

**COLLABORATIVE AGREEMENT AMONG THE
INTERNATIONAL PACIFIC HALIBUT COMMISSION,
CANADA, AND THE
PACIFIC HALIBUT MANAGEMENT ASSOCIATION OF BC
(2019)**

THIS AGREEMENT is made in triplicate among

HER MAJESTY the Queen in right of Canada (“Canada”), as represented by the Minister of Fisheries and Oceans on behalf of Fisheries and Oceans Canada (“DFO”)

and

PACIFIC HALIBUT MANAGEMENT ASSOCIATION OF BC established under the laws of British Columbia and Canada, and having its registered office located at #200 - 5611 Cooney Road, Richmond, in the province of British Columbia, Canada V6X 3J6 (“PHMA”)

and

INTERNATIONAL PACIFIC HALIBUT COMMISSION established in 1923 by a Convention between the governments of Canada and the United States of America, and having its head office located at 2320 West Commodore Way, Suite 300, Seattle WA, 98199-1287 (“IPHC”).

and is effective as of the date of execution by DFO, PHMA and the IPHC.

RECITALS

WHEREAS the IPHC, PHMA and DFO (each shall be referred to as “Party” and DFO and the IPHC, and PHMA together shall be referred to as “Parties”) wish to collaborate on a project entitled “**Deploying a Third Setline Survey Specialist Onboard the International Pacific Halibut Commission (IPHC) 2019 Fishery-Independent Setline Survey (FISS) in B.C**” as described in Appendix II hereto (“Project”); and

WHEREAS the IPHC, PHMA and DFO have a joint interest in the expected results of this collaboration and have shared and compatible objectives associated with the Project; and

WHEREAS the Project is relevant to DFO’s Mandate, Strategic outcomes and priorities; and

WHEREAS pursuant to s. 10 of the *Fisheries Act*, DFO may determine a quantity of fish or of fishing gear and equipment that may be allocated for the purpose of generating revenues to finance scientific and fisheries management activities that are described in a joint project agreement or collaborative agreement entered into with any person or body, or any federal or provincial minister, department or agency; and

WHEREAS the Minister may specify, in a licence issued under the *Fisheries Act*, a quantity of fish or of fishing gear and equipment allocated for the purpose of financing those activities, and

WHEREAS the Minister may for the proper management and control of the fisheries and the conservation and protection of fish, specify in licence conditions requirements that information be kept and reported to the Department, and DFO maintains further authority to require and use information in a manner consistent with federal legislation; and

WHEREAS the IPHC, PHMA and DFO wish to achieve a fair allocation of risk, demonstrated by the governance structure on decision making, accountability, and risk mitigation associated with the Project; and

WHEREAS this Agreement is neither a procurement agreement pursuant to the Government Contracts Regulations, nor a transfer payment agreement pursuant to the Treasury Board Policy on Transfer Payments.

THEREFORE, the Parties agree as follows:

1 The Project

(a) General description, purpose and expected results of the Project

The IPHC Fishery-Independent Setline Survey (FISS) represents one of the most extensive research programs conducted in the Northeast Pacific Ocean. DFO conducts research and manages groundfish fisheries in British Columbia (BC). In order to better understand these fisheries, DFO, PHMA, and IPHC support the deployment of a setline survey specialist aboard each chartered IPHC FISS vessel in BC to collect both (1) hook by hook species identification data on the total catch and (2) biological data on rockfish species caught during FISS operations. The work is designed to provide catch rates for numerous groundfish species and biological samples of various rockfish species off the coastal waters of BC for stock assessment. Biological data collected includes length, weight, sex, gonad maturity, otoliths for age determination, and genetic material for some species (see detailed Project description in Appendix II). Information from this project, together with other survey data, fishery and catch information, forms the basis of many groundfish species stock assessments and science advice; some of which are listed under Canada's Species at Risk Act. These assessments and science advice are then used to make informed decisions on fishing opportunities and manage risks in a sustainable groundfish fishery.

This project relates to DFO's legal mandate to administer the *Fisheries Act*, which provides authorities and powers to DFO for the conservation and sustainable utilization of Canada's fisheries resources in marine and inland waters. This project supports management of sustainable ecosystems and fosters the strategic outcomes for Economically Prosperous Marine Sectors and Fisheries. The Project supports DFO's Legal mandate and the following core responsibilities: Canadian Fisheries are sustainably managed; Conserve and Protect Aquatic Ecosystems. Specifically, the Project, relates to DFO's legal mandate to administer the *Fisheries Act*, which provides authorities and powers to DFO for the conservation and sustainable utilization of Canada's fisheries resources in marine and inland waters. This project collects scientific information on fisheries resources as well as aquatic ecosystems that informs management decisions. Data collected are used in science advisory processes relating to stock assessment as well as marine conservation planning.

Under the terms and conditions set out in this Agreement, the Parties propose to undertake the following activities further described in the Work Plan, set out in Appendix II which lists the activities that constitute the Project and the specific responsibilities of each of the Parties.

(b) Benefits each party will receive from the Project.

Collaboration and cost sharing will permit enhanced management of the groundfish fishery in a conservative and sustainable manner desired by DFO, the commercial industry, indigenous

interests and the recreational sector. Information from this project, together with other survey data, fishery and catch information, forms the basis of the stock assessments for many groundfish species (some of which are listed under the *Species At Risk Act*) and science advice to groundfish fishery managers.

The activities undertaken will assist in decreasing uncertainty around estimates of stock status and increasing the capacity to monitor constituent components of the groundfish community and marine ecosystems in general. Greater certainty and an increased understanding of the marine ecosystem will support more informed decisions on annual harvest limits and other management measures that are consistent with the Precautionary Approach outlined in DFO's Sustainable Fisheries Framework.

2 Definitions

- (a) "**Agreement**" means the recitals, definitions, terms, conditions and obligations stipulated herein including the stipulations in the appendices affixed hereto.
- (b) "**Background Information**" means any data, software, products and processes in a Party's possession prior to the start of the Project.
- (c) "**Biological Material**" means any living organisms, including animals, and any material produced by and extracted from living organisms.
- (d) "**Contribution**" means resources that are provided and used by the Parties for the Project. The term should not be confused with a Government of Canada Contribution, as per the Treasury Board Policy on Transfer Payments.
- (e) "**In-kind Expenditures**" means Project Expenditures that the Parties incur internally for the Project, accounting for its contribution to the Project in the form of salaries and salary benefits for its employees participating in the Project and other Project expenditures, but excluding any financial contribution to another Party and costs associated with equipment, instruments and facilities acquired by the Parties prior to the Project.
- (f) "**Operating Year**" means a calendar year.
- (g) "**Fish Allocation Revenue**" means revenue generated by the PHMA from a supplemental quantity of fish or of fishing gear and equipment allocated by DFO to PHMA for the purpose of generating revenues in support of the Project.
- (h) "**Fish Allocation Contribution**" means any part of Fish Allocation Revenue that the PHMA contributes to the Project towards scientific and fisheries management activities that are described in this Agreement.
- (i) "**Intellectual Property**" or "**IP**" means any invention, and any other product of intellectual activity in the industrial, scientific, literary, or artistic fields including all intellectual creation that may be or is legally protected through patents or as copyright, industrial design, integrated circuit topography, under the plant breeders' rights, or subject to protection under the law as trade secrets or as confidential information.
- (j) "**Project Authority**" means the person designated by each Party to manage and oversee the execution of this Agreement on its behalf.
- (k) "**Project Expenditures**" means expenditures required for the Project, including all applicable taxes, which are itemized in Appendix III, and consisting of In-kind Expenditures, Recoverable Project Expenditures and Fish Allocation Contributions.
- (l) "**Results**" means all data, software, products and processes arising from the Project whether or not they may be subject to IP rights.

