

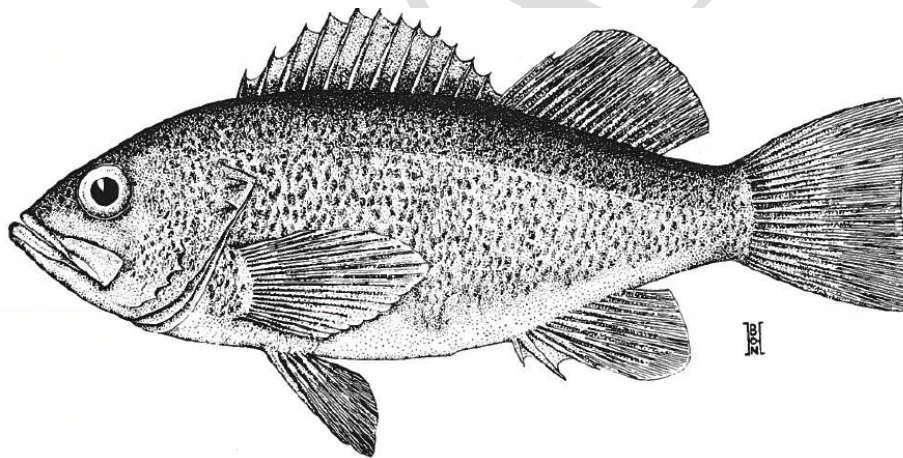
PACIFIC REGION

**INTEGRATED FISHERIES
MANAGEMENT PLAN**

GROUND FISH

EFFECTIVE FEBRUARY 21, 2019

VERSION 1.0



Black Rockfish (*Sebastes melanops*)



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canada

This Integrated Fisheries Management Plan is intended for general purposes only. Where there is a discrepancy between the Integrated Fisheries Management Plan and the regulations, the regulations are the final authority. A description of Areas and Subareas referenced in this Integrated Fisheries Management Plan can be found in the Pacific Fishery Management Area Regulations.

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FOREWORD

The purpose of this Integrated Fisheries Management Plan (IFMP) is to identify the main objectives and requirements for the Groundfish fishery in the Pacific Region, as well as the management measures that will be used to achieve these objectives. This document also serves to communicate the basic information on the fishery and its management to Fisheries and Oceans Canada (DFO) staff, legislated co-management boards and other stakeholders. This IFMP provides a common understanding of the basic “rules” for the sustainable management of the fisheries resource.

This IFMP is not a legally binding instrument which can form the basis of a legal challenge. The IFMP can be modified at any time and does not fetter the Minister's discretionary powers set out in the *Fisheries Act*, *Species At Risk Act*, and *Oceans Act*. The Minister can, for reasons of conservation or for any other valid reasons, modify any provision of the IFMP in accordance with the powers granted pursuant to the *Fisheries Act*, *Species At Risk Act*, and *Oceans Act*.

Where DFO is responsible for implementing obligations under land claims agreements, the IFMP will be implemented in a manner consistent with these obligations. In the event that an IFMP is inconsistent with obligations under land claims agreements, the provisions of the land claims agreements will prevail to the extent of the inconsistency.

This IFMP is a living document that will be subjected to a review every two years for updates, with input from interested parties. Any changes required within a given fishing season will continue to be made as needed.

IFMP documents are available from the DFO Pacific Region Internet site:
<http://www.pac.dfo-mpo.gc.ca/fm-gp/ifmp-eng.html>.

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1. OVERVIEW OF THE FISHERY

1.1. History

Each year Fisheries and Oceans Canada provides opportunities to First Nations for food, social and ceremonial (FSC) purposes (or domestic purposes for First Nations with modern treaties), and the commercial and recreational fisheries to harvest groundfish. First Nations, recreational, and commercial fisheries on the Pacific Coast of Canada have long harvested groundfish. Groundfish serve as a source of food, they provide jobs, income, and enjoyment for individuals, businesses, and coastal communities and they play key roles in natural ecosystems.

1.2. Type of Fishery and Participants

1.2.1. First Nations

In the 1990 Sparrow decision, the Supreme Court of Canada found that where an Indigenous group has an Indigenous right to fish for food, social, and ceremonial (FSC) purposes, it takes priority, after conservation, over other uses of the resource. Fisheries are authorized via a Communal Licence issued by the Department under the *Aboriginal Communal Fishing Licences Regulations*.

Five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht (the Five Nations) - have Indigenous rights to fish for any species of fish within their Fishing Territories and to sell that fish, with the exception of Geoduck. DFO is working with the First Nations to find the manner in which the rights of the five First Nations can be accommodated and exercised without jeopardizing Canada's legislative objectives and societal interests in regulating the fishery. The outcome of these discussions, including the development of a Fishery Management Plan pursuant to paragraphs 8, 9, 16, and 17 of the British Columbia Supreme Court Order dated April 19, 2018, could lead to in-season management changes.

1.2.2. Recreational

A recreational fishery may occur where authorized by a valid Tidal Waters Sport Fishing licence, which is required for the recreational harvest of all species of fish.

Approximately 300,000 Tidal Waters Sport Fishing licences are sold each year. Tidal Waters Sport Fishing Licences can be purchased online by using the DFO website: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/application-eng.html>

1.2.3. Commercial

There are seven distinct commercial groundfish sectors: Groundfish trawl, Halibut, Sablefish, Inside Rockfish, Outside Rockfish, Lingcod, and Dogfish fisheries that are managed according to the measures set out in this management plan. The management of these sector groups is integrated, with all groups subject to 100% at-sea monitoring and 100% dockside monitoring, individual vessel accountability for all catch (both retained

and released), individual transferable quotas (ITQ), and reallocation of these quotas between vessels and fisheries to cover catch of non-directed species. There are approximately 250 active commercial groundfish vessels. Information on licensed vessels is available online at the DFO website: <http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/index-eng.htm>.

First Nations have communal access to commercial opportunities through communal commercial licences acquired through the Allocation Transfer Program (ATP) and Pacific Integrated Commercial Fisheries Initiative (PICFI). The Maa-nulth have an allocation for commercial groundfish fishing outside of the Treaty as identified in the “Maa-nulth First Nation Harvest Agreement”. The allocations in the Harvest Agreement do not affirm Indigenous or Treaty rights. These licences are fished in a manner that is comparable to the general commercial fishery.

1.2.4. Aquaculture

The aquaculture industry may apply to access, by scientific licence, the wild groundfish resource to assist industry broodstock development (growth and diversification). There are currently three aquaculture operations that have been issued scientific licences to access wild Sablefish for broodstock. More information on the Sablefish broodstock access can be found in Appendix 7 to this IFMP.

1.3. Location of Fishery

This Integrated Fisheries Management Plan (IFMP) addresses groundfish fisheries occurring in waters of the Pacific Ocean off the west coast of Canada.

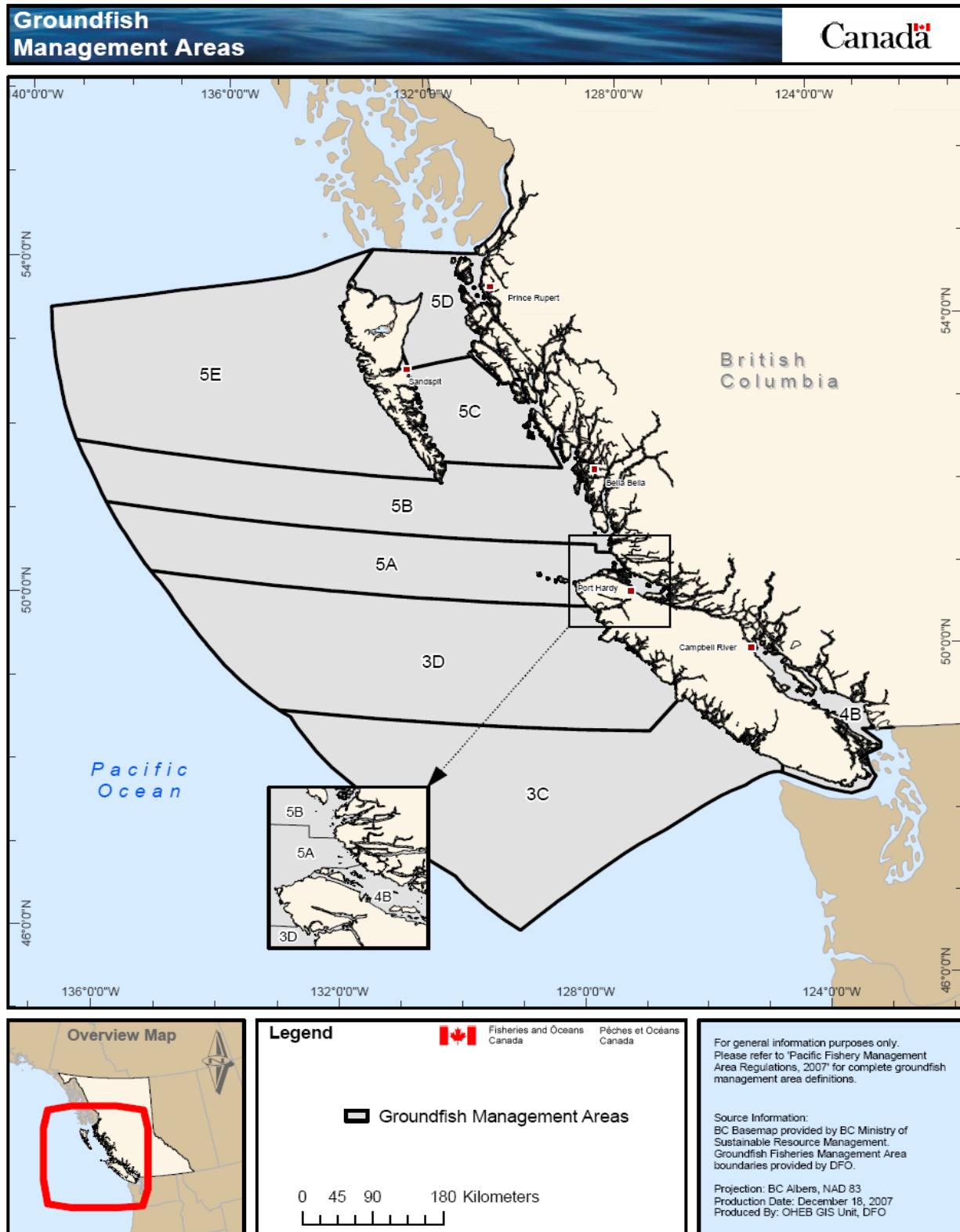
1.4. Commercial Fishing Areas

| Name | Area/Subarea |
|------|---|
| 3C | Areas 21, 23, 24, 121, 123, and Subareas 124-1 to 124-3 and 125-6. |
| 3D | Areas 25, 26, 126 and Subareas 27-2 to 27-11, 124-4, 125-1 to 125-5, 127-1 and 127-2. |
| 4B | Areas 13 to 20, 28 and 29 and Subareas 12-1 to 12-13, 12-15 to 12-48. |
| 5A | Areas 11, 111 and Subareas 12-14, 27-1, 127-3, 127-4 and 130-1. |
| 5B | Areas 7 to 10, 108 to 110 and Subareas 102-3, 107-2, 107-3, 130-2 and that portion of 130-3 that lies south of the parallel passing through 51 degrees, 56 minutes north latitude) |
| 5C | Areas 6, 106 and Subareas 2-1 to 2-19, 102-2 and 105-2 and 107-1. |
| 5D | Areas 3 to 5, 103, 104 and Subareas 1-2 to 1-5 and 101-4 to 101-10, 102-1 and 105-1. |
| 5E | Area 142 and Subareas 1-1 and 2-31 to 2-100 and 101-1 to 101-3 and that portion of Subarea 130-3 that lies north of the parallel passing through 51 degrees 56 minutes north latitude |

Specific information on the management area boundary descriptions (latitudes and longitudes) can be found in the *Pacific Fishery Management Area Regulations, 2007* (SOR/2007-77). These regulations can be found at:

<http://laws-lois.justice.gc.ca/eng/regulations/SOR-2007-77/index.html>.

1.4.1. Commercial Groundfish Management Area Map



1.5. Governance

- The *Fisheries Act* and the regulations made thereunder.
 - Areas and Subareas, as described in the *Pacific Fishery Management Area Regulations*, are referenced in describing Groundfish Management Areas.
 - Fishery (General) Regulations (i.e. conditions of licence) and the *Pacific Fishery Regulations* (1993) (i.e. open times).
 - The *British Columbia Sport Fishing Regulations* (1996).
 - The *Aboriginal Communal Fishing Licences Regulations* (1993).
- The *Oceans Act*.
- The *Species at Risk Act*.

DFO regularly works with fishery participants, Indigenous groups, Provinces and Territories, and other stakeholders in reviewing and renewing its policy frameworks in support of a sustainable and economically viable fishery. These initiatives are designed to support DFO's vision of a credible, science-based, affordable and effective fisheries program, which contributes to the sustainable wealth of Canadians.

Current projects include:

- the expansion of efforts to manage fisheries using multi-year science advice and multi-year management plans incorporating harvest levels and other primary management measures;
- the requirement for all fishers to cover business costs related to tags, logbooks, and monitoring where they are deemed an ongoing requirement (in line with the policy that those who benefit from the use of the resource be required to assist in paying for the management of the resource);
- the implementation of a suite of services to the fishing industry including online purchasing and renewal of commercial fishing licensing services, issuance of licence conditions, approval of designations and quota transfers; and,
- legislative and policy changes with regard to use of fish or fishing gear to fund joint project agreements.

In addition to the initiatives and legislation changes summarized above, the Department's Sustainable Fisheries Framework comprises the following policy instruments for adopting an ecosystem based approach to fisheries management, including:

- A Fishery Decision-Making Framework Incorporating the Precautionary Approach;
- Guidance for the Development of Rebuilding Plans under the Precautionary Approach: Growing Stocks out of the Critical Zone
- Policy for Managing the Impact of Fishing on Sensitive Benthic Areas
- Ecological Risk Assessment Framework for Cold Water Corals and Sponge Dominated Communities
- Policy on New Fisheries for Forage Species
- Policy on Managing Bycatch
- Guidance on the Policy on Managing Bycatch

Along with existing economic and shared stewardship policies, these will help the Department meet objectives for long-term sustainability, economic prosperity, and improved governance. Further information can be found at the DFO website: <http://www.dfo-mpo.gc.ca/reports-rapports/regs/policies-politiques-eng.htm>

Several advisory committees and subcommittees have been established to provide advice to the Department on management of groundfish fisheries. Terms of reference, membership and meeting minutes for the Halibut Advisory Board (HAB), Groundfish Trawl Advisory Committee (GTAC), Sablefish Advisory Committee (SAC), Groundfish Hook and Line Subcommittee (GHLSC), the Commercial Industry Caucus (CIC), and the Groundfish Integrated Advisory Board (GIAB) can be found on the Internet at: <http://www.pac.dfo-mpo.gc.ca/consultation/ground-fond/index-eng.html>. For a list of members please see Appendix 12.

DFO engages in a variety of consultation, engagement and collaborative harvest planning processes with First Nations which advise DFO on groundfish management. These exchanges and involvement may include bilateral consultations, advisory processes, management boards, technical groups and other roundtable forums. Consulting is an important part of good governance, sound policy development and decision-making. It is also a component of modern treaties established between First Nations and the provincial and federal governments. In addition to good governance objectives, Canada has statutory, contractual and common law obligations to consult with Indigenous groups.

The Sport Fishing Advisory Board provides advice to the Department on matters relating to the recreational fishery. More information on this advisory board can be found on the Internet at: <http://www.pac.dfo-mpo.gc.ca/consultation/smon/sfab-ccps/index-eng.html>.

1.6. Approval Process

The Regional Director General for the Pacific Region approves this plan.

2. RESOURCE MANAGEMENT GOAL

To sustainably manage groundfish fisheries, and to work with harvesters, coastal and Indigenous communities to enable their continued prosperity from fish and seafood.

This goal and the [Departmental Plan](#) is intended to support DFO's [mandate commitments](#). The management priorities described below are keys areas of focus that will align our activities with these goals over the long term.

| Priority | Management measures |
|---|--|
| Implement a fisheries program that uses | Completion of a management procedure framework |

| | |
|--|---|
| <p>scientific evidence, the precautionary principle, and takes into account climate change when making decisions affecting fish stocks and ecosystem management.</p> | <p>for data limited and data moderate British Columbia groundfish species to generate status assessments in a more timely manner. See section 3.3.2 for additional information.</p> <p>Continue to the support Collaborative Agreements between DFO and partners to support groundfish science activities through the allocation of fish to finance the activities, consistent with the authority granted to the Minister in the <i>Fisheries Act</i>. See section 1.5 and the harvest plan appendices for additional information.</p> <p>Continue to utilize established integrated fisheries planning and advisory processes described in appendix 12, as well as the Canadian Science Advisory Secretariat process.</p> |
| <p>Develop, implement, and monitor rebuilding plans that are consistent with regulation and policy under a renewed <i>Fisheries Act</i>.</p> | <p>Rebuilding plans for Bocaccio and Yelloweye Rockfish have been developed and continue to be evaluated as described in Appendix 9. Renewed science advice is being sought to aid in evaluating rebuilding plans, and where necessary strengthen management measures.</p> <p>DFO is undertaking a review of where there may be potential fishery-related interactions with Southern Resident Killer Whales. In the future, DFO may consider the development of management measures aimed at reducing the threat of fisheries-related interactions and also where additional mitigation measures can be developed. See section 5.1.5.</p> <p>Incidental sub-legal Sablefish catch, and the associated release mortality, limits stock productivity. As such, DFO is exploring options to reduce sub-legal Sablefish mortality. Drawing from existing advisory boards DFO has formed a working group that comprises the key sectors encountering sub-legal Sablefish in the highest frequency; this group aims to collaborate on the development of management measures aimed at reducing the frequency and volume of sub-legal Sablefish bycatch. See Appendix 7.</p> |
| <p>Supporting implementation of management measures to increase the proportion of Canada's marine</p> | <p>The federal government remains committed to protecting 10% of Canada's marine and coastal areas by 2020. The 2020 target is both a domestic</p> |

| | |
|---|--|
| <p>conservation areas to 10 percent by 2020</p> | <p>target (Canada's Biodiversity Target 1) and an international target as reflected in the Convention on Biological Diversity's Aichi Target 11 and the United Nations General Assembly's 2030 Agenda for Sustainable Development under Goal 14. Specific measures are described in section 5.2.1, and in Appendix 10.</p> <p>DFO is also currently undertaking a multi-year review of the conservation effectiveness of RCAs. Specific measures are described in section 5.1.6.</p> |
|---|--|

3. STOCK ASSESSMENT AND STATUS

3.1. Biological Synopsis

In addition to work directed at providing stock assessments, DFO staff and contracted service providers conduct routine data collection and compilation and specialized research on the general biology of groundfish in support of stock assessment. The routine work includes:

- Collection and archiving of catch data from fisher logs, observer and electronic logs and unloading slips.
- Collection and archival of catch, biological and environmental data from at-sea research cruises
- Collection of biological specimen data from dockside, and at-sea sampling.
- Archiving of biological data collected from departmental and contract sources.

3.2. Indigenous Traditional Knowledge/Traditional Ecological Knowledge

Indigenous Traditional Knowledge/Traditional Ecological Knowledge in the form of observations and comments provided by First Nations is considered in management decisions when provided.

3.3. Stock Assessment and Science Advice

3.3.1. Groundfish Stock Assessment Program

Stock assessment and research programs involving groundfish are conducted by the Department and through cooperative research programs carried out in conjunction with industry associations. Stock assessment advice has been provided for over 70 commercially exploited groundfish stocks. Science personnel, in association with DFO fishery managers and groundfish user group representatives, establish assessment priorities and timing schedules for assessments. These programs are intended to support ongoing evaluation of management measures. Opportunities for stakeholder involvement and co-operative ventures in research and assessment activities are pursued.

The 2011 – 2013 groundfish IFMP identified the prioritization and scheduling of groundfish stock assessments as an objective to be completed by 2013. DFO Science drafted a discussion paper titled “Prioritization and Scheduling of Groundfish Stock Assessments” outlining a process for this as well as a proposed assessment schedule for the 10-year period commencing 2012. The draft discussion paper was reviewed with the Groundfish Integrated Advisory Board in the spring of 2012 and was revised and completed shortly after. In 2017 the Department initiated a review of its strategic plans for science.

The document, and the process it describes, is intended to inform work-planning for the Science Branch Groundfish Section and its research collaborators and interested parties. It focuses on that portion of the Section’s workload that relates to the production of single species stock assessments. The document includes:

- a table of more than 200 groundfish species that Science suggests fall within the research mandate of the Groundfish Section (GFS) of the DFO Science Branch, Pacific Region, and for which a stock assessment might be requested;
- a recommended separation of the frame into higher priority and lower priority species;
- a screening of the lower priority species to identify a short list which should receive more assessment work for the 2012-2021 period;
- a draft assessment schedule of the higher priority and lower priority species for the 2012-2021 period;
- a consultative process for conducting the prioritizing and scheduling.

During the 2018/19 fishery season, harvest advice has been produced for Pacific Cod and Redstripe Rockfish, as well as a report synthesizing and reporting on all available data for 100 groundfish species was produced and reviewed through CSAP. The paper, titled “A Data Synopsis for over 100 British Columbia Groundfish Species”, presents a standardized view of the available data holdings for each species in a compact two page format. During the 2019/20 fishery season, harvest advice is anticipated for Widow Rockfish and Rougheye/Blackspotted Rockfish, as is the completion of a management procedure framework for data limited and data moderate British Columbia groundfish species. The Framework will use closed loop feedback simulation to evaluate the performance of a suite of management procedures across selected candidate groundfish species that represent a range of life history types, exploitation history and data richness. It is anticipated the outcome of this process will be a Framework (software, data and documentation) that can be applied to any groundfish species to generate status assessments in a more timely manner and is particularly relevant for those species lacking sufficient data for a full age structured stock assessment.

Upon receipt of science advice and in consultation with Departmental advisory processes, catch limits have been reviewed for Redstripe Rockfish, Walleye Pollock, and

Arrowtooth Flounder¹. Science Advice for Pacific Cod was received during the drafting of this plan and is currently being reviewed. Catch limits for Pacific Cod may be adjusted in-season based on the results of this advice. Science Advice for Sablefish, provided via a Management Strategy Evaluation process, will be delivered in January at which point catch limits will be determined (see appendix 7).

Median biomass estimates for both the northern and southern Redstripe Rockfish stocks suggest that the stocks are above the Upper Stock Reference point (i.e. within the Healthy zone), and that current harvest rates less are unlikely to result in biomass declines. Given the science advice and recent fishery removals, catch limits for Restripe Rockfish are unchanged, as described in section 3.1.5.4. The Science Advisory Report recommends that the next assessment occur in 2023 when additional catch indices and aging data will be available.

Median biomass estimates for both the northern and southern Walleye Pollock stocks suggest that the stocks are above the Upper Stock Reference point (i.e. within the Healthy zone), but the current harvest rates are likely greater than the long-term average harvest rates (1967-2016). The delay-difference model used in this stock assessment is less capable of making multi-year projections than an age-structured model, and as a result only one year projections are available to inform catch limit decisions. Given the science advice and recent fishery removals, catch limits for Walleye Pollock are unchanged for the northern stock and increased for the southern stock, as described in section 3.1.5.4. The Science Advisory Report recommends improvements to biological sampling and aging before undertaking the next assessment.

The median biomass estimate of Arrowtooth Flounder suggests that the stock is above the Upper Stock Reference point (i.e. within the Healthy zone), and science advice suggests that the biomass is unlikely to appreciably decrease at catch levels less than 50,000 tonnes. While there is a high level of confidence that the coastwide stock remains healthy, consultations with the Groundfish Trawl Advisory Committee have identified concerns about localized depletion of Arrowtooth Flounder. Discussions to define goals about localized depletion will continue, and additional sampling protocols will be developed to improve the understanding of commercial catch sex and maturity composition. As an interim measure, catch limits for Arrowtooth Flounder are reduced from 1,750 tonnes to 1,400 tonnes.

3.3.2. Canadian Science Advisory Secretariat

Science is the basis for sound, evidence-based decision making. DFO Science Sector provides advice on the likelihood of achieving policy objectives under alternative management strategies and tactics. The Canadian Science Advisory Secretariat (CSAS) oversees the provision of all scientific advice required by operational client sectors within the Department (Fisheries Management, Ecosystems Management, and Policy). In the

¹ Pacific Halibut and Pacific Hake are two groundfish species with assessments that are delivered outside the CSAP process. These species are each managed under the auspices of treaties between Canada and the United States, which have their own annual stock assessment and advisory processes.

Pacific Region, science advisory processes are managed by the Centre for Science Advice Pacific (CSAP).

Scientific assessments and advice on the assessment and management of the Groundfish fishery is peer reviewed annually in Regional Peer Review (RPR) meetings. Government and non-government individuals with knowledge and technical expertise pertaining to each RPR meeting are invited to contribute to the peer review and development of advice, based on the science presented. The schedule of CSAS meetings is available online at: <http://www.isdm-gdsi.gc.ca/csas-sccs/applications/events-evenements/index-eng.asp>. General information about the CSAS Policies, Procedures, Schedule and Publications can be found at: <http://www.dfo-mpo.gc.ca/csas-sccs/index-eng.htm>.

Science advice, proceedings and stock assessments/scientific evaluations resulting from CSAS meetings are available online at: <http://www.meds-sdmm.dfo-mpo.gc.ca/csas-sccs/applications/Publications/index-eng.asp>. The following provides a brief description of the various documents published by CSAS.

Science Advisory Reports

Science Advisory Reports (SAR) summarise the technical considerations and document the conclusions and advice developed during a CSAS RPR process. SARs include traditional Stock Status Reports, Ecosystem Status Reports, and Habitat Status Reports, as well as advice pertaining to management strategies, frameworks and guidelines on the assessment or evaluation on specific issues, such as impacts of human activities on ecosystem components. Recovery potential assessments for species or populations of conservation concern are also included in this series.

Research Documents

Research Documents are peer-reviewed, technical publications that document the scientific evidence and analyses taken into consideration in the development of science advice presented in SARs.

Proceedings

Proceedings record the activities at CSAS peer review meetings or workshops. The Proceedings generally record decisions, recommendations, and major points of discussion at these meetings and workshops. Proceedings capture the diversity of opinion present at the meeting or workshop.

Science Responses

The Science Responses document information and advice provided by DFO Science for issues handled via the Science Special Response Processes (SSRPs). SSRP is a streamlined peer review process that deals with urgent and unforeseen requests for advice, for situations where the timelines for providing the advice do not allow for a full peer review process, in cases where there is a clear and valid framework to provide advice or for cases where DFO is not the final decision-making body.

3.4. **Precautionary Approach (PA)**

The Department follows the Sustainable Fisheries Framework (SFF), which is a toolbox of policies for DFO and other interests to sustainably manage Canadian fisheries in order to conserve fish stocks and support prosperous fisheries. The SFF includes a decision-making framework incorporating a precautionary approach (PA) to commercial, recreational, and Food, Social, and Ceremonial fishing: <http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/precaution-eng.htm>

In general, the PA in fisheries management requires caution when scientific knowledge is uncertain. The absence of adequate scientific information should not result in postponed action or failure to take action to avoid serious harm to fish stocks or their ecosystem. This approach is widely accepted internationally as an essential part of sustainable fisheries management.

Applying the PA to fisheries management decisions entails establishing harvest strategies that:

- identify three stock status zones – Healthy, Cautious, and Critical – delineated by upper stock reference points and limit reference points;
- set the removal rate at which fish may be harvested within each stock status zone; and
- adjust the removal rate according to changes in fish stock status (i.e., the spawning stock biomass or another index/metric relevant to population productivity), based on pre-agreed decision rules.

The PA Framework requires that a harvest strategy be incorporated into respective fisheries management plans to keep the removal rate moderate when the stock status is in the Healthy Zone, to promote rebuilding when stock status is low, and to ensure a low risk of serious or irreversible harm to the stock. A key component of the PA Framework requires that when a stock has declined to the Critical Zone, a rebuilding plan must be in place with the aim of having a high probability of the stock growing out of the Critical Zone within a reasonable, agreed-upon timeframe: <http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/precautionary-precaution-eng.htm>

3.5. **Research**

3.5.1. Science Branch

A goal of the Fisheries and Oceans Canada Science Branch is to provide high quality knowledge, products and scientific advice on Canadian aquatic ecosystems and living resources, with a vision of safe, healthy, productive waters and aquatic ecosystems. Groundfish research and stock assessments are conducted jointly between the Groundfish, Quantitative Assessment Methods, and Fisheries and Assessment Data Sections of the Stock Assessment and Research Division in collaboration with staff in the Ecosystems Sciences Division of Science Branch.

3.5.2. Groundfish Monitoring and Assessment

3.5.2.1. Groundfish Multi-species hook and line surveys

The hook and line surveys program consists of three distinct components:

- 1) Inside waters hard bottom hook and line survey using a DFO research platform, staffed by DFO staff;
- 2) an Outside waters hard bottom hook and line survey supported through a use of fish agreement with Pacific Halibut Management Association (PHMA), staffed by contracted sea-going technicians and;
- 3) deployment of an additional technician aboard chartered survey vessels during the International Pacific Halibut Commission's (IPHC) annual coastwide stock assessment survey.

Since 2003 the Inside waters research survey has been conducted aboard the R/V CCGS Neocaligus. This survey is designed to cover the inside (Strait of Georgia) waters over two years, rotating between northern and southern portions. These surveys are conducted over hard bottom between 41 and 100 m in depth to determine the catch by species and to collect biological samples. These surveys were initiated in 2003 in Areas 12 and 13, and have alternated with more southern management areas since then.

In 2006, the Outside waters research survey was initiated in collaboration with the research committee of the Pacific Halibut Management Association. This survey is part of an effort to index groundfish populations in all areas of the coast. The survey grid developed for hard bottom areas are matched alongside those developed for the coastwide trawl surveys. Data from both the longline and trawl surveys will provide coastwide abundance indices and ancillary biological data for the more commonly caught species and provide general distributional data for all the others.

Employing a depth stratified random design, hard bottom areas coastwide will be surveyed with longline gear over a two year period, alternating between northern and southern portions of Canada's Pacific coast. A target of 200 fishing sets are selected in each year and three commercial fishing vessels are chartered to fish in one of three areas within the northern or southern portion of the coast each year. The southern portion of the coast is scheduled to be surveyed in even years, and the northern portion of the coast in odd years.

In 2003, cooperative work with industry and the International Pacific Halibut Commission (IPHC) was initiated to collect data on catch other than Halibut on the annual survey in B.C. waters. A third technician has been employed in B.C. waters to collect hook by hook catch information as well as biologically sample rockfish species caught on the survey. Data from this survey provides an annual coastwide relative abundance index for rockfishes as well as distributional information for all other catch.

3.5.2.2. Groundfish Trawl Multi-Species Surveys

Since 2003, a series of Groundfish Trawl Multi-species surveys have been conducted jointly between the Department and the groundfish industry through the Canadian Groundfish Research and Conservation Society. The purpose of the surveys is to gather

fishery independent data to provide usable relative abundance indices for as many benthic and near benthic fish species as is reasonable and obtain supporting biological samples of size and age composition.

This survey program is comprised of five area specific surveys. Three areas, the Strait of Georgia, the west coast of Vancouver Island and Hecate Strait are surveyed using a DFO research vessel (historically the CCGS WE Ricker, but will be replaced by a new DFO research trawler), staffed with DFO science personnel. The two remaining areas, Queen Charlotte Sound and the West Coast of Haida Gwaii are surveyed with chartered commercial fishing vessels supplied by industry through the CGRCS and staffed with a combination of DFO and contracted sea going personnel. Areas are surveyed on a biennial rotation with Queen Charlotte Sound and Hecate Strait being surveyed in odd years and the West Coast of Vancouver Island and the west coast of Haida Gwaii being surveyed in even year. The Strait of Georgia is surveyed on a triennial rotation.

These surveys employ a depth stratified random design, target trawlable bottom coastwide and integrate with the longline hard bottom survey to provide comprehensive coverage between 50 and 500 m depth coastwide.

3.5.2.3. Sablefish Research and Assessment Survey Program

The Sablefish Research and Assessment Survey Program includes three primary components:

- A Randomized Tagging survey captures Sablefish for tagging and release following an area and depth stratified randomized survey design. The catch rate data are used to derive an index of stock abundance and are a primary input to the Sablefish management procedure. Tag-recoveries can be used for deriving estimates of gear selectivity, studying movement, and potentially for deriving a tagging-based index of abundance.
- An inlets survey captures Sablefish for tagging and release in standardized sets at four mainland inlet localities. As with the Randomized Tagging survey, tagged Sablefish captured during the survey are measured, re-tagged and released.
- A Benthic Contact project is being conducted by researchers from the Canadian Sablefish Association, Simon Fraser University, and DFO Science. The project aims to provide quantitative estimates of the area contacted by longline trap gear using accelerometers that capture gear movement during a set and video cameras in high-pressure housings that capture imagery of the benthos. Prototypes of both types of equipment were first tested in 2012; deployment of accelerometers is anticipated to continue through 2019, during the annual assessment survey.

4. ECONOMIC, SOCIAL AND CULTURAL IMPORTANCE

The purpose of this section is to provide a socio-economic overview of groundfish fisheries in British Columbia using available information. This summary addresses

groundfish in the context of the Indigenous Food, Social, and Ceremonial fishery, the recreational fishery, and the commercial fishery including harvesting, processing, and export activity. The focus of this section is on the economic activity of the fisheries rather than measures of economic value (i.e. consumer and producer surpluses). Where available, information on the social and cultural context of the fisheries has been included; these sections may be expanded in future years, as additional information is made available. The information from 2003 to 2017 is included, although the entire period is not covered in all instances due to data limitations. DFO recognizes the unique values of each of the fisheries described here. The overview provided by this profile is intended to help build a common understanding of the socio-economic dimensions of the fisheries rather than compare the fisheries.

4.1. **Indigenous Fisheries**

4.1.1. Indigenous Fisheries Participation

Generally, there are three categories of Indigenous participation in fisheries – food, social, and ceremonial (FSC), commercial, and treaty.

4.1.1.1. Participation in the Food, Social, and Ceremonial Fishery

Section 35(1) of the *Constitution Act*, recognizes and affirms the existing Indigenous and treaty rights of the Indigenous peoples in Canada, however it does not specify the nature or content of the rights that are protected. In 1990, the Supreme Court of Canada issued a landmark ruling in the Sparrow decision. This decision found that the Musqueam First Nation has an Indigenous right to fish for FSC purposes. The Supreme Court found that where an Indigenous group has a right to fish for FSC purposes, it takes priority, after conservation, over other uses of the resource. The Supreme Court also indicated the importance of consulting with Indigenous groups when their fishing rights might be affected.

The Aboriginal Fisheries Strategy (AFS) was implemented in 1992 to address several objectives related to First Nations and their access to the resource. These included:

- To provide a framework for the management of fishing by Indigenous groups for food, social and ceremonial purposes.
- To provide Indigenous groups with an opportunity to participate in the management of fisheries, thereby improving conservation, management and enhancement of the resource.
- To contribute to the economic self-sufficiency of Indigenous communities.
- To provide a foundation for the development of self-government agreements and treaties.
- To improve the fisheries management skills and capacity of Indigenous groups.

AFS fisheries agreements may identify the amounts of species including groundfish that may be fished for FSC purposes, terms and conditions that will be included in the communal fishing licence, and fisheries management arrangements. Currently

approximately 58 coastal First Nations are issued communal licences by the Minister that include groundfish for FSC purposes.

4.1.1.2. Participation in the Commercial Fishery

Indigenous participation in the commercial fishery, either communally or individually, is described below in section 4.3.

4.1.1.3. Participation in Modern Indigenous Treaties

Fisheries chapters in modern First Nation treaties may articulate a treaty fishing right for FSC purposes that are protected under Section 35 of the *Constitution Act, 1982*. Some modern treaty First Nations are provided commercial access either through the general commercial fishery or a Harvest Agreement. While this commercial access may be referenced in the treaty, it is not protected under the *Constitution Act*.

Four modern treaties (Nisga'a Final Agreement, Tsawwassen First Nation Final Agreement (TFA), Maa-nulth First Nations Final Agreement (MNA), and Tla'amin Nation Final Agreement) have been ratified in British Columbia.²

The Maa-nulth treaty includes five Nuu-cha-nulth First Nations (Ka:'yu:k't'h/Che:k'tles7eth, Huu-ay-aht, Toquaht, Uchucklesaht, Ucluelet) and came into effect in April 2011; it provides for commercial groundfish in a Harvest Agreement.

4.1.2. Social and Cultural Significance

Fisheries and the harvest and management of aquatic resources have particular importance to many Indigenous communities. Many Indigenous communities are located adjacent to key fishing sites, oceans and aquatic resources, and consider the management of these resources to be matters important to these communities. There are Indigenous groups who are seeking greater access to economic opportunities from aquatic resources as a potential driver for economic development in their communities; more stability in FSC fisheries; a greater role in the aquatic resource and oceans management decisions that affect them; and a greater role in stewardship, including stock assessment, oceans and habitat management, conservation and protection, and recovery strategy development and implementation.

4.2. Recreational Fishery

Recreational fishing is a leisure activity that may also provide food for personal use. These activities provide benefits to the individual participants as well as contribute directly and indirectly to the economy through fishery related expenditures. This section focuses primarily on economic activity rather than the economic benefits to individual anglers or businesses. Catch levels in the recreational groundfish fishery are managed

² Details of concluded final agreements can be found at <https://www.aadnc-aandc.gc.ca/eng/1402584983606/1402585060047>.

using area specific openings and retention limits. There are no restrictions on the number of tidal water recreational licences.

4.2.1. Participation

Tidal water recreational licences permit access to all marine species, including many groundfish, under the conditions described in the BC Sport Fishing Guide. The number of tidal water licences sold for access in BC decreased from around 337,000 in 2003 to a low of 300,000 in 2008 where it remained for a number of years; there was an increase by 2015 to about 343,000 (Figure 1). The majority of the decline was due to a decrease in the sale of licences to non-Canadian residents, while the recent increase was due to increased sales to residents.

The National Recreational Fishing Survey is conducted every five years, though due to issues with the 2015 survey, the latest available data is from 2010³. In 2010, approximately 42% of responding anglers identified Halibut as one of their top three preferred species, while 14% identified Lingcod and 7% identified rockfish in their top three (DFO internal data). This suggests that over 120,000 anglers may target groundfish species each year. Fewer BC residents place Halibut in their top three (38%), than do anglers from outside BC (52%). Resident and non-resident anglers fished an estimated 2 million days in BC tidal waters in 2010. Approximately 16% of the days fished included time fishing for Halibut, while 12% and 11% included time fishing for lingcod and rockfish, respectively.

The number of businesses in BC that provide recreational fishing services directly to anglers (e.g. guides and charters) is unknown.

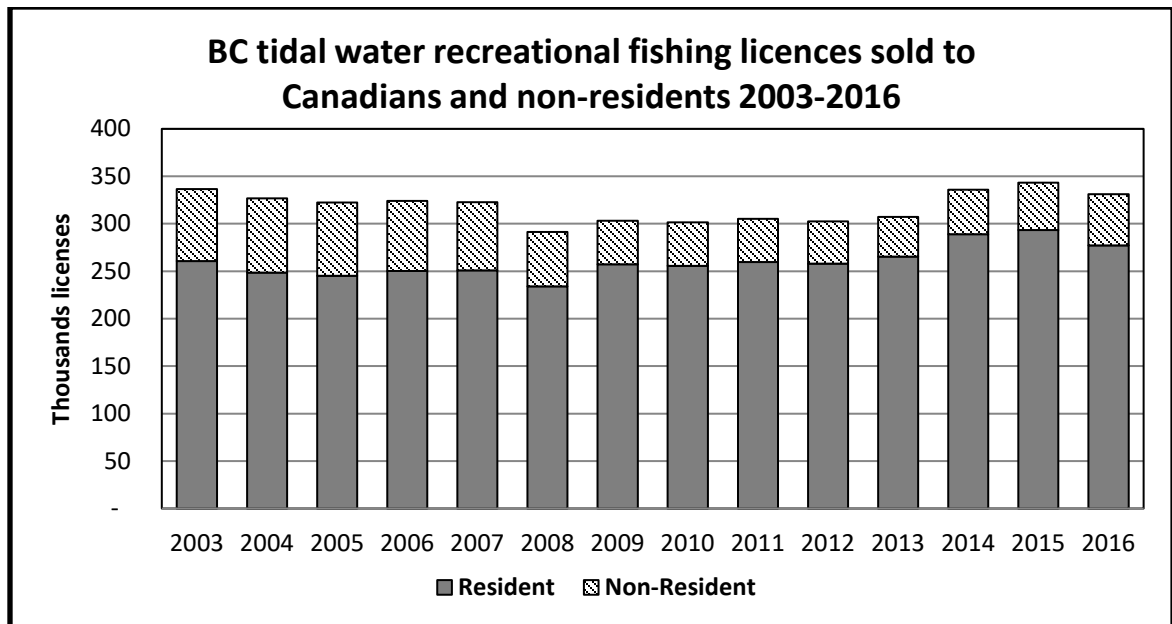


Figure 1. BC tidal water recreational fishing licences sold to Canadians (solid) and non-residents (pattern) 2003/04-2016/17 (thousands of licences) Source: DFO. Recreational Licensing data.³

4.2.2. Economic Contribution

Between 2005 and 2011, the contribution of the tidal waters recreational fishing sector (all species) to the real gross domestic product (GDP)⁴ and employment in BC grew by 9% and 5% respectively. The portion of this contribution that is attributable to groundfish was not determined. However, the data from the 2010 National Survey of Recreational Fishing indicates that Halibut, Lingcod and rockfish accounted for approximately 23% of total direct fishing expenditures and about 30% of expenditures on fishing packages in BC.

Determining the contribution of the recreational fishing sector to the economy is complicated, as some, but not all, of the GDP, employment and revenue attributable to the industry is also part of the province’s tourism sector. Tourists are those people who travel 80 kilometres or more from their usual place of residence in order to participate in the activity. While many anglers live near to the coast of BC and can participate without travelling far from home, others must travel to participate in the tidal water recreational fishery and are classified as tourists. Consequently, there is significant overlap in the economic values for the recreational fishing sector and the tourism sector. Approximately 30% of the overall recreational fishing sector’s contribution to GDP is the result of activities not directly related to fishing, but rather includes non-angling activities undertaken by tourist anglers (e.g. visiting a museum).

³ Accessed on November 20, 2018 from: <http://www-ops2.pac.dfo-mpo.gc.ca/vrnd-rneb/index-eng.cfm?pg=RecRptSelect>

⁴ Gross Domestic Product includes wages to labour, owner profits and earnings, return on capital investments, changes in inventories, and depreciation on capital.

Expenditures on fishing packages by BC resident anglers has increased considerably over the past decade; in real terms, it increased by over 13% between 2005 and 2010 and BC residents are now the primary consumers of fishing trip packages in the province.

Canadian and international tourists account for approximately 25% of tidal water recreational licences purchased in BC. In 2010, 47,269 of the anglers surveyed were not from BC. Of the international visitors, 47% reported they would not have come to BC had there not been tidal water fishing opportunities, while 32% of Canadian visitors would not have come.

4.2.3. Social and Cultural Significance

There is a lack of data on the location of recreational fishing sector dependent employment, and thus it is not possible to comment on the social significance of the fishery. However, it is recognized that recreational fishing activities - in particular, providers of fishing packages - often occur in more remote locations, providing important direct and indirect employment opportunities in these communities.

Regional estimates of angler expenditures attributable to groundfish activity illustrate differences between regions (Figure 2). In 2010, expenditures attributed to groundfish species (Halibut, Lingcod and rockfish) were highest in Haida Gwaii (\$21 million), where most expenditures were on packages, and lowest in the Johnston Strait area (almost \$8 million), where most expenditures were directly on fishing activity. The share of angler expenditures as a result of effort on groundfish varied between 13% (Georgia Strait) and 38% (Haida Gwaii) of the region's total direct expenditures, and 5% (Georgia Strait) and 38% (West Coast Vancouver Island) of the region's total package expenditures

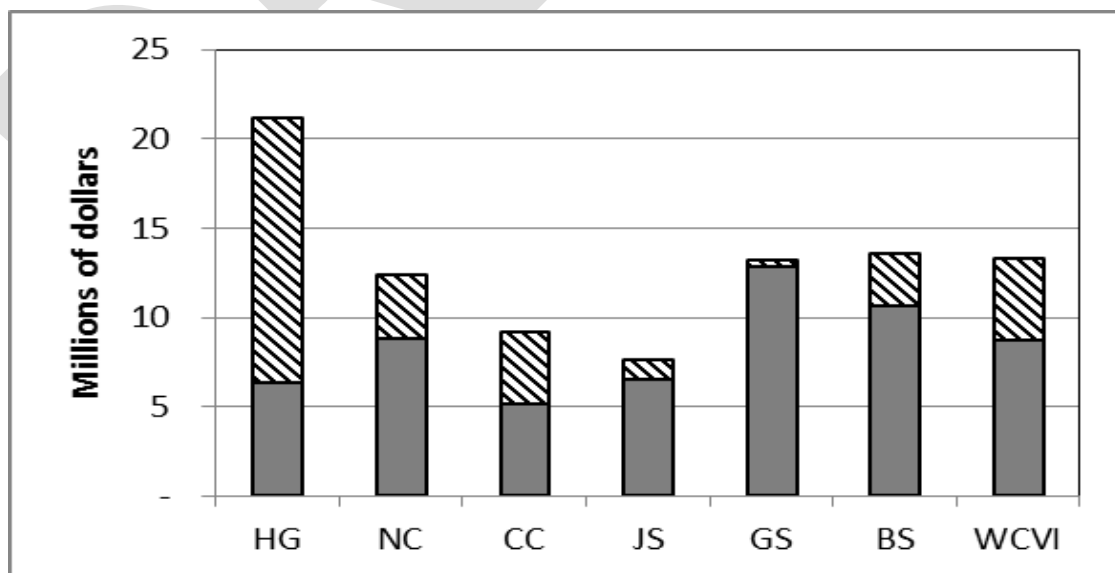


Figure 2. Angler 2010 direct expenditures (solid) and package expenditures (pattern) for groundfish (Halibut, Lingcod and rockfish) by region (millions of dollars). Note: HG =

Haida Gwaii; NC = North Coast; CC = Central Coast; JS = Johnston Strait; GS = Georgia Strait; BS = Barkley Sound; WCVI = West Coast Vancouver Island. Source: DFO internal analysis of National Survey of Recreational Fishing (2010).⁵

4.3. Commercial Fishery

The economic activity generated from commercial groundfish fishing sector includes harvesting, processing (including export activities) and the retail and distribution sectors. These activities provide benefits to the individual businesses owners as well as contribute directly and indirectly to the economy through expenditures on labour, supplies and services. This section is not able to address the activities associated with the retail and distribution sectors, and thus, may underestimate the economic activity associated with commercial harvest.

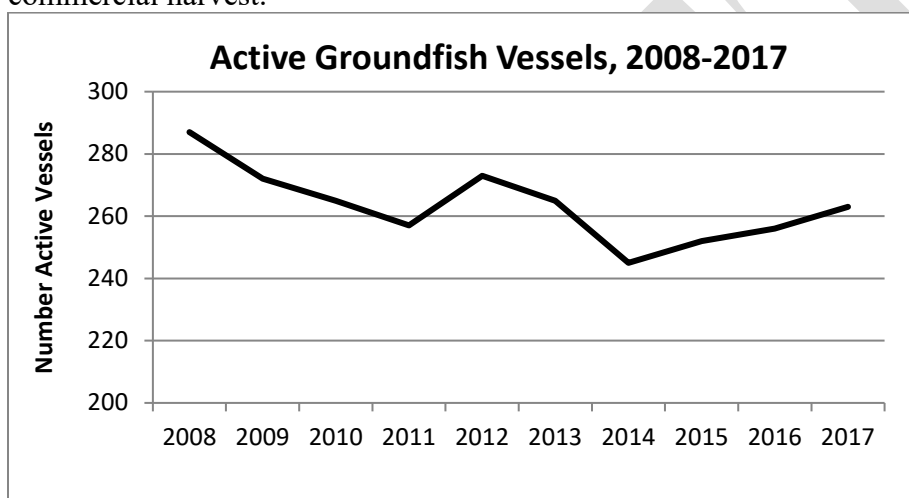


Figure 3. Active groundfish vessels in all fisheries through time.

4.3.1. Participation

The number of active vessels, and thus presumably crew, involved in the harvest of groundfish declined between 2007 and 2014, from 304 vessels to 245, but as of 2017 the number of active vessels has climbed to 263 (Figure 3). While groundfish vessels operate with between one and six individuals,⁶ it is not possible to estimate the number of unique individuals involved in the harvest of groundfish (e.g. owner-operators and hired captains and crew) and a change in the number of active vessels may not be associated with a change in full time equivalent employment.

⁵ Additional information on the history and vision for recreational fisheries can be found in the document "Vision for Recreational Fisheries in BC:" <http://www.pac.dfo-mpo.gc.ca/consultation/smon/sfab-ccps/docs/rec-vision-eng.pdf>

⁶ Nelson, S. 2011. Pacific Commercial Fishing Fleet: Financial Profiles for 2009. Prepared for Fisheries and Oceans Canada, Pacific Region. June. Pacific Commercial Fishing Fleets Financial Profiles Series, 2011-4. 160pp. Available at: <http://www.dfo-mpo.gc.ca/Library/343762.pdf>

A majority of groundfish is processed in the Lower Mainland even though the largest part of landings occurs on Vancouver Island. Figure 4 below shows estimated wages paid out in 2017 by the processing industry to its employees (for main groundfish species). In 2017 hake processing brought the highest total value of wages paid out to groundfish processing sector employees (\$22.5M). Hake remains one of the most important groundfish export species and the relatively high level of wages paid to the processing sector employees is associated with high volume of landings processed annually for export markets.⁷

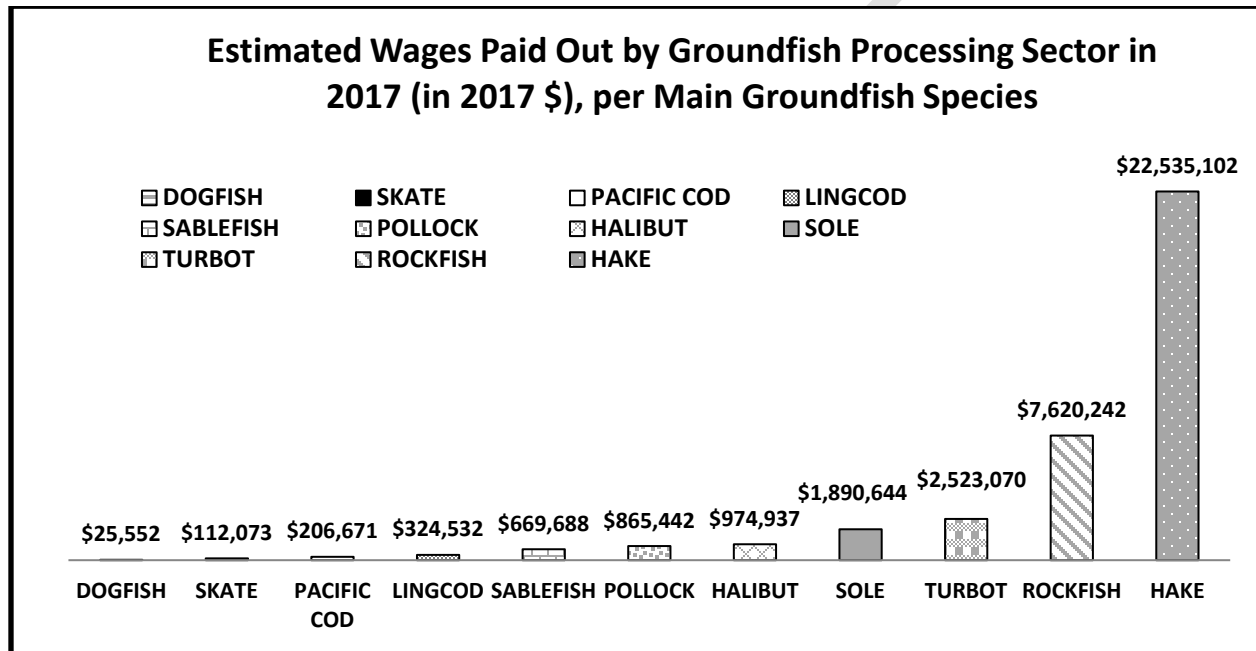


Figure 4. Estimated wages paid out by groundfish processing sector in 2017 (in 2017 \$), per main groundfish species. Source: DFO estimates based on Dockside Monitoring Program (DMP) landings; sales slip prices and GSGislason & Associates Ltd., 2017.

Indigenous participation in the commercial groundfish fishery may occur through communal commercial licences, or as individual ownership of licences and vessels. Information on individual ownership is not available. Communal commercial licences (F) identify communal Indigenous participation within the commercial groundfish fishery and allow Indigenous communities to designate vessels and individual fishers to carry out the fishing. The ATP and PICFI programs have been used by DFO to acquire commercial groundfish licence eligibilities (K - Sablefish, L - Halibut, ZN - Rockfish, T - Trawl). The ATP and PICFI programs have also acquired and distributed more than 16% of the total Halibut quota, and more than 16.5% of the Sablefish quota as well as small amounts of quota for most trawl species. In 2018, PICFI allocated groundfish licences and quota in agreements with 19 Commercial Fishing Enterprises.

4.3.2. Economic contribution

⁷ GS Gislason & Associates Ltd, 2017.

In 2017, the groundfish fishery was the largest component of the fish harvesting sector and it was responsible for approximately 72% of all BC seafood landings and about 46% of the total value of BC wild seafood landings. In terms of the processing labour intensity, in 2016 the groundfish fishery provided about 49% of all direct processing employment hours.⁸

The real landed value of the groundfish fishery appears to have increased by about 24% from 2014 to 2016, and then jumped again by 20% in the last year. Figure 5 below presents total BC groundfish landed value and volume for the last 10 years.

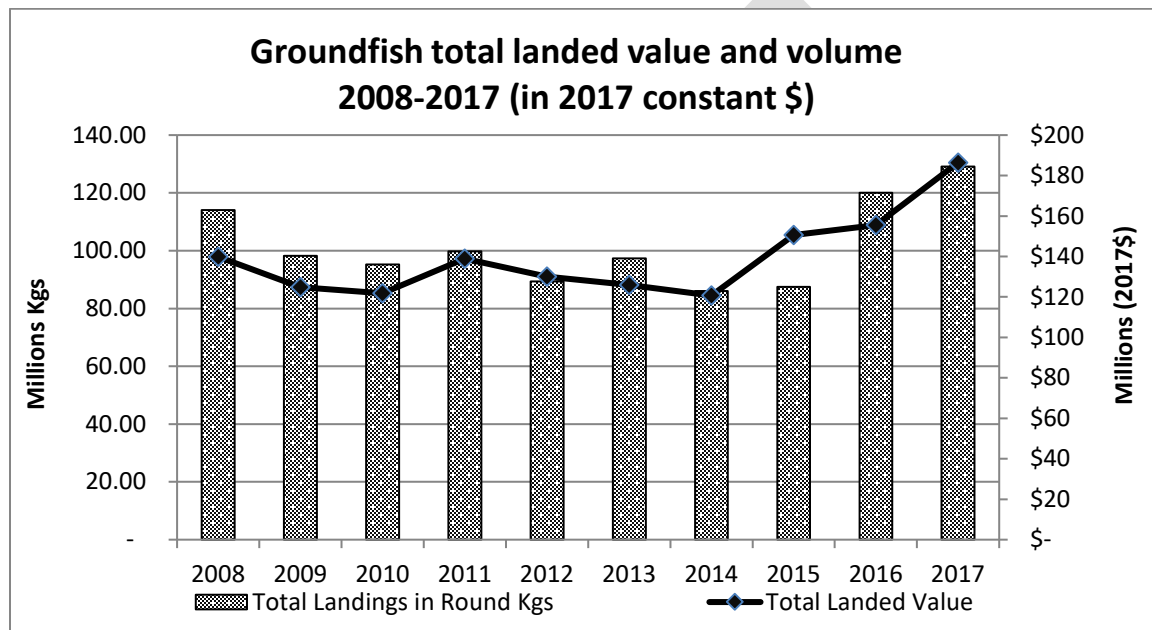


Figure 5. Groundfish total landed value and volume, 2008-2017 (in 2017 constant \$). Source: Landed volume and value calculated from Dockside Monitoring Program landings, Groundfish Fishery Observations System and sales slip prices.

The real wholesale value (see figure 6, below) of the fishery has been on a general slow decline between 2007-2014, and then stabilised in 2015. In 2016 the wholesale value rose to around \$300M, and the estimate for the wholesale values in 2017 suggest an upward movement from 2016.

⁸ GSGislason & Associates, August 2017 report and British Columbia Seafood Industry Year in Review. Various years. BC Ministry of Environment. <https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/statistics/industry-and-sector-profiles>.

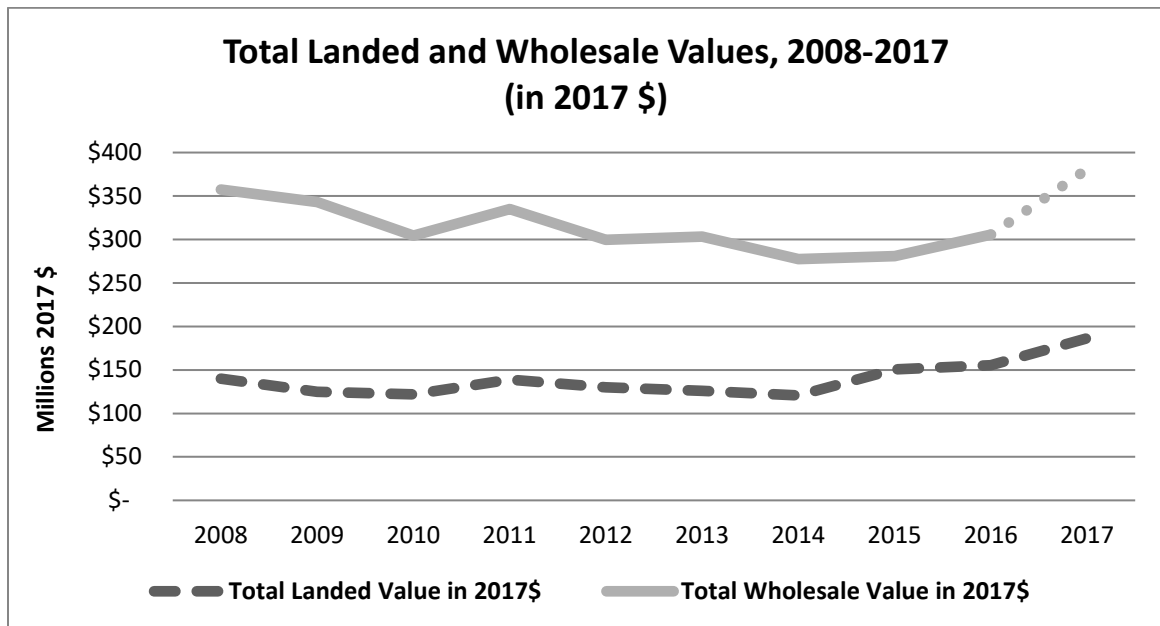


Figure 6. Total Landed and Wholesale Values, 2008-2017 (in 2017 \$). Source: Landed value calculated from Dockside Monitoring Program landings and sales slip prices. Wholesale value from British Columbia Seafood Year in Review 2007-2016. 2017 wholesale value estimated from landed value.

The export data does not allow for identification of all groundfish species (e.g. all rockfish); however, for most identifiable species export values had been steady until 2014, when values decreased (Figure 8). Cod, Halibut, Pollock and Lingcod export have been on an upward trajectory for the past 5 years, while Hake and Sablefish have been on a downward trajectory.

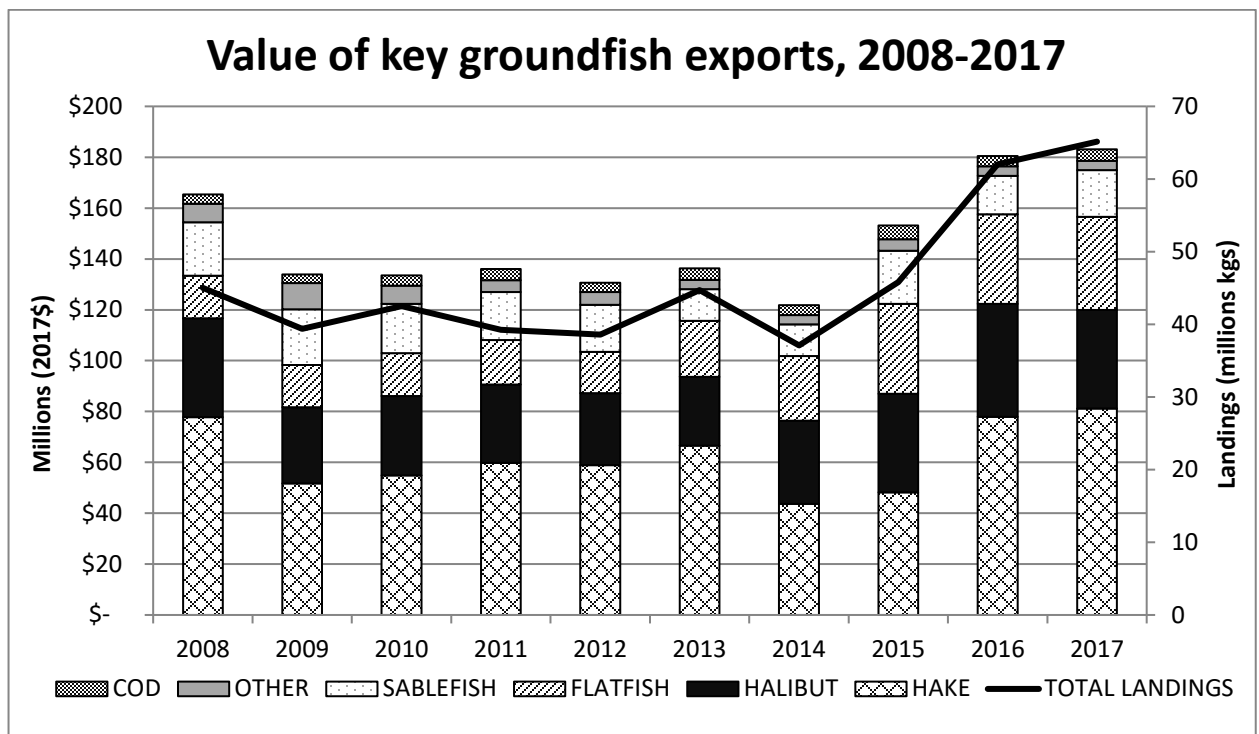


Figure 7. Value of Key Groundfish exports, 2008-2017 (in 2017\$). Source: Statistics Canada. EXIM. Accessed October 29, 2018. Note: Other Groundfish species include Dogfish, Lingcod, Pollock and other.

In August 2014, the Russian Federation imposed import ban on a range of food products including fish. The ban applied to products from Canada, the United States, Australia, the European Union and Norway. Between 2007 and 2013, seafood exports from BC to Russia had increased by 120%, with Hake accounting for an average of 81% of the total value. During the initial year of the ban (2014), the total volume of Hake exports was down by 28% from the 2013 level and the total value decreased by about 35%. From 2015 to 2017 the value of Hake exports increased by 86%, despite reduced prices, as China, Lithuania, Ukraine and other countries increased their imports. This increase in export volume was achieved without exports to the Russian Federation. There was a 20% decline in the average export price of Hake in 2013-2017, but this was offset by an increased volume of exports.

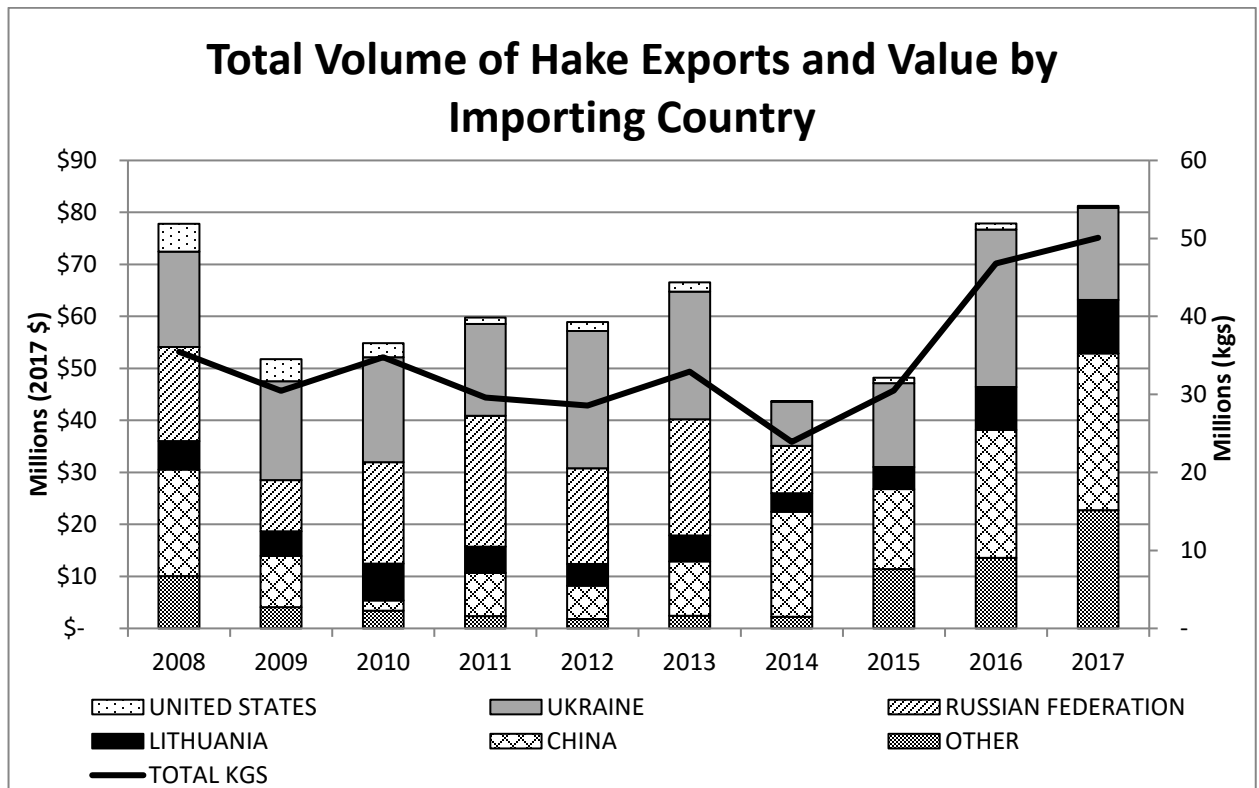


Figure 8. Total volume of Hake exports and total value of Hake exports by country, 2008-2017 (in 2017 \$). Source: Statistics Canada. EXIM. Accessed October 31, 2018 (for Total Volume of Exports, Exports to Russia and BC Export Prices) and Dockside Monitoring Program (for BC Landing Prices).

Much of the commercial groundfish fishery in BC has been managed using limited access and individual vessel-based quota, in some cases for decades. Integration of the groundfish fleets was formalized in 2009 after being initiated in 2006. Integration allows for a combination of temporary and permanent transfers of quota allocations between licences. In response, fishing vessel owners, including individuals and processors, have developed a range of business strategies that generally include licences in multiple fisheries.

While the number of groundfish licences from 2008-2017 has remained relatively stable for Trawl, Halibut, rockfish, and Sablefish, it decreased from 440-310 for Schedule II species (Lingcod/Dogfish). The number of active fishing vessels in each fishery remained variable across these 4 years. In 2014-2017 Trawl and Halibut were two of the most significant groundfish fisheries in terms of the total annual revenue stream per fishery type (Table 1 below).

Table 1. Annual number of active vessels, assigned licences and total annual revenue, per fishery (2014-2017). Total annual revenue in constant 2017 dollars.

| Trawl | | | | |
|--|----------|----------|----------|----------|
| | 2014 | 2015 | 2016 | 2017 |
| Active Vessels (#) | 56 | 52 | 51 | 53 |
| Total Revenue, per Fishery, in millions of 2017 \$ | \$ 43.48 | \$ 47.28 | \$ 55.53 | \$ 83.53 |
| % of total annual groundfish value | 29% | 30% | 30% | 69% |
| Halibut | | | | |
| | 2014 | 2015 | 2016 | 2017 |
| Active Vessels (#) | 149 | 155 | 161 | 167 |
| Total Revenue, per Fishery, in millions of 2017 \$ | \$ 52.86 | \$ 61.86 | \$ 66.61 | \$ 66.36 |
| % of total annual groundfish value | 35% | 40% | 36% | 55% |
| Sablefish | | | | |
| | 2014 | 2015 | 2016 | 2017 |
| Active Vessels (#) | 32 | 35 | 33 | 33 |
| Total Revenue, per Fishery, in millions of 2017 \$ | \$ 16.76 | \$ 31.20 | \$ 24.95 | \$ 27.05 |
| % of total annual groundfish value | 11% | 20% | 13% | 22% |
| Rockfish | | | | |
| | 2014 | 2015 | 2016 | 2017 |
| Active Vessels (#) | 47 | 48 | 43 | 37 |
| Total Revenue, per Fishery, in millions of 2017 \$ | \$ 4.82 | \$ 6.19 | \$ 4.88 | \$ 4.59 |
| % of total annual groundfish value | 3% | 4% | 3% | 4% |
| Lingcod/Dogfish | | | | |
| | 2014 | 2015 | 2016 | 2017 |
| Active Vessels (#) | 39 | 42 | 47 | 49 |
| Total Revenue, per Fishery, in millions of 2017 \$ | \$ 2.74 | \$ 4.00 | \$ 3.58 | \$ 4.87 |
| % of total annual groundfish value | 2% | 3% | 2% | 4% |

Source: DFO estimates. Note: In any given year each vessel might fish one or more species as it might hold multiple licences. Also, in any given year a certain number of licences stay inactive.

For Indigenous communities and individuals, participation in the commercial groundfish fishery provides socio-economic benefits from revenues generated by leasing, profits from harvesting and employment-generated income.

4.3.3. Social and Cultural Significance

There is a lack of information on communities of residence for groundfish vessel masters and crew. Consequently, it is not possible to comment of the social significance of the groundfish harvesting sector to BC communities. In the case of processing employment, past work has suggested a strong correlation between the off-loading location of groundfish and processing employments. There are smaller centres for which commercial fishing and fish processing are integral elements of the local economy. In some locations, groundfish represents a significant component of processing employment.⁹

There is a long history of commercial groundfish fishing in British Columbia. This history has been documented by several authors, although the link between current culture and the historical significance is less documented.¹⁰ The commercial Halibut fishery harvested Halibut back to the 1880's, but the harvest was largely marketed in Seattle until the arrival of the railroad.¹¹ From small shipments east in 1888, the fishery grew until it accounted for over 80% of Canadian Halibut landings by the 1940s. Prince Rupert, labelled the "Halibut Capital of the World", originally shipped via steamships but switched to rail in 1913, with dozens of rail cars of iced Halibut shipped each month.

The trawl fishery began with only a few nets in the early 1900s, with the otter trawl introduced in 1911. Initially most of the harvest was sold locally. The trawl fishery went through a number of periods of growth and decline, with growth during both World Wars. The World War II expansion was based largely on the development of the Dogfish liver oil market. The groundfish fishery remains part of the BC coast¹², with expanded methods, and provides seafood for domestic and international markets.

5. OTHER GROUND FISH MANAGEMENT ISSUES

5.1. Depleted Species Concerns

5.1.1. Species at Risk

The *Species at Risk Act* (SARA) came into force in 2003. The purposes of the Act are "to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of

⁹ Fraser and Associates. 2008. Linkages Between the Primary Fish Production and Fish Processing Sectors in British Columbia: Final phase 2 report. Prepared for the Department of Fisheries and Oceans, Pacific Region. Victoria, British Columbia.

¹⁰ For example: Forester, Joseph E. and Anne D. Forester. 1975. British Columbia's Commercial Fishing History. Hancock House Publishers Ltd., Saanichton, BC.

¹¹ Forester, Joseph E. and Anne D. Forester. 1975. British Columbia's Commercial Fishing History. Hancock House Publishers Ltd., Saanichton, BC.

¹² Robson, Peter A. and Michael Skog (editors). 1996. Working the Tides: A Portrait of Canada's West Coast Fishery. Harbour Publishing, Madeira Park, BC.

human activity and to manage species of special concern to prevent them from becoming endangered or threatened”. More information on SARA can be found at <https://www.registrelep-sararegistry.gc.ca>

In addition to the existing prohibitions under the *Fisheries Act*, under SARA it is illegal to kill, harm, harass, capture, take, possess, collect, buy, sell or trade any listed endangered, threatened or extirpated animal or any part or derivative of an individual. These prohibitions apply unless a person is authorized, by a permit, licence or other similar document issued in accordance with SARA, to engage in an activity affecting the listed species or the residences of its individuals. Species listed as special concern are not included in these prohibitions.

Endangered, threatened, and special concern species in Pacific region currently listed under SARA can be found at <http://www.dfo-mpo.gc.ca/species-especies/index-eng.htm>.

