MSAB may convene ad-hoc working groups comprised of MSAB members and experts. Ad-hoc working groups will report only to the MSAB and serve at the discretion of the MSAB.

VI. Reports and Records

11. A report shall be adopted at the end of each Session of the MSAB.

12. The report shall embody the MSAB's recommendations, including, when requested, a statement of minority views.

13. A copy of the final report from each MSAB meeting shall be forwarded by the Executive Director to the Contracting Parties and to the Commissioners no later than 15 days after the close of the Session.

14. All reports shall be available on the Commission's website.

~~The Co-Chairpersons, or a delegate, will ensure that a concise meeting Report listing key points from discussions, decisions, recommendations, and action items are recorded from each MSAB meeting~~



Appendix VI

Processor Advisory Board (PAB) – Terms of Reference and Rules of Procedure

I. Terms of reference

1. The Processor Advisory Board (PAB) is ~~a subsidiary~~an advisory body of the International Pacific Halibut Commission (IPHC) that represents the commercial Pacific halibut processing industry from Canada and the United States of America. It advises the Commission on issues related to the management of the Pacific halibut resource in the Convention Area.
2. The PAB encourages stability and growth of the North American Pacific halibut industry by fostering a cooperative relationship, better understanding, and a spirit of mutual benefit among seafood processors, fishermen, the Commission, and all other stakeholders.

II. Representation

3. Any company or association, including sole-proprietorships, corporation, or partnerships whose direct business is purchasing, processing and selling Pacific ~~H~~halibut caught in Alaska, British Columbia, Washington, Oregon, or California is eligible for PAB membership.
4. Potential members shall present authorization from their company to represent that company in PAB deliberations. Such authorization will be presented to the general membership of the PAB at its annual meeting. If this authorization is not valid, the member will be removed from the PAB membership list.
5. PAB members agree to carefully and objectively consider all aspects of an issue.
6. PAB members serve without compensation from the Commission.
7. Membership is renewed each year, upon attending the PAB annual meeting.



8. The Halibut Association of North America (HANA) shall serve as the PAB's organizational, administrative, communications, and recruitment facilitator. ~~HANA is also responsible for creating and distributing the PAG's annual report.~~

III. Officers

9. The PAB's annual meeting shall be convened by the President of HANA for the purpose of nominating and electing the PAB Chairperson and Vice-Chairperson. Once nominations are made, the election is confirmed by a simple majority vote of PAB members present.
10. In years when the Commission's Annual Meeting is held in Canada, the PAB Chairperson shall be a Canada-based member and the Vice-Chairperson shall be a U.S.A.-based member. In years when the Commission meets in the U.S.A., the PAB Chairperson shall be a U.S.A.-based member and the Vice-Chairperson shall be a Canada-based member.
11. Officers' terms shall be for one year, or until a replacement is elected.

IV. Sessions of the PAB

12. **Time and place:** The PAB meets once a year over the course of a few days, in conjunction with the IPHC Annual Meeting. A quorum is established each year.
13. **Agenda:** The PAB's draft agenda will be presented by the Chairperson and approved by the membership at the beginning of the meeting. Members may suggest changes to the agenda prior to approval.
14. **Conduct of meetings:** Parliamentary procedure will be used in the conduct of the PAB meeting.
15. **Decision-making:** Only one vote per company member is allowed.
 - a) If a company has more than one representative in attendance, those representatives will choose from among them one individual to cast the company's single vote on any issue.

- b) Proxies are allowed only from members who have attended the last two sequential meetings of the PAB.
- c) Only one Proxy per member is allowed.
- d) Proxies will be submitted to a PAB member or the executive director of HANA prior to the PAB meeting in written or electronic form.
- e) If a Proxy is submitted to a PAB member, that member must submit the Proxy to the Executive Director of HANA. At the meeting, HANA's executive director will submit all Proxies to the chair~~person~~man of the PAB.
- f) A General Proxy will authorize a designated PAB member to vote on any or all topics brought before the PAB, on behalf of a PAB member who cannot attend. A Specific Proxy will authorize a PAB member to vote on specifically named topics (listed on the proxy itself) on behalf of the PAB member who cannot attend.

V. Intersessional process and ad-hoc working groups

- 16. ~~During the IPHC Annual Meeting, t~~The PAB may establish ad-hoc working groups to address issues or projects, or to represent the PAB's interests, ~~between the IPHC's Annual Meetings.~~ Completed documents and other work materials from the PAB working groups will be posted for public access on the IPHC website.
- 17. ~~The PAB may establish such ad hoc working groups it deems necessary.~~ Additional work group members outside of the PAB membership may be added as judged appropriate by the Chairperson.
- 18. ~~During the IPHC Annual Meeting, the PAB may establish ad hoc working groups to address issues or projects, or to represent the PAB's interests, between the IPHC's Annual Meetings. Completed documents and other work materials from the PAB workgroups will be posted for public access on the IPHC website.~~



~~19.18.~~ When determined by the PAB Chairperson and Vice-Chairperson as necessary, Special Sessions of the PAB may be called. These meetings shall be for a purpose requiring discussion or other action by a quorum of PAB members.

~~20.19.~~ A quorum is established by a majority of the PAB members who were present at the ~~most current~~ recent PAB ~~Annual m~~ Meeting. Minutes and other reports of the Special Meeting will be distributed to the Commission for posting on the IPHC website in a timely manner by the Executive Director of HANA or her designee.

~~21.20.~~ Attendance, discussion, voting, reportage, and all other aspects of the Special Meeting may be done electronically.

VI. Reports and records

~~21.~~ A report shall be adopted at the end of each Session of the PAB.

~~22.~~ The report shall embody the PAB's recommendations, including, when requested, a statement of minority views.

~~23.~~ A copy of the final report from each PAB meeting shall be forwarded by the Executive Director to the Contracting Parties and to the Commissioners no later than 15 days after the close of the Session.

~~24.~~ All reports shall be available on the Commission's website.

~~22.~~ The Chairperson, Vice Chairperson, or a designated PAB member shall be responsible for reporting the PAB advice and recommendations to the Commission. This Report shall focus on the full discussion of the issues, the results of any votes that were taken, and minority reports if there are any.

~~23.~~ Minutes of the PAB meetings may be taken by the Executive Director of HANA or his/her designee, with assistance as needed from PAB members.



~~24.25. The Completed PAB Reports or other documents prepared and discussed at PAB meetings will be presented to the Commission at the its annual meeting and made available to the public through the PAB's section on the IPHC website.~~

Appendix VII Research Advisory Board (RAB) – Terms of Reference and Rules of Procedure

I. Terms of reference

1. The Research Advisory Board (RAB) is composed of members of the Pacific halibut community that shall:
 - a. suggest research ideas,
 - b. review IPHC research proposals, and
 - c. provide the IPHC Secretariat staff (who participate in Sessions of the RAB as Observers) with direct input and advice from industry during the development of research plans.
2. The RAB may also make recommendations to the Scientific Review Board concerning research plans and priorities for its consideration.
- 1.3. The Executive Director shall ~~facilitate~~ Chair the RAB's meetings, as well as communication with the Commission and the other IPHC ~~advisory~~ subsidiary bodies on the RAB's behalf.

II. Representation

- 2.4. RAB members are Pacific halibut industry representatives from each Contracting Party and may include commercial, guided sport, unguided sport/recreational, subsistence, and First Nations/Tribal interests.
- 3.5. The RAB shall consist of ten to fifteen members.
- 4.6. New RAB members shall be nominated by current members, by other IPHC subsidiary bodies, or by the IPHC Secretariat staff. The nominees are reviewed and approved by the IPHC Secretariat staff. Nominees must be members of the Pacific halibut community with an expressed interest in scientific research. They must be available for meetings and willing

to participate in candid discussions about the IPHC research program. It is not necessary to achieve a particular regional or sector balance in the membership of the RAB.

5.7. The term for RAB membership is two years. There is no limit to how many terms a RAB member may serve.

6.8. RAB members serve without compensation from the Commission.

III. Officers

7.9. The IPHC Executive Director shall act as Chairperson of the RAB and the IPHC Biological and Ecosystem Sciences ~~Program Branch Manager~~Head shall act as the Vice-Chairperson of the RAB, unless the RAB decides otherwise.

IV. Sessions of the RAB

8.10. **Time and place:** The RAB shall meet once each year at the IPHC offices in Seattle. The RAB may also meet at other times and places, or via electronic means, to consider specific issues or to produce specific documents or other products.

9.11. **Agenda:** The agenda for the RAB meeting is proposed by the Commission's Executive Director and approved by the membership at the beginning of the meeting, in accordance with the Commission's rules of procedure. The agenda will include time for broad discussion of scientific issues between the RAB and the IPHC Secretariat ~~staff~~.

V. Intersessional process and ad-hoc working groups

10.12. The RAB may set up ad-hoc working groups to consider particular issues and report back to the RAB.

VI. Reports and Records

13. A report shall be adopted at the end of each Session of the RAB.

14. The report shall embody the RAB's recommendations, including, when requested, a statement of minority views.



15. A copy of the final report from each RAB meeting shall be forwarded by the Executive Director to the Contracting Parties and to the Commissioners no later than 15 days after the close of the Session.

16. All reports shall be available on the Commission's website.

~~11. The Executive Director shall present the RAB Report on its behalf.~~

~~The RAB Report includes decisions, recommendations, and advice, and describes both areas of consensus and differences.~~

Appendix VIII Scientific Review Board (SRB) – Terms of Reference and Rules of Procedure

I. Terms of reference

1. The Scientific Review Board^s (SRB) ~~shall main objective is to~~ provide an independent scientific peer review of Commission science/research products and proposals, programs, and products, including but not limited to:
 - a. ~~, and to support and strengthen the s~~Stock assessment;
 - b. ~~process~~Management Strategy Evaluation;
 - c. Migration;
 - d. Reproduction;
 - e. Growth;
 - f. Discard survival;
 - a.g. Genetics and Genomics;
2. Undertake periodic reviews of science/research strategy, progress, and overall performance.
3. Review the recommendations arising from the SRB shall review modeling and evaluation used by the Management Strategy Advisory BoardMSAB and the , and review research proposals from the Research Advisory BoardRAB 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.~~

II. Representation

- ~~3.4.~~ The SRB shall ~~initially~~ be comprised of ~~34~~-5 members of the scientific community. The members may be associated or unassociated with the Contracting Parties.
- ~~4.5.~~ The SRB may be expanded based on the technical review needs of the Commission and its activities.

~~5.6.~~ The term for SRB membership is two years. There is no limit to how many terms an SRB member may serve.

III. Officers

~~6.7.~~ The SRB shall elect a Chairperson and may ~~be supported~~ elect by a Vice-Chairperson at the SRB's discretion.

IV. Sessions of the SRB

~~7.8.~~ **Time and place:** The SRB shall meet twice each year at the IPHC offices in Seattle. The SRB may also meet at other times and places, or via electronic means, to consider specific issues or to produce specific documents or other products.

~~8.9.~~ **Agenda:** The agenda for the SRB meeting shall be proposed by the Commission's Executive Director, in accordance with the Commission's rules of procedure.

V. Intersessional process and ad-hoc working groups

~~9.10.~~ The SRB may set up ad-hoc working groups to consider particular issues and report back to the SRB.

VI. Reports and Records

11. A report shall be adopted at the end of each Session of the SRB.

12. The report shall embody the SRB's recommendations, including, when requested, a statement of minority views.

13. A copy of the final report from each SRB meeting shall be forwarded by the Executive Director to the Contracting Parties and to the Commissioners no later than 15 days after the close of the Session.

14. All reports shall be available on the Commission's website.

INTERNATIONAL PACIFIC



HALIBUT COMMISSION

~~The SRB Report includes decisions, recommendations, and advice, and describes both areas of consensus and differences.~~



IPHC Memorandum's of Understanding, and Agreements

PREPARED BY: IPHC SECRETARIAT (D. WILSON, 23 OCTOBER 2018)

PURPOSE

To provide the Commission with an opportunity to consider current MoUs and Agreements between the IPHC and other organisations.

BACKGROUND

At the 2018 session of the IPHC Work Meeting (WM2018), the Commission provided an informal directive to the IPHC Secretariat regarding Memorandum of Understandings, and Agreements with other organisations as follows:

- 1) The IPHC Secretariat is requested to provide a brief paper for the 94th Session of the IPHC Interim Meeting that details all current and expired MoUs/Agreements;
- 2) The IPHC Executive Director (or delegate) may sign MOUs or Agreements on behalf of the IPHC, as long as those arrangements are based on the sharing of information for scientific purposes.

DISCUSSION

In reviewing the range of MoUs and Agreements on file at the IPHC Secretariat, it became evident that there were a number that were outdated, expired, or invalid. Efforts will be made over the coming months to determine if MoUs and Agreements in these categories require renewal.

On 20 October 2018, the IPHC Secretariat published a webpage containing all current and previous MoUs and Agreements: <https://iphc.int/the-commission/cooperation-with-other-organisations>. At present there are only three (3) active MoUs and 1 Agreement.

RECOMMENDATION/S

That the Commission:

- a) **NOTE** paper IPHC-2018-IM094-20 which provided the Commission with an opportunity to consider current MoUs and Agreements between the IPHC and other organisations;
- b) **ENDORSE** the current practice whereby the Executive Director is the sole signatory of MoUs and Agreements with other organisations, as long as those arrangements are based on the sharing of information for scientific purposes.

APPENDICES

Nil



Preparation for the 95th Session of the IPHC Annual Meeting (2019)

PREPARED BY: IPHC SECRETARIAT (S. KEITH; 15 OCTOBER 2018)

PURPOSE

To provide the Commission with the opportunity to direct preparations for the 95th Session of the IPHC Annual Meeting (AM095), to take place in Victoria, British Columbia, Canada, from 28 January to 1 February 2019.

BACKGROUND

The IPHC will hold the 95th Session of its Annual Meeting (AM095) in Victoria, British Columbia, Canada, from 28 January to 1 February 2019. At the preceding Interim Meeting (IM094), the Commission customarily reviews the preparations for the Annual Meeting, noting in particular the draft agenda and schedule, and directs the IPHC Secretariat regarding any changes it desires.

DISCUSSION

The 95th Session of the IPHC Annual Meeting (AM095) will be held at the Fairmont Empress in Victoria, which has meeting rooms adequate to the needs of the meeting. The Commission has met a number of times before in this venue, most recently in 2013.

The provisional agenda and schedule for the meeting is available on the AM095 meeting page:

<https://iphc.int/venues/details/95th-session-of-the-iphc-annual-meeting-am095>

RECOMMENDATIONS

That the Commission:

- 1) **NOTE** paper IPHC-2018-IM094-21, which outlines the preparations for the 95th Session of the IPHC Annual Meeting (28 January to 1 February 2019).
- 2) **DIRECT** the IPHC Secretariat regarding improvements which the Commission would like to make to the agenda and schedule, as well as to any other meeting preparations, for the 95th Session of the IPHC Annual Meeting (28 January to 1 February 2019).

APPENDICES

NIL



IPHC meetings calendar (2019-21)

PREPARED BY: IPHC SECRETARIAT (S. KEITH, 15 OCTOBER 2018)

PURPOSE

To provide the Commission with an opportunity to consider the draft IPHC meetings calendar (2019-21) ([Appendix I](#)).

BACKGROUND

Commission: The Commission's annual cycle of meetings is built around the management needs of the Pacific halibut fishery. The IPHC Interim Meeting (IM) follows the completion of the commercial fishing period, and is timed to allow the IPHC Secretariat to incorporate data from that fishing period into the stock assessment and harvest advice for the coming season. The IPHC Annual Meeting (AM) is scheduled to allow harvest and regulation decisions to be made by the Commission and implemented by the Contracting Parties in time for the opening of the next commercial fishing period.

Subsidiary bodies: The Finance and Administration Committee (FAC), Conference Board (CB) and Processor Advisory Board (PAB) meet during the course of the AM. The Scientific Review Board (SRB) and Management Strategy Advisory Board (MSAB) each meet at least twice during the course of the year, in a sequence that supports both their mutual collaboration and the timing of their advice for the Commission. The Research Advisory Board (RAB) meets in late February, when its members are best able to convene and consider the IPHC's scientific program.

DISCUSSION

Meetings of the Commission and its subsidiary bodies are of interest to the Pacific halibut stakeholder community and the general public, and the publication of their schedule as far in advance as possible promotes enhanced meeting preparation and collaboration among stakeholders and partner agencies.

The draft calendar provided in [Appendix I](#) includes the dates and locations for meetings in 2019 and 2020. The following concerns regarding the 2020 calendar have arisen since AM094:

- Subsequent to AM094, the North Pacific Fishery Management Council (NPFMC) announced dates for its January and December 2020 meetings that conflict with the IPHC's dates for the 96th Annual Meeting (AM096) and the 96th Interim Meeting (IM096). The NPFMC staff has indicated that the agenda for its December meeting can be adjusted to deconflict with IM096, but they are unlikely to be able to adjust their January meeting.

Suggested course of action: Leave the IPHC meetings as currently planned.

- The Commission selected Sitka, Alaska, USA as the location for AM096. The Secretariat has determined that it may be feasible to hold the meeting there, if adjustments are made due to space restrictions. If the Commission elects to hold AM096 elsewhere than Sitka, that decision should be made not later than November 2018 in order to contract for the

necessary meeting venue and food outlets, noting that the majority of restaurants are closed during that winter period.

Suggested course of action: Consider alternative meeting locations: e.g. Anchorage, Juneau, or Seattle. If the meeting is moved away from Sitka, we'd suggest holding the next MSAB meeting in Sitka, in May 2019.

SRB meetings in 2019: The SRB has also suggested a desire to swap its second meeting of the year, with that of the MSAB, in an attempt to provide greater opportunities for peer review of the assessment. This will be further considered prior to the AM095.

Dates for meetings in 2021 are proposed for the Commission's consideration. Note that the location for the 97th Annual Meeting (AM097) in 2021 must be selected in early 2019 in order to plan for the meeting and contract for the necessary meeting venue.

The draft calendar provided in [Appendix I](#) will be revised as directed by the Commission at IM094 and presented for consideration and approval at AM095.

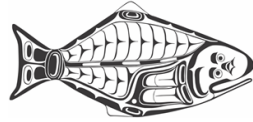
RECOMMENDATIONS

That the Commission:

- 1) **NOTE** paper IPHC-2018-IM094-22, which provides the Commission with an opportunity to consider the IPHC meetings calendar (2019-21).
- 2) **DIRECT** the IPHC Secretariat regarding any specific changes to dates or locations for particular meetings, in order to allow time for adequate planning and preparation.
- 3) **DIRECT** the IPHC Secretariat regarding any other changes to the draft calendar, with a view toward approving it at the 95th Annual Meeting (AM095) in 2019.

APPENDICES

[Appendix I](#): DRAFT: IPHC meetings calendar (2019-21)



APPENDIX I
DRAFT: IPHC meetings calendar (2019-21)

Meeting	2019			2020			2021		
	No.	Date	Location	No.	Date	Location	No.	Proposed Dates	Location
Finance and Administration Committee (FAC)	95 th	28 Jan	Victoria, Canada	96 th	27 Jan	TBD, USA	97 th	25 Jan	TBD, Canada
Annual Meeting (AM)	95th	28 Jan-1 Feb	Victoria, Canada	96th	27-31 Jan	TBD, USA	97th	25-29 Jan	TBD, Canada
Conference Board (CB)	89 th	29-30 Jan	Victoria, Canada	90 th	28-29 Jan	TBD, USA	91 st	26-27 Jan	TBD, Canada
Processor Advisory Board (PAB)	24 th	29-30 Jan	Victoria, Canada	25 th	28-29 Jan	TBD, USA	26 th	26-27 Jan	TBD, Canada
Research Advisory Board (RAB)	20 th	27 Feb	Seattle, USA	21 st	26 Feb	Seattle, USA	22 nd	24 Feb	Seattle, USA
Management Strategy Advisory Board (MSAB)	13 th	6-9 May	Seattle, USA	15 th	11-14 May	Seattle, USA	17 th	10-13 May	Seattle, USA
	14 th	21-24 Oct	Seattle, USA	16 th	19-22 Oct	Seattle, USA	18 th	18-21 Oct	Seattle, USA
Scientific Review Board (SRB)	14 th	25-27 June	Seattle, USA	16 th	23-25 June	Seattle, USA	18 th	22-24 June	Seattle, USA
	15 th	24-26 Sept	Seattle, USA	17 th	22-24 Sept	Seattle, USA	19 th	21-23 Sept	Seattle, USA
Work Meeting (WM)	--	18-19 Sept	Bellingham, USA	--	16-17 Sept	Bellingham, USA	--	15-16 Sept	Bellingham, USA
Interim Meeting (IM)	95th	25-26 Nov	Seattle, USA	96th	1-2 Dec	Seattle, USA	97th	30 Nov-1 Dec	Seattle, USA

NMFS Report
IPHC Interim Meeting
November 2018

REPORT ON THE 2018 PACIFIC HALIBUT FISHERIES IN AREA 2A (10/30/2018)

The 2018 Area 2A Pacific halibut (halibut) total allowable catch (TAC) of 1,190,000 pounds was allocated according to the 2018 Catch Sharing Plan (CSP) for Area 2A as follows:

Treaty Tribes	416,500 (35%)
Non-Tribal Total	773,500 (65%)
Non-Tribal Commercial	237,465
Washington Sport	225,366
Oregon Sport	229,730
California Sport	30,940

All catch estimates in this report are preliminary, as some fisheries are ongoing and others have not had final data reconciliation. All weights in this report are net weight (gutted, head-off, and without ice and slime), unless otherwise noted. The structure of each fishery and the resulting harvests are described below.

TOTAL TRIBAL AND NON-TRIBAL FISHERIES

Best estimates of halibut catch for Area 2A indicate harvest of 756,035 pounds of the non-tribal total quota and 403,754 pounds of the tribal quota, with a total preliminary harvest estimate of 1,159,789 pounds, or 97.5%, of the 1,190,000 pound TAC. A summary of all Area 2A quotas and preliminary harvest estimates for 2018 is attached in Table 2 on the last page of this document.

NON-TRIBAL COMMERCIAL FISHERIES

A quota of 237,465 pounds (30.7% of the non-tribal share) was allocated to two fishery components: p

- 1) a directed longline fishery targeting halibut south of Point Chehalis, WA; and
- 2) an incidental catch fishery during the salmon troll fisheries off Washington, Oregon, and California.

An additional 50,000 pounds were allocated to an incidental catch fishery in the sablefish primary fishery for vessels using longline gear north of Point Chehalis, WA. This allowance for the sablefish primary fishery is taken from the portion of the Washington sport allocation that is above 214,110 pounds, as long as the amount is at least 10,000 pounds.

Incidental halibut catch in the salmon troll fishery

A quota of 35,620 pounds of Pacific halibut (15% of the non-tribal commercial fishery allocation) was allocated to the non-tribal commercial salmon troll fishery in Area 2A as incidental catch during salmon troll fisheries.

- Halibut retention was permitted in the salmon troll fisheries beginning May 1, with the following ratio: one halibut (minimum 32 inches) per two Chinook salmon landed by a salmon troller, except that one halibut could be landed without meeting the ratio requirement, and no more than 25 halibut could be landed per trip.
- The fishery remained open with the same landing ratio until closure on July 14. On July 26, the fishery reopened with revised landing limits. The ratio changed to one Pacific halibut per three Chinook salmon, except one Pacific halibut may be possessed or landed without meeting the ratio requirement, and no more than 10 halibut may be possessed or landed per trip.
- The fishery closed August 8, and is estimated to have taken 34,903 pounds.

Fishing with salmon troll gear is prohibited within the Salmon Troll Yelloweye Rockfish Conservation Area (YRCA) off the northern Washington coast. Additionally, the "C-shaped" North Coast Recreational YRCA off Washington is designated as an area to be avoided (a voluntary closure) by salmon trollers.

Directed fishery targeting halibut

A quota of 201,845 pounds (85% of the non-tribal commercial fishery allocation) was allocated to the directed longline fishery targeting halibut in southern Washington, Oregon, and California. The fishery was confined to the area south of Subarea 2A-1 (south of Point Chehalis, WA; 46°53.30' N. lat.). In addition, there are closed areas along the coast defined by depth contours. Between the U.S./Canada border and 40°10' N. lat. the western boundary is defined by a line approximating the 100 fm depth contour. The eastern boundary is defined as follows: Between the U.S./Canada border and 46°16' N. lat., the boundary is the shoreline. Between 46°16' N. lat. and 40°10' N. lat. the boundary is the 30 fm depth contour. One-day fishing periods of 10 hours in duration were scheduled every other week by the IPHC starting June 27. In 2018, the fishery was open for 3 fishing periods on June 27, July 11, and July 25. A 32 inch minimum size limit with the head on was in effect for all openings. Vessel landing limits per fishing period based on vessel length were imposed by IPHC during all openings as shown in Table 1. Vessels choosing to operate in this fishery could not land halibut as incidental catch in the salmon troll fishery, nor operate in the recreational fishery.

Table 1. 2018 fishing period limits (dressed weight, head-on with ice and slime, in pounds per vessel) by vessel size.

Vessel Class/Size (ft)		June 27 and July 11	July 25
0-25	A	860	380
26-30	B	1,075	475
31-35	C	1,715	760
36-40	D	4,735	2,100
41-45	E	5,090	2,260
46-50	F	6,095	2,710
51-55	G	6,800	3,025
56+	H	10,225	4,545

- The June 28, July 12 and 25 directed commercial open periods resulted in a catch of approximately 217,825 pounds. IPHC announced closure of the directed fishery on July 31, 2018. Final catch amounts will be available in 2019.

Incidental halibut catch in the sablefish primary longline fishery north of Point Chehalis, WA

A quota of 50,000 pounds was allocated to the primary sablefish fishery in Area 2A as incidental catch north of Point Chehalis, WA. This incidental fishery is only available to vessels with a groundfish limited entry permit endorsed for longline gear with a sablefish tier limit and with an IPHC license. Beginning April 1, the incidental landing limit was 140 pounds (dressed weight) of halibut per 1,000 pounds (dressed weight) of sablefish and up to 2 additional halibut in excess of the landing limit ratio. Effective April 13, the landing limit was changed to 160 pounds (64 kg) dressed weight of halibut for every 1,000 pounds (454 kg) dressed weight of sablefish landed and up to 2 additional halibut in excess of the 160 pounds per 1,000 pounds ratio per landing. Effective October 9 through the end of the fishery on October 31, the landing limit was revised to 200 pounds dressed weight of halibut for every 1,000 lb dressed weight of sablefish landed and up to 2 additional halibut in excess of the 200 lb per 1,000 lb ratio per landing.

The fishery was confined to an area seaward of a boundary line approximating the 100-fm depth contour. Fishing was also prohibited in the North Coast Commercial YRCA, an area off the northern Washington coast. In addition, the "C-shaped" North Coast Recreational YRCA off Washington is designated as an area to be avoided (a voluntary closure) by commercial longline sablefish fishermen.

- Through October 26, this fishery is projected to have landed 40,256 pounds, with 9,744 pounds remaining. The fishery closes October 31.

SPORT FISHERIES (NON-TRIBAL)

486,036 pounds were allocated between sport fisheries in Washington (35.6% of non-tribal share, minus 50,000 pounds allocated to the incidental catch in the sablefish primary fishery), Oregon (29.7% of the non-tribal share), and California (4.0% of the non-tribal share). The allocations were further subdivided as quotas among six geographic subareas as described below.

Unless otherwise noted the daily bag limit in all subareas was one halibut of any size, per person, per day.

Washington Inside Waters Subarea (Puget Sound and Strait of Juan de Fuca)

This area was allocated 60,995 pounds (23.5% of the first 130,845 pounds allocated to the Washington sport fishery, and 32% of the Washington sport allocation between 130,845 and 224,110 pounds). The fishing season in Puget Sound was open May 11, 13, 25, 27, and June 7, 9, 16, 21, 23, and 30. The fishery closed without enough quota to reopen after June 30.

- The estimated total catch in this area is 42,093 pounds, which is 18,902 pounds under the quota.

Northern Washington Coastal Waters Subarea (landings in Neah Bay and La Push)

The coastal area off Cape Flattery to Queets River was allocated 111,632 pounds (62.2% of the first 130,845 pounds allocated to the Washington sport fishery, and 32% of the Washington sport allocation between 130,945 and 224,110 pounds). The fishery was open for 10 days (May 11, 13, 25, 27, and June 7, 9, 16, 21, 23, and 30). The "C-shaped" North Coast Recreational YRCA, southwest of Cape Flattery, was closed to sport halibut fishing.

- The estimated total catch for this area is 110,929 pounds, which is 703 pounds under the quota.

Washington South Coast Subarea (landings in Westport)

The area from the Queets River to Leadbetter Point was allocated 46,341 pounds (12.3% of the first 130,845 pounds allocated to the Washington sport fishery and 32% of the Washington sport allocation between 130,845 and 224,110 pounds). This subarea operates with an all-depth fishery and a nearshore fishery. The nearshore fishery occurred in waters between the Queets River and 47°25.00' N. lat. south to 46°58.00' N. lat., and east of 124°30.00' W. long. The south coast subarea quota was allocated as follows: 2,000 pounds to the nearshore fishery and the remaining 44,341 pounds to the primary fishery. The all-depth fishery was open five days on May 11, 13, 25, 27, and June 21. The nearshore fishery was open June 2-6.

- The all-depth fishery estimated catch is 54,149 pounds which is 9,808 pounds over the quota.
- The nearshore fishery estimated catch is 614 pounds.

Columbia River Subarea (Leadbetter Point to Cape Falcon)

This sport fishery subarea was allocated 11,682 pounds, consisting of 2.0% of the first 130,845 pounds allocated to the Washington sport fishery, and 4.0% of the Washington sport allocation between 130,845 and 224,110 pounds, and 2.3% of the Oregon sport allocation. The fishery operates with an all-depth and nearshore fishery. The nearshore fishery is allocated 500 pounds to accommodate incidental halibut retention during groundfish fishing when the all depth halibut fishery in this area is closed.

- The all-depth fishery was open May 3, 4, 6, 10, and 11. It reopened on June 21 for one day. The nearshore fishery opened May 7 Monday –Wednesday, and opened seven days per week effective May 24.

- 717 pounds were transferred from the all-depth fishery when it closed May 11. There was enough quota to open all Washington fisheries, including the Columbia River all-depth, for an additional day on June 21. The nearshore fishery closed June 20, with remaining quota used on the June 21 opener.
- The all-depth fishery estimated catch is 15,661 pounds which is 4,479 pounds over the subarea quota.

Oregon Central Coast Subarea (Cape Falcon to Humbug Mountain)

This sport fishery subarea was allocated 215,464 pounds (93.79% of the Oregon sport allocation).

Three seasons occurred in this subarea:

1. a restricted depth nearshore (inside 40-fathom) fishery, opened June 1, seven days a week;
2. a fixed Spring season in all depths that was open on May 10-12, 24-26, June 7-9, 21-23, and July 6-7;
3. a Summer season in all depths that was open August 3-4, 17-18, and August 31-September 1.

Harvest in this subarea in these seasons is summarized in the bullets below.

- The Spring all-depth fishery resulted in an estimated catch of 127,774 pounds, which is 7,968 pounds under the spring allocation.
- The Summer all-depth fishery resulted in an estimated catch of 51,186 pounds, which is 2,680 pounds under the summer allocation.
- The remaining spring and summer all-depth fishery quota were transferred to the nearshore fishery.
- The inside 40-fathom fishery has an estimated catch of 24,961 pounds, as of October 26, which is 11,541 pounds under the adjusted quota of 36,502 pounds. This fishery is ongoing and catch is still accruing.

Southern Oregon (Humbug Mountain to the OR/CA Border)

This sport fishery was allocated 8,982 pounds (3.9% of the Oregon sport fishery allocation minus the Oregon contribution to the Columbia River subarea). This area has a pre-set season of 7 days per week from May 1 to October 31.

- This fishery has estimated catch of 6,042 pounds, as of October 26, which is 2,940 pounds under the quota. This fishery is ongoing and catch is still accruing.

California (Off the California Coast)

This sport fishery was allocated 30,940 pounds (4.0% of the non-tribal share). The fishery was open May 1- June 15, and July 1-15, August 1-15 and September 1-21.

- This fishery resulted in an estimated catch of 29,469 pounds.

TRIBAL FISHERIES

416,500 pounds (35% of the Area 2A TAC) was allocated to tribal fisheries. The tribes estimated that 27,000 pounds would be used for ceremonial and subsistence (C&S) fisheries and the remaining 389,500 pounds were allocated to the commercial fishery.

- The unrestricted fishery was open 36 hours for each tribe between March 24 and April 28. The unrestricted fishery landed 153,446 pounds.
- The restricted fishery was open 37 hours for each tribe between March 24 and April 28, with a 500 pound/vessel/day limit. The restricted fishery landed 37,043 pounds.
- The late fishery was open for 30 hours May 4 through 23, without limits. This fishery landed 213,265 pounds.
- The total landings for all tribal fisheries is 403,754 pounds, which is 14,254 pounds over the tribal commercial allocation. The C&S fishery will continue through December 31 and tribal estimates of catch will be reported by the tribes in January 2019.

Table 2. Summary of all Area 2A quotas and preliminary 2018 harvest estimates, updated with fishery information reported to NMFS through 10/29/2018.

2018 Area 2A TAC and Catch (in pounds)			2018 Quota	Inseason Revised Quota	Catch as of 10/29/18	% Quota taken
Tribal			416,500		403,754	96.9
Tribal	C&S		27,000		-	0.0
Tribal	Comm		389,500		403,754 *	103.7
Non-Tribal			773,500		756,035	97.7
Commercial			237,465		252,728	106.4
Commercial	Directed		201,845		217,825 *	107.9
Commercial	Incid. Salmon Troll		35,620		34,903 *	98.0
WA Sport			275,366		248,041	90.1
WA Sport	Incid. Sable		50,000		40,256	80.5
WA Sport	Puget Sound		60,995		42,093 *	69.0
WA Sport	North Coast		111,632		110,929 *	99.4
WA Sport	South Coast	Primary	44,341		54,149 *	122.1
WA Sport	South Coast	Nearshore	2,000		614 *	30.7
WA/OR	Columbia River	All-Depth	11,182		15,661 *	140.1
WA/OR	Columbia River	Nearshore	500		173 *	34.6
OR Sport			229,730		209,963	91.4
OR Sport	Central OR Coast	Spring all-depth	135,742		127,774 *	94.1
OR Sport	Central OR Coast	Summer all-depth	53,866		51,186 *	95.0
OR Sport	Central OR Coast	Nearshore	25,856	36,502	24,961	68.4
OR Sport	Southern OR		8,982		6,042	67.3
CA Sport			30,940		29,469 *	95.2
Total			1,190,000		1,159,789	97.5
* Fishery closed for the season						



North Pacific Fishery Management Council

Simon Kinneen, Chair | David Witherell, Executive Director
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MEMORANDUM

TO: IPHC Commissioners

FROM: David Witherell, Executive Director

DATE: October 16, 2018

RE: Update on Management Actions.

Groundfish Fishery Actions

Halibut Abundance-based PSC Management

In October, the Council reviewed a preliminary analysis for a draft EIS/RIR of alternatives for abundance-based management (ABM) of BSAI halibut prohibited species catch (PSC) limits. The analysis centered primarily around a detailed description of the Council's alternatives, elements and options, and a historical analysis of the application of candidate PSC limits from within the alternative set, to show the behavior of control rule features relative to estimated PSC limits. A narrative description was also included of how the three directly regulated BSAI groundfish sectors approach their fishing year in the context of the various constraints they face, including but not limited to halibut PSC limits. This section was included to provide the context necessary to understand interactions between fisheries, and the factors that drive the decisions made during the year by fleet managers and vessel operators in the Amendment 80 sector, the trawl limited access sector, and the hook-and-line catcher-processor sector. The Council made a number of changes to the alternative set based upon the preliminary analysis, staff workgroup recommendations, SSC comments, and stakeholder and Advisory Panel input. The current suite of alternatives are the following:

- Alternative 1: No action
- Alternative 2: Single index used to set trawl and/or non-trawl halibut PSC limit.
 - Option 1: NMFS EBS bottom trawl survey index.
 - Option 2: IPHC Area 4 setline survey index.
- Alternative 3: Primary and secondary indices are used to set trawl and/or non-trawl PSC limit.
 - Option 1: Primary index is EBS trawl survey, secondary index is Area 4 setline survey.
 - Option 2: Primary index is Area 4 setline survey, secondary index is EBS trawl survey.
- Alternative 4: Use two indices (EBS trawl survey and Area 4 setline survey) to set the non-trawl PSC limit in the form of a look-up table.

A range of elements and options are contained within each of the alternatives. Further detail on these are provided in the Council's [motion](#) as well as direction to analysts on standardization of the indices under the different alternatives, and apportionment of PSC limits to sectors.

The Council also moved to form a stakeholder committee that will provide recommendations for the ABM scenarios to be analyzed in the draft EIS/RIR. The Committee will also provide recommendations

on measurable objectives and associated performance metrics to be considered by analysts in evaluating trade-offs among alternatives. This committee will meet to draft these scenarios prior to the February Council meeting with an update on the initial committee meeting provided to the Council in December. The committee is intended to include a range of interested stakeholders from both the directed BSAI groundfish and directed Area 4 halibut fisheries. Final action is tentatively scheduled for October 2019.

Halibut Deck Sorting

In October, the Council received an update from representatives of the Alaska Seafood Cooperative concerning the ongoing halibut deck sorting Exempted Fishing Permit (EFP) research, which is testing handling methods or reducing halibut mortality in non-pollock groundfish fisheries. The research is intended to explore implementation issues that will be applied in the proposed regulatory amendment to implement voluntary halibut deck sorting on trawl catcher processors when operating in non-pollock groundfish fisheries off Alaska, which is currently under internal development at NMFS. The analysis and proposed rule for the regulatory amendment is anticipated during the spring of 2019.

In addition to reporting on halibut mortality encountered during the EFP, the presentation compared deck sorting performance with previous years, and reported on operational changes introduced in 2018. Additionally, the Alaska Seafood Cooperative has field tested an electronic length measuring board this year, which has potential to speed up data collections, reduce data entry errors, and reduce observer workload relative to current manual data entry methods. Additional work and more trials of the electronic board and chute cameras are planned for 2019.

Research Priorities

The Magnuson-Stevens Act requires Regional Fishery Management Councils to regularly inform the Secretary of Commerce of their five-year research priorities. The North Pacific Council maintains an extensive list of research needs and interests that is developed through review by the Council's Plan Teams and Scientific and Statistical Committee (SSC), which include representatives of the IPHC. Each June, the Council provides final approval of these research priorities and submits them to NOAA Fisheries, and numerous research and academic institutions, including universities, the IPHC, and entities such as the North Pacific Research Board.

Following the June 2017 review, the Council expressed a desire to streamline its annual review process, and so, this year, the Council's Plan Teams identified a small number of projects to raise for consideration in developing a "top ten" list of research needs. The SSC reviewed and proposed a final "top ten" list, which the Council subsequently reviewed and endorsed in June 2018. In identifying its top ten research priorities, the Council emphasized the importance of research categorized as "critical ongoing monitoring" so that the "top ten" do not overshadow those projects, which are required in order for the Council to fulfill its mission.

Among the Council's top ten research priorities, two projects apply directly to halibut management issues. These include research topic #182 "Evaluate current and alternative Council PSC/bycatch reduction initiatives", and #491 "Assess dependence and impacts of halibut management actions on communities". These two projects are among at least 14 other Council research initiatives related to halibut management that can be found on the Council's dedicated Research Priorities website (<https://research.psmfc.org/>). The full research priority list includes two new priorities: #691 "Develop comparable measures of net value, total value, and economic impacts for the Area 2C and 3A charter and commercial halibut fisheries." and #692 "Conduct ethnographic research and collect information on the indirect effects of the Area 2C and 3A charter and commercial halibut fishing."

Discard Mortality Rates

Halibut discard mortality rates (DMRs) for in-season management of GOA/BSAI groundfish fisheries in 2019 were recommended by the Council at its October 2018 meeting and are provided in the tables below. Starting in 2016, DMRs have been applied to fisheries defined by operational characteristics causatively linked to halibut mortality rather than being defined by species composition as had been done previously. Additionally, DMRS are based on a shortened reference period (2-3 years instead of 10 years) for consistency with the statistical design of the observer sampling program and to better incentivize improvement in halibut handling practices. As in past years, the estimation process uses weighted averages of halibut mortality (condition data) to expand estimated DMRs from the sample to the haul, trip, and fishery following the sampling hierarchy.

Halibut DMR estimates also come from BSAI CP trawl vessels that participate in the halibut deck-sorting EFP. These DMRs are significantly lower than those for comparable vessels not participating in the EFP, but deck-sorting DMRs only apply to hauls when deck-sorting occurred. For longline fisheries, the EM program could be used in DMR management in the future following the completion of basis studies on “release method” currently being conducted by the IPHC.

Proposed 2019 and 2020 Halibut Discard Mortality Rates for Vessels Fishing in the **GOA**.

Gear	Sector	Groundfish fishery	Halibut discard mortality rate (percent)
Pelagic trawl	Catcher vessel	All	100
	Catcher/processor	All	100
Non-pelagic trawl	Catcher vessel	Rockfish Program	49
	Catcher vessel	All others	67
	Mothership and catcher/processor	All	79
Hook-and-line	Catcher/processor	All	11
	Catcher vessel	All	21
Pot	Catcher vessel and catcher/processor	All	4

Proposed 2019 and 2020 Halibut Discard Mortality Rates for Vessels Fishing in the **BSAI**.

Gear	Sector	Halibut discard mortality rate (percent)
Pelagic trawl	All	100
Non-pelagic trawl	Mothership and catcher/processor	78
Non-pelagic trawl	Catcher vessel	59
Hook-and-line	Catcher vessel	4
Hook-and-line	Catcher/processor	8
Pot	All	19

Charter Halibut Fishery Actions

Charter Halibut Permit (CHP) Renewal

In April, the Council took final action on an issue that would create an annual renewal process for charter halibut permits (CHPs) in IPHC Regulatory Areas 2C and 3A. This application process would require CHP holders (including Community Quota Entities and U.S. Military Morale, Welfare, and Recreation groups) to submit CHP number, CHP holder name, address, phone number and/or email address, as well as any updates to the CHP ownership structure. The application would also include a question asking whether financial compensation was received from use of a CHP in the preceding year.

The intent of this renewal process is to provide more complete and useful information to evaluate whether changes to the CHP Program are necessary as a result of changes in ownership and participation of CHPs, to facilitate retirement of non-transferable permits when ownership changes, and improve the ability of enforcement agents to ensure valid permits are being used. The CHP renewal application will not be required until the action is approved by the Secretary of Commerce, and the appropriate capacity for collecting this type of information has been implemented.

Mixing of Guided and Unguided Halibut

The Council initiated an action to limit the simultaneous possession of guided halibut with unguided halibut in IPHC Areas 2C and 3A in the Gulf of Alaska (GOA). Different regulations apply to guided and unguided (i.e., charter and non-charter) halibut fishing trips, which presents difficulties for accountability and enforcement. At the April 2018 meeting, the Council selected a modified Alternative 3 as its preferred alternative. Under Alternative 3, if guided and unguided halibut are onboard the fishing vessel at the same time, the stricter IPHC annual management measures for guided sport fishing would apply to all halibut anglers on board the fishing vessel.

In April Council selected Alternative 3 because it provides some flexibility for charter operations to mitigate impacts of stricter guided restrictions, while also to improving accountability and enforcement by providing regulations that are clear and concise. When both guided and unguided halibut is onboard, vessels must comply with guided sport fishing regulations for bag and possession limits, size restrictions, and carcass retention requirements. The Council did not, however, require compliance with three other regulatory requirements that apply to guided anglers: day-of-the-week closures, recording harvest in a saltwater logbook, and annual limits. The Council did not include these additional regulations for unguided anglers because of their implementation difficulties, enforcement challenges, and the potential for financial harm to multi-day fishing vessels.

Unguided Halibut Rental Boats

In October, the Council reviewed a discussion paper to explore mechanisms to create a registry for motorized rental boats that are used by unguided anglers to harvest halibut in IPHC regulatory areas 2C and 3A, and initiated an analysis. The Council requested the discussion paper in December 2017, and stated that they were concerned that differences in harvest regulations between guided and unguided sport anglers, and the apparent growth of the rental boat segment of the unguided sector may negatively impact other halibut fishing sectors. The discussion paper provided an overview of existing vessel registration programs, examined patterns in halibut harvest in the unguided, guided, and commercial sectors in recent years, and addressed questions posed by the Council. After review, the Council passed a motion initiating an analysis of alternatives to require registration for non-guided rental vessels in IPHC areas 2C and 3A, and align bag limits between charter anglers and anglers on non-guided rental vessels by applying the charter angler daily bag limit and size limit to recreational anglers.

Commercial Halibut Fishery Actions

Halibut Retention in BSAI Pot Gear

In October, the Council took final action on an issue that would allow retention of legal-size halibut in pot gear in the Bering Sea and Aleutian Islands (BSAI), provided the operator holds sufficient halibut IFQ or CDQ for the corresponding regulatory area. The purpose of this action is to allow for more efficient harvest of the halibut resource by decreasing wastage of legal-size halibut discarded in the BSAI sablefish pot fishery and to allow for the possibility of reduced whale depredation of halibut off of hook-and-line gear.

This action includes the following elements: 1) an exemption to the 9-inch maximum width of the tunnel opening on pots, 2) VMS and logbook requirements for all vessels using pot gear to fish IFQ/CDQ, and 3) in the event that the overfishing limit for a shellfish or groundfish species is approached, regulations would allow NMFS to close IFQ fishing for halibut as necessary. Additionally, the Pribilof Islands Habitat Conservation Zone would be closed to all fishing with pot gear. To the extent practicable, the Council has recommended that halibut fishermen in the BSAI interested in using pot gear under this action consult with crab fishery participants on appropriate crab escape mechanisms to minimize crab bycatch. Until the action is approved by the Secretary of Commerce and implemented by NMFS, retention of halibut in pots in the BSAI is not permitted. The Council plans to review the effects of allowing retention of halibut in pot gear three years after implementation.

The IPHC has already taken complementary action amending its 2018 regulations to allow for the retention, as well as the possession, of halibut taken with longline or single pot gear if such retention is authorized by NMFS regulations published at 50 CFR Part 679. This broad action taken by the IPHC means that when Federal regulations are changed, no changes to IPHC regulations will be necessary for halibut harvesters to use pot gear.

IFQ Medical and Beneficiary Transfers

In October, after reviewing the initial draft analysis of the medical transfer and beneficiary lease provisions, the Council approved a preliminary preferred alternative for each issue and added an option to the medical transfer provision. Preliminary preferred alternatives selected for the medical transfer provision would replace the current definition of a certified medical professional with a broader term, "health care provider". This approach is used by the Pacific Council for medical leases in their limited entry fixed gear sablefish primary fishery. A health care provider would be defined as an individual authorized to provide health care services in the State where he or she practices and preforms within the scope of their specialty. Health care providers outside the U.S. that are licensed to practice medicine are included in the definition.

The Council's preliminary preferred alternative defining the use of the medical transfer provision would revise federal regulations to allow the medical transfer provision to be used for any medical reason. This would modify the regulations that currently state that the medical transfer provision may be used in 2 of the 5 most recent years for the same medical condition. That change is more restrictive since it would not allow an individual to use the medical transfer provision repeatedly by having a medical professional attest to different medical conditions on the medical transfer form. The Council did not select a preliminary preferred alternative for the number of years the medical transfer could be used during a defined number of years. It is still considering 2 of 5 years and 3 of 7 years as the number of time the provision could be used. The Council did not include a lifetime limit on the number of years an individual could use the medical transfer provision as part of their preliminary preferred alternative.

An option (Alternative 2, Option 3) was added to the analysis that allows for additional use of the medical transfer provision, but would place limits on the amount of IFQ that could be leased some years. The option allows a QS holder to lease their IFQ up to 4 times during a 7-year period, but the third and fourth time the lease is used, during the 7-year period, only 80% and 60% of the IFQ issued to the QS holder could be transferred, respectively.

The Council's preliminary preferred alternative for the beneficiary transfer provision would include "estate" when referencing surviving spouse and immediate family member at 50 CFR 679.41(k). The Council's motion also identified the U.S. Office of Personnel Management definition of "immediate family member" as its preliminary preferred alternative to define that term.

IFQ CQE Fish Up in Area 3A

In October, the Council reviewed a discussion paper on whether to allow Community Quota Entities (CQEs) in Area 3A to fish D-class halibut IFQ on C-class vessels. Current regulations that restrict CQE ability to fish "D" class quota on "C" class vessels have, in some circumstances, limited the CQE community's access to fish CQE halibut, particularly in Area 3A. The discussion paper provided an overview of current vessel size restrictions for CQEs across regulatory areas, the original intent of D-class quota shares under the IFQ and CQE programs, CQE participation in Area 3A, and an initial look at potential impacts of the proposed action. After reviewing the document and hearing public testimony, the Council developed a Purpose and Need Statement and alternatives to be analyzed for initial review (available on the Council's website under Agenda Item D1). The alternatives include options to allow CQE communities to fish "D" class quota on "C" class vessels only after specified dates, as well as options to limit the number of years CQEs could participate in this opportunity. The action is intended as a fallback mechanism for CQEs that have unfished D-class quota late in the season to potentially avoid revenue loss, furthering the Council's intent of encouraging CQE communities to secure long-term opportunities to access halibut.