3 Term of the Agreement and Amendments

- (a) The Agreement shall expire, unless terminated sooner in accordance with the termination provisions herein, on 31 December 2019 (“end of the Agreement”).
- (b) While the Agreement is in effect, it may be amended by a written agreement signed by authorised representatives of the Parties.

4 Contributions by each Party

- (a) DFO, PHMA and IPHC’s contributions to the Project for the 2019 FISS work are outlined in the table below:

Grand Totals of All Contribution Table	PHMA and IPHC				DFO	Total Value
	Financial Contribution to DFO	In-Kind Contribution	Fish Allocation Contribution		In-Kind Contribution	
Operating year			Financial Contribution made to DFO	Contribution remaining in PHMA/ IPHC		
2019		\$7,000 US\$3,800		US\$37,900	\$26,907	\$33,907 US\$41,700
Totals						

¹ IPHC shall contribute net proceeds from rockfish and Pacific cod caught as part of this agreement. The total cost of the project, to the PHMA, is approximately US\$37,900 and shall not exceed this amount by more than 10%. The IPHC shall invoice the PHMA in US dollars based on the actual costs of the work.

- (b) DFO will not make any financial contribution to the IPHC or PHMA for this Project.
- (c) The IPHC or PHMA will not make any financial contribution to the DFO for this Project.
- (d) At the end of the operating year or upon termination of the Agreement, each of the Parties shall provide to the others a financial statement in respect of Project Expenditures actually incurred or that will be incurred. The financial statement shall be itemized, at a minimum, with the same level of details provided in Appendix III.
- (e) Throughout the Term of the Agreement and for six (6) years after expiration or termination of the Agreement, the Parties shall maintain accounting records related to, in the case of DFO, Recoverable Project Expenditures and, in the case of the Organisations, Fish Allocation Contributions. Parties will, on demand, permit the other Parties or any person that it may designate, to audit, monitor, take copies and extracts from and examine the accounting records and supporting documentation related to, in the case of DFO, Recoverable Project Expenditures and, in the case of the Organisations, Fish Allocation Contributions, and will provide all necessary access and assistance for the audits. Any materials or files transmitted or examined that are identified to contain confidential, privileged information are intended only for the Parties.

5 Ownership of Equipment

- (a) Any equipment, instruments, and supplies provided by the Parties under this Agreement shall belong to those Parties.



6 Project Authorities

- (a) The Project Authority for DFO is:

Greg Workman
Section Manager, Groundfish Section, Stock Assessment and Research Division
Pacific Biological Station
Nanaimo, BC, V9T 6N7
Telephone/Fax: (250) 756-7145 / (250) 756-7053
E-mail: Greg.Workman@dfo-mpo.gc.ca

- b) and the Project Authority for the PHMA is:

Chris Sporer
Executive Manager
P.O. Box 16046
617 Belmont Street
New Westminster, B.C.
V3M 6W6
Telephone/Fax: (604) 523-1528 / (604) 648-8737
E-mail: PHMA@telus.net

- c) and the Project Authority for the IPHC is:

Lara Erikson
Fisheries Statistics and Services Branch Manager
2320 W. Commodore Way
Suite 300
Seattle, WA 98199
Telephone: (206) 634-1838
E-mail: secretariat@iphc.int

Any Party may, by written notice to the others, designate a new Project Authority.

7 Project Management

MANAGEMENT COMMITTEE

Upon the coming into force of this Agreement, a Management Committee shall be formed by the Parties. The Management Committee shall be composed of two or more representatives from each of the Parties.

The Parties shall ensure that, during the term of the Agreement, the Management Committee meets at least once in the period running from 1 January through 31 December ("the operating year" and to review financial reports by 31 December.

DUTIES OF THE MANAGEMENT COMMITTEE

- i) Monitor the progress and performance of the Parties under the Work Plan;
- ii) Verify the costs and expenditures of each Party in connection with the Project at least once a year or more frequently where agreed to by the Parties;

- iii) Meet and resolve discrepancies to the Work Plan resulting from unanticipated changes to Project requirements.
- iv) Review financial reports prepared by DFO, the PHMA, and the IPHC outlining how the monetary and in-kind contribution of both Parties were used at least once a year or more frequently where agreed to by the Parties, including reporting against the revenues and costs forecasted in this agreement;
- v) Review and finalize financial reports pertaining to this project prepared by DFO, PHMA, and IPHC by 31 December 2019.
- vi) DFO or PHMA will provide reports to the Halibut Advisory Board (HAB) and Hook and Line Sub-Committee (HLC) on the nature of this agreement and the results of the collaborative work undertaken under the terms of this agreement. HAB is the Department's primary consultative body for the Pacific halibut fishery. The HAB includes representatives from DFO Fisheries Management, DFO Science, PHMA, commercial Pacific halibut licence holders, the Sport Fishing Advisory Board, and First Nations, amongst others. The HLC is the Department's primary consultative body for lingcod, dogfish, and rockfish fisheries. Each of these consultative bodies has terms of reference detailing their purpose, structure, and advisory process. DFO or PHMA will report out to these two bodies on the nature of this agreement and the results of the collaborative work undertaken under the terms of this agreement.

8 Risk Management

- (a) The Project Authorities have discussed and completed a Project Risk Analysis, which is outlined in Appendix IV.
- (b) If a risk event identified in the Project Risk Analysis or any other unanticipated risk event occurs, the Parties will make reasonable efforts to implement appropriate mitigation measures, including those set out in the Project Risk Analysis. However the Parties acknowledge that the occurrence of any risk event may require an extension to the Term of the Agreement or termination of the Agreement in accordance with the section entitled "Termination".

9 Communications, Reports and Notices

- (a) Communications relating to the technical and scientific aspect of the Project shall be in writing and shall be addressed to the Project Authorities.
- (b) Notices, reports and other communications relating to the Agreement shall be in writing and shall be addressed to the Project Authorities.
- (c) Each Party shall report to the others on the progress of Project-related work it is performing, and on any Results arising from work it has completed. Reporting in respect of work performed in a calendar year shall take place by 31 December of that year. However, to ensure that Parties remain well informed and up-to-date on the Project, additional reports throughout the Operating Year may be provided as agreed by the Project Authorities.
- (d) If requested, the IPHC and PHMA will assist DFO in completing an overall evaluation of the Project in accordance with the "Project Evaluation" section of Appendix II.
- (e) The PHMA shall promptly notify DFO, and provide full particulars, upon:



- (i) changing its corporate name;
- (ii) changing its controlling interests;
- (iii) filing for bankruptcy or involving itself in any insolvency proceedings;
- (iv) taking advantage of any statutes relating to the orderly payment of debts; or
- (v) being subject to criminal prosecution or convicted of a criminal offence.