In the Pacific Region, the following SARA-listed species may be encountered in groundfish fisheries:

1. Basking Shark - Endangered
2. Blue Whale – Endangered
3. Bluntnose Sixgill Shark – Special Concern
4. Fin Whale – Threatened
5. Green Sturgeon – Special Concern
6. Grey Whale – Special Concern
7. Harbour Porpoise – Special Concern
8. Humpback Whale – Threatened
9. Killer Whale northern resident population – Threatened
10. Killer Whale offshore population – Threatened
11. Killer Whale southern resident population – Endangered
12. Killer Whale transient population – Threatened
13. Leatherback Sea Turtle – Endangered
14. Longspine Thornyhead – Special Concern
15. North Pacific Right Whale – Endangered
16. Roughey Rockfish Types I & II – Special Concern
17. Sea Otter – Special Concern
18. Sei Whale – Endangered
19. Steller Sea Lion – Special Concern
20. Tope (Soupfin) Shark – Special Concern
21. Yelloweye Rockfish – Special Concern

Marine or anadromous species of fish designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) that are currently under consideration for listing under SARA include:

- Bocaccio Rockfish – Endangered
- Darkblotched Rockfish – Special Concern

- Quillback Rockfish – Threatened
- North Pacific Spiny Dogfish – Special Concern
- Eulachon, Fraser River Population – Endangered
- Eulachon, Central Pacific Coast Population – Endangered
- Eulachon, Nass/Skeena Population – Special Concern
- Northern Fur Seal – Threatened
- Sockeye Salmon (Sakinaw DU) – Endangered
- Coho Salmon (Interior Fraser DU) – Threatened
- Chinook Salmon (Okanagan DU) – Endangered

5.1.2. Shark Codes of Conduct

Of the fourteen shark species in Canadian Pacific waters, three are listed under SARA (see above). The Basking Shark (*Cetorhinus maximus*) is listed as Endangered, and the Bluntnose Sixgill Shark (*Hexanchus griseus*) and Tope Shark (*Galeorhinus galeus*) are species of Special Concern. The primary threats to shark species have been identified as bycatch and entanglement. In order to address the conservation concerns with shark species, it is important that measures are taken to reduce the mortality of sharks resulting from these primary threats. As such, commercial fishing licences have been amended to include a Condition of Licence for Basking Sharks that specifies mitigation measures in accordance with SARA permit requirements.

Additionally, two 'Code of Conduct for Shark Encounters' documents have been developed to reduce the mortality of Basking Shark, as well as other Canadian Pacific shark species such as Bluntnose Sixgill and Tope Shark resulting from entanglement and bycatch in commercial, aquaculture, and recreational fisheries. These guidelines include boat handling procedures during visual encounters with Basking Sharks, as well as best practices for handling Canadian Pacific shark species during entanglement encounters. These documents have been posted online and can be found at the following URL links.

Code of Conduct for Basking Sharks:

http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/shark-requin/conduct_basking-conduite_pelerin-eng.html

Code of Conduct for Sharks:

<http://dfo-mpo.gc.ca/species-especes/publications/sharks/coc/coc-sharks/index-eng.html>

Industry has taken additional steps that complement these Codes of Conduct. Since the 2012/2013 season, the Groundfish trawl industry, in support of Fisheries and Oceans Canada's increased conservation efforts for some elasmobranchs particularly those listed as SARA species has supported a prohibition on the selling and retention of Pacific Basking Shark, Tope (Souffin) Shark or Bluntnose Sixgill Shark in the British Columbia groundfish trawl fishery.

Additionally, cognizant of the international efforts taken to protect shark species, the groundfish trawl industry has agreed to eliminate all directed fishing for shark species, other than North Pacific Spiny Dogfish, as of the 2012/2013 season.

Most current encounters of these and other shark species are not targeted, and the groundfish trawl industry has worked with the Department to develop practical measures and protocols that may minimize encounters and mortality. These protocols can be found in section 20 of the Groundfish Trawl Harvest Plan, which is Appendix 8 to this document.

Groundfish Hook and Line fisheries are also not permitted to retain sharks, other than North Pacific Spiny Dogfish. DFO has also introduced a prohibition on shark finning. See harvest plan appendices for further details.

5.1.3. Whale, Leatherback Sea Turtle and Basking Shark Sightings or Entanglements

The Department welcomes assistance in the reporting of any whale, leatherback sea turtle or basking shark entanglement or sighting. While there are many whale species found in Pacific Canadian waters, sightings of Basking Shark and Leatherback Sea Turtles are infrequent. The collection of sighting data is useful to scientists in determining population size and species distribution and aids in recovery efforts under the Species at Risk Act (SARA).

Marine Mammal Incident Reporting Hotline

The Department is responsible for assisting marine mammals and sea turtles in distress. If your vessel strikes a whale, or if you observe an entangled, sick, injured, distressed, or dead marine mammal in B.C. waters, please contact the B.C. Marine Mammal Response Network Incident Reporting Hotline immediately:

1-800-465-4336 OR VHF CHANNEL 16

What to report:

- Your name and contact information
- Date and time of incident
- Species
- Animal alive/dead
- Nature of injury
- Location: Latitude/Longitude coordinates, landmarks
- Pictures/Video taken



To report whale or turtle sightings contact the BC Cetacean Sighting Network:

Toll free: 1.866.I.SAW.ONE (1-866-472-9663)

Email: sightings@ocean.org

Website: <http://wildwhales.org/>

App : WhaleReport

To report basking shark sightings contact the Basking Shark Sightings Network:

Toll free: 1-877-50-SHARK (1-877-507-4275)

Email: BaskingShark@dfo-mpo.gc.ca,

Website: www.pac.dfo-mpo.gc.ca/SharkSightings

5.1.4. Whale Depredation

Depredation (the removal of fish from fishing gear) by killer whales and sperm whales has been reported in the groundfish longline fishery in British Columbia and Alaska.

Depredation is a learned behaviour that can spread throughout whale social groups and once established is impossible to eliminate. It is critical that harvesters do not encourage this learning by allowing whales to associate obtaining fish with fishing activity; encouraging this behaviour will quickly lead to significant losses for harvesters.

The most important approach to prevent this from spreading is by NOT feeding whales directly or indirectly and not hauling gear in the vicinity of killer whales and sperm whales. Typically killer whales pass quickly through an area allowing fishing to resume. It is also recommended that you advise other fish harvesters in the area if you encounter depredation. Additional tips on avoiding depredation events can be found in the DFO Marine Mammal Bulletin #2.

If you experience depredation by whales, please report the incident by email MarineMammals@dfo-mpo.gc.ca or by calling (604) 666-9965. Reporting all incidents will assist DFO managers and fish harvesters in understanding this problem and help in developing strategies to avoid it.

5.1.5. Southern Resident Killer Whales

In May 2018, DFO determined that the Southern Resident Killer Whale (SRKW) is currently facing an imminent threat to its survival and recovery in Canada. Given this population status, DFO will be undertaking a review of where there may be potential fishery-related interactions with SRKW. In the future, DFO may consider the development of management measures aimed at reducing the threat of fisheries-related interactions and also where additional mitigation measures can be developed. DFO will continue to engage and consult with industry and stakeholders through the existing Integrated Fisheries Management Plan processes.

5.1.6. Rockfish Conservation Areas

Between 2003 and 2007, DFO established 164 Rockfish Conservation Areas (RCAs) in the Pacific Region for the long-term protection and conservation of a portion of inshore rockfish populations and their habitat. Information on Rockfish Conservation Areas is available online at: <http://dfo-mpo.gc.ca/rockfish-conservation>.

DFO is currently undertaking a multi-year review of the conservation effectiveness of RCAs. A review of RCAs is timely as it has been more than ten years since they were established. In addition, some RCAs potentially could qualify as “other effective area-based conservation measures” (“Other Measures”), and contribute to Canada’s Marine Conservation Target of protecting ten percent of marine waters by 2020.

The RCA Review has three areas of focus:

1. RCA Boundary/Location Review – an assessment of ecological attributes in RCAs to help prioritize those RCAs that may have lower conservation benefit to rockfish;
2. Risk assessment of permitted human activities in RCAs;

These two reports will be published through the Canadian Science Advisory Secretariat (CSAS) and will subsequently inform the Review.

3. Engagement with First Nations and stakeholders. The conservation effectiveness of RCAs might be improved by adjusting boundaries or through relocation, changing management measures, conducting more research, and increasing monitoring and compliance. RCAs in the Northern Shelf Bioregion have been selected for the first phase of engagement starting in the fall of 2018. Engagement in other bioregions will occur in subsequent years.

5.1.7. Bocaccio and Yelloweye Rockfish Conservation

Based on updated science information and DFO’s policy document “Guidance for the Development of Rebuilding Plans under the Precautionary Approach Framework”, the Department has established rebuilding plans for Bocaccio and Yelloweye Rockfish (Outside and Inside populations). The rebuilding plans, described in Appendix 9 of this IFMP, define mortality caps and stepped reductions in harvest opportunity. The rebuilding plans account for Indigenous fishing opportunities.

The Department has worked with fishing interests to develop measures that will reduce mortality and enable stock rebuilding. Please refer to Appendix 9, the harvest plans in the appendices of this IFMP, and relevant conditions of licence for further information on the measures being undertaken. The Department continues to review the efficacy of these measures at the end of each fishing season and considers any additional measures necessary to achieve stock rebuilding.

5.2. Oceans and Habitat Considerations

The *Oceans Act* came into force in 1997. This legislation provides a foundation for an integrated and balanced national oceans policy framework supported by regional management and implementation strategies. In 2002, Canada’s Oceans Strategy was released to provide the policy framework and strategic approach for modern oceans management in estuarine, coastal, and marine ecosystems. As set out in the *Oceans Act*,

the strategy is based on the three principles of sustainable development, integrated management, and the precautionary approach.

For more information on the *Oceans Act* and other relevant publications, please visit: <http://www.dfo-mpo.gc.ca/oceans/index-eng.html>

The *Oceans Act*, the *Canada Wildlife Act*, and the *National Marine Conservation Areas Act* have given rise to several initiatives on the Pacific coast, which are listed below. As goals, objectives, and management plans are finalized for these initiatives, the Department's management of fisheries will be adapted as appropriate, in consultation with interested parties through Integrated Fisheries Management Plan processes.

5.2.1. Canada's Marine and Coastal Areas Conservation Mandate

In October 2017, the Government of Canada announced that it has reached its first milestone of protecting 5% of marine and coastal areas. The federal government remains committed to protecting 10% of Canada's marine and coastal areas by 2020. The 2020 target is both a domestic target (Canada's Biodiversity Target 1) and an international target as reflected in the Convention on Biological Diversity's Aichi Target 11 and the United Nations General Assembly's 2030 Agenda for Sustainable Development under Goal 14. The 2017 and 2020 targets are collectively referred to as Canada's marine conservation targets. More information on the background and drivers for Canada's marine conservation targets is available at <http://www.dfo-mpo.gc.ca/oceans/conservation/index-eng.html>.

To meet this target, Canada is establishing Marine Protected Areas (MPAs) and "other effective area-based conservation measures" ("Other Measures"), in consultation with industry, non-governmental organizations, and other interested parties. An overview of these tools, including a description of the role of fisheries management measures that qualify as Other Measures is available <http://www.dfo-mpo.gc.ca/oceans/mpa-zpm-aoi-si-eng.html>

Specific management measures have been established for groundfish. More information on these management measures and conservation objectives is provided in this subsection of the IFMP.

On the Pacific coast, between now and 2020, Canada will be:

- advancing the work already underway in areas progressing towards establishment including the Scott Islands marine National Wildlife Area;
- exploring opportunities for establishing new, large *Oceans Act* MPAs in pristine offshore areas;
- exploring opportunities to establish additional *Oceans Act* MPAs in areas under pressure from human activities through advancing MPA network development in the Northern Shelf Bioregion;

- identifying existing and establishing new “other effective area-based conservation measures” based on advice provided by the Canadian Science Advisory Secretariat (such as fisheries closures), particularly to protect sensitive sponge and coral concentrations; and,
- examining how to facilitate the designation process for *Oceans Act* MPAs, without sacrificing science or the public’s opportunity to provide input.

5.2.1.1. Pacific North Coast Integrated Management Area (PNCIMA)

Endorsed in February 2017, the Pacific North Coast Integrated Management Area (PNCIMA) plan was developed, in collaboration with the Province of British Columbia, First Nations and stakeholders to help coordinate various ocean management processes and to complement existing processes and tools including IFMPs. High level and strategic, the plan provides direction on integrated, ecosystem-based and adaptive management of marine activities and resources in the planning area as opposed to detailed operational direction for management. The plan outlines an ecosystem-based management (EBM) framework for PNCIMA that has been developed to be broadly applicable to decision-makers, regulators, community members and resource users alike, as federal, provincial and First Nations governments, along with stakeholders, move together towards a more holistic and integrated approach to ocean use in the planning area.

The endorsement of the PNCIMA plan supports the Government of Canada’s commitment to collaborative oceans management for the Pacific North Coast and provides a joint federal-provincial-First Nations planning framework for conservation and the management of human activities in the Pacific North Coast. The plan includes marine protected area network development as a planning priority. It is anticipated that the network development will support the Government of Canada’s commitment to protecting 10% of Canada’s marine and coastal areas by 2020.

An electronic copy of the plan is available online at: www.pncima.org

5.2.1.2. Marine Protected Area Network Planning

The Oceans Act mandates DFO’s Minister with leading and coordinating the development and implementation of a national network of marine protected areas (MPAs). Nationally, MPA Network planning is proceeding in four priority bioregions under the National Framework for Canada’s Network of Marine Protected Areas, including the Northern Shelf Bioregion (NSB). The NSB extends from the top of Vancouver Island (Quadra Island/ Bute Inlet) and reaches north to the Canada - Alaska border. This bioregion has the same footprint as PNCIMA.

In the Pacific region, the Department and other federal agencies are collaborating with the Government of B.C. and Pacific North Coast First Nations to develop a MPA network for the NSB. The planning process in the NSB is guided by the Canada-BC MPA

Network Strategy (2014) and the National Framework for Canada's Network of Marine Protected Areas. Stakeholders and local governments are participating in the planning process through advisory committees at regional and sub-regional scales, workshops, and sector meetings.

Through the Network Action Plan, the MPA Network planning process will identify areas for protection. These areas will be established and implemented on a priority basis through a variety of legislative or regulatory tools.

More information on MPA Network Planning can be found at: <http://mpanetwork.ca>

5.2.1.3. Marine Protected Areas (MPAs)

DFO is also responsible for designating Marine Protected Areas (MPAs) under Canada's *Oceans Act*. Under this authority, DFO has designated three MPAs in the Pacific Region.

MPA regulations and management plans articulate any restrictions on activities taking place within the MPA, where applicable. More information on MPAs can be found at: <http://dfo-mpo.gc.ca/oceans/mpa-zpm/index-eng.html>, and in Appendix 10 of this IFMP.

5.2.1.3.1. Endeavour Hydrothermal Vents (EHV) MPA

The EHV MPA was designated in 2003. The hydrothermal vents lie in waters 2,250 m deep 250 km southeast of Vancouver Island. There is occasional commercial fishing in the MPA, and pelagic fishing is not considered to be in conflict with the objectives of the MPA. Any licenced fishing in the MPA takes place very near the ocean surface and will continue as it does not significantly impact the hydrothermal vents ecosystem. More information can be found online at: <http://www.dfo-mpo.gc.ca/oceans/mpa-zpm/endeavour-eng.html>. All commercial groundfish fisheries are restricted within the Endeavour MPA.

5.2.1.3.2. SGaan Kinghlas-Bowie Seamount (SK-B) MPA

The SK-B MPA, designated under Canada's *Oceans Act* in 2008, is 180 km west of Haida Gwaii rising from a depth of over 3,000 m to within 24 m of the sea surface, making it one of the shallowest seamounts in the north Pacific, and the shallowest in Canada. The MPA comprises the SGaan Kinghlas - Bowie, Hodgkins and Davidson Seamounts of the Kodiak-Bowie seamount chain and has a total area of approximately 6,131 square kilometres.

The SK-B MPA has been established to conserve and protect the unique biodiversity and biological productivity of the area's marine ecosystem, including and the surrounding waters, seabed, and subsoil.

The MPA is cooperatively managed by DFO and the Council of the Haida Nation (CHN) through the SK-B Management Board (the Board), which was established under a Memorandum of Understanding (MOU), signed in 2007. The Board has equal

representation from DFO and the CHN and operates on a consensus basis in developing recommendations to Canada and the Haida Nation on the management and planning of the MPA. Under the MOU, the Board is mandated to develop a management plan for the MPA. To fulfil this mandate, the Board collaborated with stakeholders by requesting and considering advice from the integrated, cross sector SK-B Advisory Committee.

Since 2018, DFO and the CHN, have been co-developing the SK-B MPA Management Plan which is now near completion. The Plan is intended to guide the conservation and protection of the SK-B ecosystem and support the development of a monitoring plan for the MPA. Key elements of the Plan will include: cooperative governance, management framework, conservation and management goals and objectives; and implementation priorities

Commercial fishing activities within the MPA have been managed through the Integrated Fisheries Management Plan process. In January 2018, the Government of Canada and the Haida Nation agreed to increase the level of protection at the SK-B MPA by closing all bottom-contact fishing. This closure shows a precautionary management approach to protection of sensitive benthic habitats in support of the MPA objectives. This decision has resulted in the MPA being closed to all commercial fishing activities. The decision also applies to bottom-contact recreational and aboriginal fisheries. This decision also aligns with the DFO recent decision to close bottom contact fishing on all seamounts in the Offshore Pacific Area of Interest (AOI) and manage impacts to coral and sponges in the Hecate Strait and Queen and Charlotte Sound Glass Sponge Reefs Marine Protected Areas.

5.2.1.3.3. Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs (HS/QCS) MPA

The HS/QCS MPA, designated under the *Oceans Act* in February 2017 is located in the Northern Shelf Bioregion of the Pacific Region, southeast of Haida Gwaii, North and South of the entrance to the Douglas Channel. The reefs are made up of large colonies of glass sponges and are estimated to be 9,000 years old. They are located at depths of 140 m to 240 m below the surface. The MPA is comprised of three individual areas known as the Northern Reef, the two Central Reefs, and the Southern Reef. Together these three areas cover approximately 2,410 km².

The HS/QCS MPA has been established to conserve the biological diversity, structural habitat, and ecosystem function of the glass sponge reefs. The slow growth and fragility of these sponges make the reefs particularly vulnerable to damage and disturbance since recovery may take tens to several hundreds of years. Due to the highly sensitive nature and structure of the reefs, human activities in and around the reefs could pose a risk to the structural habitat, biological diversity and ecosystem function of the reefs. Each glass sponge reef has a Core Protection Zone (CPZ) (two CPZ in the Central Reef), a Vertical Adaptive Management Zone (VAMZ), and an Adaptive Management Zone (AMZ).

The CPZ contain the sponge reefs and are designed to provide the highest level of protection to the reefs. The Core Protection Zone consists of the seabed, the subsoil to a

depth of 20m and the water column above the seabed to a depth of 100 m below the sea surface for the Northern Reef, 120 m for the Central Reef (Zones A and B), and 146 m for the Southern Reef. The VAMZ consist of the water column that extends above the Core Protection Zones to the sea surface. The AMZ consist of the seabed, subsoil and waters of the Marine Protected Areas (i.e., Northern, Central, and Southern Reefs) that are not part of the CPZ or the VAMZ.

In accordance with the HS/QCS MPA Regulations, it is prohibited to:

Carry[ing] out any activity that disturbs, damages, destroys or removes any living marine organism or any part of its habitat or is likely to do so; or carrying out any scientific research or monitoring, or an educational activity, unless it is part of an activity plan that has been approved by the Minister.

There are exceptions to these prohibitions that identify activities that may be allowed to occur in the MPA in certain zones. The following activities are allowed in the MPA:

- Certain fishing activities in the AMZ and VAMZ. Fishing activities will be managed in accordance with integrated fisheries management plans, annual variation orders, regulations and license conditions in a manner consistent with the conservation objective of the MPA. In order to protect the sponge reefs, additional fisheries management measures for bottom contact and midwater trawl fisheries are currently required throughout the MPA.);
- Navigation activities throughout the MPA; however, anchoring is not allowed in the CPZ;
- The laying, maintenance or repair of cables in the AMZ;
- Activities carried out for public safety, public health, national defense, national security, law enforcement or in response to an emergency; and
- Scientific research, monitoring and educational activities that have been approved by the Minister.
- All fishing, anchoring, and cable installation, maintenance and repair are prohibited in the core protection zones.

Under the HS/QCS MPA Regulations, the CPZ are closed to all commercial, recreational, and Aboriginal fishing. Anchoring and cable installation, maintenance, and repair are also prohibited in the CPZ.

Management measures under the *Fisheries Act* restricting bottom contact and mid water trawl fishing activity in the MPA were implemented as of February 21, 2017. The VAMZ and AMZ are currently closed to all commercial bottom contact fishing activities for prawn, shrimp, crab, and groundfish (including Halibut), as well as for midwater trawl for hake. These closures will be in effect until further notice. For more detail on the

fishery closure within the Hecate Strait and Queen Charlotte Sound Glass Sponge Reef MPA, please review the FN0198 Fishery Notice.

A management plan will be developed for the MPA and will seek to align the plan with relevant IFMPs. The management plan will be developed in collaboration with First Nations and in consideration of advice from an advisory committee, stakeholders through existing processes, and the public. This management plan will elaborate on the conservation and management objectives for the MPA and will address matters such as monitoring, enforcement and compliance.

Further details on the locations of these areas can be found in the relevant harvest plan appendices to this IFMP and at: <http://dfo-mpo.gc.ca/oceans/mpa-zpm/hecate-eng.html>.

5.2.1.3.4. Offshore Pacific Area of Interest

In May 2017, DFO announced a new Area of Interest (AOI) within the Offshore Pacific Bioregion off the coast of British Columbia, with the intention of making it one of Canada's largest Marine Protected Areas by 2020. This Offshore Pacific AOI is an important part of DFO's national approach to achieve the Government of Canada's Marine Conservation Target to increase Canada's marine and coastal protected areas from 0.9% to 10% by 2020.

The Offshore Pacific AOI is located in the southern portion of the Offshore Pacific Bioregion extending from the continental shelf break, west of Vancouver Island, to the Exclusive Economic Zone (EEZ) boundary with an area of approximately 140,000 km². At its closest point, the AOI is approximately 80 km from the west coast of Vancouver Island, but on average is 100-150 km off the coast and extends south to the Canada-US border. The Offshore Pacific AOI will protect ecologically and biologically significant areas (EBSAs), including seamounts and hydrothermal vents.

An Offshore Pacific AOI Advisory Committee has been established to provide a forum for engagement for the AOI and provide feedback on the proposed design of the potential MPA and the associated management approach. The interim conservation objective of the AOI is to contribute to the protection and conservation of the unique seafloor features and the ecosystems they support in Canada's Offshore Pacific Bioregion, and was established based on discussions with DFO Science. This interim conservation objective will be finalized after consultations are complete. The conservation objective will guide the development of regulations and future management actions within the potential MPA.

Offshore Pacific Seamounts and Vents Closure

In advance of potential MPA designation, fishery closures to restrict commercial and recreational bottom-contact fishing activities within the Offshore Pacific AOI were announced in October 2017. At approximately 83,000 km² in size, the closure serves to protect and conserve unique seafloor features, including seamounts and hydrothermal vents, identified through a Canadian Science Advisory Secretariat process as well as a number of species of regional importance, including corals, sponges, and other endemic or rare species.

The closure boundary was informed by available science and input received during consultations with First Nations, federal and provincial government agencies, industry and conservation organizations, and supports the AOI's interim conservation objective of contributing to the protection and conservation of the unique seafloor features and the ecosystems they support in Canada's Offshore Pacific Bioregion. Specific details of the closure can be found in the Variation Order below.

More information on the Offshore Pacific AOI can be found on the internet here: <http://www.dfo-mpo.gc.ca/oceans/aoi-si/offshore-hauturiere-eng.html>

More information on the Offshore Pacific seamounts and vents closure can be found on the internet here: <http://www.dfo-mpo.gc.ca/oceans/oeabcm-amcepz/refuges/offshore-hauturiere-eng.html>

5.2.1.3.5. Race Rocks Area of Interest

Work is ongoing to consider MPA designation for the Race Rocks area off Rocky Point south of Victoria (currently designated as a Provincial Ecological Reserve).

5.2.1.4. National Marine Conservation Area Reserves (NMCARs)

5.2.1.4.1. Gwaii Haanas

Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site is a 5000 km² land-and-sea protected area in the southern part of Haida Gwaii (formerly the Queen Charlotte Islands), approximately 100 kilometres off the north coast of British Columbia. The Haida Nation designated the area a Haida Heritage Site in 1985. The terrestrial part of Gwaii Haanas was designated a National Park Reserve by the Government of Canada soon after, and Canada and the Haida Nation have been managing the area cooperatively since 1993. In 2010, the Gwaii Haanas marine area was designated a National Marine Conservation Area Reserve.

Gwaii Haanas is managed by the Archipelago Management Board (AMB), a cooperative body made up of three representatives of the Council of the Haida Nation and three representatives of the Government of Canada (Fisheries and Oceans Canada (1) and Parks Canada (2)). The AMB is guided by the *Gwaii Haanas Agreement (1993)* and the *Gwaii Haanas Marine Agreement (2010)*, which describe how Canada and the Haida Nation will manage Gwaii Haanas cooperatively.

In November 2018, following an extensive consultation process, a new management plan for Gwaii Haanas was approved by Canada and the Haida Nation. The Gina'Waadluxan KilGuhlGa Land-Sea-People plan includes a shared vision, guiding principles based on Haida cultural values, goals and objectives, and zoning for the land and the sea. The plan will be in place for the next decade.

To develop the zoning plan, key ecological and cultural features were identified using a range of ecological data and traditional knowledge. A set of design considerations, which included minimizing socio-economic impacts, was used to develop an initial zoning proposal. This proposal was reviewed with stakeholder groups including the commercial and recreational fishing sectors and major changes were made to the zoning plan based on advice the AMB received.

The final zoning plan includes several areas of strict protection, where commercial and recreational fishing are prohibited. Please see Appendix 10 of this IFMP for descriptions of these closures.

A monitoring plan will be developed to assess the effectiveness of zoning in achieving ecological and cultural objectives. Regular monitoring within and outside of strict protection zones will illustrate ecosystem responses and facilitate adaptive management of the Gwaii Haanas marine area.

Implementation of the Land-Sea-People plan will also involve cooperative management of fisheries using an ecosystem-based management framework, and monitoring activities will be supported through partnerships. For more information on Gwaii Haanas and the Archipelago Management Board, visit www.parksCanada.gc.ca/gwaiihaanas. The Land-Sea-People plan can be downloaded at <https://www.pc.gc.ca/en/pn-np/bc/gwaiihaanas/info/consultations/gestion-management-2018>.

Users of the Gwaii Haanas marine area should be aware that, as specified in the *Gwaii Haanas Agreement*, there is "no extraction or harvesting by anyone of the resources of the lands and non-tidal waters of the Archipelago for or in support of commercial enterprise" (s3.3). There are specific requirements for visiting the Gwaii Haanas terrestrial area and advanced planning is necessary. Please contact the Gwaii Haanas administration office at 1-877-559-8818 for further information.

5.2.1.4.2. Southern Strait of Georgia

Parks Canada, in partnership with the Government of British Columbia, launched a feasibility assessment for a National Marine Conservation Area Reserve (NMCAR) in the southern Strait of Georgia in 2004. Since then, consultations with First Nations, key stakeholders, communities and the public have occurred. Informed by those discussions, a proposed boundary for consultation was announced by the provincial and federal Ministers of Environment in 2011.

Since 2011, the two governments have been consulting with First Nations, local governments and industry. A preliminary concept is currently being developed to help advance consultations on the feasibility assessment. If the results of the feasibility assessment indicate that establishment of a NMCAR is practical and feasible, an establishment agreement between the Governments of Canada and British Columbia will be negotiated and an interim management plan developed. If the NMCAR is determined

to be feasible, further consultations related to establishment agreements and Indigenous rights will also take place with First Nations. Commercial and recreational fishing sectors, communities, landowners, recreation and environmental organizations and other stakeholders will also have opportunities to provide input to the development of the interim management plan.

Parks Canada information on the proposed NMCAR in the southern Strait of Georgia is available on the internet at: <https://www.pc.gc.ca/en/amnc-nmca/cnamnc-cnmca/dgs-ssg>

5.2.1.5. Marine National Wildlife Areas (NWAs)

Under the *Canada Wildlife Act*, Environment and Climate Change Canada may establish marine National Wildlife Areas (NWAs). The Scott Islands marine National Wildlife Area, located off the northern tip of Vancouver Island, has been proposed for designation through amendment to the Wildlife Area Regulations. DFO would continue to regulate and administer fisheries within the proposed area. Environment and Climate Change Canada and DFO will develop a collaborative approach and agreement regarding management of fisheries in the area.

More information on the Scott Islands marine NWA can be found at: <http://www.ec.gc.ca/ap-pa/?lang=En&n=90605DDB-1>.

More information on NWAs across Canada can be found at: <http://www.ec.gc.ca/ap-pa/default.asp?lang=En&n=2BD71B33-1>

5.2.1.6. Strait of Georgia and Howe Sound Glass Sponge Reef Conservation Areas

Effective June 12, 2015 all commercial and recreational bottom contact fishing activities for prawn, shrimp, crab and groundfish (including Halibut) were prohibited within 150 metres of nine glass sponge reefs in the Strait of Georgia and the entrance of Howe Sound near Horseshoe Bay. On April 1, 2016 bottom-contact First Nations' Food, Social and Ceremonial (FSC) fisheries for prawn, shrimp, crab and groundfish were also prohibited within these conservation areas. Closure locations are set out in Appendix 10 to this IFMP.

The nine glass sponge reefs protected under the Strait of Georgia and Howe Sound Glass Sponge Reef Conservation Initiative are included as an "Other Effective Area Based Conservation Measure" under Canada's Marine Conservation Target contributing <0.01% to the National target, or approximately 29 km² of sensitive benthic areas. In 2017, DFO Science in collaboration with Natural Resources Canada (NRCan) analysed data from Citizen Scientists at the Marine Life Sanctuary Society, NRCan, as well as visual survey data collected by DFO Science, to get a complete assessment of glass sponge reefs' spatial extent and status throughout Howe Sound and in doing so produced a report called *Glass Sponge Aggregations in Howe Sound: Locations, Reef Status, and Ecological Significance Assessment*.

In that study, DFO Science identified a total of 18 new glass sponge sites in Howe Sound, nine of those sites were deemed to be ecologically significant while nine others require further ground-truthing to confirm their status and ecological significance. DFO is undergoing consultations to protect the nine new sites deemed to be ecologically significant in Howe Sound, and will be conducting future research to ground-truth the last nine sites.

More information is available at <http://www.dfo-mpo.gc.ca/oceans/ceccsr-cerceef/closures-fermetures-eng.html>

5.2.1.7. Rockfish Conservation Areas

In the Pacific Region, Rockfish Conservation Areas (RCAs) have been prioritized for review as potential Other Measures that may contribute to Canada's Marine Conservation Target in 2020.

5.2.1.8. Cold-Water Coral and Sponge Conservation Strategy

DFO's Pacific Region Cold-water Coral and Sponge Conservation Strategy encompasses short and long-term goals and aims to promote the conservation, health and integrity of Canada's Pacific Ocean cold-water coral and sponge species. The Strategy also takes into consideration the need to balance the protection of marine ecosystems with the maintenance of a prosperous economy. It was created with input from stakeholders throughout the Pacific Region and will help regional partners and stakeholders to understand how DFO's existing programs and activities tie into cold-water coral and sponge conservation.

5.2.2. Habitat and Coral Protection Measures in the Groundfish Trawl Fishery

In 2012, the Canadian Groundfish Research and Conservation Society (on behalf of the British Columbia commercial groundfish trawl industry) and the Pacific Marine Conservation Caucus agreed to innovative management measures that restricted trawl fishing to provide protection of coral and sponge habitat off the west coast of Canada. The objectives were:

- To reduce and manage the catch of corals and sponges by the British Columbia groundfish bottom trawl fishery;
- To reduce the impact of the British Columbia groundfish bottom trawl fishery on low energy and low productivity environments in deep waters off of the west coast of British Columbia;
- To ensure that the British Columbia groundfish bottom trawl fishery does not disproportionately affect any one particular benthic habitat type;
- To ensure that the British Columbia groundfish bottom trawl fishery is restricted to areas previously trawled between 1996-2011; and
- To improve the performance of the British Columbia groundfish bottom trawl fishery against habitat criteria used to evaluate the sustainability of fisheries.

Specific management measures adopted include:

- Freezing the footprint of groundfish bottom trawl activities;
- Establishing a combined habitat by-catch conservation limit (HBCL) for coral and sponges;
- Allocating the HBCL among groundfish trawl licence holders and allow for transferability within specified vessel caps with the groundfish trawl fleet; and
- The establishment of an encounter protocol for trawl tows where combined coral and sponge catch exceeds 20 kg in a single tow.

The Department accepted these management measures and implemented them on April 2, 2012 for the groundfish bottom trawl fishery. Areas open and closed to the trawl fleet as a result of these measures are outlined in section 4 of Appendix 8 to this IFMP.

5.2.3. Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas

Benthic ecosystems provide habitat, support food webs and are an important source of biodiversity. They also support many aquatic species that play an important social, cultural and economic role in the lives of many Canadians. It is imperative that these ecosystems are considered when managing oceans activities, including the harvest of fisheries resources. This includes the consideration of target species, non-target species, the ecosystems of which they are a part and the impact of fishing on these ecosystems when making management decisions. This is the basis of an ecosystem approach to fisheries management, which, along with a precautionary approach, is key to the Sustainable Fisheries Framework.

To avoid serious or irreversible harm to sensitive benthic habitat, species and communities and to otherwise address impacts to benthic habitat, communities and species, this policy follows a five (5) step process. Following these steps, ongoing fishing activities in historically fished areas will be managed to address impacts of fishing on sensitive benthic areas through existing processes, including the advisory processes in place for the given fishery, following these steps. The management of proposed new fishing activities in frontier areas will be addressed through a separate procedure, also using these steps. For more information on this Policy, please visit the following web site: <http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/benthi-eng.htm>

6. ACCESS AND ALLOCATION

6.1. Access and Allocations

6.1.1. First Nations

Coastal First Nations harvest groundfish for FSC purposes under the *Aboriginal Communal Fishing Licences Regulations* or Treaty Harvest Agreements. In both cases,

allocations are specified, and the fisheries are licensed and conducted under the authority of the Minister.

With respect to treaties, agreements are in place with the Nisga'a, Tsawwassen, Maa-nulth, and Tla'amin First Nations. Nisga'a, Tsawwassen, Maa-nulth, and Tla'amin First Nations Treaties came into effect on May 11, 2000, April 1, 2009, April 1, 2011, and April 5, 2016 respectively.

Under each treaty, Fisheries Operation Guidelines (FOGs) set out the operational principles, procedures and guidelines needed to assist Canada, the province of British Columbia, and the First Nations in implementing Fisheries Chapters of their respective treaties and managing Treaty fisheries on an annual basis. The FOGs provide guidance on how management decisions with respect to treaty fisheries will be made via the Joint Fisheries Committee (JFC), how abundance is estimated, biological and harvesting considerations, catch monitoring and reporting requirements, etc. Each year the JFC established under each treaty makes recommendations to the Minister on the issuance of specific 'Harvest Documents' to licence the fishery for Domestic (Food, Social and Ceremonial) harvests. Domestic fisheries will be exercised within geographic areas defined in each treaty.

More information on Treaties can be found at: <http://www.BCtreaty.net/>.

6.1.1.1. Maa-nulth fisheries

Maa-nulth Domestic fisheries

The Maa-nulth First Nations comprise five individual First Nations; Huu-ay-aht First Nations, Ka:'yu:'k't'h'/Che:k'tles7et'h' First Nations, Toquaht Nation, Uchucklesaht Tribe and the Yuułu?ił?atł First Nation on the west coast of Vancouver Island.

The domestic allocations for groundfish under the Maa-nulth First Nations Final Agreement are as follows:

1. Halibut: The Maa-nulth Fish Allocation for Halibut is 26,000 pounds (net weight, dressed, head off) plus 0.39% of the Halibut Canadian Total Allowable Catch (net weight, dressed, head off).
2. Rockfish: The Maa-nulth Fish Allocation of Rockfish is 11,250 pounds of whole fish, plus 2.46% of the Commercial Rockfish Outside Total Allowable Catch.
3. Groundfish: The Maa-nulth Fish Allocation of Groundfish is 13,000 pounds of whole fish.
4. Sablefish: The Maa-nulth Fish Allocation for Sablefish is 0.082% of the Sablefish Canadian Total Allowable Catch.

Other groundfish species are currently unallocated species under the terms of the treaty. Unallocated species may be harvested under a Maa-nulth First Nation Fishing Right in accordance with a Harvest Document.

Maa-nulth Commercial Fisheries

In addition to the allocation of fish for domestic purposes, Maa-nulth has an allocation for commercial catch outside of the Treaty as identified in the “Maa-nulth First Nation Harvest Agreement”. The allocations in the Harvest Agreement do not affirm Indigenous or Treaty rights. Fishing under the Harvest Agreement will be comparable to the requirements of the current commercial fishery.

Commercial groundfish allocations are expressed as limits (i.e., “up to” amounts) under the Harvest Agreement:

1. Halibut: up to 2% of the coastwide commercial Halibut TAC.
2. Rockfish: up to 2.6178% of the commercial ZN-Outside rockfish TACs.
3. Sablefish: up to 0.34% of the coastwide commercial sablefish TAC.

6.1.1.2. Tla’amin domestic fisheries

The domestic allocations for groundfish under the Tla’amin Nation Final Agreement are as follows:

1. In any year, the Tla’amin Fish Allocation for the aggregate of rockfish and Lingcod is a maximum of 5,000 lbs.
2. In any year, the Tla’amin Fish Allocation for all groundfish other than rockfish and Lingcod is a maximum of 1,000 lbs.

6.1.1.3. Tsawwassen and Nisga’a fisheries

Groundfish are currently unallocated species under the terms of the Tsawwassen and Nisga’a treaties. As authorised by their treaties, they may harvest groundfish for domestic purposes, subject to conservation, public health, or public safety, in their respective fishing areas under the terms of annual fishing plans signed off by the treaty nations and Canada.

6.1.1.4. Other First Nations

In addition to fishing opportunities for FSC purposes (or domestic for treaty purposes), five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht (the T’aaq-wiihak First Nations) - have Indigenous rights to fish for any species of fish within their Fishing Territories and to sell that fish, with the exception of Geoduck. DFO is working with the First Nations to find the manner in which the rights of the five First Nations can be accommodated and exercised without jeopardizing Canada’s legislative objectives and societal interests in regulating the fishery. The outcome of these discussions could lead to in-season management changes.

DFO has been providing the First Nations with communal commercial groundfish fishing licences and quota. Discussions are on-going with the five First Nations regarding continuing this access for 2018 and potential demonstration fishery proposals.

6.1.2. Recreational

Daily and possession limits are in place for recreational catch of groundfish species. Annual limits and size limits are also in place for several groundfish species such as Lingcod and Halibut. These are described in the British Columbia Tidal Waters Sport Fishing Guide available at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.html>.

There are several instances where total recreational catch is managed to specified amounts. Recreational fishing for Halibut is managed to an annual coastwide allocation. As a result of the Rockfish Conservation Strategy drafted in 2001, recreational catch of rockfish and Lingcod in the Strait of Georgia is also managed to stay within specified amounts, referred to as “management caps”. These arrangements are summarised below.

6.1.2.1. Halibut Recreational Allocation

In February 2012 the Minister announced a change to the Halibut Allocation Policy. The 2003 policy, which provided 12% of the commercial-recreational TAC to the recreational sector and 88% to the commercial sector, has been changed to allocate 15% of the commercial-recreational TAC to the recreational sector and 85% to the commercial sector. Please see Appendix 6 for the 2019 recreational Halibut allocation.

Since 2011, an optional experimental program has also been in place which allows interested recreational harvesters to temporarily transfer commercial halibut quota onto an experimental licence for the purposes of recreational fishing. This pilot program allows those who choose to participate the opportunity to fish for Halibut beyond the daily, possession, size, and annual limits or beyond the season closure date for the regular recreational Halibut fishery. In February 2012, the Minister announced that the Department would move forward with regulatory changes to continue this transfer mechanism for the long term.

6.1.2.2. Strait of Georgia Rockfish and Lingcod Management Caps

In response to conservation concerns for inshore rockfish and Lingcod in the Strait of Georgia the Department implemented annual recreational fishery management caps intended to meet rebuilding objectives while providing opportunities to recreational anglers to retain rockfish and Lingcod. In 2002, an annual management cap of 20,000 pieces of rockfish was implemented in Areas 13 to 19, sub-Areas 12-1 to 12-13, 12-15 to 12-48, 20-5 to 20-7, and 29-5. In 2006, a lingcod management cap of 5,000 pieces was implemented and in 2009 it was increased to 7,000 pieces for the same areas. Areas 28 and the rest of Area 29 were closed to the retention of rockfish and Lingcod.

In order to keep the recreational fishery within these caps other management measures were introduced. By 2010, the management measures included daily and possession limits of 1 and 2 respectively for both Lingcod and rockfish, open times between May 1

and September 30, and an annual limit of 10 Lingcod. These management measures remain in effect, and the Department monitors catch against these caps on an annual basis by reviewing catch data gathered through fishery monitoring and catch reporting programs. For further information please read *Towards an Inshore Rockfish Conservation Plan* (<http://www.dfo-mpo.gc.ca/Library/315667.pdf>) and the *Management Framework for Strait of Georgia Lingcod* (http://www.dfo-mpo.gc.ca/CSAS/Csas/DocREC/2005/RES2005_048_e.pdf).

6.1.3. Aquaculture

Fisheries and Oceans Canada continues to support the research and development of the aquaculture sector. The Department will provide the aquaculture industry with reasonable access, by scientific licence, to the wild groundfish resource to assist industry development (growth and diversification). Requests to access the wild resource will be contingent upon stakeholders providing detailed project proposals for review and approval by the Department.

Requests for access to the wild resource will be reviewed based on the provision of specified criteria by the proponent (see details below). Decisions will be provided in writing to the applicant. The Department may require observers on vessels conducting collection trips and dockside monitoring of all fish harvested for aquaculture purposes at the vessel's own expense.

Applications for broodstock capture should include:

- a) Proposed time and location(s) where the fish will be captured.
- b) Name, vessel registration number (VRN) and licence number of the vessel to be used.
- c) Description and location of the facility where the fish are to be held (including aquaculture permit number if a fish farm).
- d) Transplants permit application number.
- e) Detailed project description.
- f) Detailed reporting framework.

More information can be found at: <http://www.pac.dfo-mpo.gc.ca/aquaculture/index-eng.html>.

Currently 0.1% of the Sablefish TAC is allocated to the aquaculture industry to support broodstock collection for sablefish aquaculture.

6.1.4. Annual Research Allocations

Allocations are made each year for research to account for the mortalities associated with survey catches within TACs. This includes the outside waters hard bottom hook and line survey, the International Pacific Halibut Commission longline standardized stock assessment survey, the trawl multi-species surveys, and the Sablefish trap survey. In some cases, allocations may also be made in excess of forecasted survey catches to support the costs of completing select science projects. These allocations are made based

on the Minister’s authority to allocate fish or fishing gear for the purpose of financing scientific and fisheries management activities that are described in a joint project agreement entered into with any person or body, or any federal or provincial minister, department, or agency.

In general, research allocations are deducted from the fish available to the commercial fishery, by sector, prior to the definition of commercial TACs used for the purposes of defining allocations on licences. However, the sectoral allocations based on percentage splits between commercial sectors defined in section 6.1.5 are calculated before research allocations are deducted. Further details on the allocations of fish for financing scientific and management activities are identified in the relevant harvest plans appended to this plan.

The Trawl Survey allocations noted below are notional amounts, pending updated survey mortality data for Use of Fish agreements.

| Species | Trawl surveys (tonnes) | Longline surveys (tonnes) | Sablefish surveys, tagging, catch sampling (tonnes) | Total (tonnes) |
|-------------------------------|------------------------|---------------------------|---|----------------|
| Bocaccio Rockfish | 0.1 | 0.0 | 0.0 | 0.1 |
| Canary Rockfish | 4.1 | 6.5 | 0.0 | 10.5 |
| Copper, China, Tiger Rockfish | 0.0 | 2.8 | 0.0 | 2.8 |
| Pacific Ocean Perch | 73.8 | 0.0 | 0.0 | 73.8 |
| Quillback Rockfish | 0.1 | 5.8 | 0.0 | 5.9 |
| Redbanded Rockfish | 1.7 | 11.6 | 0.0 | 13.3 |
| Redstripe Rockfish | 15.0 | 0.0 | 0.0 | 15.0 |
| Rougeye Rockfish | 14.9 | 23.7 | 0.0 | 38.6 |
| Shorthead Rockfish | 1.0 | 5.4 | 0.0 | 6.3 |
| Silvergray Rockfish | 13.0 | 12.7 | 0.0 | 25.7 |
| Widow Rockfish | 0.7 | 0.0 | 0.0 | 0.7 |
| Yelloweye Rockfish | 0.2 | 2.0 | 0.0 | 2.2 |
| Yellowmouth Rockfish | 5.9 | 3.0 | 0.0 | 8.9 |
| Yellowtail Rockfish | 5.5 | 2.0 | 0.0 | 7.5 |
| Shortspine Thornyhead | 6.2 | 0.9 | 0.0 | 7.1 |
| Longspine Thornyhead | 0.4 | 0.0 | 0.0 | 0.4 |
| Lingcod | 1.7 | 4.5 | 0.0 | 6.2 |
| Pacific Cod | 2.7 | 0.0 | 0.0 | 2.7 |
| Sablefish | 8.0 | 0.8 | 60.0 | 68.0 |
| English Sole | 2.1 | 0.0 | 0.0 | 2.1 |

| | | | | |
|---------------------|------|------|-----|------|
| Dover Sole | 4.8 | 0.0 | 0.0 | 4.8 |
| Petrale Sole | 1.3 | 0.0 | 0.0 | 1.3 |
| Rock Sole | 0.4 | 0.0 | 0.0 | 0.4 |
| Spiny Dogfish | 11.4 | 0.0 | 0.0 | 11.4 |
| Walleye Pollock | 1.2 | 0.0 | 0.0 | 1.2 |
| Pacific Hake | 3.8 | 0.0 | 0.0 | 3.8 |
| Arrowtooth Flounder | 21.8 | 0.0 | 0.0 | 21.8 |
| Big Skate | 0.2 | 0.0 | 0.0 | 0.2 |
| Longnose Skate | 1.0 | 0.0 | 0.0 | 1.0 |
| Pacific Halibut | 1.6 | 27.2 | 0.0 | 28.8 |

*The Halibut amount for the groundfish trawl survey is part of the trawl fishery's Halibut bycatch mortality cap. The groundfish trawl fishery has a bycatch mortality cap of 454 tonnes that is not part of the allocated commercial TAC.

6.1.5. Commercial

The commercial TAC for various groundfish species are allocated between the different groundfish sectors. Formal discussions between the Hook and Line rockfish (category ZN licence), Halibut (category L licence) and Trawl (category T licence) sectors were initiated in 2000 to establish individual rockfish species allocations between the sectors to modify the 1997 adopted "92/8" Trawl/Hook and Line allocation. The agreed to allocation of groundfish species between the commercial sectors are as follows:

6.1.5.1. Rockfish Species

| Species | Commercial Sector | | |
|-----------------------|-------------------|--------|--------|
| | T | ZN | L |
| Canary | 87.70% | 11.77% | 0.53% |
| Longspine Thornyhead | 95.35% | 2.29% | 2.36% |
| Pacific Ocean Perch | 99.98% | 0.02% | 0.00% |
| Quillback | 2.56% | 87.97% | 9.47% |
| Copper, China, Tiger | 2.56% | 87.97% | 9.47% |
| Redbanded | 50.00% | 37.50% | 12.5% |
| Redstripe | 97.23% | 2.77% | 0.00% |
| Rougheye | 55.80% | 41.17% | 3.03% |
| Shortspine Thornyhead | 95.40% | 2.27% | 2.33% |
| Shortraker | 52.30% | 43.92% | 3.78% |
| Silvergray | 88.43% | 10.97% | 0.60% |
| Widow | 98.21% | 1.79% | 0.00% |
| Yelloweye | 2.54% | 64.34% | 33.12% |
| Yellowmouth | 96.77% | 2.49% | 0.74% |
| Yellowtail | 98.91% | 1.09% | 0.00% |

6.1.5.2. Non-quota Rockfish Species

| Non-quota Species | Commercial Sector | |
|---------------------------------|-------------------|---------|
| | T | L + ZN |
| Aurora Rockfish | 90.00% | 10.00% |
| Black Rockfish | 14.00% | 86.00% |
| Blue Rockfish | 5.00% | 95.00% |
| Brown Rockfish | 5.00% | 95.00% |
| Chillipepper Rockfish | 65.00% | 35.00% |
| Darkblotch Rockfish | 99.00% | 1.00% |
| Dusky Rockfish | 50.00% | 50.00% |
| Greenstripe Rockfish | 96.00% | 4.00% |
| Harlequin Rockfish | 99.00% | 1.00% |
| Bocaccio Rockfish ¹³ | 93.00% | 7.00% |
| Rosethorn Rockfish | 65.00% | 35.00% |
| Sharpchin Rockfish | 99.00% | 1.00% |
| Shortbelly Rockfish | 0.00% | 100.00% |
| Splitnose Rockfish | 99.00% | 1.00% |
| Vermillion Rockfish | 1.00% | 99.00% |

6.1.5.3. Other Groundfish

| Species* | Commercial Sector | |
|-----------------------------------|-------------------|---------------------|
| | T | L + K + ZN + Sch II |
| Lingcod | 74.00% | 26.00% |
| Dogfish | 32.00% | 68.00% |
| Hake, pollock, Pacific cod & sole | 100.00% | 0.00% |
| Sablefish | 8.75% | 91.25% |

*Halibut is not permitted for retention by trawl gear so there is no percentage of an allocation assigned to trawl.

| Species | | Commercial Sector | | | | | | |
|----------------|------|-------------------|--------|-------|-----------|------------|--------|--------|
| | | T | L | LC | ZN Inside | ZN Outside | K | DF |
| Longnose Skate | 3CD | 62.83% | 14.19% | 0.00% | 0.00% | 1.50% | 11.26% | 10.22% |
| | 5AB | 32.83% | 48.49% | 0.01% | 0.00% | 8.61% | 9.47% | 0.57% |
| | 5CDE | 20.28% | 59.80% | 0.00% | 0.00% | 8.53% | 10.55% | 0.84% |
| Big Skate | 3CD | 24.55% | 26.72% | 0.00% | 0.00% | 1.93% | 4.16% | 42.63% |
| | 5AB | 91.48% | 5.97% | 0.01% | 0.00% | 1.20% | 0.72% | 0.62% |
| | 5CDE | 92.07% | 6.34% | 0.00% | 0.00% | 0.56% | 0.95% | 0.08% |

¹³ Bocaccio is currently a quota species in the trawl fishery, but not in the Hook and Line fisheries.

6.1.5.4. Commercial Total Allowable Catches

As a result of rounding, the TACs by management area do not sum to the sector totals for some species. For the exact TAC values, please contact the Groundfish Management Unit (Appendix 1). Portions of some of the TACs listed here will be allocated for research purposes. Portions of the ZN Outside TAC exclude amounts allocated for research purposes. Details of research allocations are found in the harvest plans included as appendices to the full IFMP document.

| Species | Area | Halibut (tonnes) | Sablefish (tonnes) | ZN Outside (tonnes) | ZN Inside (tonnes) | Trawl (tonnes) | Dogfish (tonnes) | Lingcod (tonnes) |
|---------------------|------------------|------------------|--------------------|---------------------|--------------------|----------------|------------------|------------------|
| Yellowtail rockfish | 3C | 0 | 0 | 14* | 0 | 1,224 | 0 | 0 |
| | 3D, 5A/B, 5C/D/E | 0 | 0 | 47* | 0 | 4,216 | 0 | 0 |
| | Sector total | 0 | 0 | 60* | 0 | 5,440 | 0 | 0 |
| Widow rockfish | Coastwide | 0 | 0 | 42* | 0 | 2,316 | 0 | 0 |
| Canary rockfish | 3C, 3D | 1 | 0 | 30 | 0 | 615 | 0 | 0 |
| | 5A, 5B | 2 | 0 | 51 | 0 | 241 | 0 | 0 |
| | 5C, 5D | 1 | 0 | 24 | 0 | 97 | 0 | 0 |
| | 5E | 1 | 0 | 25 | 0 | 12 | 0 | 0 |
| | Sector total | 6 | 0 | 129 | 0 | 965 | 0 | 0 |
| Silvergray rockfish | 3C/D | 2 | 0 | 41 | 0 | 332 | 0 | 0 |
| | 5A/B | 4 | 0 | 80 | 0 | 646 | 0 | 0 |
| | 5C/D | 4 | 0 | 73 | 0 | 587 | 0 | 0 |
| | 5E | 3 | 0 | 47 | 0 | 382 | 0 | 0 |
| | Sector total | 13 | 0 | 241 | 0 | 1,945 | 0 | 0 |

| Species | Area | Halibut (tonnes) | Sablefish (tonnes) | ZN Outside (tonnes) | ZN Inside (tonnes) | Trawl (tonnes) | Dogfish (tonnes) | Lingcod (tonnes) |
|------------------------|--------------|------------------|--------------------|---------------------|--------------------|----------------|------------------|------------------|
| Pacific ocean perch | 3C/D | 0 | 0 | 0 | 0 | 750 | 0 | 0 |
| | 5A/B | 0 | 0 | 0 | 0 | 1,687 | 0 | 0 |
| | 5C | 0 | 0 | 0 | 0 | 1,544 | 0 | 0 |
| | 5D/E | 0 | 0 | 0 | 0 | 1,200 | 0 | 0 |
| | Sector total | 0 | 0 | 1 | 0 | 5,192 | 0 | 0 |
| Yellowmouth rockfish | 3C | 1 | 0 | 4 | 0 | 219 | 0 | 0 |
| | 3D, 5A/B | 6 | 0 | 20 | 0 | 1,135 | 0 | 0 |
| | 5C/D | 4 | 0 | 13 | 0 | 685 | 0 | 0 |
| | 5E | 7 | 0 | 24 | 0 | 325 | 0 | 0 |
| | Sector total | 18 | 0 | 60 | 0 | 2,364 | 0 | 0 |
| Rougheye rockfish | Coastwide | 33 | 0 | 451 | 0 | 636 | 0 | 0 |
| Shortraker rockfish | Coastwide | 9 | 0 | 102 | 0 | 126 | 0 | 0 |
| Redstripe rockfish | 3C | 0 | 0 | 5* | 0 | 173 | 0 | 0 |
| | 3D, 5A/B | 0 | 0 | 22* | 0 | 772 | 0 | 0 |
| | 5C/D | 0 | 0 | 9* | 0 | 330 | 0 | 0 |
| | 5E | 0 | 0 | 7* | 0 | 246 | 0 | 0 |
| | Sector total | 0 | 0 | 43* | 0 | 1,521 | 0 | 0 |
| Shortspine thornyheads | Coastwide | 17 | 0 | 17 | 0 | 735 | 0 | 0 |

| Species | Area | Halibut (tonnes) | Sablefish (tonnes) | ZN Outside (tonnes) | ZN Inside (tonnes) | Trawl (tonnes) | Dogfish (tonnes) | Lingcod (tonnes) |
|----------------------------------|--------------|------------------|--------------------|---------------------|--------------------|----------------|------------------|------------------|
| Longspine thornyheads | Coastwide | 10 | 0 | 10 | 0 | 405 | 0 | 0 |
| Redbanded rockfish | Coastwide | 74 | 0 | 210 | 0 | 295 | 0 | 0 |
| Yelloweye rockfish | 3C, 3D, 5A | 2 | 0 | 10 | 0 | 0 | 0 | 0 |
| | 5B | 4 | 0 | 5 | 0 | 0 | 0 | 0 |
| | 5C, 5D | 5 | 0 | 8 | 0 | 0 | 0 | 0 |
| | 5E | 6 | 0 | 7 | 0 | 0 | 0 | 0 |
| | 4B | 1 | 0 | 0 | 6 | 0 | 0 | 0 |
| | Sector total | 18 | 0 | 30 | 6 | 1 | 0 | 0 |
| Quillback rockfish | 3C, 3D, 5A | 3 | 0 | 43 | 0 | 0 | 0 | 0 |
| | 5B | 3 | 0 | 28 | 0 | 0 | 0 | 0 |
| | 5C, 5D | 6 | 0 | 32 | 0 | 0 | 0 | 0 |
| | 5E | 4 | 0 | 6 | 0 | 0 | 0 | 0 |
| | 4B | 0 | 0 | 22 | 22 | 0 | 0 | 0 |
| | Sector total | 16 | 0 | 131 | 22 | 4 | 0 | 0 |
| Copper, China and Tiger rockfish | 3C, 3D, 5A | 1 | 0 | 24 | 0 | 0 | 0 | 0 |
| | 5B | 1 | 0 | 7 | 0 | 0 | 0 | 0 |
| | 5C, 5D | 4 | 0 | 19 | 0 | 0 | 0 | 0 |
| | 5E | 0.3 | 0 | 1 | 0 | 0 | 0 | 0 |

| Species | Area | Halibut (tonnes) | Sablefish (tonnes) | ZN Outside (tonnes) | ZN Inside (tonnes) | Trawl (tonnes) | Dogfish (tonnes) | Lingcod (tonnes) |
|-------------------|--------------|------------------|--------------------|---------------------|--------------------|----------------|------------------|------------------|
| | 4B | 0 | 0 | 3 | 3 | 0 | 0 | 0 |
| | Sector total | 6.3 | 0 | 54 | 3 | 1 | 0 | 0 |
| Bocaccio rockfish | Coastwide | 0 | 0 | 0 | 0 | 80 | 0 | 0 |
| Pacific cod | 3C/D | 0 | 0 | 0 | 0 | 500 | 0 | 0 |
| | 5A/B | 0 | 0 | 0 | 0 | 250 | 0 | 0 |
| | 5C/D/E | 0 | 0 | 0 | 0 | 700 | 0 | 0 |
| | Sector total | 0 | 0 | 0 | 0 | 1,450 | 0 | 0 |
| Dover sole | 3C/D | 0 | 0 | 0 | 0 | 1,375 | 0 | 0 |
| | 5C/D/E | 0 | 0 | 0 | 0 | 1,100 | 0 | 0 |
| | 5A/B | 0 | 0 | 0 | 0 | 598 | 0 | 0 |
| | Sector total | 0 | 0 | 0 | 0 | 3,073 | 0 | 0 |
| Rock sole | 3C/D | 0 | 0 | 0 | 0 | 102 | 0 | 0 |
| | 5A/B | 0 | 0 | 0 | 0 | 650 | 0 | 0 |
| | 5C/D | 0 | 0 | 0 | 0 | 800 | 0 | 0 |
| | Sector total | 0 | 0 | 0 | 0 | 1,552 | 0 | 0 |
| Lemon sole | 3C/D, 5A/B | 0 | 0 | 0 | 0 | 186 | 0 | 0 |
| | 5C/D/E | 0 | 0 | 0 | 0 | 636 | 0 | 0 |
| | Sector total | 0 | 0 | 0 | 0 | 822 | 0 | 0 |

| Species | Area | Halibut (tonnes) | Sablefish (tonnes) | ZN Outside (tonnes) | ZN Inside (tonnes) | Trawl (tonnes) | Dogfish (tonnes) | Lingcod (tonnes) |
|---------------|----------------------------|------------------|--------------------|---------------------|--------------------|----------------|------------------|------------------|
| Petrale sole | Coastwide | 0 | 0 | 0 | 0 | 900 | 0 | 0 |
| Lingcod | 3C | 0 | 0 | 0 | 0 | 800 | 0 | 150 |
| | 3D | 0 | 0 | 0 | 0 | 440 | 0 | 360 |
| | 5A, 5B | 0 | 0 | 0 | 0 | 862 | 0 | 200 |
| | 5C, 5D, 5E | 0 | 0 | 0 | 0 | 580 | 0 | 420 |
| | 4B | 0 | 0 | 0 | 0 | 0 | 0 | 38** |
| | Coastwide total | 0 | 0 | 0 | 0 | 2,572 | 0 | 1,168 |
| Spiny Dogfish | 3C, 3D, 5A, 5B, 5C, 5D, 5E | 0 | 0 | 0 | 0 | 3,840 | 8,160 | 0 |
| | 4B | 0 | 0 | 0 | 0 | 640 | 1,360 | 0 |
| | Coastwide total | 0 | 0 | 0 | 0 | 4,480 | 9,520 | 0 |
| Sablefish | Coastwide | 0 | 2,195 | 0 | 0 | 210 | 0 | 0 |
| Pollock | Gulf | 0 | 0 | 0 | 0 | 1,115 | 0 | 0 |
| | 5A/B (includes Area 12) | 0 | 0 | 0 | 0 | 2,500 | 0 | 0 |
| | 5C/D/E | 0 | 0 | 0 | 0 | 1,320 | 0 | 0 |
| | Coastwide total | 0 | 0 | 0 | 0 | 4,935 | 0 | 0 |
| Hake | Gulf | 0 | 0 | 0 | 0 | 7,000 | 0 | 0 |
| | Offshore *** | 0 | 0 | 0 | 0 | TBD | 0 | 0 |
| Halibut | Coastwide | 421 | 0 | 0 | 0 | 454**** | 0 | 0 |

| Species | Area | Halibut (tonnes) | Sablefish (tonnes) | ZN Outside (tonnes) | ZN Inside (tonnes) | Trawl (tonnes) | Dogfish (tonnes) | Lingcod (tonnes) |
|---------------------|--------------|------------------|--------------------|---------------------|--------------------|----------------|------------------|------------------|
| Big skate | 3C/D | 13 | 2 | 1 | 0 | 12 | 21 | 0 |
| | 5A/B | 22 | 3 | 4 | 0 | 341 | 2 | 0 |
| | 5C/D/E | 39 | 6 | 3 | 0 | 561 | 1 | 0 |
| | Sector total | 74 | 11 | 9 | 0 | 914 | 24 | 0 |
| Longnose skate | 3C/D | 20 | 16 | 2 | 0 | 87 | 14 | 0 |
| | 5A/B | 47 | 9 | 8 | 0 | 32 | 1 | 0 |
| | 5C/D/E | 51 | 9 | 7 | 0 | 17 | 1 | 0 |
| | Sector total | 168 | 48 | 25 | 0 | 195 | 22 | 0 |
| Arrowtooth flounder | Coastwide | 0 | 0 | 0 | 0 | 14,000 | 0 | 0 |

* This tonnage is not allocated to individual licence holders, nor is it transferable.

** The Lingcod coastwide total includes the 38 tonne allocation to cover 4B trip limits. This tonnage is not allocated to licence holders, nor is it transferable.

*** This is a notional TAC for initial licence issuance – The actual TAC will be announced in early April 2019.

****The groundfish trawl fishery has a bycatch mortality cap of 454 tonnes that is not part of the allocated commercial TAC. Halibut caught while fishing under the authority of a groundfish trawl licence cannot be retained and must be returned to the water as quickly as possible.

6.1.5.5. Commercial Species-Area Groups

All groundfish Hook and Line licence holders are permitted to hold quota for up to 40 species-area groups of holdings. Landings of other groundfish will be managed through trip limits or landings allowances. Additional species areas groups are in place for the groundfish trawl fishery and can be found in Appendix 8.

| | |
|--------------------------------------|---|
| Pacific Halibut (Coastwide) | Silvergray rockfish (5E) |
| Sablefish (Coastwide) | Yelloweye rockfish (3C, 3D, 5A) |
| Lingcod (3D) | Yelloweye rockfish (5B) |
| Lingcod (3C) | Yelloweye rockfish (5C, 5D) |
| Lingcod (5A, 5B) | Yelloweye rockfish (5E) |
| Lingcod (5C, 5D, 5E) | Yelloweye rockfish (4B) |
| Dogfish (3C, 3D, 5A, 5B, 5C, 5D, 5E) | Quillback rockfish (3C, 3D, 5A) |
| Dogfish (4B) | Quillback rockfish (5B) |
| Big skate (3C, 3D) | Quillback rockfish (5C, 5D) |
| Big skate (5A, 5B) | Quillback rockfish (5E) |
| Big skate (5C, 5D, 5E) | Quillback rockfish (4B) |
| Longnose skate (3C, 3D) | Copper, China and Tiger rockfish (3C, 3D, 5A) |
| Longnose skate (5A, 5B) | Copper, China and Tiger rockfish (5B) |
| Longnose skate (5C, 5D, 5E) | Copper, China and Tiger rockfish (5C, 5D) |
| Canary rockfish (3C, 3D) | Copper, China and Tiger rockfish (5E) |
| Canary rockfish (5A, 5B) | Copper, China and Tiger rockfish (4B) |
| Canary rockfish (5C, 5D) | Rougheye rockfish (Coastwide) |
| Canary rockfish (5E) | Redbanded rockfish (Coastwide) |
| Silvergray rockfish (3C, 3D) | Shortraker rockfish (Coastwide) |
| Silvergray rockfish (5A, 5B) | Shortspine thornyhead (Coastwide) |
| Silvergray rockfish (5C, 5D) | |

6.1.5.6. Outgoing Commercial Sector Caps

The following caps are the amount of quota species, in pounds, permitted to leave a sector. These values represent initial caps established at the outset of the 2019/20 fishing season. The values can change regularly. On September 1, the outgoing caps will be removed in Hook and Line sectors for Canary, Rougheye, Shortraker, Shortspine Thornyhead, Redbanded and Silvergray rockfish. On October 1, these caps will be removed in the trawl sector. Please consult the DFO website for the most current figures:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/publications-en.html>.

| Species | Area | Sector (Outgoing) | | | | | | |
|--------------------|------------|-------------------|--------------------|---------------------|--------------------|----------------|------------------|------------------|
| | | Halibut (pounds) | Sablefish (pounds) | ZN Outside (pounds) | ZN Inside (pounds) | Trawl (pounds) | Dogfish (pounds) | Lingcod (pounds) |
| Canary rockfish | 3C, 3D | 2,309 | No Limit | 51,248 | 0 | 103,460 | No Limit | No Limit |
| | 5A, 5B | 3,948 | No Limit | 87,632 | 0 | 50,706 | No Limit | No Limit |
| | 5C, 5D | 1,830 | No Limit | 40,598 | 0 | 19,841 | No Limit | No Limit |
| | 5E | 1,904 | No Limit | 42,378 | 0 | 7,111 | No Limit | No Limit |
| Lingcod | 3C | No Limit | No Limit | No Limit | 0 | 226,367 | No Limit | 328,799 |
| | 3D | No Limit | No Limit | No Limit | 0 | 93,699 | No Limit | 789,119 |
| | 5A, 5B | No Limit | No Limit | No Limit | 0 | 351,680 | No Limit | 440,920 |
| | 5C, 5D, 5E | No Limit | No Limit | No Limit | 0 | 443,835 | No Limit | 925,930 |
| Pacific Halibut | Coastwide | 893,863 | No Limit | No Limit | No Limit | 0 | No Limit | No Limit |
| Quillback rockfish | 3C, 3D, 5A | 5,691 | No Limit | 94,987 | 0 | 0 | No Limit | No Limit |
| | 5B | 5,769 | No Limit | 10,000 | 0 | 0 | No Limit | No Limit |
| | 5C, 5D | 14,147 | No Limit | 69,807 | 0 | 0 | No Limit | No Limit |
| | 5E | 7,933 | No Limit | 14,278 | 0 | 0 | No Limit | No Limit |

| Species | Area | Sector (Outgoing) | | | | | | |
|----------------------------------|----------------------------|-------------------|--------------------|---------------------|--------------------|----------------|------------------|------------------|
| | | Halibut (pounds) | Sablefish (pounds) | ZN Outside (pounds) | ZN Inside (pounds) | Trawl (pounds) | Dogfish (pounds) | Lingcod (pounds) |
| | 4B | No Limit | 0 | 0 | 2,677 | 0 | 0 | 0 |
| Copper, China and Tiger rockfish | 3C, 3D, 5A | 3,201 | No Limit | 53,430 | 0 | 0 | No Limit | No Limit |
| | 5B | 1,353 | No Limit | 14,586 | 0 | 0 | No Limit | No Limit |
| | 5C, 5D | 8,670 | No Limit | 42,785 | 0 | 0 | No Limit | No Limit |
| | 5E | 597 | No Limit | 1,075 | 0 | 0 | No Limit | No Limit |
| | 4B | No Limit | 0 | 0 | 323 | 0 | 0 | 0 |
| Rougheye rockfish | Coastwide | 73,129 | No Limit | 993,633 | 0 | 744,322 | No Limit | No Limit |
| Sablefish | Coastwide | No Limit | 590,127 | No Limit | 0 | 42,873 | No Limit | No Limit |
| Shortraker rockfish | Coastwide | 19,301 | No Limit | 224,263 | 0 | 69,999 | No Limit | No Limit |
| Shortspine thornyhead | Coastwide | 38,462 | No Limit | 37,496 | 0 | 381,843 | No Limit | No Limit |
| Redbanded rockfish | Coastwide | 162,500 | No Limit | 487,500 | 0 | 585,000 | No Limit | No Limit |
| Silvergray rockfish | 3C, 3D | 3,091 | No Limit | 56,519 | 0 | 23,104 | No Limit | No Limit |
| | 5A, 5B | 6,031 | No Limit | 110,258 | 0 | 45,480 | No Limit | No Limit |
| | 5C, 5D | 5,473 | No Limit | 100,066 | 0 | 40,697 | No Limit | No Limit |
| | 5E | 3,560 | No Limit | 65,089 | 0 | 34,451 | No Limit | No Limit |
| Spiny Dogfish | 3C, 3D, 5A, 5B, 5C, 5D, 5E | No Limit | No Limit | No Limit | 0 | 4,232,832 | 16,190,582 | No Limit |
| | 4B | No Limit | 0 | 0 | No Limit | 1,269,850 | 25,000 | 0 |

| | | Sector (Outgoing) | | | | | | |
|--------------------|-------------|--------------------------|---------------------------|----------------------------|---------------------------|-----------------------|-------------------------|-------------------------|
| Species | Area | Halibut (pounds) | Sablefish (pounds) | ZN Outside (pounds) | ZN Inside (pounds) | Trawl (pounds) | Dogfish (pounds) | Lingcod (pounds) |
| Yelloweye rockfish | 3C, 3D, 5A | 17,155 | No Limit | 84,744 | 0 | 0 | No Limit | No Limit |
| | 5B | 37,232 | No Limit | 43,507 | 0 | 0 | No Limit | No Limit |
| | 5C, 5D | 27,037 | No Limit | 47,684 | 0 | 0 | No Limit | No Limit |
| | 5E | 42,909 | No Limit | 54,373 | 0 | 0 | No Limit | No Limit |
| | 4B | 0 | 0 | 0 | 8,000 | 0 | 0 | 0 |
| Big skate | 3C, 3D | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |
| | 5A/B | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |
| | 5C/D/E | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |
| Longnose skate | 3C, 3D | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |
| | 5A/B | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |
| | 5C/D/E | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |

6.1.5.7. Incoming Commercial Sector Caps

The following caps are the amount of quota species, by pounds, permitted to enter a sector. These values represent initial caps established at the outset of the 2019/20 fishing season. The values can change regularly. On September 1 of each season, the incoming commercial sector caps will be removed in Hook and Line sectors for Canary, Rougheye, Shortraker, Shortspine Thornyhead, Redbanded and Silvergray rockfish. On October 1 of each season, these caps will be removed in the Trawl sector. Please consult the DFO website for the most current figures: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/publications-en.html>.

| Species | Area | Sector (Incoming) | | | | | | |
|--------------------|------------|-------------------|--------------------|---------------------|--------------------|----------------|------------------|------------------|
| | | Halibut (pounds) | Sablefish (pounds) | ZN Outside (pounds) | ZN Inside (pounds) | Trawl (pounds) | Dogfish (pounds) | Lingcod (pounds) |
| Canary rockfish | 3C, 3D | 13,000 | 26,000 | 2,000 | - | 86,521 | 11,682 | 4,673 |
| | 5A, 5B | 13,686 | 43,099 | 2,000 | - | 29,179 | 2,683 | 2,236 |
| | 5C, 5D | 10,922 | 4,710 | 2,000 | - | 11,983 | 4,202 | 2,801 |
| | 5E | 10,625 | 6,503 | 2,000 | - | 13,289 | 1,446 | 1,033 |
| Lingcod | 3C | 73,353 | 62,347 | 60,000 | 0 | 144,613 | 100,000 | 30,000° |
| | 3D | 131,211 | 77,632 | 200,000 | 0 | 31,441 | 30,243 | 20,000° |
| | 5A, 5B | 256,192 | 84,119 | 250,000 | 0 | 95,244 | 32,045 | 75,000° |
| | 5C, 5D, 5E | 549,647 | 133,623 | 250,000 | 0 | 192,863 | 43,632 | 200,000° |
| Pacific Halibut | Coastwide | 0 | 192,726 | 220,000 | 25,000 | 0 | 373,137 | 80,000 |
| Quillback rockfish | 3C, 3D, 5A | 38,400 | 1,920 | 5,760 | 0 | 0 | 19,200 | 4,660 |
| | 5B | 16,200 | 810 | 4,610 | 0 | 0 | 2,430 | 1,829 |
| | 5C, 5D | 31,000 | 1,240 | 8,680 | 0 | 0 | 1,612 | 5,036 |

| | | Sector (Incoming) | | | | | | |
|----------------------------------|-------------|--------------------------|---------------------------|----------------------------|---------------------------|-----------------------|-------------------------|-------------------------|
| Species | Area | Halibut (pounds) | Sablefish (pounds) | ZN Outside (pounds) | ZN Inside (pounds) | Trawl (pounds) | Dogfish (pounds) | Lingcod (pounds) |
| | 5E | 13,950 | 1,860 | 5,344 | 0 | 0 | 279 | 542 |
| | 4B | No Limit | 0 | 0 | 0 | 0 | 2,677 | 0 |
| Copper, China and Tiger rockfish | 3C, 3D, 5A | 21,600 | 1,080 | 3,240 | 0 | 0 | 10,800 | 2,622 |
| | 5B | 3,800 | 190 | 1,081 | 0 | 0 | 570 | 429 |
| | 5C, 5D | 19,000 | 760 | 5,320 | 0 | 0 | 988 | 3,086 |
| | 5E | 1,050 | 140 | 402 | 0 | 0 | 21 | 41 |
| | 4B | No Limit | 0 | 0 | 0 | 0 | 323 | 0 |
| Big skate | 3C, 3D | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |
| | 5A, 5B | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |
| | 5C, 5D, 5E | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |
| Longnose skate | 3C, 3D | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |
| | 5A, 5B | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |
| | 5C, 5D, 5E | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit | No Limit |
| Rougheye rockfish | Coastwide | 700,000 | 800,000 | 308,644 | 0 | 500,000 | 20,000 | 200 |

| | | Sector (Incoming) | | | | | | |
|-----------------------|----------------------------|-------------------|--------------------|---------------------|--------------------|----------------|------------------|------------------|
| Species | Area | Halibut (pounds) | Sablefish (pounds) | ZN Outside (pounds) | ZN Inside (pounds) | Trawl (pounds) | Dogfish (pounds) | Lingcod (pounds) |
| Sablefish | Coastwide | 400,000 | 100,000 | 100,000 | 0 | 100,000 | 30,000 | 3,000 |
| Shortraker rockfish | Coastwide | 160,000 | 200,000 | 70,548 | - | 45,390 | 10,000 | 200 |
| Shortspine thornyhead | Coastwide | 379,124 | 300,000 | 114,640 | 0 | 32,268 | 10,000 | 200 |
| Redbanded rockfish | Coastwide | 253,948 | 500,000 | 761,842 | 0 | 914,210 | 20,000 | 20,000 |
| Silvergray rockfish | 3C, 3D | 20,000 | 7,000 | 8,818 | - | 25,000 | 2,500 | 5,545 |
| | 5A, 5B | 50,000 | 20,000 | 17,637 | - | 47,151 | 3,000 | 5,500 |
| | 5C, 5D | 50,000 | 6,000 | 10,000 | - | 38,799 | 4,000 | 2,862 |
| | 5E | 40,000 | 20,000 | 11,023 | - | 20,342 | 500 | 2,232 |
| Spiny Dogfish | 3C, 3D, 5A, 5B, 5C, 5D, 5E | 5,000,000 | 2,000,000 | 400,000 | 0 | 189,388 | 4,232,832 | 0 |
| | 4B | 272,311 | 0 | 0 | 25,000 | 0 | 972,539 | 0 |
| Yelloweye rockfish | 3C, 3D, 5A | 15,865 | 3,318 | 2,797 | 0 | 0 | 5,199 | 6,014 |
| | 5B | 10,159 | 1,632 | 8,635 | 0 | 0 | 1,796 | 937 |
| | 5C, 5D | 14,878 | 1,268 | 6,369 | 0 | 0 | 1,176 | 5,245 |
| | 5E | 15,097 | 4,969 | 8,995 | 0 | 0 | 65 | 2,910 |
| | 4B | 0 | 0 | 0 | 0 | 0 | 4,138 | 0 |

° Incoming Lingcod quota to the Lingcod sector must have originated from the Trawl sector.