Status of analytical projects related to the Halibut & Sablefish IFQ Program

Updated October 15, 2018

Name	Description
Recent Final Action	
Halibut retention in BSAI pots	<p>The Council took final action to allow retention of legal-size halibut in pot gear in the Bering Sea and Aleutian Islands (BSAI), provided the operator holds sufficient halibut IFQ or CDQ in the corresponding regulatory area. This action would allow halibut quota holders use pot gear in order to both minimize whale depredation on hook-and-line gear, as well as limiting wastage of halibut required to be discarded in the sablefish pot fishery. The Council's preferred alternative includes an exemption to the maximum 9-inch tunnel opening for those who hold halibut quota, PIHCZ closure for pot gear, authority for NMFS in-season management to close IFQ fishing if a groundfish or crab OFL is approached, monitoring requirements (e.g. logbooks and VMS), and an intent to track participation, crab bycatch, gear specifications and design, potential gear conflicts, and other aspects of the emerging fishery in a 3-yr review.</p> <p>Staff will produce a Secretarial Review Draft document and the action will move into the proposed rule-making stage.</p>

Name	Description	Status / Due Date / Target Date
Projects in Council Review <i>(Council has tasked staff and scheduled review at a future meeting)</i>		
IFQ Medical Lease and Beneficiary Transfer Provisions	<p>In October 2018, the Council identified a preliminary preferred alternative to broaden the definition of medical providers who can certify a medical IFQ transfer. The preliminary preferred alternative would also change the regulatory language to limit the number of years a medical transfer may be used from 2 of 5 years for the same medical condition to 2 of 5 years or 3 of 7 years for any medical condition. The Council is also considering allowing a QS holder to transfer up to 80% and 60% of their IFQ when utilizing the third and fourth transfers, respectively, over a 7-year period. This action may also establish a maximum number of times (years) an individual QS holder may utilize the medical transfer provision over the course of their lifetime, but this option was not selected as part of the preferred alternative.</p> <p>In addition, the Council's preliminary preferred alternative for the beneficiary transfer provision would include "estate" when referencing surviving spouse and immediate family member in regulations, as well as adopting the U.S. Office of Personnel Management's definition of "immediate family member" as its preliminary preferred alternative to define that term.</p>	Public Review draft tasked for February 2019

Name	Description	Status / Due Date / Target Date
IFQ "Fish Up" for CQEs in Halibut Area 3A	The Council will consider alternatives to allow CQEs to fish D-class halibut IFQ on larger C-class vessels (less than or equal to 60' LOA) in Area 3A. This opportunity would only apply after a cut-off date late in the season (either August 15 or September 1), with the purpose of acting as a fallback mechanism for CQEs to avoid revenue loss in cases of unforeseen vessel breakdown or adverse weather conditions.	Initial Review draft tasked for April 2019
Small Sablefish Retention	Potential action to allow vessels fishing sablefish IFQ to discard small fish or to set a minimum size limit for sablefish retention. This line of inquiry is responsive to an increase in the number of small-size sablefish encountered in the fishery. This expanded discussion paper will seek to address a suite of questions about the ability to produce species and gear- specific discard mortality rates, whale depredation, catch accounting, enforcement, and observer coverage.	Expanded discussion paper tasked for April 2019
Eligibility Requirements for QS holders	Consider replacing the Transfer Eligibility Certificate (TEC) as the permit to <u>purchase</u> QS with an active participation requirement (sea-days over a period of years) to <u>own</u> QS that applies to both existing and prospective QS holders. The Council is interested in how such a requirement could promote the original program objective of an owner/operator fleet by restricting the practice of QS holders who go onboard an IFQ vessel but do not actively participate in the work of the fishery, sometimes referred to as "ride-alongs."	Discussion paper tentatively tasked for April 2019

Name	Description
<i>Projects yet to be tasked</i>	
Discussion Paper: Use of Hired Master Provision	Given the increasing use of hired masters in the IFQ fishery, assemble data on hired master use and describe business arrangements between vessel owners, QS holders, and crew to the extent possible. The Council is scoping for potential modifications to hired master regulations that would promote the original program objective of an owner/operator fleet.
Discussion Paper: QS Transfer Mechanisms	Explore regulatory and non-regulatory options that promote willing transfers of QS from initial QS recipients to hired masters and crew, including but not limited to the Right of First Offer concept used in crab cooperatives. Also scope potential for changes to the Federal loan program that would increase use by individuals looking to purchase QS.
Discussion Paper: Global Examples of IFQ Access Programs	Review existing programs that facilitate access to IFQ-type fisheries for rural communities and new entrants. Consider those programs' successes and failures in their own context, and how they may or may not function in the North Pacific management framework.

***IFQ Committee is tentatively scheduled to meet in April 2019*



**IPHC Pacific Halibut Fishery Regulations:
Fishery Limits (Sect. 4)**

PREPARED BY: IPHC SECRETARIAT (17 OCTOBER 2018)

PURPOSE

To improve clarity and transparency of fishery limits in the IPHC Fishery Regulations.

BACKGROUND

This proposal would revise IPHC Pacific Halibut Fishery Regulations Section 4, '*Limits*,' to reflect TCEY values adopted by the IPHC and the applicable fishery sector limits resulting from those TCEY values according to existing Contracting Party catch sharing arrangements.

DISCUSSION

IPHC Pacific Halibut Fishery Regulations Section 4, '*Limits*,' was adopted in 2018 in order to provide clear documentation of the limits for fishery sectors within defined Contracting Party catch sharing arrangements, which are themselves tied to the mortality distribution (TCEY) decisions of the Commission. This proposal adds a table of the TCEY values for clarity. Both it and the fishery sector table will be populated as TCEY decisions are made for each IPHC Regulatory Area by the Commission during the 95th Session of the IPHC Annual Meeting (AM095).

Benefits/Drawbacks: The benefit is clear identification of fishery limits resulting from Commission decisions on distributed mortality (TCEY) values for each IPHC Regulatory Area. The potential drawback is a misconception that the resulting catch sharing arrangements and associated fishery limits are within the Commission's mandate, when in fact they are the responsibility of are the Contracting Parties. The distinction must continue to be emphasized at each step of the Regulatory Proposal process.

Sectors Affected: This proposal affects all sectors of the Pacific halibut fishery.

ADDITIONAL DOCUMENTATION / REFERENCES

None

SUGGESTED REGULATORY LANGUAGE**4. Fishery Limits**

(1) The Commission has adopted the following distributed mortality (TCEY) values:

IPHC Regulatory Area	<i>Distributed mortality limits (TCEY) (net weight*)</i>	
	Metric tons (t)	Pounds (lbs)
Area 2A (California, Oregon, and Washington)		
Area 2B (British Columbia)		
Area 2C (southeastern Alaska)		
Area 3A (central Gulf of Alaska)		
Area 3B (western Gulf of Alaska)		
Area 4A (eastern Aleutians)		
Area 4B (central/western Aleutians)		
Areas 4CDE (Bering Sea)		

*“net weight” of a Pacific halibut means the weight of Pacific halibut that is without gills and entrails, head-off, washed, and without ice and slime. If a Pacific halibut is weighed with the head on or with ice and slime, the required conversion factors for calculating net weight are a 2 percent deduction for ice and slime and a 10 percent deduction for the head.

(2) The fishery limits resulting from the IPHC-adopted distributed mortality (TCEY) values and the existing Contracting Party catch sharing arrangements are as follows, recognizing that each Contracting Party may implement more restrictive limits:

IPHC Regulatory Area	<i>Fishery limits (net weight*)</i>	
	Metric tons (t)	Pounds (lbs)
Area 2A (California, Oregon, and Washington)		
Non-treaty directed commercial (south of Pt. Chehalis)		
Non-treaty incidental catch in salmon troll fishery		
Non-treaty incidental catch in sablefish fishery (north of Pt. Chehalis)		
Treaty Indian commercial		
Treaty Indian ceremonial and subsistence (year-round)		
Recreational – Washington		
Recreational – Oregon		
Recreational – California		
Area 2B (British Columbia) (combined commercial/recreational)		
Commercial fishery		
Recreational fishery		
Area 2C (southeastern Alaska) (combined commercial/guided recreational)		

Commercial fishery (catch)		
Commercial fishery (incidental mortality)		
Guided recreational fishery (includes catch and incidental mortality)		
Area 3A (central Gulf of Alaska) (combined commercial/guided recreational)		
Commercial fishery catch)		
Commercial fishery (incidental mortality)		
Guided recreational fishery (includes catch and incidental mortality)		
Area 3B (western Gulf of Alaska)		
Area 4A (eastern Aleutians)		
Area 4B (central/western Aleutians)		
Areas 4CDE		
Area 4C (Pribilof Islands)		
Area 4D (northwestern Bering Sea)		
Area 4E (Bering Sea flats)		
Total		

*“net weight” of a Pacific halibut means the weight of Pacific halibut that is without gills and entrails, head-off, washed, and without ice and slime. If a Pacific halibut is weighed with the head on or with ice and slime, the required conversion factors for calculating net weight are a 2 percent deduction for ice and slime and a 10 percent deduction for the head.



**IPHC Pacific Halibut Fishery Regulations:
Commercial Fishing Periods (Sect. 9)**

PREPARED BY: IPHC SECRETARIAT (17 OCTOBER 2018)

PURPOSE

To specify fishing periods for the commercial Pacific halibut fisheries.

BACKGROUND

Each year the International Pacific Halibut Commission (IPHC) selects fishing period dates for the commercial Pacific halibut fisheries in each of the IPHC Regulatory Areas. The IPHC's practice is to use the same overall commercial fishing period dates for all IPHC Regulatory Areas. These dates vary from year to year, but in recent years have allowed commercial fishing to begin sometime in March and end sometime in November for all IPHC Regulatory Areas. Additionally restrictive fishing periods are established for IPHC Regulatory Area 2A commercial fishery.

Historically, biological factors relevant to setting the dates included protection of Pacific halibut spawning, which primarily takes place from September through early May ([IPHC Sci Rpt 70](#), p.32), and maintaining correspondence between observed distribution in the summer and actual encounter rates in the fishery relative to spawning and migrating fish. Weather patterns and predicted tides in some fishing areas and business considerations for both fishers and processors have also been historically been factors in the discussions surrounding the setting of fishing period dates.

DISCUSSION

The IPHC Secretariat proposes that the overall commercial fishing period for all IPHC Regulatory Areas be fixed from **15 March to 31 October**. Fixing the season will allow Stakeholders to more effectively develop business plans and will allow the IPHC Secretariat to more effectively monitor and manage the fishery.

For more restrictive period dates in IPHC Regulatory Area 2A, the IPHC Secretariat proposes fishing periods for the non-tribal directed commercial fishery longer than the 10-hour periods used in recent years. Specifically, the IPHC Secretariat proposes either 5-day or 10-day fishing periods. A discussion of the reasons for this proposal, the implications of longer fishing periods, previous discussion of the issue, additional expected inputs to the Commission's decision-making process, and expected outcomes is included in [Appendix I](#).

Supporting analysis of fishing period limits associated with longer fishing periods is provided in [Appendix II](#). A review of IPHC Regulatory Area 2A commercial fishery management is provided in [Appendix III](#). Copies of IPHC letters to the PFMC are included as [Appendix IV](#).

Sectors Affected: Commercial Pacific halibut fisheries in all IPHC Regulatory Areas.

ADDITIONAL DOCUMENTATION / REFERENCES

[IPHC Sci Rpt 70](#). Spawning Locations and Season for Pacific Halibut. St-Pierre. 1984.

APPENDICES

[Appendix I](#): Discussion of proposed fishing periods for the non-tribal directed commercial fishery in IPHC Regulatory Area 2A

[Appendix II](#): Analysis of fishing period limits

[Appendix III](#): Review of IPHC Regulatory Area 2A commercial fishery management

[Appendix IV](#): IPHC letters to PFMC

SUGGESTED REGULATORY LANGUAGE**9. Commercial Fishing Periods**

(1) The fishing periods for each IPHC Regulatory Area apply where the catch limits specified in Section 12 have not been taken.

(2) Unless the Commission specifies otherwise, commercial fishing for Pacific halibut in all IPHC Regulatory Areas may begin no earlier in the year than 12:00 hours local time on the 15 March.

(3) All commercial fishing for Pacific halibut in all IPHC Regulatory Areas shall cease for the year at 12:00 hours local time on 31 October.

(4) The first fishing period in the IPHC Regulatory Area 2A non-tribal directed commercial fishery shall begin at 08:00 hours on the last Saturday in June and terminate at 18:00 hours local time on the fourth day after that date (for five fishing days), unless the Commission specifies otherwise. If the Commission determines that the catch limit specified for IPHC Regulatory Area 2A in Section 12 has not been exceeded, it may announce a second fishing period of up to five days to begin on the second Saturday in July, and, if necessary, a third fishing period of up to five days to begin on the last Saturday in July.

or

(4) The first fishing period in the IPHC Regulatory Area 2A non-tribal directed commercial fishery shall begin at 08:00 hours on the last Saturday in June and terminate at 18:00 hours local time on the ninth day after that date (for ten fishing days), unless the Commission specifies otherwise. If the Commission determines that the catch limit specified for IPHC Regulatory Area 2A in Section 12 has not been exceeded, it may announce a second fishing period of up to ten days to begin on the last Saturday in July, and, if necessary, a third fishing period of up to ten days to begin on the last Saturday in August.

(5) Notwithstanding paragraph (7) of section 12, an incidental catch fishery is authorized during the sablefish seasons in Area 2A in accordance with regulations promulgated by NMFS. This fishery will occur between the dates and times listed in paragraphs 2 and 3 of this section.

(6) Notwithstanding paragraph (2), and paragraph (7) of section 12, an incidental catch fishery is authorized during salmon troll seasons in Area 2A in accordance with regulations promulgated by NMFS. This fishery will occur between the dates and times listed in paragraph 6 and 7 of this section.

12. Commercial Catch Limits

(1) ...

(6) If the Commission determines that the catch limit specified for IPHC Regulatory Area 2A in paragraph (1) would be exceeded in an additional directed commercial fishing period as specified in paragraph (2) of section 9...

Appendix I

Discussion of proposed fishing periods for the non-tribal directed commercial fishery in IPHC Regulatory Area 2A

This appendix discusses the reasons for this proposal, the implications of longer fishing periods, previous discussion of this issue, additional expected inputs to the Commission's decision-making process leading up to the 95th Annual Meeting (AM095) in January 2019, and expected outcomes of making this change.

Reasons for longer fishing periods

The IPHC Secretariat sees no compelling reason to retain the current "derby-style" form of the directed commercial Pacific halibut fishery, with its **10-hour fishing periods**, but a number of advantages in shifting to a management system that reduces the concentration of fishing effort and eliminates or reduces the race to fish. Potential advantages include:

1. Safety. The current system offers no flexibility as to when fishing takes place, creating pressure to attempt fishing even in poor weather and dangerous conditions. The U.S. Coast Guard has frequently commented at IPHC meetings in support of moving away from the derby-style fishery for this reason. We believe that a system offering more flexible fishing opportunities is inherently safer for everyone on the water, and that this is the primary reason for change.
2. Reduced regulatory discards. The current derby system is essentially a race for fish, where fishers have an incentive to set as much gear as possible during the short time available for fishing. When the fishing is good, this leads to more regulatory discards as trip limits are reached than would be the case under a system where the fishers had time to more carefully calibrate their effort to applicable limits. Mortality from these regulatory discards represents an unnecessary loss to the resource.
3. Flexibility for fishers and processors. Under the current system, fresh Pacific halibut from Regulatory Area 2A is delivered and comes to market in a tightly defined period of time, limiting the ability of fishers and processors to influence or react to market forces. A management system with more flexibility regarding fishing days would allow fishers and processors more latitude in managing their industry sector.

Other than maintaining access to the resource by the commercial Pacific halibut fishery, the IPHC Secretariat does not recommend a particular management system to replace the current form of the 2A non-tribal, directed commercial Pacific halibut fishery. The IPHC Secretariat supports a reduction in the concentration of fishing effort, and eliminating the race to fish, as a guiding principle for any changes that are made.

Implications of longer fishing periods

The primary implication of longer fishing periods is that lower fishing period limits will be required in order to maintain the fishery within its allocation under the Pacific Fishery Management Council's (PFMC) catch sharing plan (CSP).

Along with announcing open dates for the directed commercial fishery, the IPHC announces what the per-vessel catch limits will be by vessel class in accordance with IPHC Regulations

Section 13 (Fishing Period Limits). IPHC determines the fishing period limits before each fishing period opens, based on the number of vessels in each length class, the average performance of vessels in that length class, and the amount of catch allocated to (or remaining for) the directed commercial fishery for that year. The IPHC vessel length classes range from A to H, with A being the smallest vessels (25 ft and under) and H being the largest (56 ft and over).

Longer fishing periods are expected to allow greater participation of license-holders and greater attainment of individual fishing period limits by participating vessels. Options for 2-, 5-, 7-, 20-, and 30-day fishing periods have been analyzed by the IPHC Secretariat.

In recent years the IPHC has set fishing period limits for the first 10-hour fishing period of the year that range from 9,000 lbs (4.08 t)(net weight¹) for the largest, H-class vessels down to 755 lbs (0.34 mt) for the smallest, A-class vessels. Assuming a similar CSP sector allocation, the IPHC Secretariat estimates that an initial 5-day fishing period would entail a fishing period limit of approximately 6,000 lbs (2.72 t) for H-class vessels, with proportionally lower limits for smaller vessels. An initial 10-day fishing period would likely entail a fishing period limit between 2,000 and 4,000 lbs (0.91 and 1.81 t) for H-class vessels.

Previous discussion of this issue

The IPHC initiated the current discussion of fishing periods in IPHC Regulatory Area 2A with a letter to PMFC in May 2017 (see [Appendix IV](#) for the series of IPHC letters to PFMC on this subject). The PFMC and its advisory bodies engaged in a robust discussion of the issue at their June, September, and November 2017 meetings, including a request for more information from IPHC and production of a matrix of management options for the fishery. This discussion and its attendant information and analyses were considered by the Commission at the 2018 Annual Meeting (AM094).

No recommendations for changes were made for the 2018 fishery, but the PFMC and other parties indicated a willingness to continue discussing potential changes to the management of the fishery.

The focus of attention during 2018 has been on the possibility of changing the length of the fishing period and the specific proposal for either a 5-day or 10-day fishing period. This change is within the IPHC's mandate and addresses the IPHC's primary concern with the current 10-hour derby, the safety of participants in the fishery. It can be undertaken by the IPHC on its own, without requiring changes in the aspects of the fishery managed by the PFMC and the state and federal agencies.

The IPHC identified this proposal in two letters to the PFMC (see [Appendix IV](#)), and the PFMC discussed it at its September 2018 meeting. It is expected to take up the issue again at its November 2018 meeting, in time to provide any recommendations to the Commission for the 2018 Interim Meeting (IM094).

In response to suggestions by the IPHC Commissioners and the PFMC and its Groundfish Advisory Panel, the Secretariat sought input from its Regulatory Area 2A license holders on the possibility of a longer fishing period. Their views are expected to be important to making any decisions on this subject. A preliminary version of this regulation proposal was provided to all

¹ "Net weight" is defined in IPHC Regulations Section 3 as the weight without gills and entrails, head-off, washed, and without ice and slime. All weights in this paper are expressed in terms of "net weight."

license holders from 2016 to 2018, along with a brief survey, the results of which are provided in the following table:

Table of survey questions and responses – to be added prior to IM094

Analysis of survey responses – to be added prior to IM094

Additional expected inputs to the Commission’s decision-making process

In addition to the information provided here, the IPHC Secretariat expects that the Commission will receive comments from the PFMC after its November 2018 meeting, as well as additional input and testimony from stakeholders in IPHC Regulatory Area 2A beyond the survey of license holders.

In addition to whether a longer fishing period should be implemented, input regarding fishing period duration and considerations regarding when fishing periods should start, either by date or day of the week, will be particularly helpful in finalizing any change to the regulations.

Expected outcomes

Should the Commission approve longer fishing periods for 2019, the IPHC Secretariat expects that the first year of implementation will provide valuable feedback and potentially lead to further refinements for subsequent years. For instance, we may find that the dates or the duration of the fishing periods require adjustment in order to stay within allocation or to better meet industry needs.

Appendix II

Analysis of Fishing Period Options

ADDITIONAL ANALYSIS OF FISHING PERIODS OPTIONS FOR 2- AND 5-DAYS

In September 2017, the IPHC Secretariat provided the PFMC information at their request on how fishing period limits by vessel size class might change with longer fishing periods ([Attachment I](#)). The PFMC requested a range of fishing period options to be analyzed from the 10-hr derby (status quo), to a one week, 20-day, or 30-day fishing period. Following the IPHC Interim Meeting in November 2017, the Commissioners requested that the IPHC Secretariat provide additional options of a 2- and 5-day fishing period.

The IPHC's response to the PFMC request, in [Attachment I](#), provides details on licensing the IPHC Regulatory Area 2A fishery, including the number of licenses issued and fished between 2012 – 2017 ([Attachment I](#), Table 1). It also describes the dates of the fishery (Table 2), as well as fishing period limits by vessel size class and estimated landings in recent years (Table 3). The IPHC issues commercial Pacific halibut licenses by the vessel's size (or length) class, which ranges from A to H, with A being the smallest vessels (25 ft and under) and H being the largest (56 ft and over). The heart of the analysis is in Table 4 which provides sample fishing period limits by vessel size class and estimates of landings under each. The table is based on the 2017 directed commercial fishery allocation and the number of licenses IPHC issued for the fishery in 2017. Note that vessels can choose to be licensed in the directed commercial fishery, or in both the directed commercial and the fishery incidental to sablefish. At the bottom of Table 4 in Appendix II, it shows the estimated landings under three scenarios: (1) if all vessels licensed participated and caught their full vessel limit, (2) if only half the licensed vessels participated and landed their full vessel limit, and (3) if only half the licensed vessels participated and only landed half of their vessel limit (this has been the case, generally speaking, under the 10-hr derby). Table 4 from Appendix II has been updated to include estimated fishing period limits under the 2- and 5-day options and is published in this paper as Table 2.

In [Attachment I](#), the 1-week fishery (PFMC Option 1) was expected to have vessel limits for H-class vessels (the largest size class (56+ feet) and used as the reference point when talking about vessel limits) set between 4,000 to 6,000 pounds (1.81 to 2.72 t) (net weight) for the first opening. This was based on using the 2017 allocation of 225,591 pounds (102.33 t) (net weight) and on the number of vessels licensed by size class in 2017. For the 20-day fishery (PFMC Option 2), the IPHC would likely choose fishing period limits based on an H-class limit of 2,000 to 4,000 pounds (0.91 to 1.81 t) (net weight) for the first 20-day fishing period. With a 20-day fishery, as opposed to a 1-week fishery, IPHC would have to be more conservative in setting the vessel limit because with more time to fish, more vessels would likely participate and would more likely catch their vessel limit. For the 30-day fishery (PFMC Option 3), the IPHC would likely choose fishing period limits based on an H-class limit of 2,000 pounds (0.91 t) (net weight) for the first 30-day fishing period. With a 30-day fishery, as opposed to a 1-week or 20-day fishery, IPHC would have to be more conservative in setting the vessel limit because with more time to fish, more vessels would likely participate and would more likely catch their vessel limit.

In summary, based on the 2017 allocation of 225,591 pounds (102.33 t) (net weight) and on the number of vessels licensed by size class, the fishing period limit for H-class vessels in pounds (net weight) of Pacific halibut are estimated to be as follows under a 1-week, 20-day, and 30-day directed commercial fishery with a full breakout by vessel size class in Table 2:

- 1-week 4,000 to 6,000 lbs (1.81 to 2.72 t)
- 20-day 2,000 to 4,000 lbs (0.91 to 1.81 t)
- 30-day 2,000 lbs (0.91 t)

Table 2. Estimated 1-week, 20-day, and 30-day fishing period limits by vessel size class for IPHC Regulatory Area 2A using 2017 allocation and number of licenses.

		1-week				20-day				30-day	
Vessel Size Class		Vessel Limit (net wt)									
feet	letter	pounds	metric ton	pounds	metric ton	pounds	metric ton	pounds	metric ton	pounds	metric ton
1-25	A	335	0.15	505	0.23	200	0.09	335	0.23	200	0.09
26-30	B	420	0.19	630	0.29	210	0.10	420	0.29	210	0.10
31-35	C	670	0.30	1,010	0.46	335	0.15	670	0.46	335	0.15
36-40	D	1,850	0.84	2,780	1.26	925	0.42	1,850	1.26	925	0.42
41-45	E	1,990	0.90	2,990	1.36	995	0.45	1,990	1.36	995	0.45
46-50	F	2,385	1.08	3,575	1.62	1,190	0.54	2,385	1.62	1,190	0.54
51-55	G	2,660	1.21	3,990	1.81	1,330	0.60	2,660	1.81	1,330	0.60
56+	H	4,000	1.81	6,000	2.72	2,000	0.91	4,000	2.72	2,000	0.91

For a 2- or 5-day fishery, and keeping all other parameters the same (i.e., using 2017 allocation and number of vessels licensed by size class), the fishing period limit for H-class vessels in pounds (net weight) of Pacific halibut are estimated to be as follows with a full breakout by vessel size class in Table 3:

- 2-day 9,000 lbs (4.08 t)
- 5-day ~6,000 lbs (2.72 t)

Table 3. Estimated 2-day and 5-day fishing period limits by vessel size class for IPHC Regulatory Area 2A using 2017 allocation and number of licenses.

		2-day		5-day	
Vessel Size Class		Vessel Limit (net wt)			
feet	letter	pounds	metric ton	pounds	metric ton
1-25	A	755	0.34	505	0.23
26-30	B	945	0.43	630	0.29
31-35	C	1,510	0.68	1,010	0.46
36-40	D	4,165	1.89	2,780	1.26
41-45	E	4,480	2.03	2,990	1.36
46-50	F	5,365	2.43	3,575	1.62
51-55	G	5,985	2.71	3,990	1.81
56+	H	9,000	4.08	6,000	2.72

With a 2-day opening of the directed commercial fishery, the IPHC Secretariat would likely choose fishing period limits based on an H-class limit of 9,000 pounds (4.08 t) (net weight), the same amount generally used for the first 10-hr derby. Given that the 10-hr derby has been open for multiple days (2-3 total days) in recent years, a 2-day opening (i.e., 48-hrs) could be expected to have similar to, but slightly increased landings from recent 10-hr derby opening. Similar to the 10-hr derby, not all licensed vessels would be expected to participate in a 2-day opening. However, they could be expected to catch more of their vessel limit than under a 10-hr derby. With the 2-day opening, the IPHC would expect to have only one opening based on an H-class limit of 9,000 pounds (4.08 t) (net weight).

With a 5-day opening, the IPHC Secretariat would likely choose fishing period limits based on an H-class limit of approximately 6,000 pounds (2.72 t) (net weight). The 5-day opening is just slightly shorter than the 1-week fishery (PFMC Option 1) and would therefore be expected to have H-class limits on the higher end of the 1-week option range given that there is less time for all licensed vessels to participate.

Detailed breakouts for each vessel size category under all of these options are provided in Table 4 below. Note that these limits are based on the 2017 allocation and number of licenses issued by size class, both of which will change for 2018. The IPHC Secretariat will set fishing period limits for 2018 before the start of the first opening based on the actual number of licenses issued in 2018 and on the 2018 directed commercial fishery allocation.

Table 4. Estimated fishing period limits by vessel size class and estimated landings (lb, net weight) for IPHC Regulatory Area 2A using 2017 allocation and number of licenses.

				(2-day)		(5-day)		PFMC Option 2 (20-day)			
2017 allocation (lb, net weight)		225,591		Status quo (10-hr derby)		PFMC Option 1 (1-week)				PFMC Option 3 (30-day)	
Vessel Class		vessel limit ratio	2017 # Lic	9,000 vessel limit		6,000 vessel limit		4,000 vessel limit		2,000 vessel limit	
feet	letter			est. vessel limit	est. landings	est. vessel limit	est. landings	est. vessel limit	est. landings	est. vessel limit	est. landings
1-25	A	0.084	15	755	11,325	505	7,575	335	5,025	200	3,000
26-30	B	0.105	11	945	10,395	630	6,930	420	4,620	210	2,310
31-35	C	0.168	19	1,510	28,690	1,010	19,190	670	12,730	335	6,365
36-40	D	0.463	39	4,165	162,435	2,780	108,420	1,850	72,150	925	36,075
41-45	E	0.498	43	4,480	192,640	2,990	128,570	1,990	85,570	995	42,785
46-50	F	0.596	36	5,365	193,140	3,575	128,700	2,385	85,860	1,190	42,840
51-55	G	0.665	14	5,985	83,790	3,990	55,860	2,660	37,240	1,330	18,620
56+	H	1	31	9,000	279,000	6,000	186,000	4,000	124,000	2,000	62,000
			208								
If 100% of licenses participate & land 100% of vessel limit					961,415		641,245		427,195		213,995
If 50% of licenses participate & land 100% of vessel limit					480,708		320,623		213,598		106,998
If 50% of licenses participate & land 50% of vessel limit					240,354		160,311		106,799		53,499

ATTACHMENT

[Attachment I](#): IPHC Fishing Period Analysis for PFMC (Sept. 2017)

Attachment I to Appendix II: IPHC Fishing Period Analysis for PFMC (Sep 2017)INTERNATIONAL PACIFIC
HALIBUT COMMISSIONAgenda Item G.1.a
IPHC Report 1
September 2017

IPHC Report September 2017**IPHC Regulatory Area 2A Directed Commercial Pacific Halibut Fishery
Sample Vessel Fishing Period Limit Options for Longer Fishing Periods****Purpose**

This paper provides input from the International Pacific Halibut Commission (IPHC) for the discussion of Pacific halibut fishery management in IPHC Regulatory Area 2A. Specifically, the Pacific Fishery Management Council (PFMC) requested information on how vessel fishing period limits might change with longer fishing periods for Pacific halibut.

Background

The IPHC submitted a letter to the PFMC recommending a move away from derby-style management for the directed commercial Pacific halibut fishery in IPHC's Regulatory Area 2A ([Agenda Item G.1.a, Supplemental IPHC Letter 2, June 2017](#)). The IPHC noted concerns over safety and discards, as well as limitations on fishers and processor flexibility. At the PFMC's June 2017 meeting, the PFMC reviewed the IPHC's letter and heard further input from the PFMC's Groundfish Advisory Subpanel (GAP) regarding possible alternatives to the commercial derby fishery ([Agenda Item G.1.b, Supplemental GAP Report, June 2017](#)). In response, the PFMC informally asked the IPHC to provide examples of vessel fishing period limits for longer fishing periods.

Current Management of the Directed Commercial Fishery

In the management of the Pacific halibut fishery, the IPHC sets the overall catch limit for IPHC Regulatory Area 2A and then endorses the PFMC's Pacific Halibut Catch Sharing Plan, which further allocates the IPHC Regulatory Area 2A catch limit among user groups, including the directed commercial fishery ([Agenda Item G.1, Attachment 1, June 2017](#)). The National Marine Fisheries Service (NMFS) then implements the resulting catch limits by user groups in domestic regulations, which may be more restrictive than IPHC regulations. All agencies work closely together to facilitate each step of the annual process.

For the non-Indian directed commercial Pacific halibut fishery in IPHC Regulatory Area 2A, the IPHC is responsible for issuing licenses and setting the fishing periods and individual vessel fishing period limits. The IPHC sets the directed commercial fishery fishing periods and fishing period limits to match the Catch Sharing Plan allocation for this sector.



Licenses

The IPHC issues licenses to participate in Pacific halibut fisheries in IPHC Regulatory Area 2A, as specified in IPHC Regulation Section 4 (Licensing Vessels for Area 2A), including:

- the directed commercial fishery,
- retention of Pacific halibut incidental to the sablefish fishery,
- retention of Pacific halibut incidental to the salmon troll fishery, and
- sport charter fisheries.

These are annual licenses, for which an application must be submitted to the IPHC each year by the specified deadline. There is no set maximum number of licenses allowed, and the number of licenses issued from year to year may vary. If a vessel chooses to participate in the sport charter fishery or to retain Pacific halibut incidental to the salmon troll fishery, it may not participate in any other Pacific halibut fisheries in IPHC Regulatory Area 2A. However, vessels may apply for two separate licenses to participate in both the directed commercial fishery and the Pacific halibut fishery incidental to the sablefish fishery. Not all vessels issued a license for a given year actually participate in the Pacific halibut fishery.

Commercial Pacific halibut licenses specify the vessel's length class, which ranges from A to H, with A being the smallest vessels (25 ft and under) and H being the largest (56 ft and over).

Table 1 provides a summary of commercial Pacific halibut licenses issued by IPHC each year between 2012 and 2017, along with how many vessels actually participated in the Pacific halibut fishery that year. About half of the vessels issued licenses to participate in the directed commercial fishery actually fished. The number of licenses issued for the directed commercial range from a low of 143 in 2013 to a high of 208 in 2017. The greatest number of vessels that actually participated in the directed commercial derby was 97 in 2012.



Table 1. Number of vessels issued an IPHC commercial Pacific halibut license and percent fished in IPHC Regulatory Area 2A between 2012 and 2017 by commercial license type. Data on the 2017 licenses fished are not yet available.

2A LICENSES (#s)		2012	2013	2014	2015	2016	2017
<i>Total commercial derby</i>	<i>Issued</i>	175	143	162	144	169	208
	<i>Fished</i>	97	68	71	77	93	
	<i>% fished</i>	55%	48%	44%	53%	55%	
<i>Directed commercial</i>	<i>Issued</i>	156	123	138	129	159	192
	<i>Fished</i>	81	55	54	65	85	
	<i>% fished</i>	52%	45%	39%	50%	53%	
<i>Licensed for both directed and incidental to sablefish</i>	<i>Issued</i>	19	20	24	15	10	16
	<i>Fished</i>	16	13	17	12	8	
	<i>% fished</i>	84%	65%	71%	80%	80%	
<i>Incidental to sablefish</i>	<i>Issued</i>	2	6	5	7	8	8
	<i>Fished</i>	1	6	3	6	6	
	<i>% fished</i>	50%	100%	60%	86%	75%	
<i>Incidental to salmon</i>	<i>Issued</i>	311	333	424	364	310	222
	<i>Fished</i>	104	101	181	151	128	
	<i>% fished</i>	33%	30%	43%	41%	41%	
<i>Total commercial</i>	<i>Issued</i>	488	482	591	515	487	438
	<i>Fished</i>	202	175	255	234	227	
	<i>% fished</i>	41%	36%	43%	45%	47%	

Fishing Periods

The IPHC sets the fishing period dates as a series of potential 10-hour (0800-1800 hours local time) fishing periods specified in IPHC Regulation Section 8 (Fishing Periods), paragraph (2). In recent years, the potential fishing period dates have been on Wednesdays in late June and early July. The fishing period dates are decided each year through the IPHC's Annual Meeting process. Table 2 shows the potential dates for the commercial fishery between 2012 and 2017, along with the total number of days the fishery was open. From 2012 to 2015, the commercial fishery was open for two 10-hour fishing periods; in 2016 and 2017, there were three.

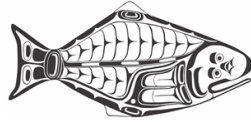


Table 2. Potential directed commercial Pacific halibut fishing period dates for IPHC Regulatory Area 2A between 2012 and 2017 and total number of days open.

<i>FISHING PERIODS</i>	2012	2013	2014	2015	2016	2017
Total open days	2	2	2	2	3	3
Potential open days (bold dates were open)	27 Jun	26 Jun	25 Jun	24 Jun	22 Jun	28 Jun
	11 Jul	10 Jul	9 Jul	8 Jul	6 Jul	12 Jul
	25 Jul	24 Jul	23 Jul	22 Jul	20 Jul	26 Jul
	8 Aug	7 Aug	6 Aug	5 Aug	3 Aug	9 Aug
	22 Aug	21 Aug	20 Aug	19 Aug	17 Aug	23 Aug
	5 Sep	4 Sep	3 Sep	2 Sep	31 Aug	6 Sep
	19 Sep	18 Sep	17 Sep	16 Sep	14 Sep	20 Sep
					28 Sep	

Vessel Fishing Period Limits

Along with announcing open dates for the directed commercial fishery, the IPHC announces what the per-vessel catch limits will be by vessel class in accordance with IPHC Regulation Section 12 (Fishing Period Limits). IPHC determines the fishing period limits before each 10-hour fishing period opens, based on the number of vessels in each length class, the average performance of vessels in that length class, and the amount of catch allocated to (or remaining for) the directed commercial fishery for that year. The IPHC vessel length classes range from A to H, with A being the smallest vessels (25 ft and under) and H being the longest (56 ft and over). The IPHC first set limits by vessel class size to address the concern that having a single limit would disadvantage larger vessels while smaller vessels would be unaffected. The IPHC adopted the relative vessel size limits at its Annual Meeting in 1988.

In recent years the IPHC has set fishing period limits for the first 10-hour fishing period of the year that range from 9,000 lbs (4.08 mt)(net weight¹) for the H-class vessels down to a limit of 755 lbs (0.34 mt) for the smallest A-class vessels. After each open fishing period, IPHC reviews available fish tickets and contacts processors and state biologists to estimate the Pacific halibut landings by vessel. This landings and participation information is used to determine how much of the directed commercial fishery allocation remains, whether there can be another open fishing period, and what the fishing period limits should be for the next open fishing period.

In addition to the fact that not all vessels with licenses traditionally participate in the open derby fishing periods, most vessels also do not come close to their full vessel limit during a fishing period. On average among all vessel size classes in 2016 and 2017, vessels caught from 20 to 40 percent of the fishing period limit for their vessel size class. In general, only a handful of vessels come close to or achieve their full vessel limit during a fishing period.

¹ "Net weight" is defined in IPHC Regulation 3 as the weight without gills and entrails, head-off, washed, and without ice and slime. All weights in this paper are expressed in terms of "net weight."



Table 3 provides the vessel length overall and the corresponding vessel class, along with the fishing period limits for each open fishing period from 2012 through 2017. Table 3 also provides the estimated landings by open fishing period compared to the overall directed fishery catch limit for that year.

Table 3. Vessel limits by vessel class and estimated landings (lb, net weight) by open fishing period for IPHC Regulatory Area 2A between 2012 and 2017. Note: 2017 landing estimates are preliminary.

Vessel Class		Fishing Period & Limits (lb, net weight)							
feet	letter	27 Jun 2012	11 Jul 2012	26 Jun 2013	10 Jul 2013	25 Jun 2014	9 Jul 2014		
1-25	A	755	200	755	250	755	200		
26-30	B	945	200	945	315	945	210		
31-35	C	1,510	250	1,510	505	1,510	335		
36-40	D	4,165	695	4,165	1,390	4,165	925		
41-45	E	4,480	745	4,480	1,495	4,480	995		
46-50	F	5,365	895	5,365	1,790	5,365	1,190		
51-55	G	5,985	1,000	5,985	1,995	5,985	1,330		
56+	H	9,000	1,500	9,000	3,000	9,000	2,000		
estimated landings		150,000	29,000	118,000	54,000	133,000	30,000		
total estimated landings			179,000		172,000		163,000		
catch limit			173,216		173,390		168,137		
difference			-5,784		1,390		5,137		
Vessel Class		Fishing Period & Limits (lb, net weight)							
feet	letter	24 Jun 2015	8 Jul 2015	22 Jun 2016	6 Jul 2016	20 Jul 2016	28 Jun 2017	12 Jul 2017	26 Jul 2017
1-25	A	755	505	755	755	210	755	755	590
26-30	B	945	630	945	945	265	945	945	735
31-35	C	1,510	1,010	1,510	1,510	420	1,510	1,510	1,175
36-40	D	4,165	2,780	4,165	4,165	1,160	4,165	4,165	3,240
41-45	E	4,480	2,990	4,480	4,480	1,245	4,480	4,480	3,485
46-50	F	5,365	3,575	5,365	5,365	1,490	5,365	5,365	4,170
51-55	G	5,985	3,990	5,985	5,985	1,665	5,985	5,985	4,655
56+	H	9,000	6,000	9,000	9,000	2,500	9,000	9,000	7,000
estimated landings		105,000	75,000	89,800	83,200	25,000	83,000	77,500	69,500
total estimated landings			180,000			198,000			230,000
catch limit			164,529			193,364			225,591
difference			-15,471			-4,636			-4,409

Fishing Period Options under Discussion



In response to the PFCM's informal request, the IPHC details below information regarding examples of fishing period limits for the directed commercial Pacific halibut fishery for the 3 requested fishing period durations of 1 week, 20 days, or 30 days, compared to the current 10-hour derby-style fishing periods. These examples are built using the 2017 allocation and 2017 license numbers as the most recent year with complete information. **NOTE: THE IPHC DOES NOT RECOMMEND OR ENDORSE ANY OF THE 3 OPTIONS DETAILED BELOW.**

While only about half of the licenses issued have actually participated in open derby-style fishing periods since 2012 (Table 1) and most vessels only catch between 20 and 40 percent of their fishing period limit, the IPHC assumes for this analysis that more licensed vessels would likely participate and that more vessels would catch their limits during a longer fishing period.

Using 2017 numbers, these examples assume 208 licensed vessels would participate, and that each vessel's fishing period limit could be fished at any time during the fishing period. The fishing period limits are based on the 2017 non-treaty directed commercial fishery catch limit of 225,591 lbs (102.33 mt) (net weight). These options assume that IPHC Regulations would allow vessels to also fish for other species while fishing for Pacific halibut, subject to the U.S. domestic regulations and license requirements for those species.

Option 1 – 1-week fishing period

Option 1 assigns a 1-week fishing period limit by vessel size class. At any time during the 7-consecutive-day fishing period announced by the IPHC, vessels could retain the amount of Pacific halibut associated with their vessel size class.

The IPHC, working with the state agencies and NMFS, would manage the fishery in season, similar to the current derby fishery. If enough allocation remained after the first 1-week fishing period, the IPHC would reopen the fishery for another 1-week period. Any subsequent 1-week fishing periods would likely be two to three weeks after the preceding 1-week fishing period to allow time to gather and review the Pacific halibut landings data and vessel participation.

The IPHC provides several examples of fishing period limits using the 2017 allocation (Table 4). Note that these example fishing period limits are provided only for purpose of discussion.

For comparison with these examples of fishing period limits, Table 4 also lists the recent historical (or status quo) series of fishing period limits based on the 9,000-lb (4.08 mt) (net weight) limit for the H-class vessels used in the current 10-hour fishing periods, with the smaller vessel classes scaled accordingly. This option would not be chosen for a longer fishing period because it is projected to exceed the allocation. Other potential H-class fishing period limits range from 2,000 to 6,000 lbs (0.91 to 2.72 mt) (net weight). The bottom of Table 4 shows three scenarios: 1) the estimated landings if all of the licensed vessels participate and land their full limits, 2) if half of the licensed vessels participate and land their full limits, and 3) if half of the vessels participate and land half of their limits. The third scenario is estimated to be unlikely to occur, given the longer fishing period. The level of participation and attainment of individual vessel limits will more likely fall somewhere between the first and third scenarios. As the season is extended longer in subsequent options, from 1 week to 20 days or 30 days, the IPHC expects there to be a higher likelihood of more licensed vessels participating and landing a higher percentage of their fishing period limits.



Under Option 1, using the 2017 allocation of 225,591 lbs (102.33 mt) (net weight), the IPHC would likely choose fishing period limits based on an H-class limit of 4,000 to 6,000 lbs (1.81 to 2.72 mt) (net weight) for the first 1-week fishing period. This is based on attainment of the H-class fishing period limit when it was 9,000 lbs (4.08 mt) by the vessels in this size class (2012-16). In these years, approximately 40 percent of these vessels attained the trip limit with 60 percent landing 6,000 lbs (2.72 mt) or more, and 90 percent landing 4,000 lbs (1.81 mt) or more.

Table 4. Vessel limits options by vessel class and estimated landings (lb, net weight) for IPHC Regulatory Area 2A using 2017 allocation and licenses.

Vessel Class		vessel limit ratio	2017 # Lic (208 total)	status quo		6,000 vessel limit		4,000 vessel limit		2,000 vessel limit	
feet	letter			vessel limit	est. landings	vessel limit	est. landings	vessel limit	est. landings	vessel limit	est. landings
1-25	A	0.084	15	755	11,325	505	7,575	335	5,025	200	3,000
26-30	B	0.105	11	945	10,395	630	6,930	420	4,620	210	2,310
31-35	C	0.168	19	1,510	28,690	1,010	19,190	670	12,730	335	6,365
36-40	D	0.463	39	4,165	162,435	2,780	108,420	1,850	72,150	925	36,075
41-45	E	0.498	43	4,480	192,640	2,990	128,570	1,990	85,570	995	42,785
46-50	F	0.596	36	5,365	193,140	3,575	128,700	2,385	85,860	1,190	42,840
51-55	G	0.665	14	5,985	83,790	3,990	55,860	2,660	37,240	1,330	18,620
56+	H	1	31	9,000	279,000	6,000	186,000	4,000	124,000	2,000	62,000
If 100% of licenses participate & land 100% of vessel limit					961,415	641,245		427,195		213,995	
If 50% of licenses participate & land 100% of vessel limit					480,708	320,623		213,598		106,998	
If 50% of licenses participate & land 50% of vessel limit					240,354	160,311		106,799		53,499	



Option 2 – 20-day fishing period

Option 2 assigns a 20-day fishing period limit by vessel size class. At any time during the 20-consecutive-day fishing period announced by the IPHC, vessels could retain the amount of Pacific halibut associated with their vessel size class.

The IPHC, working with the state agencies and NMFS, would manage the fishery in season, similar to the current derby fishery. If enough allocation remained after the first 20-day fishing period, the IPHC would reopen the fishery for another 20-day period. A sub-option could allow subsequent fishing periods of less than 20 days but not shorter than one week. Any subsequent fishing periods would likely start at least 10 days after the preceding fishing period to allow enough time to gather and review the Pacific halibut landings data and vessel participation.

The IPHC provides several examples of fishing period limits using the 2017 allocation (Table 4). Note that these example fishing period limits are provided only for purpose of discussion.

For comparison with these examples of fishing period limits, Table 4 also lists the recent historical (or status quo) series of fishing period limits based on the 9,000-lb (4.08 mt) (net weight) limit for the H-class vessels used in the current 10-hour fishing periods, with the smaller vessel classes scaled accordingly. This option would not be chosen for a longer fishing period because it is projected to exceed the allocation. Other potential H-class fishing period limits range from 2,000 to 6,000 lbs (0.91 to 2.72 mt) (net weight). The bottom of Table 4 shows three scenarios: 1) the estimated landings if all of the licensed vessels participate and land their full limits, 2) if half of the licensed vessels participate and land their full limits, and 3) if half of the vessels participate and land half of their limits. The third scenario is estimated to be unlikely to occur, given the longer fishing period. The level of participation and attainment of individual vessel limits will more likely fall somewhere between the first and third scenarios. As the season is extended, the IPHC expects there to be a higher likelihood of more licensed vessels participating and landing a higher percentage of their fishing period limits.

Under Option 2, using the 2017 allocation of 225,591 lbs (102.33 mt) (net weight), the IPHC would likely choose fishing period limits based on an H-class limit of 2,000 to 4,000 lbs (0.91 to 1.81 mt) (net weight) for the first 20-day fishing period. With a 20-day fishery, as opposed to a 1-week fishery, IPHC would have to be more conservative in setting the vessel limit because with more time to fish, more vessels would likely participate and would more likely catch their vessel limit.

Option 3 – 30-day fishing period

Option 3 assigns a 30-day fishing period limit by vessel size class. At any time during the 30-consecutive-day fishing period announced by the IPHC, vessels could retain the amount of Pacific halibut associated with their vessel size class.

The IPHC, working with the state agencies and NMFS, would manage the fishery in season, similar to the current derby fishery. If enough allocation remained after the first 30-day fishing period, the IPHC would reopen the fishery for another 30-day period. A sub-option could allow subsequent fishing periods of less than 30 days but not shorter than one week. Any subsequent fishing periods would likely start at least 10 days after the preceding fishing period to allow enough time to gather and review the Pacific halibut landings data and vessel participation.



The IPHC provides several examples of fishing period limits using the 2017 allocation (Table 4). Note that these example fishing period limits are provided only for purpose of discussion.