10 Access to DFO Grounds and Buildings

- (a) The IPHC and the PHMA, their respective employees and agents participating in the Project shall abide by all legislations, regulations, orders and policies with respect to access to DFO sites, vessels and buildings and utilization of facilities therein, including orders and policies related to security, health and safety, and shall not bring any people, equipment or any materials into DFO sites, vessels and buildings without the prior written consent of the DFO Project Authority.

11 Background Information, Results and Intellectual Property Rights

- (a) Background Information, Results and IP rights shall be subject to the provisions of Appendix V.

12 Biological Material

- (a) Biological Material produced from Project-related activities, Biological Material provided by the IPHC and PHMA to DFO under this Agreement and Biological Material issued therefrom shall be subject to the provisions of Appendix VI.

13 Dispute Resolution

- (a) If any dispute, other than a matter of public law, arises between the Parties in connection with or arising out of the Agreement, the Parties shall use their best efforts to settle any such dispute by negotiations or mediation. If the Parties fail to resolve the dispute within a period of thirty (30) days or such greater period as may be mutually agreed, then a Party may refer the dispute to arbitration in accordance with the *Commercial Arbitration Act*. The Parties agree to have arbitration hearings conducted at Vancouver, B.C. The costs of any mediation and/or arbitration shall be divided equally between the Parties. The decision rendered by the arbitrator shall be final, executable, not subject to appeal and binding on the Parties.

14 Liabilities

(a) Indemnification

- (i) Each Party (referred to as "Indemnifying Party" for the purpose of this section) hereby agrees to defend, indemnify and hold the other Parties harmless from and against all claims, legal actions or causes thereof, liabilities and costs arising from the negligence or willful misconduct of the Indemnifying Party's employees or agents in connection with the execution of this Agreement provided that the Party to be indemnified gives prompt notice of the claim to the Indemnifying Party, and provides all relevant information and reasonable assistance, as requested.
- (ii) The obligations herein will subsist after expiration or termination of this Agreement in respect of any cause or event connected with any activity undertaken by the Indemnifying Party, or by its employees or agents prior to the expiration or termination of this Agreement.



(b) Insurance and Risks

- (i) The Government of Canada underwrites its own risks, including the risk of liability for the acts or omissions of its officers and employees while they are acting within the scope of their employment with DFO.
- (ii) The PHMA and the IPHC warrant and represent that they have adequate liability insurance to cover their respective employees and agents participating in the Project.
- (iii) Each Party hereby assumes any and all risks of personal injury and property damage attributable to the negligent acts and negligent omissions of that Party and its officers, employees and agents participating in the Project.

15 Termination

- (a) A Party may terminate the Agreement by notice to the others without liability, and the other Parties hereby waive their rights to initiate any proceedings against the terminating Party if:
 - (i) another of the Parties breaches any terms or conditions of the Agreement and does not rectify the breach within thirty (30) days after being notified in writing of the breach; or
 - (ii) another of the Parties fails to perform the Project in accordance with Appendix II and does not rectify the matter within thirty (30) days after being notified in writing of the specific rectifications required; or
 - (iii) another of the Parties has submitted or submits false or misleading information in respect of the Project or in respect of the its obligations pursuant to the Agreement, such termination to take effect immediately after the notice date; or
 - (iv) resources that the terminating Party is expected to contribute to the Project (in DFO's case "resources" include resources that are subject to appropriations approved by Parliament) are reduced or not available, unless the other Parties agree to amend the Agreement to address the reduction in resources, such termination to take effect thirty (30) days after the notice date; or
 - (v) a risk event identified in the Project Risk Analysis in Appendix IV or any other unanticipated risk event jeopardized the scientific integrity of the Project or prevented the Project from being completed within a reasonable period of time despite mitigation measures that may have been implemented.
- (b) DFO may terminate the Agreement by notice to the IPHC and PHMA without liability, and the IPHC and PHMA hereby waive their rights to initiate any proceedings against DFO or Canada if:
 - (i) the IPHC or PHMA are insolvent, in receivership, bankrupt, file for bankruptcy, or are involved in any act of bankruptcy or any bankruptcy proceeding, such termination to take effect immediately after the notice date; or
 - (ii) the IPHC or PHMA are subject to criminal prosecution or are convicted of any criminal or regulatory offence under any law, order or regulation of Canada or the provinces or of a duly constituted authority thereof, or convicted as an accessory to any such offence, such termination to take effect immediately after the notice date.
- (c) Expiration or termination of the Agreement shall not relieve a Party from its obligations pursuant to the section entitled "Communications, Reports and Notices" and the sub-section entitled "Indemnification" or from its obligations, as set out in Appendix V, in respect of Background Information, Results and Intellectual Property Rights.

- (d) Failure by a Party to notify the others of a breach of the Agreement or of any other circumstances possibly warranting termination of the Agreement, or to terminate the Agreement because of such breach or such other circumstances shall not constitute an acceptance of the breach by that Party or a waiver of its right to terminate this Agreement in accordance with its provisions, and, if applicable, to recover from the other Parties any sums due under the Agreement.

16 Canadian Environmental Assessment Act (CEAA)

- (a) The Parties agree that, if applicable, the Project will be assessed and approved in accordance with the *Canadian Environmental Assessment Act* prior to commencing the Project.

17 Canadian Council on Animal Care (CCAC)

- (a) The Parties agree that, if applicable, the Project will be assessed and approved in accordance with the standards of the Canadian Council on Animal Care. DFO will engage the Animal Care Committee within DFO to ensure compliance with this provision prior to commencing the Project.

18 General

(a) Entire Agreement

This Agreement, including the appendices appended hereto which form part of this Agreement, sets forth the entire agreement between the Parties hereto concerning the Project and supersedes and revokes all negotiations, arrangements or communications, of any nature whatsoever whether they be verbal or in writing, between the Parties or their authorized representatives or any other person purporting to represent DFO, PHMA or the IPHC.

(b) No Agency

Nothing contained in the Agreement shall be considered or construed as creating a relationship of partners, principal and agent, lessor and lessee, licensor and licensee (except with respect to Intellectual Property, in accordance with Appendix V) or of employer and employee between the Parties. In particular, each Party shall be solely responsible for any and all payments and/or deductions required to be made including those required for Canada Pension Plan, Employment Insurance, Workers' Compensation, or Income Tax for all its employees participating in the Project, and for any and all fees payable to its agents participating in the Project. In addition, each Party shall be solely responsible for the supervision, scheduling of work and tasking for its employees and agents participating in the Project.

(c) Laws in Force

This Agreement shall be interpreted in accordance with federal laws of Canada and the laws in force in the Province of British Columbia.

(d) Non-waiver of International Organizations Immunities Act Rights

Nothing in this Agreement, including the Appendices hereto, or the act of issuing it, is to be construed as a waiver of any rights or immunities granted to the IPHC pursuant to the International Organizations Immunities Act, 22 U.S.C. Sec. 288 et seq.