7. COMMERCIAL MANAGEMENT MEASURES

It is important that all vessel owners, licence holders and harvesters thoroughly review this management plan and licence conditions prior to fishing.

7.1. Commercial Sector Groups

There are seven distinct commercial groundfish sector groups, Groundfish trawl (T), Halibut (L), Sablefish (K), Inside Rockfish (ZNI), Outside Rockfish (ZNO) and the Lingcod and Dogfish fisheries that are managed as separate fisheries using ITQs.

7.2. Individual Vessel Accountability and Responsibility

Accountability (documenting all catch in a fishing logbook) and responsibility (acquiring ITQ to account for mortality of all legal/marketable sized groundfish that are managed under species and area TACs as referenced in Section 6.1.5) are two key elements of the commercial management system. Vessels are individually accountable for their catch, both directed and non-directed. Subject to species, area, time and gear closures, along with vessel caps and trip limits, vessels will be permitted to land non-directed catch.

Other groundfish species not managed under species and area TACs will be managed under trip limits or will have no limits. Harvesters should reference licence conditions for more details. A vessel's catch is calculated by adding both landed weight and the estimated mortality of all catch either utilized at-sea or released at-sea. Vessels landing fish in excess of the ITQ holdings identified in licence conditions and the allowable overage will be restricted from further fishing opportunities until such time as additional ITQ has been acquired.

DFO and the groundfish trawl industry agreed to a two-step approach to instil full responsibility for catch by eliminating the designation of catch as marketable and non-marketable for fish released at-sea. The 2011/2012 fishing season marked the first year of one hundred (100) percent responsibility of all species caught within the groundfish trawl fishing fleet. The objective is to ensure full accountability and responsibility for catch of all quota species while continuing to provide incentive for better utilization of catch, reduce at-sea releases and development of improved fishing practices.

7.3. Sector Caps

To ensure that harvesters have access to non-directed catch from other sectors, sector caps have been established that limit the amount of ITQ from one sector that may be accessed by any other sector. In addition, each sector has identified a quantity of ITQ that is permitted to leave the sector. The initial sector access caps and access provided are listed in Section 6.1.5.6 and Section 6.1.5.7. The figures in those sections can change regularly. Please consult the DFO website for the most current figures:
<http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.htm>.

7.4. Reallocations of Individual Quota

Subject to annual species caps and sector holding caps, the temporary reallocations of ITQ between vessels and between commercial sectors will be permitted.

Permanent reallocations of ITQ are restricted to intra-sector reallocations. All temporary

and permanent reallocations are subject to the individual sector rules. The Groundfish Management Unit (GMU) has worked to make the necessary changes to the Quota Management System to allow for permanent intra-sector reallocations for the remaining species. Permanent intra-sector reallocations will be permitted.

7.5. **Multiple Hail-outs**

A vessel may hail out for one directed commercial groundfish fishery only, except when hailing out for both Halibut and Sablefish fishing.

7.6. **At-Sea Monitoring**

Timely and accurate information on harvesting practices and the catch composition and location is essential to assess the status of fish stocks, ensure the conservation and long-term sustainability of fish resources, and assess the impact of the fisheries on other species of interest (e.g., sharks, marine mammals, seabirds). Effective monitoring and accurate catch reporting are integral to resource management, enforcement of fisheries rules and the development of effective management plans. Monitoring of all catch, both landed and at-sea releases is critical to sustainable fisheries management. At-sea monitoring encourages responsible fishing and provides information supportive of Canada's international obligations for fisheries.

Complete 100 percent monitoring on all commercial groundfish fishing trips is required to monitor at-sea releases and record fishing activity, location, date and time.

Trawl monitoring requirements can be found in the Groundfish Trawl Commercial Harvest Plan Appendix 8. Monitoring requirements for all commercial groundfish Hook and Line/Trap fisheries can be found in Appendix 2.

7.7. **In-Season Updates**

Important changes are made to the IFMP throughout the season. For announcements of in-season updates to the IFMP, please refer to:

- Pacific Region Integrated Fisheries Management Plans website at:
<http://www.pac.dfo-mpo.gc.ca/fm-gp/ifmp-eng.html>
- Fishery Notice website at:
<http://www-ops2.pac.dfo-mpo.gc.ca/fns-sap/index-eng.cfm>

In-season sector catch and sector cap summaries are updated daily and may be found at:
<http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/publications-en.html>

The following revisions to the IFMP have occurred to date:

| Version | Date of Issue | Summary of Changes |
|---------|---------------|----------------------|
| 1.0 | 21-Feb-2019 | Initial IFMP issued. |

8. SHARED STEWARDSHIP ARRANGEMENTS

8.1. Commercial Industry

Several Collaborative Agreements (CA) currently exist between Fisheries and Oceans Canada and Wild Canadian Sablefish Ltd., the Canadian Groundfish Research and Conservation Society, and the Pacific Halibut Management Association. CAs are also being considered for 2019/20 between Fisheries and Oceans Canada and several partners to support groundfish science activities through the allocation of fish to finance the activities, consistent with the authority granted to the Minister in *Fisheries Act*.

8.2. Fisheries and Oceans Canada

The groundfish fisheries in British Columbia are managed through the Groundfish Management Unit. This includes seven Fisheries Management personnel directly involved in the management of this fishery. In addition, a groundfish stock assessment unit, located at the Pacific Biological Station contributes to annual stock assessments for groundfish species. Contributions to the IFMP are provided by Fisheries Management, the Science Branch, Conservation and Protection, Ecosystem Management Branch, the Pacific Fishery Licence Unit, the Treaty and Aboriginal Policy Directorate, and numerous others. A list of DFO contacts is provided in Appendix 1.

9. COMPLIANCE PLAN

9.1. Overview

The Conservation and Protection (C&P) Program, part of the Ecosystems and Fisheries Management Sector, promotes and maintains compliance with legislation, regulations, policies and management measures to achieve the conservation and sustainable use of Canada's aquatic resources and the protection of oceans, fish habitat and species at risk. C&P is comprised of three key programs areas:

- Program and Operational Readiness
- Enforcement Operations
- National Fisheries Intelligence Service (NFIS)

C&P is evolving into an intelligence-led organization which will assist in priority setting by identifying the greatest threats and risks to fisheries and developing appropriate strategies to address those threats and risks. C&P also uses education, partnering, and problem solving to assist in the conservation and protection of the fishery resources.

There are approximately 145 fishery officers stationed in the Pacific Region, which encompasses the province of British Columbia and Yukon Territory. They are designated as "fishery officers" under Section 5 of the *Fisheries Act* and have full enforcement powers and responsibilities outlined in the *Fisheries Act*, *Coastal Fisheries Protection Act*, *Oceans Act*, and *Species at Risk Act*. Fishery Officers are also designated, as peace officers under Section 2 the *Criminal Code of Canada*.

Third party At Sea and Dockside observers perform duties best described as "Observe, Record and Report." Duties include the monitoring of fishing activities, examination and

measurement of fishing gear, collection of biological samples, recording of scientific data, monitoring of the landing of fish and verification by weight and species of the fish caught and retained. Observers, while performing a vital role, are not enforcement officers. Observers are designated by DFO's Regional Director General and must carry proof of their designation in the form of a laminated card.

At Sea and Dockside observers fill out occurrence reports which are reviewed by C&P's Groundfish Enforcement Coordinator and followed up on as necessary. All At Sea and Dockside observers have been designated as authorities by the Director of C&P under Section 63(1) of the *Fisheries Act*. It is an offense to make a false or misleading statement whether orally or in writing to an At Sea or Dockside observer.

Fishery officers are responsible for responding coast-wide to calls from the general public, other agencies, observers and industry users reporting all types of occurrences including commercial, food, social, ceremonial and recreational groundfish.

Fishery officers conduct inspections both at-sea and dockside to verify compliance with licence conditions. Due to the complexity of the integrated groundfish management system which includes a quota management system and a related licence amendment system, tracking of catch quantities is primarily performed administratively utilizing the fishing logbook, electronic monitoring video system and the dockside monitoring program.

9.2. Enforcement Priorities

Fishery officers will:

- investigate incidents of closed area fishing such as rockfish conservation areas, sponge reef marine protection areas, marine conservation areas and other permanent and in-season fishing closures.
- investigate the retention of groundfish caught, retained or possessed without licence authority. Priority will be placed on occurrences where retention for the purpose of sale is indicated;
- investigate incidents of unauthorized dual fishing;
- investigate the non-deployment of seabird avoidance gear;
- investigate non-compliance with hail-out, hail-in, electronic monitoring and other elements of the 100 percent at-sea and dockside monitoring programs;
- investigate false and misleading statements to at-sea and dockside observers and
- investigate obstruction of at-sea and dockside observers from carrying out their duties.

9.3. Fishery Patrol Vessels

All at-sea patrols will be conducted using a combination of small craft (program vessels, mostly 7.53, 8.53 and 9.60 metre rigid hull inflatables) and two 44 metre mid-shore patrol Canadian Coast Guard vessels. These vessels are part of the Marine Patrol Program (MPP), with one vessel stationed on the north coast and one vessel stationed on the south coast. Each MPP vessel has 2-3 fishery officers permanently on board and a 7.53 meter rigid hull inflatable for their at-sea patrols. The fishery officer in charge submits daily patrol reports which are available to C&P and other departmental staff.

9.4. **Air Surveillance**

Aerial surveillance resources are utilized throughout the year to ensure compliance with the *Fisheries Act*, regulations and licence conditions and other Acts and regulations. Flight reports, photographs, videos and other data collected from the surveillance flights are readily available to departmental managers and fishery officers through an internet-based flight information system. As well, patrol coverage using charter aircraft with a fishery officer or fish manager on board, is utilised to identify concentrations and distribution of fishing vessels.

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10. APPENDICES

Appendix 1: DFO Contact Information

Appendix 2: Commercial Groundfish Hook and Line/Trap Monitoring Requirements (At-Sea and Dockside), Mortality Rates, and Size Limits

Appendix 3: Schedule II – Other Groundfish Species Commercial Harvest Plan

Appendix 4: Rockfish by Hook and Line (Inside ZN) Commercial Harvest Plan

Appendix 5: Rockfish by Hook and Line (Outside ZN) Commercial Harvest Plan

Appendix 6: Halibut Commercial Harvest Plan

Appendix 7: Sablefish Commercial Harvest Plan

Appendix 8: Groundfish Trawl Commercial Harvest Plan

Appendix 9: Rebuilding Plans for Groundfish Species

Appendix 10: Fishery Closures for Groundfish Hook and Line Fisheries

Appendix 11: Fishing Vessel Safety

Appendix 12: Groundfish Advisory Committee Contacts

Appendix 13: Fishing Hazards Advisory

11. GLOSSARY

| | |
|-----------------------------|---|
| Accountability | All harvesters are required to account for or accurately record all catch, both retained and released, for all species when fishing. As such, all catch becomes “accounted” for. Verification of accountability occurs through the monitoring program. |
| Area/Subarea | As in Section 2 of the <i>Pacific Fishery Management Area Regulations</i> , available through the Internet at: http://lois.justice.gc.ca/eng/regulations/SOR-93-54/section-2-20060322.html |
| CIC | Commercial Industry Caucus: A committee consisting of commercial groundfish vessel representatives and processors. |
| Communal Commercial Licence | Issued to First Nations organizations pursuant to the <i>Aboriginal Communal Fishing Licences Regulations</i> for participation in the general commercial fishery. |
| Communal Licence | Issued to First Nations organizations pursuant to the <i>Aboriginal Communal Fishing Licences Regulations</i> , to conduct fishing and related activities. |
| COSEWIC | Committee on the Status of Endangered Wildlife in Canada. |
| CSAP | Centre for Scientific Advice Pacific |
| CSAS | Canadian Science Advisory Secretariat |

| | |
|----------------|--|
| C&P | Conservation and Protection Branch |
| DMP | Dockside Monitoring Program: Program conducted by a company that has been designated by the Department, which verifies the species composition and landed weight of all fish landed from a commercial fishing vessel. |
| FSC | A fishery conducted by First Nations for food, social and ceremonial purposes. |
| GIAB | Groundfish Integrated Advisory Board: a committee consisting of representatives from First Nations, commercial groundfish fisheries and unions, recreational fisheries, coastal communities, the province of British Columbia, and environmental non-governmental organizations. |
| ITQ | Individual Transferable Quotas. The subdivision of a TAC into tradable shares to each commercial groundfish licence holder at the beginning of each season that are transferable between commercial groundfish licences (also referred to as Individual Vessel Quotas) |
| Observer | An individual who has been designated as an observer by the Regional Director General for Pacific Region pursuant to Section 39 of the <i>Fishery (General) Regulations</i> . |
| RCA | Rockfish Conservation Area. An area that is closed for the protection of various inshore rockfish species to fishing activities that negatively impact rockfish. |
| Responsibility | For those species that have a TAC and ITQ, harvesters must acquire sufficient quota to cover the mortality of retained and released species. |
| SAR | Science Advisory Report |
| SARA | <i>Species At Risk Act</i> |
| SFAB | Sport Fishing Advisory Board |
| TAC | Total allowable catch: The amount of catch that may be taken annually from a stock. |
| Tonne | Metric tonne, 1000 kg, or 2204.6 lbs. |
| Validation | The verification, by an observer, of the weight of fish landed. |

Appendix 1: DFO Contact Information

Observe, Record and Report Help to protect our Fisheries Resource

1-800-465-4336

Regional Headquarters

| | | |
|---------------------------------------|-----------------|--------------|
| Regional Resource Manager, Groundfish | Adam Keizer | 604-666-9033 |
| Trawl Co-ordinator | Rob Tadey | 604-666-3991 |
| Sablefish/Hook and Line Co-ordinator | Lindsay Gardner | 604 666-0912 |
| Halibut/Hook and Line Co-ordinator | Shane Petersen | 604-666-3279 |
| Regional FM Officer | Gwyn Mason | 604-666-3244 |
| Quota Officer | Gerry Dunsmore | 604-666-0010 |
| Quota Officer | Anna Khan | 604-666-5865 |
| | Facsimile | 604-666-8525 |

Science Branch Contacts

| | | |
|--|---------------|--------------|
| Regional Groundfish Science Contact | Greg Workman | 250-756-7113 |
| Regional Pelagics Science Contact | Jaclyn Cleary | 250-756-7321 |
| Regional Groundfish Science Data Contact | Bruce Patten | 250-616-6358 |

Enforcement

| | | |
|--|--|--------------|
| Regional Groundfish Enforcement Co-ordinator | | 604-666-4162 |
| Detachment Supervisor, Prince Rupert | | 250-627-3430 |
| Detachment Supervisor, Queen Charlotte City | | 250-559-8580 |
| Detachment Supervisor, Bella Coola/Bella Bella | | 250-799-5345 |
| Detachment Supervisor, Campbell River/Port Hardy | | 250-850-5707 |
| Detachment Supervisor, Port Alberni/West Coast | | 250-720-4450 |
| Detachment Supervisor, Victoria | | 250-363-0240 |
| Detachment Supervisor, Nanaimo | | 250-754-0210 |
| Detachment Supervisor, Steveston | | 604-664-9251 |

Recreational Fisheries

| | | |
|---|-------------|--------------|
| Regional Recreational Fisheries Coordinator | Carole Eros | 604-666-3271 |
| North Coast Area Coordinator | John Webb | 250-627-3409 |
| South Coast Area Coordinator | Brad Beaith | 250-756-7190 |
| Lower Fraser River Coordinator | Brian Matts | 604-666-2370 |
| BC Interior Coordinator | Dale Michie | 250-851-4946 |

Aboriginal Programs Division

| | | |
|---|--------------|--------------|
| Director, Aboriginal Programs Division | Tyler Collie | 604-666-7478 |
| Manager, Aboriginal Fisheries Strategy | Ann Susnik | 604-363-1647 |
| Manager, Integrated Aboriginal Programs | Cindy Wong | 604-666-6622 |
| Manager, PICFI Enterprise Development | David Lau | 604-666-4596 |

Aboriginal Negotiation Division

| | | |
|---|---------------|--------------|
| Director, Aboriginal Negotiation Division | Mel Kotyk | 604-666-6784 |
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First Nations Fisheries

| | | |
|---|-----------------|--------------|
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| North Coast AFS Implementation Officer (Areas 3 -6) | Melanie Anthony | 250-847-5108 |
| Central Coast Resource Manager (Areas 7-10) | Kristen Wong | 250-799-5620 |
| South Coast Resource Manager (Areas 11-13 & 27) | Rachel Saraga | 250-286-5807 |
| South Coast Resource Manager (WCVI) | Mike Ballard | 250-286-5881 |
| South Coast AFS Implementation Officer (SOG) | Jonathan Joe | 250 746-5701 |
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604-666-2716

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Appendix 2: Commercial Groundfish Hook and Line/Trap Monitoring Requirements (At-Sea and Dockside), Mortality Rates, and Size Limits

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1. CATCH MONITORING

Information on all catch is necessary for the proper management of the fishery. Monitoring of all catch, both landed and at-sea releases is critical to sustainable fisheries management. Mandatory 100 percent monitoring on all commercial groundfish hook and line and trap fishing trips will be required to provide a full and reliable accounting of all catches in these fisheries, both retained and released, and record fishing activity, location, date and time. This requirement may be met either through at-sea observer coverage or through the use of an Electronic Monitoring (EM) system on each trip. In addition, all landings must be validated through a dockside monitoring program.

1.1 Fishery Monitoring & Catch Reporting Risk Assessment Tool

DFO finalized the “Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries” (the Framework) in 2012. The Framework directs that an ecological risk assessment be undertaken for all fisheries to determine the level of monitoring, requisite for managing the ecosystem risks posed by a fishery, while allowing for final monitoring and reporting programs to reflect the fishery’s unique characteristics.

Draft risk assessments were performed using an excel-based tool that provides for a consistent approach to ecological risk and other resource management considerations. Draft risk assessments in all fisheries will be initially completed by DFO, then presented to harvesters for review, comment, and revision through existing advisory processes established for fisheries management purposes. Where no advisory process exists, engagement will occur through alternative means.

In cases where the risk assessment indicates a gap between the current and target level of monitoring identified through the risk assessment, discussions will be held between DFO and harvesters to identify options to address the monitoring gap, and the feasibility of these options (e.g. cost, technical considerations, etc.). The Strategic Framework directs that monitoring and reporting programs be both cost-effective and tailor-made for a fishery. As such, a collaborative approach is required.

Where monitoring options are determined to be feasible, the monitoring and reporting regime will be revised to incorporate these options, providing resource managers with sufficient information to effectively manage the ecological risk of the fishery. Where monitoring options are not feasible, alternative management approaches are required to reduce the ecological risk posed by the fishery. If there is no gap between the current and target level of monitoring, the management approach will not require any change.

Draft risk assessments have been completed for priority groundfish fisheries by gear type, including Hook and Line, and Trap for commercial and FSC dual fishing. From these assessments, the preliminary fishery risk (comprised of risk to main species, bycatch, and community and habitat) was identified as “high” for Hook and Line fisheries due to bycatch of COSEWIC listed species (Yelloweye rockfish, Bocaccio rockfish), and requires a monitoring level of “Enhanced” to address the associated ecological risk. The preliminary fishery risk for commercial and FSC dual Trap fisheries was identified as “low”, commensurate with lower ecological risk to COSEWIC listed species. However, quota management in an integrated groundfish fishery compels the current, enhanced level of monitoring to remain in place.

As the Hook and Line, and Trap groundfish fisheries currently meet the enhanced target monitoring level prescribed by the risk assessments, no changes to the monitoring program are expected in this risk assessment cycle (approximately five years, provided there are no significant changes to the fishery before the regular reassessment).

As of November 2018, the Department is in the process of gathering feedback on, and will subsequently finalize a draft National Fishery Monitoring Policy, which aims to bring consistency in the development, delivery and evaluation of monitoring programs for all federally-managed wild fisheries in Canada, and will ultimately supersede the existing Pacific Framework.

More information on the Pacific Framework and risk assessment is available online at:

www.pac.dfo-mpo.gc.ca/fm-gp/docs/framework_monitoring-cadre_surveillance/page-1-eng.html

2. AT SEA OBSERVER COVERAGE

Under Section 46 of the *Fishery (General) Regulations*, the licence holder or master of a fishing vessel shall, at the request of the Regional Director General, permit an observer to go on board that vessel to perform the designated duties for the period of time specified and arrange for embarkation or disembarkation of the observer at the times and places specified. The vessel master shall provide all reasonable assistance to the observer.

Archipelago Marine Research Ltd. (AMR) is the designated service provider for at-sea observers for the groundfish fisheries. Contact AMR at 1-800-663-7152 to arrange for at-sea observer services or to inquire about costs of this service. Other vessel requirements are outlined in AMR’s services agreement that each vessel must complete before an observer is deployed.

3. ELECTRONIC MONITORING SYSTEM

The EM system allows for auditing, on a trip and set basis, the species caught, retained and released at sea. Using an EM system is an alternative to the requirement to carry an at-sea observer. Vessels that do not ensure that the EM system is functional for the entire trip, that the cameras have a clear view of the fishing area at all times, or that release rockfish at-sea, may be required on subsequent trips to carry an at-sea observer.

It is the responsibility of vessel owners / licence holders to arrange for fishery electronic monitoring services from a service provider approved by the Department. Archipelago Marine Research Ltd. (AMR) is the EM service provider currently approved by the Department.

3.1. Organizational Requirements

Vessel masters must arrange for service providers that meet the following organizational requirements.

Business Plan

Vessel masters must arrange for potential service providers to provide the Department a business plan that includes a description of the organization of the service provider company, its human resources, and its plan of operations, including but not necessarily restricted to:

1. Incorporation papers;
2. Evidence of the company's financial viability, through:
 - a) provision of the organization's financial statements; or
 - b) provision of a performance bond guaranteeing three months operation;
3. A company organization chart listing principals, officers, and employees including job descriptions and responsibilities;
4. An operational plan setting out operational procedures and equipment requirements that demonstrate the capacity to operate EM services on a continuous basis;
5. A human resources plan that demonstrates the capacity and expertise to provide EM services, that:
 - a) demonstrates capacity and expertise to manage technical projects or programs;

- b) demonstrates capacity and expertise to manage a project which has a training component;
 - c) identifies individuals responsible for training and demonstrate that they have capacity and expertise to deliver training programs to adults.
6. A data quality system that ensures the integrity of the information collected and compiled, which includes:
- a) a person responsible for the system and his or her duties;
 - b) the operating system and the manner in which the records are kept;
 - c) the control points, the verification procedures, and the process for correcting deficiencies in the system;
 - d) a system for maintaining a record of system failures that details the event and corrective actions taken.
7. A detailed training plan that will be delivered by the company or an independent training organization and a process for amending the plan when changes to legislation, regulation, or policy dictate new program requirements.

Insurance

The service provider must have Commercial General Liability insurance maintained in force throughout the duration of the period for which they are approved as an EM service provider, in an amount for a limit of liability not less than \$5,000,000 per accident or occurrence.

The service provider must maintain the required insurance coverage for the duration of the period for which they are an approved service provider. Compliance with the insurance requirements does not release the company from or reduce its liability as an approved service provider.

The service provider is responsible for deciding if additional insurance coverage is necessary to ensure compliance with any applicable law. Any additional insurance coverage is at the service provider's expense, and for its own benefit and protection.

The service provider must provide to DFO a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. Coverage must be placed with an Insurer licensed to carry out business in Canada. The service provider must, if requested by DFO, provide a certified true copy of all applicable insurance policies.

Security and technical capacity

Some of the data collected by EM systems and processed by service providers is Protected information. Each of the company's proposed individuals requiring access to Protected information, assets or work site(s) must meet the security requirement at the requisite level of Reliability Status, granted or approved by the Canadian Industrial Security Directorate (CISD), Public Works and Government Services Canada (PWGSC).

The company must provide the name of all individuals who will require access to Protected information, assets, or sensitive work sites.

To submit catch data to DFO via its Fisheries Operations System, the service provider must have internet access and security clearance to acquire user access to the Fisheries Operations System web services. The service provider must also acquire Secure Virtual Personal Network access (provided by DFO) which includes: (1) Public key infrastructure (PKI) credentials and client software, (2) SVPN client software, and (3) Citrix software or software compatible to client Microsoft Terminal Server. This enables submission of information technology bugs and issues via DFO software. DFO will work with approved service providers to support the connection of service providers to the Fisheries Operations System.

Upon receipt by DFO of the harvest data and fishing location information included in EM data, Section 20(1)(b) of the *Access to Information Act* prevents DFO from disclosing to a third party, records containing financial, commercial, scientific or technical information that is confidential information. Further, Section 20(1)(c) of the *Act* prevents DFO from giving out information, the disclosure of which could reasonably be expected to prejudice the competitive position of the licence holder. Given this, service providers must demonstrate they have data management and security systems capable of preserving the integrity, accuracy, and confidentiality of EM data. Protection measures, including but not necessarily limited to SSL encryption, must be in place for EM data transmitted by service providers to DFO.

Service providers must demonstrate how EM systems are both tamper resistant and capable of indicating when attempted tampering has occurred.

Arm's Length

Arm's length criteria ensure that there are no actual or perceived conflicts of interest between EM service providers and fishing enterprises. Upon approval, service providers must attest that:

- a) The service provider, its subcontractors or agents and their respective personnel assigned to or engaged for the performance of the work have not accepted and shall not accept any bribe, gift, benefit, or other inducement that would, in any way, cause a real or apparent conflict of interest;

- b) The service provider, its subcontractors or agents and their respective personnel assigned to or engaged for the performance of the work shall have no activities or relationships with any third parties, including fishing vessels owners and operators, that would render it or any of them unable to provide impartial information, assistance or advice to DFO, or affect or otherwise impair its or their objectivity in performing the work.

Should the service provider become aware of any such activity or relationship, bribe, gift, benefit, or other inducement, the service provider must undertake to immediately report the matter, in writing, to DFO.

Upon learning of any potential conflict of interest on the part of the service provider or any of its subcontractors or agents and their respective personnel assigned to or engaged for the performance of the work, DFO may direct the service provider, in writing, to take whatever steps that DFO, in its sole discretion, deems necessary and appropriate to resolve the potential conflict.

Companies must provide a notarized declaration that the company and its directors, principals, officers, shareholders, and employees, and those with any other financial interest in the company have no actual or perceived conflicts of interest with the fishing industry, and meet the arm's length criteria as described here, and explains how any such conflicts will be resolved.

3.2. Systems Requirements

Any electronic monitoring system must be approved by the Department and must include the following minimum specifications and component requirements:

- a) a video and sensor data-logging engine (control box), equipped with monitor and keyboard to verify correct power supply and EM system software and hardware performance, equipped with an external control to allow the user to manually insert time-stamped event markers into the sensor record;
- b) operating software to record imagery during fishing events;
- c) peripheral sensor devices suitable for fishing-deck work environment, including GPS, an electronic hydraulic pressure transducer, and a winch rotation sensor (where applicable);
- d) a minimum of two closed circuit television cameras, suitable for fishing-deck work environment, configured with an adjustable focal length lens to provide a clear view of the catch retrieval process and the measurement of released fish.
- e) have the sensor box connected to a monitor and keyboard to allow the user to view recorded EM imagery and conduct system checks to test system functionality.

Video images captured by the EM system shall meet the following minimum specifications:

- a) image files shall be viewable on Windows media player; if a non-standard Windows media player Codec is used, it shall be provided to Archipelago Marine Research Ltd. for image analysis;
- b) minimum resolution of 640 X 480 dpi and the ability to vary lens choice to ensure an appropriate field of view;
- c) imagery must have a burned-in caption showing vessel identifier, date, time and location;
- d) image files must capture 100% of each catch retrieval event, including a 10 to 30 minute run-on (depending on gear type) after each event;
- e) image frame rates shall be not less than 5 frames per second for catch retrieval imagery; and
- f) image quality must be sufficient to allow clear identification of species.

Sensor data captured by the EM system shall meet the following minimum specifications:

- a) Sensor data should be recorded to an ASCII file at a minimum frequency of once every 10 seconds;
- b) Sensor data format must meet the specifications outlined below:

Date,Time,UTCOffset,Lat,Latmin,Lon,Lonmin,Gpsok,Speed,Heading,Voltage,Saterr,
Video,Event,Drum,Pressure

080602,120041,-07.00,48,26.1305,123,23.7711,1,00.0,277,11.97,005,0,01,0,0

080602,120051,-07.00,48,26.1305,123,23.7711,1,00.0,257,11.95,005,0,00,0,0

080602,120101,-07.00,48,26.1305,123,23.7711,1,00.0,249,11.95,005,0,00,0,0

080602,120111,-07.00,48,26.1305,123,23.7711,1,00.0,252,11.95,005,0,00,0,0

Comma Delimited Data Format

The date, time, latitude, longitude, speed, heading and satellite error are all delivered by the GPS in National Marine Electronics Association (NMEA) 0183 Version 2.0 format. All data are numeric except the comma separators. Sensor sample interval is 10 seconds.

- 1) **DATE** – fixed width, 6 characters, YYMMDD
- 2) **TIME** – fixed width, 6 characters, HHMMDD, Pacific Standard Time year round.

- 3) **LAT** – Latitude degrees, fixed width, 2 characters
- 4) **LATMIN** – Latitude minutes, fixed width 6 characters including decimal point with 3 decimal characters
- 5) **LON** – Longitude degrees, fixed with 3 characters
- 6) **LONMIN** – Longitude minutes, fixed width 6 characters including decimal point with 3 decimal characters
- 7) **SPD** – Speed knots, fixed width 4 characters including decimal point with 1 decimal character
- 8) **HDG** – Heading degrees, fixed width 3 characters
- 9) **SATERR** – Estimated horizontal position error in metres (radius), fixed width, 3 characters. The horizontal position error (HPE) is delivered in the NMEA 0183 – GPS data stream
- 10) **VIDEO** – Video on/off, fixed width, single character (0 or 1)
- 11) **EVENT** – Operator initiated event marker, fixed width, 1 character (0 or 1)
- 12) **COUNT** – Rotation sensor – drum revolutions during sample interval, column width variable
- 13) **PRES** – Hydraulic pressure reading, pounds per square inch (PSI), column width variable.

3.3. Administrative and reporting requirements

Vessel masters must arrange for service providers that can meet the following minimum administrative and reporting requirements:

- a) data collected from the fishing logs shall be entered into DFO's Fisheries Operations System (FOS) within seven (7) days of collection;
- b) imagery viewing shall be completed to conduct audits of fishing logs (see section 12 below);
- c) results of the audit shall be used to produce a quota status report using FOS within five (5) days of the availability of a logbook and validation record in the FOS system (unless an audit has failed);

- d) where an audit has failed, results of the audit shall be used to produce a written report to DFO within five (5) days of the availability of a logbook and validation record in the FOS system;
- e) electronic records of all audits performed shall be maintained;
- f) video and sensor data shall be retained by the service provider responsible for conducting the audit:
 - a. for at least 14 days after data has been reviewed to support audits of fishing logs and until a quota status report has been issued, where data review has not generated an occurrence report or audit failure, or
 - b. for at least 30 days after data has been reviewed to support audits of fishing logs and until a quota status report has been issued or until DFO provides written indication that these data can be destroyed, where data review has generated an occurrence report or audit failure. The service provider will provide DFO 7 days advance notice before the 30 day period is up to allow DFO the opportunity to request the video and sensor data from the service provider for storage in DFO facilities or to provide permission to destroy the data;
- g) video and sensor data shall be provided to DFO upon DFO's request;
- h) audit reports shall be produced that are consistent with requirements set out in section 12 of this appendix, and any further guidance developed by the Commercial Industry Caucus (CIC) EM subcommittee;
- i) occurrence reports shall be produced for breaches of licence conditions within five (5) days of the availability of video and sensor data, a logbook, and validation record in the FOS system, consistent with requirements set out by the DFO Conservation and Protection branch;
- j) monthly reports shall be submitted to DFO using specified templates developed by DFO that include the audit results by fishery, number of vessels, number of trips, landed weight, audit reports, the total hours of EM services, and the total hours of data services provided;
- k) a year-end report shall be submitted to the CIC EM subcommittee summarizing fleet participation and performance, lessons learned, equipment performance, and any further content identified by the CIC EM subcommittee;

- l) meetings of the CIC EM subcommittee shall be attended regularly throughout each year.

3.4. Requirements prior to fishing when using EM:

The vessel master must make arrangements with an approved EM system service provider to install an EM system on board their vessel. The EM system must be functioning prior to hailing out. A functionality test confirming that the EM system is working must be completed by either the EM service provider or through the use of the User Enabled Services (UES) program. The FTCN must be recorded in the fishing log and is required to hail out.

- a) When hailing out, the vessel owner or master must provide the hail service provider with, in addition to the usual trip details, either an FTCN or the name and observer ID number of the embarking at sea groundfish observer for the trip.
- b) A hail out number will only be issued if either the FTCN (confirming a fully operational EM System) or the name of an embarking at sea observer is included in the hail information. The vessel must not depart port until a hail out number has been issued.
- c) A Quota Status Verification Number (QSVN) must also be provided at the time of hail, this number is to be recorded on the validation record at offload.
- d) Vessels must hail out to the designated hail service provider and must receive a hail out number prior to departing on the trip. The hail out number must be recorded in the fishing log. Hail out requirements are fully described in licence conditions.
- e) Archipelago Marine Research Ltd. (AMR), the EM service provider currently approved by the Department, also provides the UES program, a voluntary program that enables a skipper to manage aspects of the EM program that would traditionally be performed by an EM technician. For more information on eligibility and program guidelines, contact AMR.

3.5. Requirements while fishing with EM:

- a) Accurate recording of all fish caught and released in the fishing log is key to both accurate determination of catch and cost-effective fishing log audits. All halibut and sablefish caught and either retained or released must be accurately recorded by piece count and estimated weight in the fishing log. All other species must be accurately and fully recorded as piece counts. In addition, the set and haul details including fishing time and location must be accurately recorded.

- b) Where an EM system is in use on a vessel, the vessel master shall ensure all components of the system are fully operational during the entire fishing trip from the time the vessel leaves port until the vessel arrives at port to offload and the technician removes the trip information. The EM system shall be continuously powered and not turned off at any time. Vessels masters may also conduct periodic system functionality checks via monitor and keyboard. These checks record EM system performance and have it recorded with a time and date stamp on the system hard drive.
- c) If any or all of the EM system equipment becomes inoperative or malfunctions in any way, the vessel master shall immediately contact the EM system service provider. If the EM system cannot be repaired at sea, the vessel master shall stop fishing by hauling gear and returning to port as soon as possible. Trip data will be reviewed to ensure no fishing occurred after equipment failure. For Sablefish trap vessels, traps can be left in the water (for no more than four days) if the vessel is returning to port to repair the equipment and subsequently returning to the fishing grounds to complete the trip. If the EM system cannot be repaired at port, the vessel must hail-in as soon as possible.
- d) All rockfish species must be retained and landed. See appendices 3-7 for further details.
- e) EM system camera views must capture all fishing gear as it is retrieved from the water and all retained and released fish.
- f) Vessel operators and crew should avoid positioning themselves between the camera and the catch as this hampers accurate recording of catch during image review. All catch must be visible to the camera.

3.6. Measurement grid

- a) The use of a measurement grid is optional, however if the vessel master opts not to use a grid then all releases of lingcod, sablefish and halibut will be deemed legal size and all releases of dogfish will be deemed marketable and the appropriate mortality rates will be applied (see Section 7). The vessel master will then be responsible to acquire the necessary quota to address these.
- b) If a measurement grid is used then all sub-legal lingcod, sablefish, halibut and unmarketable dogfish must be held against the grid matching the specifications outlined below in (d). Vessel masters are reminded that fish are to be held against the measurement grid for at least three seconds before release without doing other activities (i.e. removing a hook). The calmer the fish, the easier they are to measure. The objective is to allow video viewers to visually gage the length of the fish. If the

grid is used improperly, the fish cannot be measured and the released fish will be deemed legal size.

c) The exceptions to this are released halibut on a directed halibut trip, released dogfish on a directed dogfish trip, and released lingcod on a directed lingcod trip. On these trips all targeted species that are released at-sea will be assumed to be sub-legal or unmarketable and do not have to be measured. All levels of releases will be monitored in season to assess this requirement. See size limits in Section 9.

d) Recommended measurement grid specifications:

1. For vessels that choose to discard fish at the rail (Figure 1), or after the fish have come over the rail (Figure 2), measurement stations at the hauling area should have the following delineations:

i. Control Level

- Green band above the bumper that has a height of 5cm and a width of 100cm

ii. Bumper

- Raised material (e.g. existing rail or rubber or angle iron) at bottom of control level, it must be sufficient to act as a control point to hold the tip of the fish against

iii. Measurement Bands

- Red band spanning 55-60cm from the bumper
- White band spanning 60-65cm from the bumper
- Yellow band spanning 65-75cm from the bumper
- White band spanning 75-81cm from the bumper
- Light green band spanning 81-91cm from the bumper
- White band spanning 91-97cm from the bumper

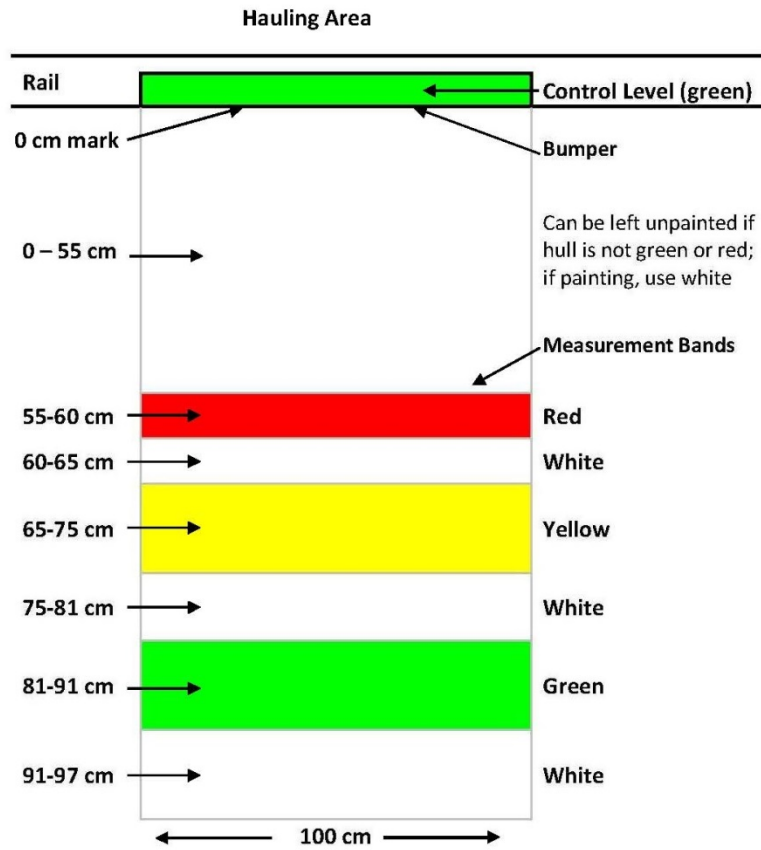


Figure 1. Measurement grid recommendations for vessels releasing at the rail.

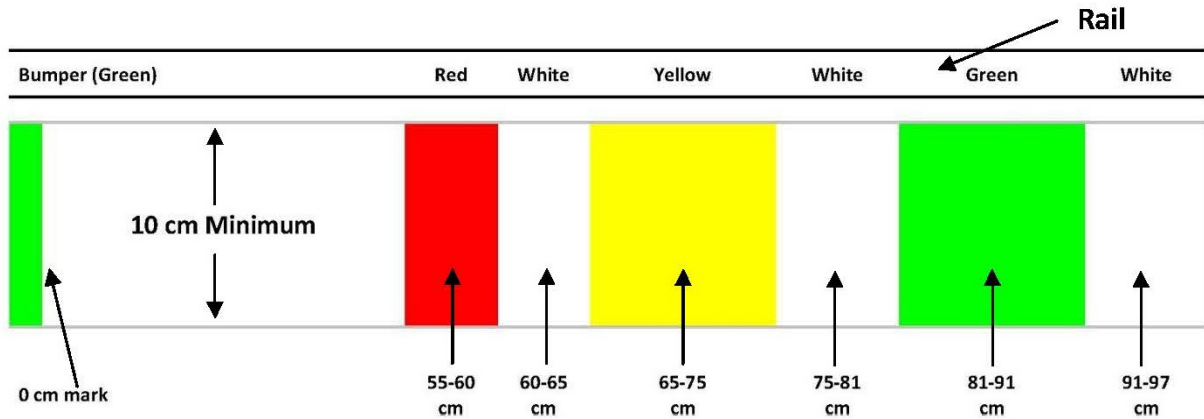


Figure 2. Measurement grid recommendations for vessels releasing after fish have come over the rail.

2. If a vessel does not have adequate freeboard for the bands on the side, infrastructure can be added above the rail at the hauling area (Figure 3). The control level, bumper and any bands above the hull must be a minimum of 10 cm wide; any bands on the hull must meet the specifications stated above.

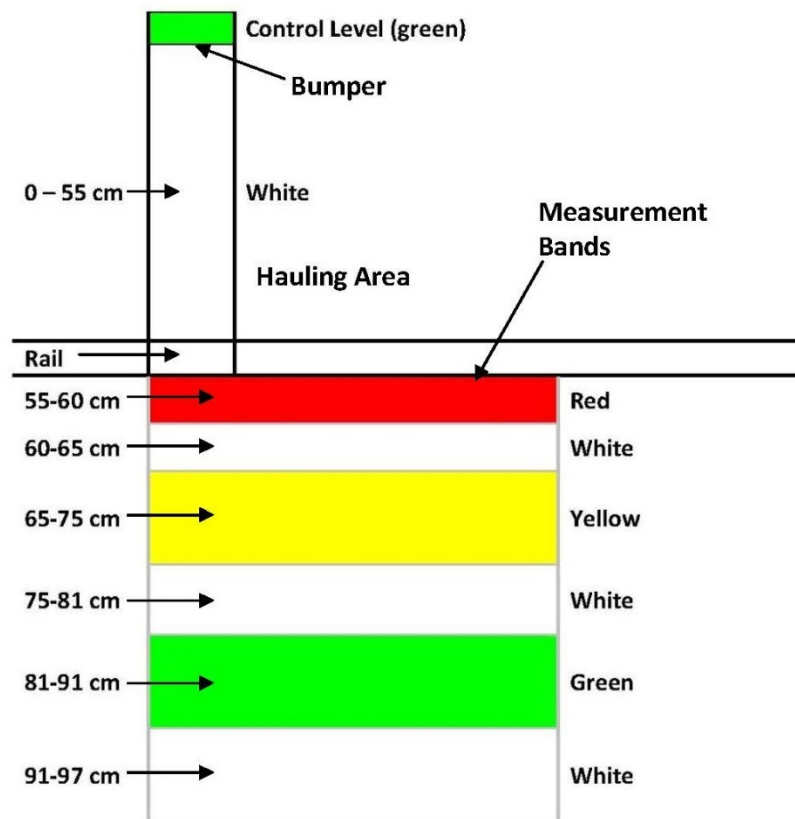


Figure 3. Measurement grid with infrastructure added for vessels without adequate freeboard.

3.7. Evaluation

The performance of the service provider(s) in meeting the requirements of the EM program may be evaluated. Service providers failing to meet the minimum requirements outlined in this appendix may not be approved by DFO to perform those duties in subsequent years. Further, the EM requirements set out in this appendix will be subject to periodic review.

DFO is not responsible for third-party contracts or other arrangements between licence holders and service providers. It is the responsibility of licence holders to ensure that arrangements are in place for service providers to meet EM requirements.

As part of the evaluation process, DFO may assess performance against the requirements described in this document at various points within the fishing season. Feedback will be provided to the service provider(s) and licence holder representative(s). Any opportunities to improve performance will be documented during the first 8 months of the year. In the event that service providers are unable to reach a satisfactory level of performance in the EM program, they will be notified along with licence holder representative(s), prior to November 1 of each year that DFO will not approve their company to provide EM services in the following year.

EM service provision evaluation criteria:

- Success of EM data collection,
- Processing and delivery of logbook information within the specified timeframes;
- Documentation of equipment deficiencies /failures and repair;
- Rate of equipment deficiencies /failures and timeliness of equipment repair;
- Timeliness, completeness, and accuracy of trip audit reports, occurrence reports, quota status reports, monthly reports, and year-end report;
- Preservation of accuracy, integrity, and confidentiality of EM data;
- Adherence to arm's length and insurance criteria;
- Attendance at meetings of the CIC EM subcommittee.

4. INTEGRATED GROUND FISH FISHING LOG

The Integrated Groundfish Fishing Log is an electronic or paper log that meets the requirements of the Department and serves as the official catch record for a vessel for any given groundfish trip. Integrated Groundfish Fishing Logs, electronic or paper, are available from Archipelago Marine Research Ltd. It is the responsibility of the vessel owner or master to ensure that the Integrated Groundfish Fishing Log be completed fully and accurately. The Integrated Groundfish Fishing Log no later than 24 hours after midnight local time for each day fished, and

prior to the landing of any fish taken under authority of this licence (see section 16 for examples).

Where a paper Integrated Groundfish Fishing Log is used:

- the white copy of the completed pages of the log will be collected by the groundfish dockside validator;
- Following the landing of halibut, the yellow copies of the completed pages shall remain in the Logbook until removed by an International Pacific Halibut Commission employee or shall be mailed within seven (7) days of the vessel's final landing to:

International Pacific Halibut Commission

2320 West Commodore Way, Suite 300

Seattle, WA, United States

98199-1287

- the pink copy of the completed pages must be retained for a minimum period of two years.

Where an electronic Integrated Groundfish Fishing Log is used:

- copies shall be provided to Fisheries and Oceans Canada (c/o Archipelago Marine Research Ltd.), and the International Pacific Halibut Commission within seven (7) days of each landing; and
- A copy must be retained for a minimum period of two years.

5. HAIL PROGRAM

Prior to leaving port for a fishing trip, and prior to landing catch, the vessel masters must identify their intentions by way of hailing. Hail-out and hail-in reports may be made either via telephone, or electronically via the e-hail program, as described in the conditions of licence.

To hail via telephone, a vessel master shall contact the designated groundfish hail service provider, Archipelago Marine Research Ltd. (AMR), at 1-877-819-1888 (24 hours per day; seven days per week).

6. BAIT

Commercial fishers wishing to use licensed catch as bait may do so (with the exception of rockfish). All such catch must be accurately recorded in the Integrated Groundfish Fishing Log. Rockfish may not be used as bait but must be retained and landed. Pacific cod landings are subject to a trip limit, (refer to licence conditions for details), however, any amount of Pacific cod caught can be used for bait provided that the fish is recorded in the logbook.

Octopus caught incidentally may be retained and used for bait but cannot be landed and sold.

If a quota species is used as bait, the vessel will be assessed the average weight for that species (see Section 9).

7. DOCKSIDE MONITORING AND VALIDATION

7.1. Hail-in

Vessels must hail-in to the designated hail service provider prior to the landing of any fish. The landing of any species of fish cannot commence unless a groundfish dockside observer is present and has given permission to commence the landing. All requests for dockside observer services will be handled as quickly as possible; however vessel masters are urged to provide as much advance notice as practical (e.g., 24 hours) to avoid delays. Response times will vary depending on many circumstances such as observer availability, time of hail and location of offload. Hail-in requirements are fully described in licence conditions.

7.2. Designated Landing Locations

All hook and line and trap groundfish species shall be landed only at the approved landing ports listed in the licence conditions. To get an estimate of costs and rates for different landing locations, contact AMR.

7.3. Landing

All fish landed must be separated, piece counted and weighed by individual species and by product type. The only exceptions to the piece count requirement are halibut, lingcod, dogfish and sablefish landed on directed trips.

Sub-sampling methods are set out in licence condition for species, (other than halibut and lingcod), where the landed weight is greater than 2,500 lbs.

All fish caught and retained must be landed at designated offloading locations and validated by a groundfish dockside observer using a dockside weight verification system. AMR is the designated service provider for this program, and will provide DFO designated groundfish dockside observers to verify individual vessel quota status. Specific requirements are included in conditions of licence.

The dockside monitoring program (DMP) is a cooperative process between vessel masters, processors and validators whereby all parties must work together to ensure the timely and accurate collection of catch landing data. Vessel masters are ultimately responsible to ensure the offload process meets the needs of all parties, in particular regarding piece counts. Should offload conditions (e.g. processing plant operations, lighting at the offload) inhibit the ability of the validator to conduct an accurate piece count, the observer is obliged to immediately bring this to the attention of both the plant foreman and the vessel master to have the issue resolved.

At the completion of an offload, vessel masters or a designate must review the validation record and sign off on the piece counts; acknowledging that piece counts are a key component of the audit process (Section 11). In the case where a discrepancy exists between the vessel master's count and the validation record, a recount may be requested.

Where a recount is carried out, it should be done in a way that minimizes impact and expense for the offloader. In those cases where the new counts are more than 5% out, AMR will not bill vessel for the extra time unless concerns regarding the validator's ability to carry out accurate piece counts were not addressed. If the recount of the species in question is completed and the new counts are within 5% of the original count, the costs of doing the extra time will be borne by the vessel and added to the Validation Record.

No fish may be offloaded at sea. No landing of any fish is to commence until a designated groundfish dockside observer is on-site and approves the commencement of the landing.

The observer will inspect fishholds, lazarettes, baitholds, and other areas where fish might be stored. With the exception of the directed Sablefish fishery (category K licence eligibility), after landing is completed the observer will inspect the fishholds, and the above-mentioned areas, to ensure that all fish on board have been landed. It is the responsibility of the vessel owner or master to provide safe access to the vessel's holds for inspection, and to ensure that the vessel does not leave the landing site prior to completion of the fishhold inspection by observer.

7.3.1. Partial Offloads

Vessels fishing under the authority of a category K licence eligibility are permitted to land only a portion of their catch during a "partial offload."

A partial offload is a manner of fishing by which a vessel offloads some catch before returning to the fishing grounds for additional fishing. A maximum of two trip "legs" are permitted in a partial offload fishing trip, meaning fishing would occur in the following manner: hail out, fish, hail in, land some portion of catch, fish, hail in, land all catch, complete data processing (e.g. audit fishing log and issue Quota Status Report).

At the end of each partial offload, all logbook pages, validation records, and electronic monitoring data must be provided to the service provider. For vessels fishing with EM, a partial offload will require a hard drive exchange.

Trip limits are assessed at the end of the final hail-in, at the service provider's head office (as opposed to on the dock as occurs for traditional offloads). Trip limits are based on all catch that occurred between the hail-out and the final hail-in.

Partial offloads are prohibited for Pacific Halibut.

Once landing commences all product on-board are to be landed and weighed on a scale approved by either Industry Canada or the State of Washington Weights and Measures.

The groundfish dockside observer will verify and record in the Groundfish Validation Log the weights and, where required, the pieces of all fish landed. Where commercially caught Pacific Halibut is landed fresh, all Pacific Halibut catch shall be landed head-on. Where commercially caught Pacific Halibut is landed frozen, Pacific Halibut catch shall be landed head-on or head-off. All catch may continue to be landed dressed. The observer will convert landed halibut weights to a net dressed, head-off weight. Rockfish and all other groundfish species will be converted to a round weight, using conversion factors set out in the conditions of licence.

The white copy of the completed pages from the Validation Record must remain with the groundfish dockside observer for subsequent keypunching and data entry. The yellow page must be delivered to the buyer or must accompany the load and be delivered to the buyer if the fish are trucked to the buyer.

The IPHC stock assessment is based on biological data obtained through port sampling, surveys and special projects. Since the 1930s, biologists have collected otoliths for ageing and lengths of fish. Under Section 48 of the *Fishery (General) Regulations*, the vessel master must make available for sampling any fish when requested by an authorized representative of the IPHC.

7.4. Halibut Tagging

All halibut landed in Canada including Canadian-caught halibut landed in the United States will be tagged. Under this program all halibut are tagged by the Department certified observer at the point of initial offloading with a unique serial number that will tie each fish to a particular offload. These numbers are recorded by the observer in the Validation Record completed for each landing.

The objectives of the program are twofold: to act as an enforcement tool to decrease the amount of illegally caught halibut entering the market, and to assist in marketing Canadian halibut as a distinct and high quality product.

7.5. Transport of validated fish

If the fish are to be transported to another location after landing, the vessel master should obtain a transit slip from the groundfish dockside observer, who will issue one transit slip for each vehicle or vessel transporting groundfish.

Vessels with validated fish onboard shall not engage in any commercial fishing until all validated fish have been removed from the vessel.

8. MORTALITY RATES

Vessels will be assessed mortality for legal/marketable sized fish released at-sea, for those species and areas for which a quota has been established. Mortality rates are set out below.

| Gear | | Lingcod | Sablefish | Dogfish | Rockfish | Halibut | Skates |
|-------------|----------|---------|-----------|---------|----------|---------|--------|
| Hook & Line | Jig | 4% | 15% | 6% | 100% | 5% | 10% |
| Hook & Line | Longline | 4% | 15% | 6% | 100% | 16% | 10% |
| Hook & Line | Troll | 2% | 15% | 6% | 100% | 5% | 10% |
| Trap | | 4% | 9% | 6% | 100% | 10% | 10% |

9. AVERAGE WEIGHTS

The mortality can be determined by calculating the mortality rate (as laid out above) by the predetermined average weights in pounds listed below. (For example a longline caught legal-sized released halibut would be $0.16 \times 21 \text{ lb.} = 3.4 \text{ lb.}$)

| | | | | | |
|-----------------|----|--------------------|---|-----------------------|---|
| Canary Rockfish | 6 | Quillback Rockfish | 3 | Shortspine Thornyhead | 3 |
| China Rockfish | 3 | Redbanded Rockfish | 4 | Silvergray Rockfish | 5 |
| Copper Rockfish | 3 | Rougheye Rockfish | 4 | Spiny Dogfish | 9 |
| Lingcod | 12 | Sablefish | 8 | Tiger Rockfish | 3 |

| | | | | | |
|-----------------|----|---------------------|----|--------------------|---|
| Pacific Halibut | 21 | Shortraker Rockfish | 9 | Yelloweye Rockfish | 7 |
| Big Skate | 18 | Longnose Skate | 14 | | |

Dogfish, Sablefish and ZN vessels that encounter halibut or lingcod as non-directed catch after their season closes will be responsible for the mortality of these species.

10. SIZE LIMITS

10.1. Halibut

No person shall catch and retain a halibut that head on is less than 32 inches (81.3 cm), measured in a straight line, passing over the pectoral fin, from the tip of the lower jaw with the mouth closed to the extreme end of the middle of the tail or head off less than 24 inches (61.0 cm), measured in a straight line from the base of the pectoral fin at its most anterior point to the extreme end of the middle of the tail.

10.2. Lingcod

No person shall catch and retain a lingcod that head on is less than 65 cm in length, measured from the tip of the nose to the tip of the tail or head off is less than 50 cm in length, measured along the shortest length of the body to the tip of the tail.

10.3. Sablefish

No person shall catch and retain a sablefish that is less than 55 cm in length, measured from the tip of the nose to the fork of the tail or where the head has been removed, 39 cm in length measured from the origin of the first dorsal fin to the fork of the tail.

10.4. Dogfish-Unmarketable

Dogfish that is less than 66 cm in length, may be released at-sea, and will not be deducted from IVQ holdings.

11. RESTRICTIONS

It is unlawful to have Pacific halibut on board taken by recreational fishing if there are any other fish on board the vessel destined for commercial use.

12. FISHING LOG AUDIT

At the time of landing the video and sensor data from the EM system will be removed from the EM system by the EM system service provider. Following every trip landing there will be an audit of the accuracy of the completed fishing log completed by a service provider approved by the Department. The audit uses the video data to confirm catch by species group, DMP piece counts to confirm retained catch, and the GPS and other sensor data to confirm location of fishing. Approved service providers for the audit will run a series of tests so that the following comparisons will be made:

- a) Fishing log total retained piece counts compared to DMP validation - to verify the accuracy of logbook with respect to landed and validated catch.
- b) Fishing log piece counts compared to EM Video - to compare the observed catches and releases against the fishing log record. Ten percent (10%) of all sets per trip (minimum 1 set) will be randomly selected for video review.
- c) Fishing log set start location, time, date and total number of fishing events compared to EM sensor data – to verify the accuracy of the logbook in relation to time, date and area of catch and number of fishing events.
- d) All test results produced from the audit are combined in a weighted average to produce a trip score to provide a single value ranging from 0 ('poor') through 10 ('good') to describe general audit results.
- e) Trip scores will be considered cumulatively in determining a vessel's annual score. Annual scores, ranging in value from 0 ('poor') through 10 ('good'), are determined by averaging a vessel's trip scores accrued over the past calendar year (i.e. irrespective of season) to provide a sense of a vessel's audit history.

After the audit is complete, the logbook and the DMP together form the official trip record.

Audits that are not within acceptable range may result in the following:

- a) Letters identifying unsuccessful tests, requests for additional information to explain discrepancies, and a delay in receiving catch details;
- b) Additional time required to resolve and correct fishing trip data at additional cost to the vessel;
- c) Complete (100%) review of all EM imagery data at additional cost to the vessel; and
- d) Catch detail being based on EM data rather than logbook data.
- e) Requirement to take an at-sea observer

Sensor and video data gaps may prevent Quota Status Reports (QSRs) from being generated. Vessels are required to have the video running when hauling gear to enable a clear view of all catch and all releases. Sensor data gaps are flagged if the set start information is missing. The sensor data must cover all setting of gear for audit purposes; therefore if any sets are missed, the audit is sent to DFO for review.

While other sensor data gaps may not prevent a QSR from being issued (i.e. overnight or in transit), it remains the responsibility of conditions of licence require the vessel master to ensure a functioning and operational EM system for the entirety of a fishing trip. When sensor gaps occur on a trip, they should be noted in the log. If a vessel is experiencing technical difficulties with the EM system such that it may cause video or sensor data gaps while fishing, it is the vessel master's duty to inform AMR and resolve any issues prior to continuing fishing activity.

13. QUOTA STATUS REPORT

Following the completion of each offload and subsequent audit, the designated EM data analysis service provider will reconcile all catch information; both landed and discarded, versus current quota holdings and produce a quota status report (QSR). The QSR will be forwarded to the identified contact for the vessel. Vessel masters should be advised that it can take up to 5-7 days for completion of a QSR.

There may be a one trip allowance for vessels to clear excess overages for non-directed catch. Vessels that remain in an overage position for any species area group will be restricted from further fishing activity for that fishery for the remainder of the fishing year, or until such time that sufficient quota holdings are reallocated to the licence to cover any overages.

14. FISHER IDENTIFICATION NUMBERS

DFO has introduced unique Fisher Identification Numbers (FIN) that will be assigned to all Pacific commercial harvesters. Once a FIN has been assigned to a fisher, that individual will reference the FIN when identifying him or herself in subsequent business dealings with both the department and service contractors, completing the FIN field on logbooks, noting the FIN when hauling and landing catch, etc. A FIN will be automatically generated for fishers when their new year's FRC licence is issued. Once the FIN is issued to a fish harvester it will not change from year to year.

15. FISH SLIPS

Vessel Masters must obtain copies of all fish slips from fish buyers and keep available copies when required by the Department. Vessel masters are required to ensure fish slip records are mailed directly to the Department no later than seven days after landing. Fish slips must be mailed to:

Fisheries and Oceans Canada
Regional Data Unit
Suite 200 - 401 Burrard Street
Vancouver, B.C. V6C 3S4

Any fishers selling fish to the public are reminded that they must obtain a Fish Vending Licence, available from any provincial government agent, and as licensed vendors they will be required to record all public fish sales on fish slips.

16. INTEGRATED GROUND FISH FISHING LOGBOOK

16.1 Example logbook page for trap gear

YEAR: 2012 INTEGRATED GROUND FISH FISHING LOGBOOK 30

| Vessel: <u>GROUND FISHER</u> | | | | FTCN: <input type="checkbox"/> | | | | DATE: _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|-----------|---------------------------|-----------|---|----------------|-------------|------------|-------------------|-----------|---------------------------|-------------|--|--|--|-------------|--|--|------|------|----------------|-------------|------------|-------------------|---------|---|------|--|---|----|-----|--|---|-------|-----|---|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|
| VRN: <u>299999</u> | | | | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th rowspan="2">GEAR ID</th> <th rowspan="2">Gear Type</th> <th rowspan="2">Length of Skate (in feet)</th> <th colspan="4">HOOK/TRAP</th> <th colspan="3">ESCAPE RING</th> </tr> <tr> <th>Type</th> <th>Size</th> <th>Spacing (feet)</th> <th># per skate</th> <th># per trap</th> <th>Diameter (inches)</th> <th>Config.</th> </tr> <tr> <td>A</td> <td>TRAP</td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td>K</td> <td>48</td> <td>150</td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td>2</td> <td>3 3/8</td> <td>SS1</td> </tr> <tr> <td>B</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>C</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>D</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | GEAR ID | Gear Type | Length of Skate (in feet) | HOOK/TRAP | | | | ESCAPE RING | | | Type | Size | Spacing (feet) | # per skate | # per trap | Diameter (inches) | Config. | A | TRAP | | K | 48 | 150 | | 2 | 3 3/8 | SS1 | B | | | | | | | | | | C | | | | | | | | | | D | | | | | | | | | |
| GEAR ID | Gear Type | Length of Skate (in feet) | HOOK/TRAP | | | | | | | | ESCAPE RING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Type | Size | Spacing (feet) | # per skate | # per trap | Diameter (inches) | Config. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | TRAP | | K | 48 | 150 | | 2 | 3 3/8 | SS1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Captain: <u>JOE SMITH</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FIN: <u>123456</u> | | # of Crew: <u>4</u> | | Trip #: <u>2</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tab #1: <u>K99</u> | | Tab #2: _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hail Out #(s): <u>32700332/</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hail In #(s): <u>32700339/</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Species: <u>SABLE FISH</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bait Spp. <u>HAKE</u> | | Spp. Wt. <u>10</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bait Spp. <u>SQUID</u> | | Spp. Wt. <u>2</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Set/Haul | Set # | Haul # | Set/Haul | Set # | Haul # |
|----------------------|---|--------|----------------------|---|--------|
| Gear/Skate Details | ID <u>A</u> #Set <u>55</u> #Lost <u>0</u> | | Gear/Skate Details | ID <u>A</u> #Set <u>60</u> #Lost <u>0</u> | |
| Catch Area (GMU) | <u>5D</u> | | Catch Area (GMU) | <u>5D</u> | |
| Set Start Date/Time | (mm/dd) <u>11/23</u> (hh:mm) <u>1100</u> | | Set Start Date/Time | (mm/dd) <u>11/23</u> (hh:mm) <u>1315</u> | |
| Haul Start Date/Time | (mm/dd) <u>11/24</u> (hh:mm) <u>1845</u> | | Haul Start Date/Time | (mm/dd) <u>11/24</u> (hh:mm) <u>2200</u> | |
| Haul End Date/Time | (mm/dd) _____ (hh:mm) _____ | | Haul End Date/Time | (mm/dd) _____ (hh:mm) _____ | |
| Set Start Lat | <u>5413.75</u> | | Set Start Lat | <u>5415.61</u> | |
| Set Start Long | <u>13047.82</u> | | Set Start Long | <u>13107.12</u> | |
| Set End Lat | <u>5413.62</u> | | Set End Lat | <u>5415.09</u> | |
| Set End Long | <u>13048.05</u> | | Set End Long | <u>13103.57</u> | |
| Depth in fathoms | Start <u>142</u> Min <u>139</u> | | Depth in fathoms | Start <u>248</u> Min <u>245</u> | |
| | End <u>165</u> Max <u>170</u> | | | End <u>262</u> Max <u>260</u> | |

| Species Name | Retained | | | Released | | | Species Name | Retained | | | Released | | |
|-------------------|-------------|------------|----------|------------|----------------|----------|-------------------|-------------|------------|------|-----------|----------|-------|
| | Weight | Pieces | Bait | Weight | Pieces | Liced | | Weight | Pieces | Bait | Weight | Pieces | Liced |
| Halibut - Legal | | | | | | | Halibut - Legal | | | | <u>30</u> | <u>1</u> | |
| Halibut - Sub-L | | | | | | | Halibut - Sub-L | | | | | | |
| Sablefish - Legal | <u>1000</u> | <u>236</u> | | | | | Sablefish - Legal | <u>1150</u> | <u>268</u> | | | | |
| Sablefish - Sub-L | | | | <u>200</u> | <u>30</u> | | Sablefish - Sub-L | | | | <u>65</u> | <u>5</u> | |
| Lingcod - Legal | | | | | | | Lingcod - Legal | | | | | | |
| Lingcod - Sub-L | | | | | | | Lingcod - Sub-L | | | | | | |
| Dogfish - Mark. | | | | | | | Dogfish - Mark. | | | | | | |
| Dogfish - UnMark. | | | | | | | Dogfish - UnMark. | | | | | | |
| Species Name | Pieces | Bait | Pieces | Liced | Species Name | Pieces | Bait | Pieces | Liced | | | | |
| Yelloweye | | | | | Yelloweye | | | | | | | | |
| Quillback | | | | | Quillback | | | | | | | | |
| Rougheye | <u>37</u> | | | | Rougheye | <u>5</u> | | | | | | | |
| SS Thornyhead | | | <u>0</u> | <u>1</u> | SS Thornyhead | | | | | | | | |
| Redbanded | | | | | Redbanded | <u>3</u> | | | | | | | |
| Big Skate | | | | | Big Skate | | | | | | | | |
| Longnose Skate | | | <u>1</u> | | Longnose Skate | | | | | | | | |
| Turbot | | | <u>8</u> | | Turbot | | | <u>29</u> | | | | | |
| Pacific Cod | | | | | Pacific Cod | | | | | | | | |

Tagged Fish/Tag #(s): A00450265 Sablefish A0040477 Sablefish

IPHC USE: _____ Collected by: _____

Comments: _____

16.2 Example logbook page for longline gear

| | | | | | |
|---|--|--|----------------------------|-------------------|--|
| YEAR: 2012 | | INTEGRATED GROUND FISH FISHING LOGBOOK | | 30 | |
| Vessel: GROUND FISH #1 | | | FTCN: <input type="text"/> | | |
| VRN: 12356 | | | DATE: <input type="text"/> | | |
| Captain: ROB SMITH. | | | | | |
| FIN: 54321 | | # of Crew: 4 | | Trip #: 13 | |
| Tab #1: L001 | | Tab #2: K09 | | | |
| Hail Out #(s): 32900970 / 32700229 | | | | | |
| Hail In #(s): 32901046 / 32700252 | | | | | |
| Target Species: HALIBUT/SABLEFISH | | | | | |
| Bait Spp. SQ | | Spp. Wt. 8 | | | |
| Bait Spp. HO | | Spp. Wt. 8 | | | |

| GEAR ID | Gear Type | Length of Skate (in feet) | HOOK/TRAP | | | | ESCAPE RING | | |
|---------|-----------|---------------------------|-----------|------|----------------|-------------|-------------|-------------------|---------|
| | | | Type | Size | Spacing (feet) | # per skate | # per trap | Diameter (inches) | Config. |
| A | SNAP | 1850 | BC | 14 | 10 | 300 | | | |
| B | | | | | | | | | |
| C | | | | | | | | | |
| D | | | | | | | | | |

| Set/Haul | Set # | Haul # | Set/Haul | Set # | Haul # |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Gear/Skate Details | ID A | # Set 3 | Gear/Skate Details | ID A | # Set 4 |
| Catch Area (GMU) | 5C | | Catch Area (GMU) | 5A | |
| Set Start Date/Time | (mm/dd) 04/22 | (hh:mm) 06:13 | Set Start Date/Time | (mm/dd) 04/24 | (hh:mm) 15:21 |
| Haul Start Date/Time | (mm/dd) 04/22 | (hh:mm) 13:56 | Haul Start Date/Time | (mm/dd) 04/25 | (hh:mm) 18:22 |
| Haul End Date/Time | (mm/dd) | (hh:mm) | Haul End Date/Time | (mm/dd) | (hh:mm) |
| Set Start Lat | 5226.28 | | Set Start Lat | 5110.10 | |
| Set Start Long | 13051.35 | | Set Start Long | 12930.50 | |
| Set End Lat | 5232.19 | | Set End Lat | 5108.00 | |
| Set End Long | 13050.00 | | Set End Long | 12940.10 | |
| Depth in fathoms | Start 44 | Min 33 | Depth in fathoms | Start 100 | Min 80 |
| | End 60 | Max 64 | | End 120 | Max 120 |

| Species Name | Retained | | | Released | | | Species Name | Retained | | | Released | | |
|-------------------|------------|-----------|----------|----------|-------------------|-----------|-------------------|-------------|------------|------------|-----------|--------|-------|
| | Weight | Pieces | Bait | Weight | Pieces | Liccd | | Weight | Pieces | Bait | Weight | Pieces | Liccd |
| Halibut - Legal | 600 | 28 | | | | 4 | Halibut - Legal | 100 | 4 | | | | |
| Halibut - Sub-L | | | | | | | Halibut - Sub-L | | | | | | |
| Sablefish - Legal | | | | 5 | | | Sablefish - Legal | 1000 | 125 | | | | |
| Sablefish - Sub-L | | | | | | | Sablefish - Sub-L | | | 200 | 30 | | |
| Lingcod - Legal | 100 | 10 | | | | | Lingcod - Legal | | | | | | |
| Lingcod - Sub-L | | | | | | | Lingcod - Sub-L | | | | | | |
| Dogfish - Mark. | | | | | | | Dogfish - Mark. | | | | 13 | | |
| Dogfish - UnMark. | | | | | | | Dogfish - UnMark. | | | | | | |
| Species Name | Pieces | Bait | Pieces | Liccd | Species Name | Pieces | Bait | Pieces | Liccd | | | | |
| Yelloweye | 17 | | | | Yelloweye | | | | | | | | |
| Quillback | | | | | Quillback | | | | | | | | |
| Rougheye | 3 | | | | Rougheye | 13 | | | | | | | |
| SS Thornyhead | | | | | SS Thornyhead | | | | | | | | |
| Redbanded | | | | | Redbanded | 10 | | | | | | | |
| Big Skate | | | 3 | | Big Skate | | | 10 | | | | | |
| Longnose Skate | | | | | Longnose Skate | | | | | | | | |
| Turbot | | 10 | | | Turbot | | | | | | | | |
| Pacific Cod | 15 | 2 | | | Pacific Cod | | | | | | | | |
| <i>Canary</i> | 4 | | | | <i>Shortraker</i> | 26 | | | 2 | | | | |

| | |
|------------------------------------|---------------------------------------|
| Tagged Fish/Tag #(s): | Sablefish A00731637, A00744833 |
| IPHC USE: | Collected by: |
| Comments: STRONG N.W. WIND. | |

Appendix 3: Schedule II – Other Groundfish Species Commercial Harvest Plan

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1. MANAGEMENT UPDATES & CHANGES FOR 2019/2020

1.1. In-Season Changes/Updates

In-season updates are available on the Fishery Notice website at: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm?pg=search_options&lang=en&id=commercial. In-season Sector Catch and Sector Cap summaries are updated daily and can be found at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.htm>

1.2. Halibut landing requirements

Based on discussions with the International Pacific Halibut Commission to ensure an accurate accounting of total landed mortality, new landing requirements have been implemented for Pacific Halibut. Where commercially caught Pacific Halibut is landed fresh, all Pacific Halibut catch shall be landed head-on. Where commercially caught Pacific Halibut is landed frozen, Pacific Halibut catch shall be landed head-on or head-off. All catch may continue to be landed dressed.