For comparison with these examples of fishing period limits, Table 4 also lists the recent historical (or status quo) series of fishing period limits based on the 9,000-lb (4.08 mt) (net weight) limit for the H-class vessels used in the current 10-hour fishing periods, with the smaller vessel classes scaled accordingly. This option would not be chosen for a longer fishing period because it is projected to exceed the allocation. Other potential H-class fishing period limits range from 2,000 to 6,000 lbs (0.91 to 2.72 mt) (net weight). The bottom of Table 4 shows three scenarios: 1) the estimated landings if all of the licensed vessels participate and land their full limits, 2) if half of the licensed vessels participate and land their full limits, and 3) if half of the vessels participate and land half of their limits. The third scenario is estimated to be unlikely to occur, given the longer fishing period. The level of participation and attainment of individual vessel limits will more likely fall somewhere between the first and third scenarios. As the season is extended, the IPHC expects there to be a higher likelihood of more licensed vessels participating and landing a higher percentage of their fishing period limits.

Under Option 3, using the 2017 allocation of 225,591 lbs (102.33 mt) (net weight), the IPHC would likely choose fishing period limits based on an H-class limit of 2,000 lbs (0.91 mt) (net weight) for the first 30-day fishing period. With a 30-day fishery, as opposed to a 1-week or 20-day fishery, IPHC would have to be more conservative in setting the vessel limit because with more time to fish, more vessels would likely participate and would more likely catch their vessel limit.

Other Considerations for Longer Fishing Periods

The IPHC expects the overall attainment of the directed commercial fishery allocation would be approximately the same with longer fishing periods, with the management target of attaining but not exceeding the allocation. There might be some shift in the spatial distribution of fishing with an extended fishing period as fishers have more time to explore fishing grounds without the pressure of a short deadline to catch their vessel fishing period limits.

For the IPHC, longer fishing periods would require revisions to the biological sampling program that provides age, length, and weight data for the annual Pacific halibut stock assessment. Historically, the IPHC has focused biological sampling effort around the first two or three 10-hour open fishing periods, in the port where the highest number of pounds are landed. In 2017, in response to changes in landing patterns, the IPHC increased this effort and collected biological samples in three separate ports over the three open fishing periods. With longer fishing periods, the landings would likely be spread over a longer period of time and the individual landings may be smaller. Therefore, in order to obtain the necessary biological data for the Pacific halibut stock assessment, the IPHC would likely need to staff more ports for a greater length of time or coordinate with state agencies to obtain biological samples.

Conclusions

As noted in the discussion of the suggested options above, the IPHC expects that fishing period limits for individual vessels would be lower with longer fishing periods under the current



Appendix III

Review of IPHC Regulatory Area 2A commercial fishery management

PURPOSE

To provide a description of the IPHC Regulatory Area 2A Pacific halibut directed commercial fishery management, and an update of fishing period options in response to the Commission recommendation at the 2017 Interim Meeting (IM093-Rec.01).

BACKGROUND

The directed commercial Pacific halibut fishery in IPHC Regulatory Area 2A is one of the last commercial derby fisheries in the United States of America, operating as a series of potential 10-hr openings on pre-selected dates dependent on quota (catch limit) remaining in the fishery allocation. While commercial Pacific halibut fisheries in Alaska and British Columbia have moved to various types of individual fishing quota (IFQ) management by national governments over the years, the IPHC Regulatory Area 2A commercial fisheries have not. The derby-style directed commercial fishery in IPHC Regulatory Area 2A is managed by the IPHC setting fishing period dates, setting fishing period limits in-season by vessel size class, licensing vessels for participation in the fishery, and adopting overall Regulatory Area 2A catch limits in accordance with the [Pacific Fishery Management Council's \(PFMC's\) Pacific halibut Catch Sharing Plan \(CSP\)](#).

In June 2017, the IPHC Secretariat notified the PFMC via letter that the IPHC Secretariat sees no compelling reason to maintain a commercial derby fishery and several reasons to move away from it, including increased safety-at-sea, reduced wastage, and increased flexibility for fishers and processors (Appendix I). The PFMC, after considering input from its stakeholder advisory body, informally asked the IPHC Secretariat to provide information on potential vessel fishing period limits for longer fishing periods. The IPHC Secretariat provided that information at the PFMC's September 2017 meeting (Appendix II). At the PFMC's November 2017 meeting, the PFMC considered management options for this fishery but decided not to take further action on this issue at this time given other priorities. At the IPHC's Interim Meeting in November 2017, the Commissioners recommended the following:

IM093– Rec.01	<p>Report of the IPHC Secretariat (2017)</p> <p>The Commission RECOMMENDED that the IPHC Secretariat develop a working paper for consideration at the 94th Annual Meeting, containing the following:</p> <ul style="list-style-type: none">a) A detailed description of how the Regulatory Area 2A commercial fishery (derby) is managed, including roles and responsibilities of agencies, the PFMC and the IPHC; andb) An update to the analysis of various fishing periods and fishing period limits provided to the PFMC in September 2017, including the addition of 2- and 5-day fishing periods.
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REGULATORY AREA 2A DIRECTED COMMERCIAL MANAGEMENT, INCLUDING ROLES & RESPONSIBILITIES

There are four commercial Pacific halibut fisheries in IPHC Regulatory Area 2A:

- 1) a directed commercial fishery south of Pt Chehalis, WA (46°53.30' N. lat.);
- 2) an incidental Pacific halibut fishery to the sablefish fishery north of Pt. Chehalis;
- 3) an incidental fishery to the salmon troll fishery; and
- 4) a tribal commercial fishery (for the 13 treaty Indian tribes within a defined geographic location (IPHC Regulatory Subarea 2A-1)).

The PFMC's CSP allocates the IPHC-adopted Regulatory Area 2A catch limit among commercial fisheries and other sectors in IPHC Regulatory Area 2A.

For the directed commercial fishery, the IPHC has primary management responsibility for this derby-style fishery. The specific roles and responsibilities for management during a season are as follows:

Pre-season

- PFMC: considers and adopts changes to the CSP which dictates allocation of the catch limit among sectors (Sep., Nov. of the previous year)
- IPHC: adopts the following limits and management measures for the IPHC Regulatory Area 2A Pacific halibut fishery:
 - catch limits, including endorsement of the PFMC's CSP and the resulting sector allocations. (Jan)
 - fishing periods, including a series of potential dates for the directed commercial fishery and specification that it will operate from 0800 hours to 1800 hours local time on those days (IPHC Regulation Section 8 (2)) (range of potential dates in Jan, closure announced when allocation of limit estimated to be attained).
 - fishing period limits, including limits by vessel size class as specified in IPHC Fishery Regulations (2017) Section 11 (1,2,3,6,7) and 12.
 - license procedures, to issue licenses to vessels as specified at IPHC Regulation Section 4 (no fee, no limit on the number of licenses issued, applications due no later than 2359 on 30 April, or on the first weekday in May if 30 April is a Saturday or Sunday) (Apr/May)
- NMFS: implements the resulting catch limits and management measures in US regulations (Feb/Mar)

In-season

- IPHC: sets the fishing period limits by vessel size class for the first 10-hr opening based on the sector catch limit and the number of licenses issued by vessel size class. IPHC announces via news release and coordinates with NMFS and State Agencies.
- NMFS: deploys observers using similar coverage rates and approach as is used with the limited entry fixed gear groundfish fleet (first covered in 2017).
- IPHC: gathers biological samples from fishery landings in key ports.
- IPHC: reviews fish ticket information immediately following the opening to estimate if enough of the sector catch limit remains for another opening.

- IPHC, NMFS, Pacific State Marine Fisheries Commission (PSMFC), and the State Fish and Wildlife Agencies (Washington, Oregon, California): coordinate on data.
- If enough sector catch limit remains, the process starts over again with IPHC setting fishing period limits by vessel size class. If not, the fishery closes.

Post-season

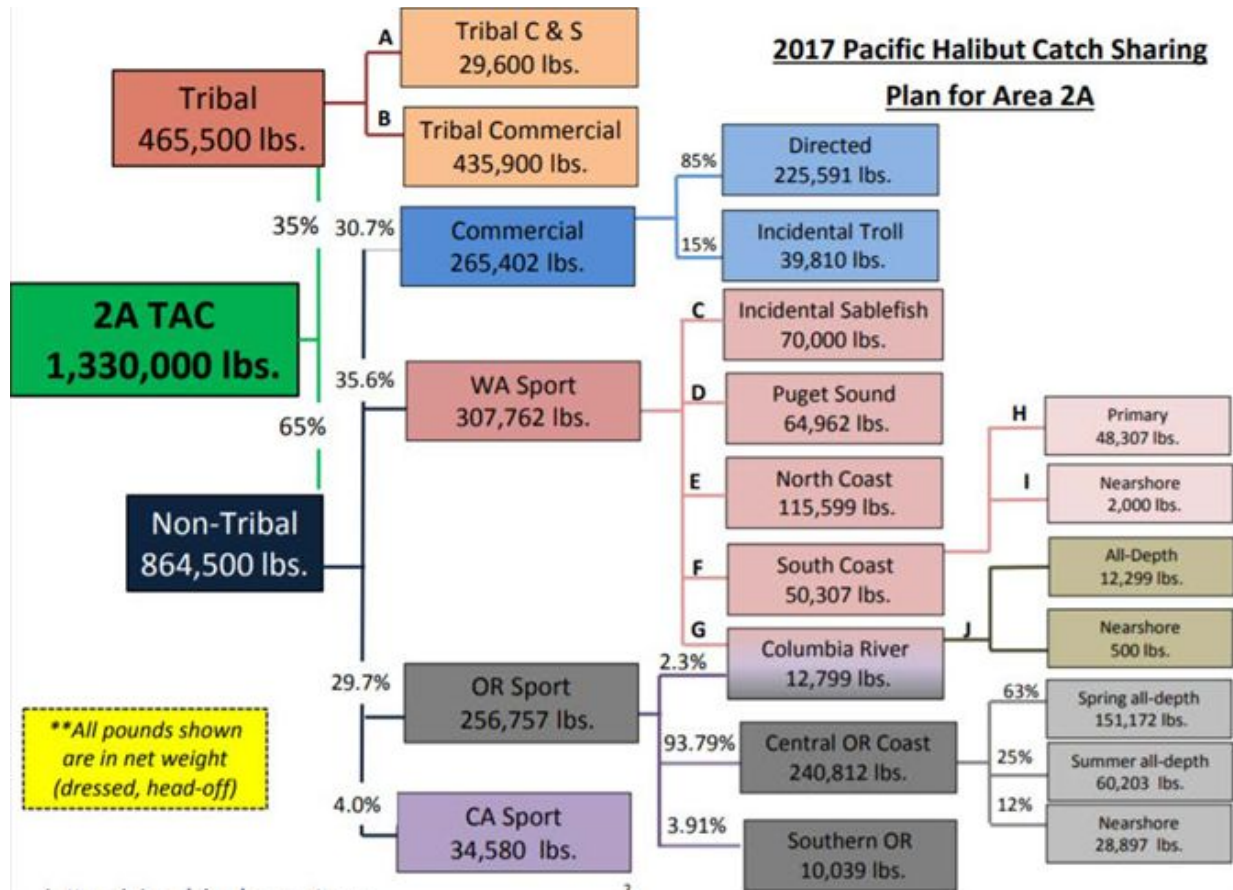
- IPHC, NMFS, PSMFC, and the State Fish and Wildlife Agencies (Washington, Oregon, California): coordinate on data and reporting from the fishery.

At the PFMC’s November 2017 meeting under the Pacific halibut agenda item, the PFMC provided a document with a similar exercise of roles and responsibilities under status quo management of the directed commercial fishery as a derby-style fishery (Level 1); as well as how roles and responsibilities would shift under a longer season or an incidental fishery (Level 2), or under limited entry or an IFQ fishery (Level 3) ([Agenda Item E.1, Attachment 3, Nov 2017](#)). The table on page 3 of Agenda Item E.1, Attachment 3, summarizes roles and responsibilities under different management scenarios.

Table 1. Scoping Matrix - Management Scenarios for the Non-Indian Directed Commercial Pacific Halibut Fishery

Level	Description	Work Load	Time Demand/ Time Frame	Comment
Level 1 Status Quo	IPHC lead in fishery management.	IPHC: establishes TAC; issues vessel licenses, identifies vessel classes, vessel limits, fishing periods, conducts biological sampling, data collection & compilation, develops fishery regulations for implementation by NMFS. Council facilitates preseason public process of developing Area 2A Catch Sharing Plan (CSP) and recommending annual regulations for the upcoming year. NMFS implements CSP/ updates regulations compliant with all applicable laws. Coordinates observer coverage with West Coast Groundfish Observer program. States monitor fisheries and report landings.	Status Quo Council moderate time demand preseason. IPHC high time demand throughout. States high time demand inseason. NMFS moderate time demand preseason and inseason.	Status Quo. Standard Council schedule for Halibut is Sept. and Nov., and sometimes June. Season setting process consistent with Council Operating Procedure (COP). 9
Level 2 Moderate change from Status Quo. (Greater change if include the standard workload for Council and States involvement, and NMFS regulatory process used in incidental retention fisheries).	Council to provide greater guidance and recommendations to IPHC if no change fishery structure. General framework of CSP intact, with level of revision dependent on level of fishery change. More variability in change at this level.	If changes are moderate: IPHC: no change in Status Quo. Council works with NMFS to develop vessel classes, vessel limits and fishing periods preseason and inseason for recommendation to IPHC. States: no change in Status Quo, unless want more involvement in developing annual fishery structure, or take over biological sampling. If current fishery structure to change from direct to incidental, NMFS take lead for regulations and inseason management, entities follow established pattern of tasks as in other incidental halibut fisheries.	IPHC time: No change if fishery structure is status quo. States time: no change or slight increase. Council time: increase. NMFS time increase. TIMEFRAME- gradual transition potentially over two or three year period.	Change anticipated in Council process and entity workload, but would depend on level of change in current fishery structure. May require change in management schedule (COP 9). Moderate development and implementation costs, and modest to moderate ongoing maintenance costs.
Level 3 Major Change from Status Quo. (Equivalent to FMP amendment to develop programs in terms of workload /process).	Council takes lead in fishery management: CSP modified to include detailed framework for fishery and role/responsibilities. Forward plans to IPHC for approval.	NMFS issues licenses. Council, NMFS develop preseason plan for fishery season structure. NMFS implements fishery, inseason management. States monitor fisheries and report landings, potentially including biological sampling.	IPHC time: decrease. States time: increase; outreach to develop recommendations. Council time: increase. NMFS time: increase. TIMEFRAME- transition potentially over 3-5 year period, perhaps graduating from Level 2.	Substantial changes for all entities. May require a change in COP 9 Council could consider a Halibut Management team or Technical Committee, or increase GAP/GMT membership to account for additional workload. High implementation and ongoing maintenance costs.

A diagram of the Regulatory Area 2A CSP for 2017 from a September PFMC meeting document is excerpted below ([PFMC, Agenda Item G.1, Attachment 2, Sept 2017](#))



Appendix IV: IPHC letters to PFMC (May 2017, May 2018, August 2018)

<p>COMMISSIONERS: ROBERT ALVERSON SEATTLE, WA TED ASBU CAMPBELL RIVER, B.C. JAMES BALSIGER JUNEAU, AK LINDA BEHNKEN SITKA, AK PAUL RYALL VANCOUVER, B.C. JAKE VANDERHEIDE DUNCAN, B.C.</p>	<p>INTERNATIONAL PACIFIC HALIBUT COMMISSION</p> <p>ESTABLISHED BY A CONVENTION BETWEEN CANADA AND THE UNITED STATES OF AMERICA</p>	<p>EXECUTIVE DIRECTOR DAVID T. WILSON</p> <p>2320 W. COMMODORE WY. STE 300 SEATTLE, WA 98199-1287</p> <p>TELEPHONE: (206) 834-1838</p> <p>FAX: (206) 832-2963</p> <p>EL2017066 30 May 2017</p>
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Mr. Herb Pollard
 Chair, Pacific Fishery Management Council
 7700 NE Ambassador Place, Suite 101
 Portland, OR 97220-1384

Re: Commercial derby fishery in IPHC Regulatory Area 2A

Dear Mr. Pollard:


The International Pacific Halibut Commission (IPHC) notes that the Pacific Fishery Management Council (Council) is reviewing the Pacific halibut Catch Sharing Plan (CSP) for Regulatory Area 2A during the remainder of this year.

In conjunction with reviewing the CSP, the IPHC recommends for the Council's consideration a change in the management of the non-tribal, directed commercial Pacific halibut fishery in Regulatory Area 2A. This fishery is one of the few remaining derby-style commercial fisheries in the United States of America, concentrating effort into as few as two days of fishing each year at current stock levels.

The IPHC sees no compelling reason to retain the directed commercial Pacific halibut fishery as a derby-style fishery, but a number of advantages in shifting to a management system that reduces the concentration of fishing effort and eliminates or reduces the race to fish. Potential advantages include:

1. **Safety.** The current derby system offers no flexibility as to when fishing takes place, creating pressure to attempt fishing even in poor weather and dangerous conditions. The U.S. Coast Guard has frequently commented at IPHC meetings in support of moving away from the derby fishery for this reason, and the Coast Guard provided similar input at the Council's March 2017 meeting. We believe that a system offering more flexible fishing opportunities is inherently safer for everyone on the water, and that this is the primary reason for change.
2. **Reduced wastage.** The current derby system is essentially a race for fish, where fishers have an incentive to set as much gear as possible during the short time available for fishing. When the fishing is good, this leads to more regulatory discards as trip limits are reached than would be the case under a system where the fishers had time to more carefully calibrate their effort to applicable limits. Mortality from these regulatory discards (termed 'wastage' in IPHC management) represents an unnecessary loss to the resource.
3. **Flexibility for fishers and processors.** Under the current derby system, fresh Pacific halibut from Regulatory Area 2A is delivered and comes to market in a tightly defined period of time, limiting the ability of fishers and processors to influence or react to market forces. A management system with more flexibility regarding fishing days would allow fishers and processors more latitude in managing their industry sector.

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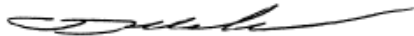


Other than maintaining access to the resource by the commercial Pacific halibut fishery, the IPHC does not recommend a particular management system to replace the derby for the 2A non-tribal, directed commercial Pacific halibut fishery. The IPHC supports a reduction in the concentration of fishing effort, and eliminating the race to fish, as a guiding principle for any changes that are made.

We recognize the challenges that shifting to a new management system would entail in order to ensure equitable use and effective management of the resource, and that it would take some time to develop and implement changes. In addition to the Council, action would be required by IPHC, the U.S. National Marine Fisheries Service, and the various State agencies. For our part, IPHC stands ready to engage in the process and to support it with scientific advice.

The IPHC looks forward to working with the Council and Council staff to continue our strong partnership for sustainable management of the Pacific halibut resource.

Sincerely,



Dr. David T. Wilson
Executive Director, IPHC

cc: IPHC Commissioners
Charles Tracy, PFMC
Michael Burner, PFMC
Kelly Ames, PFMC

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INTERNATIONAL PACIFIC HALIBUT COMMISSION

ESTABLISHED BY A CONVENTION BETWEEN CANADA
 AND THE UNITED STATES OF AMERICA

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EL2018048
 15 May 2018

Mr. Philip Anderson
 Chairperson, Pacific Fishery Management Council
 7700 NE Ambassador Place, Suite 101
 Portland, OR 97220-1384

Re: Non-treaty directed commercial Pacific halibut fishery in IPHC Regulatory Area 2A

Dear Mr. Anderson:

The International Pacific Halibut Commission (IPHC) notes with appreciation the extended discussion during 2017 by the PFMC and its advisory bodies in response to the IPHC's letter of 30 May 2017 recommending consideration of options for changes to the management of the non-treaty directed commercial Pacific halibut fishery in IPHC Regulatory Area 2A.

The IPHC sees no compelling reason to retain this fishery's current 'derby-style' management structure, and a number of substantial advantages in shifting to a management system that reduces the concentration of fishing effort and eliminates or reduces the race to fish, including the safety of fishery participants.

It is the intention of the IPHC to eliminate the 'derby-style' management structure in the near term. We acknowledge that the change from a 'derby-style' fishery to either a limited-entry or quota fishery would require active engagement on the part of the PFMC and NOAA Fisheries. Thus, we request to continue discussion toward that goal during 2018.

As an interim measure, the IPHC will commence internal discussions to extend the length of the current fishery for the 2019 fishing period, as we continue discuss the end of the 'derby-style' management of the fishery in the near future. We expect that a proposal to change the length of the fishing period for the non-treaty directed commercial Pacific halibut fishery in IPHC Regulatory Area 2A will be presented to the IPHC for consideration during its 2018-19 meeting cycle, for potential implementation in 2019.

Noting that Pacific halibut is not on the agenda for the June 2018 PFMC meeting, we wish to call the Council's attention to this issue at this time, and would appreciate the PFMC's consideration of this potential change in the course of its regular review of the Pacific halibut fishery and its Catch Sharing Plan later this year. The IPHC will provide briefing book materials in advance of the September and October PFMC meetings and IPHC Secretariat staff will attend both meetings. Recommendations from the Council would then be considered by the IPHC at its Interim Meeting in November 2018 and Annual Meeting in January 2019.

The IPHC appreciates the PFMC's consideration of this question, and looks forward to working with the Council and Council staff to continue our strong partnership for sustainable management of the Pacific halibut resource.

Sincerely,



David T. Wilson, Ph.D.
Executive Director, IPHC

cc: IPHC Commissioners
Chuck Tracy, PFMC
Mike Burner, PFMC
Robin Ehlke, PFMC

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EL2018055
 6 August 2018

Mr. Philip Anderson
 Chairperson, Pacific Fishery Management Council
 7700 NE Ambassador Place, Suite 101
 Portland, OR 97220-1384

Re: Non-treaty directed commercial Pacific halibut fishery in IPHC Regulatory Area 2A

Dear Mr. Anderson:

The International Pacific Halibut Commission (IPHC) notes with appreciation the extended discussion since 2017 by the PFMC and its subsidiary bodies in response to the IPHC's letter of 30 May 2017 recommending consideration of options for changes to the management of the non-treaty directed commercial Pacific halibut fishery in IPHC Regulatory Area 2A.

As part of this discussion, the Non-Indian Directed Pacific Halibut Fishery Management- Scoping Exercise discussed at the November 2017 PFMC meeting identified a matrix of levels of engagement and task sharing in management of the fishery, ranging from Level 1 (status quo) to Level 3 (shift in roles and responsibilities).

Level 2 of the matrix (moderate change) included a number of options as transitional tools. Among the structural changes considered in Level 2 was a change in the length of the fishing period, which is the mandate of the IPHC.

In our letter of 15 May 2018, the IPHC noted its expectation that a proposal to change the length of the fishing period for the non-treaty directed commercial Pacific halibut fishery in IPHC Regulatory Area 2A will be considered by the IPHC during its 2018-19 meeting cycle, for potential implementation in 2019. We expect this proposal to include options for either a 5-day or 10-day fishing period each year, with the possibility of additional fishing periods depending on landings.

We would appreciate the PFMC's consideration of this potential change in the course of its regular review of the Pacific halibut fishery and its Catch Sharing Plan during its September and November meetings this year. The IPHC will provide briefing book materials for both meetings and IPHC Secretariat staff will attend. Recommendations from the PFMC would then be considered by the IPHC as it reviews the proposal at its 94th Interim Meeting (IM094) in November 2018 and 95th Annual Meeting (AM095) in January 2019.

As noted previously, the IPHC sees no compelling reason to retain this fishery's current 'derby-style' management structure, and a number of substantial advantages in shifting to a management system that reduces the concentration of fishing effort and eliminates or reduces the race to fish, including the safety of

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INTERNATIONAL PACIFIC HALIBUT COMMISSION

ESTABLISHED BY A CONVENTION BETWEEN CANADA
AND THE UNITED STATES OF AMERICA

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fishery participants. We acknowledge that further change beyond that which is contemplated for 2019, such as shifting to either a limited-entry or quota-share fishery, requires active engagement on the part of the PFMC and NOAA-Fisheries. Thus, we request to continue discussion toward that goal during 2018 and 2019.

The IPHC appreciates the PFMC's consideration of this question, and looks forward to working with the PFMC and its Secretariat to continue our strong partnership for sustainable management of the Pacific halibut resource.

Sincerely,



David T. Wilson, Ph.D.
Executive Director, IPHC

cc: IPHC Commissioners
Chuck Tracy, PFMC
Mike Burner, PFMC
Robin Ehlke, PFMC



IPHC Fishery Regulations: minor amendments

PREPARED BY: IPHC SECRETARIAT (23 OCTOBER 2018)

PURPOSE

To improve clarity and consistency in the IPHC Fishery Regulations.

BACKGROUND

This proposal would make minor amendments to the IPHC Regulations. These revisions to the regulations would include:

- Updating and clarifying existing fishery regulations;
- Reordering regulations for clarity and emphasis.

DISCUSSION

Periodically, regulations should be reviewed to ensure they are clear, consistent, and up to date as a whole. These revisions to the IPHC Fishery Regulations are a result of a holistic review. The primary revisions resulting from this review are described below, and will be provided to the 95th Session of the Commission in detail:

- Updating and clarifying fishery regulations
 - The current Section 4, Limits, would be re-titled Fishery Limits.
 - Section 5, Licensing Vessels for IPHC Regulatory Area 2A, would be amended to make it clear that vessels in IPHC Regulatory Area 2A may hold both a license for directed commercial fishing AND a license for the incidental catch during the sablefish fishery.
 - The table of commercial catch limits would be removed from the current Section 12, Commercial Catch Limits, as this information is available in the current Section 4, Limits and is therefore redundant. Section 8 would be retitled Application of Commercial Fishery Limits.
 - Section 18, Receipt and Possession of Pacific Halibut, would be revised to make it clear that IPHC Regulatory Area 2A is included in Paragraph 6 as intended.
- Reordering fishery regulations for clarity and emphasis
 - The sequence of existing sections would be revised as follows:

Applicable to all fisheries

1. Short Title
30. Previous Regulations Superseded
2. Application
3. Definitions
7. Regulatory Areas
4. Limits
6. In-Season Actions

15. Careful Release of Pacific Halibut – current text appears applicable to all fisheries
22. Retention of Tagged Pacific Halibut
Applicable to commercial fisheries
9. Fishing Periods
11. Closed Area
10. Closed Periods
12. Commercial Catch Limits (retitled Application of Commercial Fishery Limits, without table)
8. Fishing in IPhC Regulatory Areas 4E and 4D
13. Fishing Period Limits
5. Licensing Vessels for IPhC Regulatory Area 2A
16. Vessel Clearance in IPhC Regulatory Area 4
19. Fishing Multiple Regulatory Areas
20. Fishing Gear
14. Size Limits
17. Logs
18. Receipt and Possession of Pacific Halibut
21. Supervision of Unloading and Weighing
Applicable to Indigenous fisheries
23. Fishing by United States Treaty Indian Tribes
25. Aboriginal Groups Fishing for Food, Social and Ceremonial Purposes in British Columbia
24. Customary and Traditional Fishing in Alaska
Applicable to recreational fisheries
26. Sport Fishing for Pacific Halibut—General
27. Sport Fishing for Pacific Halibut—IPhC Regulatory Area 2A
28. Sport Fishing for Pacific Halibut—IPhC Regulatory Area 2B
29. Sport Fishing for Pacific Halibut—IPhC Regulatory Areas 2C, 3A, 3B, 4A, 4B, 4C, 4D, 4E

Benefits/Drawbacks: The benefit is clearer and more consistent regulations that are easier to use. No known drawback.

Sectors Affected: This proposal affects all sectors of the Pacific halibut fishery.

ADDITIONAL DOCUMENTATION / REFERENCES

None

APPENDICES

None



INTERNATIONAL PACIFIC
HALIBUT COMMISSION

IPHC-2018-IM094-PropC1

REGULATORY PROPOSAL 2019
Minimum TCEY in IPHC Regulatory Area 2A

SUBMITTED BY:
PATRICK DEPOE
UNITED STATES OF AMERICA
26 OCTOBER 2018

IPHC Regulatory Area(s) that may be affected: 2A
Fishery Sector(s): Commercial, Recreational

EXPLANATORY MEMORANDUM

Variable and declines below a certain threshold in fishery limits from year to year create significant uncertainty and hardship for 13 halibut tribes and three coastal states (California, Oregon and Washington) dependent on the Pacific halibut fisheries in IPHC Regulatory Area 2A. Regulatory Area 2A represents a small fraction of Region 2, and of the overall Pacific halibut stock. As such, a higher IPHC Regulatory Area 2A TCEY than indicated by the biological distribution of the stock estimate by the IPHC Secretariat will not create a biological conservation concern. This has been demonstrated in recent years when the Commission has set TCEYs higher than the levels suggested by the harvest decision table. Recent experience suggests that a constant TCEY floor in IPHC Regulatory Area 2A can be sustained by the biomass available in Region 2. In recent years, the TCEYs adopted for IPHC Regulatory Area 2A have been between 1.06 and 1.47Mlb, which produced FCEYs of 0.96 to approximately 1.33Mlb. A stable level of catch between of 1.5Mlb would reduce the variability and uncertainty for all fisheries in IPHC Regulatory Area 2A, and should be used as a floor level in annual TCEY decisions.

SUGGESTED REGULATORY LANGUAGE

Adopt a TCEY for IPHC Regulatory Area 2A that supports a FCEY no lower than 1.5Mlb. In years when the distribution would indicate a FCEY higher than 1.5Mlb is available, that number would be adopted.



INTERNATIONAL PACIFIC
HALIBUT COMMISSION

IPHC-2018-IM094-PropC2

REGULATORY PROPOSAL 2019
IPHC Regulatory Area 2A Quota Proposal

SUBMITTED BY:
MICHAEL PETTIS
COMMERCIAL FISHERMAN
UNITED STATES OF AMERICA
26 OCTOBER 2018

IPHC Regulatory Area(s) that may be affected: 2A
Fishery Sector(s): Commercial

EXPLANATORY MEMORANDUM

Newport Oregon longliners

This is a proposal for the future management of the pacific halibut fishery in area 2-A below point Chehalis Wa. This is in response to the IPHC's request for a change from the current 10 hour derby fishery.

Our proposal would produce an individual quota system. In all other IQ programs that we are aware of, qualifying poundage was obtained on an equal playing field where each fisher had unrestricted access to qualifying pounds. Since 1991 fishers in 2-A have operated entirely under a length based trip limit system where larger vessels had larger trip limits.

Our IQ proposal has two qualifying criteria, with the first favoring the larger vessels and the second designed to even the playing field and favor the smaller vessels. All vessels will be awarded quota points earned in both qualifying criteria. The sum of points earned in both criteria will determine IQ poundage.

Initial requirement

To be included in the pool of fishers eligible for the individual quota system a fisher would need at least one delivery of halibut in two of the last three years.

Qualifying window period

The qualifying period for our IQ proposal would be the most recent 10 years of the halibut fishery in 2-A. While most of us had higher catches of halibut prior to this time, we felt that recent participation and poundage levels would best represent current dependence and investment in the fishery.

Qualifier #1 – total pounds landed

Use the total pounds caught throughout the entire window period by each qualified vessel.

This criteria obviously favors the larger vessels with larger limits. We felt that criteria number 2 favors the smaller vessels and should even things out.

Explanation of qualifier# 1

Add total pounds caught in the entire window period by each qualified vessel. Determine the top amount produced by any one vessel. The top vessel's production becomes the possible 100 % and the top vessel receives 100 quota points for his total.

Every other eligible vessel is compared to the top producing vessel and their production is expressed as a percentage of the number one producer.

Then award each eligible fisher one quota point for each percentage point they earned when compared to the top producer.

Example

For ease of example let's say that the top producing vessel had 100,000 lbs total in the entire window period.

Then let's say that vessel X has 63,000 lbs. in the entire window period which is 63% of the top vessel's 100,000 lbs. Vessel X would receive 63 quota points towards his IQ.

Let's also say that Vessel Y caught 91,000 lbs. in the window period. Vessel Y would receive 91 quota points.

We felt that while larger boats had larger trip limits than smaller boats, they also often did not stay and fish smaller later openings, giving the smaller boats a little chance to catch up some.

Qualifier #2 – percentage of available pounds caught

Take total pounds caught in Qualifier# 1 for each eligible boat and then compare each boats production with what was possible for each boat's size designation throughout the entire window period if the vessel fished every opening available. Determine what percentage of what was possible that each boat caught.

We felt that it was easier for a boat to catch 5,000 lbs. in a ten hour opening than it is to catch 10,000 lbs. in that same ten hour period. Therefore Qualifier# 2 should favor smaller boats with smaller trip limits. Also it is a fact that many larger boats skipped the later, smaller openings, and many smaller boats stayed and fished these openings. This in many cases would produce high percentage catch rates for smaller boats and 0% catch rates for the larger boats that didn't fish later openings. We felt that the advantage for smaller vessels in qualifier#2 should pretty well even out the large boat advantage in qualifier# 1.

Explanation of qualifier# 2

If the top boat in this qualifier caught, say 80% of the possible fish that were available in their size category counting all openings for the entire window period, then the top boats percentage would become the 100% standard that all other qualifiers would be compared to and the top boat would receive 100 quota points for his effort history.

Let's say in this case that boat X caught 60% of the fish available in his size category. 60% is three quarters of the 80% that the top producer earned in his size category. Three quarters is 75%, so boat X would receive 75 quota points.

Let's say that boat Y only fished the first opening and then went offshore tuna fishing most years. If boat Y caught 40% of the total available fish in his size category then that is half of the 80% caught by the top boat in the #2 qualifier. Half is 50% so boat Y would receive 50 quota points.

Both the #1 qualifier categories give more benefit to boats that fished as many openings as possible over the entire window period with good average production for their size category.

After all points for all qualified vessels have been awarded, regulators would add up the total number of points earned by all eligible fishers combined. Then regulators would divide the total allowable catch pounds by the total number of points earned, producing a number of pounds of halibut per quota point. Total quota points would only need to be calculated once during initial allocation. The pounds allocated per point would go up and down with changes to the TAC.

There also needs to be discussion about how much fish any one boat should be allowed to catch as quota points become marketable. Alaska has a vessel cap and we feel that there should be one here as well. We feel that a vessel cap of 5% of the TAC would be appropriate for area 2-A.

We feel that a "professional longliner" is one who pulls ground line with hooks on it more than two days a year. We also feel that already being at sea pulling ground line with an occasional halibut on it while targeting black cod, is a good efficient way to produce halibut with minimal negative impact to the stock. Each of us signed on this proposal also fish fixed gear black cod permits.

We feel that a halibut IQ program in area 2-A below point Chehalis would provide a more consistent supply of fresh halibut to local restaurants and fish markets, and would result in higher ex-vessel prices for the halibut produced. An IQ would allow fishers to produce their halibut when it fits their schedule, in favorable weather, reducing gear conflicts and the sacrifice of other fishing opportunities.

We feel there should be a moratorium on 2-A halibut licenses with a control date publicly announced. If other fishers realize that change is coming in the 2-A halibut fishery there could be a flood of new interest of fishers not wanting to be excluded. This

fishery has a very small quota on the directed commercial side and additional fishing pressure would further dilute an already greatly reduced fishing opportunity in whatever halibut management is adopted in the future.

Thank you for considering our proposal for future management of area 2-A Directed commercial Halibut fishing below point Chehalis Wa.

Signed by Newport Oregon Longliners.

Michael Pettis (F/V Challenge – 37 years, F/V Jaka-B – 25 years)

Doug Morrison (F/V Tempo – 32 years)

Robert Aue (F/V Winter Hawk – 38 years)

Mark Newell (F/V Silver Quest – 14 years)

Tony Pettis (F/V Heidi Sue – 20 years)

SUGGESTED REGULATORY LANGUAGE



INTERNATIONAL PACIFIC
HALIBUT COMMISSION

IPHC–2018–RAB019–R

Report of the 19th Session of the IPHC Research Advisory Board (RAB019)

Seattle, Washington, United States of America, 28 February 2018

DISTRIBUTION:

Participants in the Session
Members of the Commission
IPHC Staff

BIBLIOGRAPHIC ENTRY

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INTERNATIONAL PACIFIC
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ACRONYMS

CPUE	Catch per Unit Effort
IPHC	International Pacific Halibut Commission
NOAA	National Oceanic and Atmospheric Administration (NOAA-Fisheries)
PAT	Pop-up Archival Transmitting (tag)
RAB	Research Advisory Board
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 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 19th Session of the Research Advisory Board (RAB019) of the International Pacific Halibut Commission (IPHC) was held in Seattle, Washington, U.S.A. on 28 February 2018. The meeting was opened by the Chairperson, Dr David Wilson (IPHC Executive Director), who was assisted by the Vice-Chairperson, Dr Josep Planas.

The following are a subset of the complete recommendations and requests for action from the RAB019 to the Commission, which are provided within [Appendix IV](#).

RECOMMENDATIONS

Bycatch handling practices on all fleets catching Pacific halibut

RAB019–Rec.01 ([para. 7](#)) **NOTING** that the IPHC Secretariat is currently conducting a research project evaluating handling practices associated with physiological condition and survival of discarded Pacific halibut in the directed longline fishery that will produce, as deliverables, best practice handling guidelines for the reduction or control of discard mortality rates by late 2019, the RAB reiterated its previous **RECOMMENDATION** that the IPHC Secretariat develop ‘*Best practice handling guidelines*’ for each of the primary gear types (fixed-hook, snap gear, auto-longline, pots and trawl) which catch Pacific halibut, both directed and non-directed.

IPHC Closed Area

RAB019–Rec.02 ([para. 9](#)) The RAB **AGREED** that the IPHC Closed Area (Pacific Halibut Fishery Regulations 2018, Sect. 11) is not currently meeting its intended objective of protecting juvenile Pacific halibut when it is open to non-directed fisheries, and **RECOMMENDED**, in coordination with the NPMFC, that the IPHC Secretariat examine alternative management regimes for the Closed Area, and for these to be presented at the 96th Annual Meeting in 2020.

Chalky Pacific halibut

RAB019–Rec.03 ([para. 13](#)) The RAB reiterated its previous **RECOMMENDATION** that the IPHC Secretariat undertake research to answer the following, with the intention of developing of simple field test for chalky flesh:

- a. What causes chalky flesh in Pacific halibut and to what degree? Are there particular environmental signatures (temperature, dissolved oxygen, etc.) that characterize areas with incidence of chalky flesh?
- b. Why does the occurrence of chalky flesh in Pacific halibut appear to be reappearing after a period of limited occurrence in Regulatory Areas 3A and 3B in 2016, and again in 3A during the 2017 fishing period?
- c. Are there differences in the occurrence of chalky flesh in males and female, as well as fish of different sizes?

Benthic habitat mapping

RAB019–Rec.04 ([para. 18](#)) The RAB **RECOMMENDED** that the IPHC include a requirement on all IPHC fishery-independent setline survey contracts, that vessels collect bathymetric composition data and provide them to the IPHC Secretariat.

Calibration of snap versus fixed gear

RAB019–Rec.05 ([para. 38](#)) The RAB **RECOMMENDED** that after the current fishery-independent setline survey expansion project has been completed in 2019, a calibration experiment be conducted to evaluate the relative catchability of snap vs fixed gear types, and the potential for including snap gear in the annual setline survey design.

1. OPENING OF THE SESSION

1. The 19th Session of the Research Advisory Board (RAB019) of the International Pacific Halibut Commission (IPHC) was held in Seattle, Washington, U.S.A. on 28 February 2018. A total of ten (10) members attended the Session from the two (2) Contracting Parties, as well as seventeen (17) IPHC staff as observers or officers. Four (4) RAB Members were absent (no apologies received). The list of participants is provided at [Appendix I](#). The meeting was opened by the Chairperson, Dr David Wilson (IPHC Executive Director), who was assisted by the Vice-Chairperson, Dr Josep Planas.

2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

2. 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 *IPHC Rules of Procedure (2017)*

3. The RAB **RECALLED** its mandate as stated in the IPHC Rules of Procedure (2017) as follows:
Appendix VII, I.1 “The Research Advisory Board (RAB) is composed of members of the Pacific halibut community that shall suggest research ideas, review IPHC research, and provide the IPHC Secretariat staff (who participate in Sessions of the RAB as Observers) with direct input and advice from industry during the development of research plans. The RAB may also make recommendations to the Scientific Review Board concerning research plans and priorities. The Executive Director shall facilitate the RAB’s meetings, as well as communication with the Commission and the other IPHC advisory bodies on the RAB’s behalf.”
4. The RAB **NOTED** that in accordance with Rule 19 of the IPHC Rules of Procedure (2017), the IPHC Secretariat will undertake a detailed review of the Rules of Procedure for the consistency and appropriateness throughout the course of 2018, for consideration by the Commission at the 95th Annual Meeting in January 2019. Several key areas have been identified as needing revision or inclusion as follows:
 - a. Code of Conduct: To be developed and added to cover all Board members.
 - b. Chairperson and Vice-Chairperson roles and responsibilities: To expand upon Rule 10 – Functions of the Chairperson and Vice-Chairperson, to include the responsibilities associated with being an Officer of the Commission.
 - c. Subsidiary Bodies: Amendment of the various appendices specific to each as necessary.

3.2 *Update on the actions arising from the 18th Session of the RAB (RAB018)*

5. The RAB **NOTED** paper IPHC-2018-RAB019-03 which provided the RAB with an opportunity to consider the progress made during the inter-sessional period, in relation to the recommendations and requests of the 18th Session of the IPHC Research Advisory Board (RAB018).
6. The RAB **AGREED** to consider and revise as necessary, the actions, and for these to be combined with any new actions arising from the RAB019.

3.2.1 **Bycatch handling practices on all fleets catching Pacific halibut**

7. **NOTING** that the IPHC Secretariat is currently conducting a research project evaluating handling practices associated with physiological condition and survival of discarded Pacific halibut in the directed longline fishery that will produce, as deliverables, best practice handling guidelines for the reduction or control of discard mortality rates by late 2019, the RAB reiterated its previous **RECOMMENDATION** that the IPHC Secretariat develop ‘*Best practice handling guidelines*’ for each of the primary gear types (fixed-hook, snap gear, auto-longline, pots and trawl) which catch Pacific halibut, both directed and non-directed.

3.2.2 IPHC Closed Area

8. The RAB **AGREED** that retaining the IPHC Closed Area in its current form, whereby the directed fishery is prohibited from fishing within the area, and with the intent of protecting juvenile Pacific halibut from extraction by the longline fleet, will continue to be ineffectual if other fisheries which are known to catch and have a high mortality of juveniles, such as bottom trawl, continue to be permitted access.
9. The RAB **AGREED** that the IPHC Closed Area (Pacific Halibut Fishery Regulations 2018, Sect. 11) is not currently meeting its intended objective of protecting juvenile Pacific halibut when it is open to non-directed fisheries, and **RECOMMENDED**, in coordination with the NPMFC, that the IPHC Secretariat examine alternative management regimes for the Closed Area, and for these to be presented at the 96th Annual Meeting in 2020.

3.2.3 Chalky Pacific halibut

10. The RAB **NOTED** that from September to October in both 2016 and 2017, industry encountered a concerning number of fish with ‘chalky flesh’ in the fishery. Historically, high occurrence of chalky flesh was identified in Regulatory Areas 3A and 3B of the fishery, however the occurrence there had dissipated. No link with ‘mushy flesh’ has been found to date.
11. The RAB **RECALLED** that the previously used pH (potential of hydrogen) testing of fish flesh, as an indication of chalky flesh, was no longer used for Pacific halibut due to the fact that the pH level described (<6.3) was not considered accurate enough, given that many fish have pH 6.3 and are not subject to chalky flesh.
12. The RAB **NOTED** that work on the study of chalky Pacific halibut involving the IPHC Secretariat was last performed in 2006 and documented in IPHC Technical Report No. 50 “*Investigating the roles of temperature and exercise in the development of chalkiness in Pacific halibut*”. Conclusions of the study were indecisive, with “*failure of the experimental design to produce chalkiness in most experimental halibut*” cited as a challenge in the report.
13. The RAB reiterated its previous **RECOMMENDATION** that the IPHC Secretariat undertake research to answer the following, with the intention of developing of simple field test for chalky flesh:
 - a. What causes chalky flesh in Pacific halibut and to what degree? Are there particular environmental signatures (temperature, dissolved oxygen, etc.) that characterize areas with incidence of chalky flesh?
 - b. Why does the occurrence of chalky flesh in Pacific halibut appear to be reappearing after a period of limited occurrence in Regulatory Areas 3A and 3B in 2016, and again in 3A during the 2017 fishing period?
 - c. Are there differences in the occurrence of chalky flesh in males and female, as well as fish of different sizes?

3.3 Outcomes of the 94th Session of the IPHC Annual Meeting (AM094)

14. The RAB **NOTED** paper IPHC-2018-RAB019-04 which provided the outcomes of the 94th Session of the IPHC Annual Meeting (AM094) relevant to the mandate of the RAB.

3.3.1 Evaluation of the IPHC’s 32” minimum size limit

15. The RAB **NOTED** Commission’s decision relating to the evaluation of the IPHC’s 32” minimum size limit as follows:

AM094–Rec.04 (para. 89) *The Commission NOTED report IPHC-2018-AM094-14, which indicated that the performance of the management procedure is dominated by management decisions other than the size limit, (e.g. removal of the size limit is likely to result in minimal changes in yield) and RECOMMENDED that the size limit remain unchanged.*

4. SEASON OVERVIEW

16. The RAB **NOTED** the following key 2017 fishing updates provided by RAB members, including technological advances made in-season.

4.1 Benthic habitat mapping

17. The RAB **NOTED** an impromptu presentation on how the Alaskan Longline Fishermen’s Association (ALFA) has implemented a program to compile, map, and share bathymetric data collected by its members, for the purposes of making fishing operations more efficient, in terms of species targeting and avoidance.
18. The RAB **RECOMMENDED** that the IPHC include a requirement on all IPHC fishery-independent setline survey contracts, that vessels collect bathymetric composition data and provide them to the IPHC Secretariat.

4.2 Automatic Identification System (AIS) transmitters

19. The RAB **NOTED** the increasing use of AIS transmitters by the fleet to mark fishing buoys, and that the practice improved fishing efficiency, particularly for deep sets.

4.3 eLog implementation by the Canadian fleet

20. The RAB **NOTED** that the requirement for eLogs for Canadian harvesters had been implemented throughout the 2017 fishing period. The IPHC Secretariat, DFO and AMR coordinated extensively throughout 2017 to ensure the eLog (FLOAT) program in Canada, captured all of the IPHC minimum requirements. The transmission of the log(s) during vessel captain interviews by IPHC Secretariat staff in ports is an efficient and smooth process, which was transmitted from an Android™ device through a Bluetooth™ connection and eventually relayed to the IPHC Seattle office following field staff initial verification.
21. The RAB **NOTED** that eLogs are also being used in some U.S.A. fisheries (NOAA-Fisheries eLog and IPHC RDE). Some frustration was being experienced by Canadian fishers, in which updates to logs, maintaining multiple logs (hard copy, personal, and eLog), and concerns with the durability of the device and the data that it stores, were causing some difficulties. Similar frustrations were expressed by U.S.A. fishers, regarding the usability and the need for maintaining different records (NOAA-Fisheries eLog, hard copy, state hard copy, personal log, and details for the observer).

5. DESCRIPTION OF IPHC RESEARCH ACTIVITIES

5.1 *Brief overview of IPHC 5-year Biological Research Program*

22. The RAB **NOTED** paper IPHC-2018-RAB019-05 which outlined the research projects proposed to, and endorsed by the Commission to undertake the IPHC’s 5-year Biological and Ecosystem Sciences Research Program (2018-22).
23. The RAB **NOTED** that some of the proposed research elements are paired with the IPHC fishery-independent setline survey (FISS) each year, and encouraged the continued and mutually beneficial interaction between the 5-year Biological Research Program and the FISS.
24. The RAB **ENDORSED** the general approach to research detailed in paper IPHC-2018-RAB019-05 and encouraged the IPHC Secretariat to further engage with industry to determine if more hands-on research could be undertaken in collaboration with the fleet.

5.2 *Ongoing research activities*

5.2.1 *IPHC fishery-independent setline survey expansion and densification (R. Webster)*

25. The RAB **NOTED** paper IPHC-2018-RAB019-06 which provided an overview of the IPHC fishery-independent setline survey (FISS, or setline survey) expansion undertaken in 2017, in Regulatory Areas 4B and 2A.
26. The RAB **NOTED** that:
 - a. there is evidence that fishing is poor following seismic events, and that the IPHC Secretariat may consider exploring the relationship between setline survey catches and seismic events.

- b. (through a series of questions) there was desire for clarification of the design, purpose and future of setline survey expansions. The IPHC Secretariat explained that the setline survey expansion station locations are identified by extrapolating the current 10 nmi grid into unsurveyed habitat within the 10-400 fm range, and provided background on the motivation and design of the ad-hoc densified setline survey grid off the WA coast. Following the completion of the current expansion program (end of 2019), an evaluation of the setline survey (including expansion stations) will be undertaken in order to determine an optimal setline survey design moving forward.
- c. a number of setline survey stations regularly have zero catch rates, and questioned the need for repeatedly surveying such stations. The frequency with which such areas should be surveyed will be part of the evaluation that follows the completion of the setline survey expansion in 2019.