(e) Location

The Project shall be performed at waters off the Pacific coast of British Columbia, in the Province of British Columbia.

(f) Force Majeure

No breach of an obligation under this Agreement by the Parties shall be deemed a breach of this Agreement or create any liability if such breach arises from any cause or causes beyond the control



of the Parties including, without limitation, fire, natural disaster, inclement weather, power failures, accident, war, rebellion, insurrection, riot and invasion provided that the Parties remedy such breach resulting from one of the above causes as soon as it is practicable after the occurrence of one or more of the above causes, as appropriate.

(g) Severability

Should a court of competent jurisdiction hold that any provision of the Agreement is invalid, illegal, or unenforceable, such provision shall be considered severed from the Agreement and all other provisions of the Agreement, and all rights and obligations therein shall continue to be in force and effect.

(h) No Assignment

No Party may assign the Agreement, in whole or in part, without the prior written consent of the other Parties.

(i) Communication

(i) The Parties agree to acknowledge each other's contribution in any public communications related to and/or resulting from work carried out under this Agreement. No Party may use any symbol or mark of another Party without the express written permission of the other Party.

(j) Official Languages

The Agreement was prepared in English at the request of the IPHC and PHMA / Cette entente fut rédigée en anglais à la demande du IPHC et PHMA.

(k) Time of Essence

Time is of the essence with respect to all deliverables under the Agreement.

(l) Representation and Warranty

The IPHC and the PHMA represent and warrant that they are not under a disability to contract with Her Majesty as set out in section 750 of the Criminal Code of Canada.

(m) Order of Precedence

If there is any conflict or ambiguity between these sections of the Agreement and any appendices or schedules thereto, these sections of the Agreement shall prevail.

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IN WITNESS WHEREOF this Agreement has been executed by DFO and the IPHC and PHMA through their duly authorized representatives.

Pacific Halibut Management Association of BC

**Her Majesty the Queen in Right of Canada,
as represented by the Minister of Fisheries
and Oceans**



Robert Hauknes,
President,
Pacific Halibut Management Association of BC

Carmel Lowe,
Regional Director, Science, Pacific region
Fisheries and Oceans Canada

NOV 15 2019


Date

Date

Gary Williamson,
Treasurer,
Pacific Halibut Management Association of BC

Date

**International Pacific Halibut Commission
(IPHC)**



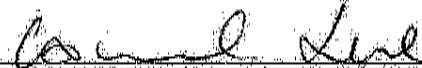
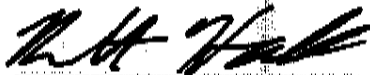
David T. Wilson, Ph.D.
Executive Director,
International Pacific Halibut Commission

30/05/2019.
Date

IN WITNESS WHEREOF this Agreement has been executed by DFO and the IPHC and PHMA through their duly authorized representatives.

Pacific Halibut Management Association of BC

**Her Majesty the Queen in Right of Canada,
as represented by the Minister of Fisheries
and Oceans**



Robert Hauknes,

Carmel Lowe,

President,

Regional Director, Science, Pacific region
Fisheries and Oceans Canada

Pacific Halibut Management Association of BC

NOV 15 2019

Date

Date



Gary Williamson,

Treasurer,

Pacific Halibut Management Association of BC

NOV 27 2019

Date

**International Pacific Halibut Commission
(IPHC)**



David T. Wilson, Ph.D.

Executive Director,

International Pacific Halibut Commission

30/06/2019

Date

APPENDIX I

COLLABORATIVE AGREEMENT AMONG THE INTERNATIONAL PACIFIC HALIBUT COMMISSION, CANADA, AND THE PACIFIC HALIBUT MANAGEMENT ASSOCIATION OF BC

The International Pacific Halibut Commission, hereinafter called “the IPHC”, the Fisheries and Oceans Canada, hereinafter called “DFO” and the Pacific Halibut Management Association of BC, hereinafter called “PHMA”;

RECOGNIZING that the International Pacific Halibut Commission (IPHC) was established by a Convention between Canada and the United States of America to:

- a) conduct research on the biology of Pacific Halibut;
- b) assess the stock structure, abundance, and biomass in the North Pacific Ocean and the Bering Sea;
- c) regulate commercial and recreational fisheries for Pacific Halibut within 200 mile limits of Canada and the United States of America;
- d) publish or otherwise disseminate the results of this work; and
- e) provide scientific information and advice to the Governments for the purpose of developing the stocks of Pacific Halibut to levels which will permit optimum yield from that fishery, and of maintaining stocks at those levels;

NOTING that in order to carry out these tasks appropriately and efficiently, the IPHC seeks, inter alia, to establish and maintain mutually agreed working arrangements with other organizations which have related objectives;

RECOGNIZING that Fisheries and Oceans Canada (DFO), exists to:

- a) ensure Canada’s fisheries, including aquaculture, are protected, managed sustainably and support Indigenous participation, and that the national network of harbours is open and in good repair;
- b) protect the oceans, freshwater and aquatic ecosystems and species from the negative impact of humans and invasive species through sound science and in collaboration with Indigenous communities;
- c) maintain waterways year round so they are safely navigable by mariners and all Canadians; and
- d) respond to maritime incidents, such as search-and-rescue and environmental emergencies, through the Coast Guard fleet and in collaboration with Indigenous communities;

NOTING that in order to carry out these tasks appropriately and efficiently, DFO seeks, inter alia, to establish and maintain mutually agreed working arrangements with other organizations which have related objectives;

RECOGNIZING that Pacific Halibut Management Association of BC (PHMA), exists to:

- a) so the industry could work collaboratively with Fisheries and Oceans Canada and other stakeholders; and
- b) ensure the sustainable management of Canada's wild Pacific Halibut fishery;

NOTING that in order to carry out these tasks appropriately and efficiently, PHMA seeks, inter alia, to establish and maintain mutually agreed working arrangements with other organizations which have related objectives;

WHEREAS the IPHC, DFO and PHMA wish to collaborate on a project entitled "*Fishery-Independent Setline Survey in BC - Northern Portion*" hereto ("Project"); and

WHEREAS the IPHC, DFO and PHMA have a joint interest in the expected results of this collaboration and have shared and compatible objectives associated with the Project; and

RECOGNIZING the following terms and associated definitions:

- i. **Agreement** means the recitals, definitions, terms, conditions and obligations stipulated herein including the stipulations in the appendix affixed hereto.
- ii. **Contribution** means resources that are provided and used by the Parties for the Project.
- iii. **Operating Year** means a calendar year.
- iv. **Project Authority** means the person designated by each Party to manage and oversee the execution of this Agreement on its behalf.
- v. **Results** means all data, software, products and processes arising from the Project.

NOW THEREFORE the IPHC, DFO and PHMA, hereinafter call "the Parties", have therefore agreed to the following:

I. OBJECTIVE OF THIS COLLABORATIVE AGREEMENT

1. The objective of this Collaborative Agreement (CA) is to 1) collect and utilize catch and biological sample data from species caught during the IPHC's annual fishery-independent setline survey (FISS); 2) lay forth the financial obligations associated with (1) hook by hook species identification data on the total catch and (2) biological data on rockfish species caught during FISS operations, as requested by DFO to survey rockfish populations off the British Columbia coastline.