1.3. Implementation of Marine Protected Area closures

Several protected areas, including Marine Protected Areas, have been established to conserve the biological diversity, structural habitat, and ecosystem function in various areas across the Pacific coast. These include:

- The Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Areas, to protect three glass sponge reefs located between Haida Gwaii and the mainland of British Columbia in Hecate Strait and Queen Charlotte Sound.
- The SGaan Kinghlas - Bowie Seamount Marine Protected Area. In October 2017, the SK-B Management Board recommended to the Council of the Haida Nation (CHN) and Minister that SK-B MPA be permanently closed to all bottom-contact fisheries. The closure is intended to protect sensitive benthic habitat from serious and irreversible harm (i.e., crushing, damaging, or destroying cold water coral and sponges with a recovery time greater than 20 years).
- In advance of potential Offshore Pacific Area of Interest MPA designation, fishery closures to restrict commercial and recreational bottom-contact fishing activities within the Offshore Pacific AOI were announced in October 2017.

For more information on these closures, refer to Appendix 10 of the IFMP.

1.4. Outside Yelloweye Rockfish rebuilding

Based on updated science information, application of DFO's *Fishery Decision-Making Framework Incorporating the Precautionary Approach*, and consultation with interested

parties, the Department is pursuing catch reductions for the outside population of Yelloweye Rockfish in Groundfish Management Areas 3 and 5.

The Department will review the efficacy of catch reduction measures at the end of each fishing season and consider any additional measures necessary to support stock rebuilding. Please refer to conditions of licence and this harvest plan for further information.

2. SPECIES

Lingcod (*Ophiodon elongates*)
Spiny Dogfish (*Squalus suckleyi*)
Rockfish (*Sebastes sp.*) and Longspine/Shortspine Thornyheads (*Sebastolobus sp.*)
Halibut (*Hippoglossus stenolepis*)
Sablefish (*Anoplopoma fimbria*)
Skate (*Rajidae*)
Sole and Flounder (*Pleuronectiformes* other than *Hippoglossus stenolepis*)
Pacific cod (*Gadus macrocephalus*)

3. GEAR

Fishing for Schedule II – Other Species is permitted by hook and line gear, specifically longline, jig, and troll. When conducting a directed Lingcod trip only troll and jig gear is permitted; directed fishing for Lingcod with longline gear is not permitted.

4. OPEN TIMES

With the exception of those seasonal and permanent closures noted in this plan, or closures announced in-season, the Schedule II species fishery will be open from February 21, 2019 to February 20, 2020. On April 1, 2019, retention of Lingcod will be permitted in management areas 3C, 3D, 5A, 5B, 5C, 5D and 5E. Retention of Lingcod by hook and line gear in management area 4B will be permitted on May 1, 2019 and only in sub-Areas 12-1 to 12-13 and 12-15 to 12-48. From November 15, 2019 until March 31, 2020 a spawning closure for the retention of Lingcod by hook and line gear will be in effect for all areas. Accordingly, all Lingcod must be landed and validated by a DFO-designated Groundfish dockside observer no later than 23:59 hours, November 21, 2019.

5. LICENSING

National Online Licensing System (NOLS) Client Support - Licensing Services

All fish harvesters/Licence Holders/vessel owners are now required to use the National Online Licensing System (NOLS) to view, pay for and print their commercial fishing licences, licence conditions and/or receipts.

Training materials, including step-by-step guides and a detailed user training manual, are

available online (<http://www.dfo-mpo.gc.ca/FM-GP/SDC-CPS/licence-permis-eng.htm>) to guide users of the system in completing their licensing transactions. The Department also provides client support and assistance on how to use the system via e-mail at fishing-peche@dfo-mpo.gc.ca or by calling toll-free at 1-877-535-7307 (7:00 AM to 8:00 PM Eastern, Monday to Friday).

For more information on how to register and use the system, visit the Department's website at the address above, or contact our client support.

5.1. Licence Category

A Schedule II species (category C), communal commercial (category FC) or any vessel based licence is required to commercially harvest Schedule II - Other Species.

“Schedule II” refers to Schedule II, Part II of the *Pacific Fishery Regulations, 1993*. Category C, Schedule II - Other Species licence eligibilities are limited entry and vessel based. Category FC licence eligibilities are limited entry and party based.

Vessels fishing under the authority of a Schedule II-Other Species licence may also be designated to fish under the authority of a category Z licence.

5.2. Licence Renewal Fees

The commercial Schedule II Species (Category C) licence renewal fee is \$30.00. There is no annual licence fee for communal commercial licences.

5.3. Licence Amendments

Prior to commencing to harvest under the authority of a Schedule II – Other Species licence the vessel owner/licence eligibility holder or an authorized representative must request and receive a 2019/2020 licence amendment from the Groundfish Management Unit. Licence Amendment Request Forms are available online at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/form-eng.html>

5.4. Licence Documents

Schedule II Species licence documents are valid from the date of issue to February 20, 2020.

Replacements for lost or destroyed licence documents may be obtained by reprinting your licence documents through the National Online Licensing System.

5.5. Vessel Replacement

The owner(s) of a category C licensed vessel may make an application to replace the commercial fishing vessel. Both the replacement vessel and the vessel being replaced must have a survey on file with the Pacific Fishery Licence Unit (PFLU) or submitted with the

vessel replacement application. Vessels must be surveyed according to the Department guidelines.

The replacement vessel may not exceed the overall length of the vessel being replaced.

A vessel may hold only one Schedule II species licence eligibility.

A Schedule II species licence may not be combined with other vessel based licence eligibilities except where the Integrated Fishery Management Plan (IFMP) for that species allows.

Where a replacing vessel is eligible for a Schedule II species licence, it must be surrendered to the department or placed on another vessel prior to the placement of vessel based licence eligibility on the vessel. A request for exemption from this requirement must be submitted in writing to the Groundfish Management Unit.

6. BAIT

Commercial fishers wishing to use licensed catch as bait may do so, with the exception of rockfish. All such catch must be accurately recorded in the Integrated Groundfish Fishing Log. Rockfish may not be used as bait, and must be retained and landed.

While hauled out on a directed lingcod or dogfish trip octopus caught incidentally may be retained and used for bait, but cannot be landed and sold.

If a quota species is used as bait, the vessel will be assessed an average weight for that species as defined in Appendix 2 of the IFMP.

7. LINGCOD INDIVIDUAL TRANSFERABLE QUOTAS (ITQ)

7.1. Licence Issuance

Renewal of a Category C licence and payment of the fees must be done on an annual basis to retain the privilege to be issued the licence in the future, regardless of whether or not fishing is carried out. Those category C licenses not renewed by February 20, 2020 will cease and licence issuance requests will be unable to be considered in future.

Prior to annual licence issuance of a communal commercial licence, licence eligibility holders are required to annually designate the fishing vessel to hold the licence. This must be done by navigating to the 'Submit a Request' menu selection within the National Online Licensing System (NOLS). Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>).

Prior to annual licence issuance, vessel owners/licence eligibility holders are required to:

- a) Meet any Ministerial conditions placed on the licence eligibility.

- b) Ensure any conditions of the previous year’s licence such as completion and submission of fishing logbooks is met and accepted by the Groundfish Management Unit (GMU).
- c) the designated vessel’s overall length does not exceed the maximum vessel length of the category FC licence eligibility.

To avoid delays, please ensure the payment and vessel designation information is submitted all at the same time through the Submit a Request menu selection within the NOLS when renewing a communal commercial licence.

7.2. Species Area Groups

Lingcod will be managed by the following management areas: 3C, 3D, 5A/B, 5C/D/E and 4B. ITQ may not be re-allocated from one area to another.

7.3. Annual ITQ Caps

7.3.1. TAC Holdings Permanent Quota Cap

All Schedule II licences will have annual ITQ caps for permanent quota. The total amount of permanent quota holdings may not exceed the quota caps listed below.

| Species | Areas | TAC Holdings Cap (pounds) |
|----------------|--------------|----------------------------------|
| Lingcod | 3C | 16,534 |
| Lingcod | 3D | 39,682 |
| Lingcod | 5A, 5B | 22,008 |
| Lingcod | 5C, 5D, 5E | 45,841 |
| Lingcod | Coastwide | 74,440 |

7.3.2. Licence Species Temporary and Permanent Quota Caps (Directed Species)

All Schedule II licences will have annual ITQ caps for some of their directed and non-directed catch. A licence may only hold up to a maximum of 10% of the area TAC for Lingcod, and up to a maximum of 5% of the overall TAC for Lingcod. Temporary and permanent reallocations will be permitted up to the species caps listed below.

| Species | Areas | Licence Species Cap (pounds) |
|----------------|--------------|-------------------------------------|
| Lingcod | 3C | 33,069 |
| Lingcod | 3D | 79,366 |
| Lingcod | 5A, 5B | 44,017 |
| Lingcod | 5C, 5D, 5E | 91,683 |
| Lingcod | Coastwide | 124,560 |

7.3.3. Quota Holdings Caps (Non-Directed Species)

| Species | Areas | Quota Holdings Cap (% of Lingcod ITQ) |
|----------------------------------|-----------|--|
| Canary rockfish | Coastwide | 2.00 |
| Spiny Dogfish | Coastwide | 1.00 |
| Halibut | Coastwide | 15.00 |
| Silvergray rockfish | Coastwide | 2.00 |
| Quillback rockfish | Coastwide | 2.00 |
| Copper, China and Tiger rockfish | Coastwide | 2.00 |
| Yelloweye rockfish | Coastwide | 1.75 |
| Redbanded rockfish | Coastwide | 2.00 |

7.3.4. Quota Landings Caps

| Species | Areas | Quota Landings Cap |
|--------------------|-----------|--|
| Yelloweye rockfish | Coastwide | Cap increases in 200 blocks up to 2180, once a 200 block is caught |

7.3.5. Sector Holdings Caps

A licence may hold up to 25% Lingcod quota from the Trawl sector, as a percentage of the licence's total coastwide Lingcod holdings.

7.4. Trip Limits

While hailed out on a directed Lingcod (Schedule II) fishing trip the following trip limits apply for species listed in the table below:

| Species | Trip Limit (pounds) | |
|--|---|--|
| Pacific Cod | 500 | |
| Other Rockfish (as set out in Appendix 1 in the conditions of licence) | 500 (under 10,000 lbs of Lingcod landed) 750 (greater than 10,000 lbs of Lingcod landed) | |
| *Big Skate | 0 | |
| *Longnose Skate | 0 | |
| Sole and Flounder | No limit | |
| Bocaccio | Landings (round weight) per trip may not exceed: | |
| | 100 pounds where 10,000 pounds or less of lingcod is landed | 100 pounds plus 1% of the amount of lingcod landed in excess of 10,000 pounds, to a maximum of 600 pounds of |

| | |
|---|----------|
| | Bocaccio |
| *Retention of Big and Longnose Skate is not permitted while hauled out on a directed Lingcod trip | |

7.5. Fishing Restrictions for ITQ Excess Overage

Licences that exceed their total Lingcod ITQ holdings by area by more than 10% or 100 pounds (whichever is greater) will be restricted from fishing for the remainder of the fishing year, or until such time that sufficient ITQ is reallocated to the licence to cover excess overages.

Licences that exceed their total non-directed ITQ holdings by area by more than 30% or 100 pounds (whichever is greater) will be restricted from fishing for the remainder of the fishing year, or until such time that sufficient ITQ is reallocated to the licence to cover any excess overages.

Licences with catch that exceeds their annual ITQ species caps will be restricted from fishing for the remainder of the fishing season.

Licences that do not reconcile excess overages by February 20, 2020, will carry excess overages into the new season (see section 7.5). If a licence remains in excess overage following initial allocations of ITQ, the licence will be restricted from fishing until temporary reallocations for the 2020/2021 season are processed in mid-March, 2020.

7.6. Rules for Carryover of ITQ Overage and Underage

7.6.1. Carryover of Directed and Non-Directed ITQ Underage

Licences will be permitted to carryover uncaught ITQ up to 30% of their total directed or non-directed species (except Dogfish) ITQ by area at the end of the 2019/2020. This amount includes any reallocations made during the year. The amount of underage will be added to the licence's ITQ holdings in 2020/2021. Any amount above the 30% will be forgone.

For Dogfish, licences will be permitted to carryover uncaught ITQ up to 10% of their Dogfish ITQ by area at the end of the 2019/2020 fishing season. This amount includes any reallocations made during the year. The amount of underage will be added to the licence's ITQ holdings in 2020/2021. Any amount above the 10% will be forgone.

7.6.2. Carryover of Lingcod and Non-Directed ITQ Overage

A licence's catch may be up to 10% over the total Lingcod ITQ (this amount includes any reallocations made during the year) or 100 pounds, whichever is greater. For the proper conservation and management of the resource, the amount of the overage will be deducted from the licence's ITQ in the 2020/2021 fishing season and will count against the annual vessel cap for the following season.

A licence’s catch may be up to 30% over the total non-directed species ITQ (this amount includes any reallocations made during the year) or 100 pounds, whichever is greater. For the proper conservation and management of the resource, the amount of the overage will be deducted from the licence’s ITQ in the 2020/2021 fishing season and will count against the annual vessel cap for the following season.

7.7. Research Allocation

The Hook and Line Groundfish Association have agreed to set aside a portion of the lingcod commercial allocation in order to support the 2019 synoptic longline survey. The table below indicates the amount of lingcod allocated for the survey.

| Lingcod | Groundfish Management Area | Allocation (pounds) |
|---------|----------------------------|---------------------|
| | 3C | 0 |
| | 3D | 0 |
| | 5AB | 750 |
| | 5CDE | 9100 |

7.8. Retention of Lingcod by Salmon Troll

All vessels wishing to retain any amount of Lingcod must have their fish validated through the established dockside monitoring program. In addition to this, any vessel wishing to land Lingcod must hold or acquire sufficient quota to do so.

Requirements include the following (less than 500 lbs of Lingcod per landing):

- Vessel must have sufficient ITQ
- Transportation requirement – all Lingcod must be transported by the licensed vessel either directly to land or to a fish pen
- Hail in and hail out requirements through the designated service provider
- Specific locations and times at which landing of fish is permitted
- Landing requirements – the landing of any fish of any species is not permitted unless a designated observer is present to authorize the commencement of weight verification.

Vessels wishing to retain and land **more than 500 lbs** of Lingcod per landing must, in addition to all of the above, meet the electronic monitoring requirements (see Appendix 2).

8. DOGFISH INDIVIDUAL TRANSFERABLE QUOTAS (ITQ)

8.1. Species Area Groups

Dogfish will be managed by the following management areas: 3C/D, 5A/B/C/D/E and 4B. ITQ may not be re-allocated from one area to the other.

8.2. Dogfish Development Quota (DDQ)

The remaining 10% of the Dogfish TAC will be made available to fish harvesters through a Dogfish Development Quota (DDQ). The purpose of the DDQ is to ensure the continued viability and ongoing development of the Dogfish industry.

The application process requires interested Dogfish processors to submit a joint application between their company and the licensed vessel(s) interested in fishing the Dogfish quota. Application packages and further information on the DDQ process are available online at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/dogfish-aiguillat/index-eng.htm>.

8.3. Annual ITQ Caps

8.3.1. TAC Holdings Permanent Quota Caps

All Schedule II licences will have annual TAC holding caps for permanent quota. The total amount of permanent quota a licence may hold will not exceed the holding caps listed below.

| Species | Areas | TAC Holdings Cap (pounds) |
|----------------|----------------------|---------------------------|
| Dogfish | 3C,3D,5A,5B,5C,5D,5E | 600,670 |
| Dogfish | 4B | 100,111 |
| Big Skate | Coastwide | 7,000 |
| Longnose Skate | Coastwide | 6,500 |

8.3.2. Licence Species Temporary and Permanent Quota Caps (Directed Species)

All Schedule II licences will have annual ITQ caps for some of their directed and non-directed species. Temporary and permanent reallocations combined up to the species caps listed below will be a permitted.

| Species | Areas | Licence Species Cap (pounds) |
|----------------|-----------|------------------------------|
| Dogfish | Coastwide | 1,500,000* |
| Big Skate | Coastwide | 30,000 |
| Longnose Skate | Coastwide | 20,000 |

*Vessels whose initial quota allocation exceeds this amount will be allowed to hold ITQ up to the initial allocation.

8.3.3. Quota Holdings Caps (Non-Directed Species)

| Species | Areas | Quota Holdings Cap (% of Dogfish ITQ) |
|------------------------|-----------|---------------------------------------|
| Canary rockfish | Coastwide | 0.50 |
| Halibut ¹ | Coastwide | 5.80 |
| Lingcod | Coastwide | 3.00 |
| Rougheye rockfish | Coastwide | 0.50 |
| Sablefish ² | Coastwide | 1.00 |

| Species | Areas | Quota Holdings Cap (% of Dogfish ITQ) |
|----------------------------------|----------------------------|---------------------------------------|
| Silvergray rockfish | Coastwide | 0.50 |
| Shortraker rockfish | Coastwide | 0.08 |
| Shortspine Thornyhead | Coastwide | 1.00 |
| Quillback rockfish | 3C, 3D, 5A, 5B, 5C, 5D, 5E | 0.50 (of dogfish coastwide ITQ) |
| Quillback rockfish | 4B | 0.25 (of dogfish 4B ITQ) |
| China, Copper and Tiger rockfish | 3C, 3D, 5A, 5B, 5C, 5D, 5E | 0.50 (of dogfish coastwide ITQ) |
| China, Copper and Tiger rockfish | 4B | 0.25 (of dogfish 4B ITQ) |
| Yelloweye rockfish ³ | 3C, 3D, 5A, 5B, 5C, 5D, 5E | 0.33 (of dogfish coastwide ITQ) |
| Yelloweye rockfish | 4B | 1.00 (of dogfish 4B ITQ) |
| Redbanded rockfish | Coastwide | 2.00 |

¹Halibut is also capped by a Quota Landings cap. A licence will be limited by the most restrictive cap.

²Sablefish is also capped by a Quota Landings cap. A licence will be limited by the most restrictive cap.

³Yelloweye is also capped by a Quota Landings cap. A licence will be limited by the most restrictive catch.

8.3.4. Quota Landings Caps (Non-Directed)

| Species | Areas | Quota Landings Cap (pounds) | | | |
|------------------------|----------------------------|---|---|---|---|
| Halibut ^o | Coastwide | 10,000 if < 100,000 lbs of dogfish landed | 20,000 if < 200,000 lbs of dogfish landed | 30,000 if < 300,000 lbs of dogfish landed | 40,000 if < 400,000 lbs of dogfish landed ^v |
| Sablefish | Coastwide | 4,000 if < 100,000 lbs of dogfish landed | 8,000 if < 200,000 lbs of dogfish landed | 12,000 if < 300,000 lbs of dogfish landed | 16,000 if < 400,000 lbs of dogfish landed |
| Yelloweye [*] | 3C, 3D, 5A, 5B, 5C, 5D, 5E | 1,320 if < 250,000 lbs of dogfish landed | 2,000 if < 600,000 lbs of dogfish landed | 2,640 if < 800,000 lbs of dogfish landed | 3,300 if < 1,000,000 lbs of dogfish landed [†] |

^vHalibut allocations can continue to occur in blocks up to 10,000 lbs for every 200,000 lbs of dogfish landed.

^oHalibut is also capped by a Quota Holdings cap. A licence will be limited by the most restrictive cap

^oSablefish is also capped by a Quota Holdings cap. A licence will be limited by the most restrictive cap

[†]Yelloweye allocations can continue to occur in blocks up to 1,000 lbs for every 200,000 lbs of dogfish landed, up to a total of 1,500,000 lbs of dogfish landed.

^{*}Yelloweye is also capped by a Quota Holdings cap of 0.5%. A licence will be limited by the most restrictive cap.

8.4. Trip Limits

For non-directed species of groundfish caught while fishing dogfish the following trip limits will apply:

| Species | Trip Limit (pounds) | |
|--|---|---|
| Pacific Cod | 500 | |
| Lingcod (4B) | 400 | |
| Other Rockfish (as set out in Appendix 1 of the conditions of licence) | Greater of 500 lbs or 2% of dogfish landed per trip | |
| Sole and Flounder | No limit | |
| Bocaccio | Landings (round weight) per trip may not exceed: | |
| | 100 pounds where 10,000 pounds or less of dogfish is landed | 100 pounds plus 1% of the amount of dogfish landed in excess of 10,000 pounds, to a maximum of 600 pounds of Bocaccio |
| Skate (4B) | 6,000 | |

8.5. Fishing Restrictions for ITQ Excess Overage

Licences that exceed their total dogfish ITQ holdings by area by more than 10% or 5,000 pounds (whichever is greater) will be restricted from further fishing activity for the remainder of the fishing year, or until such time that sufficient ITQ is reallocated to the licence to cover any overages.

Licences that exceed their total non-directed ITQ holdings by area by more than 30% or 100 pounds (whichever is greater) will be restricted from further fishing activity for the remainder of the fishing year, or until such time that sufficient ITQ is reallocated to the licence to cover any overages.

Licences with catch that exceeds their annual ITQ species caps will be restricted from fishing for the remainder of the fishing season.

Licenses that do not reconcile excess overages by February 20, 2020, will carry excess overages into the new season (see section 8.6). If a licence remains in excess overage following initial allocations of ITQ, the licence will be restricted from fishing until temporary reallocations for the 2020/2021 season are processed in mid-March, 2020.

8.6. Rules for Carryover of ITQ Overage and Underage

8.6.1. Carryover of Directed and Non-Directed Species ITQ Underage

Licences will be permitted to carryover uncaught ITQ up to 10% of their total dogfish and Halibut species ITQ by area at the end of the 2019/2020 fishing season. This amount includes any reallocations made during the year. This underage will be added to the licence's ITQ holdings in 2020/2021. Any amount above the 10% will be forgone.

Licences will be permitted to carryover uncaught ITQ up to 30% of their total rockfish and Lingcod species ITQ by area at the end of the 2019/2020 fishing season. This amount

includes any reallocations made during the year. This underage will be added to the licence's ITQ holdings in 2020/2021. Any amount above the 30% will be forgone.

Licences will be permitted to carryover uncaught ITQ up to 15% of their total Sablefish species ITQ by area at the end of the 2019/2020 fishing season. This amount includes any reallocations made during the year. This underage poundage will be added to the licence's ITQ holdings in 2020/2021. Any amount above the 15% will be forgone.

8.6.2. Carryover of Directed and Non-Directed Species ITQ Overage

A licence's catch may be up to 10% over the total dogfish species ITQ (this amount includes any reallocations made during the year) or 5,000 pounds, whichever is greater. For the proper conservation and management of the resource, the amount of the overage will be deducted from the licence's ITQ (by area) in the 2020/2021 fishing season and the overage will count against the annual ITQ caps for the following season.

A licence's catch may be up to 30% over the total non-directed species ITQ (this amount includes any reallocations made during the year) or 100 pounds, whichever is greater. For the proper conservation and management of the resource, the amount of the overage will be deducted from the licence's ITQ (by area) in the 2020/2021 fishing season and the overage will count against the annual ITQ caps for the following season.

9. REALLOCATION PROCEDURES

9.1. Reallocation of Directed and Non-Directed Species ITQ

The following guidelines for the reallocation of directed and non-directed species ITQ will be in effect for the 2019/2020 lingcod and dogfish fisheries.

- 9.1.1. Subject to annual ITQ caps and sector caps, upon application, licence eligibility holders will be permitted to make unlimited temporary reallocations of directed and non-directed species ITQs. A "Temporary Reallocation Request for Integrated Groundfish Fisheries" must be faxed to the GMU and, if approved, a licence amendment will be issued to reflect new ITQ amounts. The most current licence amendment must be onboard when fishing.
- 9.1.2. The 2017/2018 licence must be issued prior to any ITQ being reallocated.
- 9.1.3. Request for temporary reallocation for the 2019/2020 season must be received by 16:00 hours Pacific Time on February 20, 2020 in order to be processed.
- 9.1.4. Requests for permanent reallocation of ITQ must be received by 16:00 hours local time on February 2, 2019 in order to be processed
- 9.1.5. Permanent reallocations of ITQ will be expressed as a percentage of the TAC, and will be added to the receiving licence eligibility's percentage of the TAC.
- 9.1.6. For permanent ITQ reallocations, all vessel owners/licence eligibility holders of record must complete and sign a "Permanent Reallocation Request for Integrated Groundfish Fisheries." For temporary reallocations of ITQ only one owner or the

licence eligibility holder is required to sign the “Temporary Reallocation Request for Integrated Groundfish Fisheries” form.

- 9.1.7. ITQ that has already been caught or deemed “fished” cannot be reallocated.
- 9.1.8. The minimum quantity of ITQ that may be reallocated is one pound.
- 9.1.9. Temporary reallocations are only valid for the current fishing season.
- 9.1.10. Reallocations for the 2019/2020 season will not be processed until 08:00 hours local time March 15, 2019.

Quota reallocation request forms and signature authorization forms are available at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/contact-en.html>

For licence status reports (LSR) and quota reallocation inquiry, contact either of the Groundfish Management Unit Quota officers at groundfishivq@dfo-mpo.gc.ca.

10. DUAL FISHING

Dual fishing means fishing for commercial and First Nation Food, Social, and Ceremonial purposes on the same fishing trip. Dual fishing is authorized through licence conditions for commercial groundfish fisheries. Vessel masters considering dual fishing are responsible for reviewing their licence conditions to ensure they are aware of the dual fishing requirements.

Before hailing-out on a dual fishing trip, the vessel master must obtain a dual fishing designation certificate from a designating First Nation that has a communal licence authorizing the harvest of groundfish. The designation certificate must contain all of the information set out in the conditions of licence. If any of the information is missing the designation certificate will not be considered valid and the vessel master cannot dual fish. A designation certificate template is available on the DFO website: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.html>

Aboriginal organizations may issue their own designation certificate as long as the required information is included.

When hailing-out, the vessel master must notify the hail service provider that they will be dual fishing, provide the name of the First Nation that issued the designation certificate, and provide the unique designation certificate identification number. The vessel master must carry the designation certificate on board the vessel at all times during the fishing trip.

All retained fish, including both commercial and FSC catch, must be recorded in the “retained” column of the Integrated Groundfish Fishing Logbook. Additionally, fish retained as FSC catch must be separated out and recorded by set and by species in the “comments” section of the Integrated Groundfish Fishing Logbook.

When hailing-in, the vessel master must provide an estimate, by species, of the weight of fish caught under the authority of the designation certificate. Unless the designating First Nation requests to have the FSC fish landed and validated at a different location, all fish from the trip must be landed at the same place and validated by a designated groundfish dockside observer. At the time of offload, the vessel master must provide a valid designation certificate to the dockside observer. If one is not provided, all catch from the trip will be considered commercial catch until the completion of a review by the Groundfish Management Unit and discussion with the vessel master. Furthermore, if FSC fish are landed at a different location than the commercial catch, an FSC validation record containing the verified weight and the number of pieces by species must be completed by a fisheries representative of the designating First Nation organization. The vessel master must obtain a copy of the FSC validation record and provide it to the designated groundfish dockside monitor at the time of the commercial offload.

11. CLOSURES

Please refer to Appendix 10 of this IFMP for commercial groundfish hook and line fishery closures.

Appendix 4: Rockfish by Hook and Line (Inside ZN) Commercial Harvest Plan

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1. MANAGEMENT UPDATES & CHANGES FOR 2019/2020

1.1. In-Season Changes/Updates

In-season updates are available on the Fishery Notice website at: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm?pg=search_options&lang=en&id=commercial. In-season Sector Catch and Sector Cap summaries are updated daily and can be found at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.htm>

1.2. Halibut landing requirements

Based on discussions with the International Pacific Halibut Commission to ensure an accurate accounting of total landed mortality, new landing requirements have been implemented for Pacific Halibut. Where commercially caught Pacific Halibut is landed fresh, all Pacific Halibut catch shall be landed head-on. Where commercially caught Pacific Halibut is landed frozen, Pacific Halibut catch shall be landed head-on or head-off. All catch may continue to be landed dressed.

1.3. Implementation of Marine Protected Area closures

Several protected areas, including Marine Protected Areas, have been established to conserve the biological diversity, structural habitat, and ecosystem function in various areas across the Pacific coast. These include:

- The Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Areas, to protect three glass sponge reefs located between Haida Gwaii and the mainland of British Columbia in Hecate Strait and Queen Charlotte Sound.
- The SGaan Kinghlas - Bowie Seamount Marine Protected Area. In October 2017, the SK-B Management Board recommended to the Council of the Haida Nation (CHN) and Minister that SK-B MPA be permanently closed to all bottom-contact fisheries. The closure is intended to protect sensitive benthic habitat from serious and irreversible harm (i.e., crushing, damaging, or destroying cold water coral and sponges with a recovery time greater than 20 years).
- In advance of potential Offshore Pacific Area of Interest MPA designation, fishery closures to restrict commercial and recreational bottom-contact fishing activities within the Offshore Pacific AOI were announced in October 2017.

For more information on these closures, refer to Appendix 10 of the IFMP.

1.4. Outside Yelloweye Rockfish rebuilding

Based on updated science information, application of DFO's *Fishery Decision-Making Framework Incorporating the Precautionary Approach*, and consultation with interested parties, the Department is pursuing catch reductions for the outside population of Yelloweye Rockfish in Groundfish Management Areas 3 and 5.

The Department will review the efficacy of catch reduction measures at the end of each fishing season and consider any additional measures necessary to support stock rebuilding. Please refer to conditions of licence and this harvest plan for further information.

2. SPECIES

Rockfish (*Sebastes sp.*) and Longspine/Shortspine Thornyheads (*Sebastolobus sp.*)
Halibut (*Hippoglossus stenolepis*)
Lingcod (*Ophiodon elongates*)
Spiny Dogfish (*Squalus suckleyi*)
Skate (*Rajidae*)
Sole and Flounder (*Pleuronectiformes* other than *Hippoglossus stenolepis*)
Pacific cod (*Gadus macrocephalus*)
Greenlings (*Hexagrammos sp.*)

3. GEAR

Fishing under a category ZN is permitted to occur by hook and line gear, specifically longline, jig, and troll.

4. OPEN TIMES

With the exception of those seasonal and permanent closures noted in this plan, or closures announced in-season, the Rockfish by Hook and Line (Inside ZN) fishery will be open from February 21, 2019 to February 20, 2020.

5. FISHING AREAS

Subject to closures listed in Section 10, the Inside Quota Management Area for rockfish is defined as: Areas 13 to 20, 28, 29 and Subareas 12-1 to 12-13, 12-15 to 12-48. Areas and Subareas are described in the *Pacific Fishery Management Area Regulations, 2007*.

6. LICENSING

National Online Licensing System (NOLS) Client Support - Licensing Services

All fish harvesters/Licence Holders/vessel owners are now required to use the National Online Licensing System (NOLS) to view, pay for and print their commercial fishing licences, licence conditions and/or receipts.

Training materials, including step-by-step guides and a detailed user training manual, are available online (<http://www.dfo-mpo.gc.ca/FM-GP/SDC-CPS/licence-permis-eng.htm>) to guide users of the system in completing their licensing transactions. The Department also provides client support and assistance on how to use the system via e-mail at fishing-peche@dfo-mpo.

gc.ca or by calling toll-free at 1-877-535-7307 (7:00 AM to 8:00 PM Eastern, Monday to Friday).

For more information on how to register and use the system, visit the Department's website at the address above, or contact our client support.

6.1. Licence Category

A commercial rockfish category ZN or communal commercial category FZN licence eligibility is limited entry and party based.

6.2. Licence Renewal Fees

The commercial rockfish licence renewal application fee is \$100 annually. There is no annual licence renewal fee for communal commercial category FZN licenses.

6.3. Licence Issuance

Renewal of a Category ZN licence and payment of the fees must be done on an annual basis to retain the privilege to be issued the licence in the future, regardless of whether or not fishing is carried out. Those category ZN licenses not renewed by February 20, 2020 will cease and licence issuance requests will be unable to be considered in future.

Prior to annual licence issuance of a communal commercial licence, licence eligibility holders are required to annually designate the fishing vessel to hold the licence. This must be done by navigating to the 'Submit a Request' menu selection within the National Online Licensing System (NOLS). Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>.

Vessels may be designated with up to 8 'Inside rockfish' licences at one time during a season.

Prior to annual licence issuance, licence eligibility holders are required to:

- a) Meet any Ministerial conditions placed on licence eligibility.
- b) Indicate through the National Online Licensing System if you do not intend to harvest under the authority of the rockfish licence eligibility in 2019.
- c) Ensure any conditions of the previous year's licence have been met.
- d) Designate a registered commercial fishing vessel that is eligible for any vessel based licence (i.e.) salmon, schedule II species, geoduck, Sablefish, Halibut, crab, shrimp by trawl and prawn and shrimp by trap, a valid communal commercial licence or a valid salmon category NAG licence through the National Online Licensing System.
- e) Designated vessels may not exceed the maximum vessel length (MVL) of the initial licence designated. The MVL will be waived for any additional designated inside rockfish licences.

To avoid delays in licence issuance, please ensure the payment, option selection and designated vessel information is submitted all at the same time through the Submit a Request menu selection within the National Online Licensing System, when renewing the licence eligibility

6.4. Licence Options

The designated vessel may not exceed to the Maximum Vessel Length (MVL) of the initial inside rockfish licence designated, however, the option to participate in the directed ZN fishery may be made for each additional inside rockfish licence designated to the vessel at the time of licence issuance.

Should the licence holder select the option to not participate in the directed ZN fishery, the designated vessel may exceed the MVL of the rockfish licence eligibility. The designated vessel will then reallocate rockfish quota to other licence eligibilities

If the selection has been made to not participate in the directed rockfish fishery at the beginning of the season, the licence holder may choose to change to the option to participate at a later date, as long as the vessel meets all the length requirements, where applicable.

Option selection for each rockfish licence may be done by navigating to the 'Submit a Request' menu selection within the National Online Licensing System (NOLS). Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>).

6.5. Licence Amendments

Prior to commencing to harvest under the authority of a rockfish licence, the licence eligibility holder or an authorized representative must request and receive a 2019/2020 licence amendment from the Groundfish Management Unit.

Licence Amendment Request Forms and all other applicable forms are available online at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/contact-en.html>

6.6. Licence Documents

Rockfish licence documents are valid from the date of issue to February 20, 2020.

Replacements for lost or destroyed licence documents may be obtained by reprinting the licence documents through the licence holders account via the National Online Licensing System.

6.7. Vessel Redesignations

Redesignation of rockfish licences is permitted at any time during the year, provided that all Conditions of Licence has been met (i.e. completion, submission and acceptance by GMU of logbooks).

The Application for Vessel Redesignation form is available online at <http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/licence-commercial-eng.html> or by contacting the PFLU by phone at 1-877-535-7307 or via e-mail at fishing-peche@dfo-mpo.gc.ca.

Prior to a redesignation being processed, licence eligibility holders must:

- Confirm that the conditions of licence have been met (e.g. log book or fish slips submitted, etc.) E.g. if a licence was issued on January 15th and a request to redesignate is received on March 10th then logs and sales slips are required to be submitted up to March 10.
- Designate a registered Canadian commercial vessel.
- Ensure the designated vessel holds a vessel based licence eligibility (as listed above) and does not exceed the Maximum Vessel Length (MVL) of the licence eligibility to be redesignated.

Once the redesignation form has been completed, the form must be submitted through the 'Submit a Request' menu selection within the National Online Licensing System (NOLS). Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>).

6.8. Licence Eligibility Nominations

Rockfish category ZN licence eligibilities may be nominated from one party to another. Licence eligibility holders may indicate their intention to no longer apply for a rockfish licence by completing a nomination form provided by Fisheries and Oceans Canada. Where such an intention is stated, the Minister may consider issuance of the licence to a person nominated by the previous licence eligibility holder.

The Nomination for Category Z Licence Eligibility form is available online at <http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/licence-commercial-eng.html> or by contacting the Pacific Fishery Licence Unit (PFLU) by phone at 1-877-535-7307 or via e-mail at fishing-peche@dfo-mpo.gc.ca.

Communal commercial rockfish category FZN licence eligibilities may not be nominated as these are allocated annually to First Nation groups.

7. BAIT

Commercial fishers wishing to use licensed catch as bait may do so, with the exception of rockfish. All such catch must be accurately recorded in the Integrated Groundfish Fishing Log. Rockfish may not be used as bait, and must be retained and landed.

Octopus caught incidentally may be retained and used for bait under authority of a Rockfish licence eligibility, but cannot be landed and sold.

If a quota species is used as bait, the vessel will be assessed an average weight for that species as defined in Appendix 2 of the IFMP.

8. ROCKFISH INDIVIDUAL TRANSFERABLE QUOTAS (ITQ)

8.1. Annual ITQ Caps

All ZN licences will have annual ITQ caps for some of their directed and non-directed catch. Reallocations up to the species caps listed below will be a permitted.

8.1.1. TAC Holdings Permanent Quota Caps

All ZN Inside licences will have annual ITQ caps for permanent quota. The total amount of permanent reallocations of quota may not exceed the quota caps listed below.

| Species | Areas | TAC Holdings Cap (pounds) |
|----------------------------------|--------------|----------------------------------|
| Quillback rockfish | 4B | 4,180 |
| Copper, China and Tiger rockfish | 4B | 504 |
| Yelloweye rockfish | 4B | 1,091 |

8.1.2. Licence Species Temporary and Permanent Quota Caps (Directed Species)

| Species | Areas | Licence Species Cap (pounds) |
|----------------------------------|--------------|-------------------------------------|
| Quillback rockfish | 4B | 15,642 |
| Copper, China and Tiger rockfish | 4B | 1,931 |
| Yelloweye rockfish | 4B | 4,095 |

8.1.3. Quota Holdings Caps (Non-Directed Species)

| Species | Areas | Licence Species Cap (pounds) |
|----------------|--------------|-------------------------------------|
| Spiny Dogfish | 4B | 1,250 |
| Halibut | Coastwide | 3,500 |

8.1.4. Stacking Licences

ITQ will automatically be reallocated to the initial rockfish licence designated to the vessel. Vessels may be designated with up to 8 inside rockfish licences, however, only one inside rockfish licence per vessel may hold ITQ.

8.2. Trip Limits

For some species of groundfish caught while hauled out on a directed rockfish fishing trip (Inside ZN) the following trip limits will apply:

| Species | Trip Limit (pounds) |
|-----------------|---|
| Halibut | 800 |
| Kelp Greenlings | Must be equal to or less than the total of Quillback, Copper, China, Tiger that is landed |
| Lingcod (4B) | 400 |

| Species | Trip Limit (pounds) | |
|-------------------|---|---|
| Other Rockfish | Must be equal to or less than the total of Quillback, Copper, China, Tiger that is landed | |
| Pacific Cod | 150 | |
| Skate | 50 | |
| Sole and Flounder | No limit | |
| Bocaccio | Landings (round weight) per trip may not exceed: | |
| | 100 pounds where 10,000 pounds or less of quota applicable rockfish is landed | 100 pounds plus 1% of the amount of quota applicable rockfish landed in excess of 10,000 pounds, to a maximum of 600 pounds of Bocaccio |

8.3. Fishing Restrictions for ITQ Excess Overages

Licences that exceed their total directed or non-directed species ITQ holdings by area by more than 10% or 100 pounds (whichever is greater) will be restricted from further fishing activity for the remainder of the fishing year, or until such time that sufficient ITQ is reallocated to the licence to cover any overages. Licences with catch that exceeds their annual ITQ species caps will be restricted from fishing for the remainder of the fishing season.

Licenses that do not reconcile excess overages by February 20, 2020, will carry excess overages into the new season (see section 6.6.2). If a licence remains in excess overage following initial allocations of ITQ, the licence will be restricted from fishing until temporary reallocations for the 2020/2021 season are processed in mid-March, 2020.

8.4. Reallocation of Directed and Non-Directed Species ITQ

The following guidelines for the reallocation of directed and non-directed species ITQ will be in effect for the 2019/2020 ZN fishery.

- 8.4.1. Subject to annual ITQ caps and sector caps, upon application, licence eligibility holders will be permitted to make unlimited temporary reallocations of directed and non-directed species ITQs. A “Temporary Reallocation Request for Integrated Groundfish Fisheries” must be faxed to the GMU and, if approved, a licence amendment will be issued to reflect new ITQ amounts. The most current licence amendment must be onboard when fishing.
- 8.4.2. The 2019/2020 ZN licence must be issued prior to any ITQ being reallocated.
- 8.4.3. Request for temporary reallocation requests for the 2019/2020 season must be received by 16:00 hours Pacific Time on February 20, 2020 in order to be processed.
- 8.4.4. Requests for permanent reallocation of ITQ must be received by 16:00 hours local time on February 2, 2020 in order to be processed.
- 8.4.5. Permanent reallocations of ITQ will be expressed as a percentage of the TAC, and will be added to the receiving licence eligibility’s percentage of the TAC.

- 8.4.6. For permanent ITQ reallocations, the licence eligibility holder(s) of record must complete and sign a “Permanent Reallocation Request for Rockfish Inside IVQ.” For temporary reallocations of ITQ only one licence eligibility holder is required to sign the “Temporary Reallocation Request for Integrated Groundfish Fisheries” form.
- 8.4.7. ITQ that has already been caught or deemed “fished” cannot be reallocated.
- 8.4.8. The minimum quantity of ITQ that may be reallocated is one pound.
- 8.4.9. Temporary reallocations are only valid for the current fishing season.
- 8.4.10. Reallocations for the 2019/2020 season will not be processed until 8:00 hours local time March 15, 2019.

8.5. Rules for Carryover of ITQ Overage and Underage

8.5.1. Carryover of Directed and Non-Directed Species ITQ Underage

Licences will be permitted to carryover uncaught ITQ up to 10% of their total directed or non-directed species ITQ by area at the end of the 2019/2020 fishing season. This amount includes any reallocations made during the year. This amount will be added to the licence’s ITQ holdings in 2020/2021. Any amount above the 10% will be forgone.

8.5.2. Carryover of Directed and Non-Directed Species ITQ Overage

A licence’s catch may be up to 10% over the total directed or non-directed species ITQ (this amount includes any reallocations made during the year) or 100 pounds, whichever is greater. For the proper conservation and management of the resource, the amount of the overage will be deducted from the licence’s ITQ (by area) in the 2019/2020 fishing season and the overage will count against the annual ITQ caps for the following season.

Quota reallocation request forms and signature authorization forms are available at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/contact-en.html>

For licence status reports (LSR) and quota reallocation inquiry, contact either of the Groundfish Management Unit Quota officers at groundfishivq@dfo-mpo.gc.ca.

9. DUAL FISHING

Dual fishing means fishing for commercial and First Nation Food, Social, and Ceremonial purposes on the same fishing trip. Dual fishing is authorized through licence conditions for commercial groundfish fisheries. Vessel masters considering dual fishing are responsible for reviewing their licence conditions to ensure they are aware of the dual fishing requirements.

Before hailing-out on a dual fishing trip, the vessel master must obtain a dual fishing designation certificate from a designating First Nation that has a communal licence authorizing the harvest of groundfish. The designation certificate must contain all of the information set out in the conditions of licence. If any of the information is missing the designation certificate will not be considered valid and the vessel master cannot dual fish. A designation certificate template is

available on the DFO website: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.html>.

Aboriginal organizations may issue their own designation certificate as long as the required information is included.

When hailing-out, the vessel master must notify the hail service provider that they will be dual fishing, provide the name of the First Nation that issued the designation certificate, and provide the unique designation certificate identification number. The vessel master must carry the designation certificate on board the vessel at all times during the fishing trip.

All retained fish, including both commercial and FSC catch, must be recorded in the “retained” column of the Integrated Groundfish Fishing Logbook. Additionally, fish retained as FSC catch must be separated out and recorded by set and by species in the “comments” section of the Integrated Groundfish Fishing Logbook.

When hailing-in, the vessel master must provide an estimate, by species, of the weight of fish caught under the authority of the designation certificate. Unless the designating First Nation requests to have the FSC fish landed and validated at a different location, all fish from the trip must be landed at the same place and validated by a designated groundfish dockside observer. At the time of offload, the vessel master must provide a valid designation certificate to the dockside observer. If one is not provided, all catch from the trip will be considered commercial catch until the completion of a review by the Groundfish Management Unit and discussion with the vessel master. Furthermore, if FSC fish are landed at a different location than the commercial catch, an FSC validation record containing the verified weight and the number of pieces by species must be completed by a fisheries representative of the designating First Nation organization. The vessel master must obtain a copy of the FSC validation record and provide it to the designated groundfish dockside monitor at the time of the commercial offload.

10. CLOSURES

Please refer to Appendix 10 of this IFMP for commercial groundfish hook and line fishery closures.

Appendix 5: Rockfish by Hook and Line (Outside ZN) Commercial Harvest Plan

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1. MANAGEMENT UPDATES & CHANGES FOR 2019/2020

1.1. In-Season Changes/Updates

In-season updates are available on the Fishery Notice website at: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm?pg=search_options&lang=en&id=commercial.

In-season Sector Catch and Sector Cap summaries are updated daily and can be found at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.htm>

1.2. Halibut landing requirements

Based on discussions with the International Pacific Halibut Commission to ensure an accurate accounting of total landed mortality, new landing requirements have been implemented for Pacific Halibut. Where commercially caught Pacific Halibut is landed fresh, all Pacific Halibut catch shall be landed head-on. Where commercially caught Pacific Halibut is landed frozen, Pacific Halibut catch shall be landed head-on or head-off. All catch may continue to be landed dressed.

1.3. Implementation of Marine Protected Area closures

Several protected areas, including Marine Protected Areas, have been established to conserve the biological diversity, structural habitat, and ecosystem function in various areas across the Pacific coast. These include:

- The Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Areas, to protect three glass sponge reefs located between Haida Gwaii and the mainland of British Columbia in Hecate Strait and Queen Charlotte Sound.
- The S_Gaan K_Inghlas - Bowie Seamount Marine Protected Area. In October 2017, the SK-B Management Board recommended to the Council of the Haida Nation (CHN) and Minister that SK-B MPA be permanently closed to all bottom-contact fisheries. The closure is intended to protect sensitive benthic habitat from serious and irreversible harm (i.e., crushing, damaging, or destroying cold water coral and sponges with a recovery time greater than 20 years).
- In advance of potential Offshore Pacific Area of Interest MPA designation, fishery closures to restrict commercial and recreational bottom-contact fishing activities within the Offshore Pacific AOI were announced in October 2017.

For more information on these closures, refer to Appendix 10 of the IFMP.

1.4. Outside Yelloweye Rockfish rebuilding

Based on updated science information, application of DFO's *Fishery Decision-Making Framework Incorporating the Precautionary Approach*, and consultation with interested parties,

the Department is pursuing catch reductions for the outside population of Yelloweye Rockfish in Groundfish Management Areas 3 and 5.

The Department will review the efficacy of catch reduction measures at the end of each fishing season and consider any additional measures necessary to support stock rebuilding. Please refer to conditions of licence and this harvest plan for further information.

2. SPECIES

Rockfish (*Sebastes sp.*) and Longspine/Shortspine Thornyheads (*Sebastolobus sp.*)
Halibut (*Hippoglossus stenolepis*)
Lingcod (*Ophiodon elongates*)
Spiny Dogfish (*Squalus suckleyi*)
Sablefish (*Anoplopoma fimbria*)
Skate (*Rajidae*)
Sole and Flounder (*Pleuronectiformes other than Hippoglossus stenolepis*)
Pacific cod (*Gadus macrocephalus*)
Greenlings (*Hexagrammos sp.*)

3. GEAR

Fishing under a category ZN is permitted to occur by hook and line gear, specifically longline, jig, and troll.

4. OPEN TIMES

With the exception of those seasonal and permanent closures noted in this plan, or closures announced in-season, the Rockfish by Hook and Line (Outside ZN) fishery will be open from February 21, 2018 to February 20, 2019.

5. FISHING AREAS

Subject to those closures listed in Section 9, the outside management areas include: Areas 1 to 11, 21, 23 to 27, 101 to 111, 121, 123 to 127, 130, 142 and Subarea 12-14. Areas and Subareas are described in the *Pacific Fishery Management Area Regulations, 2007*.

6. LICENSING

National Online Licensing System (NOLS) Client Support - Licensing Services

All fish harvesters/Licence Holders/vessel owners are now required to use the National Online Licensing System (NOLS) to view, pay for and print their commercial fishing licences, licence conditions and/or receipts.

Training materials, including step-by-step guides and a detailed user training manual, are available online (<http://www.dfo-mpo.gc.ca/FM-GP/SDC-CPS/licence-permis-eng.htm>) to guide users of the system in completing their licensing transactions. The Department also provides client support and assistance on how to use the system via e-mail at fishing-peche@dfompo.gc.ca or by calling toll-free at 1-877-535-7307 (7:00 AM to 8:00 PM Eastern, Monday to Friday).

For more information on how to register and use the system, visit the Department's website at the address above, or contact our client support.

6.1. Licence Category

A commercial rockfish category ZN or a communal commercial category FZN licence is limited entry and party based.

6.2. Licence Renewal Fees

The commercial rockfish licence renewal fee is \$100 annually. There is no annual licence renewal fee for communal commercial category FZN licenses.

6.3. Licence Issuance

Renewal of a Category ZN licence and payment of the fees must be done on an annual basis to retain the privilege to be issued the licence in the future, regardless of whether or not fishing is carried out. Those category ZN licenses not renewed by February 20, 2020 will cease and licence issuance requests will be unable to be considered in future.

Prior to annual licence issuance of a communal commercial licence, licence eligibility holders are required to annually designate the fishing vessel to hold the licence. This must be done by navigating to the 'Submit a Request' menu selection within the National Online Licensing System (NOLS). Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>.

Vessels may not be designated with more than one 'Outside rockfish' licences during a season.

Prior to annual licence issuance, licence eligibility holders are required to:

- a) Meet any Ministerial conditions placed on licence eligibility.
- b) Indicate through the National Online Licensing System if you do not intend to harvest under the authority of the rockfish licence eligibility in 2019.
- c) Ensure any conditions of the previous year's licence are met.
- d) Designate a registered commercial fishing vessel that is eligible for any vessel based licence (i.e.) salmon, schedule II species, geoduck, Sablefish, Halibut, crab, shrimp by trawl and prawn and shrimp by trap, a valid communal commercial licence or a valid salmon category NAG licence through the National Online Licensing System.
- e) Designated vessels may not exceed the maximum vessel length (MVL) of the licence designated.

To avoid delays, please ensure the payment, vessel designation and option information is submitted all at the same time through the Submit a Request menu selection within the NOLS, when renewing the licence eligibility.

6.4. Licence Options

The designated vessel may not exceed the Maximum Vessel Length (MVL) of the outside rockfish licence designated, even when an initial inside rockfish licence has already been designated; unless the option to not participate in the directed ZN fishery is made at the time of licence issuance.

Should the licence holder select the option to not participate in the directed ZN fishery, the designated vessel may exceed the MVL of the rockfish licence eligibility. The designated vessel will then reallocate rockfish quota to other licence eligibilities.

If the selection has been made to not participate in the directed rockfish fishery at the beginning of the season, the licence holder may choose to change to the option to participate at a later date, as long as the vessel meets all the length requirements, where applicable.

Option selection for each rockfish licence may be done by navigating to the ‘Submit a Request’ menu selection within the National Online Licensing System (NOLS). Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>).

6.5. Licence Amendments

Prior to commencing to harvest under the authority of a rockfish licence the licence eligibility holder or an authorized representative must request and receive a 2019/2020 licence amendment from the Groundfish Management Unit.

Licence Amendment Request Forms and all applicable forms are available online at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.html>.

6.6. Licence Documents

Rockfish licence documents are valid from the date of issue to February 20, 2020.

Replacements for lost or destroyed licence documents may be obtained by reprinting the licence documents through the licence holders account via the National Online Licensing System.

6.7. Vessel Redesignations

Redesignation of rockfish licences is permitted at any time during the year, provided that all Conditions of Licence has been met (i.e. completion, submission and acceptance by GMU of logbooks).

The Application for Category Z Vessel Redesignation form is available online at <http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/licence-commercial-eng.html> or by

contacting the PFLU by phone at 1-877-535-7307 or via e-mail at fishing-peche@dfo-mpo.gc.ca.

Prior to a redesignation being processed, licence eligibility holders must:

- Confirm that the conditions of licence have been met (e.g. log book or fish slips submitted, etc.) E.g. if a licence was issued on January 15th and a request to redesignate is received on March 10th then logs and sales slips are required to be submitted up to March 10th.
- Designate a registered Canadian commercial vessel.

Ensure the designated vessel holds a vessel based licence eligibility (as listed above) and does not exceed the Maximum Vessel Length (MVL) of the licence eligibility to be redesignated.

Once the redesignation form has been completed, the form must be submitted through the 'Submit a Request' menu selection within the National Online Licensing System (NOLS).

Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>).

6.8. Licence Eligibility Nominations

Rockfish category ZN licence eligibilities may be nominated from one party to another. Licence eligibility holders may indicate their intention to no longer apply for a rockfish licence by completing a nomination form provided by Fisheries and Oceans Canada. Where such an intention is stated, the Minister may consider issuance of the licence to a person nominated by the previous licence eligibility holder.

The Nomination for Category ZN Licence Eligibility form is available online at <http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/licence-commercial-eng.html> or by contacting the Pacific Fishery Licence Unit by phone at 1-877-535-7307 or via e-mail at fishing-peche@dfo-mpo.gc.ca.

Communal commercial rockfish category FZN licence eligibilities may not be nominated as these are allocated annually to First Nation groups.

7. BAIT

Commercial fishers wishing to use licensed catch as bait may do so, with the exception of rockfish. All such catch must be accurately recorded in the Integrated Groundfish Fishing Log. Rockfish may not be used as bait, and must be retained and landed.

Octopus caught incidentally may be retained and used for bait under authority of a Rockfish licence eligibility, but cannot be landed and sold.

If a quota species is used as bait, the vessel will be assessed an average weight for that species as defined in Appendix 2 of the IFMP.

8. RESEARCH ALLOCATION

To support rockfish research the Groundfish Hook and Line Sub Committee (GHLSC) has agreed to set aside five percent of the allocations for research purposes.

The following table indicates the 2019/2020 outside rockfish research allocation. Note that Yelloweye Rockfish mortality is accounted for in the Yelloweye rebuilding plan noted in Appendix 9.

| Species/Aggregate | Quota (tonnes) |
|----------------------------------|-----------------------|
| Quillback rockfish | 5.8 |
| Copper, China and Tiger rockfish | 2.8 |
| Silvergray rockfish | 12.7 |
| Canary rockfish | 6.5 |
| Redbanded rockfish | 11.6 |
| Rougheye rockfish | 23.7 |
| Shortraker rockfish | 5.4 |
| Yellowmouth rockfish | 3.0 |
| Yellowtail rockfish | 2.0 |
| Shortspine Thornyheads | 0.9 |

9. ROCKFISH INDIVIDUAL TRANSFERABLE QUOTAS (ITQ)

9.1. Annual ITQ Caps

9.1.1. TAC Holdings Permanent Quota Caps

All ZN Outside licences will have annual ITQ caps for permanent quota. The total amount of permanent reallocations of quota may not exceed the quota caps listed below.

| Species | Areas | TAC Holdings Cap (pounds) |
|----------------------------------|--------------|----------------------------------|
| Yelloweye rockfish | 3C/D, 5A | 1,329 |
| | 5B | 688 |
| | 5C/D | 742 |
| | 5E | 860 |
| Quillback rockfish | 3C/D, 5A | 2,488 |
| | 5B | 1,629 |
| | 5C/D | 1,824 |
| | 5E | 371 |
| Copper, China and Tiger rockfish | 3C/D, 5A | 1,401 |
| | 5B | 382 |
| | 5C/D | 1,123 |
| | 5E | 28 |
| Canary rockfish | 3C/D | 1,071 |

| Species | Areas | TAC Holdings Cap (pounds) |
|-----------------------|--------------|----------------------------------|
| | 5A/B | 1,831 |
| | 5C/D | 848 |
| | 5E | 885 |
| Silvergray rockfish | 3C/D | 2,373 |
| | 5A/B | 4,630 |
| | 5C/D | 4,202 |
| | 5E | 2,733 |
| Shortraker rockfish | Coastwide | 5,874 |
| Redbanded rockfish | Coastwide | 10,529 |
| Rougheye rockfish | Coastwide | 26,031 |
| Shortspine Thornyhead | Coastwide | 980 |
| Big skate | Coastwide | 300 |
| Longnose skate | Coastwide | 1,000 |

9.1.2. Licence Species Temporary and Permanent Quota Caps (Directed Species)

All ZN licences will have annual ITQ caps for some of their directed and non-directed catch. Temporary and permanent reallocations combined up to the species caps listed below will be a permitted.

| Species | Areas | Licence Species Cap (pounds) |
|----------------------------------|--------------|-------------------------------------|
| Canary rockfish | Coastwide | 10,000 |
| Redbanded rockfish | Coastwide | 80,000 |
| Rougheye rockfish | Coastwide | 200,000 |
| Silvergray rockfish | Coastwide | 30,000 |
| Shortraker rockfish | Coastwide | 100,000 |
| Shortspine Thornyhead | Coastwide | 10,000 |
| Quillback, | Coastwide | 22,500 |
| China, Copper and Tiger rockfish | Coastwide | 15,000 |
| Yelloweye rockfish | Coastwide | 10,000 |

9.1.3. Quota Holdings Caps (Non-Directed Species)

| Species | Areas | Licence Species Cap (pounds) |
|----------------|--------------|-------------------------------------|
|----------------|--------------|-------------------------------------|

| | | |
|-----------|-----------|---------|
| Dogfish | Coastwide | 100,000 |
| Sablefish | Coastwide | 15,000 |
| Big skate | Coastwide | 10,000 |
| Longnose | Coastwide | 15,000 |

9.1.4. Quota Landings Caps (Non-Directed Species)

| Species | Areas | Quota Landings Cap (pounds) | | | | |
|-----------|-----------|--|---|--|---|--|
| Halibut | Coastwide | 7,500 lbs if < 20,000 lbs of quota rockfish landed | 10,000 lbs if between 20,000- 40,000 lbs of quota rockfish landed | 15,000 lbs if between 40,000- 60,000 lbs. of quota rockfish landed | 20,000 lbs if > 60,000 lbs of quota rockfish landed | 30,000 lbs if > 100,000 lbs of quota rockfish landed |
| Lingcod | Coastwide | 7,500 lbs if < 8,000 lbs of quota rockfish landed | 10,000 lbs if between 8,000- 20,000 lbs of quota rockfish landed | 15,000 lbs if between 20,000- 40,000 lbs of quota rockfish landed | 20,000 lbs if between 40,000- 60,000 lbs of quota rockfish landed | 25,000 lbs if > 60,000 lbs of quota rockfish landed |
| Sablefish | Coastwide | 5,000 lbs if < 20,000 lbs of quota rockfish landed | 10,000 lbs if between 20,000- 40,000 lbs of quota rockfish landed | 15,000 lbs if > 40,000 lbs of quota rockfish landed | | |

9.2. Trip Limits

For some species of groundfish caught while fishing Rockfish by Hook and Line (Outside ZN) fishery there will be trip limits:

| Species | Trip Limit (pounds) |
|-----------------|---------------------|
| Black Rockfish | 1,000 |
| Kelp Greenlings | 500 |
| Other Rockfish | 5,000 |
| Pacific Cod | 500 |

| Species | Trip Limit (pounds) | |
|-------------------|---|---|
| Sole and Flounder | No limit | |
| Bocaccio | Landings (round weight) per trip may not exceed: | |
| | 100 pounds where 10,000 pounds or less of quota applicable rockfish is landed | 100 pounds plus 1% of the amount of quota applicable rockfish landed in excess of 10,000 pounds, to a maximum of 600 pounds of Bocaccio |

9.3. Fishing Restrictions for ITQ Excess Overage

Licences that exceed their total directed or non-directed species ITQ holdings by area by more than 30% or 100 pounds (whichever is greater) will be restricted from further fishing activity for the remainder of the fishing year, or until such time that sufficient ITQ is reallocated to the licence to cover any overages. Licences with catch that exceeds their annual ITQ species caps will be restricted from fishing for the remainder of the fishing season.

Licenses that do not reconcile excess overages by February 20, 2020, will carry excess overages into the new season (see section 7.6.2). If a licence remains in excess overage following initial allocations of ITQ, the licence will be restricted from fishing until temporary reallocations for the 2020/2021 season are processed in mid-March, 2020.

9.4. Reallocation of Directed and Non-Directed Species ITQ

The following guidelines for the reallocation of directed and non-directed species ITQ will be in effect for the 2019/2020 ZN fishery.

- 9.4.1. Subject to annual ITQ caps and sector caps, upon application, licence eligibility holders will be permitted to make unlimited temporary reallocations of directed and non-directed species ITQs. A “Temporary Reallocation Request for Integrated Groundfish Fisheries” form must be completed and submitted to the GMU and, if approved, a licence amendment will be issued to reflect new ITQ amounts. The most current licence amendment must be onboard when fishing.
- 9.4.2. The 2019/2020 ZN licence must be issued prior to any ITQ being reallocated.
- 9.4.3. Request for temporary reallocation requests for the 2019/2020 season must be received by 16:00 hours Pacific Time on February 20, 2020 in order to be processed.
- 9.4.4. For permanent ITQ reallocations, licence eligibility holder(s) of record must complete and sign a “Permanent Reallocation Request for Integrated Groundfish Fisheries.” For temporary reallocations of ITQ only one licence eligibility holder is required to sign the “Temporary Reallocation Request for Integrated Groundfish Fisheries” form.
- 9.4.5. Requests for permanent reallocation of ITQ must be received by 16:00 hours local time on February 2, 2020 in order to be processed.
- 9.4.6. Permanent reallocations of ITQ will be expressed as a percentage of the TAC, and will be added to the receiving licence eligibility’s percentage of the TAC.

- 9.4.7. ITQ that has already been caught or deemed “fished” cannot be reallocated.
- 9.4.8. The minimum quantity of ITQ that may be reallocated is one pound.
- 9.4.9. Temporary reallocations are only valid for the current fishing season.
- 9.4.10. Reallocations for the 2019/2020 season will not be processed until 8:00 hours local time March 15, 2019.

9.5. Rules for Carryover of ITQ Overage and Underage

9.5.1. Carryover of Directed and Non-Directed Species ITQ Underage

Licences will be permitted to carryover uncaught ITQ up to 30% of their total directed or non-directed species (except Dogfish) ITQ by area at the end of the 2019/2020 fishing season. This amount includes any reallocations made during the year. This underage poundage will be added to the licence’s ITQ holdings in 2020/2021. Any amount above the 30% will be forgone.

For dogfish, licences will be permitted to carryover uncaught ITQ up to 10% of their dogfish ITQ by area at the end of the 2019/2020 fishing season. This amount includes any reallocations made during the year. This underage poundage will be added to the licence’s ITQ holdings in 2020/2021. Any amount above the 10% will be forgone.

9.5.2. Carryover of Directed and Non-Directed Species ITQ Overage

A licence’s catch may be up to 30% over the total directed or non-directed species ITQ (this amount includes any reallocations made during the year) or 100 pounds, whichever is greater. For the proper conservation and management of the resource, the amount of the overage will be deducted from the licence’s ITQ in the 2020/2021 fishing season and the overage will count against the annual ITQ caps for the following season.

Quota reallocation request forms and signature authorization forms are available at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/contact-en.html>

For licence status reports (LSR) and quota reallocation inquiry, contact either of the Groundfish Management Unit Quota officers at groundfishivq@dfo-mpo.gc.ca

10. DUAL FISHING

Dual fishing means fishing for commercial and First Nation Food, Social, and Ceremonial purposes on the same fishing trip. Dual fishing is authorized through licence conditions for commercial groundfish fisheries. Vessel masters considering dual fishing are responsible for reviewing their licence conditions to ensure they are aware of the dual fishing requirements.

Before hailing-out on a dual fishing trip, the vessel master must obtain a dual fishing designation certificate from a designating First Nation that has a communal licence authorizing the harvest of groundfish. The designation certificate must contain all of the information set out in the conditions of licence. If any of the information is missing the designation certificate will not be considered valid and the vessel master cannot dual fish. A designation certificate template is

available on the DFO website: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.html>.

Aboriginal organizations may issue their own designation certificate as long as the required information is included.

When hailing-out, the vessel master must notify the hail service provider that they will be dual fishing, provide the name of the First Nation that issued the designation certificate, and provide the unique designation certificate identification number. The vessel master must carry the designation certificate on board the vessel at all times during the fishing trip.

All retained fish, including both commercial and FSC catch, must be recorded in the “retained” column of the Integrated Groundfish Fishing Logbook. Additionally, fish retained as FSC catch must be separated out and recorded by set and by species in the “comments” section of the Integrated Groundfish Fishing Logbook.

When hailing-in, the vessel master must provide an estimate, by species, of the weight of fish caught under the authority of the designation certificate. Unless the designating First Nation requests to have the FSC fish landed and validated at a different location, all fish from the trip must be landed at the same place and validated by a designated groundfish dockside observer. At the time of offload, the vessel master must provide a valid designation certificate to the dockside observer. If one is not provided, all catch from the trip will be considered commercial catch until the completion of a review by the Groundfish Management Unit and discussion with the vessel master. Furthermore, if FSC fish are landed at a different location than the commercial catch, an FSC validation record containing the verified weight and the number of pieces by species must be completed by a fisheries representative of the designating First Nation organization. The vessel master must obtain a copy of the FSC validation record and provide it to the designated groundfish dockside monitor at the time of the commercial offload.

11. CLOSURES

Please refer to Appendix 10 of this IFMP for commercial groundfish hook and line fishery closures.

Appendix 6: Halibut Commercial Harvest Plan

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1. MANAGEMENT UPDATES & CHANGES FOR 2019/2020

1.1. In-Season Changes/Updates

In-season updates are available on the Fishery Notice website at: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm?pg=search_options&lang=en&id=commercial.

In-season Sector Catch and Sector Cap summaries are updated daily and can be found at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.htm>

1.2. Halibut landing requirements

Based on discussions with the International Pacific Halibut Commission to ensure an accurate accounting of total landed mortality, new landing requirements have been implemented for Pacific Halibut. Where commercially caught Pacific Halibut is landed fresh, all Pacific Halibut catch shall be landed head-on. Where commercially caught Pacific Halibut is landed frozen, Pacific Halibut catch shall be landed head-on or head-off. All catch may continue to be landed dressed.

1.3. Implementation of Marine Protected Area closures

Several protected areas, including Marine Protected Areas, have been established to conserve the biological diversity, structural habitat, and ecosystem function in various areas across the Pacific coast. These include:

- The Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Areas, to protect three glass sponge reefs located between Haida Gwaii and the mainland of British Columbia in Hecate Strait and Queen Charlotte Sound.
- The SGaan Kinghlas - Bowie Seamount Marine Protected Area. In October 2017, the SGaan Kinghlas Bowie (SK-B) Management Board recommended to the Council of the Haida Nation (CHN) and Minister of Fisheries, Oceans and the Canadian Coast Guard that SK-B MPA be permanently closed to all bottom-contact fisheries. A decision by the Minister and CHN with regard to this recommendation is pending. The proposed closure is a precautionary management measure to protect sensitive benthic habitat from serious and irreversible harm (i.e., crushing, damaging, or destroying cold water coral and sponges with a recovery time greater than 20 years).
- In advance of potential Offshore Pacific Area of Interest MPA designation, fishery closures to restrict commercial and recreational bottom-contact fishing activities within the Offshore Pacific AOI were announced in October 2017.

For more information on these closures, refer to Appendix 10 of the IFMP.

1.4. Outside Yelloweye Rockfish rebuilding

Based on updated science information, application of DFO's *Fishery Decision-Making Framework Incorporating the Precautionary Approach*, and consultation with interested parties,

the Department is pursuing catch reductions for the outside population of Yelloweye Rockfish in Groundfish Management Areas 3 and 5.

The Department will review the efficacy of catch reduction measures at the end of each fishing season and consider any additional measures necessary to support stock rebuilding. Please refer to conditions of licence and this harvest plan for further information.

2. SPECIES

The following species are permitted to be retained under Part 1 and Schedule II, Part 2 of a valid Halibut licence eligibility with the appropriate amendment.

Halibut (*Hippoglossus stenolepis*)

Rockfish (*Sebastes spp. and Sebastolobus spp.*)

Lingcod (*Ophiodon elongates*)

Spiny Dogfish (*Squalus suckleyi*)

Sablefish (*Anoplopoma fimbria*)

Skate (*Rajidae*)

Sole and Flounder (*Pleuronectiformes*, other than *Hippoglossus stenolepis*)

Pacific cod (*Gadus macrocephalus*)

3. GEAR

Hook and line gear.

No longline gear shall be left set and/or unattended during a vessel's return to port. Vessel masters shall retrieve, and have on board, all longline gear prior to delivering their catch to port.

4. QUOTAS AND OPEN TIMES

4.1. Open Times

The 2018 Halibut fishery will commence at 12:00 hours, TBD and will close at 12:00 hours, TBD. Following the closure of the fishery, all fish caught under the authority of a Halibut licence eligibility, must be landed and validated by a DFO-designated groundfish dockside observer no later than 12:00 hours, TBD.

To allow an orderly opening for the 2018 Pacific Halibut season, variation orders are issued to close three areas (Langara Island, Cape St. James, and North Triangle) for 72 hours prior to the opening of the Pacific Halibut season. The variation orders close the fisheries for Skate, Sole, Flounder and Spiny Dogfish by Hook and Line, Pacific Cod by Hook and Line, Rockfish by Hook and Line, and Sablefish by Longline. Please review all variation orders prior to fishing.

The retention of Lingcod by hook and line gear will be permitted from 00:01 TBD to 23:59 hours TBD. Accordingly, all Lingcod must be landed and validated by a DFO-designated groundfish dockside observer no later than 23:59 hours, TBD.

4.2. Fishing Areas

Subject to closures described in section 11 of this harvest plan and variation orders, the waters in which commercial Halibut fishing is permitted to be carried out are:

Areas 1 to 11, 21, 23 to 27, 101 to 111, 121, 123 to 127, 130, 142, Subarea 12-14, (Groundfish Management Areas 3C, 3D, 5A, 5B, 5C, 5D, and 5E).

To harvest Pacific Halibut in subareas 12-1 to 12-13, 12-15 to 12-48, 19-3 to 19-5 and Area 20 (Groundfish Management Area 4B), an amendment to the Halibut conditions of licence is required from the Halibut Coordinator; please see section 6.1 of this harvest plan.

Subject to variations orders, while fishing only under authority of a Halibut licence eligibility legal-sized Sablefish may be retained from any area or subarea open to fishing under the authority of a Halibut commercial licence eligibility, except Groundfish Management Area 4B.

When hailed out on a combination Halibut and Sablefish trip, a vessel can only fish in areas open to directed Sablefish fishing (see section 8 of this harvest plan).

4.3. Commercial and Recreational Total Allowable Catch

For 2019, the International Pacific Halibut Commission (IPHC) recommended a Canadian commercial and recreational catch limit of **TBD** tonnes (all Halibut weights are fresh, dressed, head-off weight) for IPHC regulatory area 2B, Canada's Pacific waters.

For commercial/recreational allocation purposes, the total allowable catch (TAC) was adjusted to **TBD** tonnes to include recreational discard mortality, and commercial discard mortality of fish over 66 cm in length from the previous year (totalling **TBD** tonnes). Discard mortality is defined as the incidental mortality from the directed fisheries due to regulatory discards, mandatory or voluntary release of halibut, and from lost or abandoned fishing gear. The amount of commercial and recreational discard mortality is estimated annually via the IPHC stock assessment process. The adjusted TAC is allocated between the commercial (85%) and the recreational (15%) fisheries, and the commercial and recreational discard mortality is removed from the commercial and recreational allocations, respectively.

Section 10 of the *Fisheries Act* permits the Minister of Fisheries and Oceans to allocate fish for the purpose of financing scientific and fisheries management activities. In 2019, up to 27.22 tonnes of Halibut has been notionally allocated from the commercial TAC to support (1) a synoptic longline survey, and (2) an additional technician on the IPHC setline survey in IPHC regulatory area 2B through a joint project agreement between the Pacific Halibut Management Association of BC and the Department.