5.2.2 Reproductive assessment of the Pacific halibut population

27. The RAB **NOTED** paper IPHC-2018-RAB019-07 which outlined the research project describing studies designed to improve our knowledge on reproductive development in female and male Pacific halibut.

5.2.3 Sex-marking at sea and genetic validation of sex identification

28. The RAB **NOTED** paper IPHC-2018-RAB19-08 which outlined current progress of the at-sea sex marking project and the development of genetic assays for sex identification.
29. The RAB **NOTED** the concerns from fishery participants regarding the absence of sampling of all marked offloads of Pacific halibut due to the random nature of the sampling efforts, given the effort required and the positive experience from the fleet regarding their participation in efforts to identify the sex ratio of the commercial catch.
30. The RAB **NOTED** that the IPHC Secretariat may continue its sex-marking at-sea project in 2019 once the results from all the genetic samples from the 2017 sampling effort are processed and the results analysed and interpreted.

5.2.4 Factors affecting somatic growth in juvenile Pacific halibut

31. The RAB **NOTED** paper IPHC-2018-RAB019-09 which outlined the studies on growth in juvenile Pacific halibut by the IPHC Secretariat.

5.2.5 Discard mortality rates and post-release survival in the directed Pacific halibut fishery

32. The RAB **NOTED** paper IPHC-2018-RAB019-10 which outlined the research project describing studies designed to improve our estimates of discard mortality rates in the directed Pacific halibut longline fishery.
33. The RAB **NOTED** that the IPHC Secretariat is working with the longline fleet to determine if there are improved ways to assess condition/injury classification relative to release methods, thereby providing improved data accuracy. This requires an ability to observe releases without influencing the handling of the fish.

5.2.6 Migratory behavior and distribution of Pacific halibut

34. The RAB **NOTED** paper IPHC-2018-RAB019-11 which outlined the research projects describing studies designed to improve our knowledge on Pacific halibut distribution and migration at all life stages, including the connectivity of Pacific halibut between the Gulf of Alaska and Bering Sea.
35. The RAB **NOTED** that larval connectivity studies were concentrated in the west, but connectivity of Regulatory Area 2 to other areas is also of interest. The IPHC Secretariat explained that the historical dataset being used is from NOAA larval surveys (plankton tows) and sampling in the eastern Gulf of Alaska has been minimal compared to the western areas. Likewise, it was pointed out that in the limited amount of data that have been collected in Regulatory Area 2 there have been very few larval Pacific halibut encountered, probably reflecting in part the limited spawning activity in this compared to other Regulatory Areas, making a larval connectivity study in this region impractical at this time.

5.2.7 IPHC research topics selected for 2018

36. The RAB **NOTED** paper IPHC-2018-RAB019-12 which outlined the new research projects by the IPHC Secretariat for 2018, and approved by the Commission at its 94th Annual Meeting.

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

6.1 Calibration of snap versus fixed gear

37. The RAB **NOTED** that the IPHC Secretariat and one of its associated graduate students, had previously conducted an extensive analysis of the directed Pacific halibut fishery CPUE in an effort to better understand data limitations, targeting behaviour, gear use and the differences in catchability among primary gear types (fixed-hook, snap gear, and autoline). This work indicated that current methods for subsetting logbook records were producing similar trends to more complex approaches using all available catch-rate information. The research paper associated with this work may be downloaded from the IPHC website:

Monnahan CC and Stewart IJ (2015) Evaluation of commercial logbook records: 1991-2013. IPHC Report of Assessment and Research Activities 2014. p. 213-220.
<https://iphc.int/library/documents/report-of-research-assessment-and-research-activities-rara/2014-report-of-assessment-and-research-activities>.

38. The RAB **RECOMMENDED** that after the current fishery-independent setline survey expansion project has been completed in 2019, a calibration experiment be conducted to evaluate the relative catchability of snap vs fixed gear types, and the potential for including snap gear in the annual setline survey design.
39. The RAB **AGREED** that the potential benefits of changes to the FISS design, such as including additional vessels using snap gear, should be weighed carefully against the possibility of introducing additional variance and undermining stakeholder confidence in the approach.

6.2 Whale depredation

40. The RAB **NOTED** that the IPHC Secretariat had proposed a research project on whale detection methods to commence in FY2018, though the Commission deferred the project's commencement to FY2019 for budgetary reasons. Thus, the following project will be implemented during the 2019 fishing period:

Project 2018-3 ("Whale detection methods") proposes testing electronic monitoring-based methods to detect whale presence in the directed longline Pacific halibut fishery.

41. The RAB **NOTED** the importance of real-time tracking and the current efforts being undertaken on whale presence and inter-vessel communication.
42. The RAB **REQUESTED** that the IPHC Secretariat evaluate possible gear solutions for avoiding whale depredation, such as pot gear.

6.3 Alterations of flesh characteristics: mushy Pacific halibut

43. The RAB **NOTED** that the occurrence of mushy flesh in Pacific halibut appears not to be a great concern in the fishery in recent seasons.

6.4 Other topics of interest suggested by the Board

6.4.1 Hypoxia

44. The RAB **NOTED** that the mean setline survey WPUE in Oregon and California was similar in 2017 to 2016, while WPUE in Washington was down considerably. This could imply that the decrease overall of Regulatory Area 2A was attributable to the hypoxic zone off the Washington coast. However, if Pacific halibut simply moved to other locations within Regulatory Area 2A to avoid this zone, we may have expected to see a decrease in average catch rates even in the absence of hypoxia off the Washington coast. That is, the hypoxic zone may have led to a redistribution of Pacific halibut without affecting overall average catch rates.
45. **NOTING** the importance of continuing to collect environmental data during the FISS, the RAB **URGED** the IPHC Secretariat to consider ideas on how to better understand Pacific halibut behaviour in relation to environmental variability.

46. The RAB **NOTED** that the hypoxic event off the Washington coast that occurred during 2017 affected the catch rates on the Washington ad-hoc densification of the setline survey grid. As a result, the Commission directed the IPHC Secretariat to replicate the ad-hoc densification off the Washington coast in the 2018 setline survey. It was highlighted that there was a minor effect of the densified expansion grid on the precision of Regulatory Area 2A estimates of WPUE in 2017.

6.4.2 IPHC Fishery-independent setline survey bait standards

47. The RAB **NOTED** that due to the scientific nature of the IPHC’s fishery-independent setline survey (FISS), IPHC bait quality and standardization requirements exceed those normally provided by industry as bait chum salmon (*Oncorhynchus keta*). The minimum grade of chum salmon for the FISS is #2 semi-bright or better with “meat” colored flesh (Alaska Seafood Marketing Institute grade A to E). Fish of a higher quality are acceptable but not preferred over the minimum. IPHC Sea Samplers are instructed to inspect the bait when loaded on FISS vessels and to contact the office immediately if the bait does not meet standards. If bad or soured bait is set, the station is considered unsuccessful and ineffective and must be hauled and set again after a waiting period of 48 hours. There were no reports from the 2017 FISS season that bait not meeting IPHC quality standards was set.

7. OTHER BUSINESS

7.1 Date and place of the 20th and 21st Sessions of the IPHC Research Advisory Board

48. The RAB **NOTED** the IPHC meetings calendar (2018-20) adopted by the Commission at its 94th Session included the next two Sessions of the RAB as detailed in [Table 1](#).

49. **NOTING** that this is the first time the RAB has been held in February, the RAB **AGREED** that the IPHC Secretariat should liaise with RAB members, especially those unable to attend the 19th Session, to consider other date options that avoid fishing conflicts, while still serving the Commission’s research planning needs.

Table 1. RAB meeting schedule (2019 and 2020)

Meeting	2019			2020		
	Session	Date	Location	Session	Date	Location
Research Advisory Board (RAB)	20 th	27 February	Seattle, WA, U.S.A.	21 st	26 th February	Seattle, WA, U.S.A.

8. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 19TH SESSION OF THE IPHC RESEARCH ADVISORY BOARD (RAB019)

50. The report of the 19th Session of the Research Advisory Board (IPHC-2018-RAB019-R) was **ADOPTED** via correspondence on 09 March 2018, including the consolidated set of recommendation and requests arising from the RAB019, 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@iphc.int	Dr Josep Planas Branch Head: Biological and Ecosystem Sciences Branch, International Pacific Halibut Commission Email: josep@iphc.int

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Mr Art Davidson Email: artdavidson@telus.net	Mr Lando Echevario Email: lechevario@yahoo.com
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APPENDIX II

AGENDA FOR THE 19TH SESSION OF THE IPHC RESEARCH ADVISORY BOARD (RAB019)

Date: 28 February 2018

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

Venue: IPHC Training Room, Salmon Bay

Time: 09:00-17:30 (Schedule below)

Chairperson: Dr David T. Wilson (IPHC Executive Director)

Vice-Chairperson: Dr Josep Planas (IPHC Biological & Ecosystem Science Branch Manager)

1. **OPENING OF THE SESSION** (Chairperson)
2. **ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION** (Chairperson)
3. **IPHC PROCESS**
 - 3.1 IPHC Rules of Procedure (2017)
 - 3.2 Update on the actions arising from the 18th Session of the RAB (RAB18)
 - 3.3 Outcomes of the 94th Session of the IPHC Annual Meeting (AM094)
4. **SEASON OVERVIEW: RAB MEMBERS**
5. **DESCRIPTION OF IPHC RESEARCH ACTIVITIES** (J. Planas & Project leaders)
 - 5.1 Brief overview of IPHC 5-year Biological Research Program (J. Planas)
 - 5.2 Ongoing research activities (Project leaders)
 - 5.2.1 IPHC fishery-independent setline survey expansion and densification (R. Webster)
 - 5.2.2 Reproductive assessment of the Pacific halibut population (J. Planas)
 - 5.2.3 Sex-marking at sea and genetic validation of sex identification (T. Loher)
 - 5.2.4 Factors affecting somatic growth in juvenile Pacific halibut (J. Planas)
 - 5.2.5 Discard mortality rates and post-release survival in the directed Pacific halibut fishery (C. Dykstra)
 - 5.2.6 Migratory behavior and distribution of Pacific halibut (T. Loher, L. Sadorus)
 - 5.3 IPHC research topics selected for 2018 (J. Planas)
6. **GUIDANCE ON, AND DISCUSSION OF, OTHER POTENTIAL APPLIED RESEARCH PROJECTS** (Chairperson)
 - Review of minimum size limit and discussion of maximum size limit
 - Calibration of snap versus fixed gear
 - Whale depredation
 - Alterations of flesh characteristics: chalky and mushy Pacific halibut
 - Other topics of interest suggested by the Board
7. **OTHER BUSINESS**
 - 7.1 Date and place of the 20th and 21st Sessions of the IPHC Research Advisory Board (Chairperson)
8. **REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 19TH SESSION OF THE IPHC RESEARCH ADVISORY BOARD (RAB19)** (Chairperson)

APPENDIX III

LIST OF DOCUMENTS FOR THE 19TH SESSION OF THE IPHC RESEARCH ADVISORY BOARD
(RAB019)

Document	Title	Availability
IPHC-2018-RAB019-01	Agenda & Schedule for the 19 th Session of the IPHC Research Advisory Board (RAB019)	✓ 30 Nov 2017
IPHC-2018-RAB019-02	List of Documents for the 19 th Session of the IPHC Research Advisory Board (RAB019)	✓ 18 Jan 2018 ✓ 22 Feb 2018
IPHC-2018-RAB019-03	Update on the actions arising from the 18 th Session of the RAB (RAB018) (IPHC Secretariat)	✓ 26 Jan 2018
IPHC-2018-RAB019-04	Outcomes of the 94 th Session of the IPHC Annual Meeting (AM094) (IPHC Secretariat)	✓ 22 Feb 2018
IPHC-2018-RAB019-05	Overview: IPHC 5-year research program (2018-2023) (J. Planas)	✓ 26 Jan 2018
IPHC-2018-RAB019-06	IPHC fishery-independent setline survey expansion and densification (R. Webster)	✓ 29 Jan 2018
IPHC-2018-RAB019-07	Reproductive assessment of the Pacific halibut population (J. Planas)	✓ 26 Jan 2018
IPHC-2018-RAB019-08	Sex-marking at sea and genetic validation of sex identification (T. Loher)	✓ 29 Jan 2018
IPHC-2018-RAB019-09	Factors affecting somatic growth in juvenile Pacific halibut (J. Planas)	✓ 26 Jan 2018
IPHC-2018-RAB019-10	Discard mortality rates and post-release survival in the directed Pacific halibut fishery (C. Dykstra)	✓ 26 Jan 2018
IPHC-2018-RAB019-11	Migratory behavior and distribution of Pacific halibut (T. Loher, L. Sadorus)	✓ 29 Jan 2018
IPHC-2018-RAB019-12	IPHC research topics selected for 2018 (J. Planas)	✓ 26 Jan 2018

APPENDIX IV

**CONSOLIDATED SET OF RECOMMENDATIONS OF THE 19TH SESSION OF THE IPHC
RESEARCH ADVISORY BOARD (RAB19) TO THE COMMISSION**

RECOMMENDATIONS

Bycatch handling practices on all fleets catching Pacific halibut

RAB019–Rec.01 ([para. 7](#)) **NOTING** that the IPHC Secretariat is currently conducting a research project evaluating handling practices associated with physiological condition and survival of discarded Pacific halibut in the directed longline fishery that will produce, as deliverables, best practice handling guidelines for the reduction or control of discard mortality rates by late 2019, the RAB reiterated its previous **RECOMMENDATION** that the IPHC Secretariat develop ‘*Best practice handling guidelines*’ for each of the primary gear types (fixed-hook, snap gear, auto-longline, pots and trawl) which catch Pacific halibut, both directed and non-directed.

IPHC Closed Area

RAB019–Rec.02 ([para. 9](#)) The RAB **AGREED** that the IPHC Closed Area (Pacific Halibut Fishery Regulations 2018, Sect. 11) is not currently meeting its intended objective of protecting juvenile Pacific halibut when it is open to non-directed fisheries, and **RECOMMENDED**, in coordination with the NPMFC, that the IPHC Secretariat examine alternative management regimes for the Closed Area, and for these to be presented at the 96th Annual Meeting in 2020.

Chalky Pacific halibut

RAB019–Rec.03 ([para. 13](#)) The RAB reiterated its previous **RECOMMENDATION** that the IPHC Secretariat undertake research to answer the following, with the intention of developing of simple field test for chalky flesh:

- a. What causes chalky flesh in Pacific halibut and to what degree? Are there particular environmental signatures (temperature, dissolved oxygen, etc.) that characterize areas with incidence of chalky flesh?
- b. Why does the occurrence of chalky flesh in Pacific halibut appear to be reappearing after a period of limited occurrence in Regulatory Areas 3A and 3B in 2016, and again in 3A during the 2017 fishing period?
- c. Are there differences in the occurrence of chalky flesh in males and female, as well as fish of different sizes?

Benthic habitat mapping

RAB019–Rec.04 ([para. 18](#)) The RAB **RECOMMENDED** that the IPHC include a requirement on all IPHC fishery-independent setline survey contracts, that vessels collect bathymetric composition data and provide them to the IPHC Secretariat.

Calibration of snap versus fixed gear

RAB019–Rec.05 ([para. 38](#)) The RAB **RECOMMENDED** that after the current fishery-independent setline survey expansion project has been completed in 2019, a calibration experiment be conducted to evaluate the relative catchability of snap vs fixed gear types, and the potential for including snap gear in the annual setline survey design.

REQUESTS

Whale depredation

RAB019–Req.01 ([para. 42](#)) The RAB **REQUESTED** that the IPHC Secretariat evaluate possible gear solutions for avoiding whale depredation, such as pot gear.



INTERNATIONAL PACIFIC
HALIBUT COMMISSION

IPHC-2018-SRB012-R

Report of the 12th Session of the IPHC Scientific Review Board (SRB012)

Seattle, Washington, U.S.A., 19-21 June 2018

DISTRIBUTION:

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ACRONYMS

AM	Annual Meeting
CDN	Canada
CPUE	Catch-per-unit-effort
DMR	Discard Mortality Rate
DO	Dissolved Oxygen
IPHC	International Pacific Halibut Commission
MSAB	Management Strategy Advisory Board
MSE	Management Strategy Evaluation
NPUE	Number-Per-Unit-Effort
OM	Operating Model
SB	Spawning Biomass
SRB	Scientific Review Board
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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EXECUTIVE SUMMARY

The 12th Session of the International Pacific Halibut Commission (IPHC) Scientific Review Board (SRB012) was held in Seattle, Washington, U.S.A. from 19 to 21 June 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 SRB012, which are provided at [Appendix IV](#).

RECOMMENDATIONS

([para. 8](#)) **NOTING** that the core purpose of the SRB012 is to review progress on the IPHC scientific program, and to provide guidance for the delivery of products to the SRB013 in September 2018, the SRB **AGREED** that formal recommendations to the Commission would not be developed at the present meeting, but rather, these would be developed at the SRB013.

REQUESTS

Outcomes of MSAB011

SRB012–Req.03 ([para. 28](#)) 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.
- b) The SRB **NOTED** that the original intent of [IPHC-2017-SRB011-R](#), *paragraph 28* was to exclude OM states and parameters that resulted in quasi-extinction of the stock before 2017 and **REQUESTED** that, by SRB013, the IPHC Secretariat confirm that this problem no longer exists so that the full OM distribution can be used.

Updates to MSE framework and closed-loop simulations

SRB012–Req.04 ([para. 33](#)) The SRB **AGREED** that with respect to all of the topics listed above in [paragraph 32](#), it cannot make an objective assessment of the appropriateness of choices and methods used in the MSE OM conditioning and projections in the absence of simulation results. The SRB **REQUESTED** a presentation of MSE simulation results by SRB013.

Five-year research plan and management implications

SRB012–Req.06 ([para. 37](#)) The SRB **REQUESTED** that readers of this report to refer to paragraphs 46-72 from [IPHC-2017-SRB010-R](#) for in-depth background comments previously made on the biological research program components.

SRB012–Req.07 ([para. 39](#)) The SRB **REQUESTED** that IPHC establish dedicated academic funding programs through which IPHC-funded university students participate in research activities.



1. OPENING OF THE SESSION

1. The 12th Session of the International Pacific Halibut Commission (IPHC) Scientific Review Board (SRB012) was held in Seattle, Washington, U.S.A. from 19 to 21 June 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/12th-session-of-the-iphc-scientific-review-board-srb012>.

3. IPHC PROCESS

3.1 *Update on the actions arising from the 11th Session of the SRB (SRB011)*

4. The SRB **NOTED** paper IPHC-2018-SRB012-03, which provided an opportunity to consider the progress made during the inter-sessional period, on the recommendations/requests arising from the SRB011.
5. 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 SRB012 into a consolidated list for future reporting.

3.2 *Outcomes of the 94th Session of the IPHC Annual Meeting (AM094)*

6. The SRB **NOTED** paper IPHC-2018-SRB012-04 which outlined the main outcomes of the 94th Session of the IPHC Annual Meeting (AM094), relevant to the mandate of the SRB, and **AGREED** to consider how best to provide the Commission with the information it has requested, throughout the course of the current SRB meeting.

3.3 *IPHC Rules of Procedure (2017): Proposed amendments*

7. The SRB **NOTED** the intention to revise the IPHC Rules of Procedure at the next session of the Commission in January 2019 (AM095). The revision will include roles and responsibilities of officers of the Commission’s subsidiary bodies, as well as a code of conduct for members.

3.4 *SRB annual workflow*

8. **NOTING** that the core purpose of the SRB012 is to review progress on the IPHC scientific program, and to provide guidance for the delivery of products to the SRB013 in September 2018, the SRB **AGREED** that formal recommendations to the Commission would not be developed at the present meeting, but rather, these would be developed at the SRB013.



4. IPHC FISHERY-INDEPENDENT SETLINE SURVEY (FISS)

4.1 *Methods for spatial setline survey modelling – Program of work for 2018*

9. The SRB **NOTED** paper IPHC-2018-SRB012-05, which presented results on spatio-temporal survey modelling undertaken to date in 2018, and described plans for the remainder of the year.
10. The SRB **AGREED** that, while dissolved oxygen (DO) levels improved space-time model fits to setline survey data, the results were not compelling or widespread enough (i.e. small effect size estimates) to warrant routine inclusion in the stock assessment process or WPUE/NPUE standardization. DO results could be reported at annual meetings.
11. The SRB **AGREED** that in the analysis of 20 hook vs 100% hook counts, that 20 hook counts were adequate to determine WPUE.
12. **NOTING** the request for advice on the use of slope/rugosity to estimate geographic area of Regulatory Areas or parts of regions, the SRB **AGREED** that adding such complexity is not warranted in estimation of geographic area because of the many potential confounding factors and lack of relevant data to clearly establish relationships between Pacific halibut density (by age, size, sex), catchability, and slope/rugosity.

5. PACIFIC HALIBUT STOCK ASSESSMENT: 2018

5.1 *Data source development*

13. The SRB **NOTED** paper IPHC-2018-SRB012-06, which provided a summary of anticipated data source development in support of the 2018 and 2019 stock assessment and harvest strategy analyses.
14. The SRB **NOTED** pending development on the topics of individual fish weights, historical bycatch mortality and length frequency data, and effective skate calculations for standardization of the commercial fishery CPUE.
15. The SRB **NOTED** the proposed improvements to data treatment for 2018 including:
 - a) Space-time model updates
 - b) CPUE reporting
 - c) Data status and trends summary tools
 - d) Routine data updates
16. The SRB **NOTED** the presentation comparing temporal trends in fixed and snap gear CPUE, and **URGED** the IPHC Secretariat to further provide a correlation plot between relative CPUEs for each gear type by region.
17. The SRB **NOTED**, and was pleased, that whale depredation criteria are improved and that direct estimates of sex ratio will be available for commercial fishery catch for the 2019 stock assessment.
18. **NOTING** the "map" presentation showing Recent Trend and Current Status, the SRB **REQUESTED** the IPHC Secretariat to further code the symbols to indicate relative stock sizes. An example approach for time series was provided via email and code can be made available.

5.2 *Modelling updates*

19. The SRB **NOTED** paper IPHC-2018-SRB012-07, which provided a summary of anticipated modelling development in support of the 2018 and 2019 stock assessment and harvest strategy analyses.
20. The SRB **NOTED** the planned stock assessment model development, including an updated assessment for 2018 and a full assessment in 2019.



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21. The SRB **NOTED** that the topics of model weighting, and Bayesian integration remain open avenues for future research, and that the IPHC Secretariat has submitted a manuscript for publication on the topic of ensemble stability.
22. The SRB **NOTED** that the IPHC Secretariat intends to update the current stock assessment ensemble for 2018, and that potential improvements may include a possible software update to stock synthesis version 3.3, pending the completion of several incompletely implemented features.

5.2.1 *An analysis and presentation of a historical ‘replay’*

23. **NOTING** the request for "replay" analyses, the SRB **AGREED** that "what if" questions about past behaviour are not appropriate for stock assessment models because those analyses do not adequately reflect the information available at the time or information feedbacks to future decision over time. An MSE analysis, on the other hand is specifically designed to answer "what if" questions under particular future scenarios while properly accounting for stock assessment errors in response to changing information.

5.2.2 *Graphical and tabulation tools for presentation of currently implemented reference points, potentially including a phase plot*

24. The SRB **NOTED** that the phase plot presentation showing historical stock status and fishing intensity is a common and informative way to present fishery status. However, the perception of fishery status depends on the choices for reference points (i.e. vertical and horizontal lines in the spawning biomass and fishing intensity dimensions, respectively) and corresponding zones. Therefore, the SRB **REQUESTED** that the plot not be coloured with discrete "stoplight" colours. It is important that the IPHC Secretariat make it clear to viewers that (1) that F46% is the implied fishing intensity given relatively recent catch history, and (2) that the implied biomass target associated with F46% is not at the crosshairs given in the plot.

5.2.3 *Planned evaluation of model structure for the full assessment in 2019*

25. The SRB **NOTED** that progress will be made over the next year in developing the following in preparation for a new assessment for 2019:
- a. Data weighting
 - b. Process error in selectivity, catchability, etc.
 - c. Age-based discarding and discard mortality estimation/uncertainty
 - d. Timing of survey and catch
 - e. Parameterization of sex-ratio for the commercial fishery based on anticipated new data from 2017

6. MANAGEMENT STRATEGY EVALUATION: UPDATE

26. The SRB **NOTED** paper IPHC-2018-SRB012-08 which provided an update on the progress of the IPHC Management Strategy Evaluation process and sought guidance from the SRB regarding the following topics.
- a) Appropriate biological sustainability objectives, as well as proposed biological reference points
 - b) Conditioning the OM
 - c) Introducing estimation error
 - d) Simulation of weight-at-age
 - e) Presentation of short-, medium-, and long-term results



6.1 Outcomes of MSAB011

27. The SRB **NOTED** the request from the MSAB011 ([IPHC-2018-MSAB011-R](#), para. 45) that the SRB clarify the meaning of paragraphs 24 and 28 in [IPHC-2017-SRB011-R](#).

*[IPHC-2017-SRB011-R](#), paragraph 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 SRB12 where we expect to see the implications of uncertainty in annual assessments and parameters.”*

*[IPHC-2017-SRB011-R](#), paragraph 28. “The SRB **REQUESTED** that the MSE simulation initialize the operating model biomass in the current year from the more precise Ensemble distribution of the current state (e.g., 2017) rather than the wider distribution obtained from the Operating model.”*

28. 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.
- b) The SRB **NOTED** that the original intent of [IPHC-2017-SRB011-R](#), paragraph 28 was to exclude OM states and parameters that resulted in quasi-extinction of the stock before 2017 and **REQUESTED** that, by SRB013, the IPHC Secretariat confirm that this problem no longer exists so that the full OM distribution can be used.

29. The SRB **AGREED** that the following proposed Biological Sustainability objectives are consistent with standard practice:

- a) 1.1 is retained with a biomass limit of 20% SB_0 and a probability of $\leq 10\%$;
- b) 1.2 is probably not necessary since the target is a result of applying the harvest control rule;
- c) Median average relative spawning biomass is also presented;
- d) and the usefulness of these metrics be re-evaluated once the MSE is operational.

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.

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](#)).

6.2 Updates to MSE framework and closed-loop simulations

32. The SRB **NOTED** discussion of the following MSE topics:

- a) conditioning of the Operating Model captures the variability needed for long-term performance metrics, but is not the best predictor of the short-term.
 - i. The SRB **AGREED** that the OM is not a forecasting or prediction tool, but rather a means of testing management procedure performance against a suite of alternative hypotheses about the natural world.



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- b) that implausible trajectories should be filtered out based on the value of steepness because low values of steepness resulted in the long time-series model not matching the observed historical catch.
- i. The SRB **AGREED** that this procedure eliminates potentially low values of steepness, which could create a positive bias in simulated stock productivity.
- c) that simulating estimation error may be a practical method for these closed-loop simulations.
- i. The SRB **AGREED** that, while this particular method is practical in the short-term for producing initial results given the current model-based assessment approach, a more effective MSE would include the actual assessment method that is intended for future use in setting harvest levels. In some cases, future management procedures may consider empirically-based harvest control rules, for example.
- d) that increasing estimation error beyond current estimates could be tested in a robustness trial.
- e) that the closed-loop simulations include autocorrelation in estimation error.
- i. The SRB **AGREED** that, while assessment errors are probably autocorrelated, they also tend to be systematically biased and this may not be reflected in the proposed approach.
- f) that using the conditioned Operating Model with the defined amount of variability may be useful for reporting the long-term, equilibrium metrics related to coastwide scale in the management procedure.
- g) that using the assessment ensemble is the best predictor of short-term metrics and should be used for reporting short-term performance metrics when evaluating coastwide scale in the management procedure
- h) that using sensitivities that span the range of variability will assist with describing medium-term transitions.
- i. The SRB **AGREED**, with respect to [\(f\)](#), [\(g\)](#), and [\(h\)](#), the purpose of an MSE is to compare and rank management procedure performance over many hypotheses and time scales. MSE is not a forecasting tool and should not be used that way in combination with the ensemble assessment, as implied by [\(g\)](#).
33. The SRB **AGREED** that with respect to all of the topics listed above in [paragraph 32](#), it cannot make an objective assessment of the appropriateness of choices and methods used in the MSE OM conditioning and projections in the absence of simulation results. The SRB **REQUESTED** a presentation of MSE simulation results by SRB013.
34. The SRB **NOTED** the intention of the IPHC Secretariat to provide operational characterizations of overfished and overfishing to define a harvest strategy policy as well as for use in communicating externally (e.g. fishery bodies in USA and Canada).

6.3 MSAB Program of Work and delivery of timeline for 2018 and beyond

35. The SRB **NOTED** the MSAB Program of Work, and that the Commission had approved the hiring of two contract staff (a programmer and researcher) to ensure that the MSE work provide initial management procedure recommendations no later than January 2021.

7. BIOLOGICAL AND ECOSYSTEM SCIENCE PROGRAM RESEARCH UPDATES

7.1 Five-year research plan and management implications

36. The SRB **NOTED** and was very pleased with the progress made integrating the biological, assessment, and MSE aspects of IPHC research, as well as the approach used to present this integration. The SRB



further **REQUESTED** that the presentation approach be further developed and used to communicate IPHC research at future annual meetings.

37. The SRB **REQUESTED** that readers of this report to refer to paragraphs 46-72 from [IPHC-2017-SRB010-R](#) for in-depth background comments previously made on the biological research program components.
38. The SRB **URGED** an in-depth conversation between the SRB and IPHC Secretariat on details of the biological research program prior to SRB013. In particular, the SRB is willing to provide specific advice and examples for how the IPHC Secretariat could:
- link current work on migration, growth, and physiological condition of Pacific halibut to spatial and temporal changes in productivity and connectivity.
 - improve our understanding of (1) spawning site contributions to nursery/settlement areas in relation to year-class and recruit survival and strength and (2) the relationship between nursery/settlement origin and adult distribution and abundance over temporal and spatial scales.
 - apply genetic approaches to address management-relevant questions on population structure, distribution, and recruitment.
39. The SRB **REQUESTED** that IPHC establish dedicated academic funding programs through which IPHC-funded university students participate in research activities.
40. The SRB continued to **URGE** that IPHC hire a life history modeller who could provide a new suite of skills that could bridge the gaps between empirical data, stock assessment, and operating model hypothesis generation.

7.2 Progress on ongoing research projects

41. The SRB **NOTED** paper IPHC-2018-SRB012-09 which detailed progress on research projects conducted by the Biological and Ecosystem Sciences Research Program.

7.2.1 Discard mortality rates

42. The SRB **NOTED** the progress, and looks forward to primary publication of, experimental measurements of discard mortality rates based on realistic field conditions and agreement between these and existing estimates. However, the precision of resulting DMR estimates (for Pacific halibut in Excellent condition) remain somewhat low because of small sample sizes.

7.2.2 Juvenile growth studies

43. The SRB refers to [paragraph 38](#).

7.2.3 Reproductive assessment

44. The SRB **NOTED** genetic validation of at-sea marking of male and female halibut and the potentially important contributions that would make to improvements in the stock assessment.

7.3 Presentation of planned future research projects

7.3.1 Growth-thermal history

45. The SRB **ACKNOWLEDGED** the growth-thermal history and larval distribution and connectivity research and looks forward to future presentations on these results. In particular, this would be an excellent topic for the use of genetic data (see [paragraph 38](#)).
46. The SRB **NOTED** that, while considerable progress has been made in developing the biological research program over the past few years, there are research topics within the five-year research plan that could be expanded (see [paragraph 38](#)).



8. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 12TH SESSION OF THE IPHC SCIENTIFIC REVIEW BOARD (SRB012)

47. The report of the 12th Session of the IPHC Scientific Review Board (IPHC-2018-SRB012-R) was **ADOPTED** on 21 June 2018, including the consolidated set of recommendations and/or requests arising from SRB012, provided at [Appendix IV](#).

APPENDIX I
LIST OF PARTICIPANTS FOR THE 12TH SESSION OF THE
IPHC SCIENTIFIC REVIEW BOARD (SRB012)

SRB Members

Dr Sean Cox:	spcox@sfu.ca ; Associate Professor, School of Resource and Environmental Management, Simon Fraser University, 8888 University Dr., Burnaby, B.C., Canada V5A 1S6
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Dr Marc Mangel:	msmangel@ucsc.edu ; Distinguished Research Professor and Director, Center for Stock Assessment Research, University of California, Santa Cruz, CA, U.S.A., 95064
Dr Kim Scribner:	scribne3@msu.edu ; Professor, Department of Fisheries and Wildlife, Michigan State University, 2E Natural Resources Building, East Lansing, MI, U.S.A., 48824

Observers

Canada	United States of America
Ms Ann-Marie Huang: Ann-Marie.Huang@dfo-mpo.gc.ca	Dr Carey McGilliard: carey.mcgillard@noaa.gov

IPHC Secretariat

Name	Position and email
Dr David Wilson	Executive Director, david@iphc.int
Mr Stephen Keith	Assistant Director, steve@iphc.int
Dr Allan Hicks	Quantitative Scientist, allan@iphc.int
Dr Josep Planas	Biological and Ecosystem Sciences Branch Manager, josep@iphc.int
Dr Ian Stewart	Quantitative Scientist, ian@iphc.int
Dr Ray Webster	Quantitative Scientist, ray@iphc.int
Dr Tim Loher	Research Scientist, tim@iphc.int
Ms Lauri Sadorus	Research Biologist, lauri@iphc.int



APPENDIX II
AGENDA FOR THE 12TH SESSION OF THE
IPHC SCIENTIFIC REVIEW BOARD (SRB012)

Date: 19–21 June 2018

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

Venue: IPHC Board Room, Salmon Bay

Time: 12:00-17:00 (19th), 09:00-17:00 (20th), 09:00-14:00 (the 21th)

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 11th Session of the SRB (SRB011) (D. Wilson)
 - 3.2. Outcomes of the 94th Session of the IPHC Annual Meeting (AM094) (D. Wilson)
 - 3.3. IPHC Rules of Procedure (2017): Proposed amendments (D. Wilson)
 - 3.4. SRB annual workflow (D. Wilson)
- 4. IPHC FISHERY-INDEPENDENT SETLINE SURVEY (FISS)**
 - 4.1. Methods for spatial setline survey modelling – Program of work 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. Outcomes of MSAB011 (A. Hicks)
 - 6.2. Updates to MSE framework and closed-loop simulations (A. Hicks)
 - 6.3. MSAB Program of Work and delivery timeline for 2018 and beyond (A. Hicks)
 - 6.4. Interim distribution procedures 2019-2020 (A. Hicks)
- 7. BIOLOGICAL AND ECOSYSTEM SCIENCE RESEARCH UPDATES**
 - 7.1. Five-year research plan and management implications (J. Planas)
 - 7.2. Progress on ongoing research projects (J. Planas)
 - 7.2.1. Discard Mortality Rates
 - 7.2.2. Juvenile growth studies
 - 7.2.3. Reproductive assessment
 - 7.3. Presentation of planned future research projects (J. Planas)
 - 7.3.1. Growth-thermal history
 - 7.3.2. Larval connectivity
 - 7.3.3. Others
- 8. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 12TH SESSION OF THE IPHC SCIENTIFIC REVIEW BOARD (SRB012)**



APPENDIX III
LIST OF DOCUMENTS FOR THE 12TH SESSION OF THE
IPHC SCIENTIFIC REVIEW BOARD (SRB012)

Document	Title	Availability
IPHC-2018-SRB012-01	DRAFT: Agenda & Schedule for the 12 th Session of the Scientific Review Board (SRB012)	✓ 16 Mar 2018
IPHC-2018-SRB012-02	DRAFT: List of Documents for the 12 th Session of the Scientific Review Board (SRB012)	✓ 21 May 2018
IPHC-2018-SRB012-03	Update on the actions arising from the 11 th Session of the SRB (SRB011) (IPHC Secretariat)	✓ 17 May 2018
IPHC-2018-SRB012-04	Update on the actions arising from the 94 th Session of the Commission (AM094) (D. Wilson)	✓ 16 May 2018
IPHC-2018-SRB012-05	Methods for spatial setline survey modelling – Program of work for 2018 (R. Webster)	✓ 21 May 2018
IPHC-2018-SRB012-06	Data source development (I. Stewart)	✓ 17 May 2018
IPHC-2018-SRB012-07	Modelling updates (I. Stewart, A. Hicks)	✓ 21 May 2018
IPHC-2018-SRB012-08	Management Strategy Evaluation: Update for 2018 (A. Hicks, I. Stewart)	✓ 21 May 2018
IPHC-2018-SRB012-09	Report on current and future biological research activities (J. Planas)	✓ 21 May 2018
<i>Information papers</i>		
IPHC-2018-SRB012-INF01	NPRB1704 Grant Proposal	✓ 16 May 2018
IPHC-2018-SRB012-INF02	Saltonstall-Kennedy Grant Proposal	✓ 16 May 2018



APPENDIX IV

CONSOLIDATED SET OF RECOMMENDATIONS AND REQUESTS OF THE 12TH SESSION OF THE
IPHC SCIENTIFIC REVIEW BOARD (SRB012)

RECOMMENDATIONS

([para. 8](#)) **NOTING** that the core purpose of the SRB012 is to review progress on the IPHC scientific program, and to provide guidance for the delivery of products to the SRB013 in September 2018, the SRB **AGREED** that formal recommendations to the Commission would not be developed at the present meeting, but rather, these would be developed at the SRB013.

REQUESTS

Pacific halibut stock assessment: 2018 - Data source development

SRB012–Req.01 ([para. 18](#)) **NOTING** the "map" presentation showing Recent Trend and Current Status, the SRB **REQUESTED** the IPHC Secretariat to further code the symbols to indicate relative stock sizes. An example approach for time series was provided via email and code can be made available.

Modelling updates: Graphical and tabulation tools for presentation of currently implemented reference points, potentially including a phase plot

SRB012–Req.02 ([para. 24](#)) The SRB **NOTED** that the phase plot presentation showing historical stock status and fishing intensity is a common and informative way to present fishery status. However, the perception of fishery status depends on the choices for reference points (i.e. vertical and horizontal lines in the spawning biomass and fishing intensity dimensions, respectively) and corresponding zones. Therefore, the SRB **REQUESTED** that the plot not be coloured with discrete "stoplight" colours. It is important that the IPHC Secretariat make it clear to viewers that (1) that F46% is the implied fishing intensity given relatively recent catch history, and (2) that the implied biomass target associated with F46% is not at the crosshairs given in the plot.

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Updates to MSE framework and closed-loop simulations

SRB012-Req.04 ([para. 33](#)) The SRB **AGREED** that with respect to all of the topics listed above in [paragraph 32](#), it cannot make an objective assessment of the appropriateness of choices and methods used in the MSE OM conditioning and projections in the absence of simulation results. The SRB **REQUESTED** a presentation of MSE simulation results by SRB013.

Five-year research plan and management implications

SRB012-Req.05 ([para. 36](#)) The SRB **NOTED** and was very pleased with the progress made integrating the biological, assessment, and MSE aspects of IPHC research, as well as the approach used to present this integration. The SRB further **REQUESTED** that the presentation approach be further developed and used to communicate IPHC research at future annual meetings.

SRB012-Req.06 ([para. 37](#)) The SRB **REQUESTED** that readers of this report to refer to paragraphs 46-72 from [IPHC-2017-SRB010-R](#) for in-depth background comments previously made on the biological research program components.

SRB012-Req.07 ([para. 39](#)) The SRB **REQUESTED** that IPHC establish dedicated academic funding programs through which IPHC-funded university students participate in research activities.



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

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

DISTRIBUTION:

Participants in the Session
Members of the Commission
IPHC Secretariat

BIBLIOGRAPHIC ENTRY

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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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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](#)).

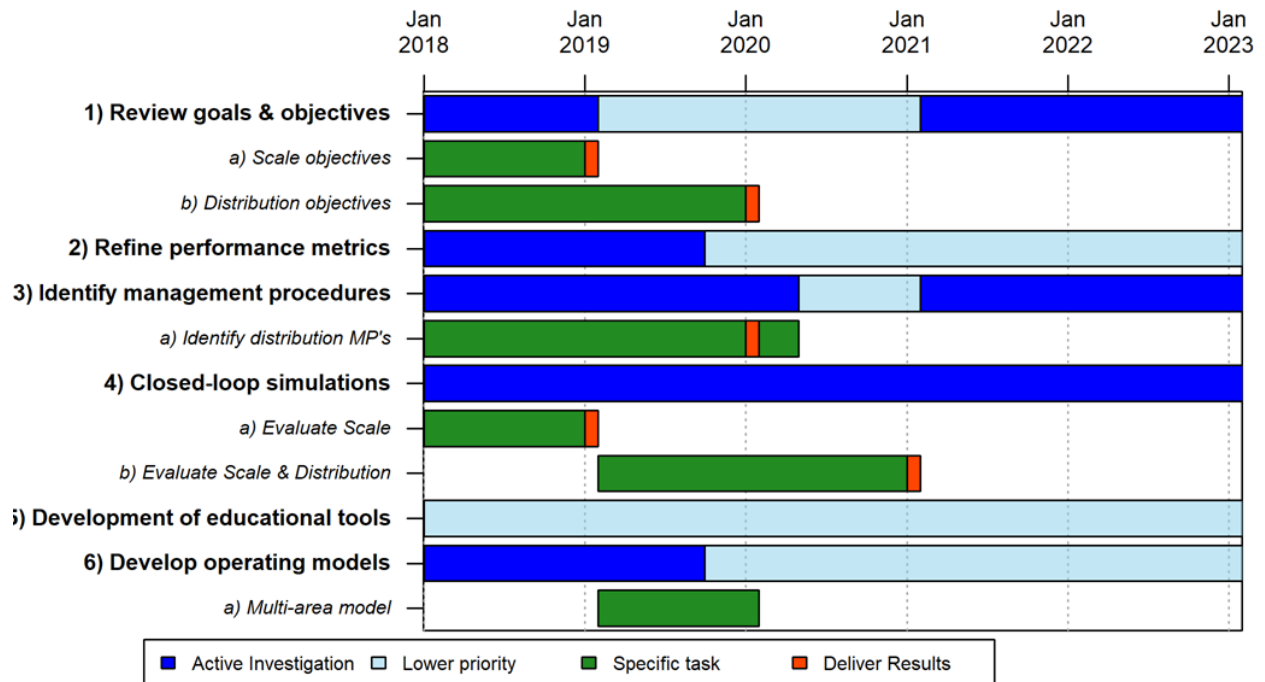


Fig. 1. Gantt chart for the IPHC MSE 5-year Program of Work. Tasks are listed as rows. Dark blue indicates when the major portion of the main tasks work will be done. Light blue indicates when preliminary or continuing work on the main tasks will be done. Dark green indicates when the work on specific 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:
- 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).

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:
- 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.

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.



**Report of the 11th Session of the IPHC
Management Strategy Advisory Board
(MSAB011)**

Seattle, Washington, U.S.A., 7-10 May 2018

DISTRIBUTION:

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ACRONYMS

AAV	Average Annual Variability
CPUE	Catch-per-unit-effort
CV	Coefficients of Variation
dRSB	dynamic Relative Spawning Biomass
FCEY	Fishery Constant Exploitation Yield
F _{SPR}	The Fishing Intensity that results in an equilibrium Spawning Potential Ratio
HCR	Harvest Control Rule
IPHC	International Pacific Halibut Commission
MSAB	Management Strategy Advisory Board
MSE	Management Strategy Evaluation
RSB	Relative Spawning Biomass
SRB	Scientific Review Board
SPR	Spawning Potential Ratio
TCEY	Total Constant Exploitation Yield
U.S.A.	United States of America
WPUE	Weight-per-unit-effort

DEFINITIONS

A set of working definitions are provided in the IPHC Glossary of Terms and abbreviations: <https://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** (formal); **REQUESTED** (informal): A conclusion for an action to be undertaken, by the Commission, a Contracting Party, a subsidiary (advisory) body of the Commission and/or the IPHC Secretariat. *Note:* Subsidiary (advisory) bodies of the Commission must have their Recommendations and Requests formally provided to the next level in the structure of the Commission for its consideration/endorsement (e.g. from an Advisory Board to the Commission). The intention is that the higher body will consider the action for endorsement under its own mandate, if the subsidiary body does not already have the required mandate. Ideally, this should be task-specific and contain a timeframe for completion.
- Level 2: AGREED:** Any point of discussion from a meeting, which the IPHC 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/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 IPHC 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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EXECUTIVE SUMMARY

The 11th Session of the International Pacific Halibut Commission (IPHC) Management Strategy Advisory Board (MSAB011) was held in Seattle, Washington, U.S.A. from 7 to 10 May 2018. The MSAB consists of 20 board members, 17 of which attended the Session from the two (2) Contracting Parties. A total of three (3) individuals attended the Session as Observers. In addition, one (1) IPHC Commissioner was in attendance, Mr Paul Ryall (Canada). The meeting was opened by Dr David Wilson, IPHC Executive Director.

The following are a subset of the complete recommendations/requests for action from the MSAB011, which are provided in full at [Appendix VIII](#).

RECOMMENDATIONS

NOTING that the core purpose of the MSAB011 is to review progress on the MSE Program of Work, and to provide guidance for the delivery of products to the MSAB012 in October 2018, the MSAB AGREED that formal recommendations to the Commission would not be developed at the present meeting, but rather, these would be developed at the MSAB012.

REQUESTS

A review of the goals and objectives of the IPHC MSE process

MSAB011–Req.03 ([para. 28](#)) The MSAB **REQUESTED** that the IPHC Secretariat continue to discuss the Biological Sustainability (conservation) objectives with the IPHCs Scientific Review Board (SRB), including the appropriate female spawning biomass limit and female spawning biomass threshold.

Performance metrics for evaluation

MSAB011–Req.05 ([para. 37](#)) The MSAB **REQUESTED** that the IPHC Secretariat present the performance metrics determined from measurable objectives, as well as additional statistics listed in [Appendix Va](#), at MSAB012.

Short-term, mid-term, and long-term performance metrics

MSAB011–Req.06 ([para. 40](#)) The MSAB **REQUESTED** that the IPHC Secretariat determine methods to present qualitative results describing the transition from the short-term to the long-term for various performance metrics as a way to describe medium-term performance.

A review of variability and scenarios

MSAB011–Req.09 ([para. 48](#)) **NOTING** that domestic management measures for the recreational fisheries often include size limits that differ to various levels of catch limits, the MSAB **REQUESTED** the IPHC Secretariat to consider alternative methods to simulate bycatch mortality at various Pacific halibut abundances, as noted in IPHC-2017-MSAB010-R, paragraph 21.

MSAB011–Req.10 ([para. 49](#)) The MSAB **REQUESTED** the IPHC Secretariat to consider alternative methods to simulate recreational mortality, and that the recreational mortality should continue to increase over the entire range of total mortality.

Simulation design for evaluations at MSAB012 of the Scale component of the harvest strategy policy

MSAB011–Req.13 ([para. 60](#)) The MSAB **REQUESTED** that the simulations incorporate:

- a) SPR values from 30% to 56%, with higher resolution where change occurs in the performance metrics, and at values where IPHC feels the results are meeting the MSE objectives.
- b) fishery trigger values of 30% and 40%, and that 45% is also used if time allows.
- c) estimation error by jointly simulating the error in total mortality and stock status with coefficients of variation (CV) the same for each variable and equal to 0.15

with a correlation of 0.5. An CV of 0.0 (no estimation error) and 0.2 may be considered if time permits, and presented as a sensitivity as a minimum to understand the effects of the different levels of estimation error.

- d) autocorrelation at a level determined appropriate by the IPHC Secretariat and the SRB.
- e) a smoothing algorithm on the catch limit for a few simulations as an example to understand the effect on the performance metrics. The algorithm should be asymmetric (e.g. slow up/fast down) and reduce annual catch variability.

MSAB011–Req.14 ([para. 61](#)) The MSAB **REQUESTED** that when reporting results:

- a) the long-term be represented by 100 simulated annual cycles from the Operating Model and performance metrics summarized over the 10 annual cycles.
- b) short- and medium-term performance metrics be presented for management procedures that meet long-term objectives.
- c) the short-term be represented by the assessment ensemble and performance metrics presented for the immediate three years. These performance metrics are not necessarily the same as for long-term metrics, and may be actual values (e.g. catch in 2019) instead of a summary over years.
- d) the medium-term be summarized qualitatively by describing the transition from the short-term to the medium-term using the closed-loop simulations. Sensitivities (e.g. holding weight-at-age at low levels or constant) can help to inform the medium-term transitions.
- e) phase-in procedures are considered when appropriate.

MSAB011–Req.16 ([para. 63](#)) The MSAB **REQUESTED** that the IPHC Secretariat consider the following improvements to the simulation framework:

- a) investigate improvements to simulating weight-at-age with input from the SRB.
- b) simulating bycatch be improved by linking it to abundance in some way.
- c) investigate methods to improve time-varying selectivity in the commercial fleet, possibly linking it to abundance.