II. AREAS OF COLLABORATION

2. The annual IPHC FISS represents one of the most extensive research programs conducted in the Northeast Pacific Ocean. DFO conducts research and manages rockfish fisheries off the British Columbia coastline. In order to better understand these fisheries, the IPHC has agreed to augment the IPHC FISS, as necessary, with additional sampling staff to

effectively capture total catch and biological data on rockfish species caught during FISS operations.

3. Where possible, the IPHC will collect whole haul species data on a hook by hook basis.
4. Biological data collected includes length, weight, sex, gonad maturity, otoliths for age determination and genetic material for rockfish species.
5. In order to facilitate a comprehensive examination of the resulting data, the above parties enter into the following agreement regarding the use of any hook by hook species identification, biological data and ancillary data obtained. This agreement shall also describe PHMA financial obligations for the additional work incurred in the form of IPHC Secretariat time associated with the IPHC annual FISS work. Future work on these stations will be subject to an annual review by the IPHC.

III. BENEFITS FROM THE COLLABORATION

6. Collaboration and cost sharing will permit enhanced management of the groundfish stocks in Canadian waters in a conservative and sustainable manner. Information from this project, together with other data sources, including survey, and fishery catch information, forms the basis of the stock assessments for many groundfish species and science advice to groundfish fishery managers.
7. The activities undertaken will assist in decreasing uncertainty around estimates of stock status and increasing the capacity to monitor constituent components of the groundfish community and marine ecosystems in general.
8. Greater certainty and an increased understanding of the marine ecosystem will support more informed decisions on harvest limits and other management measures.

IV. COMMUNICATIONS, REPORTS AND NOTICES

9. Communications relating to the technical and scientific aspects of the Project shall be in writing and shall be addressed to the Project Authorities.
10. Notices, reports and other communications relating to the CA shall be in writing and shall be addressed to the Project Authorities.
11. Each Party shall report to the other Parties on the progress of Project-related work it is performing, and on any results arising from work it has completed. However, to ensure that Parties remain well informed and up-to-date on the Project; additional reports throughout the Operating Year may be provided as agreed by the Project Authorities.
12. Within ninety (90) days following expiration or termination of this CA, each Party shall, provide to the other a final report on Project-related work it has performed, such report to be in a mutually agreeable format, and to include Results arising from the work.



13. Each Party shall have the right to publish reports or analyses based on the data collected under the provisions of this CA. If an individual of either Party is not an author of the publications arising from these data, the contribution of the other Parties shall be duly acknowledged in the publication.

V. CONTRIBUTIONS

14. Revenue disbursement: IPHC shall contribute net proceeds from permitted bycatch species (generally rockfish and Pacific cod) caught as part of this agreement that will be applied as available as a contingency to the project costs.
15. Deliverable/Reimbursement: PHMA shall reimburse the IPHC at an estimated cost of US\$34,000 for work performed during the annual FISS and upon receipt and acceptance of the required data by the DFO Project Authority. Costs may be adjusted to cover increased costs up to a maximum not to exceed of 10%. Total contract value for the 2019 FISS season, ending 31 September would be US\$41,700 with the estimates described in Appendix III. Invoice and actual project costs will be submitted no later than 15 November, at the conclusion of the annual FISS.

VI. HOLD HARMLESS CLAUSE

16. Each Party agrees that it will be responsible for its own acts and the results thereof and shall not be responsible for the acts of the other party thereof.

VII. COMING INTO EFFECT AND TERMINATION

17. This CA will continue to operate through 31 December 2019 from the date of signing. At that stage, the Parties will review the operation of the CA and decide whether it will be renewed or modified.
18. Either Party may terminate this CA by giving three (3) months prior written notice to the other Party.
19. A Party may terminate the Agreement by written notice to the other Parties without liability, and the other Parties hereby waives their rights to initiate any proceedings against the terminating Party, if:
- a) any Party breaches any terms or conditions of the CA and does not rectify the breach within thirty (30) days after being notified in writing of the breach; or
 - b) any Party fails to perform the Project in accordance with the CA and does not rectify the matter within thirty (30) days after being notified in writing of the specific rectifications required; or
 - c) any Party has submitted or submits false or misleading information in respect of the Project or in respect of the its obligations pursuant to the CA, such termination to take effect immediately after the notice date; or





- d) resources that the terminating Party is expected to contribute to the Project are reduced or not available, unless the other Party agrees to amend the CA to address the reduction in resources, such termination to take effect thirty (30) days after the notice date; or
 - e) any unanticipated risk event jeopardized the scientific integrity of the Project or prevented the Project from being completed within a reasonable period of time despite mitigation measures that may have been implemented.
20. Expiration or termination of the CA shall not relieve a Party from its obligations pursuant to Section IV, or from its obligations.
21. Failure by a Party to notify the others of a breach of the CA or of any other circumstances possibly warranting termination of the CA, or to terminate the CA because of such breach or such other circumstances shall not constitute an acceptance of the breach by that Party or a waiver of its right to terminate this CA in accordance with its provisions, and, if applicable, to recover from the other Parties any sums due under the CA.
22. This CA will come into effect on the day of signature.

Appendix II The Project

General description, purpose and expected results

This project requires a third setline survey specialist, in addition to the normal complement of two setline survey specialists onboard each of IPHC's chartered fishing vessels tasked with IPHC's research activities. The third setline survey specialist, supervised and contracted by the IPHC, will collect two distinct data sets: hook by hook catch enumeration and biological data from rockfishes (*Sebastes*). The third setline survey specialist will focus on collecting hook by hook catch data, while the other two setline survey specialists collect standard Pacific Halibut (*Hippoglossus stenolepis*) biological data as well as assist with sampling rockfish and lingcod as Pacific Halibut sampling workload permits. Protocols are detailed in the FISS manual for 2019.

Technical Description of the Project

The work plan for the third setline survey specialist is detailed in the FISS manual for 2019.