In 2019 the Halibut TAC (fresh, dressed, head-off weight) has been allocated as:

| | | |
|--|---------------|----------------|
| Food, Social, and Ceremonial* | 183.71 tonnes | 405,000 pounds |
| Use of Fish allocation for longline synoptic survey and IPHC survey technician | 27.22 tonnes | 60,000 pounds |

| | | |
|---------------------------|------------|------------|
| Commercial TAC ** | TBD tonnes | TBD pounds |
| Recreational TAC | TBD tonnes | TBD pounds |
| Total Allowable Catch *** | TBD tonnes | TBD pounds |

* Excludes treaty allocations relinquished from the commercial TAC totalling 13.90 tonnes.

** Includes treaty allocations relinquished from the commercial TAC totalling 13.90 tonnes. These treaty allocations are not available to the commercial fishery.

*** Excludes carryover of overages and underages from the previous season (see section 6.7 of this harvest plan). Excludes permitted Halibut mortality from the groundfish Trawl fishery (see appendix 8 of the IFMP).

5. LICENSING

National Online Licensing System (NOLS) Client Support - Licensing Services

All fish harvesters/Licence Holders/vessel owners are now required to use the National Online Licensing System (NOLS) to view, pay for and print their commercial fishing licences, licence conditions and/or receipts.

Training materials, including step-by-step guides and a detailed user training manual, are available online (<http://www.dfo-mpo.gc.ca/FM-GP/SDC-CPS/licence-permis-eng.htm>) to guide users of the system in completing their licensing transactions. The Department also provides client support and assistance on how to use the system via e-mail at fishing-peche@dfo-mpo.gc.ca or by calling toll-free at 1-877-535-7307 (7:00 AM to 8:00 PM Eastern, Monday to Friday).

For more information on how to register and use the system, visit the Department's website at the address above, or contact our client support.

5.1. Licence Category

A commercial Halibut (category L) or communal commercial Halibut (category FL) licence eligibility is required to participate in the directed commercial Pacific Halibut fishery.

Category L Halibut eligibilities are limited entry and vessel-based. Category FL eligibilities are limited entry and party-based; a First Nations group is the licence eligibility holder and the eligibility must be designated to a commercially registered fishing vessel that meets established length restrictions.

Vessels authorized to fish under the authority of a Halibut licence eligibility are also permitted to catch and retain other groundfish species by hook and line gear as outlined in conditions of licence. These vessels are also permitted to catch and retain species described in Schedule II, Part 2 of the *Pacific Fishery Regulations, 1993*, catch and retain other groundfish species, transport non-groundfish species caught by other vessels and be designated to fish under the authority of a category Z licence.

5.2. Licence Renewal Fees

The commercial Halibut licence renewal fee is based on the following formula: \$310 multiplied by the number of tonnes of Halibut initially allocated to the licence eligibility, less 40 percent of that product, up to a maximum reduction of \$1,000. There is no annual licence renewal fee for communal commercial category FL licences.

5.3. Licence Issuance

Renewal of a category L licence and payment of the fees must be done on an annual basis to retain the privilege to be issued the licence in the future, regardless of whether or not fishing is carried out. Those category L licenses not renewed by February 20, 2020 will cease and licence issuance requests will be unable to be considered in future.

Prior to annual licence issuance of a communal commercial licence, licence eligibility holders are required to annually designate the fishing vessel to hold the licence. This must be done by navigating to the 'Submit a Request' menu selection within the National Online Licensing System (NOLS). Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>.

Prior to annual licence issuance, vessel owners/licence eligibility holders are required to:

- a) Meet any Ministerial conditions placed on the licence eligibility.
- b) Ensure any conditions of the previous year's licence are met.
- c) the designated vessel's overall length does not exceed the maximum vessel length of the category FL licence eligibility.

To avoid delays, please ensure the payment and vessel designation information is submitted all at the same time through the Submit a Request menu selection within the NOLS, when renewing a communal commercial licence.

5.4. Licence Amendment

The Halibut licence eligibility must be issued prior to the processing of a request for licence amendment or reallocation of ITQ. The vessel owner/master must have on board a valid Halibut licence amendment prior to fishing.

This amendment outlines the total amount of fish by species that the vessel can land for the fishing season. Without this amendment the vessel is not permitted to catch, retain or land any fish.

A "Request for Licence Amendment" must be completed by the vessel owner/licence eligibility holder or the designated agent and faxed to the Groundfish Management Unit at (604) 666-8525. Request forms and all other applicable forms are available online at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/form-eng.htm>

5.5. Licence Documents

Halibut licence eligibilities are valid from the date of issue to February 20, 2020.

Replacements for lost or destroyed licence documents may be obtained by reprinting the licence documents through the NOLS.

5.6. Vessel Replacement

The owner(s) of a category L licensed Halibut vessel may make an application to replace the commercial fishing vessel. Both the replacement vessel and the vessel being replaced must have a survey on file with the Pacific Fishery Licence Unit (PFLU) or submitted with the vessel replacement application. Vessels must be surveyed according to the Department guidelines.

Communal commercial licenses are not eligible for vessel replacement as the licence eligibility is party based.

A single category L Halibut licence eligibility may be placed on a vessel that does not hold another vessel based licence eligibility up to the overall length (OAL) of the original vessel, the vessel licensed as at January 31, 1993; otherwise known as the Original Vessel Length (OVL).

A single category L Halibut licence eligibility may be placed on a vessel that holds another vessel based licence eligibility, up to the maximum vessel length (MVL) of the Halibut licence eligibility; the MVL being the length of the original vessel licensed as at January 31, 1993, plus 25 feet.

A category L Halibut licence eligibility may be separated from other licence eligibilities and placed on a vessel that does not exceed the MVL, as long as the replacing vessel holds another vessel-based licence eligibility with Schedule II species privileges.

In circumstances where the intention is to make the category L licence eligibility a standalone licence and the replacing vessel has a category C, Schedule II species licence eligibility, the C licence eligibility is relinquished (permanently retired), except when the placement is temporary, then the C licence eligibility is held until the Halibut licence eligibility is permanently placed on a vessel. The option of relinquishing a schedule II species licence may only be utilized when it is the intention to separate a halibut licence from a married situation in order to become a standalone halibut licence.

When a Schedule II licence eligibility is relinquished from a vessel with an OAL less than the MVL but greater than the OAL of the vessel licensed as at January 31, 1993, in future, the licence eligibility may be placed on an unlicensed vessel up to the OAL of the vessel that relinquished the C licence eligibility. There is no change to the MVL for the Halibut licence eligibility.

A category L Halibut licence eligibility held on a vessel, in combination with another vessel based licence, may be placed on a vessel that does not exceed the MVL, so long as it is within the vessel replacement rules associated with the another vessel based licence also being replaced.

Where the replacement vessel is unlicensed, a category L Halibut licence eligibility held on a vessel, in combination with another vessel based licence (such as Groundfish by Trawl and/or Sablefish), may be placed on a vessel that does not exceed the OVL. As the replacement vessel is unlicensed, a category C licence eligibility must be relinquished (permanently retired).

Vessels may hold more than one Halibut licence eligibility in a year, but not at the same time.

Vessels may not fish Halibut under the authority of more than one licence eligibility a year.

When vessel owners wish to swap two married Halibut licence eligibilities, neither licence may exceed the MVL assigned to the licence eligibility.

Vessel owners wishing to request a permanent or temporary vessel replacement for a commercial Halibut licence eligibilities must apply to a PFLU.

5.7. Temporary Vessel Replacement

The temporary placement of category L Halibut licence eligibilities is only allowed when the vessel to be replaced becomes a total loss.

Temporary replacement vessels may not have harvested Halibut in the current fishing year and may not exceed the MVL of the category L licence eligibility.

If a category L Halibut licence eligibility is temporarily split from other vessel licence eligibilities, the remaining eligibilities may not be placed on a third vessel.

For further information on vessel replacement policies, please contact a PFLU by telephone at 1-877-535-7307 or email at fishing-peche@dfo-mpo.gc.ca.

6. SECTOR RULES

6.1. 4B (Strait of Georgia) Halibut Fishery

Vessels participating in a directed Halibut fishery in area 4B are accountable for all species and are responsible for any Pacific Halibut, Spiny Dogfish, Yelloweye rockfish, and Quillback rockfish, and Copper, China and Tiger rockfish caught while fishing area 4B.

A non-transferable allocation of Yelloweye rockfish is provided to vessels who apply to fish Halibut in area 4B waters, thus area 4B fishers are not required to acquire quota to cover the catch of Yelloweye. However, vessels are restricted to annual caps of 200 pounds (round weight) of Yelloweye in area 4B.

Subject to variation orders, while fishing under authority of a Halibut licence legal-sized Sablefish may not be retained from Groundfish Management Area 4B.

No vessel may hold quota holdings in excess of the annual ITQ caps.

6.1.1. Licence Species Temporary Quota Caps

| Species | Areas | Licence Species Cap (fresh, round pounds) |
|--------------------|--------------|--|
| Quillback rockfish | 4B | 178 |

| | | |
|-----------------------------------|----|-------|
| Copper, China, and Tiger rockfish | 4B | 22 |
| Dogfish | 4B | 1,000 |

Vessels fishing Halibut in 4B are subject to trip limits for:

- (1) Canary rockfish, Silvergray rockfish, Redbanded rockfish, Rougheye rockfish, Shortraker rockfish, Shortspine thornyheads, and other rockfish (as set out in Appendix 1 of the commercial Halibut conditions of licence): the quantity of rockfish landed shall not exceed 50 pounds (23 kg) (fresh, round pounds).
- (2) Lingcod caught and retained from areas 12-1 to 12-13, and 12-15 to 12-48, in any one fishing trip shall not exceed 400 pounds (181 kg) (fresh, round pounds). Lingcod may not be retained from any other area.

The Department will closely monitor the fishing activity in the 4B area, and if the Yelloweye TAC for Area 4B is reached, the fishery in this area will be closed. Once individual vessels have reached their annual limits they will be restricted from further directed Halibut fishing in Area 4B for the remainder of the season.

Those vessels wishing to participate in this fishery are required to apply for an amendment to the Halibut conditions of licence by contacting the Halibut Coordinator.

6.2. Rockfish ITQ

Each Halibut licence eligibility is allocated ITQ by area for the following rockfish species: Yelloweye, Quillback, Copper, China and Tiger, Canary, Silvergray, Rougheye, Redbanded, Shortraker, and Shortspine Thornyhead. Rockfish ITQ are calculated by multiplying the Halibut sector's species' area TAC by a licence eligibility's Halibut permanent ITQ percentage at the start of the season (before any Halibut overage/underage is added). Rockfish ITQ will be subject to temporary reallocation guidelines and ITQ caps outlined below.

6.3. Annual ITQ Caps

All Halibut licence eligibilities are subject to annual ITQ caps for directed and non-directed species. Temporary reallocations of ITQ, up to the ITQ caps listed below, will be permitted. No vessel may hold quota holdings in excess of the annual ITQ caps. Note: please see section 6.1.1 of this appendix for quota caps applicable to area 4B.

6.3.1. Licence Species Temporary Quota Caps

| Species | Areas | Licence Species Cap (fresh, round pounds) |
|--------------------|-----------|---|
| Rougheye rockfish | Coastwide | 60,000 |
| Quillback rockfish | Coastwide | 8,000 |

| | | |
|--|-----------|--------|
| Copper, China and Tiger rockfish (total) | Coastwide | 2,000 |
| Silvergray rockfish | Coastwide | 8,000 |
| Canary rockfish | Coastwide | 3,500 |
| Shortspine Thornyhead | Coastwide | 16,000 |
| Lingcod | Coastwide | 30,000 |
| Redbanded rockfish | Coastwide | 24,000 |
| Longnose Skate | Coastwide | 5,561 |
| Big Skate | Coastwide | 5,000 |

6.3.2. Licence Species Permanent Quota Caps

| Species | Areas | Licence Species Cap (fresh, round pounds) |
|----------------|-----------|---|
| Longnose Skate | Coastwide | 5,561 |
| Big Skate | Coastwide | 2,533 |

6.3.3. Quota Landings Temporary Quota Caps

| Species | Areas | Quota Landings Caps (fresh, round pounds) | | |
|---------------------|-----------|--|---|--|
| Yelloweye rockfish | Coastwide | 2,750 if 0 < Halibut* landed < TBD | 4,000 if TBD < Halibut* landed | |
| | Coastwide | Cap increases in 1,500 blocks up to 5,000, once a 1,500 block is caught | | |
| Shortraker rockfish | Coastwide | 8,000 if 0 < Halibut* landed < TBD | 16,000 if TBD < Halibut* landed < TBD | 20,000 if > TBD of Halibut* landed |
| | | Cap increases in 2,000 blocks up to 20,000, once a 2,000 block is caught | | |
| Redbanded rockfish | Coastwide | Cap increases in 4,000 blocks up to 24,000, once a 4,000 block is caught | | |

| Species | Areas | Quota Landings Caps (fresh, round pounds) | | | |
|-----------------------|-----------|--|--|---|---|
| Rougheye rockfish | Coastwide | Cap increases in 8,000 blocks up to 60,000, once a 8,000 block is caught | | | |
| Shortspine thornyhead | Coastwide | Cap increases in 4,000 blocks up to 16,000, once a 4,000 block is caught | | | |
| Lingcod | Coastwide | Cap increases in 5,000 blocks up to 30,000, once a 5,000 block is caught | | | |
| Sablefish | Coastwide | 4,180 if 0 < Halibut* landed < TBD | 8,360 if TBD < Halibut* landed < TBD | 12,540 if > TBD < Halibut* landed < TBD | 14,250 if > TBD < Halibut* landed < TBD |

*Fresh, dressed, head-off weight

Note: TBD = 0.25% of Commercial Halibut TAC; TBD = 0.5% of Commercial Halibut TAC; TBD = 0.75% of commercial Halibut TAC; TBD = 1.0% of commercial Halibut TAC

6.3.4. TAC Holdings Quota Caps

The maximum quantity of Halibut ITQ that can be held by a vessel is 1.0 percent of the season’s TAC (including both permanent and temporary transfers, but not including any carryover of ITQ underage from the previous year). However, vessels that fished greater than 1.0% of the TAC in any year from 1993 to 1998 are allowed to hold quota up to their individual maximum. With the 2019/2020 commercial TAC of TBD tonnes (TBD pounds), the maximum poundage that may be held in permanent and temporary quota by a vessel for 2019/2020 is TBD tonnes (TBD pounds). Underages are excluded from the maximum TAC Holdings Quota Cap.

The minimum quantity of Halibut ITQ that must be held permanently by a vessel is 0.011494% of the commercial Halibut TAC. With the 2019/2020 commercial TAC of TBD tonnes (TBD pounds), the minimum poundage that must be permanently held by a vessel for 2019/2020 is TBD tonnes (TBD pounds). The minimum can be temporarily reallocated during the year.

6.4. Trip Limits

Trip limits for non-directed species of groundfish caught while fishing Halibut:

| Species | Trip Limit (fresh, round pounds) | |
|--|--|---|
| “Other Rockfish,” as set out in Appendix 1 in the conditions of licence, including Bocaccio. | 5,000 pounds | |
| Bocaccio | Landings (round weight) per trip may not exceed: | |
| | 100 pounds where 10,000 | 100 pounds plus 1% of the amount of Halibut landed in |

| | | |
|-------------------|--------------------------------------|---|
| | pounds or less of Halibut* is landed | excess of 10,000 pounds, to a maximum of 600 pounds of Bocaccio |
| Pacific cod | 500 pounds | |
| Sole and flounder | No limit | |

6.5. Fishing Restriction for exceeding an ITQ

Licence eligibilities that exceed their uncaught ITQ for Halibut as of the vessel’s last trip by more than 10%, or 400 pounds, whichever is greater, are defined as being in excess overage. Licence eligibilities in excess overage will be restricted from further fishing activity for the remainder of the fishing year, or until such time that sufficient ITQ is reallocated to the licence eligibility to cover any overages.

Licence eligibilities that exceed their total ITQ by area for non-directed species by more than 30%, or 100 pounds, whichever is greater, are defined as being in a state of excess overage. Licence eligibilities in excess overage will be restricted from further fishing activity for the remainder of the fishing year, or until such time that sufficient ITQ is reallocated to the licence eligibility to cover any overages.

Licenses that do not reconcile overages by February 20, 2020, will carry overages into the new season (see section 6.7.3. of this harvest plan). If a licence eligibility remains in excess overage following initial allocations of ITQ, the licence eligibility will be restricted from fishing until temporary reallocations for the 2020/2021 season are processed in mid-March (see section 6.6.7 of this harvest plan).

6.6. Reallocation of Directed and Non-Directed Species ITQ

The following guidelines for the reallocation of directed and non-directed species ITQ are in effect for the 2019/2020 fishery.

- 6.6.1. Subject to annual ITQ caps and sector caps, upon application, licence eligibility holders will be permitted to make unlimited temporary reallocations of directed and non-directed species ITQs. A “Temporary Reallocation Request for Integrated Groundfish Fisheries” must be completed and submitted to the GMU and, if approved, a licence amendment will be issued to reflect new ITQ amounts. The most current licence amendment must be onboard when fishing.
- 6.6.2. For permanent Halibut ITQ reallocations, all vessel owners/licence eligibility holders on record must complete and sign a “Permanent Reallocation Request for Integrated Groundfish Fisheries.” For temporary reallocations of ITQ only one owner or the licence eligibility holder is required to sign the “Temporary Reallocation Request for Integrated Groundfish Fisheries” form.
- 6.6.3. If the vessel owner is a company or First Nations group, only an authorized signing authority may sign the application. A copy of either a “Confirmation of

Signing Authorities” or an “Amendment to Confirmation of Signing Authorities” listing the signing authorities must be on file with the GMU.

- 6.6.4. The 2018 Halibut licence eligibility must be issued prior to any ITQ being reallocated.
- 6.6.5. Requests for permanent reallocation of Halibut ITQ must be received by GMU by 16:00 hours local time on February 2, 2020 in order to be processed.
- 6.6.6. Requests for temporary reallocation of directed and non-directed species ITQ must be received by GMU by 16:00 hours local time on February 20, 2020 in order to be processed. Temporary reallocations of directed and non-directed species ITQ are only valid for the current fishing season.
- 6.6.7. Reallocations for the 2019/2020 season will not be processed until 8:00 hours local time March 15, 2019.
- 6.6.8. ITQ that has already been caught or deemed “fished” cannot be reallocated.
- 6.6.9. Permanent reallocations of ITQ will be expressed as a percentage of the TAC, and will be added to the receiving licence eligibility’s percentage of the TAC.
- 6.6.10. The minimum quantity of ITQ that may be reallocated is one pound.
- 6.6.11. Temporary reallocations are only valid for the current fishing season.

6.7. Rules for Carryover of Quota Overage and Underage

6.7.1. Carryover of Directed Species ITQ Underage

Licence eligibilities with Halibut catch less than ITQ, including reallocations made during the year, will be permitted to carryover uncaught ITQ up to 10% of their total Halibut ITQ at the end of the fishing season. This equivalent poundage will be added to the licence ITQ in 2020/2021. Any amount above the 10% will be forgone.

6.7.2. Carryover of Non-Directed Species ITQ Underage

Licence eligibilities with non-directed species (except Dogfish) catch less than ITQ, including reallocations made during the year, will be permitted to carryover uncaught ITQ up to 30% of their total non-directed species ITQ at the end of the fishing season. This equivalent poundage will be added to the licence ITQ in 2020/2021. Any amount above the 30% will be forgone.

Licence eligibilities with Dogfish catch less than ITQ, including reallocations made during the year, will be permitted to carryover uncaught ITQ up to 10% of their total Dogfish ITQ at the end of the fishing season. This equivalent poundage will be added to the licence ITQ in 2020/2021. Any amount above the 10% will be forgone.

6.7.3. Carryover of ITQ Overages

Licence eligibilities with catch in excess of ITQ, including reallocations made during the year, will have the overage deducted from the licence eligibility's ITQ in 2020/2021. ITQ to cover these overages will count against the ITQ caps during the season in which the ITQ is allocated to the licence eligibility.

Quota reallocation request forms and signature authorization forms are available at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/contact-en.html>

For licence status reports (LSR) and quota reallocation inquiry, contact either of the Groundfish Management Unit Quota officers at groundfishivq@dfo-mpo.gc.ca.

7. BAIT

Commercial fishers wishing to use licensed catch as bait may do so, with the exception of rockfish. All such catch must be accurately recorded in the Integrated Groundfish Fishing Log. Rockfish may not be used as bait, and must be retained and landed.

Octopus caught incidentally may be retained and used for bait under authority of a Halibut licence eligibility, but cannot be landed and sold.

If a quota species is used as bait, the vessel will be assessed an average weight for that species as defined in Appendix 2 of the IFMP.

8. COMBINED HALIBUT AND SABLEFISH FISHING

Vessels conducting combined Halibut and Sablefish trips will be required to identify their intentions at the time of hail-out and will receive two hail-out numbers.

Those vessels conducting combination Halibut and Sablefish trips may assign directed and non-directed quota species catch to either their L licence eligibility or their K licence eligibility as long as they are within the quota caps for that fishery. This includes splitting catch for the same species between the two licence eligibility types if so desired. It is the responsibility of the vessel master at the time of offload to communicate this to the dockside observer. Trip limit allowances for quota species will be determined using the licence eligibility that the landed catch is assigned to. Trip limit allowances for all non-quota species will be determined using the Sablefish licence eligibility only.

If fishing on a combination trip the vessel may only fish in areas open to directed Sablefish fishing (see section 4.2 and section 11 of Appendix 7 for the waters in which commercial Sablefish fishing is permitted to occur).

9. DUAL FISHING

Dual fishing means fishing for commercial and First Nation Food, Social, and Ceremonial purposes on the same fishing trip. Dual fishing is authorized through licence conditions for commercial groundfish fisheries. Vessel masters considering dual fishing are responsible for reviewing their licence conditions to ensure they are aware of the dual fishing requirements.

Before hailing-out on a dual fishing trip, the vessel master must obtain a dual fishing designation certificate from a designating First Nation that has a communal licence authorizing the harvest of groundfish. The designation certificate must contain all of the information set out in the conditions of licence. If any of the information is missing the designation certificate will not be considered valid and the vessel master cannot dual fish.

A designation certificate template is available on the DFO website: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.html>. Aboriginal organizations may issue their own designation certificate as long as the required information is included.

When hailing-out, the vessel master must notify the hail service provider that they will be dual fishing, provide the name of the First Nation that issued the designation certificate, and provide the unique designation certificate identification number. The vessel master must carry the designation certificate on board the vessel at all times during the fishing trip. The vessel master must record, by set and by species, the fish retained under the authority of the designation certificate. This information must be recorded in the comments section and the retained column of the Integrated Groundfish Fishing Log.

All retained fish, including both commercial and FSC catch, must be recorded in the “retained” column of the Integrated Groundfish Fishing Logbook. Additionally, fish retained as FSC catch must be separated out and recorded by set and by species in the “comments” section of the Integrated Groundfish Fishing Logbook.

When hailing-in, the vessel master must provide an estimate, by species, of the weight of fish caught under the authority of the designation certificate. Unless the designating First Nation requests to have the FSC fish landed and validated at a different location, all fish from the trip must be landed at the same place and validated by a designated groundfish dockside observer. At the time of offload, the vessel master must provide a valid designation certificate to the dockside observer. If one is not provided, all catch from the trip will be considered commercial catch until the completion of a review by the Groundfish Management Unit and discussion with the vessel master. Furthermore, if FSC fish are landed at a different location than the commercial catch, an FSC validation record containing the verified weight and the number of pieces by species must be completed by a fisheries representative of the designating First Nation organization. The vessel master must obtain a copy of the FSC validation record and provide it to the designated groundfish dockside monitor at the time of the commercial offload.

10. RECREATIONAL FISHING

Fish harvesters are reminded that under Section 14 of the *British Columbia Sport Fishing Regulations, 1996*, it is unlawful to have Halibut on board taken by sport fishing if there are any other fish on board the vessel destined for commercial sale.

11. CLOSURES

Please refer to Appendix 10 of this IFMP for commercial groundfish hook and line fishery closures.

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Appendix 7: Sablefish Commercial Harvest Plan

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1. MANAGEMENT UPDATES & CHANGES FOR 2019/2020

1.1. In-Season Changes/Updates

In-season updates are available on the Fishery Notice website at: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm?pg=search_options&lang=en&id=commercial.

In-season Sector Catch and Sector Cap summaries are updated daily and can be found at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.htm>

1.2. Halibut landing requirements

Based on discussions with the International Pacific Halibut Commission to ensure an accurate accounting of total landed mortality, new landing requirements have been implemented for Pacific Halibut. Where commercially caught Pacific Halibut is landed fresh, all Pacific Halibut catch shall be landed head-on. Where commercially caught Pacific Halibut is landed frozen, Pacific Halibut catch shall be landed head-on or head-off. All catch may continue to be landed dressed.

1.3. Implementation of Marine Protected Area closures

Several Marine Protected Areas (MPAs) have been established to conserve the biological diversity, structural habitat, and ecosystem function in various areas across the Pacific Coast. These include:

- The Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Areas, to protect three glass sponge reefs located between Haida Gwaii and the mainland of British Columbia in Hecate Strait and Queen Charlotte Sound.
- The SGaan Kinghlas - Bowie Seamount Marine Protected Area. In October 2017, the SK-B Management Board recommended to the Council of the Haida Nation (CHN) and Minister that SK-B MPA be permanently closed to all bottom-contact fisheries. The closure is intended to protect sensitive benthic habitat from serious and irreversible harm (i.e., crushing, damaging, or destroying cold water coral and sponges with a recovery time greater than 20 years).
- In advance of potential Offshore Pacific Area of Interest MPA designation, fishery closures to restrict commercial and recreational bottom-contact fishing activities within the Offshore Pacific AOI were announced in October 2017.

For more information on these closures, refer to Appendix 10 of the IFMP.

1.4. Sub-legal Sablefish

Sub-legal Sablefish are vulnerable to most commercial groundfish sectors due to their widespread distribution and high selectivity to commercial fishing gears. A significant Sablefish recruitment event, likely starting in 2014, has increased the frequency and volume of encounters in subsequent years. Incidental sub-legal Sablefish catch, and the associated release mortality, limits stock productivity; as such, there is a need to explore options to reduce sub-legal Sablefish mortality.

Drawing from existing advisory boards DFO has formed a working group that comprises the key sectors encountering sub-legal Sablefish in the highest frequency. This group aims to collaborate on the development of management measures aimed at reducing the frequency and volume of sub-legal Sablefish bycatch.

1.5. Outside Yelloweye Rockfish rebuilding

Based on updated science information, application of DFO's *Fishery Decision-Making Framework Incorporating the Precautionary Approach*, and consultation with interested parties, the Department is pursuing catch reductions for the outside population of Yelloweye Rockfish in Groundfish Management Areas 3 and 5.

The Department will review the efficacy of catch reduction measures at the end of each fishing season and consider any additional measures necessary to support stock rebuilding. Please refer to conditions of licence and this harvest plan for further information.

1.6. Partial Offloads

Vessels fishing under the authority of a Sablefish licence eligibility are permitted to land only a portion of their catch during a "partial offload."

A partial offload is a manner of fishing by which a vessel offloads some catch before returning to the fishing grounds for additional fishing. A maximum of two trip "legs" are permitted in a partial offload fishing trip, meaning fishing would occur in the following manner: hail out, fish, hail in, land some portion of catch, fish, hail in, land all catch, complete data processing (e.g. audit fishing log and issue Quota Status Report).

At the end of each partial offload, all logbook pages, validation records, and electronic monitoring data must be provided to the service provider. For vessels fishing with EM, a partial offload will require a hard drive exchange.

Trip limits are assessed at the end of the final hail-in, at the service provider's head office (as opposed to on the dock as occurs for traditional offloads). Trip limits are based on all catch that occurred between the hail-out and the final hail-in.

Partial offloads are prohibited for Pacific Halibut.

1.7. **Seamounts**

Seamount fisheries within the Exclusive Economic Zone (EEZ) have been closed to bottom-contact fishing. The northern seamounts have been closed within S_Gaan K_Inghlas – Bowie MPA, and the southern seamounts have been closed as part of the Offshore Pacific Area of Interest. Further details of these closures are outlined in Appendix 10 of the IFMP.

2. **SPECIES**

The following species are permitted to be retained under Part 1 and Schedule II, Part 2 of a valid Sablefish licence eligibility with the appropriate amendment.

Sablefish (*Anoplopoma fimbria*)

Halibut (*Hippoglossus stenolepis*)

Rockfish (*Sebastes spp. and Sebastolobus spp.*)

Lingcod (*Ophiodon elongates*)

Spiny Dogfish (*Squalus suckleyi*)

Skate (*Rajidae*)

Sole and Flounder (*Pleuronectiformes*, other than *Hippoglossus stenolepis*)

Pacific cod (*Gadus macrocephalus*)

3. **GEAR**

Hook and line, and trap gear.

By regulation, no person shall fish for Sablefish with a trap, unless the trap has a side wall section that has been laced, sewn or otherwise secured by a single length of untreated natural fibre not larger than two millimetres in diameter and that, on deterioration or parting, produces in the side wall an opening with four sides, each of which is at least 20 centimetres in length.

No person shall fish for Sablefish with a trap unless the trap has in the side walls at least two escape openings each having an inside diameter of not less than 8.89 centimetres which creates an unrestricted exit out of the trap.

No person shall set a trap and leave the trap in the water for more than four consecutive days without lifting the trap from the water and removing all of the catch.

4. QUOTAS AND OPEN TIMES

4.1. Open Times

The 2019/2020 Sablefish fishery will commence 00:01 hours, February 21, 2019 and close at 23:59 hours, February 20, 2020. Following the closure of the fishery, all fish caught under the authority of a Sablefish licence eligibility must be landed and validated by a DFO-designated groundfish dockside observer no later than 23:59 hours, February 27, 2020.

No Halibut may be retained until the 2018 Halibut fishery commences at 12:00 hours, March 11, 2019. The directed Halibut fishery will close at 12:00 hours, November 7, 2019. Accordingly, all Halibut must be landed and validated by a DFO-designated groundfish dockside observer no later than 12:00 hours, November 14, 2019.

The retention of Lingcod by hook and line gear will be permitted from April 1, 2019 to 23:59 hours November 14, 2019. Accordingly, all Lingcod must be landed and validated by a DFO-designated groundfish dockside observer no later than 23:59 hours local time, November 21, 2019.

To allow an orderly opening for the 2019 Pacific Halibut season, variation orders are issued to close three areas (Langara Island, Cape St. James, and North Triangle) for 72 hours prior to the opening of the Pacific Halibut season. The variation orders close the fisheries Skate, Sole, Flounder and Spiny Dogfish by hook and line, Pacific Cod by hook and line, rockfish by hook and line, and Sablefish by longline. Please review all variation orders prior to fishing.

4.2. Fishing Areas

Subject to closures described in Section 11 of this harvest plan and variation orders, the waters in which commercial Sablefish fishing is permitted to be carried out are:

Areas: 1, 2, 101, 108 to 111, 121, 123 to 127, 130, 142, Sub-area 102-3 and that portion of Subarea 102-2 that lies southerly of a line from 52°10.00' north latitude and 130°57.395' west longitude to 52°27.020' north latitude and 130°16.621' west

longitude (portions of Groundfish Management Areas 3C, 3D, 5A, 5B, 5C, 5D, and 5E).

When hailed out on a combination Halibut and Sablefish trip, a vessel can only fish in areas open to directed Sablefish fishing (see section 8 of this harvest plan).

While fishing under authority of a Halibut, Rockfish or a Schedule II species licence eligibility only, non-directed, legal-sized Sablefish caught may be retained from any area or subarea open to fishing under the authority of a Halibut, Rockfish or a Schedule II species commercial licence eligibility, except Groundfish Management Area 4B. Retention of Sablefish is also subject to closures described in section 11 of this harvest plan and variation orders.

4.3. Total Allowable Catch

The 2019/2020 coastwide Sablefish total allowable catch (TAC) is **TBD tonnes** (all Sablefish weights are fresh, round weight). The Sablefish TAC is determined annually using information from an annual fishery-independent Sablefish survey, and the commercial Sablefish fishery. These data are used to estimate Sablefish biomass which is incorporated into a harvest control rule that is compliant with DFO's *Fishery Decision Making Framework incorporating the Precautionary Approach*. From the TAC, access is allocated for First Nation Food, Social, and Ceremonial (FSC) purposes, aquaculture broodstock collection, and research and management. Section 10 of the Fisheries Act permits the Minister of Fisheries and Oceans to allocate fish for the purpose of financing scientific and fisheries management activities.

After accounting for FSC and research, access is allocated to commercial sectors. Access totalling **0.1% of the commercial TAC** is provided to the aquaculture industry for the collection of broodstock. In a manner similar to directed commercial groundfish fisheries (Appendix 2 of the groundfish IFMP), aquaculture access accounts for the mortality associated with the retention and release of Sablefish caught during the collection of broodstock. The balance of the TAC is allocated between the directed Sablefish fishery (91.25%) and the groundfish Trawl fishery (8.75%).

In 2019 the Sablefish TAC has been allocated as:

| | | |
|--------------------------------------|-------------------|-------------------|
| Food, Social, and Ceremonial | 45.36 tonnes | 100,000 pounds |
| Research; PHMA survey | 0.78 tonnes | 1,674 pounds |
| Use of Fish allocation; trap survey | 60.00 tonnes | 132,276 pounds |
| Use of Fish allocation; trawl survey | TBD tonnes | TBD pounds |
| Category K licence eligibility TAC | TBD | TBD |

| | | |
|------------------------------------|-------------|-----|
| Category T licence eligibility TAC | TBD | TBD |
| Aquaculture broodstock collection | 0.1% of TAC | TBD |
| Total Allowable Catch* | | |

* Excludes carryover of overages and underages from the previous season (see section 6.5 of this harvest plan).

5. LICENSING

National Online Licensing System (NOLS) Client Support - Licensing Services

All fish harvesters/Licence Holders/vessel owners are now required to use the National Online Licensing System (NOLS) to view, pay for and print their commercial fishing licences, licence conditions and/or receipts.

Training materials, including step-by-step guides and a detailed user training manual, are available online (<http://www.dfo-mpo.gc.ca/FM-GP/SDC-CPS/licence-permis-eng.htm>) to guide users of the system in completing their licensing transactions. The Department also provides client support and assistance on how to use the system via e-mail at fishing-peche@dfo-mpo.gc.ca or by calling toll-free at 1-877-535-7307 (7:00 AM to 8:00 PM Eastern, Monday to Friday).

For more information on how to register and use the system, visit the Department's website at the address above, or contact our client support

5.1. Licence Category

A commercial Sablefish (category K) or a communal commercial Sablefish (category FK) licence eligibility is required to participate in the directed commercial Sablefish fishery.

Category K Sablefish licence eligibilities are limited entry and vessel-based. Category FK eligibilities are limited entry and party-based; an Aboriginal group is the licence eligibility holder and the eligibility must be designated to a commercially registered fishing vessel that meets established length restrictions.

Vessels authorized to fish under the authority of a Sablefish licence eligibility are also permitted to catch and retain other groundfish species by hook and line gear, and trap gear as outlined in conditions of licence. These vessels are also permitted to catch and retain species described in Schedule II, Part 2 of the *Pacific Fishery Regulations, 1993*, catch and retain other groundfish species, transport non-groundfish species caught by other vessels and be designated to fish under the authority of a category Z licence.

5.2. Licence Renewal Fees

The commercial Sablefish licence renewal fee is based on the following formula: \$241 multiplied by the number of tonnes of Sablefish initially allocated to the licence eligibility, less 40 percent of that product, up to a maximum reduction of \$1,000. There is no annual licence renewal fee for communal commercial category FK licenses.

5.3. Licence Issuance

Renewal of a Category K licence and payment of the fees must be done on an annual basis to retain the privilege to be issued the licence in the future, regardless of whether or not fishing is carried out. Those category K licenses not renewed by February 20, 2018 will cease and licence issuance requests will be unable to be considered in future.

Prior to annual licence issuance of a communal commercial licence, licence eligibility holders are required to annually designate the fishing vessel to hold the licence. This must be done by navigating to the 'Submit a Request' menu selection within the National Online Licensing System (NOLS). Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>).

Prior to annual application, vessel owner(s)/licence eligibility holders are required to:

- a) Meet any Ministerial conditions placed on the licence eligibility.
- b) Ensure any conditions of the previous year's licence are met.
- c) the designated vessel's overall length does not exceed the maximum vessel length of the category FK licence eligibility.

To avoid delays, please ensure the payment and vessel designation information is submitted all at the same time through the Submit a Request menu selection within the NOLS when renewing a communal commercial licence.

5.4. Licence Amendment

The Sablefish licence eligibility must be issued prior to the processing of a request for licence amendment or reallocation of ITQ. The vessel owner/master must have on board a valid Sablefish licence amendment prior to fishing.

This amendment outlines the total amount of fish by species that the vessel can land for the fishing season. Without this amendment the vessel is not permitted to catch, retain or land any fish.

A “Request for Licence Amendment” must be completed by the vessel owner/licence eligibility holder or the designated agent and faxed to the Groundfish Management Unit at (604) 666-8525. Request forms and other applicable forms are available online at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/form-eng.htm>.

5.5. Licence Documents

Sablefish licence documents are valid from the date of issue to February 20, 2020.

Replacements for lost or destroyed licence documents may be obtained by reprinting the licence documents through the NOLS.

5.6. Vessel Replacement

The owner(s) of a category K licensed Sablefish vessel may make an application to replace the commercial fishing vessel. Both the replacement vessel and the vessel being replaced must have a survey on file with the Pacific Fishery Licence Unit (PFLU) or submitted with the vessel replacement application. Vessels must be surveyed according to the Department guidelines.

Communal commercial licenses are not eligible for vessel replacement as the licence eligibility is party-based.

A single category K Sablefish licence eligibility may be placed on a vessel that does not hold another vessel based licence eligibility as long as the replacing vessel does not exceed the overall length of the existing vessel.

A category K Sablefish licence eligibility held on a vessel, in combination with another vessel based licence, may be placed on a vessel of any length, so long as it is within the vessel replacement rules associated with the another vessel based licence also being replaced.

A category K Sablefish licence eligibility may be separated from any combination of married licence eligibilities as long as it is placed on another commercially licensed fishing vessel of any length, that holds a salmon, geoduck, Halibut, crab, shrimp trawl, groundfish trawl or prawn and shrimp by trap licence eligibility. Sablefish licence eligibilities may not be stacked.

In circumstances where the intention is to make the category K licence eligibility a standalone licence, and the replacing vessel holds Schedule II species (category C) licence eligibility, then the Schedule II licence privilege must be permanently retired. The option of relinquishing a schedule II species licence may only be utilized when it is the

intention to separate a Sablefish licence from a married situation in order to become a standalone Sablefish licence.

Where the Sablefish licence eligibility is temporarily placed on a vessel which holds Schedule II species licence eligibility, then the Schedule II licence must be returned to a PFLU. The Schedule II licence will be held for the duration of the time the Sablefish licence is temporarily placed.

Vessel owners wishing to make permanent or temporary vessel replacements for commercial Sablefish licence eligibilities must apply to a PFLU.

5.7. Temporary Vessel Replacement

The temporary placement of Sablefish licence eligibilities is only allowed when the vessel to be replaced becomes a total loss.

Temporary replacement vessels may not have harvested Sablefish in the current fishing year and may not exceed the Maximum Vessel Length (MVL) of the Sablefish licence eligibility.

If a Sablefish licence eligibility is temporarily split from other vessel licence eligibilities, the remaining eligibilities may not be placed on a third vessel.

For further information on vessel replacement policies, please contact a PFLU by telephone at 1-877-535-7307 or email at fishing-peche@dfo-mpo.gc.ca.

6. SECTOR RULES

6.1. Annual ITQ Caps

All Sablefish licence eligibilities are subject to annual ITQ caps for directed and non-directed species. Temporary reallocations of ITQ, up to the ITQ caps listed below, will be permitted. No vessel may hold quota holdings in excess of the annual ITQ caps.

6.1.1. Licence Species Temporary Quota Caps

| Species | Areas | Licence Species Cap (fresh, round pounds) |
|-----------------|-----------|---|
| Halibut | Coastwide | XX,XXX |
| Lingcod | Coastwide | 33,772 |
| Canary rockfish | Coastwide | 14,542 |

| Species | Areas | Licence Species Cap (fresh, round pounds) |
|--|--------------|--|
| Silvergray rockfish | Coastwide | 9,836 |
| Yelloweye rockfish | Coastwide | 5,000 |
| Quillback rockfish | Coastwide | 1,459 |
| Copper, China and Tiger rockfish (total) | Coastwide | 486 |
| Redbanded rockfish | Coastwide | 50,000 |
| Rougheye rockfish | Coastwide | 180,000 |
| Shortraker rockfish | Coastwide | 64,000 |
| Shortspine Thornyhead | Coastwide | 40,000 |
| Longnose Skate | Coastwide | 40,000 |
| Big Skate | Coastwide | 30,000 |

Note: **XX,XXX** = 1.0% of commercial Halibut TAC

6.1.2. Licence Species Permanent Quota Caps

| Species | Areas | Licence Species Cap (fresh, round pounds) |
|----------------|--------------|--|
| Longnose Skate | Coastwide | 40,000 |
| Big Skate | Coastwide | 40,000 |

6.1.3. Quota Landings Temporary Quota Caps

| Species | Areas | Quota Landings Caps (fresh, round pounds) |
|--------------------|--------------|---|
| Halibut | Coastwide | Cap increases in 2,000 blocks up to XX,XXX , for every 10,000 Sablefish caught |
| Yelloweye rockfish | Coastwide | Cap increases in 1,500 blocks up to 5,000, for every 10,000 Sablefish caught |

| Species | Areas | Quota Landings Caps (fresh, round pounds) |
|--------------------|-----------|---|
| Quillback rockfish | Coastwide | Cap increases in 1,000 blocks up to 1,459, for every 5,000 Sablefish caught |
| Lingcod | Coastwide | Caps increase in 7,500 blocks up to 33,772, for every 10,000 Sablefish caught |

Note: XX,XXX= 1.0% of commercial Halibut TAC

6.2. Trip Limits

Trip limits for non-directed species of groundfish caught while fishing Sablefish:

| Species | Trip Limit (fresh, round pounds) | |
|--|---|---|
| “Other Rockfish,” as set out in Appendix 1 in the conditions of licence, including Bocaccio. | 5,000 pounds | |
| Bocaccio* | Landings per trip may not exceed: | |
| | 100 pounds where 10,000 pounds or less of Sablefish is landed | 100 pounds plus 1% of the amount of Sablefish landed in excess of 10,000 pounds, to a maximum of 600 pounds of Bocaccio |
| Pacific cod | 500 pounds | |
| Sole and Flounder | No limit | |

*When combined Halibut and Sablefish fishing, the permitted amount of Bocaccio is based on the combined landed weight of Halibut (fresh, dressed, head-off pounds) and Sablefish (round pounds).

6.3. Fishing Restrictions for Exceeding ITQ Species Caps

Licence eligibilities that exceed their total Sablefish ITQ by more than 10%, or 1,000 pounds, whichever is greater, are defined as being in excess overage. Licence eligibilities

in excess overage will be restricted from further fishing activity for the remainder of the fishing year, or until such time that sufficient ITQ is reallocated to the licence eligibility to cover any overages.

Licence eligibilities that exceed their total ITQ for non-directed species by more than 30%, or 100 pounds, whichever is greater, are defined as being in excess overage. Licence eligibilities in excess overage will be restricted from further fishing activity for the remainder of the fishing year, or until such time that sufficient ITQ is reallocated to the licence eligibility to cover any overages.

Licence eligibilities that do not reconcile excess overages by February 20, 2021, will carry excess overages into the new season (see sections 6.5.3.). If a licence eligibility remains in excess overage following initial allocations of ITQ, the licence eligibility will be restricted from fishing until such time that sufficient ITQ is reallocated to the licence eligibility to cover any overages. Note that temporary reallocations for the 2019/2020 season are first processed in mid-March (see section 6.4.7 of this harvest plan).

6.4. Reallocation of Directed and Non-Directed Species ITQ

The following guidelines for the reallocation of directed and non-directed species ITQ are in effect for the 2020/2021 fishery.

- 6.4.1. Subject to annual ITQ caps and sector caps, upon application, licence eligibility holders will be permitted to make unlimited temporary reallocations of directed and non-directed species ITQs. A “Temporary Reallocation Request for Integrated Groundfish Fisheries” must be completed and submitted to the GMU and, if approved, a licence amendment will be issued to reflect new ITQ amounts. The most current licence amendment must be onboard when fishing.
- 6.4.2. For permanent Sablefish ITQ reallocations, all vessel owners/licence eligibility holders on record must complete and sign a “Permanent Reallocation Request for Integrated Groundfish Fisheries.” For permanent reallocations, all signatures must be notarized. For temporary reallocations of ITQ only one owner or the licence eligibility holder is required to sign the “Temporary Reallocation Request for Integrated Groundfish Fisheries” form.
- 6.4.3. If the vessel owner is a company or First Nations group, only an authorized signing authority may sign the application. A copy of either a “Confirmation of Signing Authorities” or an “Amendment to Confirmation of Signing Authorities” listing the signing authorities must be on file with the GMU.
- 6.4.4. The 2020/2021 Sablefish licence eligibility must be issued prior to any ITQ being reallocated.

- 6.4.5. Requests for permanent reallocation of Sablefish ITQ must be received by GMU by 16:00 hours local time on February 2, 2021 in order to be processed.
- 6.4.6. Requests for temporary reallocation of directed and non-directed species ITQ must be received by GMU by 16:00 hours local time on February 20, 2021 in order to be processed. Temporary reallocations of directed and non-directed species ITQ are only valid for the current fishing season.
- 6.4.7. Reallocations for the 2020/2021 season will not be processed until 8:00 hours local time March 15, 2020.
- 6.4.8. ITQ that has already been caught or deemed “fished” cannot be reallocated.
- 6.4.9. Permanent reallocations of ITQ will be expressed as a percentage of the TAC, and will be added to the receiving licence eligibility’s percentage of the TAC.
- 6.4.10. The minimum quantity of ITQ that may be reallocated is one pound.
- 6.4.11. Temporary reallocations are only valid for the current fishing season.

6.5. Rules for Carryover of Quota Overage and Underage

6.5.1. Carryover of Directed Species ITQ Underage

Licence eligibilities with Sablefish catch less than ITQ, including reallocations made during the year, will be permitted to carryover uncaught ITQ up to 30% of their total Sablefish ITQ at the end of the fishing season. This equivalent poundage will be added to the licence ITQ in 2020/2021. Any amount above the 30% will be forgone. The 30% carryover provision will be reviewed annually to ensure sustainability of the stock.

6.5.2. Carryover of Non-directed ITQ Underage

Licence eligibilities with non-directed species (except Dogfish) catch less than ITQ, including reallocations made during the year, will be permitted to carryover uncaught ITQ up to 30% of their total non-directed species ITQ at the end of the fishing season. This equivalent poundage will be added to the licence ITQ in 2020/2021. Any amount above the 30% will be forgone.

Licence eligibilities with Dogfish catch less than ITQ, including reallocations made during the year, will be permitted to carryover uncaught ITQ up to 10% of their total Dogfish ITQ at the end of the fishing season. This equivalent poundage will be added to the licence ITQ in 2020/2021. Any amount above the 10% will be forgone.

6.5.3. Carryover of ITQ Overages

Licence eligibilities with catch in excess of ITQ, including reallocations made during the year, will have the overage deducted from the licence eligibility's ITQ in 2020/2021. ITQ to cover these overages will count against the ITQ caps during the season in which the ITQ is allocated to the licence eligibility.

7. BAIT

Commercial fishers wishing to use licensed catch as bait may do so, with the exception of rockfish. All such catch must be accurately recorded in the Integrated Groundfish Fishing Log. Rockfish may not be used as bait, and must be retained and landed.

Octopus caught incidentally may be retained and used for bait under authority of a Sablefish licence eligibility, but cannot be landed and sold.

If a quota species is used as bait, the vessel will be assessed an average weight for that species as defined in Appendix 2 of the IFMP.

8. COMBINED HALIBUT AND SABLEFISH FISHING

Vessels conducting combined Halibut and Sablefish trips will be required to identify their intentions at the time of hail-out and will receive two hail-out numbers.

Those vessels conducting combination Halibut and Sablefish trips may assign directed and non-directed quota species catch to either their L licence eligibility or their K licence eligibility as long as they are within the sector caps for that fishery. This includes splitting catch for the same species between the two licence eligibility types if so desired. It is the responsibility of the vessel master at the time of offload to communicate this to the dockside observer. Trip limit allowances for quota species will be determined using the licence eligibility that the landed catch is assigned to. Trip limit allowances for all non-quota species will be determined using the Sablefish licence eligibility only.

If fishing on a combination trip, the vessel may only fish in areas open to directed Sablefish fishing (see section 4.2 and section 11 of this harvest plan for the waters in which commercial Sablefish fishing is permitted to occur).

9. DUAL FISHING

Dual fishing means fishing for commercial and First Nation Food, Social, and Ceremonial purposes on the same fishing trip. Dual fishing is authorized through licence conditions for commercial groundfish fisheries. Vessel masters considering dual fishing

are responsible for reviewing their licence conditions to ensure they are aware of the dual fishing requirements.

Before hailing-out on a dual fishing trip, the vessel master must obtain a dual fishing designation certificate from a designating First Nation that has a communal licence authorizing the harvest of groundfish. The designation certificate must contain all of the information set out in the conditions of licence. If any of the information is missing the designation certificate will not be considered valid and the vessel master cannot dual fish.

A designation certificate template is available on the DFO website: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.html>. Aboriginal organizations may issue their own designation certificate as long as the required information is included.

When hailing-out, the vessel master must notify the hail service provider that they will be dual fishing, provide the name of the First Nation that issued the designation certificate, and provide the unique designation certificate identification number. The vessel master must carry the designation certificate on board the vessel at all times during the fishing trip. The vessel master must record, by set and by species, the fish retained under the authority of the designation certificate. This information must be recorded in the comments section and the retained column of the Integrated Groundfish Fishing Log.

All retained fish, including both commercial and FSC catch, must be recorded in the “retained” column of the Integrated Groundfish Fishing Logbook. Additionally, fish retained as FSC catch must be separated out and recorded by set and by species in the “comments” section of the Integrated Groundfish Fishing Logbook.

When hailing-in, the vessel master must provide an estimate, by species, of the weight of fish caught under the authority of the designation certificate. Unless the designating First Nation requests to have the FSC fish landed and validated at a different location, all fish from the trip must be landed at the same place and validated by a designated groundfish dockside observer. At the time of offload, the vessel master must provide a valid designation certificate to the dockside observer. If one is not provided, all catch from the trip will be considered commercial catch until the completion of a review by the Groundfish Management Unit and discussion with the vessel master. Furthermore, if FSC fish are landed at a different location than the commercial catch, an FSC validation record containing the verified weight and the number of pieces by species must be completed by a fisheries representative of the designating First Nation organization. The vessel master must obtain a copy of the FSC validation record and provide it to the designated groundfish dockside monitor at the time of the commercial offload.

10. RECREATIONAL FISHING

Fishers are reminded that under Section 14 of the *British Columbia Sport Fishing Regulations, 1996*, it is unlawful to have Halibut on board taken by sport fishing if there are any other fish on board the vessel destined for commercial sale.

11. CLOSURES

Please refer to Appendix 10 of this IFMP for commercial groundfish hook and line fishery closures.

12. OFFSHORE SOUTHERN SEAMOUNT FISHERY

12.1. Open Times

One vessel per month from April 1 to September 30 is permitted to participate in the southern seamount fishery management area, located beyond the 200 nautical mile Exclusive Economic Zone boundary. Seamount application forms will be mailed to licence eligibility holders early in the 2019 calendar year. A lottery draw of applicant licence eligibility holders will determine those vessels permitted to participate in the seamount fishery. If a vessel is selected for the seamount fishery but is unable to participate, the eligibility to participate in the seamount fishery cannot be transferred to another Sablefish licence eligibility holder. Rather, the opportunity to participate in the fishery must be declined and will be passed to the next vessel selected from the lottery process.

Successful applicants must apply for a Section 68 licence to fish in international waters. Please contact the Pacific Fishery Licence Unit (1-877-535-7307, fishing-peche@dfo-mpo.gc.ca) for details.

12.2. Gear and Monitoring Requirements

Trap gear is permitted in the southern seamount fishery. Vessels participating in the seamount fishery must adhere to all monitoring requirements as outlined in the IFMP, Appendix 2 and the conditions of licence.

12.3. Monthly Vessel Limits

For vessels participating in the Sablefish seamount fishery there will be monthly vessel limits.

| Species | Monthly Vessel Limit (fresh, round pounds) |
|-----------------------------------|---|
| Sablefish | 75,000 |
| Rougeye rockfish | 5,000 |
| Other rockfish, sole and flounder | 1,000 |

DRAFT

Appendix 8: 2019/2020 Groundfish Trawl Commercial Harvest Plan

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1. MANAGEMENT CHANGES AND REMINDERS FOR 2019/2020

Following is a summary of changes adopted for the Groundfish trawl fishery for the 2019/2020 season following consultation with the Groundfish Trawl Advisory Committee (GTAC). Refer to the specific section within the plan for details of these changes.

1.1. In-season Changes/Updates

In-season updates are available on the Fishery Notice website at: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm?pg=search_options&lang=en&id=commercial. In-season Sector Catch and Sector Cap summaries are updated daily and can be found at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.htm>

1.2. Offshore Pacific Hake Management Plan

Offshore Pacific hake management measures, including the Total allowable catch (TAC) for the 2018 season are not included in this document and will be released in-season in an addendum to this harvest plan.

1.3. Implementation of Marine Protected Area closures

Several protected areas, including Marine Protected Areas, have been established to conserve the biological diversity, structural habitat, and ecosystem function in various areas across the Pacific coast. These include:

- The Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Areas, to protect three glass sponge reefs located between Haida Gwaii and the mainland of British Columbia in Hecate Strait and Queen Charlotte Sound.
- The SGaan Kinghlas - Bowie Seamount Marine Protected Area. In October 2017, the SK-B Management Board recommended to the Council of the Haida Nation (CHN) and Minister that SK-B MPA be permanently closed to all bottom-contact fisheries. The closure is intended to protect sensitive benthic habitat from serious and irreversible harm (i.e., crushing, damaging, or destroying cold water coral and sponges with a recovery time greater than 20 years).
- In advance of potential Offshore Pacific Area of Interest MPA designation, fishery closures to restrict commercial and recreational bottom-contact fishing activities within the Offshore Pacific AOI were announced in October 2017.

For more information on these closures, refer to Appendix 10 of the IFMP.

1.4. Outside Yelloweye Rockfish rebuilding

Based on updated science information, application of DFO's *Fishery Decision-Making Framework Incorporating the Precautionary Approach*, and consultation with interested parties, the Department is pursuing catch reductions for the outside population of Yelloweye Rockfish in Groundfish Management Areas 3 and 5.

The Department will review the efficacy of catch reduction measures at the end of each fishing season and consider any additional measures necessary to support stock rebuilding. Please refer to conditions of licence and this harvest plan for further information.

1.5. Bocaccio Rebuilding Measures

Based on updated science information, the Department introduced bocaccio catch reduction targets from 2012 catch levels of approximately 137 tonnes (inclusive of trawl, groundfish hook and line, salmon troll, and recreational sectors) to a mortality cap of 75 tonnes over a three year period in order to support stock rebuilding.

As a result of the annual review of groundfish industry's progress in achieving the targeted mortality cap, DFO and the groundfish trawl industry agreed to reductions in the trawl TAC to 110 tonnes for the 2015/2016 season and followed by a further reduction to 80 tonnes for the 2016/2017 season.

The Department and industry continues to review the efficacy of these pilot measures inseason and post season and if and when necessary may consider any additional measures necessary to support stock rebuilding. Please refer to section 9.1.5 of the IFMP, section 12.5 of this harvest plan, and conditions of the groundfish trawl licence for further information and requirements.

2. APPLICATION

The management strategies and harvest levels contained in this plan apply to vessels operating under the authority of a 2019/2020 groundfish trawl licence off the west coast of Canada.

3. OPEN TIMES

With the exception of those seasonal and permanent closures noted in this plan, or closures announced in-season the groundfish trawl fishery will be open from February 21, 2019 to February 20, 2020. Information on in-season changes can be found by accessing the Department's Groundfish Internet site at:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.htm>

4. FISHING AREAS

Fishing is permitted coast wide with the exception of annual and season closures described in sections 5, 6, 7 and 8 below and those areas set out within in season variation orders issued by Fisheries and Oceans Canada. In-season changes are announced through the Fisheries Public Notices system that can be found at the Department's internet site:

<http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm>

5. SPECIES CLOSURES

The following species closures (non-retention) are in effect.

5.1. Lingcod

Closed year-round in Areas 12 to 20 and 29, (includes all of Johnstone Strait, Strait of Georgia and Juan de Fuca Strait).

5.2. Rockfish

Closed year-round in Areas 12 to 20 and 29, (includes all of Johnstone Strait, Strait of Georgia and Juan de Fuca Strait).

6. HECATE STRAIT AND QUEEN CHARLOTTE SOUND GLASS SPONGE REEFS MARINE PROTECTED AREAS

Commercial harvesters are reminded that fishing with bottom trawl and mid water trawl gear is prohibited in the Marine Protected Area described below.

6.1.1. Northern Reef Area

Those waters of subareas 105-2 and 106-1and is described as bounded by a series of rhumb lines drawn from a point:

| | | |
|---------------|---------------|----------------|
| commencing at | 53°11'52.9" N | 130°19'47.2" W |
| to a point at | 53°09'22.0" N | 130°18'53.0" W |
| to a point at | 53°02'54.5" N | 130°25'16.2" W |
| to a point at | 53°03'06.9" N | 130°30'35.6" W |
| to a point at | 53°07'17.8" N | 130°42'03.2" W |
| to a point at | 53°07'44.5" N | 130°46'26.5" W |

| | | |
|---------------|---------------|----------------|
| to a point at | 53°13'28.7" N | 130°47'28.7" W |
| to a point at | 53°19'20.0" N | 130°54'24.2" W |
| to a point at | 53°24'05.4" N | 130°48'37.8" W |
| to a point at | 53°23'40.7" N | 130°42'52.2" W |
| to a point at | 53°18'42.5" N | 130°38'09.3" W |
| to a point at | 53°15'20.6" N | 130°33'01.3" W |

then back to the point of commencement.

6.1.2. Central Reefs Area

Those waters of subareas 106-2, 107-1, and 107-2 and is described as bounded by a series of rhumb lines drawn from a point:

| | | |
|---------------|---------------|----------------|
| commencing at | 52°00'24.4" N | 129°14'12.6" W |
| to a point at | 51°55'50.5" N | 129°18'13.8" W |
| to a point at | 51°51'32.5" N | 129°36'37.4" W |
| to a point at | 51°53'00.7" N | 129°44'03.4" W |
| to a point at | 52°05'14.1" N | 129°36'14.1" W |
| to a point at | 52°08'46.0" N | 129°33'33.5" W |
| to a point at | 52°15'42.6" N | 129°44'12.3" W |
| to a point at | 52°29'35.4" N | 129°52'32.7" W |
| to a point at | 52°32'05.4" N | 129°53'06.2" W |
| to a point at | 52°34'05.6" N | 129°47'51.4" W |
| to a point at | 52°25'42.7" N | 129°35'12.2" W |
| to a point at | 52°20'02.8" N | 129°29'51.7" W |
| to a point at | 52°09'52.3" N | 129°25'29.5" W |

then back to the point of commencement.

6.1.3. Southern Reef Area

Those waters of area 110 and is described as bounded by a series of rhumb lines drawn from a point:

| | | |
|---------------|---------------|----------------|
| commencing at | 51°24'44.2" N | 128°47'58.3" W |
| to a point at | 51°18'32.5" N | 128°40'35.6" W |
| to a point at | 51°14'57.6" N | 128°47'01.2" W |
| to a point at | 51°14'33.9" N | 128°55'45.5" W |
| to a point at | 51°17'42.3" N | 129°00'29.0" W |
| to a point at | 51°19'24.5" N | 129°00'53.6" W |

then back to the point of commencement.

HECATE STRAIT / QUEEN CHARLOTTE SOUND GLASS SPONGE REEFS MARINE PROTECTED AREAS
ZONES DE PROTECTION MARINES DES RÛCIFS D'ÉPONGES SILICEUSES DU DÉTROIT D'HÉCATE
ET DU BASSIN DE LA REINE-CHARLOTTE

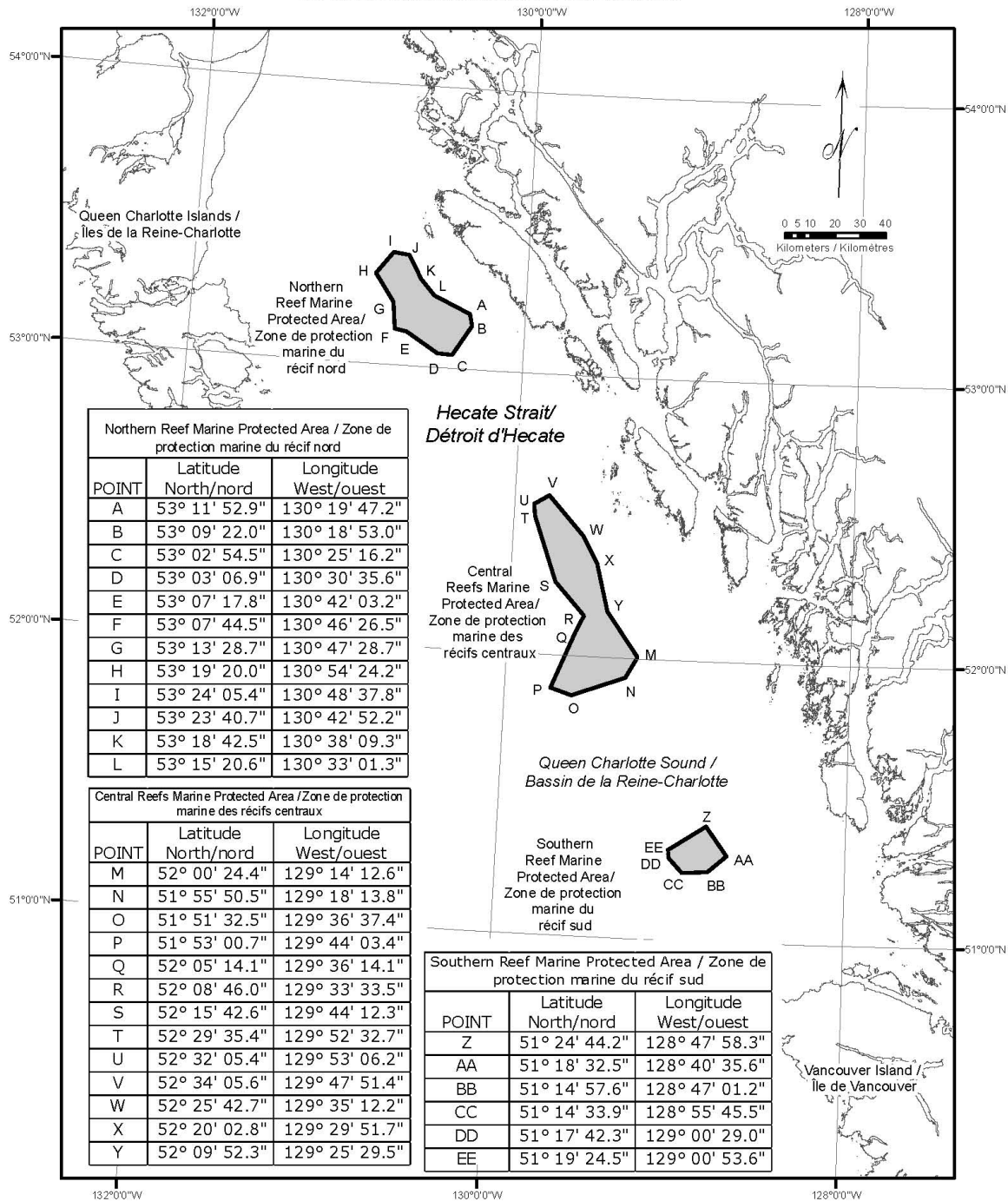
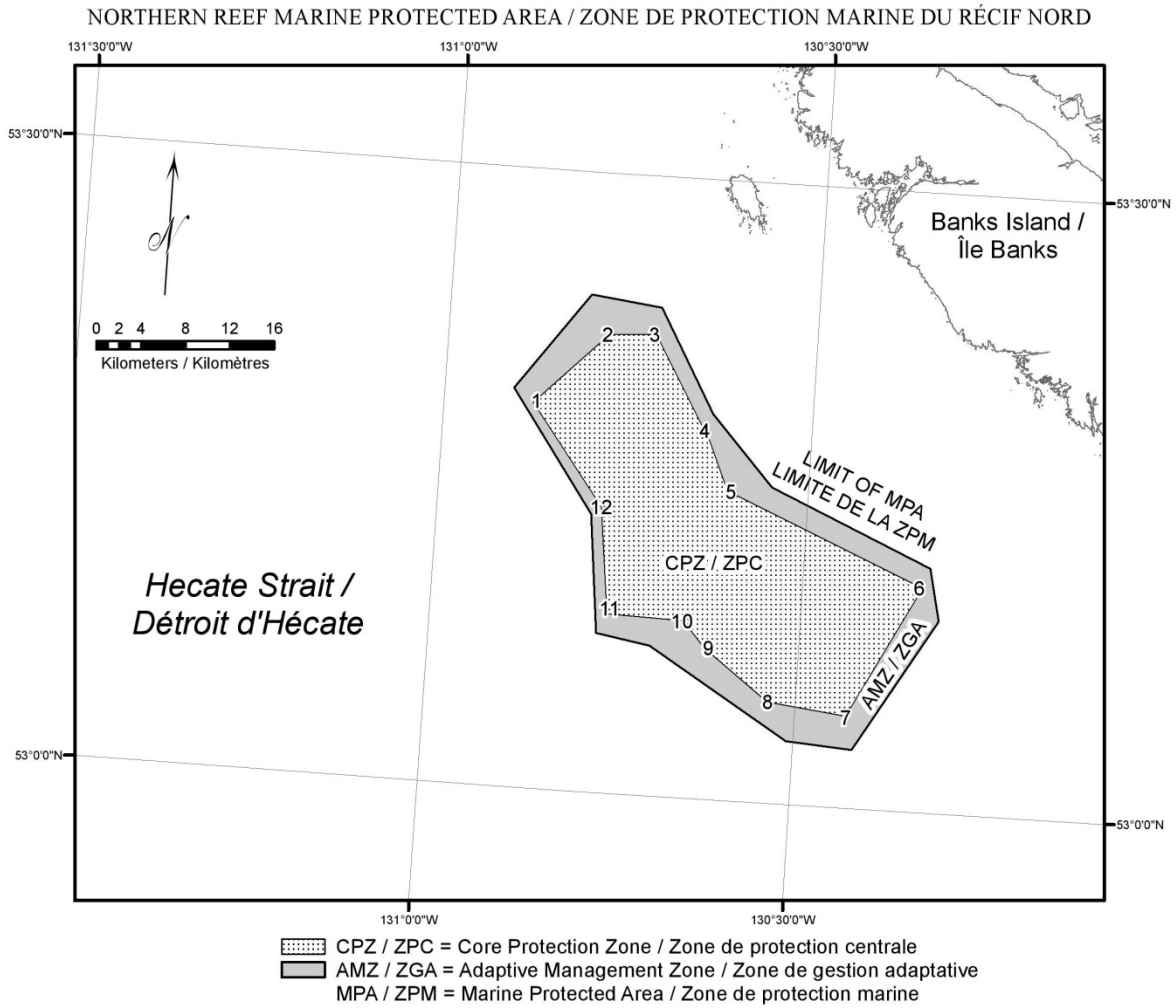


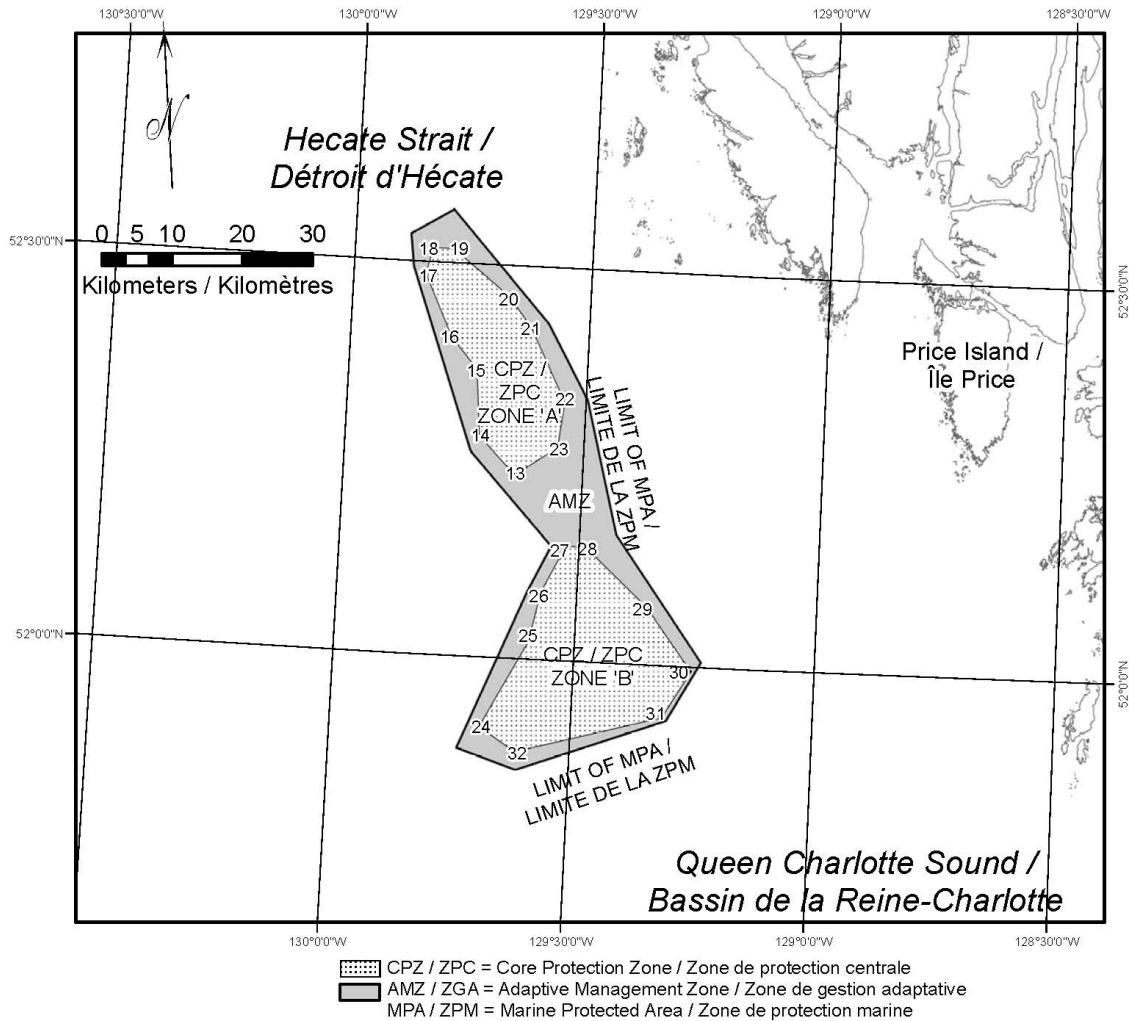
Figure 1. Hecate Strait and Queen Charlotte Sound Glass Sponge Reef Marine Protected Areas. Boundary coordinates are shown here in degrees-minutes-seconds (DMS-format), as per the format in the *Hecate Strait and Queen Charlotte Sound Glass Sponge Reef Marine Protected Areas Regulations, 2017*.



| Northern CPZ / ZPC nord | | |
|-------------------------|------------------------|-------------------------|
| POINT | Latitude North/nord | Longitude West/ouest |
| 1 | 53° 18' 40.4" | 130° 52' 46.5" |
| 2 | 53° 22' 12.1" | 130° 47' 01.7" |
| 3 | 53° 22' 20.2" | 130° 43' 12.5" |
| 4 | 53° 17' 22.8" | 130° 38' 18.2" |
| 5 | 53° 15' 01.7" | 130° 36' 35.5" |
| 6 | 53° 10' 55.2" | 130° 20' 19.3" |
| 7 | 53° 04' 30.2" | 130° 25' 53.6" |
| 8 | 53° 04' 58.0" | 130° 32' 16.9" |
| 9 | 53° 07' 22.2" | 130° 37' 37.6" |
| 10 | 53° 08' 36.6" | 130° 39' 29.5" |
| 11 | 53° 08' 41.8" | 130° 45' 40.0" |
| 12 | 53° 13' 51.2" | 130° 46' 41.2" |

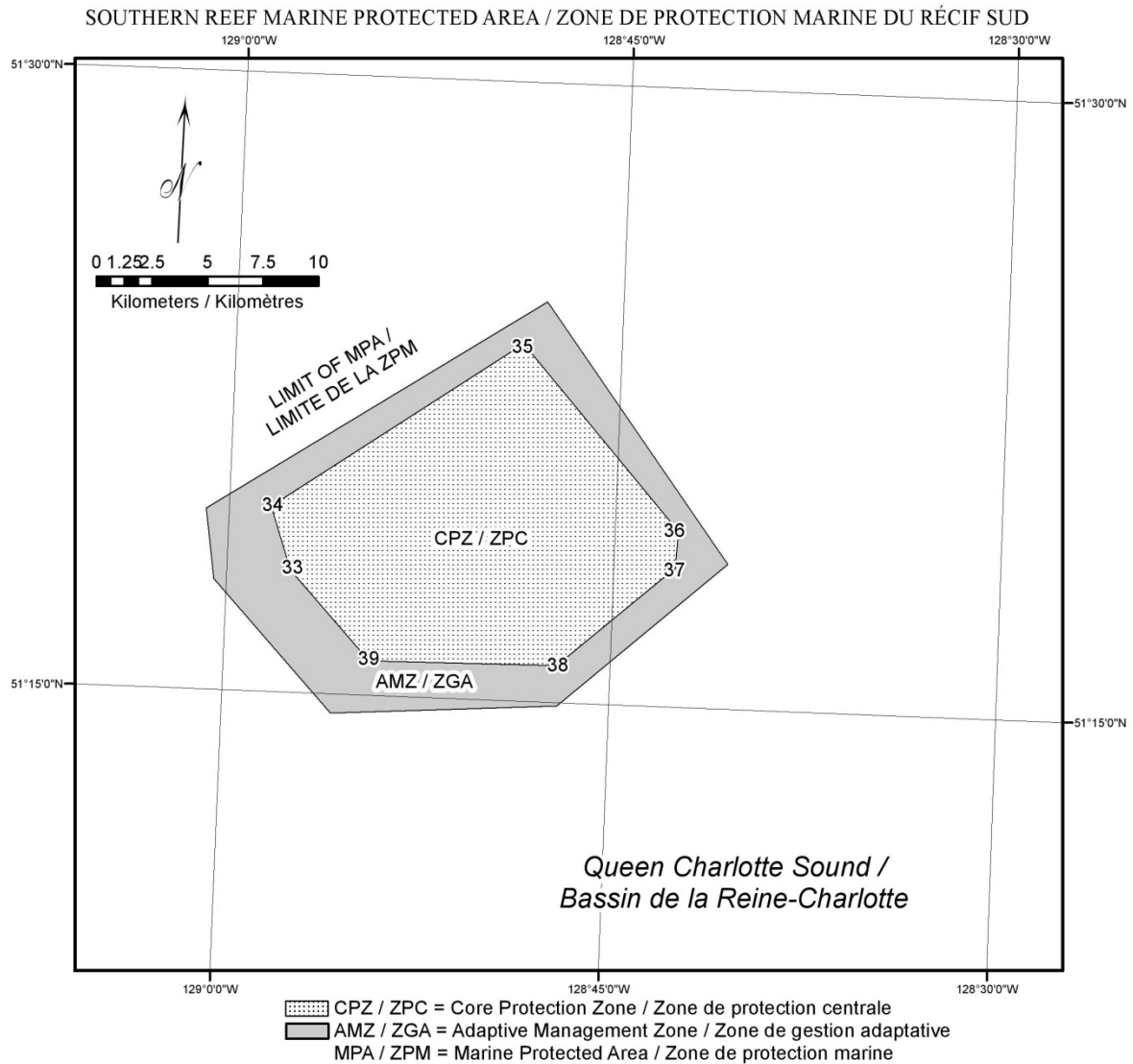
Figure 2. Northern Reef Marine Protected Area. Boundary coordinates are shown here in degrees-minutes-seconds (DMS-format), as per the format in the *Hecate Strait and Queen Charlotte Sound Glass Sponge Reef Marine Protected Areas Regulations, 2017*.