MSAB011–Req.18 ([para. 65](#)) The MSAB **REQUESTED** the following sensitivities:

- a) Low and high states of weight-at-age.
- b) Low and high regimes determining mean recruitment.
- c) Implementation variability (variability associated with not exactly catching the quota or with departures during decision-making).
- d) Higher and lower levels of mean bycatch.
- e) Shift in bycatch selectivity to younger ages to address ongoing concerns on U26 mortality.

1. OPENING OF THE SESSION

1. The 11th Session of the International Pacific Halibut Commission (IPHC) Management Strategy Advisory Board (MSAB011) was held in Seattle, Washington, U.S.A. from 7 to 10 May 2018. The MSAB consists of 20 board members, 17 of which attended the Session from the two (2) Contracting Parties. Apologies received from Mr Adam Keizer and Mr Bruce Gabrys. A total of three (3) individuals attended the Session as Observers. In addition, one (1) IPHC Commissioner was in attendance, Mr Paul Ryall (Canada). The list of participants is provided at [Appendix I](#). The meeting was opened by Dr David Wilson, IPHC Executive Director.
2. The MSAB **RECALLED** that the primary objectives of MSAB, as described in Appendix V, para. 2 of the IPHC Rules of Procedure (2017) are as follows:
 - 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 IPHC staff 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.*
3. **NOTING** paragraph 2, the MSAB **RECALLED** that the Management Strategy Evaluation process is a stakeholder informed, scientifically driven process.
4. The MSAB **NOTED** apologies received from the following board members: Mr Adam Keizer (Canadian government representative, and Co-Chairperson), and Mr Bruce Gabrys (USA harvester representative).

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 MSAB011 are listed at [Appendix III](#).

3. IPHC PROCESS

3.1 *MSAB Membership and Officers*

6. The MSAB **NOTED** paper IPHC-2018-MSAB011-03 which provided the current membership list and term expirations for the MSAB, and call for nominations for vacant posts.
7. The MSAB **NOTED** that Mr Neil Davis was in attendance at the MSAB011 as the Canadian government representative, DFO (Acting for Adam Keizer).
8. The MSAB **ENDORSED** the following new government MSAB members, and the membership list provided at [Appendix IV](#):
 - a) Ms Ann-Marie Huang: Canadian government science advisor (to replace Mr Rob Kronlund at the close of the current session)
 - b) Trent Hartill: USA government representative, ADFG.
 - c) Mr Glenn Merrill: USA government representative, NOAA-Fisheries.

9. The MSAB **AGREED** that an Expression of Interest (EOI) for the vacant MSAB member positions should be circulated by the IPHC Secretariat. At the close of a 30 day EOI period, the IPHC Secretariat shall provide the EOIs to the Commission, who will be asked to make an inter-sessional decision on MSAB membership. The MSAB would also be provided with the EOI's for information purposes.
10. The MSAB **NOTED** the following nominations received for the USA Processor member of the MSAB and encouraged a submission of an EOI through the process described in [paragraph 9](#):
 - a) Mr Joe Morelli (Seafood Producers Cooperative)
 - b) Ms Angel Drobnica (Aleutian-Pribilof Island Community Development Association)
 - c) Ms Jessie Keplinger (Icicle Seafoods)
11. The MSAB **NOTED** the following nomination received for one of the two vacant first nations/tribal representatives of the MSAB and encouraged a submission of an EOI through the process described in [paragraph 9](#):
 - a) Matt Damiano (Northwest Indian Fisheries Commission)
12. The MSAB **NOTED** that in accordance with the IPHC Rules of Procedure (2017), Dr Carey McGilliard was elected at the Co-Chairperson of the MSAB for the next biennium (USA).

3.2 Update on the actions arising from the 10th Session of the MSAB (MSAB010)

13. The MSAB **NOTED** paper IPHC-2018-MSAB011-04 which provided an opportunity to consider the progress made during the inter-sessional period in relation to the recommendations and requests of the 10th Session of the IPHC Management Strategy Advisory Board (MSAB010).
14. The MSAB **AGREED** to consider and revise as necessary, the actions arising from the MSAB010, and for these to be combined with any new actions arising from the MSAB011.

3.3 Review of the outcomes of the 11th Session of the IPHC Scientific Review Board (SRB011)

15. The MSAB **NOTED** paper IPHC-2018-MSAB011-05, which provided the outcomes of the 11th Session of the IPHC Scientific Review Board (SRB011) relevant to the mandate of the MSAB, which were provided for reference.

3.4 Outcomes of the 94th Session of the IPHC Annual Meeting (AM094)

16. The MSAB **NOTED** paper IPHC-2018-MSAB011-06 which outlined the outcomes of the 94th Session of the IPHC Annual Meeting (AM094) relevant to the mandate of the MSAB, and **AGREED** to consider how best to provide the Commission with the information it has requested, throughout the course of the current MSAB meeting.

4. GOALS, OBJECTIVES, AND PERFORMANCE METRICS

4.1 A review of the goals and objectives of the IPHC MSE process

17. The MSAB **NOTED** paper IPHC-2018-MSAB011-07 which provided a review of the goals and objectives of the IPHC MSE process, and to consider the directives from the Commission, including the consideration of additional objectives related to distributing the TCEY.
18. The MSAB **REQUESTED** that the IPHC Secretariat standardize the terminology for types of objectives (e.g. general, higher level objectives vs. measurable objectives).
19. The MSAB **AGREED** to separate management tactics from objectives and keep their intent as guiding principles for management procedures. The following guiding principles were determined:
 - a) Define a limit below which no fishing will occur.
 - b) Account for mortality of all sizes in the population.
 - c) Reduce the harvest rate when below a threshold.

-
20. The MSAB **REQUESTED** that the objectives as defined in [Appendix Va](#), be refined by an Ad-Hoc Working Group (composition: Peggy Parker; Chris Sporer; Glenn Merrill; Dan Falvey; Michelle Culver). The Ad-Hoc Working Group shall provide refined objectives to the IPHC Secretariat for distribution to the MSAB for consideration by 15 June 2018. Comments from the MSAB members would then be provided to the IPHC Secretariat by 30 June 2018. Some points of interest include determining appropriate reference catch levels, considering the use of “economically sufficient,” and retaining the concepts of a minimum catch, a reference catch, and stability in catch (which may be stated as a rate of change). A further consideration may be to identify an objective related to taking advantage of high yield opportunities. Another consideration may be to look at what minimum catch is necessary to maintain markets.
 21. The MSAB **NOTED** that the measurable objective of a minimum number of females may be redundant with the ‘biomass’ objective, but is important to retain a metric related to numbers, such as an absolute measure.
 22. The MSAB **AGREED** that biological reference points (i.e. female spawning biomass limit and female spawning biomass threshold) should be defined for biological sustainability goals and have associated performance metrics, and that these are separate concepts from the SPR, fishing limit, and fishery trigger defined in the harvest control rule, which do not have performance metrics, as they are part of the management procedure whose performance against the objectives will be evaluated.
 23. The MSAB **NOTED** the presentation on biocomplexity and its importance to biological sustainability for the Pacific halibut stock.
 24. The MSAB **NOTED** that the IPHC Secretariat has identified biologically-based Regions based on various sex ratios, age composition, size-at-age, historical trends, genetic studies, and tagging studies, as well as consideration of IPHC Regulatory Area boundaries.
 25. The MSAB **NOTED** that the addition of a general objective related to preserving biocomplexity, under the goal of Biological Sustainability, may be useful for identifying objectives related to distributing the TCEY.
 26. The MSAB **AGREED** that some of the measurable objectives related to Fishery Sustainability, Stability, and Access are redundant and should be considered by the Ad-Hoc Working Group specified in [paragraph 20](#).
 27. The MSAB **NOTED** that the following subset of measurable objectives related to Fishery Sustainability, Stability, and Access of the coastwide stock may be sufficient:
 - a) to maintain a minimum catch;
 - b) maintain an average catch;
 - c) provide opportunity for above average catches; and
 - d) limit annual changes in TAC, coast-wide and/or by IPHC Regulatory Area.
 28. The MSAB **REQUESTED** that the IPHC Secretariat continue to discuss the Biological Sustainability (conservation) objectives with the IPHCs Scientific Review Board (SRB), including the appropriate female spawning biomass limit and female spawning biomass threshold.
 29. The MSAB **AGREED** that the goal “Serve Consumer Needs” is captured under the goal of Fishery Sustainability and Stability, and is not needed.
 30. The MSAB **NOTED** the objectives related to distributing the TCEY presented in [Circular IPHC-2017-CR022](#).
 31. The MSAB **AGREED** that some objectives related to distributing the TCEY presented in [Circular IPHC-2017-CR022](#) are 1) covered under current general objectives and are simply extensions to area-specific objectives, 2) require more discussion to understand the intent and meaning, 3) can be considered at a future time when it can be investigated, and 4) should be dropped and not considered. The MSAB’s categorisations are shown in [Appendix Vb](#).
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32. The MSAB **AGREED** that Regulatory Area-specific objectives could be defined for Fishery Sustainability and Stability objectives and Discard Mortality objectives. Further consideration will be required to determine the measurability of some objectives with a spatial connotation, given the current coastwide operating model, which cannot evaluate performance against area specific objectives.
33. The MSAB **REQUESTED** that the objectives related to distributing the TCEY in [Appendix Vb](#) be the subject of further discussion by the Ad-Hoc Working Group ([paragraph 20](#)). The consideration of these objectives should be done after refinement of Scale objectives, as noted in [paragraph 20](#). This task is to be completed no later than 1 September 2018, for consideration by the IPHC Secretariat and subsequent submission to the MSAB012 in accordance with the IPHC Rules of Procedure (2017).
34. The MSAB **AGREED** that the Commission should review and provide guidance on the revised goals, objectives, and performance metrics at AM095, as detailed at [Appendix Va](#).

4.2 *Classifying objectives in a hierarchy*

35. The MSAB **NOTED** the following directive from the Commission:

Review of fishery goals and objectives: Commission directive

AM094–Rec.01 ([para. 36](#)) *The Commission **RECOMMENDED** that the draft goals, objectives, and performance metrics, as detailed in Appendix IV, IPHC-2017-MSAB10-R be used for ongoing evaluation in the MSE process, and that they may be refined in the future. The objectives should be evaluated in a hierarchal manner, with conservation as the first priority.*

36. The MSAB **AGREED** that objectives should be hierarchical and if Biological Sustainability objectives are not met by a management procedure, additional objectives are not evaluated.

4.3 *Performance metrics for evaluation*

37. The MSAB **REQUESTED** that the IPHC Secretariat present the performance metrics determined from measurable objectives, as well as additional statistics listed in [Appendix Va](#), at MSAB012.

4.3.1 *Short-term, mid-term, and long-term performance metrics*

38. The MSAB **NOTED** the following directive from the Commission:

AM094–Rec.03 ([para. 44](#)) *The Commission **RECOMMENDED** that long- and mid-term performance metrics for conservation objectives be considered in the MSE process for conservation objectives, and that short-term metrics be included for fishery-related objectives in the MSE process, via the MSAB.*

39. The MSAB **AGREED** to consider long-term metrics related to Biological Sustainability objectives and short- and long-term metrics related to fishery objectives when evaluating management procedures. Short-term objectives will be determined using the current stock assessment process, and the long-term objectives will be determined using the MSE. There remains an interest in development of metrics for the medium-term, though there are clear challenges in producing medium-term modelling results.
40. The MSAB **REQUESTED** that the IPHC Secretariat determine methods to present qualitative results describing the transition from the short-term to the long-term for various performance metrics as a way to describe medium-term performance.
41. The MSAB **REQUESTED** that the IPHC Secretariat present the methods for producing short-, medium- and long-term results to the SRB for their review and comment.

5. HARVEST STRATEGY POLICY, PART 1: SIMULATIONS TO EVALUATE FISHING INTENSITY

42. The MSAB **NOTED** paper IPHC-2018-MSAB011-08 which provided an update on the progress of the IPHC Management Strategy Evaluation process to investigate fishing intensity, and seek recommendations from the MSAB related to the Management Strategy Evaluation simulation framework.

5.1 *A description of the closed-loop simulation framework*

43. The MSAB **NOTED** the simulation framework including the operating model (OM) composed of the two coastwide assessment models, the option to simulate estimation error, and the harvest control rule consisting of a procedural SPR, a fishery threshold where SPR begins to be linearly reduced, and a directed fishery catch limit is set to zero, realising that there are sources of fishing mortality that are outside of the IPHC harvest strategy.

5.2 *A review of variability and scenarios*

44. The MSAB **NOTED** that the assessment model has high utility for short-term predictions, the Operating Model has high utility for long-term characterization of uncertainty, and there is not a model that would adequately predict the medium-term.
45. The MSAB **REQUESTED** that the SRB clarify the meaning of paragraphs 24 and 28 in the SRB report, IPHC-2017-SRB011-R.
46. The MSAB **NOTED** that variability in the Operating Model is introduced through parameter uncertainty, variable recruitment, changes in mean recruitment due to regime shifts, variable size-at-age, and variability in the proportion of the Total Mortality allocated to each sector.
47. The MSAB **NOTED** that implementation variability (the deviation of realized total mortality from the procedure recommended total mortality) is not currently implemented.
48. **NOTING** that domestic management measures for the recreational fisheries often include size limits that differ to various levels of catch limits, the MSAB **REQUESTED** the IPHC Secretariat to consider alternative methods to simulate bycatch mortality at various Pacific halibut abundances, as noted in IPHC-2017-MSAB010-R, paragraph 21.
49. The MSAB **REQUESTED** the IPHC Secretariat to consider alternative methods to simulate recreational mortality, and that the recreational mortality should continue to increase over the entire range of total mortality.

5.3 *Management Procedures related to fishing intensity*

50. The MSAB **NOTED** that dynamic reference points (e.g. dRSB) in the Harvest Control Rule measure the effects of fishing but not other effects that cannot be controlled (e.g. changes in weight-at-age).
51. The MSAB **AGREED** that the Procedural SPR and the fishery trigger in the HCR are the focus for evaluation at MSAB012.
52. The MSAB **AGREED** that a performance metric related to “being on the ramp” of the HCR is not necessary and would be covered by catch variability performance metrics. However, the MSAB **REQUESTED** a statistic related to “being on the ramp” be reported.

5.4 *Preliminary closed-loop simulations results to investigate SPR with estimation error*

53. The MSAB **NOTED** that simulation of the assessment as an ensemble of models is too time consuming and that simulating the estimation error is more practical.
54. The MSAB **AGREED** that estimation error should be simulated from a joint distribution representing error in the estimated Total Mortality and the estimated stock status, with autocorrelation. The MSAB **REQUESTED** that the SRB review these methods to incorporate estimate error.
55. The MSAB **NOTED** that the MSE is focused on evaluating the application of a constant SPR (with adjustment at low stock status), and that a short-term MSE decision table will differ from the stock assessment decision table presented at the Annual Meeting because the MSE will apply a constant SPR and use performance metrics appropriate for the evaluation of the management procedure.
56. The MSAB **AGREED** that using the 2017 ensemble of models is useful in providing a reasonable idea of the estimation error for total mortality and stock status, as well as the correlation between the two.
57. The MSAB **NOTED** the comparison of long-term simulation results with estimation error compared to results with no estimation error. Specifically, with estimation error,

-
- a) a higher fishing intensity than the target occurs,
 - b) stock status is lower and more often below the threshold,
 - c) median yield increases,
 - d) variability in yield greatly increases, and may be above the tolerance level of stability objectives.

58. The MSAB **NOTED** that estimation error in total mortality only resulted in minor changes to conservation and yield performance metrics, but increased the variability in yield by more than two-fold. Estimation error on both total mortality and stock status had a greater effect on all performance metrics.

59. **NOTING** that preliminary results will not include autocorrelation, the MSAB **AGREED** that autocorrelation should be included in the final simulation, and may result in a reduction of the variability in yield seen in the preliminary results without autocorrelation.

5.5 *Simulation design for evaluations at MSAB012 of the Scale component of the harvest strategy policy*

60. The MSAB **REQUESTED** that the simulations incorporate:

- a) SPR values from 30% to 56%, with higher resolution where change occurs in the performance metrics, and at values where IPHC feels the results are meeting the MSE objectives.
- b) fishery trigger values of 30% and 40%, and that 45% is also used if time allows.
- c) estimation error by jointly simulating the error in total mortality and stock status with coefficients of variation (CV) the same for each variable and equal to 0.15 with a correlation of 0.5. An CV of 0.0 (no estimation error) and 0.2 may be considered if time permits, and presented as a sensitivity as a minimum to understand the effects of the different levels of estimation error.
- d) autocorrelation at a level determined appropriate by the IPHC Secretariat and the SRB.
- e) a smoothing algorithm on the catch limit for a few simulations as an example to understand the effect on the performance metrics. The algorithm should be asymmetric (e.g. slow up/fast down) and reduce annual catch variability.

61. The MSAB **REQUESTED** that when reporting results:

- a) the long-term be represented by 100 simulated annual cycles from the Operating Model and performance metrics summarized over the 10 annual cycles.
- b) short- and medium-term performance metrics be presented for management procedures that meet long-term objectives.
- c) the short-term be represented by the assessment ensemble and performance metrics presented for the immediate three years. These performance metrics are not necessarily the same as for long-term metrics, and may be actual values (e.g. catch in 2019) instead of a summary over years.
- d) the medium-term be summarized qualitatively by describing the transition from the short-term to the medium-term using the closed-loop simulations. Sensitivities (e.g. holding weight-at-age at low levels or constant) can help to inform the medium-term transitions.
- e) phase-in procedures are considered when appropriate.

62. The MSAB **REQUESTED** that IPHC Secretariat discuss the time-frames detailed in [paragraph 61](#), with the SRB.

63. The MSAB **REQUESTED** that the IPHC Secretariat consider the following improvements to the simulation framework:

- a) investigate improvements to simulating weight-at-age with input from the SRB.
- b) simulating bycatch be improved by linking it to abundance in some way.

-
- c) investigate methods to improve time-varying selectivity in the commercial fleet, possibly linking it to abundance.
64. The MSAB **NOTED** that the Operating Model and how it is conditioned is adequate for the evaluation of the HCR, and **REQUESTED** that the IPHC Secretariat present these methods to the SRB.
65. The MSAB **REQUESTED** the following sensitivities:
- a) Low and high states of weight-at-age.
 - b) Low and high regimes determining mean recruitment.
 - c) Implementation variability (variability associated with not exactly catching the quota or with departures during decision-making).
 - d) Higher and lower levels of mean bycatch.
 - e) Shift in bycatch selectivity to younger ages to address ongoing concerns on U26 mortality.
66. The MSAB **NOTED** that the MSE may be updated in the future as additional knowledge becomes available and objectives are updated.
67. The MSAB **AGREED** that the management procedure resulting from the MSE process would generate catch limit recommendations.

6. HARVEST STRATEGY POLICY, PART 2: ADDRESSING STOCK AND TOTAL CONSTANT EXPLOITATION YIELD (TCEY) DISTRIBUTION

68. The MSAB **NOTED** paper IPHC-2018-MSAB011-09 which provided an update on discussions and ideas related to science inputs and management procedures for distributing the Total Constant Exploitation Yield (TCEY) across the IPHC Convention Area.

6.1 *Review framework to investigate distributing the TCEY among IPHC Regulatory Areas and evaluate against objectives*

69. The MSAB **NOTED** that:
- a) if the goal of a procedure is to maintain a constant SPR through all steps of distributing the TCEY, then a change in distribution may change the total coastwide mortality to maintain that SPR.
 - b) there are science-based and management-derived elements in the TCEY distribution procedure. Some distribution procedures may incorporate one or both elements.
 - c) stock distribution is science-based and is linked to biological sustainability objectives. WPUE from the space-time model is used to determine stock distribution to biological regions, and using “all sizes” in the calculation of WPUE is more congruent with the TCEY, while acknowledging that the IPHC fishery-independent setline survey catches a small number of Pacific halibut below 26 inches.
 - d) the IPHC Secretariat has described four biological Regions (consistent with IPHC Regulatory Area boundaries) based on the best available science, and will be used for stock distribution as the first step, after which distribution procedures would distribute the TCEY to meet fishery objectives.
 - e) relative harvest rates among Regions are science-based and management-derived, and within Regions are management-derived. Science-based foundations could include productivity analyses, while management-derived elements may include quantity and quality of data in each area and other area-specific objectives.
 - f) many more elements of the TCEY distribution procedure may be developed and include management-derived elements.
 - g) TCEY distribution procedures are to be evaluated against objectives and reported at AM097 in 2021. Biological sustainability objectives are related to biological Regions and Fishery

objectives are related to IPHC Regulatory Areas. Because IPHC Regulatory Areas are nested within Regions, distribution to Regions can affect fishery objectives.

70. The MSAB **NOTED** that the proposed TCEY distribution procedure contains four main components, each of which may contain multiple elements. These four components are listed below and have a computational outcome:
- a) **Coastwide Target Fishing Intensity:** this defines the TCEY to be distributed.
 - b) **Regional Stock Distribution:** this distributes the TCEY to biological Regions to satisfy the Biological Sustainability objective of preserving biocomplexity.
 - c) **Regional Allocation Adjustment (optional):** this adjusts the distribution of the TCEY among Regions to account for additional Biological Sustainability objectives and fishery objectives.
 - d) **Regulatory Area Allocation:** this distributes the TCEY from Regions to Regulatory Areas to satisfy fishery objectives.
71. The MSAB **NOTED** that the output of the TCEY distribution procedure will be a catch table describing proposed mortality (allocation) in each IPHC Regulatory Area ([Appendix VI](#)).
72. The MSAB **REQUESTED** that the proposed TCEY distribution framework described in [paragraphs 69, 70](#) and [71](#), be reviewed by the SRB in 2018.
73. The MSAB **NOTED** the intent expressed by the Commission that the output from the management procedure (proposed mortality – allocation – by IPHC Regulatory Area) would then be subject to an annual Regulatory Area adjustment by the Commission, which may deviate from the harvest strategy by changing the distribution and the SPR.
74. The MSAB **NOTED** that the SPR is maintained after distributing the catch. A deviation from the SPR determined in the Harvest Control Rule due to distribution procedures may be useful to investigate, but there must be a minimum SPR which is not exceeded. This ensures that a maximum fishing intensity is not exceeded.

6.2 *Identify preliminary MPs related to distribution*

75. The MSAB **NOTED** some potential tools for use as distribution procedures when distributing the TCEY:
- a) Relative harvest rates.
 - b) O32:O26 ratios.
 - c) trends in survey WPUE by IPHC Regulatory Area.
 - d) Trends in modelled survey WPUE by biological region.
 - e) trends in fishery CPUE.
 - f) Smoothing algorithms on area-specific catch limits.
 - g) Percentage allocation with a floor (i.e. minimums of 1.5 Milbs in 2A and 1.7 Milbs in 4CDE).
 - h) A maximum SPR with catch distribution by IPHC Regulatory Area determined from the modelled survey WPUE.
 - i) Coastwide TCEY target and maximum calculated; distribution by target, but with ability to adjust TCEY up to the maximum.
76. **NOTING** that these tools require further discussion, the MSAB **REQUESTED** that the IPHC Secretariat provide comments, and that further stakeholder feedback is elicited.
77. The MSAB **NOTED** that observations of stock and catch distribution during various reference periods should be considered when defining objectives for evaluation.

7. MSAB PROGRAM OF WORK 2019-23

- 78. The MSAB **NOTED** paper IPHC-2018-MSAB011-10 which provided an update on the 5-year MSE Program of Work (2019-23), given current Commission directives.
- 79. The MSAB **AGREED** to the updated Program of Work provided at [Appendix VII](#), for the Commission’s further consideration.

8. OTHER BUSINESS

8.1 IPHC meetings calendar (2018-23): MSAB

- 80. The MSAB **NOTED** the annual IPHC meetings calendar (2018-20) adopted by the Commission at its 94th Session in 2018 (IPHC-2018-AM094-R, Appendix VII).
- 81. The MSAB **AGREED** that due to scheduling conflicts with a number of MSAB members, that the 12th Session of the MSAB should be held from 22-25 October 2018.

8.2 Steering Committee

- 82. The MSAB **RECALLED** that the members of the MSAB Steering Committee are as follows, and that their terms shall expire at the close of the 13th Session of the MSAB in 2019:

Canada	United States of America
Mr Adam Keizer	Dr Carey McGilliard
Mr Jim Lane	Ms Michele Culver
Mr Chris Sporer	Ms Peggy Parker

9. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 11TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB011)

- 83. The report of the 11th Session of the IPHC Management Strategy Advisory Board (IPHC-2018-MSAB011–R) was **ADOPTED** on 10 May 2018, including the consolidated set of recommendations and/or requests arising from MSAB011, provided at [Appendix VIII](#).

APPENDIX I
LIST OF PARTICIPANTS FOR THE 11TH SESSION OF THE IPHC MANAGEMENT STRATEGY
ADVISORY BOARD (MSAB011)

Officers

Co-Chairperson (Canada)	Co-Chairperson (United States of America)
Mr Neil Davis (A/g): neil.davis@dfo-mpo.gc.ca	Dr Carey McGilliard : Carey.McGilliard@noaa.gov

MSAB Members

Canada	United States of America
Mr Neil Davis : neil.davis@dfo-mpo.gc.ca	Mr Craig Cross : craigc@starboats.com
Mr Robert Hauknes : robert_hauknes@hotmail.com	Ms Michele Culver : Michele.Culver@dfw.wa.gov
Mr Allen (Rob) Kronlund : Allen.Kronlund@dfo-mpo.gc.ca	Mr Dan Falvey : myriadfisheries@gmail.com
Mr Jim Lane : jim.lane@nuuchahnulth.org	Trent Hartill : trent.hartill@alaska.gov
Mr Martin Paish : martinpaish1@gmail.com	Mr Jeff Kauffman : jeff@spfishco.com
Mr Chris Sporer : chris.sporer@phma.ca	Mr Tom Marking : tmmarking@gmail.com
	Mr Scott Mazzone : smazzone@quinault.org
	Dr Carey McGilliard : Carey.McGilliard@noaa.gov
	Mr Glenn Merrill : glenn.merrill@noaa.gov
	Mr Per Odegaard : vanseeodegaard@hotmail.com
	Ms Peggy Parker : peggyparker616@gmail.com
Absentees	Absentees
Mr Adam Keizer : adam.keizer@dfo-mpo.gc.ca	Mr Bruce Gabrys : gabryscpa@mtaonline.net
Mr Brad Mirau : brad@aerotrading.ca	

Commissioners

Canada	United States of America
Mr Paul Ryall : Paul.Ryall@dfo-mpo.gc.ca	

Observers

Canada	United States of America
Ms Ann-Marie Huang : Ann-Marie.Huang@dfo-mpo.gc.ca	Ms Ruth Christiansen , United Catcher Boats: ruth.christiansen78@gmail.com
	Mr Matt Damiano , Northwest Indian Fisheries Commission: mdamiano@nwifc.org
	Mr Jim Hasbrouck , ADFG: james.hasbrouck@alaska.gov
	Mr Frank Lockhart , NOAA-Fisheries: frank.lockhart@noaa.gov

IPHC Secretariat

Name	Position and email
Dr David Wilson	Executive Director, david@iphc.int
Mr Stephen Keith	Assistant Director, steve@iphc.int
Dr Allan Hicks	Quantitative Scientist, allan@iphc.int
Dr Ian Stewart	Quantitative Scientist, ian@iphc.int

APPENDIX II

**AGENDA FOR THE 11TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD
(MSAB011)**

Date: 07-10 May 2018

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

Venue: IPHC Training Room

Time: 7th: 12:00-17:00; 8th-10th: 09:00-17:00 daily

Co-Chairpersons: Mr Neil Davis, A/g (Canada) and Dr Carey McGilliard (U.S.A.)

1. OPENING OF THE SESSION

2. ADOPTION OF THE AGENGA AND ARRANGEMENTS FOR THE SESSION

2.1. IPHC website and Office 365

3. IPHC PROCESS

3.1. MSAB Membership and Officers

3.2. Update on the actions arising from the 10th Session of the MSAB (MSAB010)

3.3. Review of the outcomes of the 11th Session of the Scientific Review Board (SRB011)

3.4. Outcomes of the 94th Session of the IPHC Annual Meeting (AM094)

4. GOALS, OBJECTIVES, AND PERFORMANCE METRICS

4.1. A review of the goals and objectives of the IPHC MSE process

4.2. Classifying objectives in a hierarchy

4.3. Performance metrics for evaluation

4.3.1. Short-term, mid-term, and long-term performance metrics

**5. HARVEST STRATEGY POLICY, PART 1: SIMULATIONS TO EVALUATE FISHING
INTENSITY**

5.1. A description of the closed-loop simulation framework

5.2. A review of variability and scenarios

5.3. Management procedures related to fishing intensity

5.4. Preliminary closed-loop simulations results to investigate SPR with estimation error

5.5. Simulation design for evaluations at MSAB012 of the Scale component of the harvest strategy policy

**6. HARVEST STRATEGY POLICY, PART 2: ADDRESSING STOCK AND TOTAL CONSTANT
EXPLOITATION YIELD (TCEY) DISTRIBUTION**

6.1. Review framework to investigate distributing the TCEY among IPHC Regulatory Areas and evaluate against objectives

6.2. Identify preliminary MPs related to distribution

7. MSAB PROGRAM OF WORK 2019-23

8. OTHER BUSINESS

8.1. IPHC meetings calendar (2018-23): MSAB

**9. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 11TH SESSION OF
THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB011)**

APPENDIX III
LIST OF DOCUMENTS FOR THE 11TH SESSION OF THE MANAGEMENT STRATEGY ADVISORY BOARD (MSAB011)

Document	Title	Availability
IPHC-2018-MSAB011-01	Agenda & Schedule for the 11 th Session of the IPHC Management Strategy Advisory Board (MSAB011)	✓ 06 Feb 2018 ✓ 22 Mar 2018 ✓ 19 Apr 2018
IPHC-2018-MSAB011-02	List of Documents for the 11 th Session of the IPHC Management Strategy Advisory Board (MSAB011)	✓ 03 Apr 2018 ✓ 19 Apr 2018
IPHC-2018-MSAB011-03	MSAB Membership and Officers (IPHC Secretariat)	✓ 04 Apr 2018
IPHC-2018-MSAB011-04	Update on the actions arising from the 10 th Session of the MSAB (MSAB010) (IPHC Secretariat)	✓ 07 Apr 2018
IPHC-2018-MSAB011-05	Outcomes of the 11 th Session of the IPHC Scientific Review Board (SRB011) (IPHC Secretariat)	✓ 05 Apr 2018
IPHC-2018-MSAB011-06	Outcomes of the 94 th Session of the IPHC Annual Meeting (AM094) (IPHC Secretariat)	✓ 05 Apr 2018
IPHC-2018-MSAB011-07	Goals, Objectives, and Performance Metrics for the IPHC Management Strategy Evaluation (MSE) (A. Hicks)	✓ 09 Apr 2018
IPHC-2018-MSAB011-08	IPHC Management Strategy Evaluation to Investigate Fishing Intensity (A. Hicks)	✓ 10 Apr 2018
IPHC-2018-MSAB011-09	Ideas on estimating stock distribution and distributing catch for Pacific halibut fisheries (A. Hicks & I. Stewart)	✓ 19 Apr 2018
IPHC-2018-MSAB011-10	IPHC Secretariat Program of Work for MSAB Related Activities 2019-23 (A. Hicks)	✓ 07 Apr 2018
<i>Information papers</i>		
Nil	Nil	Nil

**APPENDIX IV
MSAB MEMBERSHIP**

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	2021
2	Hauknes, Robert	CDN Commercial		9-May-17	2021
3	Vacant	CDN Commercial			
4	Vacant	CDN Commercial			
5	Gabrys, Bruce		USA Commercial	9-May-17	2021
6	Kauffman, Jeff		USA Commercial	9-May-17	2019
7	Odegaard, Per		USA Commercial	9-May-17	2021
8	Falvey, Dan		USA Commercial	9-May-17	2021
First Nations/Tribal fisheries (2-4)					
1	Lane, Jim	CDN First Nations		9-May-17	2021
2	Vacant	CDN First Nations			
3	Mazzone, Scott		USA Treaty Tribes	9-May-17	2019
4	Vacant		USA Treaty Tribes		
Government Agencies (4-8)					
1	Keizer, Adam	DFO		9-May-17	2019
2	Huang, Ann-Marie	CDN Science Advisor		10-May-18	2022
3	Vacant	DFO			
4	Merrill, Glenn		NOAA-Fisheries	7-May-18	2022
5	McGilliard, Carey		USA Science Advisor	9-May-17	2021
6	Culver, Michele		PFMC	9-May-17	2021
7	Cross, Craig		NPFMC	9-May-17	2021
8	Hartill, Trent		ADFG	7-May-18	2022
Processors (2-4)					
1	Parker, Peggy	US/CDN Processing	US/CDN Processing	9-May-17	2019
2	Mirau, Brad	CDN Processing		9-May-17	2019
3	Vacant		USA Processing		
4	Vacant				
Recreational/Sport fisheries (2-4)					
1	Paish, Martin	CDN Sport Fishing Advisory Board		9-May-17	2021

IPHC-2018-MSAB011-R

Membership category	Member	Canada	U.S.A.	Current Term commencement	Current Term expiration *
2	Marking, Tom		USA Sportfishing (CA)	9-May-17	2019
3	Vacant		USA sportfishing (AK)		
4	Vacant				
*	MSAB member terms begin and end at the first MSAB meeting of the year, unless otherwise indicated				

APPENDIX VA
MEASURABLE OBJECTIVES AND ASSOCIATED PERFORMANCE METRICS

GOAL: Biological Sustainability

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	NEGATIVE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRICS
1.1. KEEP BIOMASS ABOVE A LIMIT TO AVOID CRITICAL STOCK SIZES	Maintain a minimum spawning stock biomass above a limit reference point	$RSB < \text{Biomass Limit}$	Long-term 10 year period	0.05	$P(dRSB < \text{Limit})$
1.2. MITIGATE FOR UNCERTAINTY	Maintain spawning stock biomass mostly above a threshold reference point to avoid stock sizes that could become critical	$RSB < \text{Biomass Threshold}$	Long-term 10-year period	0.25	$P(dRSB < \text{Threshold})$
	When the Estimated Biomass < Biomass Threshold, limit the probability of declines	SSB declines when $RSB < \text{Biomass Threshold}$	Long-term 10 year period	0.05-0.5	$P(SSB_{i+1} < SSB_i)$ given $RSB < \text{biomass threshold}$
ABSOLUTE MEASURE	An absolute measure	Number of mature female halibut	Long-term 10 year period	NA	Median $\overline{\text{Mature Females}}$
ABSOLUTE MEASURE	An absolute measure	Spawning Biomass	Long-term 10 year period	NA	Median \overline{RSB}

GOAL : Fishery Sustainability, Stability, and Access

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	NEGATIVE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRICS
2.1. MAINTAIN AN ECONOMICALLY SUFFICIENT LEVEL OF CATCH (I.E, TARGET) ACROSS REGULATORY AREAS	Maintain an average catch		Long-term, 10 yr Short-term, 3 yr	?? ??	$P(FCEY < AvCatch)$
	Maintain a minimum catch	FCEY < min	Long-term, 10 yr Short-term, 3 yr	?? ??	$P(FCEY < min)$
	Maintain an above average catch	< 70% of historical 1993-2012 average	Long-term, 10 yr Short-term, 3 yr	0.1 ??	$P(FCEY < 70\%)$
	Maintain a consistent level of catch	Outside of ±10% of 1993-2012 average	Long-term, 10 yr Short-term, 3 yr	0.1 0.	$P(FCEY > 110\% \text{ or } FCEY < 90\%)$
2.2. LIMIT CATCH VARIABILITY	Limit annual changes in TAC, coast-wide and/or by Regulatory Area	Change in Mortality > 15%	Long-term, 10 yr Short-term, 3 yr	?? ??	$P\left(\frac{FCEY_{i+1} - FCEY_i}{FCEY_i} > 15\%\right)$
		AAV > 15%	Long-term, 10 yr Short-term, 3 yr	?? ??	$P(AAV > 15\%)$
ABSOLUTE MEASURE	An absolute measure	Mortality (TM, TCEY, FCEY, Commercial)	Long-term, 10 yr Short-term, 3 yr	NA	Median \overline{Mort}
ABSOLUTE MEASURE	An absolute measure	Range of mortality	Long-term, 10 yr Short-term, 3 yr	NA	5 th and 75 th percentiles of mortality
ABSOLUTE MEASURE	An absolute measure	Variability in mortality (TM, TCEY, FCEY, Commercial)	Long-term, 10 yr Short-term, 3 yr	NA	Median Average Annual Variability (AAV)
STATISTIC	Chance of being “on the ramp”	Estimated stock status is below the fishery trigger	Long-term, 10 yr Short-term, 3 yr	NA	$P(\widehat{dRSB} < Trigger)$

GOAL : Minimize Discard Mortality

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	NEGATIVE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRICS
3.1. HARVEST EFFICIENCY	Discard mortality is a small percentage of the longline fishery annual catch limit	>10% of annual catch limit	Long-term, 10 yr Short-term, 3 yr	0.25	$P(DM > 10\%FCEY)$
ABSOLUTE MEASURE	Absolute	Discard Mortality (DM)	Long-term, 10 yr Short-term, 3 yr	NA	Median \overline{DM}

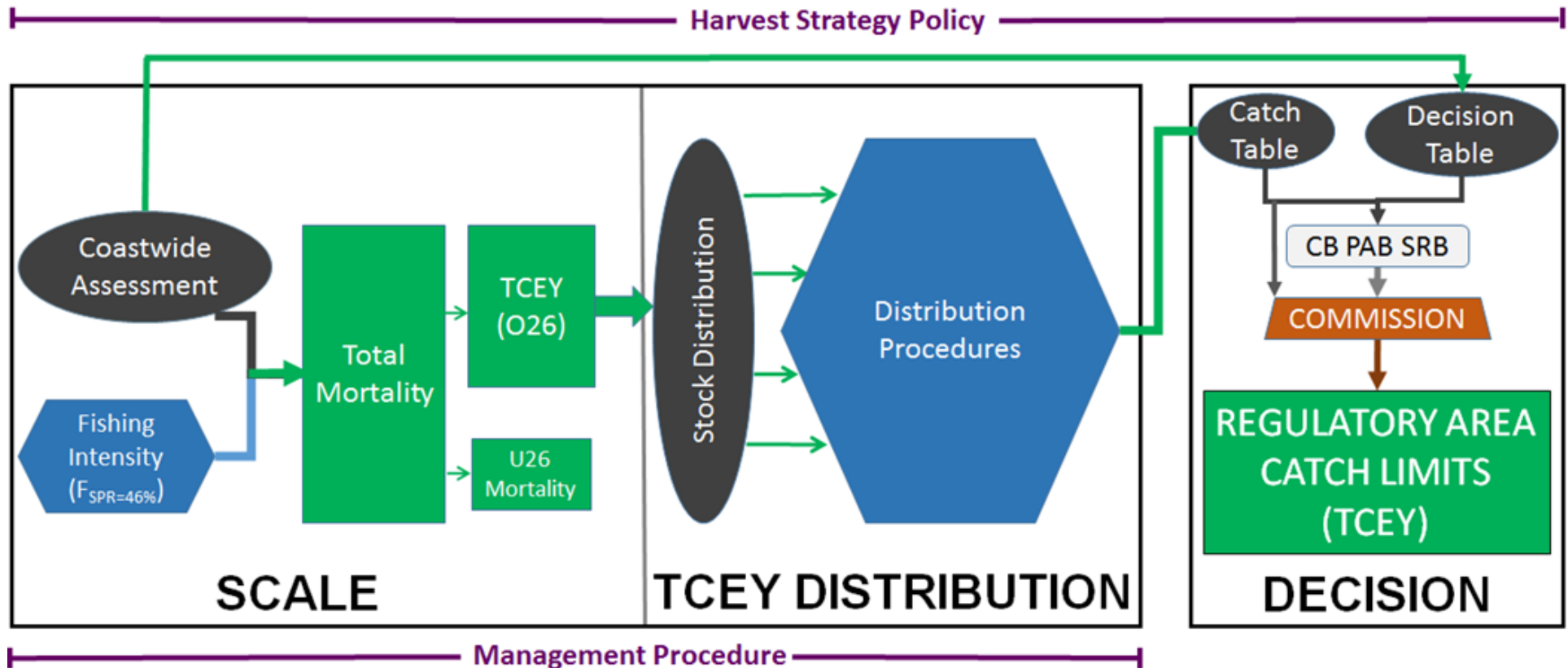
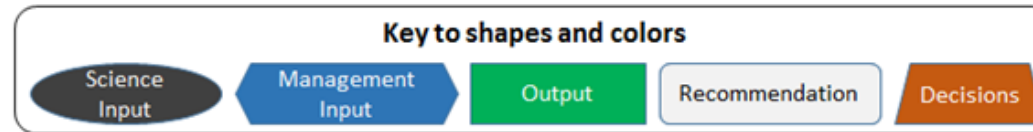
GOAL : Minimize Bycatch and Bycatch Mortality

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	NEGATIVE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRICS

**APPENDIX VB
OBJECTIVES FROM CIRCULAR IPHC-2018-CR022 AND MSAB RECOMMENDATIONS**

GOAL	GENERAL OBJECTIVE	MSAB RECOMMENDATION
Biological sustainability: Preserving bio-complexity	Maintaining diversity in the population across IPHC biologically-based Areas.	MORE DISCUSSION NEEDED
	Prevent local depletion at IPHC Regulatory Area scale.	MORE DISCUSSION NEEDED
Fisheries Sustainability: Maintain access and serve consumer needs.	Maintain commercial, recreational and subsistence fishing opportunities in each IPHC Regulatory Area.	EASILY EXTENDED TO AREAS
	Maintain processing opportunities in each IPHC Regulatory Area.	DROP
Fisheries Sustainability: Maximize yield by regulatory area	Distribution is responsive to IPHC Regulatory Area abundance trends and stock characteristics (ex. Fishery WPUE, age structure, size at age etc.).	MORE DISCUSSION NEEDED
	Distribution is responsive to management precision in each IPHC Regulatory Area.	MORE DISCUSSION NEEDED
	Minimize impact on downstream migration areas.	MORE DISCUSSION NEEDED
	Minimize discard mortality and bycatch.	MORE DISCUSSION NEEDED (DISCARD) PARKING LOT (BYCATCH)
Fisheries Sustainability: Minimize variability,	Limit annual TCEY variability due to stock distribution in both time and scale.	EASILY EXTENDED TO AREAS
	Avoid zero sum distribution policy.	MORE DISCUSSION NEEDED

APPENDIX VI
REVISED: HARVEST STRATEGY POLICY PROCESS (10 MAY 2018)



A revised harvest strategy policy showing the separation of scale and distribution of fishing mortality. The decision step is when policy (not a procedure) influences the final outcome.

APPENDIX VII
MSE PROGRAM OF WORK (2019-23)

May 2018 Meeting
Review Goals
Look at results of SPR
Review Performance Metrics
Identify Scale MP's
Review Framework
Identify Preliminary Distribution MP's
October 2018 Meeting
Review Goals
Complete results of SPR
Review Performance Metrics
Identify Scale MP'S
Verify Framework
Identify Distribution MP's
Annual Meeting 2019
Recommendation on Scale
Present possible distribution MP's
May 2019 Meeting
Review Goals
Spatial Model Complexity
Identify MP's (Distribution Scale)
Review Framework
October 2019 Meeting
Review Goals
Spatial Model Complexity
Identify MP's (Distn Scale)
Review Framework
Review multi-area model development
Annual Meeting 2020
Update on progress
Present to the Commission preliminary Management Procedures
May 2020 Meeting
Review Goals
Review multi-area model
Review preliminary results
October 2020 Meeting
Review Goals
Review preliminary results
Annual Meeting 2021
Recommendations on Scale and Distribution

APPENDIX VIII

CONSOLIDATED SET OF RECOMMENDATIONS AND REQUESTS OF THE 11TH SESSION OF THE
IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB011)**RECOMMENDATIONS**

NOTING that the core purpose of the MSAB011 is to review progress on the MSE Program of Work, and to provide guidance for the delivery of products to the MSAB012 in October 2018, the MSAB AGREED that formal recommendations to the Commission would not be developed at the present meeting, but rather, these would be developed at the MSAB012.

REQUESTS***A review of the goals and objectives of the IPHC MSE process***

- MSAB011–Req.01 ([para. 18](#)) The MSAB **REQUESTED** that the IPHC Secretariat standardize the terminology for types of objectives (e.g. general, higher level objectives vs. measurable objectives).
- MSAB011–Req.02 ([para. 20](#)) The MSAB **REQUESTED** that the objectives as defined in [Appendix Va](#), be refined by an Ad-Hoc Working Group (composition: Peggy Parker; Chris Sporer; Glenn Merrill; Dan Falvey; Michelle Culver). The Ad-Hoc Working Group shall provide refined objectives to the IPHC Secretariat for distribution to the MSAB for consideration by 15 June 2018. Comments from the MSAB members would then be provided to the IPHC Secretariat by 30 June 2018. Some points of interest include determining appropriate reference catch levels, considering the use of “economically sufficient,” and retaining the concepts of a minimum catch, a reference catch, and stability in catch (which may be stated as a rate of change). A further consideration may be to identify an objective related to taking advantage of high yield opportunities. Another consideration may be to look at what minimum catch is necessary to maintain markets.
- MSAB011–Req.03 ([para. 28](#)) The MSAB **REQUESTED** that the IPHC Secretariat continue to discuss the Biological Sustainability (conservation) objectives with the IPHCs Scientific Review Board (SRB), including the appropriate female spawning biomass limit and female spawning biomass threshold.
- MSAB011–Req.04 ([para. 33](#)) The MSAB **REQUESTED** that the objectives related to distributing the TCEY in [Appendix Vb](#) be the subject of further discussion by the Ad-Hoc Working Group ([paragraph 20](#)). The consideration of these objectives should be done after refinement of Scale objectives, as noted in [paragraph 20](#). This task is to be completed no later than 1 September 2018, for consideration by the IPHC Secretariat and subsequent submission to the MSAB012 in accordance with the IPHC Rules of Procedure (2017).

Performance metrics for evaluation

- MSAB011–Req.05 ([para. 37](#)) The MSAB **REQUESTED** that the IPHC Secretariat present the performance metrics determined from measurable objectives, as well as additional statistics listed in [Appendix Va](#), at MSAB012.

Short-term, mid-term, and long-term performance metrics

- MSAB011–Req.06 ([para. 40](#)) The MSAB **REQUESTED** that the IPHC Secretariat determine methods to present qualitative results describing the transition from the short-term to the long-term for various performance metrics as a way to describe medium-term performance.
- MSAB011–Req.07 ([para. 41](#)) The MSAB **REQUESTED** that the IPHC Secretariat present the methods for producing short-, medium- and long-term results to the SRB for their review and comment.

A review of variability and scenarios

MSAB011–Req.08 ([para. 45](#)) The MSAB **REQUESTED** that the SRB clarify the meaning of paragraphs 24 and 28 in the SRB report, IPHC-2017-SRB011-R.

MSAB011–Req.09 ([para. 48](#)) **NOTING** that domestic management measures for the recreational fisheries often include size limits that differ to various levels of catch limits, the MSAB **REQUESTED** the IPHC Secretariat to consider alternative methods to simulate bycatch mortality at various Pacific halibut abundances, as noted in IPHC-2017-MSAB010-R, paragraph 21.

MSAB011–Req.10 ([para. 49](#)) The MSAB **REQUESTED** the IPHC Secretariat to consider alternative methods to simulate recreational mortality, and that the recreational mortality should continue to increase over the entire range of total mortality.

Management Procedures related to fishing intensity

MSAB011–Req.11 ([para. 52](#)) The MSAB **AGREED** that a performance metric related to “being on the ramp” of the HCR is not necessary and would be covered by catch variability performance metrics. However, the MSAB **REQUESTED** a statistic related to “being on the ramp” be reported.

Preliminary closed-loop simulations results to investigate SPR with estimation error

MSAB011–Req.12 ([para. 54](#)) The MSAB **AGREED** that estimation error should be simulated from a joint distribution representing error in the estimated Total Mortality and the estimated stock status, with autocorrelation. The MSAB **REQUESTED** that the SRB review these methods to incorporate estimate error.

Simulation design for evaluations at MSAB012 of the Scale component of the harvest strategy policy

MSAB011–Req.13 ([para. 60](#)) The MSAB **REQUESTED** that the simulations incorporate:

- a) SPR values from 30% to 56%, with higher resolution where change occurs in the performance metrics, and at values where IPHC feels the results are meeting the MSE objectives.
- b) fishery trigger values of 30% and 40%, and that 45% is also used if time allows.
- c) estimation error by jointly simulating the error in total mortality and stock status with coefficients of variation (CV) the same for each variable and equal to 0.15 with a correlation of 0.5. An CV of 0.0 (no estimation error) and 0.2 may be considered if time permits, and presented as a sensitivity as a minimum to understand the effects of the different levels of estimation error.
- d) autocorrelation at a level determined appropriate by the IPHC Secretariat and the SRB.
- e) a smoothing algorithm on the catch limit for a few simulations as an example to understand the effect on the performance metrics. The algorithm should be asymmetric (e.g. slow up/fast down) and reduce annual catch variability.