Deliverables

- 1) Hook by hook catch enumeration and rockfish biological data in electronic format
- 2) Biological samples: otoliths (rockfish) for aging and tissue samples for DNA analysis
- 3) Report detailing the results of the 2019 Rockfish Sampling by the Third setline survey specialist onboard the IPHC FISS
- 4) Financial Report on costs and revenues from the project agreement

Work Plan: Timelines, Milestones and Work Responsibilities for 2019

Date/ Period	Milestones	Responsible Party
May	IPHC secures personnel to staff the third setline survey specialist aboard the chartered FISS vessels in BC waters.	IPHC
May	FISS briefing	IPHC
May 28	Delivery of motion-compensating electronic scales, otolith trays, fin envelopes and DNA kits to IPHC or IPHC charter vessels.	DFO
May 29-Aug. 31	Data acquisition	IPHC
September	Recovery of motion-compensating electronic scales and all biological sample materials collected	DFO
November 15	Preparation of a financial report	IPHC
November 30	Hook by hook enumeration and rockfish and lingcod biological data in electronic format delivered to DFO	IPHC
December	FISS debriefing: DFO and IPHC meet via teleconference to resolve data issues and discuss sampling logistics / planning.	IPHC/DFO
December	Preparation of a financial report	PHMA
December	Review of Financial Report	PHMA/DFO

Work and Equipment Responsibilities

A. DFO

1. Provide motion compensated weigh scales, otolith trays, and DNA collection vials
2. Delivery of scales, otolith trays, and DNA kits to IPHC or IPHC FISS vessels
3. Recovery of scales, otolith trays, DNA kit, and all other biological materials
4. Deposition of otoliths with the DFO sclerochronology lab and tissue samples with the DFO genetics lab
5. Receive hook by hook enumeration and biological data sets in an electronic format
6. Meet with IPHC to resolve data issues and review FISS sampling logistics
7. Upload data to appropriate DFO legacy databases (GFBio)
8. Summarize results in the Groundfish Data Synopsis Report
9. Review financial statements/reports

B. IPHC

Subject to IPHC determination to proceed with the coast-wide FISS, the IPHC shall:

1. Provide measuring strip, data entry forms, knives, forceps and other basic sampling equipment. Sampling equipment includes a motion compensating scale calibrated for +/- 2 gm accuracy, measuring board for +/- 1 cm accuracy, knife for cutting fish, chisel and tweezers for removing otoliths, plastic 2 ml vials filled with 98% ethanol and scissors for DNA samples and other assorted sampling data sheets, pencils and cleaning supplies
2. Secure personnel to staff the third setline survey specialist positions aboard the chartered FISS vessels in BC waters
3. Inform DFO of FISS vessel fishing plans including; home port, estimated date of departure for the FISS, fishing plan, and appropriate times for delivery of sampling equipment and supplies
4. Collect full hook by hook catch enumeration data and rockfish biological data during the annual IPHC FISS IPHC
5. Inform DFO of the completion of the FISS and general logistics for transfer of the sampling equipment and sampled material
6. To deliver electronic data package to DFO
7. Meets with DFO to:
 - a. review data from the FISS
 - b. resolve any outstanding data issues
 - c. deliver any outstanding sampling equipment or sampled material
8. Provide financial report to PHMA detailing costs, expenditures and use of fish revenues for this project

C. PHMA

The PHMA shall:

1. Provide financial report to DFO detailing costs, expenditures, and use of fish revenues for this project

Project Evaluation

Evaluation of the Project should be performed by DFO, in consultation with the IPHC and PHMA if required by DFO, and should address the performance items below, as applicable. Once the Project is completed, performance evaluation may address additional aspects of the Project that may not have been anticipated.

1. DFO project authority will determine if the project has been completed, on time, on budget and within scope by reviewing the number of sets conducted, number of sets with complete hook by hook data, and the proportion of the total rockfish catch sampled.
2. DFO project authority will monitor compliance with milestones and document any deviation from pre-agreed to timeline
3. DFO Project authority and data technician, or delegates, will meet with IPHC to review data package delivered for completeness, resolve any issues with the data, and confirm all activities are complete.
4. DFO project authority, or delegate, will confirm all biological samples have been delivered and are in usable condition.
5. DFO and PHMA project authorities will review and agree on completeness of the technical report summarizing the results of this project.
6. DFO, PHMA and IPHC project authorities will discuss any difficulties encountered within the performance of the project and if so, how they were managed to achieve resolution.
7. DFO, PHMA and IPHC project authorities will review financial reports prepared by the PHMA and IPHC detailing the revenues and expenses from this project.

Appendix III Project Expenditures

Budget Summary for Operating Year 2019

Description	Financial Contribution to DFO	In-Kind Contribution	Use of Fish Contribution	Total Value
Salary – Term employees	\$0	\$0	\$0	\$0
Salary – Indeterminate employees	\$0	\$3,800 (IPHC) \$17,250 (DFO)		\$3,800 \$17,250
Benefits (e.g. 27% of Salary)	\$0	\$4,657 (DFO)	\$0	\$4,657
Consultant Contract	\$0	\$7,000 (PHMA)	\$37,900	\$7,000 \$37,900
Equipment	\$0	\$4,000 (DFO)	\$0	\$4,000
Material	\$0	\$0	\$0	\$0
Supplies	\$0	\$1,000 (DFO)	\$0	\$1,000
Travel	\$0	\$0	\$0	\$0
Vessels	\$0	\$0	\$0	\$0
Other Expenses	\$0	\$0	\$0	\$0
Totals		\$ 7,000 (PHMA) \$ 3,800 (IPHC) \$26,907 (DFO)	\$37,900¹	\$33,907 \$41,700

¹ The IPHC shall contribute net proceeds from the sale of rockfish and Pacific cod caught as part of this agreement. The total cost of the project, to the PHMA, is approximately US\$37,900 and shall not exceed this amount by more than 10%. The IPHC shall invoice the PHMA in US dollars based on the actual costs incurred to carry out the work agreed to in this CA.

Appendix IV Risk Management

Project Risk Analysis

Activity or Deliverable	IPHC secures charter vessels for the FISS.		
Description of risk event and its consequences	There is a risk that IPHC cannot secure appropriate vessels to conduct the FISS. Consequences could be: 1) that inappropriate vessels are chartered to conduct the FISS and they do not do an adequate job; 2) that no vessels submit bids to conduct the FISS.		
	Likelihood	Impact	Risk Rating
	Unlikely	Very High	Medium
Mitigation measures	Financial incentives and broad advertising of the FISS RFPs by the IPHC		
Responsible Party	IPHC		

Activity or Deliverable	IPHC gets approval from DFO to fish standard 10 nmi grid of FISS stations.		
Description of risk event and its consequences	There is a risk that IPHC will not be able to sample stations within a Marine Protected Area (MPA) or Rockfish Conservation Area (RCA). The consequence would be a less representative standard grid sample design, leading to biased estimates of Pacific Halibut and rockfish biomass indices in Canadian waters.		
	Likelihood	Impact	Risk Rating
	Likely	Medium-High (depends on how many banned)	High
Mitigation measures	IPHC will sample only approved FISS stations. For stations where the 3 nmi radius around the center point of the station is near or touches an MPA, IPHC will fish the station away from the MPA.		
Responsible Party	IPHC		

Activity or Deliverable	IPHC charter vessels and third setline survey specialist conduct the FISS.		
Description of risk event and its consequences	There is a risk that the IPHC charter vessels and the setline survey specialists do not perform well. Consequences could be: 1) vessel breakdown and FISS fishing is not completed 2) personnel issues cause a loss of FISS data.		
	Likelihood	Impact	Risk Rating
	Unlikely	Very High	Medium
Mitigation measures	IPHC employs highly skilled and reliable charter vessels and staff.		
Responsible Party	IPHC		