CENTRAL REEFS MARINE PROTECTED AREA / ZONE DE PROTECTION MARINE DES RÉCIFS CENTRAUX



| Central CPZ / ZPC centrale - Zone 'A' | | | Central CPZ / ZPC centrale - Zone 'B' | | |
|---------------------------------------|---------------------|----------------------|---------------------------------------|---------------------|----------------------|
| POINT | Latitude North/nord | Longitude West/ouest | POINT | Latitude North/nord | Longitude West/ouest |
| 13 | 52° 14' 03.4" | 129° 38' 33.2" | 24 | 51° 54' 43.1" | 129° 41' 22.2" |
| 14 | 52° 16' 54.8" | 129° 43' 13.4" | 25 | 52° 01' 22.5" | 129° 35' 48.4" |
| 15 | 52° 21' 57.1" | 129° 43' 56.5" | 26 | 52° 05' 13.5" | 129° 34' 32.5" |
| 16 | 52° 24' 24.5" | 129° 47' 22.8" | 27 | 52° 08' 48.5" | 129° 31' 44.1" |
| 17 | 52° 29' 05.9" | 129° 50' 59.4" | 28 | 52° 08' 51.3" | 129° 29' 18.0" |
| 18 | 52° 31' 05.2" | 129° 50' 13.9" | 29 | 52° 04' 27.1" | 129° 21' 17.3" |
| 19 | 52° 31' 06.7" | 129° 47' 40.9" | 30 | 51° 59' 40.8" | 129° 15' 23.9" |
| 20 | 52° 27' 42.0" | 129° 40' 25.1" | 31 | 51° 56' 04.5" | 129° 18' 46.2" |
| 21 | 52° 25' 22.9" | 129° 37' 24.0" | 32 | 51° 52' 55.7" | 129° 36' 49.8" |
| 22 | 52° 19' 47.0" | 129° 32' 43.2" | | | |
| 23 | 52° 16' 18.2" | 129° 33' 22.8" | | | |

Figure 3. Central Reefs Marine Protected Area. Boundary coordinates are shown here in degrees-minutes-seconds (DMS-format), as per the format in the *Hecate Strait and Queen Charlotte Sound Glass Sponge Reef Marine Protected Areas Regulations, 2017*.



| Southern CPZ / ZPC sud | | |
|------------------------|------------------------|-------------------------|
| POINT | Latitude North/nord | Longitude West/ouest |
| 33 | 51° 17' 59.2" | 128° 57' 31.9" |
| 34 | 51° 19' 30.8" | 128° 58' 22.7" |
| 35 | 51° 23' 41.9" | 128° 48' 50.9" |
| 36 | 51° 19' 17.5" | 128° 42' 33.6" |
| 37 | 51° 18' 24.5" | 128° 42' 37.7" |
| 38 | 51° 15' 56.0" | 128° 47' 04.2" |
| 39 | 51° 15' 52.2" | 128° 54' 20.4" |

Figure 4. Southern Reef Marine Protected Area. Boundary coordinates are shown here in degrees-minutes-seconds (DMS-format), as per the format in the *Hecate Strait and Queen Charlotte Sound Glass Sponge Reef Marine Protected Areas Regulations, 2017*.

7. HABITAT CONSERVATION BOTTOM TRAWL OPEN AND CLOSED AREAS

On April 2, 2012 all Canadian Fisheries waters of the Pacific Ocean, except Areas 13 to 20 and 29, and Subareas 12-1 to 12-13 and 12-15 to 12-43 and those areas described in 7.1 but not including the closed areas set out in section 7.2, were closed to fishing with bottom trawl gear year round.

Those waters found within the areas described in section 7.1 and Areas 13 to 20 and 29, and Subareas 12-1 to 12-13 and 12-15 to 12-43 are open to bottom trawl fishing but are also subject to seasonal area and time closures set out in sections 8 and 9 below, those areas set out within in-season variation orders issued by Fisheries and Oceans Canada and restrictions set out by groundfish trawl licence conditions.

The intent of this closure is to “freeze the bottom trawl footprint” and implement the industry agreed upon habitat conservation measures for protection of corals and sponges in the Pacific Region groundfish trawl fishery. Details of the measures are set out in Section 19 of this plan.

7.1. Areas Open to Bottom Trawling

Those areas open to bottom trawling include;

| The area bounded by a line starting at the following coordinates: | | |
|---|---------------|----|
| Latitude | Longitude | |
| 49° 59.809 N | 127° 43.229 W | To |
| 49° 53.888 N | 127° 39.429 W | To |
| 49° 47.009 N | 127° 36.857 W | To |
| 49° 46.648 N | 127° 32.447 W | To |
| 49° 42.351 N | 127° 24.458 W | To |
| 49° 42.125 N | 127° 09.255 W | To |
| 49° 33.404 N | 126° 52.533 W | To |
| 49° 22.832 N | 126° 42.341 W | To |
| 49° 22.063 N | 126° 44.803 W | To |
| 49° 16.977 N | 126° 31.126 W | To |
| 49° 12.761 N | 126° 23.065 W | To |
| 49° 01.174 N | 126° 08.749 W | To |
| 48° 59.315 N | 126° 01.941 W | To |
| 48° 53.013 N | 125° 57.508 W | To |
| 48° 50.187 N | 126° 02.869 W | to |
| 48° 40.616 N | 125° 56.635 W | to |
| 48° 39.580 N | 126° 03.953 W | to |
| 48° 32.282 N | 126° 06.531 W | to |
| 48° 27.959 N | 126° 03.394 W | to |
| 48° 27.126 N | 125° 53.142 W | to |
| 48° 22.176 N | 125° 49.761 W | to |
| 48° 21.819 N | 125° 37.948 W | to |
| 48° 25.525 N | 125° 36.233 W | to |
| 48° 28.736 N | 125° 46.117 W | to |
| 48° 38.893 N | 125° 47.339 W | to |
| 48° 43.008 N | 125° 54.257 W | to |
| 48° 45.763 N | 125° 54.296 W | to |
| 48° 47.041 N | 125° 45.673 W | to |
| 48° 46.597 N | 125° 39.763 W | to |
| 48° 46.817 N | 125° 37.872 W | to |
| 48° 50.508 N | 125° 39.294 W | to |
| 48° 50.046 N | 125° 52.259 W | to |
| 48° 59.401 N | 125° 49.371 W | to |
| 48° 59.928 N | 125° 41.175 W | to |
| 48° 56.459 N | 125° 35.551 W | to |
| 48° 51.113 N | 125° 25.062 W | to |
| 48° 43.139 N | 125° 14.701 W | to |
| 48° 40.495 N | 124° 59.612 W | to |
| 48° 40.055 N | 124° 52.992 W | to |
| 48° 36.186 N | 124° 45.211 W | to |
| 48° 35.510 N | 124° 43.150 W | to |
| 48° 29.631 N | 124° 43.150 W | to |
| 48° 30.051 N | 124° 45.095 W | to |

| | | |
|--------------|---------------|----|
| 48° 30.319 N | 124° 47.217 W | to |
| 48° 30.402 N | 124° 49.164 W | to |
| 48° 30.356 N | 124° 51.370 W | to |
| 48° 30.050 N | 124° 54.089 W | to |
| 48° 29.579 N | 124° 57.163 W | to |
| 48° 28.630 N | 125° 01.051 W | to |
| 48° 27.678 N | 125° 04.484 W | to |
| 48° 26.944 N | 125° 06.784 W | to |
| 48° 25.441 N | 125° 11.115 W | to |
| 48° 24.593 N | 125° 13.299 W | to |
| 48° 22.587 N | 125° 17.934 W | to |
| 48° 21.029 N | 125° 21.263 W | to |
| 48° 19.867 N | 125° 24.738 W | to |
| 48° 18.945 N | 125° 28.268 W | to |
| 48° 17.879 N | 125° 32.336 W | to |
| 48° 16.897 N | 125° 35.784 W | to |
| 48° 14.405 N | 125° 43.311 W | to |
| 48° 13.269 N | 125° 46.384 W | to |
| 48° 11.763 N | 125° 50.270 W | to |
| 48° 10.544 N | 125° 53.663 W | to |
| 48° 10.626 N | 125° 55.597 W | to |
| 48° 13.868 N | 125° 56.102 W | to |
| 48° 12.664 N | 126° 00.427 W | to |
| 48° 13.286 N | 126° 02.020 W | to |
| 48° 15.002 N | 126° 00.618 W | to |
| 48° 17.494 N | 126° 02.081 W | to |
| 48° 20.205 N | 126° 00.343 W | to |
| 48° 20.245 N | 125° 55.877 W | to |
| 48° 20.581 N | 125° 54.903 W | to |
| 48° 20.878 N | 125° 55.008 W | to |
| 48° 21.041 N | 125° 54.208 W | to |
| 48° 21.353 N | 125° 53.594 W | to |
| 48° 21.545 N | 125° 53.613 W | to |
| 48° 21.880 N | 125° 54.126 W | to |
| 48° 22.288 N | 125° 52.993 W | to |
| 48° 22.448 N | 125° 53.096 W | to |
| 48° 22.471 N | 125° 53.957 W | to |
| 48° 22.566 N | 125° 55.954 W | to |
| 48° 23.460 N | 125° 55.366 W | to |
| 48° 23.629 N | 125° 56.074 W | to |
| 48° 21.951 N | 125° 57.530 W | to |
| 48° 21.111 N | 125° 58.360 W | to |
| 48° 20.663 N | 126° 00.056 W | to |
| 48° 19.270 N | 126° 03.511 W | to |
| 48° 18.739 N | 126° 06.761 W | to |
| 48° 18.684 N | 126° 10.750 W | to |
| 48° 21.061 N | 126° 11.770 W | to |

| | | |
|--------------|---------------|----|
| 48° 21.126 N | 126° 14.451 W | to |
| 48° 26.118 N | 126° 20.174 W | to |
| 48° 29.126 N | 126° 22.016 W | to |
| 48° 33.379 N | 126° 20.178 W | to |
| 48° 34.467 N | 126° 23.048 W | to |
| 48° 40.353 N | 126° 27.916 W | to |
| 48° 40.543 N | 126° 31.921 W | to |
| 48° 42.725 N | 126° 35.986 W | to |
| 48° 44.768 N | 126° 38.362 W | to |
| 48° 45.685 N | 126° 40.717 W | to |
| 48° 48.664 N | 126° 43.985 W | to |
| 48° 52.138 N | 126° 41.271 W | to |
| 48° 51.742 N | 126° 44.543 W | to |
| 48° 53.256 N | 126° 48.816 W | to |
| 48° 52.156 N | 126° 55.684 W | to |
| 48° 57.252 N | 126° 57.647 W | to |
| 49° 01.290 N | 127° 00.513 W | to |
| 49° 03.862 N | 127° 01.422 W | to |
| 49° 06.191 N | 127° 03.120 W | to |
| 49° 07.635 N | 127° 06.958 W | to |
| 49° 10.438 N | 127° 09.581 W | to |
| 49° 13.031 N | 127° 08.704 W | to |
| 49° 17.868 N | 127° 13.994 W | to |
| 49° 22.002 N | 127° 20.499 W | to |
| 49° 24.518 N | 127° 21.276 W | to |
| 49° 26.396 N | 127° 23.957 W | to |
| 49° 28.473 N | 127° 30.164 W | to |
| 49° 30.533 N | 127° 27.433 W | to |
| 49° 31.898 N | 127° 30.217 W | to |
| 49° 28.077 N | 127° 39.588 W | to |
| 49° 31.783 N | 127° 41.843 W | to |
| 49° 32.573 N | 127° 43.864 W | to |
| 49° 37.243 N | 127° 45.631 W | to |
| 49° 37.822 N | 127° 47.190 W | to |
| 49° 40.544 N | 127° 48.462 W | to |
| 49° 45.440 N | 127° 47.395 W | to |
| 49° 44.699 N | 127° 49.937 W | to |
| 49° 49.856 N | 128° 00.322 W | to |
| 49° 53.598 N | 128° 01.591 W | to |
| 49° 57.176 N | 128° 08.093 W | to |
| 49° 59.447 N | 128° 11.103 W | to |
| 49° 59.375 N | 128° 08.656 W | to |
| 49° 55.224 N | 128° 01.460 W | to |
| 49° 55.539 N | 127° 59.073 W | to |
| 49° 56.421 N | 127° 59.161 W | to |
| 49° 57.492 N | 127° 58.095 W | to |
| 49° 57.929 N | 127° 55.615 W | to |

| | | |
|--------------|---------------|------------------------------------|
| 49° 57.928 N | 127° 55.615 W | to |
| 49° 58.634 N | 127° 53.415 W | to |
| 49° 57.570 N | 127° 48.395 W | to |
| 49° 58.406 N | 127° 46.679 W | to |
| 49° 59.707 N | 127° 46.067 W | then back to the starting point at |
| 49° 59.809 N | 127° 43.229 W | |

The area bounded by a line starting at the following coordinates:

| Latitude | Longitude | |
|--------------|---------------|----|
| 50° 38.618 N | 128° 23.065 W | to |
| 50° 35.471 N | 128° 18.171 W | to |
| 50° 29.032 N | 128° 18.023 W | to |
| 50° 28.974 N | 128° 15.804 W | to |
| 50° 27.337 N | 128° 15.830 W | to |
| 50° 25.800 N | 128° 11.004 W | to |
| 50° 24.400 N | 128° 01.542 W | to |
| 50° 22.383 N | 128° 01.169 W | to |
| 50° 21.363 N | 128° 06.377 W | to |
| 50° 10.412 N | 128° 03.688 W | to |
| 50° 06.562 N | 127° 58.430 W | to |
| 50° 05.853 N | 128° 00.459 W | to |
| 50° 06.917 N | 128° 02.523 W | to |
| 50° 08.695 N | 128° 05.470 W | to |
| 50° 10.836 N | 128° 07.862 W | to |
| 50° 14.931 N | 128° 07.572 W | to |
| 50° 18.050 N | 128° 17.465 W | to |
| 50° 19.418 N | 128° 19.306 W | to |
| 50° 19.612 N | 128° 26.330 W | to |
| 50° 21.594 N | 128° 28.965 W | to |
| 50° 24.326 N | 128° 29.531 W | to |
| 50° 27.319 N | 128° 33.495 W | to |
| 50° 26.724 N | 128° 35.989 W | to |
| 50° 32.725 N | 128° 36.957 W | to |
| 50° 32.263 N | 128° 39.454 W | to |
| 50° 34.931 N | 128° 41.332 W | to |
| 50° 34.762 N | 128° 45.516 W | to |
| 50° 37.004 N | 128° 47.791 W | to |
| 50° 39.490 N | 128° 53.501 W | to |
| 50° 42.471 N | 129° 01.154 W | to |
| 50° 43.871 N | 128° 58.204 W | to |
| 50° 43.382 N | 128° 54.963 W | to |
| 50° 42.505 N | 128° 44.999 W | to |
| 50° 37.421 N | 128° 38.210 W | to |
| 50° 38.763 N | 128° 30.162 W | to |
| 50° 42.195 N | 128° 30.926 W | to |
| 50° 44.375 N | 128° 28.568 W | to |

| | | |
|---|---------------|------------------------------------|
| 50° 45.137 N | 128° 25.804 W | then back to the starting point at |
| 50° 38.618 N | 128° 23.065 W | |
| The area bounded by a line starting at the following coordinates: | | |
| Latitude | Longitude | |
| 50° 44.881 N | 129° 20.011 W | to |
| 50° 44.874 N | 129° 22.292 W | to |
| 50° 48.362 N | 129° 25.674 W | to |
| 50° 51.571 N | 129° 37.166 W | to |
| 50° 54.971 N | 129° 35.183 W | to |
| 50° 58.318 N | 129° 32.185 W | to |
| 50° 57.793 N | 129° 30.065 W | to |
| 50° 54.210 N | 129° 32.539 W | to |
| 50° 50.452 N | 129° 19.559 W | to |
| 50° 46.537 N | 129° 17.162 W | then back to the starting point at |
| 50° 44.881 N | 129° 20.011 W | |
| The area bounded by a line starting at the following coordinates: | | |
| Latitude | Longitude | |
| 51° 02.273 N | 127° 50.163 W | to |
| 51° 02.072 N | 127° 55.343 W | to |
| 51° 04.116 N | 127° 56.344 W | to |
| 51° 04.497 N | 127° 52.645 W | then back to the starting point at |
| 51° 02.273 N | 127° 50.163 W | |
| The area bounded by a line starting at the following coordinates: | | |
| Latitude | Longitude | |
| 51° 07.405 N | 129° 56.915 W | to |
| 51° 07.270 N | 130° 04.351 W | to |
| 51° 09.836 N | 130° 08.498 W | to |
| 51° 15.873 N | 130° 10.331 W | to |
| 51° 21.286 N | 130° 11.087 W | to |
| 51° 23.380 N | 130° 05.740 W | to |
| 51° 25.938 N | 130° 03.154 W | to |
| 51° 25.898 N | 129° 59.662 W | to |
| 51° 23.877 N | 129° 57.199 W | to |
| 51° 18.293 N | 129° 55.567 W | to |
| 51° 16.561 N | 129° 51.884 W | to |
| 51° 14.076 N | 129° 49.987 W | then back to the starting point at |
| 51° 07.405 N | 129° 56.915 W | |
| The area bounded by a line starting at the following coordinates: | | |
| Latitude | Longitude | |
| 51° 59.143 N | 131° 12.671 W | to |
| 51° 58.833 N | 131° 15.927 W | to |
| 52° 01.643 N | 131° 20.418 W | to |
| 52° 03.820 N | 131° 22.520 W | to |
| 52° 06.049 N | 131° 21.160 W | then back to the starting point at |
| 51° 59.143 N | 131° 12.671 W | |
| The area bounded by a line starting at the following coordinates: | | |
| Latitude | Longitude | |

| | | |
|---|---------------|------------------------------------|
| 52° 07.470 N | 131° 30.193 W | to |
| 52° 06.309 N | 131° 33.328 W | to |
| 52° 08.119 N | 131° 35.370 W | to |
| 52° 10.819 N | 131° 35.365 W | to |
| 52° 09.689 N | 131° 30.156 W | then back to the starting point at |
| 52° 07.470 N | 131° 30.193 W | |
| The area bounded by a line starting at the following coordinates: | | |
| Latitude | Longitude | |
| 51° 54.657 N | 129° 41.313 W | to |
| 51° 52.686 N | 129° 38.069 W | to |
| 51° 53.976 N | 129° 30.228 W | to |
| 51° 50.454 N | 129° 26.740 W | to |
| 51° 58.380 N | 129° 09.881 W | to |
| 51° 56.471 N | 129° 02.365 W | to |
| 51° 48.494 N | 129° 17.570 W | to |
| 51° 47.337 N | 129° 01.050 W | to |
| 51° 40.707 N | 129° 00.811 W | to |
| 51° 40.134 N | 129° 13.986 W | to |
| 51° 34.503 N | 129° 22.756 W | to |
| 51° 38.199 N | 129° 30.287 W | to |
| 51° 39.067 N | 129° 36.221 W | to |
| 51° 37.268 N | 129° 50.466 W | to |
| 51° 33.959 N | 130° 00.194 W | to |
| 51° 34.818 N | 130° 01.657 W | to |
| 51° 37.358 N | 129° 56.351 W | to |
| 51° 43.221 N | 130° 05.574 W | to |
| 51° 42.662 N | 130° 08.050 W | to |
| 51° 44.182 N | 130° 10.818 W | to |
| 51° 42.925 N | 130° 18.257 W | to |
| 51° 41.201 N | 130° 20.815 W | to |
| 51° 39.513 N | 130° 20.291 W | to |
| 51° 35.575 N | 130° 23.132 W | to |
| 51° 34.548 N | 130° 28.777 W | to |
| 51° 36.948 N | 130° 31.222 W | to |
| 51° 39.863 N | 130° 28.002 W | to |
| 51° 42.404 N | 130° 31.708 W | to |
| 51° 42.745 N | 130° 28.443 W | to |
| 51° 47.890 N | 130° 22.202 W | to |
| 51° 44.696 N | 130° 17.952 W | to |
| 51° 49.676 N | 130° 06.443 W | to |
| 51° 53.287 N | 129° 48.197 W | to |
| 51° 56.775 N | 129° 44.206 W | to |
| 52° 06.966 N | 129° 51.434 W | to |
| 52° 10.685 N | 129° 46.233 W | to |
| 52° 12.413 N | 129° 39.193 W | to |
| 52° 08.767 N | 129° 33.558 W | to |
| 52° 05.235 N | 129° 36.235 W | to |

| | | |
|--------------|---------------|------------------------------------|
| 51° 53.012 N | 129° 44.057 W | to |
| 51° 51.542 N | 129° 36.623 W | then back to the starting point at |
| 51° 53.282 N | 129° 29.591 W | |

The area bounded by a line starting at the following coordinates:

| Latitude | Longitude | |
|--------------|---------------|----|
| 52° 03.954 N | 128° 55.336 W | to |
| 51° 59.325 N | 128° 48.224 W | to |
| 51° 59.325 N | 128° 48.217 W | to |
| 51° 55.078 N | 128° 43.224 W | to |
| 51° 54.560 N | 128° 42.789 W | to |
| 51° 54.831 N | 128° 34.145 W | to |
| 51° 47.559 N | 128° 28.370 W | to |
| 51° 42.017 N | 128° 32.314 W | to |
| 51° 35.503 N | 128° 32.278 W | to |
| 51° 33.385 N | 128° 25.300 W | to |
| 51° 30.791 N | 128° 25.029 W | to |
| 51° 30.936 N | 128° 16.918 W | to |
| 51° 22.691 N | 128° 24.020 W | to |
| 51° 18.696 N | 128° 36.181 W | to |
| 51° 18.696 N | 128° 36.185 W | to |
| 51° 15.841 N | 128° 33.789 W | to |
| 51° 15.841 N | 128° 33.786 W | to |
| 51° 08.117 N | 128° 18.781 W | to |
| 51° 06.956 N | 128° 06.138 W | to |
| 51° 02.091 N | 127° 59.009 W | to |
| 50° 56.652 N | 127° 45.913 W | to |
| 50° 55.973 N | 127° 47.533 W | to |
| 50° 58.632 N | 127° 54.176 W | to |
| 50° 59.414 N | 128° 12.697 W | to |
| 50° 52.745 N | 128° 18.208 W | to |
| 50° 49.565 N | 128° 26.843 W | to |
| 50° 49.452 N | 128° 29.840 W | to |
| 50° 55.430 N | 128° 38.581 W | to |
| 51° 00.068 N | 128° 47.466 W | to |
| 51° 04.941 N | 128° 49.553 W | to |
| 51° 07.224 N | 128° 54.267 W | to |
| 51° 10.198 N | 128° 57.983 W | to |
| 51° 10.071 N | 129° 03.818 W | to |
| 51° 06.393 N | 129° 12.352 W | to |
| 51° 03.100 N | 129° 14.444 W | to |
| 51° 01.443 N | 129° 19.750 W | to |
| 51° 01.644 N | 129° 20.516 W | to |
| 51° 04.094 N | 129° 27.966 W | to |
| 51° 20.925 N | 129° 35.038 W | to |
| 51° 23.104 N | 129° 28.698 W | to |
| 51° 25.763 N | 129° 28.018 W | to |

| | | |
|--------------|---------------|------------------------------------|
| 51° 30.246 N | 129° 29.786 W | to |
| 51° 29.482 N | 129° 07.998 W | to |
| 51° 31.113 N | 128° 44.081 W | to |
| 51° 36.092 N | 128° 37.655 W | to |
| 51° 41.088 N | 128° 37.919 W | to |
| 51° 45.335 N | 128° 41.349 W | to |
| 51° 54.335 N | 128° 52.021 W | to |
| 51° 53.705 N | 128° 55.702 W | to |
| 51° 56.489 N | 129° 01.939 W | to |
| 51° 59.270 N | 128° 56.308 W | to |
| 51° 59.270 N | 128° 56.294 W | to |
| 52° 04.081 N | 129° 03.223 W | to |
| 52° 11.441 N | 129° 00.681 W | to |
| 52° 14.861 N | 128° 48.680 W | to |
| 52° 13.823 N | 128° 47.385 W | then back to the starting point at |
| 52° 03.954 N | 128° 55.336 W | |

| | | |
|---|---------------|------------------------------------|
| The area bounded by a line starting at the following coordinates: | | |
| Latitude | Longitude | |
| 52° 35.054 N | 130° 55.583 W | to |
| 52° 31.670 N | 130° 59.281 W | to |
| 52° 32.736 N | 131° 07.172 W | to |
| 52° 36.195 N | 131° 19.911 W | to |
| 52° 40.922 N | 131° 22.686 W | to |
| 52° 38.800 N | 131° 12.817 W | to |
| 52° 37.056 N | 130° 53.908 W | then back to the starting point at |
| 52° 35.054 N | 130° 55.583 W | |

| | | |
|---|----------------------|------------------------------------|
| The area bounded by a line starting at the following coordinates: | | |
| Latitude | Longitude | |
| 52° 33.217 N | 129° 50.113 W | to |
| 52° 33.182 N | 129° 51.995 W | to |
| 52° 41.577 N | 129° 51.656 W | to |
| 52° 42.199 N | 129° 47.267 W | |
| 52° 34.025 N | 129° 48.043 W | then back to the starting point at |
| 52° 33.217 N | 129° 50.113 W | |

| | | |
|---|---------------|------------------------------------|
| The area bounded by a line starting at the following coordinates: | | |
| Latitude | Longitude | |
| 52° 50.520 N | 131° 15.200 W | to |
| 52° 48.390 N | 131° 16.876 W | to |
| 52° 49.533 N | 131° 21.444 W | to |
| 52° 51.596 N | 131° 24.032 W | to |
| 52° 58.323 N | 131° 15.551 W | to |
| 52° 57.147 N | 131° 12.567 W | to |
| 52° 54.053 N | 131° 15.026 W | then back to the starting point at |
| 52° 50.520 N | 131° 15.200 W | |

| The area bounded by a line starting at the following coordinates: | | |
|---|-----------------------|-----------|
| Latitude | Longitude | |
| 54° 18.674 N | 130° 59.623 W | to |
| 54° 03.706 N | 130° 59.758 W | to |
| 54° 01.410 N | 131° 01.233 W | to |
| 53° 50.284 N | 130° 46.679 W | to |
| 53° 46.895 N | 130° 38.094 W | to |
| 53° 41.169 N | 130° 34.886 W | to |
| 53° 36.807 N | 130° 42.034 W | to |
| 53° 33.471 N | 130° 41.479 W | to |
| 53° 29.299 N | 130° 46.640 W | to |
| 53° 24.501 N | 130° 48.819 W | to |
| 53° 20.066 N | 130° 53.513 W | to |
| 53° 18.627 N | 130° 53.569 W | to |
| 53° 16.566 N | 130° 53.644 W | to |
| 53° 14.010 N | 130° 56.597 W | to |
| 53° 07.703 N | 130° 52.037 W | to |
| 53° 07.761 N | 130° 52.452 W | to |
| 53° 07.742 N | 130° 46.442 W | to |
| 53° 07.297 N | 130° 42..053 W | to |
| 53° 03.115 N | 130° 30.593 W | to |
| 53° 02.908 N | 130° 25.270 W | to |
| 53° 06.602 N | 130° 21.600 W | to |
| 53° 04.267 N | 130° 16.592 W | to |
| 52° 57.877 N | 130° 11.972 W | to |
| 52° 52.193 N | 130° 11.815 W | to |
| 52° 43.435 N | 130° 17.773 W | to |
| 52° 30.892 N | 130° 17.814 W | to |
| 52° 31.777 N | 130° 13.179 W | to |
| 52° 20.299 N | 130° 06.992 W | to |
| 52° 26.107 N | 129° 57.704 W | to |
| 52° 27.833 N | 129° 55.136 W | to |
| 52° 26.267 N | 129° 50.839 W | to |
| 52° 28.822 N | 129° 52.868 W | to |
| 52° 25.312 N | 129° 52.347 W | to |
| 52° 15.127 N | 129° 47.347 W | to |
| 52° 18.012 N | 130° 00.909 W | to |
| 52° 05.301 N | 130° 01.052 W | to |
| 51° 56.240 N | 130° 13.023 W | to |
| 51° 48.290 N | 130° 28.186 W | to |
| 51° 43.047 N | 130° 32.729 W | to |
| 51° 43.462 N | 130° 39.072 W | to |
| 51° 39.030 N | 130° 39.045 W | to |
| 51° 36.642 N | 130° 39.769 W | to |
| 51° 36.397 N | 130° 40.729 W | to |
| 51° 37.470 N | 130° 42.885 W | to |
| 51° 40.987 N | 130° 48.131 W | to |
| 51° 45.587 N | 130° 53.435 W | to |

| | | |
|--------------|---------------|----|
| 51° 47.857 N | 130° 52.721 W | to |
| 51° 52.003 N | 130° 49.651 W | to |
| 51° 56.272 N | 130° 49.419 W | to |
| 52° 04.297 N | 130° 54.902 W | to |
| 52° 07.655 N | 130° 54.095 W | to |
| 52° 11.891 N | 130° 55.909 W | to |
| 52° 14.847 N | 130° 59.171 W | to |
| 52° 23.835 N | 131° 01.762 W | to |
| 52° 27.415 N | 130° 52.618 W | to |
| 52° 17.901 N | 130° 45.940 W | to |
| 52° 12.105 N | 130° 47.616 W | to |
| 52° 06.160 N | 130° 42.488 W | to |
| 52° 05.566 N | 130° 37.171 W | to |
| 52° 11.708 N | 130° 34.400 W | to |
| 52° 21.956 N | 130° 30.939 W | to |
| 52° 27.801 N | 130° 31.550 W | to |
| 52° 49.195 N | 130° 25.811 W | to |
| 52° 56.149 N | 130° 24.656 W | to |
| 52° 56.915 N | 130° 30.357 W | to |
| 52° 53.680 N | 130° 34.807 W | to |
| 52° 54.575 N | 130° 48.256 W | to |
| 52° 58.778 N | 130° 57.436 W | to |
| 52° 59.189 N | 131° 02.858 W | to |
| 52° 57.056 N | 131° 05.250 W | to |
| 52° 57.813 N | 131° 09.718 W | to |
| 53° 06.218 N | 131° 11.945 W | to |
| 53° 17.027 N | 131° 16.633 W | to |
| 53° 16.048 N | 131° 34.140 W | to |
| 53° 21.923 N | 131° 34.480 W | to |
| 53° 27.367 N | 131° 13.805 W | to |
| 53° 35.051 N | 131° 12.736 W | to |
| 53° 49.320 N | 131° 18.715 W | to |
| 53° 51.369 N | 131° 14.600 W | to |
| 54° 09.886 N | 131° 16.360 W | to |
| 54° 13.834 N | 131° 26.361 W | to |
| 54° 06.417 N | 132° 05.342 W | to |
| 54° 09.146 N | 132° 36.464 W | to |
| 54° 09.038 N | 132° 48.139 W | to |
| 54° 11.352 N | 132° 59.334 W | to |
| 54° 16.410 N | 133° 00.681 W | to |
| 54° 16.767 N | 133° 07.434 W | to |
| 54° 11.731 N | 133° 17.490 W | to |
| 54° 06.217 N | 133° 21.902 W | to |
| 54° 02.313 N | 133° 32.437 W | to |
| 53° 54.732 N | 133° 27.077 W | to |
| 53° 43.318 N | 133° 16.558 W | to |
| 53° 38.039 N | 133° 09.688 W | to |

| | | |
|--------------|---------------|----|
| 53° 31.137 N | 133° 06.062 W | to |
| 53° 07.009 N | 132° 38.867 W | to |
| 52° 59.038 N | 132° 28.492 W | to |
| 52° 58.062 N | 132° 33.354 W | to |
| 53° 04.998 N | 132° 42.761 W | to |
| 53° 09.515 N | 132° 48.423 W | to |
| 53° 09.829 N | 132° 50.391 W | to |
| 53° 11.663 N | 132° 54.574 W | to |
| 53° 13.697 N | 133° 03.954 W | to |
| 53° 16.739 N | 133° 10.024 W | to |
| 53° 25.181 N | 133° 10.905 W | to |
| 53° 25.602 N | 133° 11.551 W | to |
| 53° 26.500 N | 133° 11.695 W | to |
| 53° 27.245 N | 133° 11.521 W | to |
| 53° 27.898 N | 133° 11.640 W | to |
| 53° 28.745 N | 133° 12.302 W | to |
| 53° 29.794 N | 133° 12.819 W | to |
| 53° 31.938 N | 133° 15.788 W | to |
| 53° 35.386 N | 133° 19.006 W | to |
| 53° 39.269 N | 133° 21.505 W | to |
| 53° 40.714 N | 133° 21.516 W | to |
| 53° 41.780 N | 133° 20.658 W | to |
| 53° 43.756 N | 133° 22.302 W | to |
| 53° 44.552 N | 133° 23.805 W | to |
| 53° 50.006 N | 133° 31.239 W | to |
| 53° 51.217 N | 133° 34.287 W | to |
| 53° 57.264 N | 133° 39.178 W | to |
| 54° 08.455 N | 133° 46.760 W | to |
| 54° 09.051 N | 133° 49.089 W | to |
| 54° 18.663 N | 133° 57.429 W | to |
| 54° 20.646 N | 133° 49.765 W | to |
| 54° 16.330 N | 133° 46.417 W | to |
| 54° 16.714 N | 133° 38.740 W | to |
| 54° 23.088 N | 133° 27.276 W | to |
| 54° 26.473 N | 133° 11.763 W | to |
| 54° 21.057 N | 133° 03.399 W | to |
| 54° 20.545 N | 132° 58.854 W | to |
| 54° 24.518 N | 132° 51.692 W | to |
| 54° 22.254 N | 132° 46.119 W | to |
| 54° 18.379 N | 132° 49.812 W | to |
| 54° 18.038 N | 132° 38.386 W | to |
| 54° 15.682 N | 132° 21.606 W | to |
| 54° 18.606 N | 131° 59.533 W | to |
| 54° 23.291 N | 131° 45.403 W | to |
| 54° 24.546 N | 131° 30.007 W | to |
| 54° 27.791 N | 131° 24.281 W | to |
| 54° 30.901 N | 131° 24.237 W | to |

| | | |
|--------------|---------------|------------------------------------|
| 54° 35.278 N | 131° 30.067 W | to |
| 54° 40.095 N | 131° 30.095 W | to |
| 54° 40.145 N | 131° 23.463 W | to |
| 54° 34.702 N | 131° 15.228 W | to |
| 54° 31.897 N | 130° 58.421 W | to |
| 54° 21.867 N | 131° 02.980 W | then back to the starting point at |
| 54° 18.674 N | 130° 59.623 W | |

7.2. Areas Closed to Bottom Trawling

The following areas found within the area open for bottom trawling set out in 6.1 above are closed year round to bottom trawling. Please note that all graphic contained in the harvest plan are for illustration purposes only.

| The area bounded by a line starting at the following coordinates: | | |
|---|---------------|------------------------------------|
| Latitude | Longitude | |
| 49° 55.826 N | 127° 56.782 W | to |
| 49° 54.659 N | 127° 52.063 W | to |
| 49° 51.630 N | 127° 48.329 W | to |
| 49° 46.748 N | 127° 49.226 W | to |
| 49° 46.785 N | 127° 45.893 W | to |
| 49° 44.315 N | 127° 39.851 W | to |
| 49° 50.260 N | 127° 45.337 W | to |
| 49° 53.085 N | 127° 45.844 W | to |
| 49° 53.246 N | 127° 48.890 W | to |
| 49° 55.564 N | 127° 49.078 W | to |
| 49° 56.900 N | 127° 56.246 W | then back to the starting point at |
| 49° 55.826 N | 127° 56.782 W | |

| The area bounded by a line starting at the following coordinates: | | |
|---|---------------|----|
| Latitude | Longitude | |
| 49° 45.317 N | 127° 37.786 W | to |
| 49° 44.162 N | 127° 39.424 W | to |
| 49° 41.972 N | 127° 34.672 W | to |
| 49° 39.943 N | 127° 30.293 W | to |
| 49° 35.788 N | 127° 24.757 W | to |
| 49° 33.471 N | 127° 19.337 W | to |
| 49° 31.809 N | 127° 18.780 W | to |
| 49° 29.887 N | 127° 16.880 W | to |
| 49° 27.190 N | 127° 16.729 W | to |
| 49° 27.378 N | 127° 15.044 W | to |
| 49° 30.106 N | 127° 15.126 W | to |
| 49° 32.366 N | 127° 17.045 W | to |
| 49° 34.753 N | 127° 17.787 W | to |
| 49° 36.086 N | 127° 22.858 W | to |
| 49° 36.737 N | 127° 23.987 W | to |

| | | |
|--------------|---------------|------------------------------------|
| 49° 37.638 N | 127° 25.436 W | to |
| 49° 40.461 N | 127° 25.514 W | to |
| 49° 41.460 N | 127° 29.144 W | to |
| 49° 42.804 N | 127° 30.855 W | to |
| 49° 42.287 N | 127° 34.119 W | to |
| 49° 43.551 N | 127° 35.120 W | to |
| 49° 45.631 N | 127° 35.552 W | then back to the starting point at |
| 49° 45.317 N | 127° 37.786 W | |

The area bounded by a line starting at the following coordinates:

| Latitude | Longitude | |
|--------------|---------------|------------------------------------|
| 49° 35.186 N | 127° 31.480 W | to |
| 49° 37.537 N | 127° 35.559 W | to |
| 49° 37.539 N | 127° 37.938 W | to |
| 49° 36.244 N | 127° 37.918 W | to |
| 49° 34.738 N | 127° 35.929 W | to |
| 49° 33.678 N | 127° 32.327 W | to |
| 49° 33.698 N | 127° 31.097 W | then back to the starting point at |
| 49° 35.186 N | 127° 31.480 W | |

The area bounded by a line starting at the following coordinates:

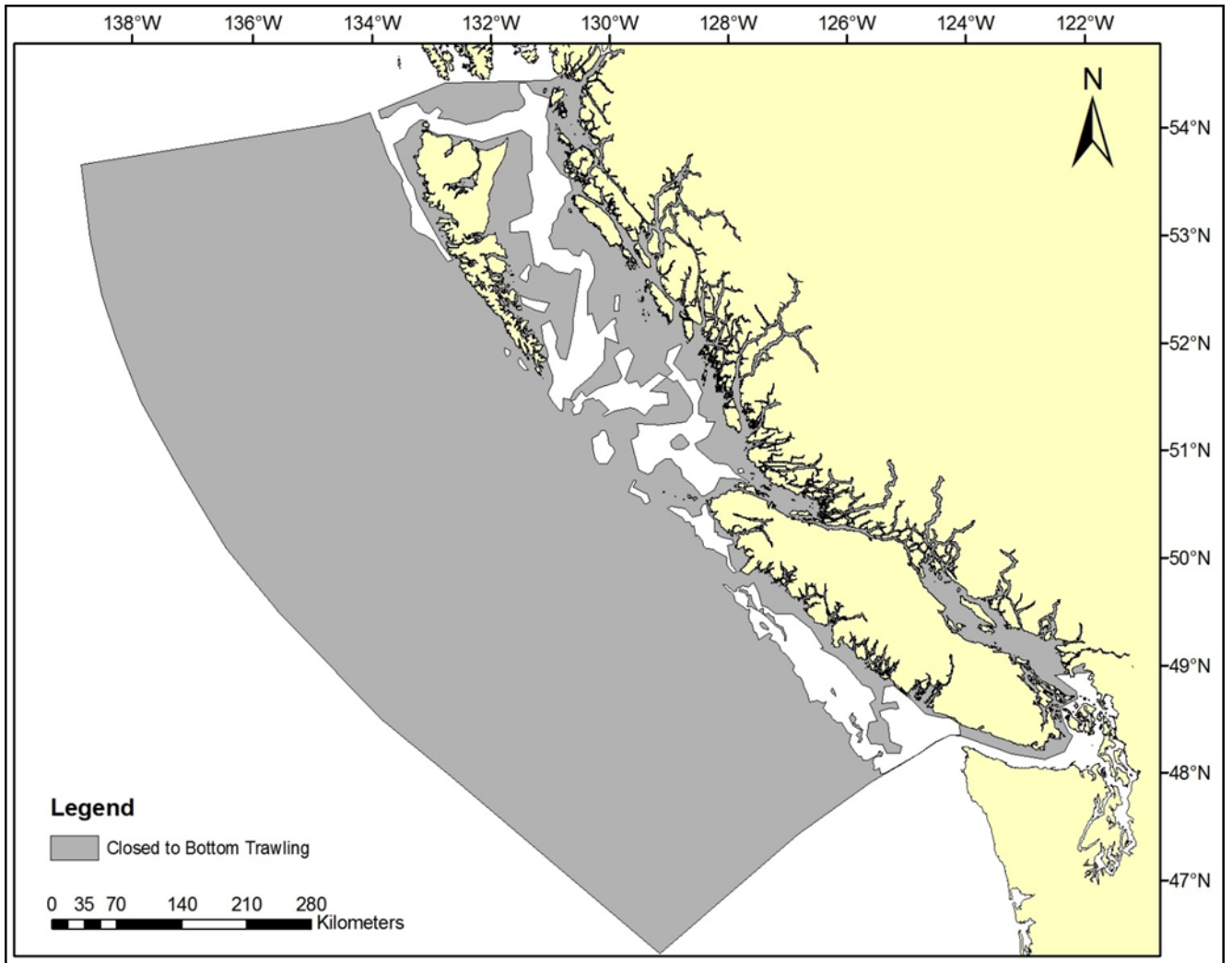
| Latitude | Longitude | |
|--------------|---------------|------------------------------------|
| 48° 56.083 N | 126° 33.513 W | to |
| 48° 55.163 N | 126° 32.844 W | to |
| 48° 57.506 N | 126° 33.085 W | to |
| 49° 00.099 N | 126° 35.561 W | to |
| 48° 58.766 N | 126° 36.837 W | to |
| 48° 57.172 N | 126° 36.151 W | to |
| 48° 56.415 N | 126° 34.551 W | then back to the starting point at |
| 48° 56.083 N | 126° 33.513 W | |

The area bounded by a line starting at the following coordinates:

| Latitude | Longitude | |
|--------------|---------------|----|
| 48° 31.255 N | 126° 12.828 W | to |
| 48° 28.864 N | 126° 15.021 W | to |
| 48° 28.820 N | 126° 11.931 W | to |
| 48° 29.806 N | 126° 12.056 W | to |
| 48° 30.079 N | 126° 11.010 W | to |
| 48° 32.374 N | 126° 11.017 W | to |
| 48° 34.773 N | 126° 10.434 W | to |
| 48° 35.707 N | 126° 09.618 W | to |
| 48° 36.260 N | 126° 11.520 W | to |
| 48° 37.354 N | 126° 12.403 W | to |
| 48° 38.846 N | 126° 13.715 W | to |
| 48° 38.439 N | 126° 15.356 W | to |
| 48° 39.679 N | 126° 16.143 W | to |
| 48° 39.787 N | 126° 18.207 W | to |

| | | |
|--------------|---------------|------------------------------------|
| 48° 40.872 N | 126° 16.169 W | to |
| 48° 41.871 N | 126° 15.574 W | to |
| 48° 43.188 N | 126° 15.818 W | to |
| 48° 44.175 N | 126° 18.513 W | to |
| 48° 45.203 N | 126° 17.872 W | to |
| 48° 45.366 N | 126° 18.449 W | to |
| 48° 42.664 N | 126° 21.652 W | to |
| 48° 38.227 N | 126° 18.146 W | to |
| 48° 35.258 N | 126° 10.986 W | to |
| 48° 32.969 N | 126° 15.921 W | then back to the starting point at |
| 48° 31.255 N | 126° 12.828 W | |

| | | |
|---|---------------|--------------------------------------|
| The area bounded by a line starting at the following coordinates: | | |
| Latitude | Longitude | |
| 51° 17.705 N | 129° 00.483 W | to |
| 51° 14.565 N | 128° 55.758 W | to |
| 51° 14.960 N | 128° 47.020 W | to |
| 51° 18.542 N | 128° 40.593 W | to |
| 51° 24.737 N | 128° 47.972W | to |
| 51° 19.408 N | 129° 00.893 W | t then back to the starting point at |
| 51° 17.705 N | 129° 00.483 W | |



The above graphic is for illustration purposes only.

8. IN-SEASON GROUND FISH TRAWL CLOSURES - OUTSIDE WATERS

In addition to the closures above, the following area closures are also in effect for all trawl vessels during the 2019/2020 season. The closures described may change in-season and fishers are reminded to refer to current Fisheries Public Notices prior to conducting any fishing activity. A full description of Areas and Subareas referenced on these figures can be found in *the Pacific Fishery Management Area Regulations*. The illustrations set out below are for information purposes only.

8.1. Rockfish Conservation Areas

Currently there are 164 Rockfish Conservation Areas (RCAs) in effect and are outlined in the Rockfish Conservation Areas booklet. These booklets can be downloaded from the Department's internet site at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/rca-acs/index-eng.html>

8.2. Gwaii Haanas National Marine Conservation Area

Commercial and recreational fishers and harvesters are reminded that extraction of any kind (e.g., fishing, kelp harvest) is not permitted in the areas of the National Marine Conservation Area described below:

8.2.1. Burnaby Narrows

| | | |
|---|-------------|--------------|
| Those waters of Subareas 2-13 and 2-16 inside a line: | | |
| commencing at | 52°23.049 N | 131°23.438 W |
| then east to | 52°23.077 N | 131°22.908 W |
| following the southern shoreline of Kat Island east to | 52°23.107 N | 131°22.274 W |
| then east to | 52°23.295 N | 131°21.34 W |
| following the western shoreline of Burnaby Island south to | 52°20.951 N | 131°20.509 W |
| then west to | 52°20.733 N | 131°21.072 W |
| then north following the eastern shoreline of Moresby Island back to the point of commencement. | | |

8.2.2. Louscoone Estuary

| | | |
|---|-------------|--------------|
| Those waters of Subareas 2-33 and 2-34 north of a line: | | |
| drawn from | 52°11.836 N | 131°15.658 W |
| then true east to | 52°12.271 N | 131°14.594 W |

8.2.3. Flamingo Estuary

| | | |
|---|-------------|--------------|
| Those waters of Subarea 2-37 north of a line: | | |
| drawn from | 52°14.456 N | 131°22.234 W |
| then southeast to | 52°14.246 N | 131°21.489 W |

8.2.4. Gowgaia Estuary

| | | |
|--|--|--|
| Those waters of Subarea 2-41 east of a line: | | |
|--|--|--|

| | | |
|-------------------|-------------|--------------|
| drawn from | 52°24.944 N | 131°32.138 W |
| then southeast to | 52°24.238 N | 131°32.024 W |

8.2.5. Cape Saint James

| | | |
|--|-------------|--------------|
| Those waters of Subareas 2-19, 102-3, 130-3 and 142-1 inside a line: | | |
| commencing at | 51°56.523 N | 131°01.522 W |
| then southwest to | 51°55.627 N | 131°02.574 W |
| then southeast to | 51°52.5 N | 130°57.919 W |
| then south to | 51°51.676 N | 130°57.805 W |
| then southeast to | 51°50.349 N | 130°56.442 W |
| then northeast to | 51°51.062 N | 130°54.717 W |
| then north to | 51°53.888 N | 130°55.608 W |
| then northwest to | 51°58.671 N | 130°59.464 W |
| then west to | 51°58.743 N | 131°00.606 W |
| and then following the southern shore of Kungit Island to the point of commencement. | | |

8.2.6. SGang Gwaay

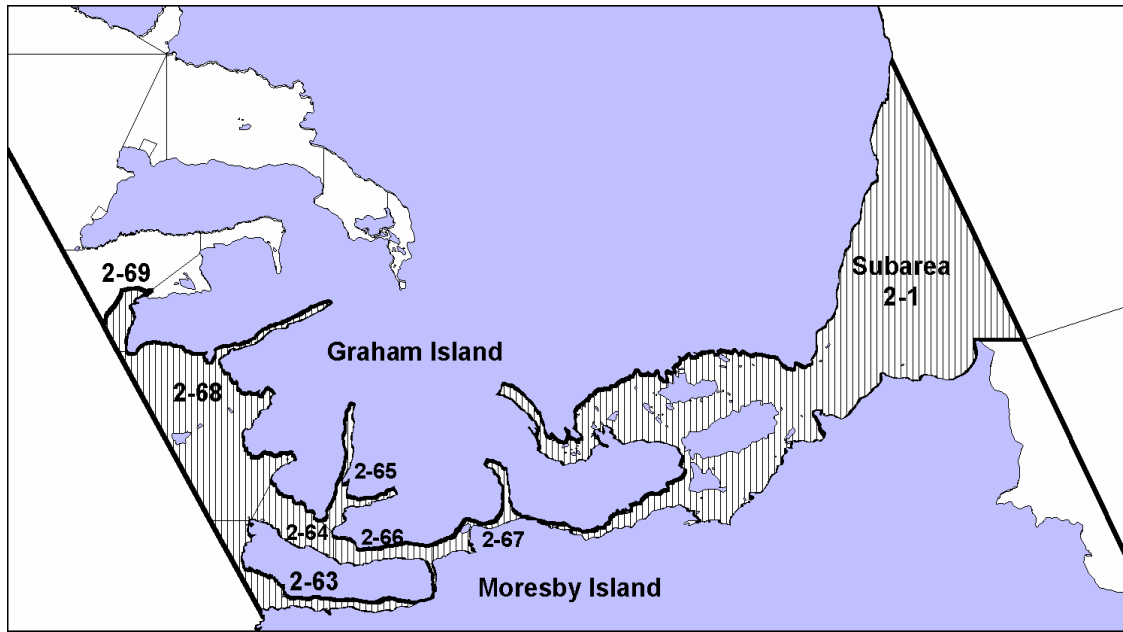
| | | |
|--|-------------|--------------|
| Those waters of Subareas 2-31 and 142-1 inside a 3 km radius from the centre point on Anthony Island located at: | 52°05.655 N | 131°13.178 W |
|--|-------------|--------------|

For more background information on the National Marine Conservation Area please see IFMP section 8.4.

8.3. Haida Gwaii

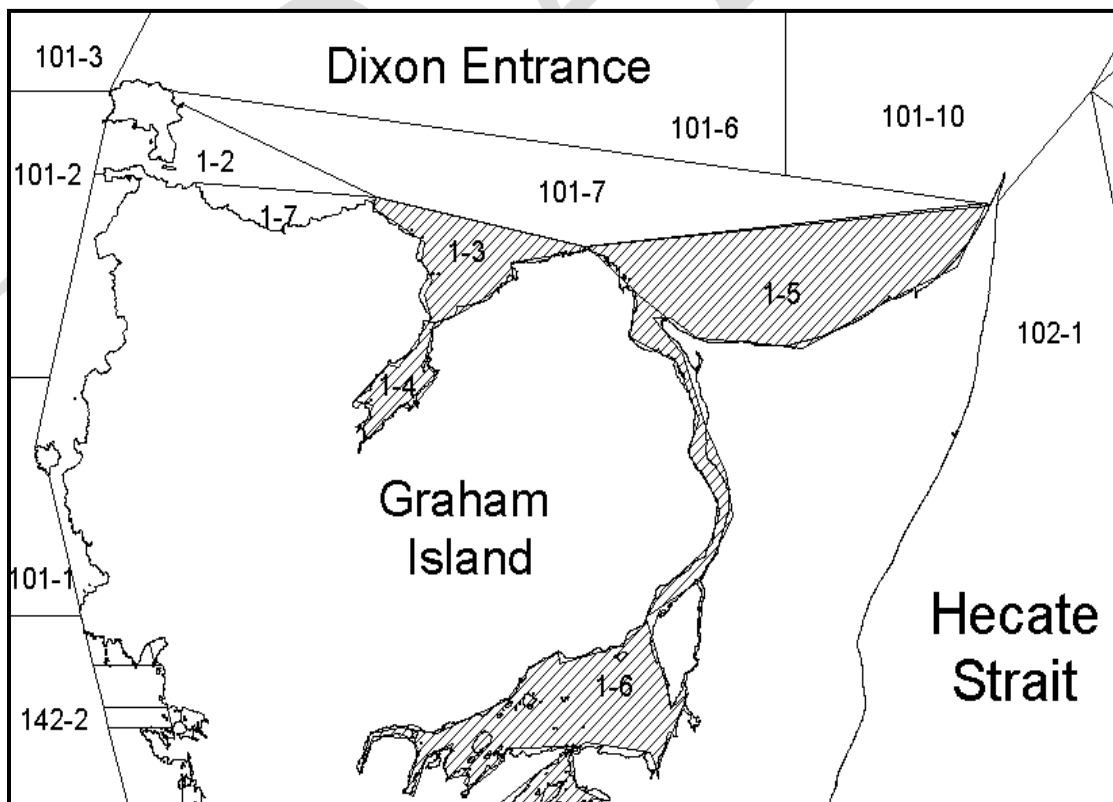
Closed to all trawling (includes both bottom and midwater gear) year-round in Subareas 2-1, 2-63 to 2-68 and those portions of Subarea 2-69 described below. The intent of the closure is to reduce harvesting pressure on localized stocks of fish and to provide improved access to food, social and ceremonial fish for the Haida First Nations.

| | | |
|---|--------------|---------------|
| That portion of Subarea 2-69 inside a line: | | |
| that begins at Fame Point | 53°17.060' N | 132°42.415' W |
| then to | 53°17.060' N | 132°43.800' W |
| then to | 53°16.350' N | 132°44.700' W |
| then abutting the boundary of 2-68 | 53°15.208' N | 132°43.597' W |
| Then to Hunter Point | 53°15.208' N | 132°42.984' W |



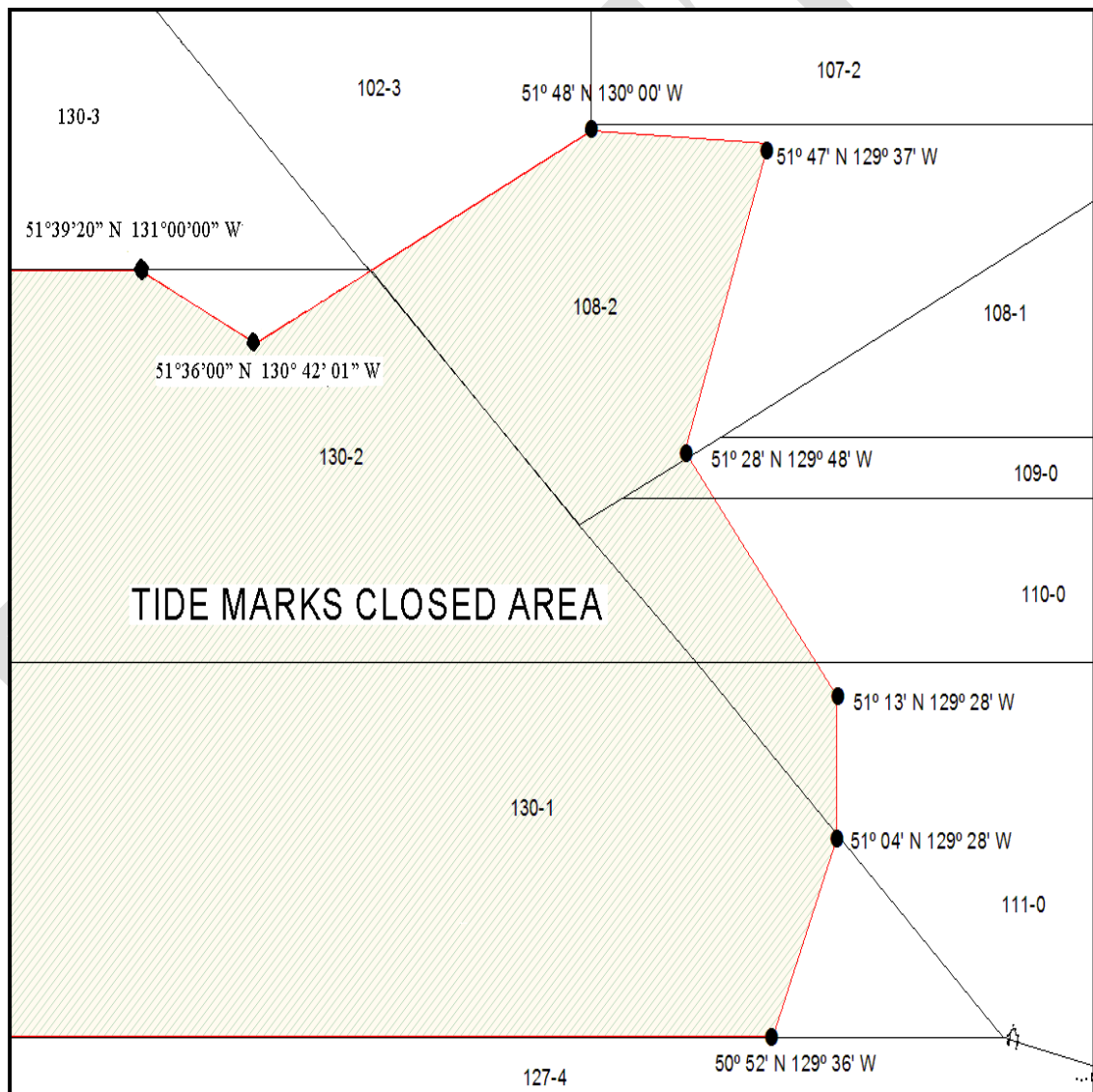
8.4. McIntyre Bay/Masset

Closed to all trawling (includes both bottom and midwater) year-round in Subareas 1-3, 1-4, 1-5 and 1-6. The intent of this closure is to reduce harvesting pressure on localized stocks of fish, minimize the catch of juvenile halibut, and to provide improved access to food, social, and ceremonial fisheries for First Nations.



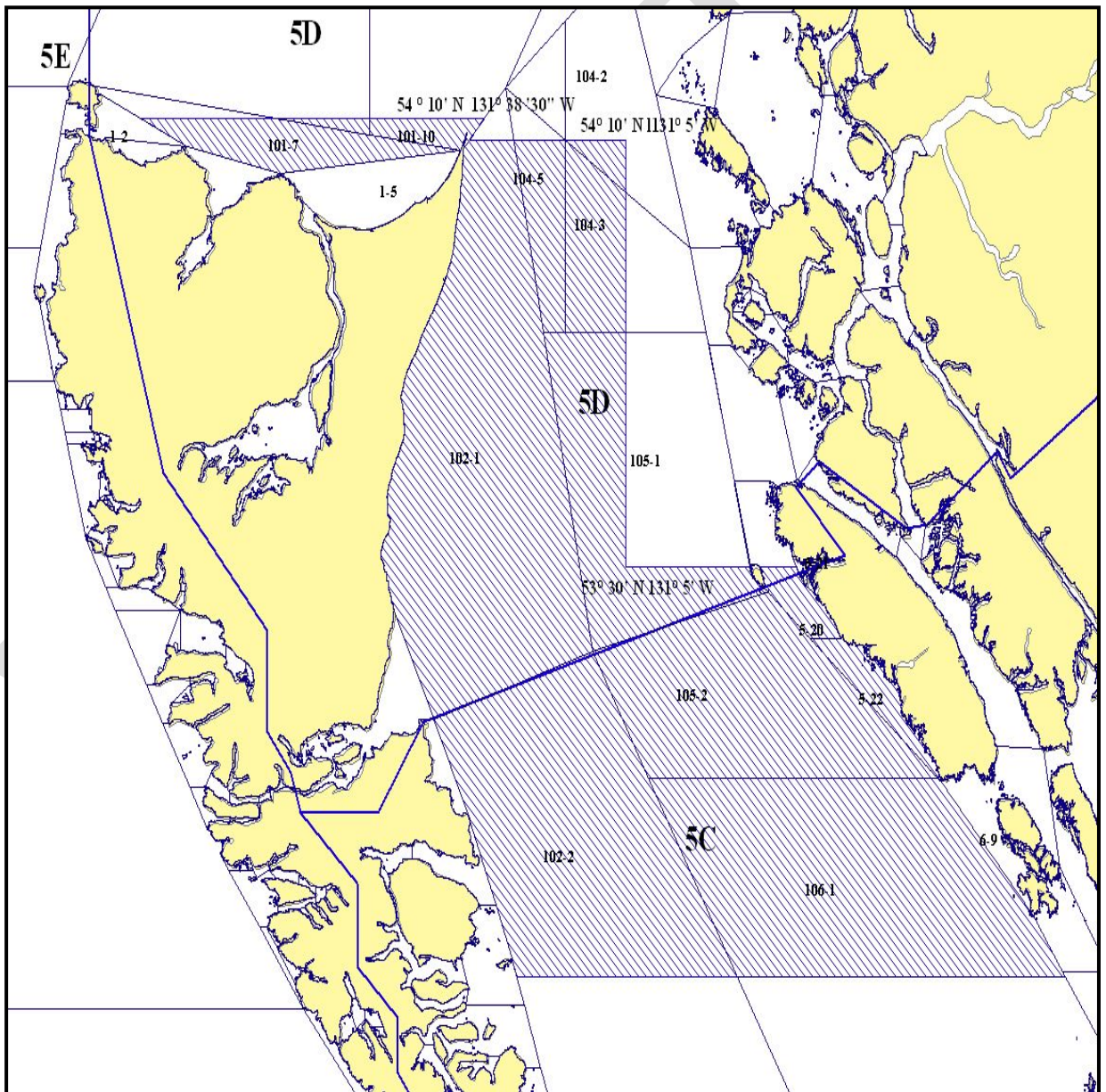
8.5. Tide Marks

Closed to all trawling (includes both bottom and midwater) from February 21, 2019 to May 31, 2019 and from October 1, 2019 to March 31, 2020 in those portions of Areas 109 to 111 and Subareas 130-2, 108-2 and 130-1 found within a line that begins at the intersection of the outer perimeter of Fishing Zone 5 and 51 deg 39.33 min N. lat. then following the northern boundary of Subarea 130-2 to 51 deg 39.33 min N. lat. 131 deg 00 min W. long. then to 51 deg 36.00 min N. lat. 130 deg 42.02 min W. long. then to 51 deg 48 min N. lat. 130 deg 00 min W. long. then to 51 deg 47 min N. lat. 129 deg 37 min W. long. then to 51 deg 28 min N. lat. 129 deg 48 min W. long. then to 51 deg 13 min N. lat. 129 deg 28 min W. long. then true south to 51 deg 04 min N. lat. 129 deg 28 min W. long. then to 50 deg 52 min N. lat. 129 deg 36 min W. then southern boundary of 130-1 to the outer perimeter of Fishing Zone 5 and back to the point of commencement. The intent of this closure is to reduce harvesting pressure on Pacific Ocean Perch stocks during the spawning period.



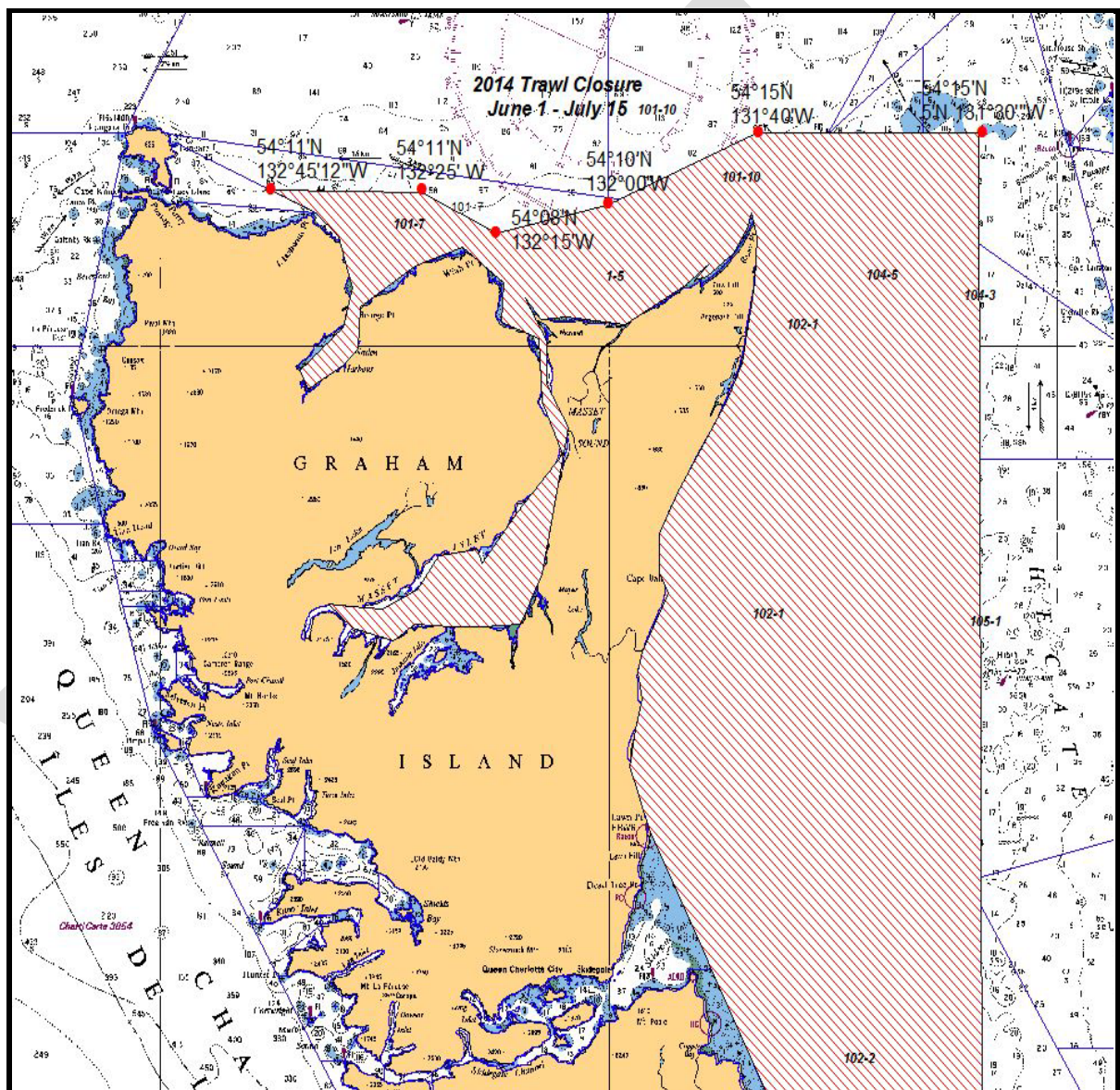
8.6. Hecate Strait/Dixon Entrance - Protection of Pacific Cod

Closed to all trawling (includes both bottom and midwater) from January 1, 2020 through April 30, 2020 in those portions of area 101, south of 54° 12' N latitude and in those waters of areas 102, 104, 105 and subarea 5-20 found south and westerly of a line commencing at 54° 10' N latitude 131° 38' 30" W longitude thence to 54° 10' N latitude 131° 5' W longitude south thence to 53° 30' N latitude 131° 5' W longitude thence to 53° 30' N latitude 130° 28' 20" W longitude thence following the eastern boundary of 5-20, 5-22 and 106-1 to 52° 51' N latitude 129° 30' 37" W longitude thence westerly to 52° 51' N latitude 131° 41' W longitude thence northerly along the western boundary of subareas 102-2, 102-1 to the point of commencement (revised Jan 27, 2012). This closure is to protect the spawning biomass of Pacific Cod found in Hecate Strait and Dixon Entrance.



8.7. Lower West Hecate Strait/Dixon Entrance - Protection of Soft Shell Crabs

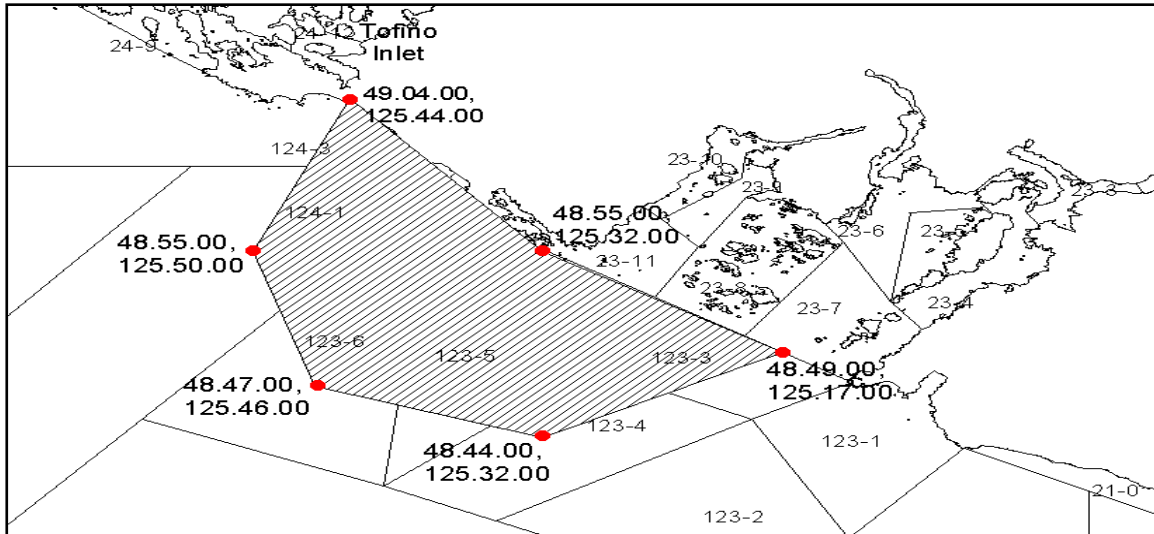
Closed to bottom trawling from June 1, 2019 through July 15, 2019 in Subareas 2-1, 2-2, 2-3, 102-1 and 104-5; that portion of Subarea 101-7, 101-10 and 104-2 south of line commencing at 54°11'N 132°45'12"W thence to 54°11'N 132°25'W thence to 54°08'N 132°15'W thence to 54°10'N 132°00'W thence to 54°15'N 131°40'W thence to 54°15'N 131°10'W; that portion of Subarea 104-2, that is both south of 54°15'N, and west of 131°10'W; that portion of Subarea 104-3, that is west of 131°10'W; that portion of Subarea 105-1, that is west of 131°10'W; that portion of Subarea 105-2, west of 131°10'W and that portion of Subarea 102-2, that is both north of 53°00'N, and west of 131°10'W. The intent of this closure is to protect crabs during the soft-shell period.