MSAB011–Req.14 ([para. 61](#)) The MSAB **REQUESTED** that when reporting results:

- f) the long-term be represented by 100 simulated annual cycles from the Operating Model and performance metrics summarized over the 10 annual cycles.
- g) short- and medium-term performance metrics be presented for management procedures that meet long-term objectives.
- h) the short-term be represented by the assessment ensemble and performance metrics presented for the immediate three years. These performance metrics are not necessarily the same as for long-term metrics, and may be actual values (e.g. catch in 2019) instead of a summary over years.

- i) the medium-term be summarized qualitatively by describing the transition from the short-term to the medium-term using the closed-loop simulations. Sensitivities (e.g. holding weight-at-age at low levels or constant) can help to inform the medium-term transitions.
- j) phase-in procedures are considered when appropriate.

MSAB011–Req.15 ([para. 62](#)) The MSAB **REQUESTED** that IPHC Secretariat discuss the time-frames detailed in [paragraph 61](#), with the SRB.

MSAB011–Req.16 ([para. 63](#)) The MSAB **REQUESTED** that the IPHC Secretariat consider the following improvements to the simulation framework:

- d) investigate improvements to simulating weight-at-age with input from the SRB.
- e) simulating bycatch be improved by linking it to abundance in some way.
- f) investigate methods to improve time-varying selectivity in the commercial fleet, possibly linking it to abundance.

MSAB011–Req.17 ([para. 64](#)) The MSAB **NOTED** that the Operating Model and how it is conditioned is adequate for the evaluation of the HCR, and **REQUESTED** that the IPHC Secretariat present these methods to the SRB.

MSAB011–Req.18 ([para. 65](#)) The MSAB **REQUESTED** the following sensitivities:

- f) Low and high states of weight-at-age.
- g) Low and high regimes determining mean recruitment.
- h) Implementation variability (variability associated with not exactly catching the quota or with departures during decision-making).
- i) Higher and lower levels of mean bycatch.
- j) Shift in bycatch selectivity to younger ages to address ongoing concerns on U26 mortality.

Review framework to investigate distributing the TCEY among IPHC Regulatory Areas and evaluate against objectives

MSAB011–Req.19 ([para. 72](#)) The MSAB **REQUESTED** that the proposed TCEY distribution framework described in [paragraphs 69, 70](#) and [71](#), be reviewed by the SRB in 2018.

Identify preliminary MPs related to distribution

MSAB011–Req.20 ([para. 76](#)) **NOTING** that these tools require further discussion, the MSAB **REQUESTED** that the IPHC Secretariat provide comments, and that further stakeholder feedback is elicited.



**Report of the 12th Session of the IPHC
Management Strategy Advisory Board
(MSAB012)**

Seattle, Washington, U.S.A., 22-25 October 2018

DISTRIBUTION:

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ACRONYMS

AAV	Average Annual Variability
CPUE	Catch-per-unit-effort
CV	Coefficient of Variation
dRSB	dynamic Relative Spawning Biomass
FCEY	Fishery Constant Exploitation Yield
FISS	Fishery-independent setline survey
F _{SPR}	The Fishing Intensity that results in an equilibrium Spawning Potential Ratio
HCR	Harvest Control Rule
IPHC	International Pacific Halibut Commission
MP	Management Procedure
MSAB	Management Strategy Advisory Board
MSE	Management Strategy Evaluation
RSB	Relative Spawning Biomass
SB	Spawning Biomass
SRB	Scientific Review Board
SPR	Spawning Potential Ratio
TCEY	Total Constant Exploitation Yield
TM	Total Mortality
U.S.A.	United States of America
WPUE	Weight-per-unit-effort

DEFINITIONS

A set of working definitions are provided in the IPHC Glossary of Terms and abbreviations: <https://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** (formal); **REQUESTED** (informal): A conclusion for an action to be undertaken, by the Commission, a Contracting Party, a subsidiary (advisory) body of the Commission and/or the IPHC Secretariat. *Note:* Subsidiary (advisory) bodies of the Commission must have their Recommendations and Requests formally provided to the next level in the structure of the Commission for its consideration/endorsement (e.g. from a subsidiary body to the Commission). The intention is that the higher body will consider the action for endorsement under its own mandate, if the subsidiary body does not already have the required mandate. Ideally, this should be task-specific and contain a timeframe for completion.
- Level 2: AGREED:** Any point of discussion from a meeting, which the IPHC 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/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 IPHC 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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EXECUTIVE SUMMARY

The 12th Session of the International Pacific Halibut Commission (IPHC) Management Strategy Advisory Board (MSAB012) was held in Seattle, Washington, U.S.A. from 22 to 25 October 2018. The MSAB consists of 21 board members, 18 of which attended the Session from the two (2) Contracting Parties. A total of four (4) individuals attended the Session as Observers. In addition, three (3) IPHC Commissioner's were in attendance, Mr Paul Ryall (Canada), Mr Bob Alverson (USA) and Mr Richard Yamada (USA).

The following are a subset of the complete recommendations/requests for action from the MSAB012, which are provided in full at [Appendix VII](#).

RECOMMENDATIONS

A review of the goals and objectives of the IPHC MSE process

MSAB012–Rec.01 ([para. 20](#)) The MSAB **NOTED** the refined objectives provided by the ad-hoc working group (contained in paper IPHC-2018-MSAB012-06), and **RECOMMENDED** prioritizing a single conservation objective over fishery measurable objectives ([Table 1](#)).

Table 1. Priority objectives phrased as measurable outcomes used to evaluate MSE results. The first objective is prioritized over the others.

MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE
SB < Spawning Biomass Limit (SB _{Lim})	Long-term	0.10
SB _{Lim} =20% spawning biomass		
Relative AAV	Short-term	
Average Annual Variability (AAV) > 15%	Short-term	0.25
Maximize average TCEY coastwide	Short-term	

Performance metrics for evaluation

MSAB012–Rec.02 ([para. 24](#)) The MSAB **RECOMMENDED** that performance-metrics for the short-term span 4-13 years, medium-term span 14-23 years, and the long-term span 91-100 years, be reported to understand how the management procedures may rank differently in the different periods of the forward simulations.

Closed-loop simulation results to investigate coastwide fishing intensity

MSAB012–Rec.03 ([para. 37](#)) The MSAB **RECOMMENDED** that a coastwide fishing intensity SPR should not be lower than 40% nor higher than 46%, with a target SPR of 42%-43% with a 30:20 HCR. Rationale for this recommendation is provided in [paragraph 38](#).

REQUESTS

Closed-loop simulation results to investigate coastwide fishing intensity

MSAB012–Req.03 ([para. 40](#)) The MSAB **REQUESTED** that additional MPs components be considered to meet the objective of catch stability. The IPHC Secretariat may consider the following MPs, but is **ENCOURAGED** to explore other options to report at MSAB013.

- a) 25:10 control rule, and other control rules, as possible, potentially including 30:10 and 30:15 and 30:20;

- b) Multi-year quotas, defined as setting the TCEY in one year and sticking with the same TCEY in one or more following years, noting that AAV may not be an appropriate metric to measure variability;
- c) Limiting change in catch limits from the previous year to +/-15% per year, in addition to other relevant percentages, with the goal of finding MPs that meet the main objectives;
- d) Limiting change in catch limits from the previous year to a maximum increase of 15% per year with no limit on decreasing the catch limit;
- e) Slow up (33% of the change in TCEY), fast down (-50% of the change in TCEY).

Identify preliminary MPs related to distribution

MSAB012-Req.05 ([para. 54](#)) The MSAB **REQUESTED** that an additional management procedure be considered to define allocations and a catch limit floor that reduces catch limits in a stair-step manner during times of large abundance changes.

1. OPENING OF THE SESSION

1. The 12th Session of the International Pacific Halibut Commission (IPHC) Management Strategy Advisory Board (MSAB012) was held in Seattle, Washington, U.S.A. from 22 to 25 October 2018. The MSAB consists of 21 board members, 18 of which attended the Session from the two (2) Contracting Parties. A total of four (4) individuals attended the Session as Observers. In addition, three (3) IPHC Commissioner's were in attendance, Mr Paul Ryall (Canada), Mr Bob Alverson (USA), and Mr Richard Yamada (USA). The list of participants is provided at [Appendix I](#).
2. The MSAB **NOTED** apologies received from the following board members: Mr Robert Hauknes (Canadian Commercial harvester representative), Mr Tom Marking (USA sport fishing representative and Martin Paish (Canadian sport fishing representative).
3. The MSAB **RECALLED** that the primary objectives of MSAB, as described in Appendix V, para. 2 of the IPHC Rules of Procedure (2017) are as follows:
 - 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 IPHC staff 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 MSAB012 are listed at [Appendix III](#).

3. IPHC PROCESS

3.1 MSAB Membership

6. The MSAB **NOTED** paper IPHC-2018-MSAB012-03 Rev_1 which provided the current membership list and term expirations for the MSAB. The full membership list is provided at [Appendix IV](#):
7. The MSAB **WELCOMED** the following new MSAB members appointed by the Commission:
 - a) Mr Matt Damiano: USA Treaty tribes representative
 - b) Mr Joseph Morelli: USA Processor representative
8. The MSAB **WELCOMED** the following government members appointed by ADFG:
 - a) James Hasbrouck: USA government representative, ADFG.

3.2 Update on the actions arising from the 11th Session of the MSAB (MSAB011)

9. The MSAB **NOTED** paper IPHC-2018-MSAB012-04 which provided an opportunity to consider the progress made during the inter-sessional period in relation to the recommendations and requests of the 11th Session of the IPHC Management Strategy Advisory Board (MSAB011).

10. The MSAB **AGREED** to consider and revise as necessary, the actions arising from the MSAB011, and for these to be combined with any new actions arising from the MSAB012.

3.2.1 Additional Commission directives

11. The MSAB **NOTED** that the Commission met for its annual Work Meeting (WM2018) in September 2018. At that meeting, the Commission developed several additional directives for the MSAB012 as follows:

*“The Commission **RECOMMENDED** that the MSAB:*

- a) focus its efforts on providing a recommendation on the level of the coast-wide fishing intensity for IM094 in November 2018. This work on the scale portion of the harvest strategy policy should be prioritized over work on distribution.*
- b) While it is recognized that the MSAB has spent considerable time and effort in developing objectives for evaluating management procedures, for the purpose of expediting a recommendation on the level of the coast-wide fishing intensity, and noting SRB11–Rec.02 to develop an objectives hierarchy, the MSAB is requested to evaluate management procedure performance against objectives that prioritize long-term conservation over short-/medium-term (e.g. 3-8 years) catch performance. Where helpful in accelerating progress on scale, the MSAB is requested to constrain objectives to (1) maintain biomass above a limit to avoid critical stock sizes, (2) maintain a minimum average catch, and (3) limit catch variability.”*

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

12. The MSAB **NOTED** paper IPHC-2018-MSAB012-05, which provided the outcomes of the 13th Session of the IPHC Scientific Review Board (SRB013) relevant to the mandate of the MSAB, which were provided for reference.
13. The MSAB **AGREED** with the SRB that objectives should be hierarchal, include a combination of long-term and short-term timeframes, and be computed from the MSE simulation framework, noting that the goal of the MSE process is to rank the relative performance of management procedures.
14. The MSAB **AGREED** with the SRB that the current stock assessment process is distinct from the MSE process.
15. The MSAB **NOTED** that a phase-in of procedures to transition from the status quo to a recommended management procedure may be useful.
16. The MSAB **NOTED** that the stock assessment decision table may also be useful in understanding the 1-3 year consequences of a management procedure, given it is used for decision-making.
17. The MSAB **AGREED** with the SRB that this is an iterative process, but **NOTED** that the results presented at MSAB012 provide insight into management procedures that are likely to meet the conservation and fishery objectives related to coastwide scale.

4. GOALS, OBJECTIVES, AND PERFORMANCE METRICS

4.1 A review of the goals and objectives of the IPHC MSE process

18. The MSAB **NOTED** paper IPHC-2018-MSAB012-06 which provided a review of the goals and objectives of the IPHC MSE process, and to consider the directives from the Commission, including the consideration of additional objectives related to distributing the TCEY.
19. The MSAB **NOTED** that the additional directives regarding objectives that arose from the 2018 IPHC Work Meeting (WM2018; see [para. 11](#)) align with the refined objectives provided by the ad-hoc working group.
20. The MSAB **NOTED** the refined objectives provided by the ad-hoc working group (contained in paper IPHC-2018-MSAB012-06), and **RECOMMENDED** prioritizing a single conservation objective over fishery measurable objectives ([Table 1](#)).

Table 1. Priority objectives phrased as measurable outcomes used to evaluate MSE results. The first objective is prioritized over the others.

MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE
SB < Spawning Biomass Limit (SB _{Lim})	Long-term	0.10
SB _{Lim} =20% spawning biomass		
Relative AAV	Short-term	
Average Annual Variability (AAV) > 15%	Short-term	0.25
Maximize average TCEY coastwide	Short-term	

21. The MSAB **AGREED** that statistics of interest are useful when evaluating management procedures and **REQUESTED** that they continue to be reported.

4.2 *Performance metrics for evaluation*

22. The MSAB **NOTED** the performance metrics, including statistics of interest, reported in IPHC-2018-MSAB012-07 Rev_1.
23. The MSAB **REQUESTED** that the same metrics are calculated for the recreational sector as are calculated for the commercial sector and be reported for subsequent evaluations.
24. The MSAB **RECOMMENDED** that performance-metrics for the short-term span 4-13 years, medium-term span 14-23 years, and the long-term span 91-100 years, be reported to understand how the management procedures may rank differently in the different periods of the forward simulations.

5. HARVEST STRATEGY POLICY, PART 1: SIMULATIONS TO EVALUATE FISHING INTENSITY

25. The MSAB **NOTED** paper IPHC-2018-MSAB011-07 Rev_1 which provided an update on the progress of the IPHC Management Strategy Evaluation process to investigate fishing intensity, and to present results of the closed-loop simulations.

5.1 *A description of the closed-loop simulation framework*

26. **NOTING** the current simulation framework for the MSE, the MSAB **AGREED** that the changes made (bycatch mortality, recreational mortality, and time-varying commercial selectivity) improve the simulation framework.
27. The MSAB **NOTED** the importance of periodic check-ins to update the simulation framework with current knowledge as part of the iterative MSE process.

5.2 *A review of variability and scenarios*

28. The MSAB **NOTED** that the results presented at MSAB012 included four levels of estimation error (none, 0.10, 0.15, and 0.20) and four levels of autocorrelation (0.0, 0.2, 0.4, and 0.6). An estimation error of 0.15 and an autocorrelation was considered the default based on investigations of the current stock assessment models.

5.3 *Closed-loop simulation results to investigate coastwide fishing intensity*

29. The MSAB **NOTED** that the Management Procedures (MPs) requested by the MSAB at MSAB011 consisted of SPR values from 0.3 to 0.56 and control rules of 30:20 and 40:20.
30. The MSAB **NOTED** that additional MPs were presented for evaluation that consisted of SPR values and a control rule of 25:10. An additional MP with no control rule was presented.
31. The MSAB **NOTED** that additional MPs incorporating a constant catch with 30:20 or 40:20 control rules were presented.

-
32. The MSAB **NOTED** that sensitivities with different levels of estimation error, autocorrelation, fixed weight-at-age, fixed recruitment regime (high or low), low and high bycatch, and bycatch selectivity shifted to younger fish were presented to determine the robustness of the management procedures.
33. The MSAB **NOTED** the results of two MPs that limit the change of TM: (1) an MP that limits the maximum change in TM in either direction to 15%, and (2) an MP that limits the maximum increase in the TM to 15%, with no limit on the maximum decrease.
34. The MSAB **REVIEWED** the performance metrics related to the objectives in [Appendix V](#), for MPs with SPR ranging from 0.3 to 0.56 in combination with 40:20, 30:20, 25:10 HCRs, and without an HCR, and **NOTED** the following:
- All of these MPs meet the primary long-term conservation objective of maintaining the spawning biomass above a biomass limit of 20 percent at least 90 percent of the time, except for the MPs without an HCR and for the highest fishing intensity investigated ($F_{SPR} = 0.30$);
 - While some of the MPs result in lower average annual variability (AAV), none of them achieves the specific AAV measurable outcome of more than 15 percent less than 25% of the time; however, MPs with a control rule of 25:10 produce the lowest AAV values in the short, medium, and long-term timeframes;
 - the performance of MPs across different SPR values is relative to the corresponding harvest control rule (HCR) and that there are trade-offs associated with various HCRs and SPR values, particularly with regard to AAV and coastwide TM.
35. The MSAB **NOTED** that an HCRs is a useful way to help meet the conservation objective ($SB > 0.2$) is met at all fishing intensities investigated.
36. **NOTING** that a 40:20 HCR results in a lower yield and higher AAV when compared to other HCRs, the MSAB **AGREED** MPs for current consideration be limited to 30:20 and 25:10 HCRs.
37. The MSAB **RECOMMENDED** that a coastwide fishing intensity SPR should not be lower than 40% nor higher than 46%, with a target SPR of 42%-43% with a 30:20 HCR. Rationale for this recommendation is provided in [paragraph 38](#).
38. The MSAB **AGREED** on the rationale for [paragraph 37](#) as follows:
- that at fishing intensities greater than SPR 40%, AAV appears to increase at a faster rate, with little gain in yield; and
 - at fishing intensities greater than SPR 40%, $Pr(SB < SB_{30})$ and $Pr(SB < 20)$ increased; and
 - fishing intensities lower than SPR 46% yield appears to decrease at a faster rate, with little gain to conservation and stability objectives; and
 - that conservation risk is lower under the 30:20 HCR than for a 25:10 HCR, although the probability of a directed fishery closure is greater than under the 25:10 HCR; and
 - that median total mortality is lower, and median AAV is higher under a 30:20 HCR across all SPRs considered compared to the 25:10 HCRs.
39. **NOTING** [paragraph 34\(b\)](#), the MSAB ranked the MPs relative to one another in terms of median AAV in TM. To meet the AAV objective, additional MPs to limit the percent change TM limit from the previous year were also discussed.
40. The MSAB **REQUESTED** that additional MPs components be considered to meet the objective of catch stability. The IPHC Secretariat may consider the following MPs, but is **ENCOURAGED** to explore other options to report at MSAB013.
- 25:10 control rule, and other control rules, as possible, potentially including 30:10 and 30:15 and 30:20;
 - Multi-year quotas, defined as setting the TCEY in one year and sticking with the same TCEY in one or more following years, noting that AAV may not be an appropriate metric to measure variability;

- c) Limiting change in catch limits from the previous year to +/-15% per year, in addition to other relevant percentages, with the goal of finding MPs that meet the main objectives;
- d) Limiting change in catch limits from the previous year to a maximum increase of 15% per year with no limit on decreasing the catch limit;
- e) Slow up (33% of the change in TCEY), fast down (-50% of the change in TCEY).

41. The MSAB **CONSIDERED** the objectives described in [Table 2](#) in making its recommendation in [Paragraph 37](#).

Table 2. Priority objectives phrased as measurable outcomes used to evaluate MSE results and results for SPR values from 46% to 40% using a 30:20 control rule for each objective. Pass/Fail or change in the metric are reported to reflect the ranking of management procedures.

MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	SPR 46%	SPR 44%	SPR 42%	SPR 40%
SB < Spawning Biomass Limit (SB _{Lim})						
SB _{Lim} =20% spawning biomass	Long-term	0.10	Pass	Pass	Pass	Pass
Median AAV	Short-term		Min	+0.9%	+1.8%	+3.2%
Average Annual Variability (AAV) > 15%	Short-term	0.25	Fail	Fail	Fail	Fail
Maximize average TCEY coastwide (Median TM)	Short-term		-9.9% diff	-6.3% diff	-3.4% diff	Max

42. The MSAB **NOTED** additional statistics of interest over the long-term in making its recommendation in [Paragraph 37](#), described in [Table 3](#).

Table 3. Statistics of interest used for the evaluation of MSE with results for SPR values from 46% to 40% using a control rule of 30:20.

STATISTIC OF INTEREST	TIME-FRAME	SPR 46%	SPR 44%	SPR 42%	SPR 40%
Median realized SPR	Long-term	47.4%	45.9%	44.5%	43.5%
SB < Spawning Biomass Limit (SB _{Lim})					
SB _{Lim} =20% spawning biomass	Long-term	<0.01	<0.01	<0.01	<0.01
Median AAV	Long-term	18.4%	19.4%	21.1%	23.9%
Probability Average Annual Variability (AAV) > 15%	Long-term	0.722	0.771	0.813	0.847
Maximize average TCEY coastwide (Median TM, Mlbs)	Long-term	38.0	38.5	39.0	39.6
Median relative spawning biomass	Long-term	39.7%	37.9%	36.5%	35.0%
Probability SB<30% in a year	Long-term	0.031	0.065	0.094	0.142
Probability SB<30% in at least 1 of 10 years	Long-term	0.070	0.149	0.202	0.307
Probability commercial allocation = 0 in a year	Long-term	0.034	0.046	0.051	0.063
Probability commercial allocation = 0 in at least 1 of 10 years	Long-term	0.147	0.192	0.233	0.283

75 th percentile of TM	Long-term	63.5	65.3	65.9	68.4
Probability TM<34 Mlbs in a year	Long-term	0.448	0.435	0.426	0.432
Probability TM<34 Mlbs in at least 1 of 10 years	Long-term	0.633	0.641	0.661	0.681
Probability Directed < 50.6 Mlbs* in a year	Long-term	0.7212	0.7078	0.6958	0.6819
Probability Directed < 50.6 Mlbs* in at least 1 of 10 years	Long-term	0.8550	0.8470	0.8500	0.8530

*70% of average TM from 1993-2012

43. The MSAB **REQUESTED** that the IPHC Secretariat provide a report at MSAB013 of IPHC research and other relevant research (to the extent possible) activities related to relationships between population dynamics and environmental conditions, noting that the IPHC 5-year research plan is available on the [IPHC website](#), to aid in the discussion of hypotheses that are plausible to include in the MSE process.
44. The MSAB **NOTED** that the MSE framework is an appropriate way to explore how management procedures perform under potential future environmental conditions given plausible hypotheses about such relationships.
45. The MSAB **NOTED** paragraph 39 of the SRB013 report which states:

“The SRB NOTED that the biological research activities being undertaken by the IPHC Secretariat 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).” (IPHC-2018-SRB013-R, para. 39).”

6. HARVEST STRATEGY POLICY, PART 2: ADDRESSING STOCK AND TOTAL CONSTANT EXPLOITATION YIELD (TCEY) DISTRIBUTION

46. The MSAB **NOTED** paper IPHC-2018-MSAB012-08 which provided an update on discussions and ideas related to science inputs and management procedures for distributing the Total Constant Exploitation Yield (TCEY) across the IPHC Convention Area.

6.1 Discussion of distribution goals

47. The MSAB **NOTED** that the ad-hoc working group did not refine objectives related to distribution of TCEY, but differentiated between current objectives related to scale and distribution.
48. The MSAB **ACKNOWLEDGED** the importance and continued support among members for the following principle: conserving spatial population structure by applying a precautionary approach and using bioregions. This would be maintained as a general objective in [Appendix V](#).

6.2 Review the framework to investigate distributing the TCEY among IPHC Regulatory Areas and evaluate against objectives

49. The MSAB **NOTED** the distribution framework and the separation of scientific and management elements of distribution procedures.
50. The MSAB **NOTED** that catch limit decisions are based on TCEY (O26), therefore using “all-sizes” WPUE from the FISS space-time model is more congruent with regional stock distribution.

6.3 Identify preliminary MPs related to distribution

51. The MSAB **NOTED** the MPs that are currently listed for consideration, as follows:
- a) Relative harvest rates.
 - b) O32:O26 ratios.
 - c) Trends in setline survey WPUE by IPHC Regulatory Area.

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- d) Trends in modelled setline survey WPUE by biological region.
 - e) Trends in fishery CPUE.
 - f) Smoothing algorithms on area-specific catch limits.
 - g) Percentage allocation with a floor (i.e. minimums of 1.5 Milbs in 2A and 1.7 Milbs in 4CDE).
 - h) A maximum SPR with catch distribution by IPHC Regulatory Area determined from the modelled setline survey WPUE.
 - i) Coastwide TCEY target and maximum calculated; distribution by target, but with ability to adjust TCEY up to the maximum.

52. The MSAB **AGREED** that an ad-hoc working group would be formed to recommend elements of management procedures for the distribution of TCEY. The working group will organize the management procedures listed in paper IPHC-2018-MSAB012-08 with respect to the framework of five steps for distributing TCEY to bioregions and regulatory areas listed in Section 3.4 of paper IPHC-2018-MSAB012-08. The members of the ad-hoc working group will be: Bruce Gabrys, Peggy Parker, Dan Falvey, Chris Sporer, Glenn Merrill, Scott Mazzone, Jim Lane, Adam Keizer, and Carey McGilliard. The working group will meet electronically between the AM095 and MSAB013 and the meeting will be facilitated by the IPHC Secretariat.
53. The MSAB **URGED** members to document candidate management procedures and share any such MPs with the ad-hoc working group prior to MSAB013, via the IPHC Secretariat. The 95th Session of the IPHC Annual Meeting (AM095) will be a key engagement point for this task.
54. The MSAB **REQUESTED** that an additional management procedure be considered to define allocations and a catch limit floor that reduces catch limits in a stair-step manner during times of large abundance changes.
55. The MSAB **REQUESTED** that the IPHC Secretariat and the MSAB continue to develop the concept of a 'fishery footprint', as previously considered in IPHC-2015-MSAB006-R, in part to consider how it may be incorporated into a MP.

7. MSAB PROGRAM OF WORK 2019-23

56. The MSAB **NOTED** paper IPHC-2018-MSAB012-09 which provided an update on the 5-year MSE Program of Work (2019-23), given current Commission directives.
57. The MSAB **NOTED** the delivery dates of January 2019 for coastwide results and January 2021 for the MSE results, including Scale and Distribution components of the management procedure for potential adoption by the Commission and subsequent implementation.
58. The MSAB **ENDORSED** the Program of Work provided at [Appendix VI](#).

8. OTHER BUSINESS

8.1 *IPHC meetings calendar (2019-21)*

59. The MSAB **NOTED** the annual IPHC meetings calendar (2019-21) adopted by the Commission at its 94th Session in 2018, as published on the [IPHC website](#).
60. The MSAB **NOTED** the indication from the IPHC Secretariat that the MSAB may not need the four (4) days currently scheduled for MSAB013 (6-9 May 2019).

8.2 *IPHC Rules of Procedure (2017)*

61. **NOTING** the proposed revisions to the IPHC Rules of Procedure presented by the IPHC Secretariat, the MSAB **AGREED** to the following:
- a) *Intersessional process and ad-hoc working groups: Steering Committee* (Section V, para. 10): given the changes to the MSAB in recent years, there is no longer a need for a Steering Committee and this section should be removed;

b) **Reports and Records** (Section VI, para. 12): currently, the drafting of the MSAB report is the responsibility of the Co-Chairpersons, with the Steering Committee being delegated some of that responsibility. With the changes agreed to above, and the need for standardisation among all of the Commission's subsidiary bodies, para. 12 of the Rules of Procedure (2017) should be standardised to those of the other subsidiary bodies of the Commission.

62. The MSAB **AGREED** that support for rapporteuring will be determined tentatively during each MSAB meeting for the next MSAB meeting, and confirmed at the commencement of each meeting.

9. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 12TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB012)

63. The report of the 12th Session of the IPHC Management Strategy Advisory Board (IPHC-2018-MSAB012-R) was **ADOPTED** on 25 October 2018, including the consolidated set of recommendations and/or requests arising from MSAB012, provided at [Appendix VII](#).

APPENDIX I
LIST OF PARTICIPANTS FOR THE 12TH SESSION OF THE IPHC MANAGEMENT STRATEGY
ADVISORY BOARD (MSAB012)

Officers

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

MSAB Members

Canada	United States of America
Ms Ann-Marie Huang : Ann-Marie.Huang@dfo-mpo.gc.ca	Mr Craig Cross : craigc@starboats.com
Mr Adam Keizer : adam.keizer@dfo-mpo.gc.ca	Ms Michele Culver : Michele.Culver@dfw.wa.gov
Mr Jim Lane : jim.lane@nuuchahnulth.org	Mr Matt Damiano : mdamiano@nwifc.org
Mr Brad Mirau : brad@aerotrading.ca	Mr Dan Falvey : myriadfisheries@gmail.com
Mr Chris Sporer : chris.sporer@phma.ca	Mr Bruce Gabrys : gabryscpa@mtaonline.net
	Mr James Hasbrouck : james.hasbrouck@alaska.gov
	Mr Jeff Kauffman : jeff@spfishco.com
	Mr Scott Mazzone : smazzone@quinault.org
	Dr Carey McGilliard : Carey.McGilliard@noaa.gov
	Mr Glenn Merrill : glenn.merrill@noaa.gov
	Mr Joseph Morelli : jmorelli@spsales.com
	Mr Per Odegaard : vanscodegaard@hotmail.com
	Ms Peggy Parker : peggyparker616@gmail.com
Absentees	Absentees
Mr Robert Hauknes : robert_hauknes@hotmail.com	Mr Tom Marking : tmmarking@gmail.com
Mr Martin Paish : martinpaish1@gmail.com	

Commissioners

Canada	United States of America
Mr Paul Ryall : Paul.Ryall@dfo-mpo.gc.ca	Mr Robert (Bob) Alverson : RobertA@fvoa.org
	Mr Richard Yamada : richard@alaskareel.com

Observers

Canada	United States of America
	Ms Ruth Christiansen , United Catcher Boats: ruth.christiansen78@gmail.com
	Ms Keeley Kent – NOAA-Fisheries: keeley.kent@noaa.gov
	Mr Frank Lockhart , NOAA-Fisheries: frank.lockhart@noaa.gov
	Ms Sarah Webster , Alaska Department of Fish and Game: sarah.webster@alaska.gov

IPHC Secretariat

Name	Position and email
Dr David Wilson	Executive Director, david@iphc.int
Mr Stephen Keith	Assistant Director, steve@iphc.int

Dr Allan Hicks	Quantitative Scientist, allan@iphc.int
Dr Ian Stewart	Quantitative Scientist, ian@iphc.int

APPENDIX II

AGENDA FOR THE 12TH SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB012)

Date: 22-25 October 2018

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

Venue: IPHC Training Room

Time: 22nd: 12:00-17:00; 23rd-25th: 09:00-17:00 daily

Co-Chairpersons: Mr. Adam Keizer (Canada) and Dr. Carey McGilliard (U.S.A.)

- 1. OPENING OF THE SESSION**
- 2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION**
- 3. IPHC PROCESS**
 - 3.1. MSAB Membership
 - 3.2. Update on the actions arising from the 11th Session of the MSAB (MSAB011)
 - 3.3. Review of the outcomes of the 13th Session of the Scientific Review Board (SRB013)
- 4. GOALS, OBJECTIVES, AND PERFORMANCE METRICS**
 - 4.1. A review of the coastwide goals and objectives of the IPHC MSE process
 - 4.2. Performance metrics for evaluation
- 5. HARVEST STRATEGY POLICY, PART 1: SIMULATIONS TO EVALUATE FISHING INTENSITY**
 - 5.1. A description of the closed-loop simulation framework
 - 5.2. A review of variability and scenarios
 - 5.3. Closed-loop simulation results to investigate coastwide fishing intensity
- 6. HARVEST STRATEGY POLICY, PART 2: ADDRESSING STOCK AND TOTAL CONSTANT EXPLOITATION YIELD (TCEY) DISTRIBUTION**
 - 6.1. Discussion of distribution goals
 - 6.2. Review the framework to investigate distributing the TCEY among IPHC Regulatory Areas and evaluate against objectives
 - 6.3. Identify preliminary MPs related to distribution
- 7. MSAB PROGRAM OF WORK (2019-23)**
- 8. OTHER BUSINESS**
 - 8.1. IPHC meetings calendar (2019-21)
 - 8.2. IPHC Rules of Procedure (2017)
- 9. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 12th SESSION OF THE IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB012)**

APPENDIX III
LIST OF DOCUMENTS FOR THE 12TH SESSION OF THE MANAGEMENT STRATEGY ADVISORY BOARD (MSAB012)

Document	Title	Availability
IPHC-2018-MSAB012-01	Draft: Agenda & Schedule for the 12 th Session of the IPHC Management Strategy Advisory Board (MSAB012)	✓ 23 July 2018 ✓ 21 September 2018
IPHC-2018-MSAB012-02	Draft: List of Documents for the 12 th Session of the IPHC Management Strategy Advisory Board (MSAB012)	✓ 21 September 2018 ✓ 18 October 2018
IPHC-2018-MSAB012-03 Rev_1	MSAB Membership and Officers (IPHC Secretariat)	✓ 21 September 2018 ✓ 18 October 2018
IPHC-2018-MSAB012-04	Update on the actions arising from the 10th Session of the MSAB (MSAB011) (IPHC Secretariat)	✓ 21 September 2018
IPHC-2018-MSAB012-05	Outcomes of the 12 th Session of the IPHC Scientific Review Board (SRB012) (IPHC Secretariat)	✓ 16 October 2018
IPHC-2018-MSAB012-06	Goals, Objectives, and Performance Metrics for the IPHC Management Strategy Evaluation (MSE) (A. Hicks)	✓ 21 September 2018
IPHC-2018-MSAB012-07 Rev_1	IPHC Management Strategy Evaluation to Investigate Fishing Intensity (A. Hicks & I. Stewart)	✓ 22 September 2018 ✓ 16 October 2018
IPHC-2018-MSAB012-08	Ideas on estimating stock distribution and distributing catch for Pacific halibut fisheries (A. Hicks & I. Stewart)	✓ 22 September 2018
IPHC-2018-MSAB012-09	IPHC Secretariat Program of Work for MSAB Related Activities 2019-23 (A. Hicks)	✓ 21 September 2018
<i>Information papers</i>		
Nil	Nil	Nil

**APPENDIX IV
MSAB MEMBERSHIP**

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	8-May-21
2	Hauknes, Robert	CDN Commercial		9-May-17	8-May-21
3	Vacant	CDN Commercial			
4	Vacant	CDN Commercial			
5	Gabrys, Bruce		USA Commercial	9-May-17	8-May-21
6	Kauffman, Jeff		USA Commercial	9-May-17	8-May-19
7	Odegaard, Per		USA Commercial	9-May-17	8-May-21
8	Falvey, Dan		USA Commercial	9-May-17	8-May-21
First Nations/ Tribal fisheries (2-4)					
1	Lane, Jim	CDN First Nations		9-May-17	8-May-21
2	Vacant	CDN First Nations			
3	Mazzone, Scott		USA Treaty Tribes	9-May-17	8-May-19
4	Damiano, Matt		USA Treaty Tribes	20-Jun-18	19-Jun-22
Government Agencies (4-8)					
1	Keizer, Adam	DFO		9-May-17	08-May-19
2	Huang, Ann-Marie	CDN Science Advisor		10-May-18	09-May-22
3	Vacant	DFO			
4	Merrill, Glenn		NOAA-Fisheries	7-May-18	06-May-22
5	McGilliard, Carey		USA Science Advisor	9-May-17	08-May-21
6	Culver, Michele		PFMC	9-May-17	08-May-21
7	Cross, Craig		NPFMC	9-May-17	08-May-21
8	Hasbrouck, James		ADFG	12-Oct-18	11-Oct-22
Processors (2-4)					
1	Parker, Peggy	US/CDN Processing	US/CDN Processing	9-May-17	08-May-19
2	Mirau, Brad	CDN Processing		9-May-17	08-May-19
3	Morelli, Joseph		USA Processing	29-Aug-18	28-Aug-22
4	Vacant		CDN Processing		
Recreational/ Sport fisheries (2-4)					
1	Paish, Martin	CDN Sport Fishing Advisory Board		9-May-17	08-May-21
2	Marking, Tom		USA Sport fishing (CA)	9-May-17	08-May-19

Membership category	Member	Canada	U.S.A.	Current Term commencement	Current Term expiration
3	Vacant		USA sportfishing (AK)		
4	Vacant		Open		

APPENDIX VA
PRIMARY OBJECTIVES AND ASSOCIATED PERFORMANCE METRICS

Primary objectives for the evaluation of Management Procedures (MPs) on coastwide scale

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRIC
1.1. KEEP BIOMASS ABOVE A LIMIT TO AVOID CRITICAL STOCK SIZES Biomass Limit	Maintain a minimum female spawning stock biomass above a biomass limit reference point at least 90% of the time	$SB < \text{Spawning Biomass Limit } (SB_{Lim})$ $SB_{Lim}=20\%$ spawning biomass	<i>Long-term</i>	0.10	$P(SB < SB_{Lim})$
2.1. LIMIT CATCH VARIABILITY	Limit annual changes in the coastwide TCEY	Average Annual Variability (AAV) > 15%	Short-term	0.25	$P(AAV > 15\%)$
2.2. MAXIMIZE DIRECTED FISHING YIELD	<i>Maximize average TCEY coastwide</i>	<i>Median coastwide TCEY</i>	<i>Short-term</i>	<i>STATISTIC OF INTEREST</i>	<i>Median \overline{TCEY}</i>

APPENDIX VB
ADDITIONAL OBJECTIVES AND ASSOCIATED PERFORMANCE METRICS

GOAL: Biological Sustainability

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRIC
<i>REPORT A METRIC THAT IS BASED ON NUMBERS OF PACIFIC HALIBUT</i>	<i>An absolute measure</i>	<i>Number of mature female halibut</i>	<i>Long-term</i>	<i>STATISTIC OF INTEREST</i>	<i>Median Number of Mature Females</i>
<i>REPORT A METRIC INDICATING THE SPAWNING BIOMASS EXPECTED TO BE ABOVE 50% OF THE TIME (I.E., AN IMPLIED TARGET)</i>	<i>An absolute measure</i>	<i>Spawning Biomass</i>	<i>Long-term</i>	<i>STATISTIC OF INTEREST</i>	<i>Median \overline{SB}</i>
<i>REPORT A METRIC THAT GIVES AN INDICATION HOW OFTEN THE BIOMASS IS BELOW THE FISHERY TRIGGER</i>	<i>Maintain a biomass that is above the biomass limit and not on the ramp a high percentage of the time</i>	<i>B < Spawning Biomass Limit (Fishery Trigger)</i> <i>Fishery biomass Trigger=30% spawning</i>	<i>Long-term</i>	<i>STATISTIC OF INTEREST</i>	<i>$P(SB < Fish_{Trig})$</i>
<i>CONSERVE SPATIAL POPULATION STRUCTURE</i>					

GOAL: Optimize directed fishing opportunities.

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRIC
2.1. LIMIT CATCH VARIABILITY	Limit annual changes in the coastwide TCEY	AAV	Long-term	STATISTIC OF INTEREST	AAV and variability
		Change in TCEY > 15% in any year	Short-term	STATISTIC OF INTEREST	$\frac{TCEY_{i+1} - TCEY_i}{TCEY_i}$
	Limit annual changes in the TCEY for each Regulatory Area	Average Annual Variability by Regulatory Area (AAV _A) > 15%	Long-term	0.25	P(AAV > 15%)
		AAV _A	Long-term	STATISTIC OF INTEREST	AAV and variability
	Gain insight into the additional variability in the TCEY when on the ramp	Change in TCEY by Regulatory Area > 15% in any year	Short-term	STATISTIC OF INTEREST	$\frac{TCEY_{i+1} - TCEY_i}{TCEY_i}$
		AAV while on the ramp	Long-term	STATISTIC OF INTEREST	AAV given estimated SB < SB _{Trig}
		Percent of time “on the ramp” (estimated stock status is below the fishery trigger; SB _{trig})	Long-term	STATISTIC OF INTEREST	P($\widehat{SB} < SB_{Trig}$)
		SB _{Trig} to be evaluated (e.g., 30% or 40%)			

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRIC
2.2. MAXIMIZE DIRECTED FISHING YIELD	Maintain TCEY above a minimum level coastwide	Coastwide TCEY < TCEY _{min}	Long-term Short-term	?? ??	$P(TCEY < TCEY_{min})$
	Maximize high yield (TCEY) opportunities coastwide	Coastwide TCEY > 50.6 Mlbs (70% of 1993-2012 average)	Long-term Short-term	STATISTIC OF INTEREST	$P(TCEY < 50.6 \text{ Mlbs})$
	Present the range of coastwide TCEY that would be expected	Range of coastwide TCEY	Long-term Short-term	STATISTIC OF INTEREST	5 th and 75 th percentiles of TCEY
	Maximize average TCEY by Regulatory Area	Median coastwide TCEY	Long-term Short-term	STATISTIC OF INTEREST	Median \overline{TCEY}
	Maintain TCEY above a minimum level by Regulatory Area	TCEY _A < TCEY _{A,min}	Long-term Short-term	?? ??	$P(TCEY < TCEY_{min})$
	Maximize high yield (TCEY) opportunities by Regulatory Area	TCEY _A > 50.6 Mlbs (70% of 1993-2012 average)	Long-term Short-term	STATISTIC OF INTEREST	$P(TCEY < 50.6 \text{ Mlbs})$
	Present the range of TCEY by Regulatory Area that would be expected	Range of TCEY by Regulatory Area	Long-term Short-term	STATISTIC OF INTEREST	5 th and 75 th percentiles of TCEY
MINIMIZE POTENTIAL FOR NO CATCH LIMIT FOR THE DIRECTED COMMERCIAL FISHERY	Minimize fishery closures	Directed commercial allocation = 0	Long-term Short-term	STATISTIC OF INTEREST	$P(\text{Directed Mort} = 0)$

GOAL: Minimize Discard Mortality

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRICS
3.1. HARVEST EFFICIENCY	Discard mortality is a small percentage of the longline fishery annual catch limit	>10% of annual catch limit	Long-term Short-term	0.25	$P(DM > 10\%FCEY)$
<i>ABSOLUTE MEASURE</i>	<i>Absolute</i>	<i>Discard Mortality (DM)</i>	<i>Long-term</i> <i>Short-term</i>	<i>NA</i>	<i>Median \overline{DM}</i>

GOAL: Minimize Bycatch Mortality

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRICS

APPENDIX VI
MSE PROGRAM OF WORK (2019-23)

May 2018 MSAB Meeting
Review Goals
Look at results of SPR
Review Performance Metrics
Identify Scale MP's
Review Framework
Identify Preliminary Distribution MP's
October 2018 MSAB Meeting
Review Goals
Complete results of SPR
Review Performance Metrics
Identify Scale MP's
Verify Framework
Identify Distribution MP's
Annual Meeting 2019
Recommendation on Scale
Present possible distribution MP's
May 2019 MSAB Meeting
Evaluate additional Scale MP's
Review Goals
Spatial Model Complexity
Identify MP's (Distn Scale)
Review Framework
October 2019 MSAB Meeting
Review Goals
Spatial Model Complexity
Identify MP's (Distn Scale)
Review Framework
Review multi-area model development
Annual Meeting 2020
Update on progress
May 2020 MSAB Meeting
Review Goals
Review multi-area model
Review preliminary results
October 2020 MSAB Meeting
Review Goals
Review preliminary results
Annual Meeting 2021
Presentation of first complete MSE product to the Commission
Recommendations on Scale and Distribution MP

APPENDIX VII

CONSOLIDATED SET OF RECOMMENDATIONS AND REQUESTS OF THE 12TH SESSION OF THE
IPHC MANAGEMENT STRATEGY ADVISORY BOARD (MSAB012)*RECOMMENDATIONS**A review of the goals and objectives of the IPHC MSE process*

MSAB012–Rec.01 ([para. 20](#)) The MSAB **NOTED** the refined objectives provided by the ad-hoc working group (contained in paper IPHC-2018-MSAB012-06), and **RECOMMENDED** prioritizing a single conservation objective over fishery measurable objectives ([Table 1](#)).

Table 1. Priority objectives phrased as measurable outcomes used to evaluate MSE results. The first objective is prioritized over the others.

MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE
SB < Spawning Biomass Limit (SB _{Lim})	Long-term	0.10
SB _{Lim} =20% spawning biomass		
Relative AAV	Short-term	
Average Annual Variability (AAV) > 15%	Short-term	0.25
Maximize average TCEY coastwide	Short-term	

Performance metrics for evaluation

MSAB012–Rec.02 ([para. 24](#)) The MSAB **RECOMMENDED** that performance-metrics for the short-term span 4-13 years, medium-term span 14-23 years, and the long-term span 91-100 years, be reported to understand how the management procedures may rank differently in the different periods of the forward simulations.

Closed-loop simulation results to investigate coastwide fishing intensity

MSAB012–Rec.03 ([para. 37](#)) The MSAB **RECOMMENDED** that a coastwide fishing intensity SPR should not be lower than 40% nor higher than 46%, with a target SPR of 42%-43% with a 30:20 HCR. Rationale for this recommendation is provided in [paragraph 38](#).

*REQUESTS**A review of the goals and objectives of the IPHC MSE process*

MSAB012–Req.01 ([para. 21](#)) The MSAB **AGREED** that statistics of interest are useful when evaluating management procedures and **REQUESTED** that they continue to be reported.

Performance metrics for evaluation

MSAB012–Req.02 ([para. 23](#)) The MSAB **REQUESTED** that the same metrics are calculated for the recreational sector as are calculated for the commercial sector and be reported for subsequent evaluations.

Closed-loop simulation results to investigate coastwide fishing intensity

MSAB012–Req.03 ([para. 40](#)) The MSAB **REQUESTED** that additional MPs components be considered to meet the objective of catch stability. The IPHC Secretariat may consider the following MPs, but is **ENCOURAGED** to explore other options to report at MSAB013.

- a) 25:10 control rule, and other control rules, as possible, potentially including 30:10 and 30:15 and 30:20;
- b) Multi-year quotas, defined as setting the TCEY in one year and sticking with the same TCEY in one or more following years, noting that AAV may not be an appropriate metric to measure variability;
- c) Limiting change in catch limits from the previous year to +/-15% per year, in addition to other relevant percentages, with the goal of finding MPs that meet the main objectives;
- d) Limiting change in catch limits from the previous year to a maximum increase of 15% per year with no limit on decreasing the catch limit;
- e) Slow up (33% of the change in TCEY), fast down (-50% of the change in TCEY).

MSAB012–Req.04 ([para. 43](#)) The MSAB **REQUESTED** that the IPHC Secretariat provide a report at MSAB013 of IPHC research and other relevant research (to the extent possible) activities related to relationships between population dynamics and environmental conditions, noting that the IPHC 5-year research plan is available on the [IPHC website](#), to aid in the discussion of hypotheses that are plausible to include in the MSE process.

Identify preliminary MPs related to distribution

MSAB012–Req.05 ([para. 54](#)) The MSAB **REQUESTED** that an additional management procedure be considered to define allocations and a catch limit floor that reduces catch limits in a stair-step manner during times of large abundance changes.

MSAB012–Req.06 ([para. 55](#)) The MSAB **REQUESTED** that the IPHC Secretariat and the MSAB continue to develop the concept of a ‘fishery footprint’, as previously considered in the 2015 IPHC Report of Assessment and Research Activities, page 238, in part to consider how it may be incorporated into a MP.



Report of the 23rd Session of the IPHC Processor Advisory Board (PAB023)

Portland, Oregon, United States of America, 23-24 January 2018

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ACRONYMS

FCEY	Fishery Constant Exploitation Yield
IPHC	International Pacific Halibut Commission
PAB	Processor Advisory Board
SPR	Spawning Potential Ratio
TCEY	Total Constant Exploitation Yield

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 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 23rd Session of the International Pacific Halibut Commission (IPHC) Processor Advisory Board (PAB023) was held in Portland, Oregon, U.S.A. from 23-24 January 2018. A total of 20 members attended the Session from the two (2) Contracting Parties.

The following are a subset of the complete recommendations and requests for action from the PAB023, which are provided at [Appendix IV](#).

RECOMMENDATIONS

Fishing periods: season opening and closing dates

PAB023-Rec.01 ([para. 10](#)) The PAB **RECOMMENDED** the following fishing period dates for the 2018 season:

- a) Opening: 24 March
- b) Closing: 1 November
- c) IPHC Regulatory Area 2A Directed Commercial: 27 June, 11 July, 25 July, 8 August, 22 August, 5 September, and 19 September.

Catch limits

PAB023-Rec.02 ([para. 14](#)) The PAB **RECOMMENDED** the following TCEY catch limits for the 2018 fishing period as provided in [Table 1](#), which translate to the mortality estimates by sector (as provided by the IPHC Secretariat) provided in [Appendix III](#) and an SPR of 42%.

Table 1. Processor Advisory Board (PAB) recommended TCEY catch limits for 2018 [in favour=10; against=7; abstain=1]

IPHC Regulatory Area	Catch limit (TCEY) (mlbs)
2A	1.47
2B	6.08
2C	6.35
3A	12.07
3B	3.27
4A	1.75
4B	1.28
4CDE	3.62
Total (IPHC Convention Area)	35.89

Minimum size limit review

PAB023-Rec.17 ([para. 41](#)) The PAB **RECOMMENDED** that the Commission not pursue lowering the size limit because of the potentially extreme marketing and therefore, harvesting implications (i.e. high-grading).