Activity or Deliverable	Electronic data files and biological samples are delivered to DFO		
Description of risk event and its consequences	There is a risk of loss or damage during the transfer of data and biological samples. Consequences could be: 1) the data are lost or corrupted 2) the samples are lost, jumbled (otoliths), or desiccated (DNA tissues).		
	Likelihood	Impact	Risk Rating
	Unlikely	Very High	Medium
Mitigation measures	IPHC retains hardcopies and backups of electronic data and there is electronic transfer of data to DFO. IPHC and DFO are very careful in handling biological samples		
Responsible Party	IPHC and DFO		

Activity or Deliverable	Data Summary and Results Report and Financial Reports completed and reviewed		
Description of risk event and its consequences	There is a risk that the data summary and results report and financial reports are not completed and not reviewed due to the lack of DFO personnel. Consequences could be: 1) lack of industry support for the project; and, 2) no future project agreements with industry.		
	Likelihood	Impact	Risk Rating
	Likely	Very High	High
Mitigation measures	DFO sets this project as a high priority and assigns staff to these tasks.		
Responsible Party	DFO		

Activity or Deliverable	Revenues from the catch of rockfish and Pacific Cod during the FISS are insufficient to pay for the fixed processing fees IPHC paid on vessel contracts.		
Description of risk event and its consequences	There is a risk that the proceeds from the sale of rockfish, Lingcod and Pacific Cod are not enough to offset the processing fees IPHC paid on vessel contracts due to the low catch of these fish on the FISS and compounded by the low Canadian dollar. Consequences could be: 1) IPHC is in a deficit position with this project in 2019 and, 2) IPHC will not collaborate on similar project agreements with PHMA and DFO in the future.		
	Likelihood	Impact	Risk Rating
	Likely	Very High	High
Mitigation measures	The IPHC carries this deficit over to subsequent years and applies this to the project in the next agreement. For future agreements, DFO, PHMA, and IPHC reconsider the Use of Fish funding arrangements such that the processing cost and revenue are linked directly to the Use of Fish.		
Responsible Party	DFO, IPHC, and PHMA		

Table to determine Risk Rating

Impact	5. Extreme				
	4. Very High				High
	3. Medium			Medium	
	2. Low	Low			
	1. Negligible				
	1. Rare	2. Unlikely	3. Low	4. Likely	5. Almost Certain
	Likelihood				

Appendix V

Background Information, Results and Intellectual Property Rights

1. Background Information¹

- 1.1. Each Party ("Disclosing Party") shall promptly disclose to another ("Receiving Party") any Background Information in its possession that is required by the Receiving Party to perform any Project activities for which the Receiving Party is responsible, excluding Background Information subject to third-party intellectual property rights. The Disclosing Party retains its rights in any Background Information disclosed to the Recipient Party.
- 1.2. Any confidentiality obligation with respect to Background Information shall remain in effect until such time as the information becomes public.

2. Results²

- 2.1. The Parties understand and agree that any Results arising under this Agreement should be managed in the best interest of the Parties.
- 2.2. Each Party shall promptly inform the others of any Results it generates and provide to the other Parties all technical information that may be necessary to enable the Parties to use those Results.
- 2.3. A Party is free to publish any Results in accordance with sub-article (a) provided it ensures that data integrity is preserved in the publication, and that the publication does not jeopardize the authorship interest of another Party's employees or the IP rights of another Party.
 - (a) If a Party ("Publishing Party") wishes to publish any Results, it shall submit these Results to the other Parties for review. The other Parties may, within thirty (30) days, request the Publishing Party, by written notice, to withhold publication of the Results or any portions thereof, for a reasonable time, for the purpose of securing its employees' authorship interest and protecting IP rights. Any obligation to withhold disclosure of Results may not exceed one year from the date of the notice, or one year following the end of the Agreement, whichever date is the earliest.

3. Intellectual Property ("IP") Rights³

3.1. Ownership of IP rights in Results

- (a) DFO owns the IP rights in Results generated solely by its employees.
- (b) IPHC or PHMA own the IP rights in Results generated solely by its employees and shall otherwise be free to determine ownership of such IP rights.
- (c) The IP rights in Results generated jointly by employees of all Parties will be jointly own by the Parties ("Joint IP"), and will be managed according to section 4.
- (d) Notwithstanding any conflict with any other provision in this Agreement, any student of the IPHC, DFO or working with the PHMA who may be involved in the Project retains the copyright in any research report, Masters or PhD thesis subject only to the confidentiality provisions herein.

¹ "Background Information" is defined in section 2 of this Agreement.

² "Results" is defined in section 2 of this Agreement.

³ "Intellectual Property" or "IP" is defined in section 2 of this Agreement.

3.2. Licensing of IP rights in Results

- (a) Any Party that owns IP rights in Results hereby grants to the other a non-exclusive, non-transferable, royalty-free and paid-up licence in respect of such IP rights and for the duration of the IP rights, allowing the other Parties to use, reproduce, modify and translate the IP and any parts thereof for non-commercial research purposes only.
- (b) The IPHC and/or PHMA may request from DFO, a licence to use, reproduce, modify and translate DFO-owned IP rights for commercial purposes. The request shall be in writing and shall be delivered to DFO no later than three (3) months following the end of the Agreement. The Parties shall negotiate the terms and conditions of such a licence in good faith; however if they can't agree within three (3) months following the beginning of licence negotiations, or at such later time as they may agree, DFO will no longer be obligated to continue licence negotiation with the IPHC or PHMA.

3.3. Patenting of inventions derived from Results

- (a) The Parties shall fully cooperate with each other and assist each other free of charge in the preparation and filing of patent applications related to inventions associated with any Results; however no Party may file patent applications incorporating Results of another Party without the prior written permission of that Party.
- (b) Each Party shall promptly provide to the others a copy of every patent application that it files in relation to any such inventions.
- (c) Each Party shall execute such conveyances or other documents as reasonably required for the filing, prosecution and maintenance of any patent applications and for defending any issued patents related to such inventions; however no Party shall be obligated to incur any costs in relation to any such patent applications or any such patents.

4. Management of Joint IP

- 4.1. The Parties agree that Joint IP shall be managed by the Party that has contributed the most to such Joint IP ("IP Manager"). The IP Manager shall determine any disclosure, protection, reproduction and commercialization of the Joint IP taking into consideration the other Parties' interests and internal policies, except if the Joint IP consists of an invention or software in which case section 4.3 shall also apply.
- 4.2. It is agreed that the IP Manager design may assign management of a Joint IP to one of the other Parties who upon accepting the assignment becomes the IP Manager of such Joint IP.
- 4.3. With respect to Joint IP consisting of an invention or software that has a significant commercial potential, the Parties agree to co-operate in good faith to develop a detailed management plan relating to the protection and commercialization of the Joint IP, while ensuring that the Parties' mutual interests in the Joint IP are protected.

5. Term of Application

- 5.1. The obligations of the Parties in this Appendix shall survive the expiration or termination of the Agreement.