8.8. Lower West Coast Vancouver Island - Protection of Pacific Cod

Closed to all trawling (includes both bottom and midwater) from January 1, 2019 through to March 31, 2019 and from January 1, 2020 to March 31, 2020 in those portions of Subareas 123-

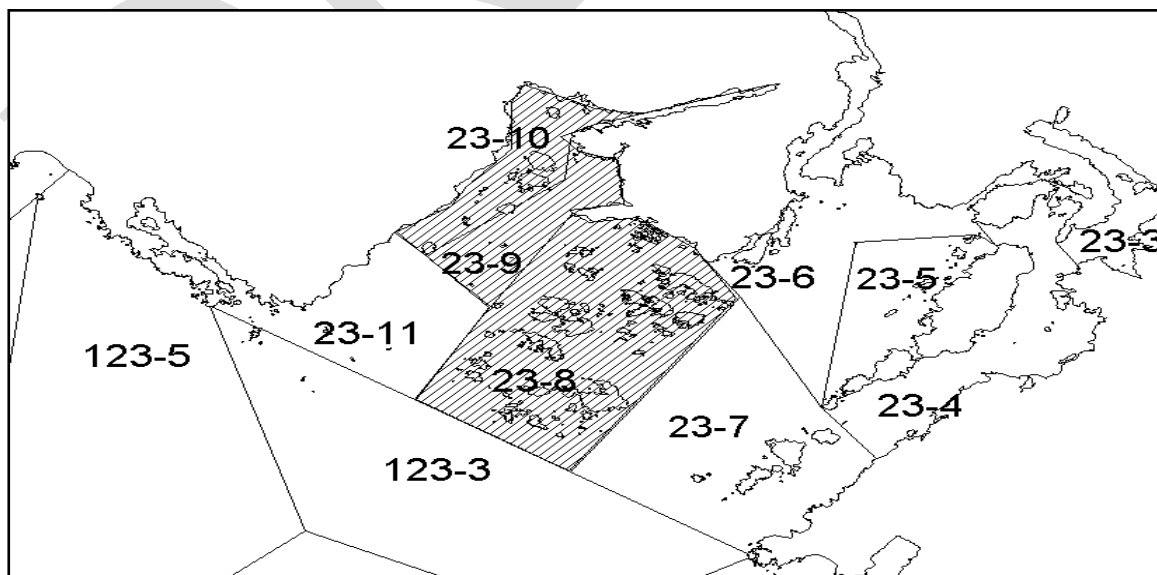
3, 123-4, 123-5, 123-6, 124-1 and 124-3 that are found within the area bounded by a line that begins on the Vancouver Island shore near Amphitrite Point lighthouse at 48°55'N latitude 125°32'W longitude; then westerly to 49°04'N latitude 125°44'W longitude; then southerly to 48°55'N latitude 125°50'W longitude; then southerly to 48°47'N latitude 125°46'W longitude; then easterly to 48°44'N latitude 125°32'W longitude; then easterly to 48°49'N latitude 125°17'W longitude; then northerly along the surf line to the point of commencement. The intent



of this closure is to reduce the harvesting of Pacific Cod during the spawning period.

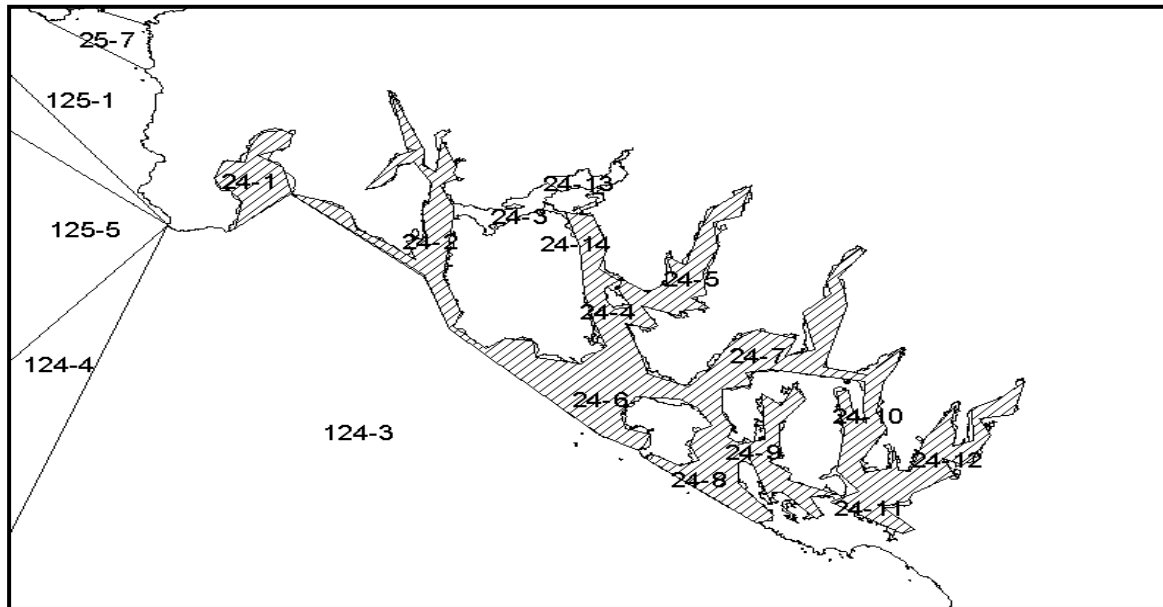
8.9. Area 23 (Barkley Sound)

Closed to all trawling (includes both bottom and midwater) from February 25, 2019 through March 25, 2019 in Subareas 23-8 to 23-10. The intent of this closure is to reduce gear conflicts during the roe herring season.



8.10. Area 24 (Clayoquot Sound)

Closed year-round to all trawling (includes both bottom and midwater) in Subareas 24-1, 24-2, 24-4 to 24-12 and 24-14. The intent of this closure is to address shellfish interception and shallow water habitat concerns.



9. IN-SEASON GROUND FISH TRAWL CLOSURES - INSIDE WATERS

There are a number of Subareas within the Johnstone, Georgia and Juan de Fuca Straits that are closed to both bottom and mid-water trawling. The closures have been implemented for reasons that include: herring spawn areas, salmon/herring holding areas, conflicts with crab gear, harbour congestion and reduction of harvesting pressure on localized groundfish stocks. A full description of Areas and Subareas referenced on these figures can be found in *the Pacific Fishery Management Area Regulations*.

The closures described on the following pages may change in-season. Current Fisheries Public Notices should be referred to prior to fishing.

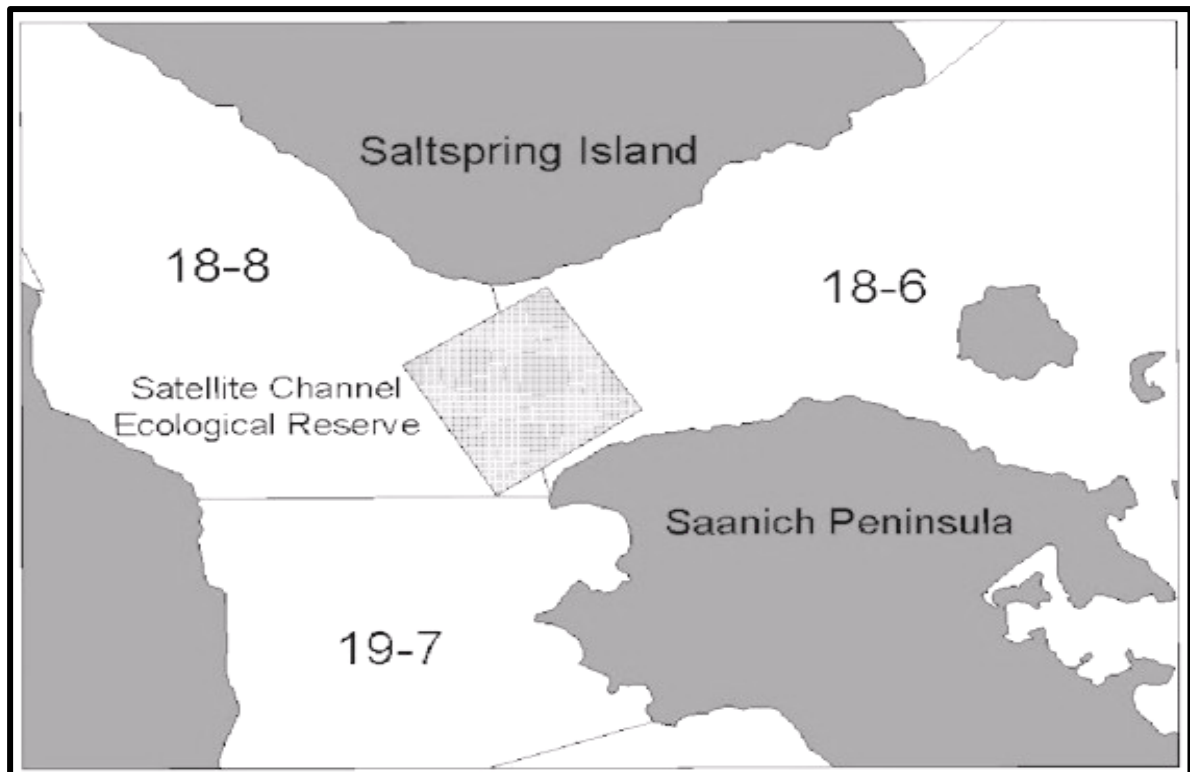
9.1. Rockfish Conservation Areas

Currently there are 164 Rockfish Conservation Areas (RCAs) in effect and are outlined in the Protecting British Columbia's Rockfish booklet. These booklets can be downloaded from the Department's internet site at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/rca-acs/index-eng.html>.

9.2. Satellite Channel

Closed year round to all trawling (includes both bottom and midwater) in that portion of Subarea 18-6 inside a line: that begins at 48 deg 41.46 min N. lat. 123 deg 29.48 min W. long. then to 48 deg 41.96 min N. lat. 123 deg 28.18 min W. long. then to 48 deg 42.82 min N. lat. 123 deg 28.92

min W. long. then to 48 deg 42.32 min N. lat. 123 deg 30.23 min W. long. then to the beginning point. (B.C. Provincial Ecological Reserve Number 67.)



9.3. Gulf - Bottom Trawl Closures by Subarea

| Subarea(s) | Closure Description | Period Closed |
|--------------|--|-------------------------|
| 12-6 | Those portions of Subarea 12-6 inside a line commencing at Red Point on the north-western shore of Harbledown Island, thence north-westerly to 50°38'N and 126°45'W, thence true east to 50°38' N and 126°35'W, thence true south to Dead Point on the northern shore of Harbledown Island, thence westerly along the north shore of Harbledown Island to the point of commencement at Red Point on Harbledown Island. | All year |
| 12-20 | Entire Subarea | All year |
| 12-29, 12-34 | Entire Subareas | February 16 to April 30 |
| 12-39 | Those portions of Subarea 12-39 inside a line commencing at Slope Point on the southern shore of Gilford Island, thence north-westerly in a straight line to the navigational light on Duff Islet in lower Fife Sound, thence north-easterly in a straight line to Powell Point on Gilford Island, thence southerly along the | All year |

| Subarea(s) | Closure Description | Period Closed |
|-------------------|--|-------------------------|
| | western shore of Gilford Island to the point of commencement at Slope Point. | |
| 12-42 | Entire Subarea | All year |
| 12-46 | Entire Subarea | February 16 to April 30 |
| 13-1 to 13-17 | Entire Subareas | All year |
| 13-33,13-34 | Entire Subareas | All year |
| 14-1,14-8 | Entire Subareas | All year |
| 14-11,14-14,14-15 | Entire Subareas | All year |
| 14-2 to 14-7 | Entire Subareas | April 1 to September 30 |
| 14-9,14-10,14-12 | Entire Subareas | April 1 to September 30 |
| 16-3,16-4 | Entire Subareas | All year |
| 17-1,17-3,17-7 | Entire Subareas | All year |
| 17-9,17-14,17-17 | Entire Subareas | All year |
| 17-20,17-21 | Entire Subareas | All year |
| 18-2 | Entire Subareas | All year |
| 18-7, 18-8, 18-9 | Entire Subareas | All year |
| 19-1,19-2 | Entire Subareas | All year |
| 19-6 to 19-12 | Entire Subareas | All year |
| 20-6,20-7 | Entire Subareas | All year |
| 28-1 to 28-14 | Entire Subareas | All year |
| 29-3,29-4,29-6 | Shoreward of 100 m contour line as shown on CHS charts # 3463 and # 3512. | All year |
| 29-7 to 29-17 | Entire Subareas | All year |

9.4. Gulf - Mid-water Trawl Closures by Subarea

| Subarea(s) | Closure Description | Period Closed |
|-------------------|----------------------------|-------------------------|
| 12-20 | Entire Subarea | All year |
| 12-29,12-34,12-46 | Entire Subareas | February 16 to April 30 |
| 13-1 to 13-17 | Entire Subareas | All year |
| 13-33,13-34 | Entire Subareas | All year |
| 14-1,14-8 | Entire Subareas | All year |
| 14-11,14-14,14-15 | Entire Subareas | All year |
| 16-3,16-4 | Entire Subareas | All year |
| 17-1,17-7,17-9 | Entire Subareas | All year |
| 17-14,17-20,17-21 | Entire Subareas | All year |
| 18-7, 18-8 | Entire Subareas | All year |
| 18-10 | Entire Subareas | All year |
| 19-1,19-2 | Entire Subareas | All year |
| 19-6 to 19-12 | Entire Subareas | All year |

| Subarea(s) | Closure Description | Period Closed |
|-------------------|----------------------------|----------------------|
| 20-6,20-7 | Entire Subareas | All year |
| 28-1 to 28-14 | Entire Subareas | All year |
| 29-7 to 29-17 | Entire Subareas | All year |

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9.5. Strait of Georgia/Howe Sound Sponge Reef Closed Areas

In the spring of 2015 DFO implemented a number of closures to all bottom contact gear in the area of the identified glass sponges reefs found with the Strait of Georgia. These closures were the result of extensive consultation, initiated in 2012, with First Nations, commercial and recreational interests, and other stakeholders.

Coordinates of each closure and an illustration of the locations of the nine Strait of Georgia Glass reef complexes are below:

1. Howe Sound – “Defence Islands Closure”

Includes that portion of Subarea 28-4 that lies inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 34.102N | 123 17.070W |
| then southerly to | 49 33.730N | 123 16.562W |
| then to | 49 33.553N | 123 16.462W |
| then to | 49 33.438N | 123 16.750W |
| then to | 49 33.707N | 123 17.201W |
| then to | 49 33.993N | 123 17.391W |
| thence back to the beginning point. | | |

2. Howe Sound – “Queen Charlotte Channels Closures” (4 closed areas)

Closure #1: Includes those portions of Subareas 28-2 and 28-3 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 21.486N | 123 17.254W |
| then southerly to | 49 20.528N | 123 17.690W |
| then to | 49 20.401N | 123 17.956W |
| then to | 49 20.765N | 123 18.794W |
| then to | 49 20.982N | 123 18.584W |
| then to | 49 21.098N | 123 18.037W |
| then to | 49 21.501N | 123 17.737W |
| thence back to the beginning point. | | |

Closure #2: Includes those portions of Subareas 28-2 and 28-3 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 20.288N | 123 17.693W |
| then southeasterly to | 49 20.224N | 123 17.501W |
| then to | 49 19.993N | 123 17.377W |
| then to | 49 19.802N | 123 17.444W |
| then to | 49 19.720N | 123 17.841W |
| then to | 49 19.937N | 123 18.107W |
| then to | 49 20.288N | 123 17.693W |
| thence back to the beginning point. | | |

Closure #3: Includes those portions of Subareas 28-2 and 28-3 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 19.296N | 123 19.905W |
| then southerly to | 49 19.918N | 123 19.847W |
| then to | 49 19.307N | 123 20.344W |
| then to | 49 19.643N | 123 20.421W |
| then to | 49 19.819N | 123 20.361W |
| then to | 49 19.947N | 123 20.097W |
| thence back to the beginning point. | | |

Closure #4: Includes those portions of Subareas 28-2 and 28-3 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 20.637N | 123 19.162W |
| then easterly to | 49 20.577N | 123 18.720W |
| then to | 49 20.441N | 123 18.637W |
| then to | 49 20.068N | 123 18.818W |
| then to | 49 20.076N | 123 19.135W |
| then to | 49 19.718N | 123 19.188W |
| then to | 49 19.726N | 123 19.514W |
| then to | 49 20.259N | 123 19.828W |
| thence back to the beginning point. | | |

3. Strait of Georgia “Foreslope Hills Closure”

Includes that portion of Subarea 29-3 that lies inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 09.634N | 123 23.048W |
| then southerly to | 49 09.389N | 123 22.622W |
| then to | 49 09.187N | 123 22.587W |
| then to | 49 09.211N | 123 23.567W |
| then to | 49 09.646N | 123 23.543W |
| thence back to the beginning point. | | |

4. Strait of Georgia – “Outer Gulf Islands Closure” (4 closed areas)

Closure #1: Includes those portions of Subareas 18-1 and 29-4 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 48 54.936N | 123 19.589W |
| then southerly to | 48 54.283N | 123 18.529W |
| then to | 48 54.114N | 123 18.619W |
| then to | 48 54.065N | 123 18.771W |
| then to | 48 54.787N | 123 19.929W |
| then to | 48 54.902N | 123 19.793W |
| thence back to the beginning point. | | |

Closure #2: Includes those portions of Subareas 18-1 and 29-4 that lie inside the area bounded by a line that:

| | | |
|-----------|------------|-------------|
| begins at | 48 52.588N | 123 15.261W |
|-----------|------------|-------------|

| | | |
|-------------------------------------|------------|-------------|
| then easterly to | 48 52.520N | 123 14.537W |
| then to | 48 51.971N | 123 13.768W |
| then to | 48 51.795N | 123 13.947W |
| then to | 48 52.150N | 123 14.444W |
| then to | 48 52.038N | 123 14.678W |
| then to | 48 52.479N | 123 15.521W |
| thence back to the beginning point. | | |

Closure #3: Includes those portions of Subareas 18-1 and 29-4 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|-------------|-------------|
| begins at | 48 51.602N | 123 13.233W |
| then southerly to | 48 51.309N | 123 12.751W |
| then to | 48 50.913N | 123 12.938W |
| then to | 48 50.8441N | 123 13.059W |
| then to | 48 51.1634N | 123 13.662W |
| then to | 48 51.579N | 123 13.378W |
| thence back to the beginning point. | | |

Closure #4: Includes those portions of Subareas 18-1 and 29-4 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 48 50.999N | 123 12.391W |
| then southerly to | 48 50.607N | 123 11.603W |
| then to | 48 50.097N | 123 10.956W |
| then to | 48 49.959N | 123 11.182W |
| then to | 48 50.857N | 123 12.654W |
| then to | 48 50.959N | 123 12.566W |
| thence back to the beginning point. | | |

5. Strait of Georgia – “Gabriola Island Closure”

Includes that portion of Subarea 17-11 that lies inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 13.672N | 123 47.577W |
| then southerly to | 49 13.235N | 123 47.429W |
| then to | 49 13.185N | 123 47.882W |
| then to | 49 13.391N | 123 48.119W |
| then to | 49 13.623N | 123 48.166W |
| thence back to the beginning point. | | |

6. Strait of Georgia – “Parksville Closure”

Includes those portions of Subareas 14-2 and 14-3 that lies inside the area bounded by a line that:

| | | |
|-----------------------|------------|-------------|
| begins at | 49 21.680N | 124 19.762W |
| then southeasterly to | 49 21.514N | 124 18.893W |
| then to | 49 21.191N | 124 17.723W |
| then to | 49 21.064N | 124 17.724W |
| then to | 49 20.725N | 124 18.380W |
| then to | 49 21.432N | 124 19.811W |

| |
|-------------------------------------|
| thence back to the beginning point. |
|-------------------------------------|

7. Strait of Georgia – “East of Hornby Islands Closure”

Includes that portion of Subarea 14-6 that lies inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 33.490N | 124 29.229W |
| then southerly to | 49 32.701N | 124 28.760W |
| then to | 49 31.657N | 124 29.434W |
| then to | 49 31.663N | 124 29.896W |
| then to | 49 32.651N | 124 29.752W |
| then to | 49 33.340N | 124 29.935W |
| then to | 49 33.498N | 124 29.773W |
| thence back to the beginning point. | | |

8. Strait of Georgia – “Sechelt Closure”

Includes that portion of Subarea 29-2 that lies inside the area bounded by a line that:

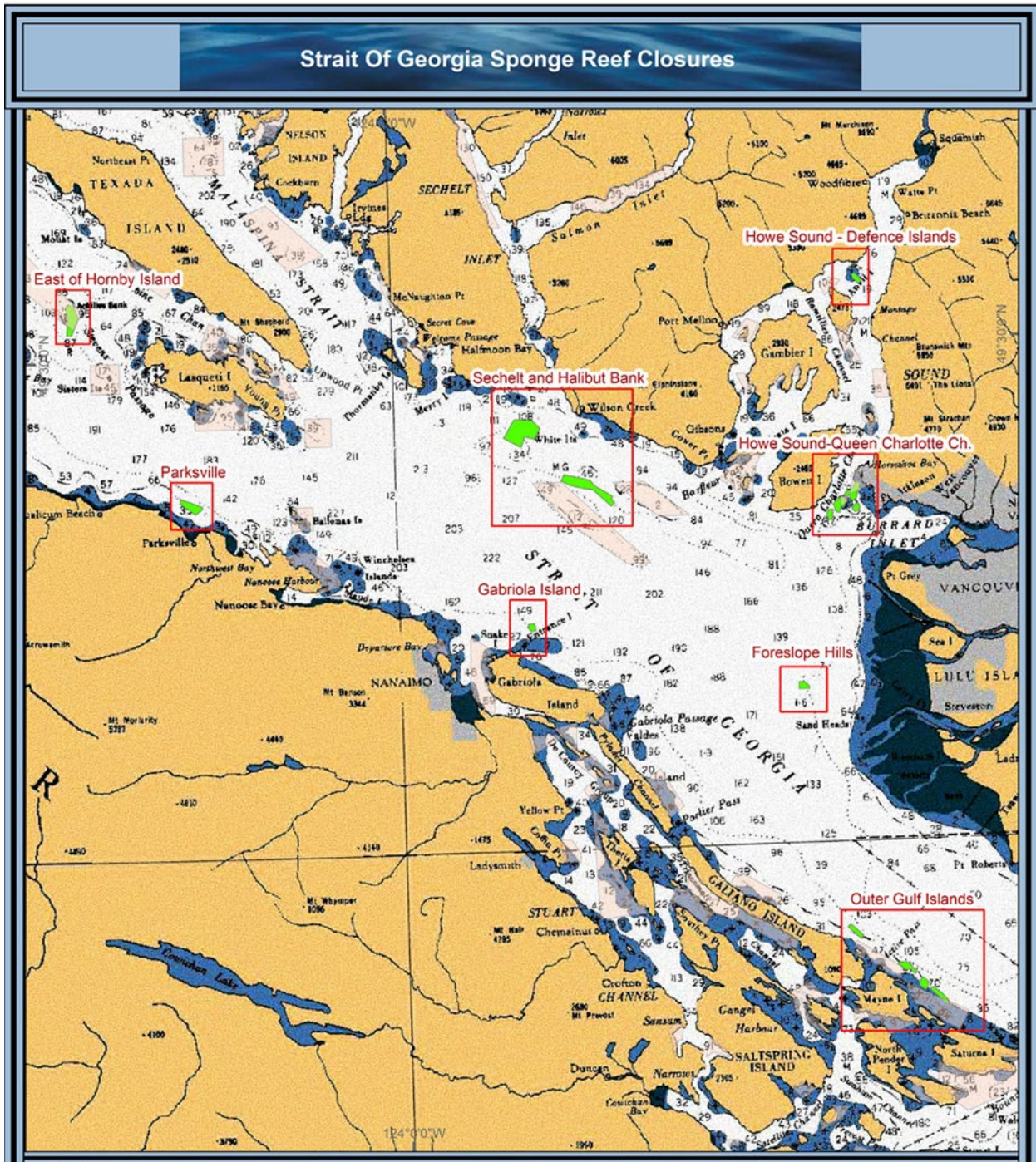
| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 25.948N | 123 48.889W |
| then easterly to | 49 25.899N | 123 47.266W |
| then to | 49 25.373N | 123 46.494W |
| then to | 49 24.734N | 123 47.083W |
| then to | 49 24.910N | 123 47.951W |
| then to | 49 24.253N | 123 48.283W |
| then to | 49 24.845N | 123 49.914W |
| thence back to the beginning point. | | |

9. Strait of Georgia – “Halibut Bank Closure”

Includes that portion of Subarea 29-2 that lies inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 21.768N | 123 41.501W |
| then southerly to | 49 21.174N | 123 40.045W |
| then to | 49 20.961N | 123 40.139W |
| then to | 49 20.803N | 123 39.860W |
| then to | 49 20.565N | 123 40.182W |
| then to | 49 21.610N | 123 41.843W |
| then to | 49 22.555N | 123 44.456W |
| then to | 49 22.188N | 123 42.167W |
| then to | 49 21.945N | 123 42.087W |
| then to | 49 21.673N | 123 42.643W |
| then to | 49 21.895N | 123 43.908W |
| then to | 49 22.174N | 123 44.748W |
| thence back to the beginning point. | | |

Strait of Georgia Glass Sponge Reef Locations:



10. GEAR

Subject to the licence option selected, species closures, area closures and IVQ holdings, a vessel holding a valid groundfish trawl licence may fish with either bottom and/or mid-water trawl gear.

10.1. Mesh Size

“Mesh size” means the total length of twine measured along two contiguous sides of a single mesh, including the distance across the knot joining those sides but not including any other knots. Where a minimum mesh size is prescribed, no person shall use any device by means of which openings that are smaller in size than the original mesh are created. Mesh size shall be measured when the net is wet.

10.2. Mesh Measuring Procedure

The average measurement, in millimetres, of any 20 consecutive meshes running parallel to the long axis of the codend, beginning at the after end of the codend, and at least 10 meshes from the lacings; made by inserting into the meshes a flat wedge shaped gauge having a taper of 2 cm in 8 cm and a thickness of 2.3 mm with a weight of 5 kg attached. The gauge shall be inserted into the mesh opening using a weight until the mesh gauge is stopped by the resistance of the mesh at the tapering edges. In any other part of the trawl 20 consecutive meshes at least 10 meshes from the lacings.

The meshes to be measured need not be consecutive if this is prevented by the application ropes and codlines. Any mesh that has been mended or torn or to which attachments to the net are fixed shall not be measured.

10.3. Gear Restrictions

10.3.1. Trawl Net Size

Subject to Sections 10.3.1.1 and 10.3.1.2 and 10.3.1.3, the coast-wide mesh size in any part of a bottom trawl or mid-water trawl net, including the cod-end, shall not be less than 76 mm (approximately three inches).

10.3.1.1. In Areas 13 to 19 and 29: the mesh size in a bottom trawl net shall not be less than 108 mm (approximately 4.25 inches) in the final 50 meshes, including the cod-end. In all other parts of a bottom trawl net, the mesh size shall not be less than 76 mm (approximately three inches).

10.3.1.2. In Hecate Strait and Eastern Dixon Entrance: the mesh size in a bottom trawl net shall not be less than 152.6 mm (approximately 6 inches) in the last 50 meshes of the net, including the cod-end. In all other parts of a bottom trawl net, the mesh size shall not be less than 76 mm (approximately three inches). This restriction applies to that area bounded on the south by 52°51'N in Hecate Strait, bounded on the north by the Canada/United States International boundary, bounded on the west by 132°00'W in Dixon Entrance, and bounded on the east by the mainland of British Columbia.

The intent of the new mesh size for all trawl vessels operating within the Hecate Strait/Dixon Entrance areas is to reduce the catch, handling and subsequent mortality of smaller fish in the area. This action has been discussed and endorsed by the groundfish trawl industry and becomes a mandatory condition of the groundfish trawl licence for the 2016/2017 season.

10.3.1.3. In Queen Charlotte Sound: the mesh size in a bottom trawl shall not be less than 140 mm (approximately 5.5 inches) mesh size restriction in the last 50 meshes of the net, including the cod-end. For all other parts of a bottom trawl net, the mesh size shall not be less than 76 mm (approximately three inches). This mesh size restriction applies to vessels fishing in waters shallower than 60 fathoms in the area bounded by the southern boundary of 130-1 and the 52°51'N (Hecate Strait) in the north. The intent of this action is to reduce bycatch of small fish.

10.3.2. Trawl Net Escape Panel

10.3.2.1. All bottom trawl nets and mid-water trawl nets, when used in fishing for pacific hake destined for delivery to a foreign fishing vessel licensed under the *Coastal Fisheries Protection Regulations*, shall have an escape panel fitted to permit the release of unwanted fish. This panel shall be located in the intermediate portion (lengthening piece) of the trawl net commencing at a point six feet from where the intermediate (lengthening piece) is attached to the cod-end. The panel shall be composed of not less than one row of meshes running parallel to the long axis of the intermediate for a distance of not less than six feet. The row(s) of mesh shall be cut and sewn with a length of twine or similar material having a breaking strength not exceeding 70 pounds.

10.4. Cod-end Protection Device

For the purpose of preventing wear and tear to a trawl net, there may be attached to the underside of the cod-end any hides, canvas, netting or similar material. For the purpose of preventing wear and tear to a trawl net, there may be attached to the topside of the cod-end, one of the following topside chafers.

10.4.1. Regular Topside Chafer

A rectangular piece of netting that: is at least one and half times the width of the area of the cod-end that is covered, where the width is measured at right angles to the long axis of the cod-end; has a mesh size that is not less than the mesh size of the cod-end and; is fastened to the cod-end only along the forward and lateral edges of the netting in a manner that will permit it to extend where a splitting strap is used, over not more of the cod-end than that part between the fourth mesh forward of the cod line mesh and the fourth mesh forward of the splitting strap, and where a splitting strap is not used, over not more than one third of the cod-end, measured from not less than the fourth mesh forward of the cod line mesh.

10.4.2. Modified Polish Topside Chafer

A rectangular piece of netting that: is made of twine of the same material and size as that of the cod-end, or of any single, thick, knotless twine material; has a mesh size that is twice as large as the mesh size of the cod-end; is attached to the rear portion of the topside of the cod-end; and is fastened to the cod-end along the forward, lateral and rear edges of the netting in a manner that will cause each mesh to exactly overlies four meshes of the cod-end over which it extends.

10.4.3. Multiple Flap-Type Topside Chafer

A series of pieces of netting where the aggregate length extends less than two-thirds of the length of the cod-end; and each piece of netting is attached to the topside of the cod-end so that it overlaps the piece of netting immediately to its rear, if any, has a mesh size that is not less than the mesh size of the cod-end, is at least as wide as the cod-end, where the width is measured at right angles to the cod-end, is not more than 10 meshes long, and is fastened by its forward edge only across the cod-end at right angles to its long axis.

The above description of mesh size and gear restrictions are provided for reference purposes only. Groundfish trawl vessel owners, captains and crews must carefully read their 2016/2017 groundfish trawl licence and the attached conditions of licence and, regulations (*Fishery [General] Regulations* and *Pacific Fishery Regulations, 1993*) to ensure a full understanding of all gear restrictions in effect.

11. LICENSING

National Online Licensing System (NOLS) Client Support - Licensing Services

All fish harvesters/Licence Holders/vessel owners are now required to use the National Online Licensing System (NOLS) to view, pay for and print their commercial fishing licences, licence conditions and/or receipts.

Training materials, including step-by-step guides and a detailed user training manual, are available online (<http://www.dfo-mpo.gc.ca/FM-GP/SDC-CPS/licence-permis-eng.htm>) to guide users of the system in completing their licensing transactions. The Department also provides client support and assistance on how to use the system via e-mail at fishing-peche@dfo-mpo.gc.ca or by calling toll-free at 1-877-535-7307 (7:00 AM to 8:00 PM Eastern, Monday to Friday).

For more information on how to register and use the system, visit the Department's website at the address above, or contact our client support.

11.1. Licence Category

A commercial groundfish trawl Category T or a communal commercial groundfish trawl category FT licence eligibility is required to commercially harvest groundfish trawl species using trawl gear. Category T licence eligibilities are limited entry and vessel based. Category FT licence eligibilities are limited entry and party based; an Aboriginal group is the licence eligibility holder and the eligibility must be designated to a commercially registered fishing vessel that meets established length restrictions.

Vessels authorised to fish under the authority of a groundfish trawl licence are also permitted to fish and retain catch using hook and line gear for those species described in Schedule II Part 2 of the Pacific Fishery Regulations 1993, for species and the quantities set out in Part 2 of the groundfish trawl licence conditions, to transport fish caught by other vessels and to be designated to fish under the authority of a category Z licence.

Groundfish trawl vessel owners and fishers are reminded to carefully review and familiarize themselves with the groundfish trawl licence and attached conditions.

11.2. Licence Renewal Fees

The commercial groundfish trawl licence renewal fee is based on the combination of a base licence fee of \$500.00 and the Permanent IVQ holdings of the licence on February 20th, measured in pounds

| IVQ Species | Fee Per Tonne of IVQ | Fee Per Pound of IVQ |
|----------------------|----------------------|----------------------|
| All Rockfish Species | \$15.00 | \$.0068 |
| All Sole Species | \$16.00 | \$.0073 |
| Lingcod | \$16.00 | \$.0073 |
| Pollock | \$7.50 | \$.0034 |
| Hake | \$4.00 | \$.0018 |

There is no annual licence renewal fee for communal commercial category FT license.

11.3. Licence Application and Issuance

Renewal of a Category T licence and payment of the fees must be done on an annual basis to retain the privilege to be issued the licence in the future, regardless of whether or not fishing is carried out. Any category T licenses not renewed by February 20th of the current fishing year will cease and licence issuance requests will be unable to be considered in future.

Prior to annual licence issuance of a communal commercial licence, licence eligibility holders are required to annually designate the fishing vessel to hold the licence. This must be done by navigating to the ‘Submit a Request’ menu selection within the National Online Licensing System (NOLS). Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>).

Prior to annual licence issuance, vessel owners/licence eligibility holders are required to:

- a) Meet any Ministerial conditions placed on the licence eligibility.
- b) Ensure all conditions of the previous year’s licence have been met.
- c) the designated vessel’s overall length does not exceed the maximum vessel length of the category FT licence eligibility.

To avoid delays in licence issuance, please ensure the payment, option selection and designated vessel information is submitted through the National Online Licensing System at the same time, when renewing the licence eligibility.

11.3.1. Groundfish Trawl Licence Option Selection

Prior to Licence issue, each groundfish trawl vessel owner/licence eligibility holder may choose to fish under the conditions of one of two options (A or B) for the current fishing year. By default DFO sets the trawl licence option to that issued as of the end of the previous season.

Option selection for each groundfish trawl licence may be done by navigating to the ‘Submit a Request’ menu selection within the National Online Licensing System (NOLS). Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>).

A general description of the permitted activities under each option are:

11.3.1.1. Option A

- i) Permitted to fish with bottom trawl gear in all areas, except management Area 4B (Fisheries Management Areas 12 to 20 and 29) open to bottom trawling.
- ii) Permitted to fish by mid-water trawl coast-wide.
- iii) Subject to one hundred (100) percent dockside monitoring for all landings.
- iv) Subject to one hundred (100) percent at sea observer coverage when fishing with bottom or mid-water gear except when mid-water trawling for hake and delivering all fish caught as fresh round product to land.
- v) Subject to one hundred (100) percent at sea monitoring coverage when fishing when mid-water trawling for hake.
- vi) Permitted to fish throughout the year for groundfish species subject to TAC up to the amount of the IVQ specified on the licence.
- vii) Permitted to reallocate IVQ holdings subject to the rules governing such reallocations.
- viii) Limited to 15,000 pound per trip for all combined rockfish species not subject to TAC.
- ix) Permitted to retain incidentally caught mackerel equal to six (6) percent of the offshore pacific hake IVQ portion of quota holdings.
- x) No trip limit for groundfish species (excluding rockfish) not subject to a TAC.
- xi) Not permitted to fish for and retain Eulachon, wolf-eels, any salmon species, Pacific Herring, Green Sturgeon, White Sturgeon, Pacific Basking Shark, Tope (Soupfin) Shark or Bluntnose Sixgill Shark.
- xii) Halibut is not permitted to be retained. By-catch mortality caps for halibut will be issued on an individual vessel basis. Licence holders will be responsible and accountable for all halibut mortality incurred.
- xiii) Corals and Sponges are not permitted to be retained unless specifically authorized by Fisheries and Oceans Canada.
- xiv) A fleet wide habitat bycatch conservation limit (HBCL) for Corals and Sponges has been set and allocated as IVQ to individual groundfish trawl vessels. The HBCL IVQ is transferable among groundfish trawl licence holders within annual caps. Groundfish trawl licence holders will be responsible and accountable for all coral and sponge mortality incurred.

11.3.1.2. Option B

- i) Required to request monthly amendments to groundfish trawl licence prior to fishing.
- ii) Permitted to fish by bottom trawl in Area 4B (Areas 12 to 20 and 29) only.
- iii) Not permitted to fish by mid-water trawl in any Area.
- iv) Limited to a maximum of 15 landings per calendar month.
- v) Subject to one hundred (100) percent dockside monitoring for all landings.
- vi) Subject to mandatory at-sea monitoring of all fishing activities.
- vii) A 15,000 pound calendar month limit for all groundfish species combined other than dogfish, lingcod and rockfish; of which no more than 200 pounds shall be

- Sablefish, and of which no more than 200 pounds shall be Petrale sole, and of which no more than 500 pounds shall be Pacific Cod.
- viii) Not permitted to fish for and retain Eulachon, halibut, lingcod, any rockfish, squid, octopus, wolf-eels any salmon species, Pacific Herring, Green Sturgeon, White Sturgeon, Pacific Basking Shark, Tope (Soupfin) Shark or Bluntnose Sixgill Shark,
 - ix) No limit on the quantity of dogfish.

11.3.1.3. In Season Change of Groundfish Trawl Licence Option

Groundfish trawl vessel owners/licence eligibility holders may choose to fish choosing Option B are permitted to make a once a year change from Option B to Option A. Once issued, groundfish trawl vessel owners/licence eligibility holders issued an Option A licence may not change their selection for the remainder of the fishing year.

11.3.1.4. Requirement and Issuance of Valid Licence Amendments

The vessel owner/master must have on board a valid groundfish trawl licence amendment prior to fishing. This amendment outlines the total amount of fish by species that the vessel can land for the fishing season. Without this amendment the vessel is not permitted to catch, retain or land any fish.

A “Request for Licence Amendment” must be completed by the vessel owner/licence eligibility holder or the designated agent and faxed to the Groundfish Management Unit at (604) 666-8525. Request forms and other applicable forms are available online at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/form-eng.htm>.

Option B vessels will be issued monthly amendments. The owner of an Option B vessel must submit a 2019/2020 Groundfish Trawl Licence Amendment request form for each month and be in possession of a valid amendment prior to fishing.

Option A vessels must be in possession of a valid amendment to the vessels 2019/2020 groundfish trawl licence prior to fishing.

Contact either of the Groundfish Management Unit Quota officers at groundfishivq@dfo-mpo.gc.ca for further information.

11.4. Licence Documents

Groundfish Trawl licence documents are valid from the date of issue to February 20, 2020.

Replacements for lost or destroyed licence documents may be obtained by reprinting the licence documents through the National Online Licensing System.

11.5. Vessel Replacement Rules for Groundfish Trawl

The owner(s) of a category T licensed Groundfish Trawl vessel may make an application to replace the commercial fishing vessel. Both the replacement vessel and the vessel being replaced must have a survey on file with the Pacific Fishery Licence Unit (PFLU) or

submitted with the vessel replacement application. Vessels must be surveyed according to the Department guidelines.

A groundfish trawl licence eligibility may be placed either permanently or temporarily on any Canadian commercially registered fishing vessel which does not exceed the maximum vessel length (MVL) i.e. the overall length of the vessel that held the licence eligibility as of December 1, 1998 plus 50%. This is subject to departmental policies governing the placement of other vessel based licence eligibilities also held on the vessel being replaced.

An application for a temporary replacement may be made where a vessel has been declared a loss, or the vessel is out of service due to an accident or unforeseen damage. Written confirmation from an insurance company, shipyard or marine engineer explaining why the vessel is inoperative is required. Vessels that are in disrepair at the time of purchase, vessels with engine problems, delays in annual maintenance or rebuilds do not qualify for a temporary transfer.

Where single groundfish trawl licence eligibility is being placed on a shorter vessel, there remains a future opportunity to place the licence eligibility on a commercially registered vessel which does not exceed the MVL i.e. the overall length of the vessel that held the licence eligibility as of December 1, 1998 plus 50%.

A groundfish trawl licence eligibility may be separated from other licence eligibilities and placed on a Canadian commercially registered fishing vessel that does not exceed the MVL. Where the receiving vessel does not already hold a vessel based licence eligibility, the Schedule II privileges associated with the groundfish trawl eligibility must be relinquished.

A groundfish trawl licence eligibility (category T) held on a vessel, in combination with another vessel based licence, may be placed on a vessel that does not exceed the MVL, so long as it is within the vessel replacement rules associated with the another vessel based licence also being replaced.

Groundfish trawl licensed vessel owners are allowed to swap groundfish trawl eligibilities within the groundfish trawl fleet subject to the length guidelines described within this section. Where swapping occurs, the IVQ and holdings caps follow each licence eligibility.

Once a vessel has commenced fishing under the authority of a groundfish trawl licence, that vessel may not fish under the authority of another groundfish trawl licence in the same fishing year.

Temporary vessel replacements are allowed if the vessel has been declared a loss or the vessel is out of service due to an accident or unforeseen damage. Vessels that are in disrepair at the time of purchase, have engine problems, or have encountered delays in annual maintenance or rebuilding do not qualify for a temporary replacement.

Written confirmation from an insurance company, shipyard, or marine engineer explaining why the vessel is inoperative must be submitted to a Pacific Fishery Licence Unit when declaring the vessel a total loss.

Temporary replacement vessel may not exceed the overall vessel length plus 10 per cent of the groundfish trawl vessel.

Should the groundfish trawl licence eligibility be temporarily split from other licence eligibilities, the remaining eligibilities may not be placed on a third vessel.

For further information on vessel replacement policies, please contact the Department by telephone at 1-877-535-7307 or email at fishing-peche@dfo-mpo.gc.ca.

12. GROUND FISH SPECIES AND ALLOWABLE CATCHES

12.1. Prohibited Species

The following species of vertebrate fish are not allowed to be fished for or retained when fishing under the authority of a groundfish trawl licence.

| <i>Common Name</i> | <i>Scientific Name</i> |
|-------------------------|---------------------------------|
| Pacific Halibut | <i>Hippoglossus stenolepis</i> |
| Salmon Species | <i>Onchorhynchus spp.</i> |
| Pacific Herring | <i>Clupea harengus pallasii</i> |
| Green Sturgeon | <i>Acipenser medirostris</i> |
| White Sturgeon | <i>Acipenser transmontanus</i> |
| Wolf-Eel | <i>Anarrhichthys ocellatus</i> |
| Pacific Basking Shark | <i>Cetorhinus maximus</i> |
| Tope (Soupfin) Shark | <i>Galeorhinus galeus</i> |
| Bluntnose Sixgill Shark | <i>Hexanchus griseus</i> |
| Eulachon | <i>Thaleichthys pacificus</i> |

12.2. Species Permitted to be Fished

| <i>Common Name</i> | <i>Scientific Name</i> |
|-----------------------|-------------------------------|
| Aurora rockfish | <i>Sebastes aurora</i> |
| Black rockfish | <i>Sebastes melanops</i> |
| Blue rockfish | <i>Sebastes mystinus</i> |
| Bocaccio rockfish | <i>Sebastes paucispinis</i> |
| Brown rockfish | <i>Sebastes auriculatus</i> |
| Canary rockfish | <i>Sebastes pinniger</i> |
| Chilipepper rockfish | <i>Sebastes goodie</i> |
| China rockfish | <i>Sebastes nebulosus</i> |
| Copper rockfish | <i>Sebastes caurinus</i> |
| Darkblotched rockfish | <i>Sebastes crameri</i> |
| Dusky rockfish | <i>Sebastes ciliates</i> |
| Greenstriped rockfish | <i>Sebastes elongates</i> |
| Harlequin rockfish | <i>Sebastes variegates</i> |
| Longspine thornyhead | <i>Sebastolobus altivelis</i> |
| Northern rockfish | <i>Sebastes polyspinis</i> |
| Pacific Ocean Perch | <i>Sebastes alutus</i> |

| | |
|---------------------------|-----------------------------------|
| Puget Sound rockfish | <i>Sebastes emphaeus</i> |
| Pygmy rockfish | <i>Sebastes wilsoni</i> |
| Quillback rockfish | <i>Sebastes maliger</i> |
| Redbanded rockfish | <i>Sebastes babcocki</i> |
| Redstripe rockfish | <i>Sebastes proriger</i> |
| Rosethorn rockfish | <i>Sebastes helvomaculatus</i> |
| Rougheyeye rockfish | <i>Sebastes aleutianus</i> |
| Sharpchin rockfish | <i>Sebastes zacentrus</i> |
| Shortbelly rockfish | <i>Sebastes jordani</i> |
| Shortraker rockfish | <i>Sebastes borealis</i> |
| Shortspine thornyhead | <i>Sebastolobus alascanus</i> |
| Silvergray rockfish | <i>Sebastes brevispinis</i> |
| Splitnose rockfish | <i>Sebastes diploproa</i> |
| Stripetail rockfish | <i>Sebastes saxicola</i> |
| Tiger rockfish | <i>Sebastes nigrocinctus</i> |
| Vermilion rockfish | <i>Sebastes miniatus</i> |
| Widow rockfish | <i>Sebastes entomelas</i> |
| Yelloweye rockfish | <i>Sebastes ruberrimus</i> |
| Yellowmouth rockfish | <i>Sebastes reedi</i> |
| Yellowtail rockfish | <i>Sebastes flavidus</i> |
| Skate & Sharks | |
| Big skate | <i>Raja binoculata</i> |
| Longnose skate | <i>Raja rhina</i> |
| Black skate | <i>Raja kincaidi</i> |
| Starry skate | <i>Raja stellulata</i> |
| Deepsea skate | <i>Raja abyssicola</i> |
| Spiny Dogfish | <i>Squalus suckleyi</i> |
| Flatfish | |
| Arrowtooth flounder | <i>Atheresthes stomias</i> |
| Butter sole | <i>Isopsetta isolepis</i> |
| C-O sole | <i>Pleuronichthys coenosus</i> |
| Curlfin sole | <i>Pleuronichthys decurrens</i> |
| Dover sole | <i>Microstomus pacificus</i> |
| Lemon/English sole | <i>Parophrys vetulus</i> |
| Flathead sole | <i>Hippoglossoides elassodon</i> |
| Pacific sanddab | <i>Citarichthys sordidus</i> |
| Petrable sole | <i>Eopsetta jordani</i> |
| Rex sole | <i>Glyptocephalus zachirus</i> |
| Rock sole | <i>Lepidopsetta bilineata</i> |
| Sand sole | <i>Psettichthys melanostictus</i> |
| Slender sole | <i>Lyopsetta exilis</i> |
| Speckled sanddab | <i>Citharichthys stigmaeus</i> |
| Starry flounder | <i>Platichthys stellatus</i> |
| Yellowfin sole | <i>Limanda aspera</i> |
| Tuna | |
| Albacore | <i>Thunnus alalunga</i> |
| Bluefin | <i>Thunnus thynnus</i> |

| | |
|--|--------------------------------------|
| Pacific bonito | <i>Sarda chiliensis lineolata</i> |
| Skipjack | <i>Euthynnus pelamis</i> |
| Yellowfin | <i>Thunnys albacares</i> |
| Smelt | |
| Surf smelt | <i>Hypomesus pretiosus pretiosus</i> |
| Rainbow smelt | <i>Osmerus mordax dentex</i> |
| Night smelt | <i>Spirinchus starski</i> |
| Mackerel | |
| Chub Mackerel | <i>Scomber japonicas</i> |
| Pacific Mackerel | <i>Trachurus symmetricus</i> |
| Roundfish | |
| Greenlings | <i>Hexagrammos sp.</i> |
| Lingcod | <i>Ophiodon elongates</i> |
| Pacific cod | <i>Gadus macrocephalus</i> |
| Sablefish | <i>Anoplopoma fimbria</i> |
| Sculpins | <i>Family Cottidea</i> |
| Walleye Pollock | <i>Thragra chalcogramma</i> |
| Pacific hake | <i>Merluccius productus</i> |
| Any Other Vertebrate Fish Except those listed in 12.1 above | |

12.3. Research Allocation

To support groundfish research and account for unavoidable mortality incurred in during the 2016 Groundfish Trawl Multi-species surveys planned for the West Coast of Vancouver Island (WCVI) (Groundfish Management Area 3C/D) and West Coast of Haida Gwaii (Groundfish Management Area 5E), the following quantities have been subtracted prior to defining the Groundfish Trawl TAC's set out in section 12.4 below;

| Species | Management Area | WCVI Research Allocation (mt) | Management Area | Haida Gwaii Survey (mt) | Total Research Trawl Mortality (mt) |
|-------------------------------|------------------|-------------------------------|------------------|-------------------------|-------------------------------------|
| Yellowtail Rockfish | 3C | TBD | 3D, 5A/B, 5C/D/E | 0.1 | TBD |
| Widow Rockfish | Coast-wide total | TBD | Coast-wide total | 0.7 | TBD |
| Canary Rockfish | 3C/D | TBD | 5E | 0.2 | TBD |
| Silvergrey Rockfish | 3C/D | TBD | 5E | 7.5 | TBD |
| Pacific Ocean Perch | 3C/D | TBD | 5D/E | 41.8 | TBD |
| Yellowmouth Rockfish | 3C, 3D | TBD | 5E | 4.1 | TBD |
| Rougeye Rockfish | Coast-wide | TBD | Coast-wide | 9.6 | TBD |
| Shortraker Rockfish | Coast-wide | TBD | Coast-wide | 0.7 | TBD |
| Redstripe Rockfish | 3C, 3D5A/B | TBD | 5E | 4.0 | TBD |
| Copper, China, Tiger Rockfish | Coastwide | TBD | Coastwide | 0.0 | TBD |
| Quillback Rockfish | Coastwide | TBD | Coastwide | 0.0 | TBD |
| Yelloweye Rockfish | Coastwide | TBD | Coastwide | 0.1 | TBD |
| Shortspine Thornyheads | Coast-wide | TBD | Coast-wide | 3.3 | TBD |
| Longspine Thornyheads | Coast-wide | TBD | Coast-wide | 0.4 | TBD |
| Redbanded Rockfish | Coast-wide | TBD | Coast-wide | 0.6 | TBD |
| Bocaccio Rockfish | Coast-wide | TBD | Coast-wide | 0.1 | TBD |
| Pacific Cod | 3C/D | TBD | 5C/D/E | 0.3 | TBD |
| Dover Sole | 3C/D | TBD | 5C/D/E | 1.0 | TBD |
| English/Lemon Sole | 3 C/D, 5 A/B | TBD | 5C/D/E | 0.0 | TBD |
| Petrale Sole | Coast-wide | TBD | Coast-wide | 0.1 | TBD |

| Species | Management Area | WCVI Research Allocation (mt) | Management Area | Haida Gwaii Survey (mt) | Total Research Trawl Mortality (mt) |
|---------------------------|------------------------|--------------------------------------|------------------------|--------------------------------|--|
| Rock Sole | 3C/D | TBD | 5E | 0.0 | TBD |
| Lingcod | 3C, 3D | TBD | 5C/D/E | 0.3 | TBD |
| Sablefish | Coast-wide | TBD | Coast-wide | 2.6 | TBD |
| Spiny Dogfish | Rest of Coast | TBD | Rest of Coast | 0.1 | TBD |
| Walleye Pollock | 3C/D) | TBD | 5 C/D/E | 0.3 | TBD |
| Pacific Hake | Offshore | TBD | Offshore | 1.4 | TBD |
| Arrowtooth Flounder | Coast-wide | TBD | Coast-wide | 8.5 | TBD |
| Big Skate | 3C/D | TBD | 5 C/D/E | 0.0 | TBD |
| Longnose Skate | 3C/D | TBD | 5 C/D/E | 1.2 | TBD |
| Pacific Halibut Mortality | Coast-wide | TBD | Coast-wide | 0.7 | TBD |
| Total - All Species | WCVI survey | TBD | HG Survey | 89.4 | TBD |

12.4. Annual Trawl Total Allowable Catches

TACs listed below have been set for the commercial groundfish trawl fishery for the 2019/2020 fishing season. In some cases, the coast-wide total differs slightly from the amount obtained by summing the Species Management Areas values. This difference is due to the TAC being expressed in whole numbers within the table. For the exact TAC values, please contact the Groundfish Management Unit (see Appendix 1).

| Species | Management Area | TAC ¹ (tonnes) |
|------------------------|-------------------------------|---------------------------|
| Yellowtail Rockfish | 3C ⁵ | 1,224 |
| | 3D, 5A/B, 5C/D/E ⁵ | 4,212 |
| | Coast-wide total | 5,436 |
| Widow Rockfish | Coast-wide total | 2,316 |
| Canary Rockfish | 3C/D | 615 |
| | 5A/B | 239 |
| | 5C/D | 97 |
| | 5E | 12 |
| | Coast-wide total | 963 |
| Silvergray Rockfish | 3C/D | 331 |
| | 5A/B | 633 |
| | 5C/D | 586 |
| | 5E | 381 |
| | Coast-wide total | 1,932 |
| Pacific Ocean Perch | 3C/D | 750 |
| | 5A/B ⁶ | 1,670 |
| | 5C ² | 1,555 |
| | 5D/E ² | 1,200 |
| | Coast-wide total | 5,175 |
| Yellowmouth Rockfish | 3C | 219 |
| | 3D, 5A/B | 1,132 |
| | 5C/D ² | 685 |
| | 5E ² | 325 |
| | Coast-wide total | 2,361 |
| Rougheyeye Rockfish | Coast-wide | 634 |
| Shorthead Rockfish | Coast-wide | 126 |
| Redstripe Rockfish | 3C | 173 |
| | 3D, 5A/B | 768 |
| | 5C/D | 329 |
| | 5E | 246 |
| | Coast-wide total | 1,516 |
| Shortspine Thornyheads | Coast-wide | 734 |
| Longspine Thornyheads | Coast-wide | 405 |
| Redbanded Rockfish | Coast-wide | 293 |
| Bocaccio Rockfish | Coast-wide | 80 |
| Yelloweye Rockfish | Coast-wide ⁴ | 3 |
| Quillback | Coast-wide ⁴ | 3 |

| Species | Management Area | TAC¹(tonnes) |
|----------------------------------|-----------------------------|--------------------------------|
| Copper, China And Tiger Rockfish | Coast-wide ⁴ | 1 |
| Pacific Cod | 3C/D | 500 |
| | 5A/B | 249 |
| | 5C/D/E | 698 |
| | Coast-wide total | 1,447 |
| Dover Sole | 3C/D | 1,375 |
| | 5A/B | 596 |
| | 5C/D/E | 1,094 |
| | Coast-wide total | 3,064 |
| Rock Sole | 3C/D | 102 |
| | 5A/B | 649 |
| | 5C/D | 797 |
| | Coast-wide total | 1,549 |
| Lemon Sole | 3C/D, 5A/B | 185 |
| | 5C/D/E | 631 |
| | Coast-wide total | 816 |
| Petrale Sole | Coast-wide | 899 |
| Lingcod | 3C | 800 |
| | 3D | 440 |
| | 5A/B | 861 |
| | 5C/D/E | 580 |
| | Coast-wide total | 2,681 |
| Spiny Dogfish | 4B | 640 |
| | Rest of Coast | 3,835 |
| | Coast-wide total | 4,475 |
| Sablefish | Coast-wide | 210 |
| Pollock | Gulf ³ | 1,115 |
| | 5A/B (includes Area 11, 12) | 1,787 |
| | 5C/D/E | 1,318 |
| | Coast-wide total | 4,220 |
| Hake | Gulf ³ | 7,000 |
| | Offshore | 29,999 ⁸ |
| Big Skate | 3C/D | 12 |
| | 5A/B | 341 |
| | 5C/D/E | 560 |
| Longnose Skate | 3C/D | 88 |
| | 5A/B | 30 |
| | 5C/D/E | 18 |
| Arrowtooth Flounder | Coast-wide | 17,464 |

| Species | Management Area | TAC ¹ (tonnes) |
|---|-----------------|---------------------------|
| ¹ All quotas are in round weight and metric tonnes (mt). | | |
| ² Pacific Ocean Perch and Yellowmouth rockfish caught within Subarea 102-3 and those portions of Subareas 142-1, 130-3 and 130-2 found southerly and easterly of a straight line commencing at 52°20'00"N 131°36'00"W thence to 52°20'00"N 132°00'00"W thence to 51°30'00"N 131°00'00"W and easterly and northerly of a straight line commencing at 51°30'00"N 131°00'00"W thence to 51°39'20"N 130°30'30"W will be deducted from the vessel's 5C IVQ for Pacific Ocean Perch and 5C/D IVQ for Yellowmouth Rockfish. | | |
| ³ TAC for the Gulf applies to Hake and Pollock catches occurring in Areas 13 to 19 and 29. All other hake catches are applied against a vessel's Offshore Hake quota holdings. All other Pollock catch are applied to the area of catch holdings. | | |
| ⁴ Yelloweye, Quillback, Copper, China and Tiger rockfish will not be allocated as IVQ. All proceeds for landing of these rockfish species will be relinquished and the vessel fishing restrictions for IVQ overage shall not apply. | | |
| ⁵ Yellowtail rockfish caught in the Offshore Pacific Hake fishery can be deducted from IVQ coast-wide. The vessel master is responsible for designating the area at the time of the offload. | | |
| ⁶ Pacific Ocean Perch within Subarea 127-1 and that portion of Subareas 127-2 found northerly and westerly of 50°06'00"N will be deducted from the vessel's Pacific Ocean Perch 5A/B IVQ. | | |
| ⁸ This is a notional TAC for initial licence issuance – The actual TAC will be announced in early April 2017. | | |

12.5. Bocaccio Rockfish Measures

To address the conservation concern for Bocaccio rockfish identified through a Canadian Science Advisory Process review, new management measures were adopted for the groundfish trawl fishery for the 2013/2014 season. These include establishment of an annual trawl TAC, establishing individual vessel licence allocations, establishing holdings caps, and applying all rules governing the Trawl IVQ program for Bocaccio rockfish. As a result of the annual review of groundfish industry's progress in achieving the targeted mortality cap of 61.9 tonnes, DFO and the groundfish trawl industry agreed to reductions in the trawl TAC to 110 tonnes for the 2015/2016 season and followed by a further reduction to 80 tonnes for the 2016/2017 season.

Additionally, the trawl industry has reconfirmed its continuation of the 2004 voluntary program whereby groundfish trawl vessel masters donate all proceeds of all landed Bocaccio rockfish for use in groundfish research programs. These management actions have been taken to reduce the trawl fleet's mortality of Bocaccio rockfish and allow for stock rebuilding over the long term. The Department reviews the efficacy of these measures at the end of each fishing season and if necessary, may consider additional measures to support stock rebuilding.

12.6. Prohibition on Shark Finning

DFO and the groundfish industry agreed to prohibit the practice of finning of dogfish and sharks off the west coast of Canada beginning in the 2012 fishing season. Though not a common practice in Canada, this action is in response to International concerns with fish handling practices in other jurisdictions, where the fins of sharks are removal at-sea and the remainder of the shark, sometimes still alive, is discarded overboard.

The prohibition is set out as a condition in all commercial groundfish licenses which states that no person shall remove and retain the fins of any Spiny Dogfish or shark without retaining the remainder of the carcass for validation upon landing. The number of fins landed shall correspond to the number of carcasses landed.

12.7. Groundfish Size Limits

Fishers are reminded of the following regulatory groundfish size limits:

12.7.1. Lingcod

- Head-on: not less than 65 cm in length, measured from the tip of the nose to the tip of the tail.
- Head-off: not less than 50 cm in length, measured along the shortest length of the body to the tip of the tail.

12.7.2. Sablefish

- Head-on: not less than 55 cm in length, measured from the tip of the nose to the fork of the tail.
- Head-off: not less than 39 cm in length, measured from the origin of the first dorsal fin to the fork of the tail.

13. TRAWL INDIVIDUAL VESSEL QUOTA ALLOCATIONS

For the 2019/2020 fishing year, the commercial groundfish trawl TACs, less the research allocation for the Groundfish Trawl Multi-species survey(s), are allocated as IVQ accordingly:

- i) 80 percent of each TAC will be allocated directly to groundfish trawl licensed vessels as IVQ based on the percentage of IVQ holdings for each species by species/area group held by each licence holder as of midnight February 2nd, 2019.
- ii) 20 percent of each TAC will be allocated to groundfish trawl licensed vessels in-season by the Minister of Fisheries and Oceans Canada, taking into consideration advice from the Groundfish Development Authority (GDA).

14. TRAWL INDIVIDUAL VESSEL ALLOCATION FORMULA

14.1. Initial 1997 Allocation Formula

In 1997, the initial formula used to allocate all groundfish species subject to TAC, with the exception of hake, was based 30 percent on vessel length and 70 percent on average catch of groundfish (excluding hake) during the five year term 1988 to 1992. For this purpose, the length of vessel used in the calculation is the length that was recorded on the Pacific Licensing System on March 31, 1997. The groundfish species included in the catch history calculations are all rockfish, all soles, pacific cod, lingcod, dogfish, sablefish and walleye pollock. For initial allocation purposes, quota catch history attributed to the licence is defined as the quantity of fish landed by the vessel holding that groundfish trawl licence at the time of landing.

The hake IVQ allocation formula was based 30 percent on vessel length, based on the total length of hake vessels only, and 70 percent on average hake catch history for the five year term 1987 to 1991. If a vessel had no history of hake previous 1992, but did participate in the fishery after this date, then they received an allocation based solely on the 30 percent vessel length. However, no vessel qualified for participation in the 30 percent vessel length allocation unless its average landings for the 1987 to 1991 period exceeded 2,000 pounds of hake, or its average landings for the 1992 to 1996 period exceeded that sum.

Based on the above two formulae, each fish harvester with a groundfish trawl licence received two initial IVQ allocations expressed as percentages; one for groundfish other than hake, and one for hake (which may be zero if they do not meet the qualifying criteria). These percentages were then applied to each area and species specific TAC to generate the area and species specific IVQ allocations.

14.2. Annual Allocation of Individual Vessel Quota

At the commencement of each fishing year, the percentage of each vessel's IVQ permanent holdings for each species and species/area group as of midnight February 2nd of the previous fishing year, are applied against the new year's groundfish trawl TAC's, less the quota allocated for research purposes, to determine the initial actual poundage of fish that a vessel may fish during that fishing season.

15. INDIVIDUAL VESSEL QUOTA REALLOCATION RULES

15.1. Reallocation Rules for Inter-Sector Non-T IVQ

The 2019/2020 IFMP provides for the temporary reallocation of IVQ between different groundfish licence sectors. Each sector has established reallocation rules that govern the temporary movement of IVQ between vessels into and within each sector. For the purposes of the groundfish trawl fishery, all IVQ originating from outside the trawl sector reallocated to the trawl sector will be referred to as Non-T IVQ. Specific rules governing the reallocation of Non-T IVQ are included below.

15.2. Groundfish Trawl 2019/2020 Reallocation Sector Rules

15.2.1. Reallocation Rules Effective February 21st, 2019

15.2.1.1. Upon application, groundfish trawl vessel owners will be permitted, subject to other requirements outlined below, to make unlimited permanent and temporary reallocations of groundfish IVQ or Non-T IVQ, subject to each individual groundfish trawl licence holdings cap and the fleet wide species caps set out in this plan.

15.2.1.2. Groundfish trawl IVQ and Non-T groundfish IVQ can be reallocated between groundfish trawl vessels holding a valid 2019/2020 groundfish trawl licence and vessels holding valid appropriate groundfish licences.

15.2.1.3. The IVQ percentage held on a groundfish trawl licence as of midnight February 2nd, 2018 will establish the initial permanent IVQ holdings for that groundfish trawl licence for the 2019/2020 season.

15.2.1.4. Requests for reallocation of groundfish IVQ must be received by DFO by 16:00 hours on February 2nd, 2020 in order to be processed and determine the permanent IVQ holdings for that groundfish trawl licence used for initial licence issuance for the 2020/2021 season.

15.2.1.5. Only uncaught IVQ is eligible for reallocation.

15.2.1.6. Permanent reallocation requests can be submitted either as a percentage of IVQ of the TAC for that species/species area group (SAG) or in pounds. Any permanent reallocation request submitted in pounds will be interpreted as to include both the IVQ and Code of Conduct Quota (CCQ).

15.2.1.7. Permanent reallocations will be expressed as a percentage of the TAC and will be added to the receiving vessel's percentage of the TAC. (For example, the poundage on a groundfish trawl licence is dependent on the total TAC for the year multiplied by the percent of the allocation that vessel holds).

15.2.1.8. Requests for temporary reallocation uncaught IVQ must be received by GMU by 16:00 hours local time on February 20, 2019 in order to be processed and have effect in the current fishing season. Temporary reallocations of IVQ are only valid for the current fishing year.

15.2.1.9. The minimum quantity of IVQ that may be temporarily reallocated is one pound.

15.2.1.10. The maximum quantity of IVQ on a groundfish trawl licence is subject to the individual vessel holdings cap and coast-wide species caps.

15.3. Individual Vessel Quota Species Cap

15.3.1. Trawl sector Species Caps

The following species caps are set on a coast-wide basis for all IVQ species, except hake. The hake species caps are individually applied to Gulf hake and offshore hake allocated for onshore delivery and offshore hake for joint venture delivery. Only temporary quota reallocations are permitted to exceed the individual species holding cap to the temporary species cap level. Temporary vessel caps may be subject to adjustment in season.

| Species | Permanent Species Cap | Temporary Species Cap |
|----------------------|------------------------------------|------------------------------------|
| | (% of Trawl sector coast-wide TAC) | (% of Trawl sector coast-wide TAC) |
| Yellowtail Rockfish | 5% | 7% |
| Widow Rockfish | 5% | 10% |
| Canary Rockfish | 4% | 7% |
| Silvergrey Rockfish | 4% | 8% |
| Pacific Ocean Perch | 5% | 9% |
| Yellowmouth Rockfish | 5% | 7% |
| Rougeye Rockfish | 7% | 12% |
| Shortraker Rockfish | 7% | 10% |
| Redstripe Rockfish | 5% | 10% |

| Species | Permanent Species Cap | Temporary Species Cap |
|------------------------|------------------------------------|------------------------------------|
| | (% of Trawl sector coast-wide TAC) | (% of Trawl sector coast-wide TAC) |
| Bocaccio Rockfish | 4% | 8% |
| Shortspine Thornyheads | 10% | 25% |
| Longspine Thornyheads | 10% | 25% |
| Redbanded Rockfish | 7% | 10% |
| Pacific Cod | 4% | 8% |
| Dover Sole | 5% | 15% |
| Rock Sole | 5% | 10% |
| Lemon (English) Sole | 6% | 20% |
| Petrale Sole | 4% | 8% |
| Lingcod | 5% | 10% |
| Spiny Dogfish | 10% | 10% |
| Sablefish | 5% | 7% |
| Pollock | 10% | 20% |
| Hake (Gulf of Georgia) | 15% | 30% |
| Hake (Offshore) | 10% | 11% |
| Big Skate | 5% | 7.5% |
| Longnose Skate | 5% | 8% |
| Arrowtooth Flounder | 8% | 17% |

15.3.2. Incoming/Outgoing Non-Trawl Vessel Species Caps.

The following schedule sets out the effective dates and percentages of the individual vessel licence non-Trawl species holding caps in relation to the trawl incoming and outgoing sector caps set out in Section 9.2 of the Groundfish IFMP. These non-Trawl temporary vessel caps and dates may be subject to further adjustment in season.

| Species | Non-T Temporary Species Cap Feb 21–Aug 31 (% of incoming/outgoing trawl sector cap) | Non-T Temporary Species Cap Sept 1–Oct 31 (% of incoming/outgoing trawl sector cap) | Non-T Temporary Species Cap Nov 1–Feb 20 (% of incoming/outgoing trawl sector cap) |
|------------------------|---|---|--|
| Canary Rockfish | 10% | 10% | 10% |
| Silvergrey Rockfish | 10% | 10% | 10% |
| Rougheye Rockfish | 5% | 10% | 20% |
| Shortraker Rockfish | 5% | 10% | 20% |
| Shortspine Thornyheads | 5% | 10% | 20% |
| Longspine Thornyheads | 10% | 10% | 10% |
| Redbanded Rockfish | 5% | 10% | 20% |
| Lingcod | 10% | 10% | 10% |
| Spiny Dogfish | 10% | 10% | 10% |
| Sablefish | 10% | 10% | 10% |
| Big Skate | 10% | 10% | 10% |

| Species | Non-T Temporary Species Cap Feb 21–Aug 31 (% of incoming/outgoing trawl sector cap | Non-T Temporary Species Cap Sept 1–Oct 31 (% of incoming/outgoing trawl sector cap) | Non-T Temporary Species Cap Nov 1–Feb 20 (% of incoming/outgoing trawl sector cap) |
|-------------------|---|--|---|
| Longnose Skate | 10% | 10% | 10% |
| All other species | 0% | 0% | 0% |

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15.4. Individual Vessel Quota Holdings Cap

Each groundfish trawl licence is subject to a total holdings cap. This cap has been set at a level that allows vessel owner(s) to adjust their IVQ holdings to a viable level while ensuring that operators cannot accumulate an unreasonably large amount of IVQ. Non-T IVQ and carryover/underage quota held on the licence will not be included in the calculation of holdings against the vessels individual holdings cap.

A reallocation request which results in one of the groundfish trawl licences involved holding more than its total IVQ holdings cap, measured in groundfish equivalents, will not be approved by Fisheries and Oceans Canada.

IVQ holdings caps were calculated for each groundfish trawl licence, during the first year of the IVQ program. The total IVQ holdings cap for each groundfish trawl licence was measured in groundfish equivalents (described below) as a percentage of total groundfish equivalents. These holdings caps, first determined in 1997, have been subject to increases to reflect the addition of new species to the IVQ program and to allow for modernization of the fleet.

In 2011 DFO and industry agreed to a two-step approach to allow a 25% increase in individual vessel's holdings cap. The first 15% increase was implemented during the 2011 season. The final 10% increase was implemented in the 2012 season.

15.4.1. Groundfish Equivalents

For the purposes of calculating the total IVQ holdings cap for each groundfish trawl licence, for measuring IVQ holdings of a groundfish trawl licence against its cap, and for quota swapping purposes, Fisheries and Oceans Canada has set the following groundfish equivalents (GFE). GFE will be based on price relative to pacific ocean perch (pacific ocean perch = 1.00). These GFE values may be updated at the start of each fishing year.

| Species | GFE |
|----------------------------------|------------|
| Yellowtail Rockfish | 1.26 |
| Widow Rockfish | 0.96 |
| Canary Rockfish | 1.19 |
| Silvergrey Rockfish | 1.20 |
| Pacific Ocean Perch | 1.00 |
| Yellowmouth Rockfish | 1.19 |
| Rougeye Rockfish | 1.15 |
| Shortraker Rockfish | 1.24 |
| Redstripe Rockfish | 0.73 |
| Shortspine Thornyheads | 3.38 |
| Longspine Thornyheads | 3.38 |
| Redbanded Rockfish | 2.00 |
| Bocaccio Rockfish | 1.00 |
| Yelloweye Rockfish | 1.23 |
| Quillback Rockfish | 1.21 |
| Copper, China and Tiger Rockfish | 1.21 |
| Pacific Cod | 1.69 |
| Dover Sole | 1.33 |

| Species | GFE |
|------------------------|------------|
| Rock Sole | 1.65 |
| Lemon Sole | 1.37 |
| Petrale Sole | 3.22 |
| Lingcod | 1.75 |
| Spiny Dogfish | 0.49 |
| Sablefish | 6.30 |
| Pollock | 0.66 |
| Hake (Gulf of Georgia) | 0.14 |
| Hake (Offshore) | 0.22 |
| Big Skate | 0.37 |
| Longnose Skate | 0.26 |
| Arrowtooth Flounder | 0.37 |

| | |
|--------------|--|
| For example: | 10,000 lb. of Pacific Ocean Perch + 10,000 lb. of lingcod = 10,000 lb. GFE + 17,500 lb. GFE = 27,500 lb. GFE |
|--------------|--|

15.5. Quota Overage/Underage Rules

In addition to any of the rules set out in this plan, vessels that exceed by thirty (30) percent (%) the area specific IVQ holdings for a species (excluding Pacific Hake, Sablefish and Bocaccio rockfish which are fifteen (15) percent (%) and halibut at zero (0) percent (%)), shall be restricted to mid-water trawl fishing for the area in which the species IVQ has been exceeded for the remainder of the fishing year, or until such time as sufficient IVQ is transferred onto the groundfish trawl licence to cover overages in excess of the permitted amounts.

Fisheries and Oceans Canada will amend the licence conditions to restrict the vessel to mid-water trawling operations and deliver this amendment to the vessel owner by hand or by registered mail. The amendment will take effect from the date the licence amendment is provided to the vessel owner.