1. OPENING OF THE SESSION

1. The 23rd Session of the International Pacific Halibut Commission (IPHC) Processor Advisory Board (PAB023) was held in Portland, Oregon, U.S.A. from 23-24 January 2018. A total of 20 members attended the Session from the two (2) Contracting Parties. The list of participants is provided at [Appendix I](#). The meeting was opened by the President and Vice-President of HANA, Mr Blake Tipton, and Mr John Woodruff respectively, who welcomed participants to Portland.
2. In accordance with Appendix VI, Section III of the IPHC Rules of Procedure (2017), the PAB **NOTED** the requirement to elect a Chairperson and a Vice-Chairperson of the PAB until the opening of the next PAB meeting in 2019.
3. The PAB **CALLED** for nominations for the position of Chairperson of the PAB until the opening of the next session in 2019. Mr John Woodruff was nominated, seconded and elected as Chairperson.
4. The PAB **CALLED** for nominations for the position of Vice-Chairperson of the PAB until the opening of the next session in 2019. Mr Robert Fraumeni was nominated, seconded and elected as Vice-Chairperson.

2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

5. The PAB **ADOPTED** the Agenda as provided at [Appendix II](#). The documents provided to the PAB023 are those submitted for the 94th Session of the Annual Meeting.

3. FISHING PERIODS: SEASON OPENING AND CLOSING DATES

6. The PAB **AGREED** that an earlier closing date of 1 November is preferable due to the substantial drop in market interest at the end of the season. Deterioration of the weather in most areas, increased problems with quality, and the need for the IPHC Secretariat to collect and process data for the stock assessment in a timely manner, these are all compelling evidence to support an earlier closure date.
7. The PAB **AGREED** that a Saturday opening was optimal from a market standpoint, so that fresh fish can arrive in the market timely for next week sales.
8. The PAB **NOTED** regulatory proposal IPHC-2018-AM094-PropA2 which proposed establishing fixed fishing periods for the commercial Pacific halibut fisheries.
9. The PAB **AGREED** the closing date should be fixed to the specific date of 1 November subject to periodic review, but the opening date should remain flexible and be determined at each session of the IPHC Annual Meeting based on advice from stakeholders and depending on the amount of frozen product in inventory, the timing of the Boston Seafood Show, regional tides, and potential weather concerns.

Recommendation

10. The PAB **RECOMMENDED** the following fishing period dates for the 2018 season:
 - a) Opening: 24 March
 - b) Closing: 1 November
 - c) IPHC Regulatory Area 2A Directed Commercial: 27 June, 11 July, 25 July, 8 August, 22 August, 5 September, and 19 September

4. CATCH LIMITS

11. The PAB **NOTED** paper IPHC-2018-AM094-11 Rev_1 which provided a summary of IPHC Regulatory Area-specific mortality projections for 2018 based on the interim management procedure and other alternatives.
12. The PAB **AGREED** that the coastwide total for 2018 would be no less than 50% down from the reference level. With this as a template, the PAB **NOTED** the following:

- a) Area 2A: The PAB **AGREED** the conditions during the survey in IPHC Regulatory Area 2A resulted in less representative survey results and there’s very little movement north out of 2A and thus much less risk to the coastwide resource.
 - b) Area 2B: PAB **NOTED** a great deal of discussion and several iterations of proposed TCEYs. In the end, the PAB by a split vote, **AGREED** to a TCEY that is 50% of the difference between last year’s adopted TCEY and this year’s referenced TCEY. Those who supported the motion **CONSIDERED** this the best option given all the information. See [paragraph 13] below for the minority report.
 - c) Areas 2C, 3B, 4A, 4B, 4CDE: The PAB **NOTED** these recommended catch limits are 50% of the difference between last year’s adopted TCEY and this year’s referenced TCEY.
 - d) Area 3A: The PAB **NOTED** the recommended TCEY reflects the 2018 reference TCEY.
13. The PAB **ACKNOWLEDGED** on the catch limit motion passed by PAB, the six Canadian members with a dissenting opinion **AGREED** with the goal of stepping down the harvest over a two-year period. This would be achieved by establishing the 2018 TCEY at 88% of the adopted coast wide 2017 TCEY of 40.74 million pounds. Since 2006, Canada has never agreed to the apportionment methodology to distribute TCEY and the approved motion presumes inherent apportionment. Therefore, the Canadian PAB members could not vote in favour of this motion. Canada remains committed to the protection of the resource and is willing to take a 12% decrease in Area 2B from the 2017 adopted TCEY which would result in a TCEY for IPHC Regulatory Area 2B of 7.32 million pounds.

Recommendation

14. The PAB **RECOMMENDED** the following TCEY catch limits for the 2018 fishing period as provided in [Table 1](#), which translate to the mortality estimates by sector (as provided by the IPHC Secretariat) provided in [Appendix III](#) and an SPR of 42%.

Table 1. Processor Advisory Board (PAB) recommended TCEY catch limits for 2018 [in favour=10; against=7; abstain=1]

IPHC Regulatory Area	Catch limit (TCEY) (mlbs)
2A	1.47
2B	6.08
2C	6.35
3A	12.07
3B	3.27
4A	1.75
4B	1.28
4CDE	3.62
Total (IPHC Convention Area)	35.89

5. REGULATORY PROPOSALS FOR 2018

5.1 IPHC Secretariat regulatory proposals

5.1.1 IPHC Closed Area (Sect. 10)

15. The PAB **NOTED** paper IPHC-2018-AM094-PropA1 which considered the intent and purpose of the IPHC Closed Area, as defined in IPHC Fishery Regulations (2017) Section 10, which currently excludes directed Pacific “halibut fishing” (i.e. the longline fleet), with the intent of protecting juveniles from extraction.
16. The PAB **RECOMMENDED** that the Commission take no action on PropA1. [in favour=14; against=0; abstain=3]

5.1.2 Commercial fishing periods (Sect. 8)

17. The PAB **NOTED** paper IPHC-2018-IM093-PropA2 which proposed establishing fixed fishing periods for the commercial Pacific halibut fisheries. See [Section 3](#) above.

5.1.3 Removal of exemption for Vessel Monitoring System requirement for IPHC Regulatory Area 4 clearances (Sect. 15)

18. The PAB **NOTED** paper IPHC-2018-AM094-PropA3 which proposed streamlining regulatory requirements and improve monitoring for IPHC Regulatory Area 4 by requiring vessel monitoring systems (VMS) instead of an IPHC Clearance.
19. The PAB **RECOMMENDED** that the Commission adopt the IPHC Secretariat Regulatory Proposal A3. [in favour=18; against=0; abstain=0]

5.1.4 IPHC Fishery Regulations: minor amendments

20. The PAB **NOTED** paper IPHC-2018-AM094-PropA4 which proposed amendments to ensure clarity and consistency in the IPHC Fishery Regulations.
21. The PAB **RECOMMENDED** that the Commission adopt the Contracting Party Regulatory Proposal B2 regarding regulatory edits to section 17 paragraphs 5 and 6 and regulatory edits to section 17 paragraph 9 in IPHC Secretariat regulatory proposal A4 and all other amendments contained within Proposal A4. [in favour=18; against=0; abstain=0]

5.1.5 Discussion paper: Frozen-at-sea exemption for head-on requirement (Sect. 13)

22. The PAB **NOTED** paper IPHC-2018-AM094-PropA5 which proposed a discussion on retaining or removing the frozen-at-sea head-on exemption into the future.
23. The PAB **RECOMMENDED** that the Commission support the IPHC Secretariat and its continuing review. [in favour=18; against=0; abstain=0]

5.2 Contracting Party (by agency) regulatory proposals

5.2.1 Alaska CDQ Leasing in IPHC Regulatory Area 4

24. The PAB **NOTED** paper IPHC-2018-AM094-PropB1 Rev_1 which proposed IPHC Regulation changes to allow the use of leased Individual Fishing Quota (IFQ) by Community Development Quota (CDQ) organizations in IPHC Regulatory Areas 4B, 4C, 4D and 4E.
25. The PAB **RECOMMENDED** that the Commission adopt Contracting Party regulatory proposal B1. [in favour=14; against=0; abstain=1]

5.2.2 Clarify Alaska Sport Fishery Regulations

26. The PAB **NOTED** paper IPHC-2018-AM094-PropB2 which proposed a clarification to the IPHC Regulations regarding retention of Pacific halibut caught in the recreational charter fisheries in IPHC Regulatory Areas 2C and 3A.
27. The PAB **RECOMMENDED** that the Commission adopt Contracting Party regulatory proposal B2. [in favour=18; against=0; abstain=0]

5.2.3 Clarify Head-On Weight Requirement in Alaska Commercial Fisheries

28. The PAB **NOTED** paper IPHC-2018-AM094-PropB3 which proposed clarifications to the IPHC Regulations regarding the landing of Pacific halibut with the head on.
29. The PAB **RECOMMENDED** that the Commission adopt the Contracting Party regulatory proposal B2 regarding regulatory edits to section 17 paragraphs 5 and 6 and regulatory edits to section 17 paragraph 9 in IPHC Secretariat proposal A4. [in favour=17; against=0; abstain=0]

5.3 Stakeholder regulatory proposals

5.3.1 Commercial Catch Limits (Sect. 11): Proposals

30. The PAB **NOTED** paper IPHC-2018-AM094-PropC1 which summarises catch limit proposals received from stakeholders. Entries in the table reflect the individual proposals, and unless otherwise noted, proposals are expressed as TCEY (with values in millions of pounds) for particular IPHC Regulatory Areas or as a total for the whole coast. See Section 4 above.

5.3.2 Other stakeholder regulatory proposals

31. The PAB **NOTED** papers IPHC-2018-AM094-PropC2-17 which detailed 16 regulatory proposals from various stakeholders, for potential adoption and implementation in the 2018 fishing season, as detailed below:
- IPHC-2018-AM094-PropC2 Preserving catch on private live-aboard vessels (A. Cooper)
 - IPHC-2018-AM094-PropC3 For unguided sport fishing (P. Phillips)
 - IPHC-2018-AM094-PropC4 Sport Fishing for Halibut - Cleaning Regulations (S. Riehemann)
 - IPHC-2018-AM094-PropC5 Elimination of skin-on regulation (J. Shirk)
 - IPHC-2018-AM094-PropC6 Live-aboard processing exemption (D. Robertson)
 - IPHC-2018-AM094-PropC7 Eliminate the requirement for a CHP (S. Riehemann)
 - IPHC-2018-AM094-PropC8 Allow shellfish pots on board (ALFA)
 - IPHC-2018-AM094-PropC9 Processing halibut greater than four filets (M. Cowart)
 - IPHC-2018-AM094-PropC10 Halibut length measurement method (R. Yamada)
 - IPHC-2018-AM094-PropC11 Long term storage aboard pleasure vessels (L. Thompson)
 - IPHC-2018-AM094-PropC12 Long term storage on cruising vessels (W. Cornell)
 - IPHC-2018-AM094-PropC13 Halibut in Bering Sea pots (J. Kauffman)
 - IPHC-2018-AM094-PropC14 Status Quo Harvest Measures for Guided Anglers in Area 3A (R. Yamada)
 - IPHC-2018-AM094-PropC15 Trawler Halibut Bycatch Tender boat program (J. Kearns)
 - IPHC-2018-AM094-PropC16 Recreational Bag Limit 2C and 3A in times of low abundance (M. Grove)
 - IPHC-2018-AM094-PropC17 Recreational sportsfishing only allocation (J. Kearns)
32. The PAB **RECOMMENDED** that the Commission follow IPHC Secretariat suggested actions for Stakeholder regulatory proposal C2, C4, C6, C9, C11, and C12 as documented in IPHC-2018-AM094-23. [in favour=19; against=0; abstain=0]
33. The PAB **RECOMMENDED** that the Commission refer the proponents to the appropriate contracting party agencies for Stakeholder regulatory proposals C3, C7, C14, C16, and C17. [in favour=19; against=0; abstain=0]
34. The PAB **RECOMMENDED** that the Commission follow IPHC Secretariat suggested actions for Stakeholder regulatory proposal C8 as documented in IPHC-2018-AM094-23. [in favour=19; against=0; abstain=0]
35. The PAB **RECOMMENDED** that the Commission follow IPHC Secretariat suggested actions for Stakeholder regulatory proposal C5 as documented in IPHC-2018-AM094-23. [in favour=18; against=0; abstain=1]
36. The PAB **RECOMMENDED** that the Commission follow IPHC Secretariat suggested actions for Stakeholder regulatory proposal C10 as documented in IPHC-2018-AM094-23 and direct the IPHC Secretariat to provide a clear profile image for inclusion in the 2018 IPHC Pacific Halibut Fishery Regulations. [in favour=16; against=0; abstain=0]
37. The PAB **NOTED** that the proponent withdrew Stakeholder regulatory proposal C14.

38. The PAB **RECOMMENDED** that the Commission follow IPHC Secretariat suggested actions for Stakeholder regulatory proposal C13 as documented in IPHC-2018-AM094-23. [in favour=17; against=0; abstain=0]
39. The PAB **RECOMMENDED** that the Commission oppose Stakeholder regulatory proposal C15 and not allow any tender boat to take any trawl bycatch. [in favour=18; against=0; abstain=0]

6. RECOMMENDATIONS TO THE COMMISSION

40. The PAB **NOTED** paper IPHC-2018-AM094-14 which provided a response to the Commission request made during the 2016 Interim Meeting (IPHC 2016): IM092–Req.07 (para. 73) “*The Commission REQUESTED that a review of the analysis of the effectiveness of size limits be undertaken by the IPHC Staff throughout 2017, for consideration by the Commission at its annual meeting in 2018.*”
41. The PAB **RECOMMENDED** that the Commission not pursue lowering the size limit because of the potentially extreme marketing and therefore, harvesting implications (i.e. high-grading).

7. OTHER BUSINESS

42. The PAB **NOTED** the need for greater written information and requests in particular, a written blue book for the 024 meeting of the PAB.
43. The PAB **NOTED** its appreciation for the IPHC Secretariat assistance and for presentations by Chris Woodley, Mark Fina, and Robert Jones as well as input from the IPHC Secretariat and Rachel Baker of NOAA-Fisheries.

8. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 23RD SESSION OF THE IPHC PROCESSOR ADVISORY BOARD (PAB023)

44. The report of the 23rd Session of the IPHC Processor Advisory Board (IPHC-2018-PAB023-R) was **ADOPTED** on 24 January 2018, including the consolidated set of recommendations and requests arising from PAB023, provided at [Appendix IV](#).

APPENDIX I

LIST OF PARTICIPANTS FOR THE 23RD SESSION OF THE IPHC PROCESSOR ADVISORY BOARD
(PAB023)

Officers

Chairperson	Vice-Chairperson
Mr. John Woodruff (United States of America)	Mr. Robert Fraumeni (Canada)
HANA Executive Director: Ms Peggy Parker: peggyparker616@gmail.com	

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Bellingham Cold Storage	Jose Roques
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IPHC Secretariat

Ms Lara Erikson: lara@iphc.int

Mr. Jay Walker

APPENDIX II

AGENDA FOR THE 23RD SESSION OF THE IPHC PROCESSOR ADVISORY BOARD (PAB023)

Date: 23–24 January 2018

Location: Portland, Oregon, U.S.A.

Venue: Grand Ballroom II, Hilton Portland & Executive Tower

Time: 23rd: 13:30-17:00; 24th: 09:00-17:00

Chairperson: John Woodruff (United States of America)

Vice-Chairperson: Robert Fraumeni (Canada)

- 1. OPENING OF THE SESSION**
- 2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION**
- 3. FISHING PERIODS: SEASON OPENING AND CLOSING DATES**
- 4. CATCH LIMITS**
- 5. REGULATORY PROPOSALS FOR 2018**
 - 5.1 IPHC Secretariat regulatory proposals
 - 5.2 Contracting Party (by agency) regulatory proposals
 - 5.3 Other Stakeholder regulatory proposals
- 6. RECOMMENDATIONS TO THE COMMISSION**
- 7. OTHER BUSINESS**
- 8. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 23rd SESSION OF THE IPHC PROCESSOR ADVISORY BOARD (PAB023)**

APPENDIX III

**PACIFIC HALIBUT MORTALITY PROJECTED FOR 2018 BASED ON THE PAB RECOMMENDED
TCEY CATCH LIMITS**

Note: All values reported in millions of net pounds. Provided by the IPHC Secretariat based on the PAB 2018 TCEY recommendations.

	IPHC Regulatory Area								
	2A	2B	2C	3A	3B	4A	4B	4CDE	Total
<u>O26 Non-FCEY</u>									
Commercial discards	0.02	0.12	NA	NA	0.18	0.06	0.03	0.02	0.44
Bycatch	0.11	0.23	0.02	1.01	0.45	0.29	0.20	1.96	4.26
Recreational (+ discards)	NA	NA	1.43	1.86	0.01	0.02	0.00	0.00	3.31
Subsistence	NA	0.41	0.44	0.22	0.01	0.01	0.00	0.05	1.14
Total Non-FCEY	0.13	0.76	1.89	3.09	0.65	0.37	0.23	2.04	9.15
<u>O26 FCEY</u>									
Commercial discard	NA	NA	0.07	0.30	NA	NA	NA	NA	0.37
Recreational (+ discards)	0.53	0.82	0.82	1.70	NA	NA	NA	NA	3.87
Subsistence	0.03	NA	NA	NA	NA	NA	NA	NA	0.03
Commercial Landings	0.78	4.51	3.58	6.99	2.62	1.38	1.05	1.58	22.47
Total FCEY	1.34	5.32	4.46	8.98	2.62	1.38	1.05	1.58	26.74
TCEY	1.47	6.08	6.35	12.07	3.27	1.75	1.28	3.62	35.89
<u>U26</u>									
Commercial discards	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.04
Bycatch	0.00	0.02	0.00	0.42	0.44	0.11	0.01	0.79	1.79
Total U26	0.00	0.02	0.00	0.43	0.46	0.12	0.01	0.79	1.83
Total Mortality	1.47	6.11	6.35	12.50	3.73	1.87	1.29	4.41	37.72

APPENDIX IV

**CONSOLIDATED SET OF RECOMMENDATIONS AND REQUESTS OF THE 23RD SESSION OF THE
IPHC PROCESSOR ADVISORY BOARD (PAB023) (23-24 JANUARY 2018)**

RECOMMENDATIONS

Fishing periods: season opening and closing dates

PAB023-Rec.01 ([para. 10](#)) The PAB **RECOMMENDED** the following fishing period dates for the 2018 season:

- a) Opening: 24 March
- b) Closing: 1 November
- c) IPHC Regulatory Area 2A Directed Commercial: 27 June, 11 July, 25 July, 8 August, 22 August, 5 September, and 19 September.

Catch limits

PAB023-Rec.02 ([para. 14](#)) The PAB **RECOMMENDED** the following TCEY catch limits for the 2018 fishing period as provided in [Table 1](#), which translate to the mortality estimates by sector (as provided by the IPHC Secretariat) provided in [Appendix III](#) and an SPR of 42%.

Table 1. Processor Advisory Board (PAB) recommended TCEY catch limits for 2018 [in favour=10; against=7; abstain=1]

IPHC Regulatory Area	Catch limit (TCEY) (mlbs)
2A	1.47
2B	6.08
2C	6.35
3A	12.07
3B	3.27
4A	1.75
4B	1.28
4CDE	3.62
Total (IPHC Convention Area)	35.89

IPHC Secretariat regulatory proposals

IPHC Closed Area (Sect. 10)

PAB023-Rec.03 ([para. 16](#)) The PAB **RECOMMENDED** that the Commission take no action on PropA1. [in favour=14; against=0; abstain=3]

Removal of exemption for Vessel Monitoring System requirement for IPHC Regulatory Area 4 clearances (Sect. 15)

PAB023-Rec.04 ([para. 19](#)) The PAB **RECOMMENDED** that the Commission adopt the IPHC Secretariat Regulatory Proposal A3. [in favour=18; against=0; abstain=0]

IPHC Fishery Regulations: minor amendments

PAB023-Rec.05 ([para. 21](#)) The PAB **RECOMMENDED** that the Commission adopt the Contracting Party Regulatory Proposal B2 regarding regulatory edits to section 17 paragraphs 5 and 6 and regulatory edits to section 17 paragraph 9 in IPHC Secretariat regulatory proposal A4 and all other amendments contained within Proposal A4. [in favour=18; against=0; abstain=0]

Discussion paper: Frozen-at-sea exemption for head-on requirement (Sect. 13)

PAB023-Rec.06 ([para. 23](#)) The PAB **RECOMMENDED** that the Commission support the IPHC Secretariat and its continuing review. [in favour=18; against=0; abstain=0]

*Contracting Party (by agency) regulatory proposals**Alaska CDQ Leasing in IPHC Regulatory Area 4*

PAB023-Rec.07 ([para. 25](#)) The PAB **RECOMMENDED** that the Commission adopt Contracting Party regulatory proposal B1. [in favour=14; against=0; abstain=1]

Clarify Alaska Sport Fishery Regulations

PAB023-Rec.08 ([para. 27](#)) The PAB **RECOMMENDED** that the Commission adopt Contracting Party regulatory proposal B2. [in favour=18; against=0; abstain=0]

Clarify Head-On Weight Requirement in Alaska Commercial Fisheries

PAB023-Rec.08 ([para. 29](#)) The PAB **RECOMMENDED** that the Commission adopt the Contracting Party regulatory proposal B2 regarding regulatory edits to section 17 paragraphs 5 and 6 and regulatory edits to section 17 paragraph 9 in IPHC Secretariat proposal A4. [in favour=17; against=0; abstain=0]

Stakeholder regulatory proposals

PAB023-Rec.10 ([para. 32](#)) The PAB **RECOMMENDED** that the Commission follow IPHC Secretariat suggested actions for Stakeholder regulatory proposal C2, C4, C6, C9, C11, and C12 as documented in IPHC-2018-AM094-23. [in favour=19; against=0; abstain=0]

PAB023-Rec.11 ([para. 33](#)) The PAB **RECOMMENDED** that the Commission refer the proponents to the appropriate contracting party agencies for Stakeholder regulatory proposals C3, C7, C14, C16, and C17. [in favour=19; against=0; abstain=0]

PAB023-Rec.12 ([para. 34](#)) The PAB **RECOMMENDED** that the Commission follow IPHC Secretariat suggested actions for Stakeholder regulatory proposal C8 as documented in IPHC-2018-AM094-23. [in favour=19; against=0; abstain=0]

PAB023-Rec.13 ([para. 35](#)) The PAB **RECOMMENDED** that the Commission follow IPHC Secretariat suggested actions for Stakeholder regulatory proposal C5 as documented in IPHC-2018-AM094-23. [in favour=18; against=0; abstain=1]

PAB023-Rec.14 ([para. 36](#)) The PAB **RECOMMENDED** that the Commission follow IPHC Secretariat suggested actions for Stakeholder regulatory proposal C10 as documented in IPHC-2018-AM094-23 and direct the IPHC Secretariat to provide a clear profile image for inclusion in the 2018 IPHC Pacific Halibut Fishery Regulations. [in favour=16; against=0; abstain=0]

PAB023-Rec.15 ([para. 38](#)) The PAB **RECOMMENDED** that the Commission follow IPHC Secretariat suggested actions for Stakeholder regulatory proposal C13 as documented in IPHC-2018-AM094-23. [in favour=17; against=0; abstain=0]

PAB023-Rec.16 ([para. 39](#)) The PAB **RECOMMENDED** that the Commission oppose Stakeholder regulatory proposal C15 and not allow any tender boat to take any trawl bycatch. [in favour=18; against=0; abstain=0]

Minimum size limit review

PAB023-Rec.17 ([para. 41](#)) The PAB **RECOMMENDED** that the Commission not pursue lowering the size limit because of the potentially extreme marketing and therefore, harvesting implications (i.e. high-grading).

REQUESTS

Nil



INTERNATIONAL PACIFIC
HALIBUT COMMISSION

IPHC-2018-CB088-R

Report of the 88th Session of the IPHC Conference Board (CB088)

Portland, Oregon, United States of America, 22-23 January 2018

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ACRONYMS

CB	Conference Board
FCEY	Fishery Constant Exploitation Yield
IPHC	International Pacific Halibut Commission
SPR	Spawning Potential Ratio
TCEY	Total Constant Exploitation Yield

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 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 88th Session of the International Pacific Halibut Commission (IPHC) Conference Board (CB088) was held in Portland, Oregon, U.S.A. from 23-24 January 2018. A total of 78 members attended the Session from the two (2) Contracting Parties. The USA section accredited three new members for participation for the 2018 Conference Board proceedings. The meeting was opened by Mr Jeff Kaufman (U.S.A.) (Co-Chairperson), who welcomed participants to Portland.

The following are a subset of the complete recommendations and requests for action from the CB088, which are provided at [Appendix IV](#).

Fishing periods: season opening and closing dates

CB088-Rec.01 ([para. 14](#)) The CB **RECOMMENDED** the following fishing period dates for the commercial fishery:

- a) Opening: 10 March 2018
- b) Closing: no earlier than 7 November, with emphasis on longest season possible.

Catch limits

CB088-Rec.02 ([para. 31](#)) The CB **RECOMMENDED** the following TCEY catch limits for the 2018 fishing period as provided in [Table 1](#), which translate to the mortality estimates by sector (as provided by the IPHC Secretariat) provided in [Appendix III](#).

Table 1. Conference Board (CB) recommended TCEY catch limits for 2018

IPHC Regulatory Area	Catch limit (TCEY) (Mlbs)	Votes
2A	1.47	USA: In favour 42, Against 4 Canada: Abstained
2B	7.25	Canada: In favour 31, Against 0 USA: In favour 0, Against 44, 3 Abstained
2C	6.58	USA: In favour 42, Against 4 Canada: Abstained
3A	12.66	USA: In favour 42, Against 4 Canada: Abstained
3B	3.51	USA: In favour 42, Against 4 Canada: Abstained
4A	1.76	USA: In favour 42, Against 4 Canada: Abstained
4B	1.30	USA: In favour 42, Against 4 Canada: Abstained
4CDE	3.69	USA: In favour 42, Against 4 Canada: Abstained
Total (IPHC Convention Area)	38.22	

Minimum Size Limit

CB088-Rec.11 ([para. 65](#)) The CB **RECOMMENDED** to take no further action on the MSL matter, and that IPHC Secretariat actions were satisfactory. Motion passed by hand vote.

1. OPENING OF THE SESSION

1. The 88th Session of the International Pacific Halibut Commission (IPHC) Conference Board (CB088) was held in Portland, Oregon, U.S.A. from 23-24 January 2018. A total of 78 members attended the Session from the two (2) Contracting Parties. The USA section accredited three new members for participation for the 2018 Conference Board proceedings. The list of participants is provided at [Appendix I](#). The meeting was opened by Mr Jeff Kaufman (U.S.A.) (Co-Chairperson), who welcomed participants to Portland.
2. In accordance with Appendix IV, Section III of the IPHC Rules of Procedure (2017), the CB **NOTED** the requirement to elect Co-Chairpersons, and the option to elect up to two (2) Vice-Chairpersons, of the CB until the beginning of the next Session in 2019.
3. The CB **CALLED** for nominations for the positions of Co-Chairpersons of the CB until the opening of the next session in 2019. Mr Martin Paish (Canada) and Mr Jeff Kauffman (United States of America) were nominated, seconded and elected as Co-Chairpersons.

2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

4. The CB **ADOPTED** the Agenda as provided at [Appendix II](#). The documents provided to the CB088 are those submitted for the 94th Session of the Annual Meeting. Additional presentations were requested from the IPHC Secretariat on the Management Strategy Evaluation matrix of goals and objectives. A proposal to alter the agenda so that the bycatch presentation took place before discussion of catch limits was moved and passed unopposed.

3. BYCATCH

5. The CB **NOTED** the presentation by the Amendment 80 Group detailing their Bycatch Avoidance measures, including the most recent results of the Experimental Fishing Permit on deck sorting.
6. The CB **NOTED** there was remaining uncertainty as to potential bycatch reduction measures by the Amendment 80 (A-80) Fleet. The CB asked clarifying questions as to the makeup of the fleet, the permitting process of the deck sorting program and changes in the size composition of bycatch. Several Canadian CB members inquired about the mortality rates of the different sorting processes. A 4CDE member asked the A-80 fleet to reduce 026" bycatch by and an additional 170,000 in 2018 to support a 10% reduction rather than the 20% reduction from 2017's approved TCEY.

4. IPHC SECRETARIAT INFORMATIONAL SESSION

7. The CB **NOTED** the presentation by the IPHC Secretariat on the use of TCEY versus FCEY regarding 2018 catch rates. The CB inquired on processes to streamline the distribution and prevent duplicative requests of various TCEY scenarios, presented to the CB for decision making. Some discussion on area-specific bycatch distribution was held.

5. FISHING PERIODS: SEASON OPENING AND CLOSING DATES

8. The CB **NOTED** regulatory proposal IPHC-2018-AM094-PropA2 which proposed establishing fixed fishing periods for the commercial Pacific halibut fisheries.
9. The CB **AGREED** that, for both opening and closing, the dates should emphasize the longest fishing period possible for stakeholders. The following reasons were given for this rationale:
 - a) Maximize time to catch quota
 - b) Better for the consumer
 - c) Longer season for Alaskan sablefish fishers to avoid whale depredation (due to aligned sablefish and halibut season dates)
10. The CB **NOTED** that by show of hands, unanimous vote in opposition of fixed opening and closing dates, **NOTING** that the proposed fixed opening and closing dates result in a shorter season that achieved in 2017.

-
11. The CB **NOTED** that several opening and closing dates were discussed and debated. Several CB members expressed concern regarding the time the IPHC Secretariat seemed to require to implement the fishery. After discussion of tides and other seasonal implications, Motion put forward for a March 10th opening date for the 2018 fishing period. The votes were 40 in favour, 22 opposed and 11 abstentions. MOTION PASSES.
 12. The CB **CONSIDERED** closing dates, and again expressed the desire for the longest fishing period possible for stakeholders and consumers. A motion was put forward for a closing date of November 25th, some members **NOTED** that, with this date, the IPHC Secretariat would have to use incomplete data for their stock assessment. Vote counts were 22 in favour, 23 opposed and 7 abstentions. Due to lack of endorsement, MOTION FAILS.
 13. The CB **MOTIONED** for a fishing period end date “no earlier than 7th November, or as long as the Commission was willing to keep the season open. By show of hands, MOTION PASSES.

Recommendation

14. The CB **RECOMMENDED** the following fishing period dates for the commercial fishery:
 - a) Opening: 10 March 2018
 - b) Closing: no earlier than 7 November, with emphasis on longest season possible.

6. CATCH LIMITS

15. The CB **NOTED** paper IPHC-2018-AM094-11 Rev_1 which provided a summary of IPHC Regulatory Area-specific mortality projections for 2018 based on the interim management procedure and other alternatives.

6.1 Coastwide perspectives

16. The CB **NOTED** paper IPHC-2018-AM094-11 Rev_1 which provided a summary of IPHC Regulatory Area-specific TCEY 2018 Reference SPR values.
17. The CB **NOTED** concern regarding the stock assessment versus the anecdotal evidence seen on fishing grounds. The CB requested decision tables with the added elements from a 1/3 and ½ reduction from adopted 2017 TCEYs to the 2018 Reference SPR 46 (31 million pounds coastwide TCEY). Concerns included whale depredation on survey stations and the concern over the impacts of continually setting catch limits higher than recommended by the IPHC Secretariat. Several CB members expressed concern about recruitment. CB members agreed there was benefit in trying to achieve a consensus on a coastwide TCEY target and catch limit recommendations across all areas.

6.2 Individual area discussion

18. The CB **NOTED** Area 2A CB members from the Makah Tribal Nation concerns over a potential decrease in 2018 quota and economic and social impacts on their community members. It was **NOTED** that the Makah fishers had a 2017 harvest seemingly in contrast to FISS data. Other 2A recreational fishers agreed.
19. The CB **NOTED** the comment from Area 2A CB members that 2017 was an anomalous year in terms of environmental conditions that may have negatively affected the FISS due to the presence of an hypoxic event. Area representatives **NOTED** that a static level of removals in Area 2A will not have a negative impact on the biomass or other IPHC Regulatory Areas.
20. The CB **NOTED** the comment from Area 2B CB members that downstream impacts of Alaskan halibut bycatch on the 2B stocks, and indicated that an SPR 46 TCEY of 3.84 million pounds would not be acceptable due to its linkage with the current stock distribution method and impacts to local communities and economies. Area 2B CB members explained that their 2017 catches did not reflect the stock decreases seen in the FISS data and that the fishery dependent versus fishery independent data be taken into account by the Commission. Members further expressed concern with lower catches in areas with high levels of pyrosomes and dogfish. Area 2B CB members highlighted long term positive trends in commercial

WPUE as well as steadily increasing survey WPUE and NPUE with the exception of the 2017 FISS which could be an anomaly.

21. The CB **NOTED** the comment from Area 2C Members and agreed with other fishers that the FISS results were in contrast to catches seen on the fishing grounds. Discussion items included matching Area 2B and 2C harvest rates and the major impact of quota cuts on recreational and commercial fishers. Several 2C CB members expressed interest in a slow up, fast down approach and that a stair-stepped methodology would be appropriate. Concern about low recruitment was comment upon but was not justification for draconian catch limit reductions. The IPHC FISS continues to show increasing trends as does the commercial WPUE.
22. The CB **NOTED** the comment from Area 3A CB members that improved commercial WPUE for the last several years including 2017. After discussion on 2017 FISS numbers, some CB members from 3A indicated that they would like to see equitable cuts across all regulatory areas. A CB member indicated that the 2017 FISS results were substantially lower than the directed fleets observations and commercial WPUE results for the season. The fleet experienced good fishing with an expectation that 2018 stocks would be the same or slightly better than 2017. In addition, it was highlighted that sablefish longliner in 2017 experienced unusually higher incidence of contact with halibut at depths below the FISS limit of 275 fathoms, suggesting that the “missing halibut” may have gone deep to avoid warmer ocean temperatures. Commercial WPUE in Area 3A was up 6% in 2017 from the previous year and the 3A 2017 FISS appears to be within normal year to year variability.
23. The CB **NOTED** the comment from CB members from Area 3B that had the same concerns as area 3A members, and some members would support a consistent SPR rate coast-wide. Further discussion topics included respecting the science provided by the IPHC Secretariat. However, CB member proposed the idea of a ½ or 1/3 drop as noted in the coast-wide perspective above rather than the 2018 reference SPR 46 percent. One 3B CB member supported 3B and all other areas all dropping together to the SPR 46 threshold. It was highlighted that 3B is conservatively managed with a harvest rate of 16.125%. If 3B was managed at the 21.5% harvest rate, the 2018 TCEY would be 3.32 Mlb, not the 2.56 Mlb in the 2018 reference SPR. Area 3A and 3B are considered one biological region and should have the same harvest rate based on a science. Area 3B FCEY was up 14% in 2017 and was the only area that accepted the 2017 reference level. CB members from 3B support a 1/3 down approach but nothing more than ½ down approach from the 2018 reference level.
24. The CB **NOTED** the comment from CB members from Area 4A that consistently higher commercial catches in 2017 in the absence of killer whale depredation.
25. The CB **NOTED** a comment from a CB member from 4B who questioned the discrepancy of the lower 4B harvest rate compared to other regulatory areas, and suggested that a status quo catch limit could be justified if the rate was corrected. This member also acknowledged concern over coastwide recruitment and the need to take a conservative approach.
26. The CB **NOTED** the comments from CB members from Areas 4CDE who expressed concern regarding quota cuts as their communities rely significantly upon Pacific halibut fishing. Although members support conservation, 4CDE fishers also indicated high catch rates in 2017. CDQ region member indicated the Pacific halibut fishery is the only employment opportunity for the Pribilof community. The FISS WPUE for island station in 4C, 4D and 4D edge stations are the highest they’ve been in the last five years, however the Bering Sea trawl survey brought down the overall 4CDE FISS WPUE. Commercial WPUE for 4C and 4D area the highest seen in the last 5 years with 4D having among the highest commercial WPUE in all areas. Representatives of this area support a stair stepped ½ to 1/3 down reduction in order to maintain stability for their fishers, processors and communities, and believe that the relatively small poundage translation between half down and the reference SPR 46% will not pose considerable risk to the halibut resource.
27. The CB further **DISCUSSED** 2018 catch limits and began hearing initial proposals regarding total TCEY.
28. The CB **RECEIVED** a series of tables breaking down several catch scenarios applying various SPR ratios and total TCEY from the IPHC Secretariat.

29. The CB **AGREED** to organize discussion around coastwide TCEYS of 31 Mlb, 35.5 Mlb, and 37.5 Mlb, with three different distribution methods which produced nine catch table alternatives. Some CB members **NOTED** that it is important to adhere to the science presented by the IPHC Secretariat and that upcoming low recruitment is a coastwide issue.
30. The CB **NOTED** the comment from a 2B member who suggested that 2B would support a proportional decrease of 12.88% for each area to get to a total TCEY of 35.5 Mlb. USA CB representatives indicated that this would result in TCEYS for 3A and 4B and 4CDE lower than the reference level of SPR of 46% (full down). Further, a US member of the CB commented that there were differences in abundance trends by area and this approach is not responsive to these differences.

Recommendation

31. The CB **RECOMMENDED** the following TCEY catch limits for the 2018 fishing period as provided in [Table 1](#), which translate to the mortality estimates by sector (as provided by the IPHC Secretariat) provided in [Appendix III](#).

Table 1. Conference Board (CB) recommended TCEY catch limits for 2018

IPHC Regulatory Area	Catch limit (TCEY) (Mlbs)	Votes
2A	1.47	USA: In favour 42, Against 4 Canada: Abstained
2B	7.25	Canada: In favour 31, Against 0 USA: In favour 0, Against 44, 3 Abstained
2C	6.58	USA: In favour 42, Against 4 Canada: Abstained
3A	12.66	USA: In favour 42, Against 4 Canada: Abstained
3B	3.51	USA: In favour 42, Against 4 Canada: Abstained
4A	1.76	USA: In favour 42, Against 4 Canada: Abstained
4B	1.30	USA: In favour 42, Against 4 Canada: Abstained
4CDE	3.69	USA: In favour 42, Against 4 Canada: Abstained
Total (IPHC Convention Area)	38.22	

32. The CB made a **MOTION** to approve catch limits for Areas 2C, 3A, 3B, 4A, 4B, and 4CDE to be decreased 33.3% from the adopted 2017 catch limits towards the 2018 reference level was made and seconded.
33. The CB **NOTED** the rationale in support of the motion which is a consistent approach that can be applied to all areas, it is responsive to the concern over upcoming low recruitment, it balances 2017 approved TCEY distribution with 2018 FISS results, and it is similar to the “fast down, slow up” harvest policy used in the past for large catch limit transitions.
34. The CB **NOTED** the comment from a CB member from Areas 3A and 3B made an amendment to the main motion to take 100% of the recommended reductions in Areas 2C, 3A, 3B, 4A, 4B, and 4CDE consistent with catch tables reflecting reference levels of SPR 46%.

Rationale

35. The CB **PROVIDED** the following Rationale:
- a) Adopting the 1/3 down approach creates unacceptable risk for future TCEY levels. The decision table provided by the IPHC Secretariat shows the 1/3 down option leads to a 93% chance that the 2019 TCEY will be less than 2018, and that by 2021 there is a 70% chance that the TCEY will be 10% less than 2018 levels.

- b) The 1/3 down option creates a TCEY 21% above the 2018 reference level, which is not sustainable particularly considering that adopted TCEY in 2017 was 15% above 2017 reference levels.
- c) A more precautionary approach, taking a “full down, slow up” approach better protects the stock and smooths out sharp increases and decreases.
- d) A conservative approach is needed this year to ensure a healthy stock for future generations.
- e) The amendment supports science-based fisheries management and decisions. There is no justification to deviate from the scientifically based 2018 reference levels, and while we recognize that the Commission can set whatever levels it deems appropriate, we are concerned about bearing the costs of any such decision in future years.
- f) MOTION FAILS by hand vote, Canada abstained as a block.

36. The CB **NOTED** that 6 CB members from a broad section of user groups supported this motion.

37. The CB **NOTED** that a member from Area 2A amended the main motion to include Area 2A TCEY of 1.47 Milb.

38. The CB **NOTED** that members from Area 2A and other US areas spoke in support of the motion. Members talked about the survey, the hypoxic event, the socio-economic needs of the tribes and other communities, and anecdotally high catch rates. Approved by hand vote. MOTION PASSES. Canada abstained.

39. The CB **NOTED** an amended motion: 2A TCEY of 1.47 Milb and catch limits for Areas 2C, 3A, 3B, 4A, 4B, and 4CDE to be decreased 33.3% from the adopted 2017 catch limits towards the 2018 reference level. Vote: US -Yes 42; No 4 - Canada abstained.

40. The CB **NOTED** that Canada **MOVED** to approve and Area 2B TCEY 7.25 Milb for 2018.

41. The CB **NOTED** the following perspectives shared by Canadian members of the CB:

- a) Canada is concerned about recruitment and the apparent reduction in the number of smaller fish.
- b) Like other areas, we saw some anomalies in 2017 and are hopeful that next year will show improvements but we think action is needed this year and that is why we are pursuing a stepped approach and proposing a reduction of 12.88% from the adopted 2017 Area 2B TCEY.
- c) The proposal is consistent with Canada’s national share of around 19% as established by Commissioners in recent years.
- d) Canada was proposing a reduction of 12.88% from the 2017 TCEY. While the proposals for most of US areas achieved a reduction of less than 5%.
- e) Canada was pleased to note that the US had supported the principle that catch limits need not be based on the current stock distribution model by proposing a divergent share for area 2A.
- f) Canada remains concerned about:
 - i. attempts to use unacceptable stock distribution or “apportionment” methodology as a means to allocate the coastwide TCEY given the unfair implications for all of area 2.
 - ii. the level of bycatch in Regions 3 and 4 -- Canada is encouraged by the estimated reduction in bycatch in Region 4, however, the U26 bycatch mortalities affects all areas, including Area 2B.
 - iii. the precision and accuracy of bycatch mortality estimates in Regions 3 and 4, particularly Region 3 given the statements in the IPHC Fishery Statistics paper (page 23).
 - iv. the long term survey trends in Regions 3 and 4, particularly Region 3.

- v. the fact the Total Mortality of some Regulatory Areas consistently exceeds those areas' TCEY - there is overharvesting in some areas above the TCEY.
- g) The USA CB members spoke in opposition to the motion, NOTING the desire for consistency across all areas, the fact that the 1/3 down approach balances 2017 approved TCEY distribution with 2018 reference SPR. Other areas, like 2C, that have strong abundance indices agree to the 1/3 down approach. US CB members also indicated that Canada's ongoing concern over US bycatch is not sufficient justification for continued harvest disproportionate to other areas, and support a 2B TCEY of 6.83 Mlb consistent with the 1/3 down approach. Vote: Canada - unanimous Yes 31; US – No 44, 3 Abstentions.

7. REGULATORY PROPOSALS FOR 2018

7.1 IPHC Secretariat regulatory proposals

7.1.1 IPHC Closed Area (Sect. 10)

42. The CB **NOTED** paper IPHC-2018-AM094-PropA1 which considered the intent and purpose of the IPHC Closed Area, as defined in IPHC Fishery Regulations (2017) Section 10, which currently excludes directed Pacific “halibut fishing” (i.e. the longline fleet), with the intent of protecting juveniles from extraction.
43. The CB **RECOMMENDED** that Option 2 be adopted with the amended language: “*Agree that the Closed Area is not currently meeting its intended objective of protecting juvenile halibut when it is open to non-directed fisheries, and URGES, in coordination with NPFMC, the IPHC Secretariat to examine alternative management regimes for the Closed Area, and for these to be presented at the 96th Annual Meeting in 2020.*”
44. The CB **QUESTIONED** if the IPHC Closed Area was biologically distinct from other areas in the Bering Sea and considered a designated nursery area.
45. The CB **RECOGNIZED** that the directed halibut fishery is currently the only fishery excluded from the area and that because a significant amount of bycatch is taken from the area, the closure was not meeting its management objective to protect juvenile halibut. Members also **RECOGNIZED** that more analysis was needed to determine whether alternative management was warranted and acknowledged the different authorities of the IPHC and NPFMC to implement any changes.
46. The CB **URGED** the IPHC Secretariat to work with NPFMC to identify the specific biological importance of this area and the potential impacts of opening the area to directed fishing, specifically, whether there would be any implications to the Catch Share Plan in 4 CDE and who would be able to participate in this area. In addition, the CB **NOTED** that previous tagging studies showed this area to be of migratory importance and net emigration to other regulatory areas in the GOA and beyond.

7.1.2 Commercial fishing periods (Sect. 8)

47. The CB **NOTED** paper IPHC-2018-IM093-PropA2 which proposed establishing fixed fishing periods for the commercial Pacific halibut fisheries. See [Section 5](#) above.
48. The CB **NOTED** the suggestion that the CB consider the area 2A directed commercial fishing period dates to start on the last Wednesday in June and every other Wednesday as quota remains. The CB was silent on this issue and referred it to the Commission.

7.1.3 Removal of exemption for Vessel Monitoring System requirement for IPHC Regulatory Area 4 clearances (Sect. 15)

49. The CB **NOTED** paper IPHC-2018-AM094-PropA3 which proposed streamlining regulatory requirements and improve monitoring for IPHC Regulatory Area 4 by requiring vessel monitoring systems (VMS) instead of an IPHC Clearance.

50. The CB **RECOMMENDED** that the IPHC Secretariat investigate whether vessels with EM would meet with VMS check in/out requirements in area 4A. By hand count, MOTION PASSES. The CB remained silent on the need for VMS requirements for Area 4 Clearance.

7.1.4 IPHC Fishery Regulations: minor amendments

51. The CB **NOTED** paper IPHC-2018-AM094-PropA4 which proposed amendments to ensure clarity and consistency in the IPHC Fishery Regulations.
52. The CB **NOTED** that Area 2B members questioned language that said possession limits had been changed from three to two. It was **NOTED** that a limit of three remained in regulation but could be varied by condition of license on an annual basis.
53. The CB **RECOMMENDED** to strike the recommended language change and provide correct wording. By show of hands, motion PASSES

7.1.5 Discussion paper: Frozen-at-sea exemption for head-on requirement (Sect. 13)

54. The CB **NOTED** paper IPHC-2018-AM094-PropA5 which proposed a discussion on retaining or removing the frozen-at-sea head-on exemption into the future.
55. The CB **RECOMMENDED** to continue the exemption allowing frozen-at-sea vessels to land head-off halibut as discussion continues. MOTION PASSES by hand vote.

7.2 Contracting Party (by agency) regulatory proposals

7.2.1 Alaska CDQ Leasing in IPHC Regulatory Area 4

56. The CB **NOTED** paper IPHC-2018-AM094-PropB1 Rev_1 which proposed IPHC Regulation changes to allow the use of leased Individual Fishing Quota (IFQ) by Community Development Quota (CDQ) organizations in IPHC Regulatory Areas 4B, 4C, 4D and 4E.
57. The CB **RECOMMENDED** to support PropB1 Rev_1. Motion passed by show of hands.

7.2.2 Clarify Alaska Sport Fishery Regulations

58. The CB **NOTED** paper IPHC-2018-AM094-PropB2 which proposed a clarification to the IPHC Regulations regarding retention of Pacific halibut caught in the recreational charter fisheries in IPHC Regulatory Areas 2C and 3A.
59. The CB **RECOMMENDED** supporting PropB2. Proposal passes by hand vote.

7.2.3 Clarify Head-On Weight Requirement in Alaska Commercial Fisheries

60. The CB **NOTED** paper IPHC-2018-AM094-PropB3 which proposed clarifications to the IPHC Regulations regarding the landing of Pacific halibut with the head on.
61. The CB **RECOMMENDED** supporting PropB3. Proposal passes by hand vote.

7.3 Stakeholder regulatory proposals

7.3.1 Commercial Catch Limits (Sect. 11): Proposals

62. The CB **NOTED** paper IPHC-2018-AM094-PropC1 which summarises catch limit proposals received from stakeholders. Entries in the table reflect the individual proposals, and unless otherwise noted, proposals are expressed as TCEY (with values in millions of pounds) for particular IPHC Regulatory Areas or as a total for the whole coast. See [Section 6](#) above.