Appendix VI
Provisions related to Biological Materials

- 1) Biological Material produced from Project-related activities performed by a Party shall belong to that Party.
- 2) Ownership of Intellectual Property related to Biological Material produced from the Project shall be determined in accordance with the provisions of Appendix V.
- 3) If DFO receives any Biological Material from the IPHC or PHMA, DFO will not return the Biological Material to the IPHC or PHMA unless requested, in writing, any time while the Agreement is in effect, in which case DFO will return to the IPHC or PHMA any such Biological Material that is no longer needed for the Project and remaining in its possession, subject to the following provisions:
 - a) DFO shall not be responsible for the condition of the Biological Material or the death of animals that DFO receives from the IPHC or PHMA;
 - b) DFO shall not be obligated to return to the IPHC or PHMA any deceased animals or any Biological Material which, in DFO's opinion, presents a health or environmental risk; and
 - c) The IPHC or PHMA pays to DFO upon request all DFO costs related to the transfer of the Biological Material back to the IPHC or PHMA.

Appendix VII Statement of Work

This project is a collaborative effort between DFO, PHMA and the IPHC to collect data about incidentally captured rockfish encountered during the IPHC's Fishery-Independent Setline Survey (FISS).

The annual IPHC FISS represents one of the most extensive research programs conducted in the Northeast Pacific Ocean which is used to conduct stock assessments on Pacific halibut. DFO conducts research and manages groundfish fisheries in British Columbia (BC) and has used the indices for species other than Pacific halibut from the IPHC FISS data in stock assessments. In order to collect additional data on other groundfish species in BC, particularly rockfish species, DFO, PHMA, and the IPHC support the deployment of an additional setline survey specialist aboard each chartered IPHC FISS vessel in BC to collect both (1) hook-by-hook species identification data on the total catch and (2) biological data on rockfish species caught during FISS operations. The work is designed to provide catch rates for numerous groundfish species and biological samples of various rockfish species off the coastal waters of BC for stock assessment. Biological data collected includes length, weight, sex, gonad maturity, otoliths for age determination, and genetic material for some species.

The annual IPHC FISS area in British Columbia waters consists of 166 fixed stations of 20 to 275 fathoms depth, spaced on a 10x10 nautical mile grid. The FISS provides data used to compute indices of Pacific halibut density for use in monitoring stock trends, estimating stock distribution, and as an important input in the stock assessment.

Since 2016, IPHC Secretariat has employed space-time modelling to estimate density indices. This approach makes use of additional information within the FISS catch data, along with auxiliary information collected on the FISS (such as station depth) to lead to improved estimates over the previous method (computing the arithmetic mean over sampled stations, with some adjustments applied). Specifically, improvements in estimation are made by fitting models to the data that account for spatial and temporal dependence, which make use of the degree to which the Pacific halibut distribution is patchy (has regions of high and low density), and that those patches tend to persist with time.

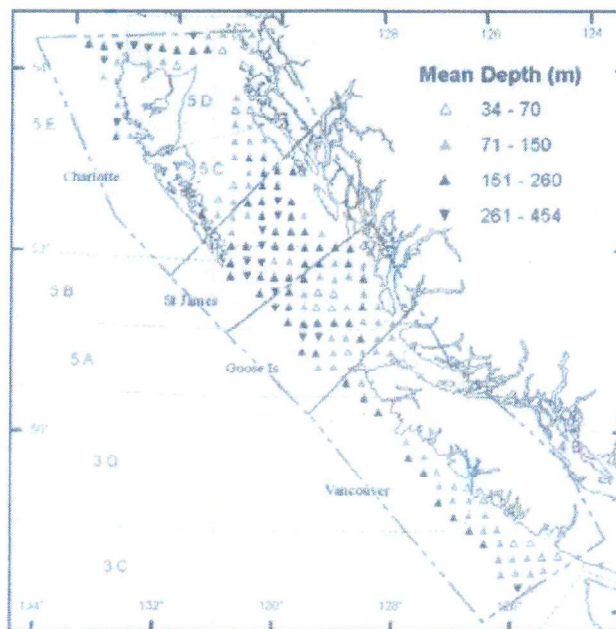


Figure 1. Stations for the IPHC FISS in BC.

DFO technicians prepare and maintain equipment and sampling kits for use on the FISS, as well as receive, proof and manage data and biological specimens collected on the FISS. DFO biologists manage partnerships, administrates the collaborative agreement process, participates in pre and post-season meetings, writes reports and analyzes FISS data.

1. Completion of the FISS according to the specifications and protocols set out by DFO.
2. Participation of the parties in pre and post-FISS meetings with one another to prepare for the FISS and debrief on the outcomes of the FISS.
3. Participation of DFO's BI-03 and EG-04 in a data workshop directly with the IPHC to resolve data inconsistencies and update data collection if required.
4. Participation of the parties in pre and post-FISS meetings with HAB and GHLAC to report out on the nature of this agreement and the results from the FISS; collaboration on the development of meeting agendas and materials for these meetings.
5. Financial Report on costs and revenues from the agreement.
6. Summary of FISS activities and results.

This is an example of the general terms of IPHC specifications. However, actual terms will remain embedded within the contract that IPHC establishes with the vessel.

Specifications

A. Vessel requirements

Subject to IPHC determination to proceed with the FISS, the IPHC will ensure each chartered IPHC vessel in BC meets the requirements set forth in the vessel Charter Agreement and the IPHC FISS Vessel Bid Specifications, collectively attached hereto as Exhibit A, and any additional Cruise Instructions agreed to in writing by the parties.

B. Vessel gear requirements

The IPHC will ensure that the vessel owner shall provide and replace, as needed, all gear and associated equipment necessary for commercial longline fishing as specified in the Charter Agreement and the IPHC FISS Vessel Bid Specifications, collectively attached hereto as Exhibit A, and any additional Cruise Instructions agreed to in writing by the parties.

C. Bait requirements

The bait requirements will be as per the Charter Agreement and the IPHC FISS Vessel Bid Specifications, collectively attached hereto as Exhibit A, and any additional Cruise Instructions agreed to in writing by the parties.

Samplers will collect data by set, whole-haul hook occupancy data and biological data from rockfish as set forth in the FISS Manual, attached hereto as Exhibit B.

Post FISS Meetings

After completion of the FISS, a post-FISS debriefing will be held. The purpose of the debriefing is to provide DFO with an evaluation of the program, a discussion on the data collected and the transfer of the



data collected during the FISS to DFO (see data section below). The date and time of the meeting will be scheduled by DFO and IPHC, no later than 31 November 2019.

Data Transfer

A summary of the charter activities shall accompany the FISS data (MS Word document) and biological materials. Information in this document shall include; 1) the name of the charter vessels, Captains, crew, and setline survey specialists onboard during the FISS, 2) the dates of fishing and offloading, including the "hail-in" numbers assigned, as well as 3) any other anecdotal information that is deemed to be of particular interest to those interpreting the data from the FISS.

The delivery of the electronic FISS data to DFO is required by the 31 December 2019. These data can be provided in a MS Excel or comma delimited text file. The data should be organized by the trip, set, skate, hook by hook and biological data levels with the appropriate primary keys. Code definitions must be provided for all IPHC codes used in the data. The original data forms by vessel should be scanned and provided as images in PDF format. All field notes pertaining to data, weather conditions, fishing events, etc. as well as post-survey data processing notes should be provided to DFO. Digital photos of sharks and other specimens should be provided at the same time as the electronic data.