7.3.2 Other stakeholder regulatory proposals

63. The CB **NOTED** papers IPHC-2018-AM094-PropC2-17 which detailed 16 regulatory proposals from various stakeholders, for potential adoption and implementation in the 2018 fishing season, including a number for **RECOMMENDATION**.
- IPHC-2018-AM094-PropC2 Preserving catch on private live-aboard vessels (A. Cooper)

- There was no CB member to discuss on PropC2. By show of hands, PropC2 was not endorsed for adoption.
- IPHC-2018-AM094-PropC3 For unguided sport fishing (P. Phillips)
 - There was no CB member to speak to PropC3.
 - The CB **RECOMMENDED** that the IPHC Secretariat draft a letter to the NPFMC addressing the need for more accurate reporting of the non-guided recreational sector for Areas 2C and 3A. By show of hands, PropC3 was **RECOMMENDED** for adoption.
- IPHC-2018-AM094-PropC4 Sport Fishing for Halibut - Cleaning Regulations (S. Riehemann)
 - The CB **NOTED** that updated technology could help alleviate this ongoing issue with the recreational fishery. By show of hands, PropC4 was not endorsed for adoption.
- IPHC-2018-AM094-PropC5 Elimination of skin-on regulation (J. Shirk)
 - There was no CB member to speak to PropC5. Motion made to adopt IPHC Secretariat revision to regulation language as pertaining to skin-on regulation. By show of hands, PropC5 was **RECOMMENDED** for adoption.
- IPHC-2018-AM094-PropC6 Live-aboard processing exemption (D. Robertson)
 - There was no CB member to speak to PropC6. By show of hands, C6 was not endorsed for adoption
- IPHC-2018-AM094-PropC7 Eliminate the requirement for a CHP (S. Riehemann)
 - The CB **NOTED** that this issue needs to be dealt with by the NPFMC. By show of hands, PropC7 was not endorsed for publication.
- IPHC-2018-AM094-PropC8 Allow shellfish pots on board (ALFA)
 - The CB **NOTED** that shellfish pots on commercial vessels is an ongoing issue for the IPHC and the NPFMC, and **REQUESTED** that the IPHC Secretariat form a working group with relevant regulatory and enforcement agencies to clarify the language regarding this issue. By show of hands, PropC8 was **RECOMMENDED** for adoption.
- IPHC-2018-AM094-PropC9 Processing halibut greater than four filets (M. Cowart)
 - The CB **NOTED** that this is a long standing problem and **REQUESTED** that the IPHC Secretariat work with new technology to resolve the regulation. By show of hands, PropC9 is not endorsed for adoption.
- IPHC-2018-AM094-PropC10 Halibut length measurement method (R. Yamada)
 - The CB **NOTED** they were in support of changing regulations for measurement processes, and disagrees with the IPHC Secretariat that measuring fish on the top or bottom will produce the same measurement. The CB **REQUESTED** that the IPHC Secretariat conduct outreach with stakeholders and enforcement agencies to resolve this issue. By show of hands, PropC10 was **RECOMMENDED** for adoption.
- IPHC-2018-AM094-PropC11 Long term storage aboard pleasure vessels (L. Thompson)
 - The CB expressed the same concern as previous motions regarding this issue. By show of hands, PropC11 was not endorsed for adoption.
- IPHC-2018-AM094-PropC12 Long term storage on cruising vessels (W. Cornell)
 - The CB expressed the same concern as previous motions regarding this issue. By show of hands, PropC11 was not endorsed for adoption.
- IPHC-2018-AM094-PropC13 Halibut in Bering Sea pots (J. Kauffman)
 - The CB **NOTED** general support for this proposition. CB member concerns included small halibut potentially used as bait in subsequent fishing, unattended gear left for long soak times, and the need for pot escape mechanisms. By show of hands, PropC13 was **RECOMMENDED** for adoption.
- IPHC-2018-AM094-PropC14 Status Quo Harvest Measures for Guided Anglers in Area 3A (R. Yamada)

- PropC14 author withdrew this proposition No action taken.
- IPHC-2018-AM094-PropC15 Trawler Halibut Bycatch Tender boat program (J. Kearns)
 - No CB member spoke to PropC15. By show of hands, PropC15 was not endorsed for adoption.
- IPHC-2018-AM094-PropC16 Recreational Bag Limit 2C and 3A in times of low abundance (M. Grove)
 - The CB expressed confusion as to the stakeholders involved in the possible implementation of this proposition and the potential inclusion of subsistence fishers in Alaska. Members noted the goal of unifying the entire recreational sector, guided and unguided, to fall under the same regulation regarding catch limits. MOTION: The CB **REQUESTED** that the IPHC Secretariat write a letter to relevant agencies, including NPFMC, addressing disparate bag limits in Alaska recreational fisheries, particularly in times of low abundance. By vote: 30 in favor, 5 against and 9 abstentions. Canada abstains as a block. MOTION PASSES.
- IPHC-2018-AM094-PropC17 Recreational sportsfishing only allocation (J. Kearns)
 - The CB **NOTED** that this action falls under the rule of NPFMC. By show of hands, PropC17 was not endorsed for adoption.

8. OTHER BUSINESS

8.1 *Minimum Size Limit*

64. The CB **NOTED** paper IPHC-2018-AM094-14 which provided a response to the Commission request made during the 2016 Interim Meeting (IPHC 2016): IM092–Req.07 (para. 73) “*The Commission REQUESTED that a review of the analysis of the effectiveness of size limits be undertaken by the IPHC Staff throughout 2017, for consideration by the Commission at its annual meeting in 2018.*”
65. The CB **RECOMMENDED** to take no further action on the MSL matter, and that IPHC Secretariat actions were satisfactory. Motion passed by hand vote.

8.2 *Documentation*

66. The CB made a **MOTION**, that for future Annual Meetings, the IPHC Secretariat provide a streamlined version of The Blue Book for CB members that contains relevant documents in regards to catch limit discussions. For example: SPR ratios, decision tables, risk tables, WPUE Commercial graphs, O32 FISS data, NPUE FISS data and FCEY/TCEY conversions for previous years, fishery average fish weight, and navigation to meeting. The CB also requested at least one hard copy of RARA be available for reference. In addition, the CB requests the IPHC Secretariat provide a method to produce adequate paper copies of requested documents to CB members in future meetings. By hand vote, MOTION PASSES.

8.3 *MSAB goals and objectives*

67. The CB **NOTED** the request for input and help with MSAB process. The CB encouraged members to provide recommendations regarding goals and objectives to their MSAB representative.

9. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 88TH SESSION OF THE IPHC CONFERENCE BOARD (CB088)

68. The report of the 88th Session of the IPHC Conference Board (IPHC-2018-CB088-R) was **ADOPTED** on 26 January 2018, including the consolidated set of recommendations and requests arising from CB088, provided at [Appendix IV](#).

APPENDIX I**LIST OF PARTICIPANTS FOR THE 88TH SESSION OF THE IPHC CONFERENCE BOARD (CB088)****Officers**

Co-Chairperson	Co-Chairperson
Mr. Martin Paish (Canada)	Mr. Jeff Kauffman (United States of America)

**CB Members
(Canada)**

Member	Representative
A`Tlegay Fisheries Society	Christa Rusel
Annieville Halibut Association	Terry Henshaw
Area F Troll Association	Bud Schuler
BC Commercial Integrated Groundfish Society	Bruce Turriss
BC Halibut Longline Fisherman's Assoc.	Wilf Phillips
BC Longline Fisherman's Association	Colleen van der Heide
BC Tuna Fisherman's Association	Peter DeGreef
BC Wildlife Federation	Ted Brookman
Canadian Sablefish Association	Gary Williamson
FAS Seafoods	Art Davidson
Gulf Trollers Association	Angus Grout
Council of Haida Nation	Robert Bennett
Halibut Advisory Board	David Boyes
Hook and Line Groundfish Association	Ken Wing
IMAWG	Carl Edgar Jr. (?)
Northern Halibut Producer's Assoc.	Tim Courtier
Northern Trollers Association	Esther Sample
North Pac Halibut Fisherman's Assn	Robert Stanley
Pacific Coast Fishing Vessel Owners Guild	Quincy Sample
Pacific Trollers Association	Tiare Boyes
PHMA	Chris Sporer
Sport Fishing Advisory Board – Main	Gerry Kristianson
Sport Fishing Advisory Board - South	Chuck Ashcroft
Sport Fishing Advisory Board - North	Doug Daugert
Steveston Halibut Assoc.	Herb van Grootel
Sport Fishing Institute of BC	Owen Bird
Sydney Anglers Association	Kevin Begley
South Vancouver Island Anglers Coalition Society	Gordon Martin
UFAWU	Russell Cameron
Vancouver Island Longline Assoc.	Lyle Pierce
West Coast Fishing Guides Association	Bill Shaw

United States of America	
Member	Representative
Adak Commercial Development Corporation	None indicated
Alaska Charter Association	
Alaska Troller's Association	
Alaska Longline Fisherman's Association	
Alaska Whitefish Trawlers Association	
Aleut Corporation	
Aleutian Pribilof Island Community Development Association	
Area 4 Harvesters Alliance	
Central Bering Sea Fishermen's Association	
Coastal Conservation Association	
Coastside Representaive	
Deep Sea Fishermen's Union of the Pacific	
Edmonds Veteran Indev Longliners	
Fishing Vessel Owners Assoc. (FVOA)	
Freezer Longliner Coalition	
Halibut Coalition	
Homer Charter Association	
Jamestown S'Kallum Tribe	
Juneau Charter Boat Association	
Humbolt Area Saltwater Anglers	
Kodiak Vessel Owners Association	
Kruzof Fisheries	
K Bay Fishermen Association	
Lower Elwa	
Lummi Indian Nation	
Makah Tribe	
North Pacific Fisheries Association	
Oregon Coast Charter Association	
Petersburg Vessel Owners Association	
Point no Point Treaty Council	
Port Gambel S'Klallam Tribe	
Pudget Sound Anglers	
Quiliute Tribe	
Quinault Indian Nation	
Recreational Fishing Alliance-Oregon Chapter	
Seafood Producers Coop	
SE Alaska Fishermen's Alliance	
Sitka Halibut & Blackcod Marketing Assoc.	
Skokomish Indian Tribe	
St. Paul Fishermen's Association	
Tribal Government of St. Paul	
Swinomish Tribal Communities	
Tulalip Tribes	
United Cook Inlet Drift Association	
Westport Charter Association	
West Brothers Group	
Yukon Delta Fisheries Assocation	

IPHC Secretariat

Ms Lara Erikson: lara@iphc.int

Ms Tracee Geernaert: tracee@iphc.int

Ms Jessica Marx

APPENDIX II

AGENDA FOR THE 88TH SESSION OF THE IPHC CONFERENCE BOARD (CB088)

Date: 23–24 January 2018

Location: Portland, Oregon, U.S.A.

Venue: Grand Ballroom I, Hilton Portland & Executive Tower

Time: 23rd: 13:30-17:00; 24th: 09:00-17:00

Co-Chairpersons: Mr Martin Paish (Canada) and Mr Jeff Kauffman (United States of America)

Vice-Chairpersons: Nil.

- 1. OPENING OF THE SESSION**
 - 1.1 Election of Co-Chairpersons
 - 1.2 Accreditation of Membership for CB088
- 2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION**
- 3. BYCATCH**
- 4. IPHC SECRETARIAT INFORMATIONAL SESSION**
- 5. FISHING PERIODS: SEASON OPENING AND CLOSING DATES**
- 6. CATCH LIMITS**
 - 6.1 Coastwide perspectives
 - 6.2 Regulatory Area perspectives
- 7. REGULATORY PROPOSALS FOR 2018**
 - 7.1 IPHC Secretariat regulatory proposals
 - 7.2 Contracting Party (by agency) regulatory proposals
 - 7.3 Other Stakeholder regulatory proposals
- 8. OTHER BUSINESS**
- 9. REVIEW OF THE DRAFT AND ADOPTION OF THE REPORT OF THE 88th SESSION OF THE IPHC CONFERENCE BOARD (CB088)**

APPENDIX III
PACIFIC HALIBUT MORTALITY PROJECTED FOR 2018 BASED ON THE CB RECOMMENDED
TCEY CATCH LIMITS

Note: All values reported in millions of net pounds. Provided by the IPHC Secretariat based on the CB 2018 TCEY recommendations.

	IPHC Regulatory Area								
	2A	2B	2C	3A	3B	4A	4B	4CDE	Total
<u>O26 Non-FCEY</u>									
Commercial discards	0.02	0.15	NA	NA	0.20	0.06	0.03	0.03	0.49
Bycatch	0.11	0.23	0.02	1.01	0.45	0.29	0.20	1.96	4.26
Recreational (+ discards)	NA	NA	1.43	1.86	0.01	0.02	0.00	0.00	3.31
Subsistence	NA	0.41	0.44	0.22	0.01	0.01	0.00	0.05	1.14
Total Non-FCEY	0.13	0.78	1.89	3.09	0.67	0.37	0.23	2.04	9.20
<u>O26 FCEY</u>									
Commercial discard	NA	NA	0.07	0.32	NA	NA	NA	NA	0.39
Recreational (+ discards)	0.53	0.99	0.86	1.81	NA	NA	NA	NA	4.19
Subsistence	0.03	NA	NA	NA	NA	NA	NA	NA	0.03
Commercial Landings	0.78	5.48	3.76	7.45	2.84	1.39	1.07	1.65	24.40
Total FCEY	1.34	6.47	4.69	9.58	2.84	1.39	1.07	1.65	29.02
TCEY	1.47	7.25	6.58	12.66	3.51	1.76	1.30	3.69	38.22
<u>U26</u>									
Commercial discards	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.05
Bycatch	0.00	0.02	0.00	0.42	0.44	0.11	0.01	0.79	1.79
Total U26	0.00	0.03	0.00	0.43	0.46	0.12	0.01	0.79	1.83
Total Mortality	1.47	7.28	6.58	13.09	3.96	1.88	1.31	4.48	40.05

APPENDIX IV

**CONSOLIDATED SET OF RECOMMENDATIONS AND REQUESTS OF THE 88TH SESSION OF THE
IPHC CONFERENCE BOARD (CB088) (22-24 JANUARY 2018)**

RECOMMENDATIONS

Fishing periods: season opening and closing dates

CB088-Rec.01 ([para. 14](#)) The CB **RECOMMENDED** the following fishing period dates for the commercial fishery:

- a) Opening: 10 March 2018
- b) Closing: no earlier than 7 November, with emphasis on longest season possible.

Catch limits

CB088-Rec.02 ([para. 31](#)) The CB **RECOMMENDED** the following TCEY catch limits for the 2018 fishing period as provided in [Table 1](#), which translate to the mortality estimates by sector (as provided by the IPHC Secretariat) provided in [Appendix III](#).

Table 1. Conference Board (CB) recommended TCEY catch limits for 2018

IPHC Regulatory Area	Catch limit (TCEY) (Mlbs)	Votes
2A	1.47	USA: In favour 42, Against 4 Canada: Abstained
2B	7.25	Canada: In favour 31, Against 0 USA: In favour 0, Against 44, 3 Abstained
2C	6.58	USA: In favour 42, Against 4 Canada: Abstained
3A	12.66	USA: In favour 42, Against 4 Canada: Abstained
3B	3.51	USA: In favour 42, Against 4 Canada: Abstained
4A	1.76	USA: In favour 42, Against 4 Canada: Abstained
4B	1.30	USA: In favour 42, Against 4 Canada: Abstained
4CDE	3.69	USA: In favour 42, Against 4 Canada: Abstained
Total (IPHC Convention Area)	38.22	

IPHC Secretariat regulatory proposals

IPHC Closed Area (Sect. 10)

CB088-Rec.03 ([para. 43](#)) The CB **RECOMMENDED** that Option 2 be adopted with the amended language:
“Agree that the Closed Area is not currently meeting its intended objective of protecting juvenile halibut when it is open to non-directed fisheries, and URGES, in coordination with NPMFC, the IPHC Secretariat to examine alternative management regimes for the Closed Area, and for these to be presented at the 96th Annual Meeting in 2020.”

Removal of exemption for Vessel Monitoring System requirement for IPHC Regulatory Area 4 clearances (Sect. 15)

CB088-Rec.04 ([para. 50](#)) The CB **RECOMMENDED** that the IPHC Secretariat investigate whether vessels with EM would meet with VMS check in/out requirements in area 4A. By hand count, MOTION PASSES. The CB remained silent on the need for VMS requirements for Area 4 Clearance.

IPHC Fishery Regulations: minor amendments

CB088-Rec.05 ([para. 53](#)) The CB **RECOMMENDED** to strike the recommended language change and provide correct wording. By show of hands, motion PASSES

Discussion paper: Frozen-at-sea exemption for head-on requirement (Sect. 13)

CB088-Rec.06 ([para. 55](#)) The CB **RECOMMENDED** to continue the exemption allowing frozen-at-sea vessels to land head-off halibut as discussion continues. MOTION PASSES by hand vote.

Contracting Party (by agency) regulatory proposals

Alaska CDQ Leasing in IPHC Regulatory Area 4

CB088-Rec.07 ([para. 57](#)) The CB **RECOMMENDED** to support PropB1 Rev_1. Motion passed by show of hands.

Clarify Alaska Sport Fishery Regulations

CB088-Rec.08 ([para. 59](#)) The CB **RECOMMENDED** supporting PropB2. Proposal passes by hand vote.

Clarify Head-On Weight Requirement in Alaska Commercial Fisheries

CB088-Rec.09 ([para. 61](#)) The CB **RECOMMENDED** supporting PropB3. Proposal passes by hand vote.

Stakeholder regulatory proposals

CB088-Rec.10 ([para. 63](#)) The CB **NOTED** papers IPHC-2018-AM094-PropC2-17 which detailed 16 regulatory proposals from various stakeholders, for potential adoption and implementation in the 2018 fishing season, including a number for **RECOMMENDATION**.

Minimum Size Limit

CB088-Rec.11 ([para. 65](#)) The CB **RECOMMENDED** to take no further action on the MSL matter, and that IPHC Secretariat actions were satisfactory. Motion passed by hand vote.



Stakeholder statements on regulatory proposals

PREPARED BY: IPHC SECRETARIAT (20 NOVEMBER 2018)

PURPOSE

To provide the Commission with a consolidated document containing 'Statements' from stakeholders submitted to the Commission for its consideration at the 94th Session of the IPHC Interim Meeting.

BACKGROUND

During 2018, the IPHC Secretariat made improvements to the [Fishery Regulations](#) portal on the IPHC website (announced via [IPHC News Release 2018-021](#)), which includes instructions for stakeholders to submit statements to the Commission for its consideration. Specifically:

"Informal Statements by stakeholders should be submitted as an email to the following address, secretariat@iphc.int, which will then be provided to the Commissioners as Stakeholder Statements at each Session.

DISCUSSION

[Table 1](#) provides a list of the Stakeholder Statements received by 27 November 2018, which are provided in full in the Appendices. The IPHC Secretariat does not provide commentary on the Statements, but simply provides a collation for the Commission's consideration.

Table 1. Statements received from stakeholders by 27 November 2018.

Appendix No.	Title and author	Date received
Appendix I	Regulation statement by Bill Connor	17 October 2018
Appendix II	Regulation statement by Bill Connor	17 October 2018
Appendix III	Regulation statement by Tony Pettis	19 October 2018
Appendix IV	Regulation statement by Mike Banks	21 October 2018
Appendix V	Regulation statement by John Little	24 October 2018
Appendix VI	Regulation statement by Marc Schmidt	29 October 2018
Appendix VII	Regulation statement by Thomas Germain	6 November 2018

APPENDICES

As listed in [Table 1](#).

APPENDIX I

Regulation statement by Bill Connor

From: crfbc@aol.com <crfbc@aol.com>
Sent: Wednesday, October 17, 2018 7:40 AM
To: IPHC Secretariat <secretariat@iphc.int>
Cc: crfbc@aol.com
Subject: Regulation Statement

To the IPHC commission,

I would like to propose a year round fishery for Pacific halibut.

We are experiencing an increasing rise of quota from east coast halibut, it is a year round fisheries and it will continue to erode our frozen markets and fresh markets. This will cause the price of pacific halibut to continue to fall from our current pricing.

By having a year round fishery we will be able to market pacific halibut year round thus saving the frozen fish alternative which we have heard from all processors that it is a losing product form. This has caused a steep price reduction over this season.

Fishing halibut for 40 years I have seen spawning halibut throughout the opened season.

To do nothing and stay status quo we will continue to lose market share and price stability.

Bill Connor

APPENDIX II

Regulation statement by Bill Connor

From: crfbc@aol.com <crfbc@aol.com>
Sent: Wednesday, October 17, 2018 7:49 AM
To: IPHC Secretariat <secretariat@iphc.int>
Subject: Regulation Statement

To the IPHC commission,.

I would like to propose a size limit to halibut marketed in the United states.

With the farmed halibut coming on line, to protect our resource and markets we should have a minimum market size to match the commercial size limit of 32 inches.

This would keep all sales of halibut above board avoiding product from other countries harvesting smaller fish, or farmed fish less than 32 inches from being sold into our markets, undermining our commercial size, and possibly pirated fish from our stocks entering our market place.

Bill Connor

APPENDIX III**Regulation statement by**

From: Tony Pettis <emailtonypettis@gmail.com>
Sent: Friday, October 19, 2018 7:48 PM
To: IPHC Secretariat <secretariat@iphc.int>
Subject: Regulation Statement

This comment is in regards to the IPHC proposal to extend the 2A halibut season to 5 or 10 days.

My name is Tony Pettis. I own and operate the fishing vessel Heidi Sue out of Newport, OR and have been halibut fishing in area 2A for 20+ years.

I believe this is a bad idea for many reasons.

First of all, I believe this would increase the amount of halibut discard when more boats caught their full quota and were required to discard their overage. It could also attract more "new" long longliners that would be more likely to lose gear or waste fish while discouraging professional longliners to take the time to participate in a fishery with reduced quotas that took more time away from other potential fisheries.

In my opinion, the 5 to 10 day season would be the worst possible scenario because the quota would be much lower, but a fisherman would still be required to miss other opportunities in order to fish halibut at a certain time. I would have a difficult decision as to whether or not it would be worth my time away from other fisheries to fish for halibut. This seems like a sad scenario after 20+ years of halibut fishing.

I believe there are two viable options that could improve the 2A halibut fishery.

The first option would be to leave the 10 hour season structure in place but move the season dates at least one month earlier. If the seasons started in mid May, there would be more halibut outside the rca in more areas which would result in higher catch rates, less crowding, and less localized depletion. Another huge benefit to fishing earlier would be fishing before blue sharks arrived. There would be much less shark bycatch and much less lost gear (and wasted halibut) that was bit off by sharks.

Another option would be to set up a IFQ system for 2A similar to Alaska. I along with a small group of other professional longliners from Newport have submitted an IFQ plan that we support. The plan we submitted details the many benefits we see, so I won't go into those details here.

Again, I would like to emphasize that I believe a 5 or 10 day season structure would be the worst possible scenario. The worst of both worlds with the inconvenience of having to cater to a short season and miss out on other fisheries, and much reduced possible reward.

Thank you for your time and consideration.

Tony Pettis
F/V Heidi Sue

APPENDIX IV**Regulation statement by Mike Banks****From:** IPHC Web Form <IPHC_Web_Form@emailconfirmationdelivery.com>**Sent:** Sunday, October 21, 2018 6:50 PM**Cc:** IPHC Secretariat <secretariat@iphc.int>**Subject:** web form: Contact IPHC**Name** Mike Banks**E-mail** mkbanks292@gmail.com**Subject** RE: Directed 2A proposed changes**Message**

We have been involved in the Directed 2A fishery for decades in multiple boats (owner/operator). Twenty to twenty-five years ago the sport guys were organized and were trying to eliminate the fishery in 2A. At one of the IPHC meetings that I attended we agreed that we would let the sport guys go first and get the bulk of their quota, starting near the beginning of May, and the commercial guys would go near the end of June. That eliminated a lot of conflict. It may cause problems to move our start date earlier. Something to consider. Mike Banks 360.590.0954

APPENDIX V

Regulation statement by John Little

From: IPHC Web Form <IPHC_Web_Form@emailconfirmationdelivery.com>

Sent: Wednesday, October 24, 2018 4:54 PM

Cc: IPHC Secretariat <secretariat@iphc.int>

Subject: web form: Contact IPHC

Name John Little

E-mail retiredteacher@hotmail.com

Subject sport caught halibut

Message If you really want to be a hero, figure a way for those of us who live on their boat to cut halibut into freezer size pieces on board. Those fillets are mighty big to use when it is time to cook and serve.

APPENDIX VI**Regulation statement by Marc Schmidt**

Name	Marc Schmidt
E-mail	fvreelmagic@gmail.com
Subject	Considerations for small boats in 2A directed commercial fishery
Message	<p>Hello IPHC, I am one of the very few participants with multiple landings in the directed commercial fishery in CA. I have been pursuing this fishery with investments in time, gear, and risk to my vessel and my well being while fishing, or attempting to fish, the derby openers in my 26 ft boat for the last 7 years. I am a huge proponent for a longer period over the current 10hr opener but am greatly concerned the quota for my size class boat (B - 26ft) will get its quota chopped to just a couple or few hundred lbs and not be worth my time. The industry seems to cater to the big boats, which are needed, but it is very frustrating to be trying to make a living fishing when there is no regard for us small boat operations. We need a good payday every once in a while also. I feel there should be the same boat quota for all boat classes for the first (possibly more) open period (say of 1500-3000 lbs) or at the very least a minimum of 1000lbs on the first opener for all boat sizes. I understand the need for reduced quota in additional open periods if we were to see them. I feel a 5 day season is still putting fishermen in a derby situation and 10 to 21 days is getting to be where safety, efficient fishing, and available markets are considered. Thank you for your time, Marc Schmidt F/V Reel Magic Eureka, CA</p>

APPENDIX VII

Regulation statement by Thomas Germain

From: Thomas Germain <tomgermain@hotmail.com>

Sent: Tuesday, November 6, 2018 7:35 PM

To: IPHC Secretariat <secretariat@iphc.int>

Subject: Informal Statement by stakeholder - for the 94th Session of the IPHC Interim Meeting (IM094)

IPHC-2018-IM094-INF02 provides no resolution

The report IPHC-2018-IM094-INF02 – “2018 IPHC Regulatory Proposals referred to a Working Group of IPHC Contracting Parties”. Was created by “Representatives of NOAA Fisheries Alaska Region Office, NOAA Office of Law Enforcement, and NOAA General Counsel met with the IPHC Secretariat as a working group on 25 September 2018 to discuss the deferred regulatory proposals.”

There is an issue with the group that was convened, there is no incentive of any party in the group to come up with a solution that allows the sensible retention of Halibut by Cruising/Live Aboard Vessels. It is not in the groups interest to help resolve the issue but to allow the issue to continue to discriminate against the small number of people affected.

The Working Groups recommendation to not accept any of the proposals, or to recognize the possibility of a combination of these proposals will leave the regulation unchanged. The proposals listed a variety of reasons that the issues need to be addressed.

Reasons listed on the proposals:

1. Current regulations assume that sport fishing vessels return to port each day for processing of their catch. Live-aboard vessels are often operating and fishing in remote areas or where limited port facilities offer no options for proper preservation or shipment of their catch.
2. The current regulations (specifically the Pacific Halibut Fishery Regulations 2017 section 28d) do not allow for proper processing and preservation of the catch on board any vessel. This discriminates against citizens that live on their vessels.
3. It contradicts ADF&G regulations by promoting waste.
4. It is illegal to cut off a portion of a fletch and have it for dinner.
5. It is illegal to buy halibut in town and take it on a cruising trip (unless someone sells whole fletches with skin on) (By the letter of the law, you can not bring it on board while in port tied to the dock)
6. To properly store halibut for long term preservation one needs to cut filets into more than 4 pieces (skin on tends to taint the flesh over time) as “meal size” is approximately 1 lb.

The reason given by the Working Group for its recommendation to not accept any of the proposals is difficulty in enforcement of the daily or possession limit.

The difficulty with enforcement is caused by the federal definition of possession and the fact that it only applies to salt waters. For all other fish in the state of Alaska the definition of Possession Limit is “POSSESSION LIMIT—the maximum number of unpreserved fish a person may have in possession.” This allows processing on board a cruising vessel.

If these proposals were combined and a couple of easy additions made, the enforcement would be much easier than the enforcement of people who catch a limit early in the morning, return to a town/remote cabin and leave their catch at home, return to fish that afternoon. There are a lot more people with the opportunity to break

the law in that manner, as the enforcement is impossible with the regulation only applying to salt water, then there are people who are on extended trips with the proper equipment onboard to process halibut.

I would request that before the Commission walk away from these proposals that they consider that the current regulations do nothing to promote enforcement of the larger potential issues but do discriminate against a few law abiding citizens who care enough to try and get the regulations changed.

Suggestions from the proposals to allow on board processing:

1. No fishing allowed once processing has begun for the day (More enforceable than people living in town making two trips in a day)
2. Photos with date stamps, dates and markings on packages
3. Recording the fish, size, location and date (Already done for multiple other species for season and daily limits)

Additional options:

1. All carcasses must be kept on board until processing is complete
2. No fishing allowed until halibut is completely frozen to a hard condition (easily enforceable and delays fishing enough to protect against cheating the dates on packages)

Please recognize that this is a huge issue for a very small portion of the sport fishing population. This represents a very small portion of the sport fish catch which would have little to no impact to the Halibut resource if it was difficult to enforce.

If the Commission can not accept any form of the proposals, the least that would be a responsible way forward would be to have the Working Group reconvene with representation from some of the people affected by the regulation, maybe some of the people who wrote the proposals.

Tom Germain
tomgermain@hotmail.com



2018 IPHC Regulatory Proposals referred to a Working Group of IPHC Contracting Parties

PREPARED BY: IPHC SECRETARIAT (25 OCTOBER 2018)

PURPOSE

To provide the Commission with an opportunity to consider the report of an ad-hoc working group convened to discuss a group of regulatory proposals deferred at the 94th Session of the IPHC Annual Meeting (AM094) ([Appendix I](#)).

BACKGROUND

As noted in the [Report of the 94th Session of the IPHC Annual Meeting \(AM094\)](#) and detailed in [Appendix I](#), the Commission deferred action on a number of regulatory proposals to an IPHC Secretariat-led working group, to include appropriate Contracting Party agencies, for further study with a view to investigating possible new solutions.

DISCUSSION

Representatives of NOAA Fisheries Alaska Region Office, NOAA Office of Law Enforcement, and NOAA General Counsel met with the IPHC Secretariat as a working group on 25 September 2018 to discuss the deferred regulatory proposals.

The working group reviewed the history of the deferred proposals and the regulatory and enforcement issues associated with them. Noting that enforcement of recreational fishery regulations is the primary issue in each case, the working group was unable to develop new solutions to the problems raised by the stakeholder proponents of the deferred proposals. Members of the working group remain open to new ideas and agreed to continue to solicit input from stakeholders.

The working group prepared an information paper from the meeting for the Commission's consideration, provided as [Appendix I](#). The report includes a background discussion, a summary of existing regulations, and comments of the working group regarding the deferred proposals.

RECOMMENDATIONS

That the Commission:

- 1) **NOTE** paper IPHC-2018-IM094-INF02, which provided the Commission with an opportunity to consider the report of a working group of the IPHC Secretariat and Contracting Party agencies convened to discuss a group of regulatory proposals deferred at AM094.
- 2) **DIRECT** the IPHC Secretariat regarding any additional action to be taken regarding the deferred regulatory proposals.

APPENDICES

[Appendix I](#): Information Paper for 2018 IPHC Regulatory Proposals referred to an ad-hoc working group of IPHC Contracting Party agencies.

APPENDIX I

2018 IPHC Regulatory Proposals referred to a Working Group of IPHC Contracting Party agencies

Background

The 2018 IPHC Annual Meeting (AM094) was held January 22-26 in Portland, Oregon. Among the regulatory proposals submitted by stakeholders, six proposals sought regulatory changes that would affect the processing and / or long-term storage of halibut onboard vessels. The Commission did not take action on these proposals, and instead referred them to an ad-hoc working group. The AM094 report states:

*The Commission **NOTED** that a number of these proposals touched on issues raised by stakeholders in previous years and **DEFERRED** action on the following proposals to an IPHC Secretariat led working group, to include appropriate Contracting Party agencies, for further study with a view to investigating possible new solutions. For IPHC-2018-AM094-PropC2, in particular, the working group could consider annual limits and new technologies among possible solutions.*

*IPHC-2018-AM094-PropC2; Preserving catch on private live-aboard vessels (A. Cooper)
 IPHC-2018-AM094-PropC4; Sport Fishing for Halibut - Cleaning Regulations (S. Riehemann)
 IPHC-2018-AM094-PropC6; Live-aboard processing exemption (D. Robertson)
 IPHC-2018-AM094-PropC9; Processing halibut greater than four filets (M. Cowart)
 IPHC-2018-AM094-PropC11; Long term storage aboard pleasure vessels (L. Thompson)
 IPHC-2018-AM094-PropC12; Long term storage on cruising vessels (W. Cornell)*

Existing Regulations

The relevant regulations for these proposals are found in Section 29 of the IPHC's Pacific Halibut Fishery Regulations (2018). Under the terms of the Northern Pacific Halibut Act, IPHC fishery regulations may be accepted by the United States Secretary of State as annual management measures and implemented as regulations by NOAA-Fisheries (National Marine Fisheries Service (NMFS)). The NMFS regulations are published annually in the Federal Register (50 CFR 300.65).

Section 29 of the IPHC Fishery Regulations (2018) and the relevant paragraphs read as follows:

29. Sport Fishing for Pacific Halibut - IPHC Regulatory Areas 2C, 3A, 3B, 4A, 4B, 4C, 4D, 4E

- (1) In Convention waters in and off Alaska:
- (a) The sport fishing season is from 1 February to 31 December.
 - (b) The daily bag limit is two Pacific halibut of any size per day per person unless a more restrictive bag limit applies in Commission regulations or Federal regulations at 50 CFR 300.65.
 - (c) No person may possess more than two daily bag limits.
 - (d) No person shall possess on board a vessel, including charter vessels and pleasure craft used for fishing, Pacific halibut that have been filleted, mutilated, or otherwise disfigured in any manner, except that each Pacific halibut may be cut into no more than 2 ventral pieces, 2 dorsal pieces, and 2 cheek pieces, with a patch of skin on each piece, naturally attached.

- (e) Pacific halibut in excess of the possession limit in paragraph (1)(c) of this Section may be possessed on a vessel that does not contain sport fishing gear, fishing rods, hand lines, or gaffs.

Similar regulations are found elsewhere in the IPHC Fishery Regulations (2018) for waters outside of Alaska. For Pacific halibut sport fishing in IPHC Area 2A, Section 27(4), reads as follows:

- (4) In California, Oregon, or Washington, no person shall fillet, mutilate, or otherwise disfigure a Pacific halibut in any manner that prevents the determination of minimum size or the number of fish caught, possessed, or landed.

And for Pacific halibut fishing in the waters off British Columbia, 2018 regulations in Section 28(2) are similar:

- (2) In British Columbia, no person shall fillet, mutilate, or otherwise disfigure a Pacific halibut in any manner that prevents the determination of minimum size or the number of fish caught, possessed, or landed.

The current regulations for Alaska waters at Section 29(d), which specify the extent to which a Pacific halibut may be filleted on board a vessel in Alaska waters (2 ventral pieces, 2 dorsal pieces, 2 cheek pieces, with a patch of skin on each piece), were added in 2008. Prior to 2008, regulations for Pacific halibut retention in Alaska waters were worded very similar to the current regulations for the waters of the Pacific West Coast and British Columbia, as indicated above.

Current regulations at Section 29(e), which allow possession of Pacific halibut in excess of the possession limit on vessels that do not contain sport fishing gear, were added in 2009. The effect of this regulation is to allow the transportation of Pacific halibut on Convention waters from one site to another. This often occurs at remote fishing lodges when the lodges transport their clients and preserved fish to a city or town.

Contracting Parties; Comments from the Working Group

As directed, an ad-hoc working group of the contracting party agencies was formed to review the proposals referenced above. As they only impacted USA fishers, Canada was not engaged. The working group consisted of staff from the IPHC Secretariat, NOAA-Fisheries NMFS Sustainable Fisheries staff, staff from the NOAA Fisheries Office of Law Enforcement (OLE), and attorneys from the NOAA Office of General Counsel.

The Working Group noted that regulations restricting the amount of filleting or chunking of Pacific halibut are necessary for the enforcement of bag and possession limits among sport fishermen. Proposals to change or do away with these regulations have been suggested in the past, as well as in 2018. To date, the IPHC has not been presented with a consistent, easily verifiable option that would replace the current regulations and still allow effective enforcement of the bag and possession limits. Contemporaneous information that would be self-reported by the angler prior to processing a Pacific halibut on a vessel, such as logging the angler's fishing license number, the location of the catch, and taking photographs of the fish, raise concerns of compliance and verification that would not be satisfied by the proposal. The Working Group notes that regulations limiting the processing of sport-caught fish on vessels are consistent for all management areas under the jurisdiction of the IPHC. Similar regulations are also common among the State and Provincial agencies for other sport fish species besides Pacific halibut. Given these considerations, the Working Group advises no changes to Section 29(1)(d) and recommends that the Commission not adopt proposals C2, C4, and C9 at this time.

The Working Group also discussed the proposals that would exempt anglers on some vessels from the Pacific halibut possession limits and/or the restrictions on filleting or chunking of Pacific halibut, if the Pacific halibut onboard the vessel is preserved or processed in a manner for long-term storage. Some of the proposals suggest the preserved fish exemption should be specific to live-aboard vessels. In general, the Working Group expressed concerns with creating a separate class of anglers on certain vessels on Convention waters that would not be restricted by possession limits and/or be exempt from the limits on filleting or processing of fish.

The Working Group also notes that possession limits and restrictions on the amount of filleting work in tandem with daily bag limits, and that effective enforcement of daily limits could also be affected by the proposals. Some of the proposals in this group suggest that anglers on vessels with preserved fish could assist with the enforcement of the bag and possession limits by logging their catches and recording photographs of each fish. Again, as indicated above, this raised concern among the Working Group for compliance of the rules and maintaining a consistent method of verification of the logged catches.

For those proposals that seek exemptions for live-aboard vessels, the Working Group expressed further concerns with defining a live-aboard vessel, and verifying the status of the vessel on a continuing basis. Some Working Group members questioned whether the possession limit exemption would apply to all anglers who step aboard a live-aboard vessel.

With respect to Proposals C6, C11, and C12 the Working Group recommends that the Commission take no action on these proposals at this time.



DRAFT: 2018 IPHC Contracting Party (by agency) Report Template

PREPARED BY: IPHC SECRETARIAT (30 OCTOBER 2018)

PURPOSE

To provide a draft template for use by Contracting Parties (by agency) in their annual reports to the Commission.

BACKGROUND

As noted in the [Report of the 93rd Session of the IPHC Interim Meeting \(IM093\)](#):

IM093–Req.07 (para. 61) *The Commission **REQUESTED** that the IPHC Secretariat develop a standard template for agency reports to the Commission, in order to improve their structure and consistency, as well as to allow the agencies to prepare the appropriate information at the appropriate level of detail for the Commission’s consideration.*

DISCUSSION

In response to the Commission’s request, the IPHC Secretariat has developed a draft template ([Appendix I](#)) for the Contracting Parties (by agency) to use in preparing their annual reports to the Commission. The template provides a standardised format to highlight important information and recommendations for the Commission’s consideration, as well as being adaptable to each agency’s needs.

The IPHC Secretariat desires to implement the template for reports submitted to the 95th Session of the IPHC Annual Meeting (AM095) in January 2019, with a submission deadline of **29 December 2018**, and will solicit feedback from the Commission and the Contracting Party agencies on its format and usefulness during the 94th Session of the IPHC Interim Meeting (IM094) (27-28 November 2018).

RECOMMENDATIONS

That the Commission:

- 1) **NOTE** paper IPHC-2018-IM094-INF03 which provided a draft template for use by Contracting Parties (by agency) in their annual reports to the Commission.
- 2) **REQUEST** the IPHC Secretariat make specific modifications to the template based on the information needs of the Commission.

APPENDICES

[Appendix I](#): Draft: 2018 IPHC Contracting Party (by agency) Report Template

APPENDIX I

DRAFT: 2018 IPHC Contracting Party (by agency) Report Template

DATE: DD/MMM/2018

CONTRACTING PARTY: CANADA / UNITED STATES OF AMERICA

AGENCY:

Agency name

Agency representative and contact information

FISHERY SECTOR/S

Commercial / Recreational / Subsistence / Bycatch / Research / ALL

IPHC REGULATORY AREA/S

IPHC Regulatory Area 2A (USA: Washington, Oregon, California)

IPHC Regulatory Area 2B (Canada: British Columbia)

IPHC Regulatory Areas 2C, 3, and 4 (USA: Alaska)

DISCUSSION

Include a brief discussion of the primary topics of interest to the Commission. Additional details and data may be provided in the appendices. Secondary topics, background information, or additional relevant documents may also be included in the appendices.

Topic 1 ...

Topic 2 ...

Topic 3 ...

RECOMMENDATION/S

List any recommendations for the Commission, including noting the information provided in this report.

REFERENCES

List any pertinent references.

APPENDICES

List and attach additional relevant materials for the Commission's consideration, such as reports or data tables, background information, or other documents.



Implementation Notes: 2019 Regulatory proposals

PREPARED BY: IPHC SECRETARIAT (20 NOVEMBER 2018)

PURPOSE

To provide the Commission with the required '*Implementation Notes*' for regulatory proposals received by the IPHC Secretariat for preliminary consideration at the 94th Session of the IPHC Interim Meeting (IM094).

BACKGROUND

On behalf of the Commission, the IPHC Secretariat has received regulatory proposals for preliminary consideration at the 94th Session of the IPHC Interim Meeting (IM094), as indicated in [Table 1](#). In accordance with the process established for handling regulatory proposals, the IPHC Secretariat has developed *Implementation Notes* for each proposal to aid Commissioners in their deliberations. These are provided under the discussion section of this paper and are linked through [Table 1](#).

Table 1. Regulatory proposals received from Contracting Parties and stakeholders by the proposal deadline of 28 October 2018.

Regulatory proposals for 2019		
		Sector (Region)
Contracting Party (Agency) regulatory proposals		
IPHC-2018-AM094-PropB1	[None provided for IM094]	
Other Stakeholder regulatory proposals		
IPHC-2018-AM094-PropC1	IPHC Regulatory Area 2A TCEY (P. DePoe)	All fisheries (2A)
IPHC-2018-AM094-PropC2	IPHC Regulatory Area 2A quota program (M. Pettis)	Non-treaty commercial (2A)

DISCUSSION

OTHER STAKEHOLDER REGULATORY PROPOSALS

IPHC-2018-AM094-PropC1	IPHC Regulatory Area 2A TCEY (P. DePoe)	All fisheries (2A)
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The proposal suggests that the Commission adopt a TCEY each year for IPHC Regulatory Area 2A that produces an FCEY no lower than 1.5Mlb.

Suggested action:

- 1) The Commission should base any initial catch limit decision at a coast-wide scale, via the harvest decision table.
- 2) The Commission should then consider distribution at a Regional level based on the biological distribution of the species.
- 3) Allocation at a Regulatory Area level, as described in this proposal, then becomes the domain of the IPHC harvest strategy policy, and should be considered in that context.

The general movement patterns within the coastwide Pacific halibut stock, based on historical tagging experiments, result in Region 2 being estimated to receive net immigration each year. More recent satellite tagging indicates that Pacific halibut mix among individual IPHC Regulatory Areas within Region 2 during the calendar (and fishing) year. Therefore, given that Region 2 has comprised 23.1-24.6% of the coastwide stock over the last five years, from a biological perspective, the IPHC Secretariat agrees with the proposal that there would be no conservation risk if the IPHC Regulatory Area 2A TCEY were set at 1.5Mlb. Adopted TCEYs for Region 2 have ranged from 14.2 to 16.8 Mlb over the same period, such that a 2A TCEY of 1.5 Mlb would correspond to 8.9-10.5% of the Regional TCEY.

IPHC-2018-AM094-PropC2	IPHC Regulatory Area 2A quota program (M. Pettis)	Non-treaty commercial (2A)
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The proposal suggests a method for establishing an individual quota (IQ) system for the non-treaty directed commercial fishery in IPHC Regulatory Area 2A.

Suggested action:

- 1) The IPHC Secretariat recommends that the Commission not adopt this proposal at this time.
- 2) The future management of this fishery is an ongoing topic of discussion among interested parties.
- 3) The IPHC Secretariat notes that this proposal could be resubmitted in the future.



Pacific Fishery Management Council

7700 NE Ambassador Place, Suite 101 Portland, OR 97220-1384
Phone 503-820-2280 | Toll free 866-806-7204 | Fax 503-820-2299 | www.pcouncil.org
Philip Anderson, Chair | Charles A. Tracy, Executive Director

November 16, 2018

Dr. David Wilson, Executive Director
International Pacific Halibut Commission
2320 West Commodore Way, STE 300
Seattle, WA 98199

Dear Dr. Wilson,

The Pacific Fishery Management Council (Council) appreciates the International Pacific Halibut Commission's (IPHC) presentations provided by Mr. Steve Keith at our September and November 2018 meetings regarding the proposal to extend the length of the fishing period for the non-treaty directed commercial Pacific halibut fishery in IPHC Regulatory Area 2A. The Council understands that the IPHC will review this proposal at its 2018 Interim Meeting and the 2019 Annual Meeting.

We understand the IPHC's desire to adjust the structure of the directed commercial fishery. However, we would like to take this opportunity to provide feedback on a number of unresolved or outstanding issues that we identified in reviewing the IPHC's proposal and analyses. Because these issues are critical to coordinating with our state and Federal management partners on halibut management, we request the IPHC engage with us to work through all of the issues, or otherwise delay action to modify the management parameters of the 2A directed commercial halibut fishery until the following issues have been addressed.

1. Ensure the proposed changes do not result in additional bycatch, particularly of yelloweye rockfish which is an overfished stock managed under a rebuilding plan. Even though progress has been made in rebuilding yelloweye rockfish, and higher annual catch limits will be in place in 2019 and 2020, there are still significant restrictions in place for both recreational and commercial fisheries. Modifications to the management parameters of the directed commercial halibut fishery that potentially increase yelloweye rockfish mortalities is of concern. Timely and accurate tracking of yelloweye rockfish impacts, and bycatch of other species (e.g., big skate, longnose skate, sablefish, and rougheye/blackspotted rockfish), need to be accounted for and monitored as an important component of managing the fishery.
 2. Ensure advance coordination with the National Marine Fishery Service (NMFS) West Coast Groundfish Observer Program such that the Council's data collection and bycatch estimation efforts are not compromised by the proposed change in fishery length, as well
-

as with the state agency port sampling programs to ensure adequate collection of biological samples.

3. Consider the effect of the proposed change on the economic viability of the fishery to both the harvesters as well as the buyers and processors, especially the implications associated with smaller volumes of deliveries. In particular, the Council has heard from some participants that the current directed commercial fishery may not be economically viable now, and it will be important to understand how the proposed changes may affect the fishery from an economic perspective.
4. Ensure advance opportunity for discussion and coordination with enforcement entities, including the NMFS Office of Law Enforcement, U.S. Coast Guard, and the state departments of fish and wildlife and law enforcement entities, relative to their collective efforts to effectively enforce the fishery regulations during a longer season. As part of those coordination efforts, discuss whether fish hold inspections should continue to be required and who would perform those inspections.
5. Consider what the appropriate timing of the fishery should be (e.g., noon to noon, or midnight to midnight), the effects of different options, and whether a 72-hour stand down period prior to the opening is still needed.
6. In setting the season dates for this proposal, consider the potential impacts to the Area 2A recreational fisheries, which are currently scheduled around the directed commercial fishery openings to avoid gear conflicts, as well as the economic effects associated with different season options. Specifically, the Council would appreciate an opportunity to review and discuss an analysis of the impacts to the recreational fisheries that may result from the proposed season date options for the directed commercial fishery.

Although the implementation issues outlined above relate to the IPHC's proposal to extend the length of the fishing period for the directed commercial fishery, they are issues that the Council and its management partners will need to resolve prior to providing a perspective on any change in the management structure of the 2A directed commercial halibut fishery.

In addition, past correspondence (May 15, 2018 letter to the Council) indicates that IPHC considers the proposed fishing period extension is an interim step towards larger changes to the Area 2A management approach. To consider future changes to the Area 2A halibut fishery management structure in a more holistic way, the Council and NMFS West Coast Region office proposed a workshop, potentially as early as spring 2019, to fully engage all management partners in this exploration. We believe this approach will assist us in answering some of the questions outlined above prior to moving forward with changes to the management of this fishery.

Page 3

The Council looks forward to engaging with the IPHC in this process as a way to address management issues and collaborate with all management partners on potential solutions.

Sincerely,

A handwritten signature in black ink, appearing to read "Philip Anderson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Philip Anderson
Council Chair

RDE:kma

Cc: Mr. Chuck Tracy
Mr. Mike Burner
Ms. Robin Ehlke
Mr. Frank Lockhart
Ms. Keeley Kent
Ms. Aja Szumylo
Ms. Kathryn Blair
Ms. Michele Culver
Mr. Joe Oatman
Ms. Heather Reed
Ms. Maggie Sommer
Ms. Lynn Mattes
Ms. Marci Yaremko
Ms. Caroline McKight
Mr. Matt Damiamo