The groundfish trawl industry has reconfirmed its commitment to eliminate all directed fishing by the trawl fleet for Bocaccio, Yelloweye, Quillback, Copper, China and/or Tiger Rockfish. The trawl industry, as a disincentive to vessel owners, masters and crews, has also agreed to voluntarily relinquish all proceeds from the sale of these species landed to support groundfish research programs.

15.5.1. Quota Overage/Underage and Quota Carryover

To accommodate fishers in circumstances where catches do not meet the exact IVQ holdings in a given area for a given species, a carryover/underage policy has been implemented which allows fish harvesters to carry uncaught quota forward, or apply catch against its next year's IVQ allocation.

For all species of groundfish subject to IVQ, other than offshore Pacific hake, halibut by-catch and Non-T sablefish IVQ and Bocaccio rockfish the carryover/underage limit is thirty (30) percent of the vessels IVQ holdings for that particular species and species area group.

IVQ holdings used to calculate of overage/underage from one year to another only includes the sum of the Permanent IVQ, Temporary reallocated IVQ and CCQ held on the groundfish trawl licence. Neither GDQ, nor previous carryover quota, nor Non-T groundfish IVQ holdings held on the licence are used in the calculation of carryover quantities for the next season.

For onshore hake and joint venture hake (if applicable), the carryover/underage limit is fifteen (15) percent of the vessel's onshore hake IVQ holdings.

For halibut by-catch mortality, the underage limit is fifteen (15) percent of the vessel halibut by-catch IVQ holdings. ***There is no allowable overage for halibut bycatch mortality.***

For Non-T Sablefish IVQ the carryover/underage limit is fifteen (15) percent of the vessels Non-T sablefish coast wide holdings.

For Bocaccio IVQ the carryover/underage limit is fifteen (15) percent of the vessels Bocaccio holdings.

15.5.2. Rules for All Other Carryovers

Groundfish trawl licensed vessels landing up to thirty (30) percent over the species and area specific IVQ holdings, except for Non-T temporary Sablefish set at the fifteen (15) percent, may keep the proceeds from the overage but will have the equivalent poundage of the overage subtracted from the IVQ holdings of the licence in the following year. The trawl industry has agreed to an automatic voluntary relinquishment of all proceeds for the following species Bocaccio, Yelloweye, Quillback, Copper, China and Tiger rockfish for use in support of groundfish research in British Columbia.

All groundfish trawl licensed vessel landings more than thirty (30) percent over the species and area specific IVQ holdings, except for Non-T temporary Sablefish which is at the fifteen (15) percent, must be relinquished for that groundfish trawl licence.

Vessels transferring additional IVQ onto the groundfish trawl licence following a quota overage and/or relinquishment will have the total overage (entire percent plus the relinquished amount) subtracted from the IVQ that is added to the groundfish trawl licence. The adjustment will be reflected in the groundfish trawl licence amendment. Relinquishments for prior overages will not be reimbursed.

If no further reallocations are processed, the total poundage of the all overages will be subtracted from the IVQ holdings of the licence in the following year.

IVQ overage/underage adjustments in the following year will be attributed to the groundfish trawl licensed vessel which did or did not fish the IVQ in the previous season.

IVQ overage/underage adjustments can be reallocated to any other licensed groundfish trawl vessel.

All weights are fresh round weights as determined by information collected from the dockside observers and at-sea observers.

Vessels in an overage situation can avoid a relinquishment by reallocating applicable IVQ prior to hailing out for the vessel's next trip or within 30 days, whichever comes first.

Quota reallocation request forms and signature authorization forms are available at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/contact-en.html>

For licence status reports (LSR) and inquiry related to quota reallocation requests, Quota Officers can be reached at: groundfishivq@dfo-mpo.gc.ca

16. GROUND FISH DEVELOPMENT AUTHORITY

The Groundfish Development Authority (GDA) was established in 1997 as a result of an agreement reached between Fisheries and Oceans Canada and the British Columbia Ministry of Agriculture, Fisheries and Food (MAFF), to include the Coastal Communities Network (CCN) and fishing industry participants in a process that would continue to provide advice on the evolving west coast groundfish fishery.

The GDA provides advice on groundfish allocations to the Ministers of Fisheries for that portion of the TAC not allocated directly to fishers under the allocation formula. The intent of the recommendations was to allocate TAC in a manner that considers fair crew treatment, assists in regional development, promotes and attains a stable market, employment conditions and encourages sustainable fishing practices.

The GDA consists of seven members (Board of Directors) and a Standing Committee of two advisors (formerly called non-voting members of GDA), whose role it is to provide background information and expertise to the Board of Directors.

Details of the operation of the GDA, its members and terms of reference, objectives and criteria are set out in a separate GDA Operational Plan. The 2019/2020 GDA Operational Plan is available by contacting Charlie Minns, GDA Executive Director at (604) 943-3320 Fax (604) 943-1166, Cell phone (604) 880-1425 or email: cminns@dccnet.com.

16.1. Groundfish Development Quota

For 2019/2020, ten (10) percent of each groundfish trawl TAC will be allocated as Groundfish Development Quota (GDQ). The GDA, on the basis of joint proposals submitted by a processor

and one or more groundfish trawl licensed vessel owners, provides advice to the Minister of Fisheries and Oceans Canada on how best to allocate to vessels involved in the joint proposals for GDQ. The GDA rates each proposal on the merits of the commitments made in the submitted operation plan in addressing the objectives of the GDA for the upcoming fishing year.

16.2. Code of Conduct Quota

Fisheries and Oceans Canada allocates ten (10) percent of each groundfish trawl TAC as Code of Conduct Quota (CCQ). It is intended to promote fair treatment of crew and safe vessel operation under the IVQ program.

CCQ is initially allocated according to each licence's CCQ rating and in proportion to the IVQ holdings for each species by species/area group on the groundfish trawl licence as of midnight, February 2nd of the previous fishing year.

Although each groundfish trawl licence has an initial one hundred (100) percent CCQ rating, the Minister may alter this rating as a result of advice from the GDA regarding the vessel compliance with the general principles set for the CCQ. The general principles, guidelines, and complaints procedure for CCQ are set out in the GDA 2019/2020 Operations Plan.

17. CATCH MONITORING AND VALIDATION

17.1. Catch Reporting

All groundfish trawl licensed vessels are required to accurately record and keep a record of all fishing activities in either a groundfish trawl fishing logbook, (see the example found on last page of this harvest plan) or new groundfish trawl industry new data management platform.

The fishing master must ensure that the fishing logbook or platform is available for use, and that prior to fishing that sufficient logbook pages, or hard drive space are available to cover all activities of the fishing trip. The fishing master is responsible for all required fishing event information is recorded for each fishing event, immediately after completion of the fishing event.

Completed original logbook pages or electronic logbook data must be submitted to the Department at the time of landing fish at the end of each trip.

The groundfish trawl sector has tasked the Canadian Groundfish Research and Conservation Society (CGRCS), on its behalf, to negotiate and secure a contract(s) for the provision of the groundfish trawl data management platform. The CGRCS has selected and contracted Integrated Quota Management Inc (IQMI) as the sole service provider for new data management platform for to the groundfish trawl fleet for the 2019/2020 fishing season.

Industry details of the groundfish trawl data management platform are available by contacting Bruce Turris, the Executive Director of the CGRCS or at (604) 524-0005 Fax (604) 524-0150 or email: bruceturris@shaw.ca or IQMI at 604-250-2462 or email at: jesse@iqmi.ca.

17.2. Port Monitoring

A comprehensive industry funded one hundred (100) percent port monitoring program shall continue in the 2019/2020 fishing year.

All groundfish trawl licensed vessels, regardless of the area or species fished, must have all of their groundfish catches validated, whether landed in Canada or in the United States, to ensure that proper sorting, weight and enumeration by species occurs.

The groundfish trawl sector has tasked the Canadian Groundfish Research and Conservation Society (CGRCS), on its behalf, to negotiate and secure a contract(s) for the provision of the port monitoring services. The CGRCS has selected and contracted Archipelago Marine Research Ltd (AMR) as the sole service provider for port monitoring services to the groundfish trawl fleet for the 2019/2020 fishing season.

Details of the groundfish port monitoring program are available by contacting Bruce Turris, the Executive Director of the CGRCS or at (604) 524-0005 Fax (604) 524-0150 or email: bruceturris@shaw.ca or AMR at 1-800-663-7152.

Monitoring requirements in effect for the groundfish trawl IVQ fishery include the mandatory requirement to hail-out and hail-in for each trip and landing. Detailed catch verification, hail-out and hail-in requirements are found in the 2019/2020 Groundfish Trawl Conditions of Licence issued with each groundfish trawl licence. IQMI is the service provider for hail services.

Following completion of the trip, the service provider will finalize the catch record by assigning catch to management areas fished. This information will be forwarded to the vessel owner within 48 hours of the completion of the offload in the form of the Groundfish Quota Status Report. The CGRCS has contracted IQMI to provide these services via the data management platform described above. It is the responsibility of the vessel owner to ensure that the Groundfish Quota Status Report is on board the vessel prior to the commencement of the next fishing trip, and is made available, upon request, to a Fisheries and Oceans Canada certified observer.

For the 2019/2020 season there continues the opportunity for Option A vessels to land a portion the fish on board the vessel (either fresh, frozen or live) provided that the vessel master ensures that same groundfish at sea observer that was present on board the vessel during the fishing trip remains onboard for the next fishing trip. All fish caught during one fishing trip and not landed at the conclusion of that trip, must be landed at the conclusion of the next fishing trip.

This measure is to assist fishers and provide greater flexibility in managing their catch and reduce at-sea releases. Specific rules governing split and partial landings are set out in the terms and conditions of the Option A groundfish trawl licence. This privilege will be monitored by the Department in-season to ensure compliance, proper accounting, and control and management of the fishery, and may be subject to change.

Individual vessels may request modified offloading procedures, which are more applicable to their operation. If this is requested, departmental, CGRCS and/or contract personnel shall

determine the feasibility of the modifications. Particulars of allowed offloading procedures are set out in the vessel's licence conditions.

17.3. At Sea Monitoring

Fisheries and Oceans Canada announced in May 2012 that DFO will no longer provide funding support for the provision of at-sea or electronic monitoring services in all regions of Canada as of April 1st, 2013. Responsibility for provision of monitoring services lies with the vessel master.

17.3.1. Option A Monitoring Requirements

The 100% at-sea observer coverage requirement for the Option A fleet continues to be in effect. This level of coverage enables DFO and the industry to maintain and strengthen stock assessment capabilities, to provide for effective area and species-specific management, and to effectively monitor by-catch under the highly complex IVQ management program.

The groundfish trawl sector has tasked the Canadian Groundfish Research and Conservation Society (CGRCS), on its behalf, to negotiate and secure a contract(s) for the provision of the required at-sea observer services. The CGRCS has selected and contracted Archipelago Marine Research Ltd as the sole service provider.

Details of the groundfish trawl at-sea observer program are available by contacting Bruce Turris, the Executive Director of the CGRCS or at (604) 524-0005 Fax (604) 524-0150 or email: bruceturris@shaw.ca.

Vessels choosing Fishing Option A are required to carry a DFO certified groundfish at-sea observer on all fishing trips during the 2019/2020 season except when the vessel is hailed out on either an Option-A shoreside hake trip or Option-A joint venture hake trip or Option-A Gulf Hake trip using mid-water for Pacific hake that delivers all fish caught as fresh round product to land or to a Canadian licence foreign fishing vessel (herein referred to as the DFO Exemption Guidelines for carrying an At-Sea Observer).

An Option A vessel when directed mid-water trawling for Pacific Hake in the Gulf of Georgia (4B) or in offshore waters is subject to one hundred (100) percent at-sea monitoring program for all fishing activities. Vessels masters mid water trawling for Pacific hake and delivering all fish caught as fresh round product to land in the shore based fishery or in the approved Joint Venture hake fishery may opt to utilize either an onboard at-sea observer or use an electronic monitoring system (EM). All vessel masters opting for use of an EM system while mid-water fishing for hake are subject to full retention (100%) of all fish caught with the exception of prohibited species.

In those situations where the vessel master may use either an at-sea observer or an Electronic Monitoring (EM) system, and the vessel master opts to use an EM system, the vessel shall have an EM system that meets the requirements as stated in the licence conditions for that vessel.

Where an EM system is in use on a vessel, the vessel master shall ensure all components of the EM system are fully operational and in use during the entire fishing trip from the time the vessel leaves port until the vessel arrives at port to commence the validation of their catch. The EM system shall be continuously powered and not turned off at any time.

If at any time during a fishing trip the EM system fails to function as required by licence conditions the vessel is deemed to have failed to comply with these exemption guidelines and may be directed to carry an at-sea observer at the discretion of a fishery officer.

At-sea monitoring requirements for vessels directed midwater fishing for Hake will be discussed prior to the start of the 2019 hake fishery and thus may be subject to in-season modification.

A vessel which is on a dedicated Offshore Hake trip without an at-sea observer on board is permitted a ten (10) percent by-catch allowance of other groundfish, excluding sablefish, halibut and Walleye Pollock, subject to available IVQ holdings. The by-catch allowance for Walleye Pollock is restricted to thirty (30) percent of the offshore hake landing. Any catch of groundfish (other than hake) in excess of the set allowance must be relinquished. All by-catch will be deducted from the vessel's IVQ holdings. Fishers who may wish to retain more than the by-catch allowance while on a dedicated hake trip must carry an at-sea observer for that trip.

17.3.2. Criteria to Disembark At-Sea Observers

If a vessel has discontinued fishing and is transiting directly to an offloading port, the vessel master may request that the observer may disembark in Port Hardy, Victoria, Ucluelet or Prince Rupert. The following requirements shall apply:

- i. A hail-in as described in the Conditions of the 2019/2020 Groundfish Trawl Licence shall be made to the designated service provider.
- ii. The use of Port Hardy shall only be considered when the vessel is transiting southbound between Vancouver Island and the mainland of British Columbia.
- iii. The use of Victoria shall only be considered when the vessel is transiting eastbound to a Canadian landing port or transiting southbound to Blaine, Bellingham or Anacortes in Washington State.
- iv. The use of Ucluelet shall only be considered when the vessel is transiting directly to Port Alberni, southbound to a Canadian landing port or to Blaine, Bellingham or Anacortes in Washington State.
- v. The use of Prince Rupert shall only be considered when a vessel is transiting southbound between Vancouver Island and the Mainland of British Columbia to a Canadian landing port or to the ports of Blaine, Bellingham or Anacortes in Washington State.

17.3.3. Option B At-Sea Monitoring requirements

All Option B groundfish trawl vessel are subject to a mandatory one hundred (100) percent at-sea monitoring program for all fishing activities. Vessels masters may opt to utilize either an onboard at-sea observer or use an electronic monitoring system (EM). It is the responsibility of the vessel master to ensure arrangements for at-sea monitoring services are in place prior to commencement of any fishing operations.

In those situations the vessel master when utilizing an EM system instead of a designated groundfish at-sea observer the vessel master shall ensure the vessel is equipped with an EM system that meets the requirements set out in the conditions of groundfish trawl licence for that vessel.

Where an EM system is in use on a vessel, the vessel master shall ensure all components of the EM system are fully operational and in use during the entire fishing trip from the time the vessel leaves port until the vessel arrives at port to commence the validation of their catch. The EM system shall be continuously powered and not turned off at any time.

If at any time during a fishing trip the EM system fails to function as required by licence conditions the vessel is deemed to have failed to comply with these exemption guidelines and may be directed to carry an at-sea observer at the discretion of a fishery officer.

17.4. Conversion Factors

To facilitate the conversion of product weight to round weight for the purposes of monitoring catches against TAC and IVQ holdings, the Department shall use set conversion factors and ice/slime and glaze allowances.

The factors and allowances that shall be used at the commencement of the 2019/2020 fishery are set out in the conditions of each groundfish trawl licence. As changes may be made in-season, the conditions of the groundfish trawl licence should be referenced to determine what factors and allowances are in effect at any time.

Individual vessels may request in writing to use different conversion factors and/or ice/glaze allowances, which are more applicable to their operation. Testing will be conducted to verify the applicability of different conversion factors/ice/glaze allowance. To facilitate this request verification of these different factors will be conducted at the owner's expense that includes product samples and approved contract personal. Where at-sea testing is required, such testing by DFO approved protocols by approved contract personnel. Test results may result in DFO amending licence conditions/dockside monitoring protocols to reflect agreed upon new factors. Further testing may be required in-season to verify the continued appropriateness of the amended factors.

18. HALIBUT BY-CATCH MANAGEMENT PLAN

18.1. Halibut Prohibition

Halibut caught while fishing under the authority of a groundfish trawl licence cannot be retained and must be returned to the water as quickly as possible.

18.2. Halibut Mortality Fleet Cap

For the 2019/2020 fishing year, the halibut by-catch mortality cap for the trawl fleet is set at 1,000,000 pounds (~454 tonnes). All estimated halibut by-catch mortality will be deducted from a vessel's individual cap.

18.3. Halibut Species Mortality Cap

No groundfish trawl licence can hold permanently more than four (4) percent of the total halibut by-catch mortality cap for the trawl fleet. No groundfish trawl licence can hold temporarily more than eight (8) percent of the total halibut by-catch mortality cap for the trawl fleet.

18.4. Halibut By-catch Reallocation

Uncaught halibut by-catch mortality IVQ can be reallocated, subject to the halibut species mortality cap rules set out above. Halibut by-catch IVQ is not to be considered as part of the groundfish trawl vessel's groundfish IVQ holdings for holdings cap calculations/limits.

18.5. Halibut By-catch Quota Overage

Halibut catch in excess of a vessel's individual halibut by-catch cap will result in the vessel being restricted to mid-water species coast-wide for the remainder of the fishing year, or until sufficient additional halibut by-catch cap is reallocated onto the groundfish trawl licence to cover the overage. For the proper conservation and management of the resource, halibut overages in the current year will be deducted from the groundfish trawl licence's halibut by-catch mortality cap allocation in the following year.

18.6. Halibut By-catch Underage

A groundfish trawl licensed vessel may carry forward up to fifteen (15) percent of their halibut by-catch mortality holdings that are uncaught into the following fishing season.

19. HABITAT CONSERVATION MEASURES: CORALS AND SPONGES

The Canadian Groundfish Research and Conservation Society, on behalf of the British Columbia groundfish trawl industry, and the Pacific Marine Conservation Caucus agreed in 2012 to innovative restrictive management measures to provide additional protection of Coral and Sponge Habitat off the west coast of Canada. The objectives of this agreement are:

- To reduce and manage the catch of corals and sponges by the British Columbia groundfish bottom trawl fishery with a management objective of an annual coral and sponge fleet-wide catch at the 2009 level or lower (coral 562 kg, sponge 322 kg);
- To reduce the impact of the British Columbia groundfish bottom trawl fishery on low energy and low productivity environments in deep waters off of the west coast of British Columbia;
- To ensure that the British Columbia groundfish bottom trawl fishery does not disproportionately affect any one particular benthic habitat type;
- To ensure that the British Columbia groundfish bottom trawl fishery is restricted to areas previously trawled between 1996-2011;
- To improve the performance of the British Columbia groundfish bottom trawl fishery against habitat criteria used to evaluate the sustainability of fisheries.

To achieve these objectives the following management measures were agreed to:

- Freeze the footprint of where groundfish bottom trawl activities can occur (see section 19.10).
- Establishing a combined habitat bycatch conservation limit (HBCL) for coral and sponges.
- Allocating the HBCL among groundfish trawl licence holders and allow for transferability within specified vessel caps amongst the groundfish trawl fleet,

- The establishment of an encounter protocol for trawl tows where combined coral and sponge catch exceeds 20 kg in a single tow.

The Groundfish Trawl Advisory Committee (GTAC) at its January 11, 2012 meeting approved of these measures and recommended that the Department implement them into the groundfish Integrated Fisheries Management Plan. The specific management measures adopted are below:

19.1. Coral and Sponge Retention Rules

Corals and Sponges are not permitted to be retained unless authorized by Fisheries and Oceans Canada.

19.2. Fleet-wide Habitat Bycatch Conservation Limit

For the 2019/2020 fishing year, the coastwide HBCL for the trawl fleet is set at 9,921 pounds (4500 kilograms). All estimated sponge and coral bycatch mortality will be assessed against a vessel's individual HBCL. The mortality rate applied to all coral and sponge catch is 100 %.

19.3. Corals and Sponges Subject to Management Measures

Species Taxonomic groupings of corals and sponges used by the observer program, and included in the Habitat Bycatch Conservation Limit:

| Coral | Coral | Sponge |
|---------------------|--------------------|---------------|
| Hexacorallia | Primnoa | Calcareous |
| Stony | Stylatula elongate | Glass |
| Alcyonaria | Sea pens | Bath |
| Gorgonian | Sea whips | |
| Paragorgia arborea | Virgularia | |
| Paragorgia pacifica | | |

19.4. Habitat Bycatch Conservation Limit Mortality Cap

No Category "T" license will be authorized a permanent allocation that exceeds 4% and a combined permanent and temporary allocation that exceeds 30% of the coastwide HBCL for either coral or sponge. The initial annual temporary cap will be set at 6% of the coastwide HBCL. Changes to the initial temporary cap will be made by DFO after receiving advice through the Groundfish Trawl Advisory Committee.

19.5. Habitat Bycatch Conservation Limit Reallocation

Uncaught HBCL IVQ can be reallocated, subject to the cap rules set out above. HBCL IVQ is not to be considered as part of the groundfish trawl vessel's groundfish IVQ holdings for holdings cap calculations/limits.

19.6. Habitat Bycatch Conservation Limit Quota Overage

The individual HBCL will hold each vessel accountable and responsible for all capture of coral and sponge. HBCL catch in excess of a vessel's individual HBCL will result in the vessel being restricted from groundfish bottom trawling coast-wide for the remainder of the fishing year, or until sufficient additional HBCL is reallocated onto the groundfish trawl licence to cover the overage.

19.7. Habitat Bycatch Conservation Limit Underage

Category “T” licenses vessels are permitted to carry forward annually a maximum amount of uncaught individual HBCL equal to 10% of the total HBCL issued to the license. The equivalent weight will be added to the vessel’s HBCL allocation in the following year.

19.8. Habitat Conservation Review Committee

The BC groundfish trawl industry, MCC and Fisheries and Oceans Canada staff agree to work collaboratively in the monitoring and evaluation of the habitat conservation measures. A joint Habitat Conservation Review Committee (HCRC) will be established to review and assess annually and over time:

1. Compliance with the established groundfish bottom trawl boundaries and agreement to avoid non-trawled areas within the footprint;
2. The area covered and the level of effort by the Option A groundfish bottom trawl fishery, by depth strata, eco-region, and substrate type;
3. Total catch of coral and sponge, number of transfers of individual HBCL, amount of coral and sponge individual HBCL carryover of underage or overage;
4. Coral and sponge hotspots, including but not limited to those identified through the encounter protocol;
5. At-sea and dockside coral and sponge reporting procedures and requirements;
6. The effectiveness of the individual HBCLs at providing incentives for minimizing capture of coral and sponge and consideration in the development of further habitat management measures.

Advice on changes from the HCRC will be brought to the Groundfish Trawl Advisory Committee for discussion.

19.9. Encounter Protocol

Observer data collected from the British Columbia groundfish trawl fishery between the years of 2005-2009 indicate that the vast majority of coral/sponge bycatch events result in less than 20 kilograms caught in one tow. A catch of more than 20 kilograms in one tow, therefore, is a rare event and indicates a potential interaction with a substantial coral and/or sponge aggregation. Such situations require an “encounter protocol”. Essentially, an encounter protocol is a rapid-response procedure to re-direct bottom trawl fishing activity away from the area, in order to limit further damage to the recently-encountered coral/sponge aggregation. The initial protocol catch level is set at 20 kilograms of coral and sponge combined, but will be reviewed annually.

In the event that a vessel catches more than 20 kilograms of combined coral and sponge in a single tow, the following procedure will occur:

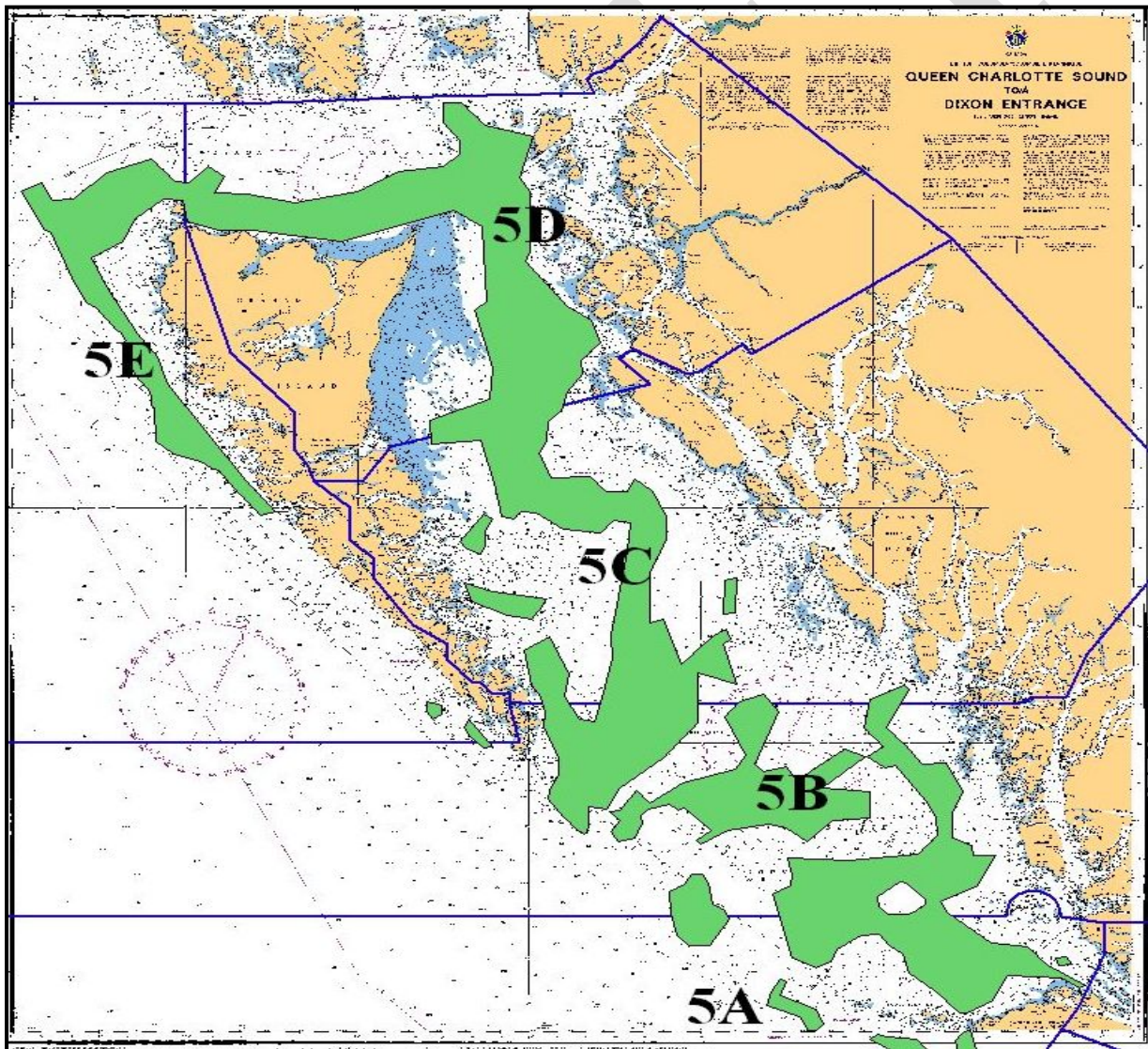
1. The at-sea observer will collect information;
2. Information about the location of the coral or sponge capture, and the amounts caught, will be communicated to the trawl industry through the Quota Status Reports that are updated on a daily basis;
3. Vessels will be encouraged to avoid the area where the bycatch of coral and sponge occurred;
4. The incident, and the response of the fleet to the encounter, will be reviewed by the Habitat Conservation Review Committee. This procedure will be followed any time a vessel catches more than 20 kilograms of combined corals or sponges in one tow,

regardless of that vessel's HBCL holdings at the time. The vessel is still responsible for covering the coral/sponge catch with individual HBCL.

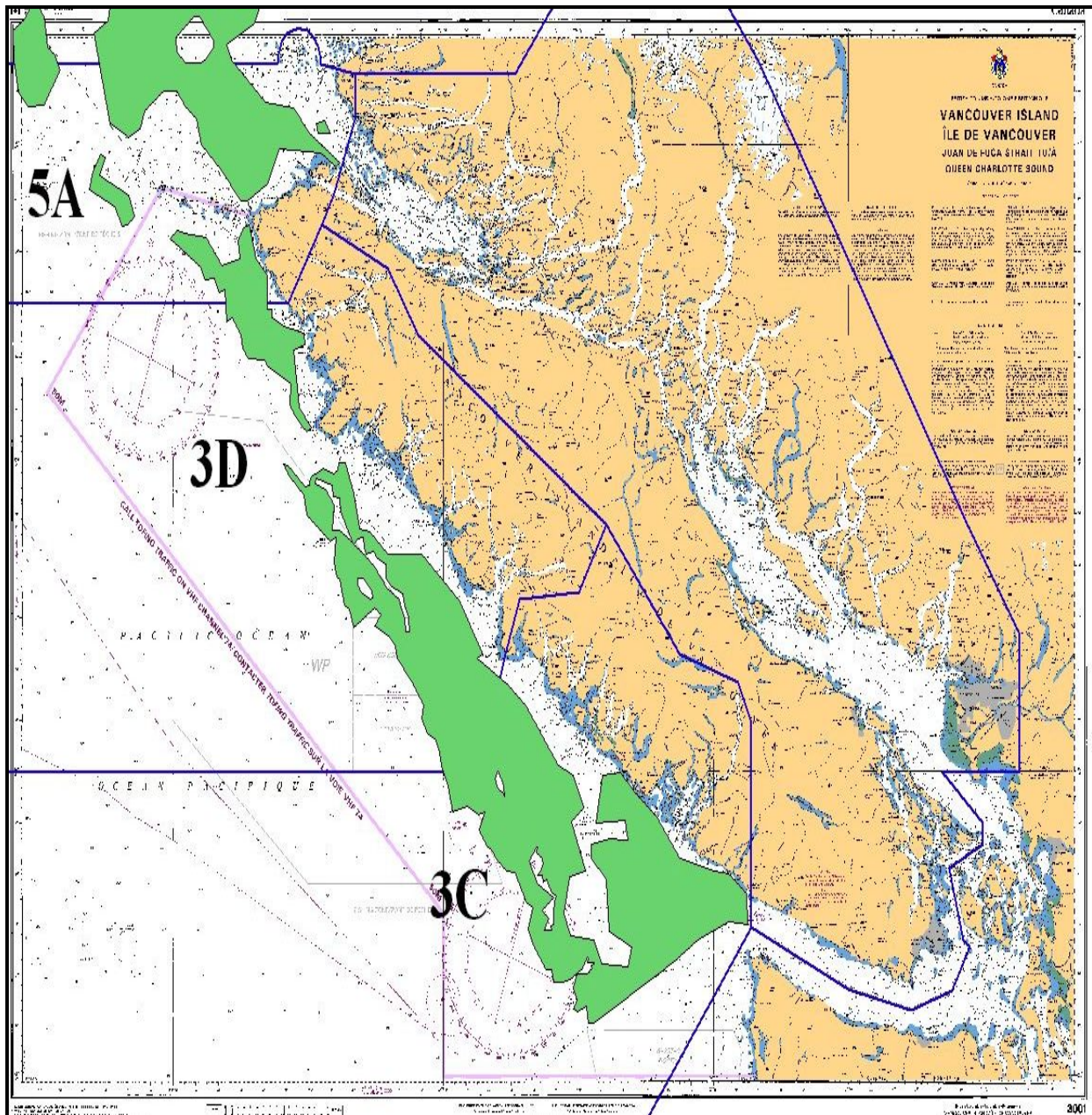
19.10. Areas Permitted to be Fished

All vessels fishing bottom trawl under the authority of a valid Category "T" commercial Groundfish trawl license selecting Option A as identified in the Groundfish Trawl Commercial Harvest Plan within the Pacific Region Integrated Fisheries Management Plan for Groundfish are permitted to fish with bottom trawl gear within the boundaries outlined in the two graphics below, notwithstanding other seasonal closures, Rockfish Conservation Closed Areas and Glass Sponge Reef Closed Areas set out within this plan. All areas found outside the outlined areas, except with Area 4B (Area 12 to 20 and 29) are closed to fishing with bottom trawl gear year round. The graphics below are for illustration purposes only. A full description of the Open and Closed areas boundaries are set out in Section 6 of this plan.

Queen Charlotte Sound, Hecate Strait and West coast of Gwaii Haanas Islands footprint.



West Coast of Vancouver Island footprint



20. FISH RELEASED AT SEA

The mortality of all species of groundfish (including Non-T IVQ) that are released at-sea shall be levied as catch against a vessel's IVQ holdings or annual TAC subject to mortality rates below.

The weight of fish released at sea will be multiplied by the mortality rate set out below to calculate released mortality.

20.1. Mortality Rates

Mortality rates for fish released at sea are as follows:

| Species | Mortality Rates |
|--|--|
| Soles | 10% mortality for the first two hours fished or portion thereof and, 10% for each additional hour ¹ . |
| Lingcod | 10% mortality for the first two hours fished or portion thereof and, 10% for each additional hour ¹ . |
| Sablefish | 10% mortality for the first two hours fished or portion thereof and, 10% for each additional hour ¹ . |
| Pacific Cod And Pollock | 25% mortality for the first two hours fished or portion thereof and, 25% for each additional hour ¹ . |
| Spiny Dogfish | 5% mortality for the first two hours fished or portion thereof and, 5% for each additional hour. |
| Big and Longnose Skate | 5% mortality for the first two hours fished or portion thereof and, 5% for each additional hour. |
| All Rockfish | 100% mortality regardless of time fished. |
| Longspine/ Shortspine Thornyhead | 100% mortality regardless of time fished. |
| Arrowtooth Flounder | 100% mortality regardless of time fished |
| Pacific Hake | 100% mortality regardless of time fished |
| ¹ Fishing time is defined as the period following shooting of the gear during which the trawl winches are locked. For that portion of a tow time less than 60 minutes, mortality rate shall be determined by multiplying the number of full hours of the tow by the mortality rate and adding to that the ratio of the portion of an hour by the applicable mortality rate to determine the overall mortality of the species for that tow. For a 2 hour and 20 minute tow the formula used to determine sablefish mortality is: $((2\text{hrs} \times 10\%)* \text{est. release weight}) + (((20\text{min}/60\text{min}) \times 10\%)* \text{released weight})$ | |

The above mortality rates do not necessarily reflect true mortality rates of fish released at-sea, but are intended to provide incentives for vessel operators to reduce towing time and avoid by-catch wherever possible.

All fish landed shall be levied as catch against the appropriate area and species-specific IVQ or by-catch cap.

For halibut, a DFO certified at-sea observer shall assess the condition of each fish before it is returned to the water in order to apply the appropriate mortality factor. Halibut mortality condition factors used by the at-sea observer for the Canadian trawl fishery were developed by the International Pacific Halibut Commission.

21. SPECIES AT RISK SHARK ENCOUNTER PROTOCOL

Since the 2012/2013 season, the Groundfish trawl industry in support of Fisheries and Oceans Canada's increased conservation efforts for some Elasmobranchs, and in particular those listed as SARA species, supports a prohibition on the selling and retention of Pacific Basking Shark, Tope (Soupfin) Shark or Bluntnose Sixgill Shark in the British Columbia groundfish trawl fishery.

Additionally, cognizant of the international efforts taken to protect shark species, the groundfish trawl industry agreed to eliminate all directed fishing for shark species, other than Pacific Spiny Dogfish, as of the 2012/2013 season.

It is important to recognize that most current encounters of these and other shark species are not targeted, the industry in conjunction with the Department has initiated discussions to develop practical measures and protocols that may minimize encounters and mortality.

These measures include:

- modification of fishing plans to remove all directed fishing for sharks, other than Spiny Dogfish.
- modifications of fishing practices by taking into account advice and experience of other harvesters regarding areas of higher shark abundance and densities
- investigation of trawl gear modifications, such as mesh sizes, excluder grids or acoustic deterrent devices, which may lead to reduce interactions of sharks and trawl fishing gear.
- developing fishing plans that take in to account avoidance of known important habitats for sharks (such as pupping and nursery habitats) and migratory routes.

Specifically for Pacific Basking shark, pursuant to subsection 73(2) (c) and section 74 of the Species at Risk Act (SARA), the vessel master, prior to and while conducting fishing activities, shall ensure that:

- every measure will be taken to avoid the incidental capture of the Pacific Basking Shark.
- fishing gear is not set or hauled when Pacific Basking Sharks are within 10 metres of the fishing vessel, and/or are visible at the water's surface.
- any Pacific Basking Shark, Tope (Soupfin) Shark or Bluntnose Sixgill Shark incidentally caught and alive, is released in a manner that causes them the least harm, subject to completion of DFO Bio-sampling protocols.

Bio-sampling protocol

When capture of any of Pacific Basking Shark, Tope (Soupfin) Shark or Bluntnose Sixgill Shark occurs the vessel master, prior to the fish's release (alive if possible), shall ensure that the bio-sampling requirements as set out by DFO are conducted as quickly as possible by the onboard at-sea observer or a member of the vessel's crew.

The fishing master shall ensure that any bio-samples gathered are retained and stored to DFO requirements and such samples are provided in a secure manner to DFO upon termination of the trip.

22. HAKE FISHERY

The offshore Pacific hake fishery will be managed under the general IVQ program in place for the groundfish trawl fishery. On Nov. 21, 2003, an Agreement between the Government of the Canada and the Government of United States on Pacific Hake/Whiting was signed.

The agreement establishes agreed percentage shares of the transboundary stock of Pacific hake, also known as Pacific whiting. It also creates a process through which scientists and fisheries managers from both countries will recommend the total catch of Pacific hake each year. The agreement anticipates that stakeholders from both countries will have significant input into this process.

The agreement, implemented for the first time in 2012, created four bodies to assist the governments of Canada and the United States to assess and sustainably manage the shared resource:

- The Joint Management Committee (JMC) is charged with determining the Total Allowable Catch of hake/whiting every year.
- The industry Advisory Panel (AP) is charged with reviewing the management of the fishery and making recommendations to the JMC regarding the overall Total Allowable Catch.
- The Joint Technical Committee (JTC) is charged with annually providing the JMC with a stock assessment that includes scientific advice on the annual potential yield of the offshore hake/whiting resource that may be caught for that fishing year.
- The Scientific Review Group (SRG) is charged with providing an independent peer review of the work of the JTC.

Additional details on the Canada/US Treaty process can be found at:

<http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/Whiting-Management/Treaty.cfm>

The 2019/2020 offshore hake TAC and further details of the in-season management measures will be set out in an addendum to this harvest plan once the above process has been completed and approved by DFO. Industry consultations on the addendum will be initiated in February 2019.

23. EXAMPLE OF GROUND FISH TRAWL FISHING LOGBOOK

| | | | | | | | |
|--|--|--|-----------------------------------|------------------|--------------------------------|---------------------------|--|
| Fisheries and Oceans / Pêches et Océans Canada | | GROUND FISH TRAWL FISHING INFORMATION LOG | | | | Page 2 of 2 | |
| Vessel Name SEA WATER | | VRN# 29999 | Licence # T0155 | Trip # 55 | Hull Out# 21810476 | | |
| Captain JOHN DOE | | CAPT. FIN # 1234567 | Port of Landing UCL | | Hull In# 21824596 | | |
| At Sea Observer DON TRIP | | Code 18637 | Offload Location BORNSTEIN | | Departure Date 20/05/04 | | |
| | | | Buyer/Processor SEA DRIFT | | Landing Date 30/05/04 | | |

| | | | | | | | | | | | | | | | |
|--------------------|----------|------------------------------------|--|---------------------------|--|------------------------------------|--|---------------------------|--|------------------|--|--|--|--|--|
| Tow # | BT or MT | 003 | | B T 004 | | | | | | | | | | | |
| Date | | 26 / 05 / 04 | | 26 / 05 / 04 | | | | | | | | | | | |
| Name of Grounds | | C. SCOTT SPITT | | | | C. SCOTT SPITT | | | | | | | | | |
| Fishing Area | | 127-04 | | major area 3D | | 127-04 | | major area 3D | | | | | | | |
| Time (24hr clock) | set | 0745 | | haul 0950 | | set | | 1045 | | haul 1200 | | | | | |
| Set: Latitude | | set 504351 | | | | set 504351 | | | | | | | | | |
| Longitude | | lon 283850 | | | | lon 283850 | | | | | | | | | |
| Mid: Latitude | | mid 504210 | | | | mid 504210 | | | | | | | | | |
| Longitude | | lon 282820 | | | | lon 282723 | | | | | | | | | |
| Haul: Latitude | | haul 504291 | | | | haul 504291 | | | | | | | | | |
| Longitude | | lon 282723 | | | | lon 282723 | | | | | | | | | |
| Fishing Depth | start | end 41 | | mid 36 | | start | | end 41 | | mid 36 | | | | | |
| Meters | Fathoms | and 36 | | fish capture 36 | | and 36 | | fish capture 36 | | | | | | | |
| Tow Speed - Codend | | 34 KN | | codend mesh 100 mm | | 34 KN | | codend mesh 100 mm | | | | | | | |
| Gear Depth | | 40 / 40 / 250 | | | | 40 / 40 / 250 | | | | | | | | | |
| Spread | | 45 / 24 / 8 | | | | 37 / 19 / 6 | | | | | | | | | |

| TS - Target Species | TS | retained (lb) | released (lb) | TS | retained (lb) | released (lb) | TS | retained (lb) | released (lb) | TS | retained (lb) | released (lb) |
|-------------------------|----------|---------------|---------------|---------------|---------------|---------------|----|---------------|---------------|---------------|---------------|---------------|
| 418 Yellowtail RF | | | | | | | | | | | | |
| 417 Widow RF | | | | | | | | | | | | |
| 437 Canary RF | | | | | | | | | | | | |
| 405 Silvergrey RF | | | | | | | | | | | | |
| 396 Pacific Ocean Perch | | | | | | | | | | | | |
| 440 Yellowmouth RF | | | | | | | | | | | | |
| 394 Rougheye RF | | | | | | | | | | | | |
| 403 Shortraker RF | | | | | | | | | | | | |
| 439 Redstripe RF | | | | | | | | | | | | |
| 401 Redbanded RF | | | | | | | | | | | | |
| 425 Bocaccio | | | | | | | | | | | | |
| 451 Shortspine TH | 3 | | 0 | 3 | 110 | | | | | | | |
| 453 Longspine TH | | | | | | | | | | | | |
| 626 Dover Sole | 1 | 14000 | 100 | 1 | 20000 | 100 | | | | | | |
| 621 Rock Sole | | | | | | | | | | | | |
| 628 Lemon Sole | | | | | | | | | | | | |
| 607 Petrale Sole | | | | | | | | | | | | |
| 610 Rex Sole | | | | | | | | | | | | |
| 631 Starry Flounder | | | | | | | | | | | | |
| 602 Turbot | 2 | 100 | | 2 | 500 | | | | | | | |
| 222 Pacific Cod | | | | | | | | | | | | |
| 467 Lingcod | | | | | | | | | | | | |
| 044 Dogfish | | | | | | | | | | | | |
| 455 Sablefish | | | | | | | | | | | | |
| 228 Pollock | | | | | | | | | | | | |
| 225 Hake | | | | | | | | | | | | |
| 056 Big Skate | | 200 | | | 100 | | | | | | | |
| 059 Longnose Skate | | | | | | | | | | | | |
| 540 Cabezon | | | | | | | | | | | | |
| 472 Sculpin | | | | | | | | | | | | |
| 614 Halibut | | x x x x x x x | 130 | x x x x x x x | 130 | x x x x x x x | | | | x x x x x x x | | |

| | | |
|---------------|----------------------------|---------------------------|
| Tow Comments: | WEATHER GETTING BAD | CUT TRIP SHORT BAD |
| | GOING TO MAKE ONE | WEATHER! |
| | MORE TOW. | |

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Appendix 9: Rebuilding Plans for Groundfish Species

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1. FOREWORD

Fisheries and Oceans Canada (DFO) has developed “A *Fisheries Decision-Making Framework Incorporating the Precautionary Approach*” (PA Framework) under the auspices of the Sustainable Fisheries Framework. It outlines the departmental methodology for applying the precautionary approach (PA) to Canadian fisheries. A key component of the PA Framework requires that when a stock has reached or fallen below a limit reference point (LRP), a rebuilding plan must be in place with the aim of having a high probability of the stock growing above the LRP within a reasonable timeframe.

The purpose of rebuilding plans is to identify the main objectives and requirements for any species below an LRP (i.e., in the “critical zone” of the PA Framework), as well as the management measures that will be used to achieve these objectives.

This appendix outlines rebuilding plans for groundfish species that (a) have been identified by peer reviewed stock assessments as currently in the critical zone under the PA framework and (b) are not covered by other management planning tools for depleted species, such as Species At Risk Act-listed species that require a recovery plan or management plan.

This document also serves to communicate the basic information on the stock(s) and its management to DFO staff, legislated co-management boards and other fishery interests. This plan provides a common understanding of the basic “rules” for rebuilding the stock(s). The objectives and measures outlined in this plan are applicable as long as the stock(s) is below the LRP. Once the stock grows and remains consistently above the LRP, the stock(s) will be managed through the provisions of the Groundfish IFMP.

Management measures outlined in this rebuilding plan are mandatory, and may be modified to include additional catch restrictions if they fail to result in stock rebuilding.

This rebuilding plan is not a legally binding instrument which can form the basis of a legal challenge. The plan can be modified at any time and does not fetter the Minister's discretionary powers set out in the *Fisheries Act*. The Minister can, for reasons of conservation or for any other valid reasons, modify any provision of the rebuilding plan in accordance with the powers granted pursuant to the *Fisheries Act*.

Where DFO is responsible for implementing a rebuilding plan in an area under a land claim agreement, the rebuilding plan will be implemented in a manner consistent with that agreement.

2. INTRODUCTION

The groundfish species currently subject to rebuilding plan provisions are: Bocaccio and Yelloweye rockfish (outside and inside populations).

3. OVERVIEW OF THE FISHERY

These species are known to be caught in the fisheries listed below, which occur coastwide, though they may also be caught in other fisheries.

- Commercial fisheries: Bocaccio are primarily caught incidentally in several fisheries: groundfish trawl, groundfish hook and line and trap, and salmon troll. Yelloweye are primarily caught in the groundfish hook and line fisheries as incidental and targeted catch, and are also caught incidentally in the groundfish trawl and salmon troll fisheries.
- Recreational fisheries: Bocaccio are primarily caught incidentally by recreational anglers when fishing for rockfish, Lingcod, and salmon. Some anglers will target Yelloweye and others will catch them incidentally when fishing for Lingcod or salmon.
- Food, Social, and Ceremonial and domestic (treaty) fisheries: catch reports include records of Bocaccio, Yelloweye. Yelloweye is much more commonly reported as catch than Bocaccio.

Catch information for these species in the commercial salmon troll fishery, recreational fisheries, and Food, Social, and Ceremonial fisheries is limited.

4. BIOLOGICAL SYNOPSIS AND STOCK STATUS

4.1. Bocaccio

Bocaccio rockfish are long lived and slow growing; generation time is treated as 20 years in the most recent stock assessment. Currently, Bocaccio are treated as a single coastwide stock. They are found over various bottom types, most commonly off bottom in depths of 60-340 m.

DFO Science published a stock assessment for Bocaccio in 2009 which was updated in 2012. The 2012 assessment reported a median estimate of B_{2012}/K (the ratio of 2012 stock size to the unfished stock size) of 3.5%. The median estimate of B_{2012}/B_{msy} (the ratio of 2012 stock size to that at maximum sustainable yield) was reported as 7.0%.

The assessment estimated that the stock had a 99% probability of being in the PA critical zone, whereby $B_{2012} < 0.4 * B_{msy}$, and indicated that there was at least a 90% likelihood that the population has continued to decline since 2002, despite total catches during that period being among the lowest in the history of the fishery.

The species was recommended as “threatened” by the Committee On The Status Of Endangered Wildlife In Canada (COSEWIC) in 2006. Following consultation and review, the Government of Canada decided not to add Bocaccio to the list of wildlife species at risk. COSEWIC reassessed Bocaccio in November 2013 and recommended it as “endangered”: http://www.cosewic.gc.ca/rpts/detailed_species_assessments_e.html.

Detailed descriptions of available information on Bocaccio biology and distribution, habitat requirements, and stock scenarios, are included in the “Updated stock assessment for Bocaccio (*Sebastes paucispinis*) in British Columbia waters for 2012” report and the 2009 “Recovery

Potential Assessment of Bocaccio in British Columbia Waters”, which can both be found online on the DFO WAVES catalogue at: <http://waves-vagues.dfo-mpo.gc.ca/waves-vagues/>.

Yelloweye Rockfish

Yelloweye rockfish are long lived, slow growing; average female age at maturity is estimated as 15 years in the 2015 stock assessment of the outside population¹. Adults of the species are generally sedentary and show some site fidelity. Management of Yelloweye Rockfish in commercial groundfish fisheries is broken down into several management areas; management measures in the recreational fishery also vary between the south coast and central and north coast. Yelloweye are generally found over rocky bottom types, with juveniles tending to occupy shallower habitats than adults.

Inside Population

DFO Science published a stock assessment for the inside population (groundfish management area 4B) of Yelloweye in 2011. The assessment reported a median estimate of B_{2009}/B_0 (the ratio of 2009 stock size to the unfished stock size) of 12%. The median estimate of B_{2009}/B_{msy} (the ratio of 2009 stock size to that at maximum sustainable yield) was reported as 22%.

The assessment estimated that the stock had a 95% probability of being in the PA critical zone, whereby $B_{2009} < 0.4 * B_{msy}$.

Outside population

DFO Science published a stock assessment for the outside population (groundfish management areas 3 and 5) of Yelloweye in 2015. The assessment reported a median estimate of B_{2014}/B_0 (the ratio of 2014 stock size to the unfished stock size) of 18%. The median estimate of B_{2014}/B_{msy} (the ratio of 2014 stock size to that at maximum sustainable yield) was reported as 36%.

The assessment estimated that the stock had a 63% probability of being in the PA critical zone, whereby $B_{2014} < 0.4 * B_{msy}$. It also estimated that the 2014 biomass is 60% of the biomass in 2002, when the first of numerous catch reduction measures were introduced under the Rockfish Conservation Strategy.

The outside and inside populations of this species were recommended as “Special Concern” by the Committee On The Status Of Endangered Wildlife In Canada (COSEWIC) in 2008 and listed under the Species at Risk Act as “Special Concern” in 2011.

Detailed descriptions of available information on Yelloweye biology and distribution, habitat requirements, and stock scenarios, are included in “Stock Assessment for the Inside Population of Yelloweye Rockfish (*Sebastes Ruberrimus*) for British Columbia, Canada in 2010” and “Stock Assessment for the Outside Population of Yelloweye Rockfish (*Sebastes Ruberrimus*) for British Columbia, Canada in 2014.”

¹ The outside population of Yelloweye rockfish corresponds with Groundfish Management Areas 3 and 5.

5. SOCIO-ECONOMIC AND CULTURAL IMPORTANCE

As described above, Bocaccio and Yelloweye are components of the catch in multiple fisheries. The “social, cultural, and economic importance” sections of the corresponding IFMPs such as groundfish and salmon describe the importance of these fisheries.

6. MANAGEMENT ISSUES

Harvests in the commercial groundfish fisheries are assumed to be the major current source of human-induced mortality for both species. The largest proportion of the estimated catch of Bocaccio occurs in the groundfish trawl fishery. Smaller amounts of estimated Bocaccio catch (groundfish hook and line, salmon troll, recreational, FSC) contribute some additional mortality.

Commercial catch of Yelloweye is largest in the Pacific Halibut and Rockfish Outside fisheries. Catches of Bocaccio in US waters from California to Washington may also have some impact on the BC population, but there is currently no means of assessing this impact. The recreational catch of Yelloweye also comprises a significant proportion of the total fishing mortality.

Limited information on Bocaccio biology has meant that little is known regarding the role of any habitat limitations or predator-prey interactions in Bocaccio rebuilding. Increased seal predation, biogenic habitat loss (e.g., corals and sponges), and decreased dissolved oxygen levels have all been identified as potential threats.

Yelloweye are preyed upon by whales, Harbour Seals, and sea lions; juveniles are also subject to predation by Chinook Salmon, rockfishes, Lingcod and marine birds. The extent to which predation or other factors pose threats to Yelloweye rebuilding is not well understood.

7. OBJECTIVES

To support the development and achievement of objectives, DFO set out four key considerations in discussions with fishing interests that guided the rebuilding approach for Bocaccio and Yelloweye:

1. *Conservation* – Identified in the PA Framework as the primary consideration for stocks in the critical zone.
2. *Shared responsibility* – Address all relevant sectors in the development of rebuilding efforts.
3. *Long term planning* – Given current stock status, life history, and catch reductions already implemented, sustainable long measures are key.
4. *Adaptive management* – regular reviews of performance against objectives and targets with implementation of additional management measures to meet them if required. Objectives and targets (e.g., the mortality caps described below) may also be adjusted if required.

The primary objective of any rebuilding plan, outlined in the PA Framework, is to:

Promote stock growth out of the critical zone ($B > 0.4 B_{msy}$) by ensuring removals from all fishing sources are kept to the lowest possible level until the stock has cleared this zone. There will be no tolerance for preventable decline. This objective remains the same whether the stock is declining, stable, or increasing.

DFO's "Guidance for the Development of Rebuilding Plans under the Precautionary Approach Framework" specifies that a timeline and an acceptable probability for achieving the objective should be defined, and that a broader ecosystem context for rebuilding should be considered.

Bocaccio

- 7.1. For Bocaccio, its severely depleted current status, slow growth, and long generation times all contribute to high levels of uncertainty associated with long term predictions of stock trajectory, and consequently, moderate probabilities of rebuilding the stock out of the critical zone in the near future. Taking this into account, the DFO Groundfish Management Unit has refined the primary objective described above to specify that the aim is to also:

Achieve rebuilding throughout the species' range and grow out of the critical zone within three generations, with a 65% probability of success.

To support and monitor progress towards the objective, milestones have also been established:

Achieve a positive stock trajectory trend in each 5 year interval, such that the biomass at the end of each 5 year period is greater than the biomass at the beginning of the same 5 year period. Between major assessments, progress towards this goal will be monitored by annually reviewing fishery dependent and fishery independent indices of stock trajectory.

7.2.

Yelloweye rockfish - inside population

The estimated stock size of the inside population of Yelloweye Rockfish is a smaller proportion of unfished biomass than the outside population, and as a result the inside population has experienced more significant fishing effort reductions in the early 2000s.

The primary objective described above to specify that the aim for Yelloweye is to:

Achieve rebuilding throughout the inside stock's range and grow out of the critical zone within 80 years, with a 56% probability of success.

To support and monitor progress towards the objective, a milestone has also been established:

Achieve a positive inside stock trajectory trend in each 10 year interval, such that the biomass at the end of each 10 year period is greater than the biomass at the beginning of the same 10 year period.

Yelloweye rockfish - outside population

The status of the outside population of Yelloweye is slightly better relative to unfished biomass than it is for Bocaccio. However Yelloweye are also slow growing, low productivity, and have long generation times. Taking this into account, the DFO Groundfish Management Unit has refined the primary objective described above to specify that the aim for Yelloweye is to also:

Achieve rebuilding throughout the outside stock's range and grow out of the critical zone within 15 years, with a 57% probability of success.

To support and monitor progress towards the objective, milestones have also been established:

Achieve a positive outside stock trajectory trend in each 10 year interval, such that the biomass at the end of each 10 year period is greater than the biomass at the beginning of the same 10 year period;

Achieve catch reduction targets within three years.

It is important to acknowledge that in some sectors, the effects of management measures and the ability to estimate catch will be imprecise for Bocaccio and Yelloweye.

Once either stock has grown out of the critical zone, the standard IFMP process will be used to support the longer term objective, which is to:

Continue stock growth into the healthy zone.

8. MANAGEMENT MEASURES

8.1.

Bocaccio

Based on updated science information, the Department has set out a near term plan for stepped reductions of total Bocaccio harvest from the estimated total catch mortality of 137 metric tonnes (MT) in 2012 to a mortality cap of 75 MT over 3 years (2013-14 to 2015-16). The mortality cap has been broken out to identify sector-specific mortality caps (see below). This plan accounts for Indigenous fishing opportunities.

| Mortality cap | Sector-specific mortality caps (tonnes) | | | | |
|---------------|---|-----------------------------|-------------------------------------|-------------------------|------------|
| | Mortality cap after FSC | Commercial groundfish trawl | Commercial groundfish hook and line | Commercial salmon troll | Recreation |
| 75 | 74 | 61.9 | 4.7 | 3.6 | 3.5 |

Taking into consideration advice provided by fishing interests, the Department introduced new management measures and other strategies to help achieve the catch reductions described above.

The Department is working collaboratively with all fishing interests to achieve for Bocaccio conservation and rebuilding. For the salmon troll, recreational, and FSC fisheries, the current emphasis is on increasing awareness, given the limited data available on catch. Current work with these fisheries is focused on:

- Improving Bocaccio identification among fishers, technicians, guides, lodges, creel surveyors, and other catch monitors;
- Improving fishery monitoring and catch reporting for Bocaccio;
- Promoting the avoidance of Bocaccio;
- Identifying and implementing the tools required to conserve Bocaccio.

Commercial groundfish fisheries are already subject to 100% at sea and dockside monitoring, which helps ensure accurate recording of all catch. Additional management measures were introduced in 2013/14 for several commercial fisheries to further support Bocaccio rebuilding. A summary of these additional measures are listed below. Please refer to licence conditions and harvest plans in the appendices of this IFMP for more details:

- Groundfish trawl: the establishment of a TAC mortality cap, individual transferable quotas for each licence holder, and licence holdings caps; continuation of the voluntary program initiated by industry whereby groundfish trawl vessel masters donate all proceeds of all landed Bocaccio for use in groundfish research programs.
- Groundfish hook and line: the establishment of reduced Bocaccio trip limits.
- Salmon troll: the establishment of Bocaccio daily limits.

Following a 2014 review of the commercial groundfish fisheries' progress in reducing catch to meet the mortality caps, the measures for commercial groundfish fisheries were modified for the 2015/16 fishing season:

- the trip limit for Bocaccio in groundfish hook and line and trap fisheries was lowered from 200 lbs for the first 15,000 lbs of landed catch of the directed species to 100 lbs for the first 10,000 lbs of landed catch of the directed species²;
- the TAC mortality cap in the trawl fishery was reduced from 150 MT to 110 MT.

For the 2016/17 fishing season, the TAC mortality cap in the trawl fishery was further reduced from 110 MT to 80 MT.

Consistent with the stock assessment prioritization schedule in place for groundfish species, 8.2. DFO will produce updated, peer reviewed Bocaccio stock assessments.

Yelloweye rockfish – inside population

Based on available science information, the Department established management measures in 2012 intended to restrict total mortality to 15 tonnes, an amount that is believed to promote stock rebuilding consistent with the stated objective.

² The balance of the trip limit is adjusted accordingly: 100 lbs plus 1% of the amount of directed species landed in excess of 10,000 pounds, to a maximum of 600 pounds of Bocaccio.

Commercial groundfish fisheries are limited to the rockfish and Dogfish fisheries and are managed with ITQs, and the Halibut fishery is managed with effort controls. Rockfish and Dogfish harvesters fishing in groundfish management area 4B are required to account for Yelloweye Rockfish catch within the 6 tonne ITQ allocation. Halibut harvesters are restricted to a 200 pound (0.09 tonne) annual limit that is accessed via modified conditions of licence. No more than 1 tonne may be harvested within the commercial Halibut fishery which primarily occurs in PFMA 12. For additional details about Yelloweye Rockfish retention in the Halibut fishery, please see section 6.1 of Appendix 6.

Daily and possession recreational fishery limits for rockfish in PFMA 13 to 19 and Subareas 12-1 to 12-13, 12-15 to 12-48, 20-5 to 20-7 and 29-5 are one rockfish, including Yelloweye Rockfish. The fishery is open May 1 to September 30. Area 28 and Subareas 29-1 to 29-4 and 29-6 to 29-17 are closed year round. Management measures are reviewed annually and current annual mortality is estimated at 4 tonnes. Food, Social, and Ceremonial mortality, which has not been restricted as part of the rebuilding plan, is estimated at 3 tonnes.

Yelloweye rockfish – outside population

8.3.

Based on updated science information, the Department has set out a near term plan for stepped reductions of total Yelloweye outside population harvest from the estimated total catch mortality of 287 MT in 2014 to a mortality cap of 100 MT over 3 years (2016/17 to 2018/19). This plan accounts for survey catches and Indigenous fishing opportunities.

| | | Sector-specific mortality caps (tonnes) | | | |
|---------------|-------------------------|---|-----------------------------------|----------------------|-------------------------------|
| Mortality cap | Mortality cap after FSC | Research | Non-groundfish commercial fishery | Recreational fishery | Commercial groundfish fishery |
| 100 | 81.1 | 15.8 | 0.5 | 13.9 | 50.9 |

| Commercial Groundfish mortality caps (tonnes) | | | |
|---|-----------------|-------------|-----------|
| Commercial groundfish fishery cap | Outside ZN (ZN) | Halibut (L) | Trawl (T) |
| 50.9 | 32.7 | 16.9 | 1.3 |

Taking into consideration advice provided by stakeholders, the Department has reduced the commercial groundfish TAC by 78% since the 2015/16 season, and has made slight adjustments to the spatial apportionment of the TAC among Groundfish Management Areas. This advice considered survey trends and abundance and commercial fishery catch information.

Recreational daily limits for Yelloweye were reduced in 2016/17 from 3 to 2 in the north and from 2 to 1 in the south and improvements to reporting and avoidance of Yelloweye were promoted for the salmon troll fishery (retention of Yelloweye is already prohibited). Additional

recreational management measures are also being developed and informational materials are being developed to promote awareness of the importance of Yelloweye rebuilding.

The rebuilding plan will continue to be expanded over the coming years to set out a longer term approach.

9. COST BENEFIT ANALYSIS

Stock rebuilding efforts may be associated with socioeconomic costs. Due to the biological characteristics of Bocaccio and Yelloweye, rebuilding will be a long term initiative, and may constrain opportunities to harvest healthy species, given that Bocaccio and Yelloweye are caught as part of multi-species fisheries and when targeting other species.

The objectives and management measures developed for rebuilding Bocaccio and Yelloweye stocks have taken into consideration the socio-economic implications of planned management measures. The timeframe for recovery and the level of catch reductions have been established to balance the priority of rebuilding Bocaccio and Yelloweye while also allowing for fishing opportunities on healthy stocks that co-occur with these two stocks. The rebuilding approach has been developed with input from harvest sectors to help establish this balance with the intent that the management measures can be maintained over the long time frame likely required for a meaningful recovery.

In the long term, there will be benefits for harvesters to the rebuilding of Bocaccio and Yelloweye stocks, as healthy stocks will allow for the prosecution of relevant fisheries with fewer conservation constraints.

10. ROLES AND RESPONSIBILITIES

The Groundfish Management Unit is responsible for monitoring progress, leading performance reviews, and implementing management measures for commercial groundfish fisheries. The Groundfish Management Unit will also support recreational fishery managers in monitoring, reviewing, and implementing management for the recreational fishery. The Department's salmon troll fishery managers will be responsible for implementing and monitoring management measures for commercial salmon troll fisheries.

11. EVALUATION AND PERFORMANCE REVIEW

As outlined above in section 6, one of the key considerations DFO has identified for rebuilding these stocks is an adaptive management approach. This approach acknowledges the need to monitor progress against the milestones and objectives (described above) on an ongoing basis, and to adapt management where required to support rebuilding.

The current focus for commercial groundfish fisheries will continue to be on annual reviews of performance against the catch reduction targets. The annual review process consists of the following elements:

- Regular in-season reviews of catch to date through advisory processes, beginning in late summer each year. Survey trends will also be periodically summarized to inform decisions about whether the mortality caps themselves remain appropriate to achieve stock rebuilding.
- In the event that mortality caps are exceeded, DFO will consider additional measures or changes necessary to achieve the mortality caps for the next fishing season. Available measures that may be considered include area closures, temporal closures, individual quotas, reduced TACs, and trip or monthly limits, among others. Consultation on any additional measures will occur through the Commercial Industry Caucus and other groundfish fishery advisory boards in fall each year.
- Implementation of adjusted or new management measures. Primary tools for implementing changes will be licence conditions and / or the Groundfish IFMP, both of which are renewed for issuance on February 21 of each year.

The current estimated mortality caps are available here: <https://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/publications-eng.html>.

Limited fishery monitoring and catch reporting programs in the recreational and salmon troll fisheries constrain the Department's ability to generate catch estimates for these fisheries. Work is ongoing in the recreational fishery to develop options for more comprehensive estimates of rockfish catch.

Appendix 10: Fishery Closures for Groundfish Hook and Line Fisheries

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1. ROCKFISH CONSERVATION AREAS

On February 1, 2007 a suite of Rockfish Conservation Areas (RCAs) came into effect. Designation of the final 164 closed areas is a result of over three years of consultation with many stakeholders. Information on RCAs can be found on the Department's website at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/rca-acis/index-eng.html>.

2. STRAIT OF GEORGIA/HOWE SOUND SPONGE REEF CLOSED AREAS

As of spring 2015 DFO implemented a number of closures to all bottom contact gear in the area of the identified glass sponges reefs found with the Strait of Georgia and Howe Sound. These closures were the result of extensive consultation with First Nations, commercial and recreational industries and other stakeholders, and were initiated in 2012. Coordinates of each closure and an illustration of the locations of the nine Strait of Georgia Glass Reef complexes are below:

2.1. Howe Sound – “Defence Islands Closure”

Includes that portion of Subarea 28-4 that lies inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 34.102N | 123 17.070W |
| then southerly to | 49 33.730N | 123 16.562W |
| then to | 49 33.553N | 123 16.462W |
| then to | 49 33.438N | 123 16.750W |
| then to | 49 33.707N | 123 17.201W |
| then to | 49 33.993N | 123 17.391W |
| thence back to the beginning point. | | |

2.2. Howe Sound – “Queen Charlotte Channels Closures” (4 closed areas)

Closure #1: Includes those portions of Subareas 28-2 and 28-3 that lie inside the area bounded by a line that:

| | | |
|-------------------|------------|-------------|
| begins at | 49 21.486N | 123 17.254W |
| then southerly to | 49 20.528N | 123 17.690W |
| then to | 49 20.401N | 123 17.956W |

| | | |
|-------------------------------------|------------|-------------|
| then to | 49 20.765N | 123 18.794W |
| then to | 49 20.982N | 123 18.584W |
| then to | 49 21.098N | 123 18.037W |
| then to | 49 21.501N | 123 17.737W |
| thence back to the beginning point. | | |

Closure #2: Includes those portions of Subareas 28-2 and 28-3 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 20.288N | 123 17.693W |
| then southeasterly to | 49 20.224N | 123 17.501W |
| then to | 49 19.993N | 123 17.377W |
| then to | 49 19.802N | 123 17.444W |
| then to | 49 19.720N | 123 17.841W |
| then to | 49 19.937N | 123 18.107W |
| then to | 49 20.288N | 123 17.693W |
| thence back to the beginning point. | | |

Closure #3: Includes those portions of Subareas 28-2 and 28-3 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 19.296N | 123 19.905W |
| then southerly to | 49 19.918N | 123 19.847W |
| then to | 49 19.307N | 123 20.344W |
| then to | 49 19.643N | 123 20.421W |
| then to | 49 19.819N | 123 20.361W |
| then to | 49 19.947N | 123 20.097W |
| thence back to the beginning point. | | |

Closure #4: Includes those portions of Subareas 28-2 and 28-3 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 20.637N | 123 19.162W |
| then easterly to | 49 20.577N | 123 18.720W |
| then to | 49 20.441N | 123 18.637W |
| then to | 49 20.068N | 123 18.818W |
| then to | 49 20.076N | 123 19.135W |
| then to | 49 19.718N | 123 19.188W |
| then to | 49 19.726N | 123 19.514W |
| then to | 49 20.259N | 123 19.828W |
| thence back to the beginning point. | | |

2.3. Strait of Georgia “Foreslope Hills Closure”

Includes that portion of Subarea 29-3 that lies inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 09.634N | 123 23.048W |
| then southerly to | 49 09.389N | 123 22.622W |
| then to | 49 09.187N | 123 22.587W |
| then to | 49 09.211N | 123 23.567W |
| then to | 49 09.646N | 123 23.543W |
| thence back to the beginning point. | | |

2.4. Strait of Georgia – “Outer Gulf Islands Closure” (4 closed areas)

Closure #1: Includes those portions of Subareas 18-1 and 29-4 that lie inside the area bounded by a line that:

| | | |
|-------------------|------------|-------------|
| begins at | 48 54.936N | 123 19.589W |
| then southerly to | 48 54.283N | 123 18.529W |

| | | |
|-------------------------------------|------------|-------------|
| then to | 48 54.114N | 123 18.619W |
| then to | 48 54.065N | 123 18.771W |
| then to | 48 54.787N | 123 19.929W |
| then to | 48 54.902N | 123 19.793W |
| thence back to the beginning point. | | |

Closure #2: Includes those portions of Subareas 18-1 and 29-4 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 48 52.588N | 123 15.261W |
| then easterly to | 48 52.520N | 123 14.537W |
| then to | 48 51.971N | 123 13.768W |
| then to | 48 51.795N | 123 13.947W |
| then to | 48 52.150N | 123 14.444W |
| then to | 48 52.038N | 123 14.678W |
| then to | 48 52.479N | 123 15.521W |
| thence back to the beginning point. | | |

Closure #3: Includes those portions of Subareas 18-1 and 29-4 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|-------------|-------------|
| begins at | 48 51.602N | 123 13.233W |
| then southerly to | 48 51.309N | 123 12.751W |
| then to | 48 50.913N | 123 12.938W |
| then to | 48 50.8441N | 123 13.059W |
| then to | 48 51.1634N | 123 13.662W |
| then to | 48 51.579N | 123 13.378W |
| thence back to the beginning point. | | |

Closure #4: Includes those portions of Subareas 18-1 and 29-4 that lie inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 48 50.999N | 123 12.391W |
| then southerly to | 48 50.607N | 123 11.603W |
| then to | 48 50.097N | 123 10.956W |
| then to | 48 49.959N | 123 11.182W |
| then to | 48 50.857N | 123 12.654W |
| then to | 48 50.959N | 123 12.566W |
| thence back to the beginning point. | | |

2.5. Strait of Georgia – “Gabriola Island Closure”

Includes that portion of Subarea 17-11 that lies inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 13.672N | 123 47.577W |
| then southerly to | 49 13.235N | 123 47.429W |
| then to | 49 13.185N | 123 47.882W |
| then to | 49 13.391N | 123 48.119W |
| then to | 49 13.623N | 123 48.166W |
| thence back to the beginning point. | | |

2.6. Strait of Georgia – “Parksville Closure”

Includes those portions of Subareas 14-2 and 14-3 that lie inside the area bounded by a line that:

| | | |
|-----------------------|------------|-------------|
| begins at | 49 21.680N | 124 19.762W |
| then southeasterly to | 49 21.514N | 124 18.893W |
| then to | 49 21.191N | 124 17.723W |
| then to | 49 21.064N | 124 17.724W |

| | | |
|-------------------------------------|------------|-------------|
| then to | 49 20.725N | 124 18.380W |
| then to | 49 21.432N | 124 19.811W |
| thence back to the beginning point. | | |

2.7. Strait of Georgia – “East of Hornby Islands Closure”

Includes that portion of Subarea 14-6 that lies inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 33.490N | 124 29.229W |
| then southerly to | 49 32.701N | 124 28.760W |
| then to | 49 31.657N | 124 29.434W |
| then to | 49 31.663N | 124 29.896W |
| then to | 49 32.651N | 124 29.752W |
| then to | 49 33.340N | 124 29.935W |
| then to | 49 33.498N | 124 29.773W |
| thence back to the beginning point. | | |

2.8. Strait of Georgia – “Sechelt Closure”

Includes that portion of Subarea 29-2 that lies inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 25.948N | 123 48.889W |
| then easterly to | 49 25.899N | 123 47.266W |
| then to | 49 25.373N | 123 46.494W |
| then to | 49 24.734N | 123 47.083W |
| then to | 49 24.910N | 123 47.951W |
| then to | 49 24.253N | 123 48.283W |
| then to | 49 24.845N | 123 49.914W |
| thence back to the beginning point. | | |

2.9. Strait of Georgia – “Halibut Bank Closure”

Includes that portion of Subarea 29-2 that lies inside the area bounded by a line that:

| | | |
|-------------------------------------|------------|-------------|
| begins at | 49 21.768N | 123 41.501W |
| then southerly to | 49 21.174N | 123 40.045W |
| then to | 49 20.961N | 123 40.139W |
| then to | 49 20.803N | 123 39.860W |
| then to | 49 20.565N | 123 40.182W |
| then to | 49 21.610N | 123 41.843W |
| then to | 49 22.555N | 123 44.456W |
| then to | 49 22.188N | 123 42.167W |
| then to | 49 21.945N | 123 42.087W |
| then to | 49 21.673N | 123 42.643W |
| then to | 49 21.895N | 123 43.908W |
| then to | 49 22.174N | 123 44.748W |
| thence back to the beginning point. | | |

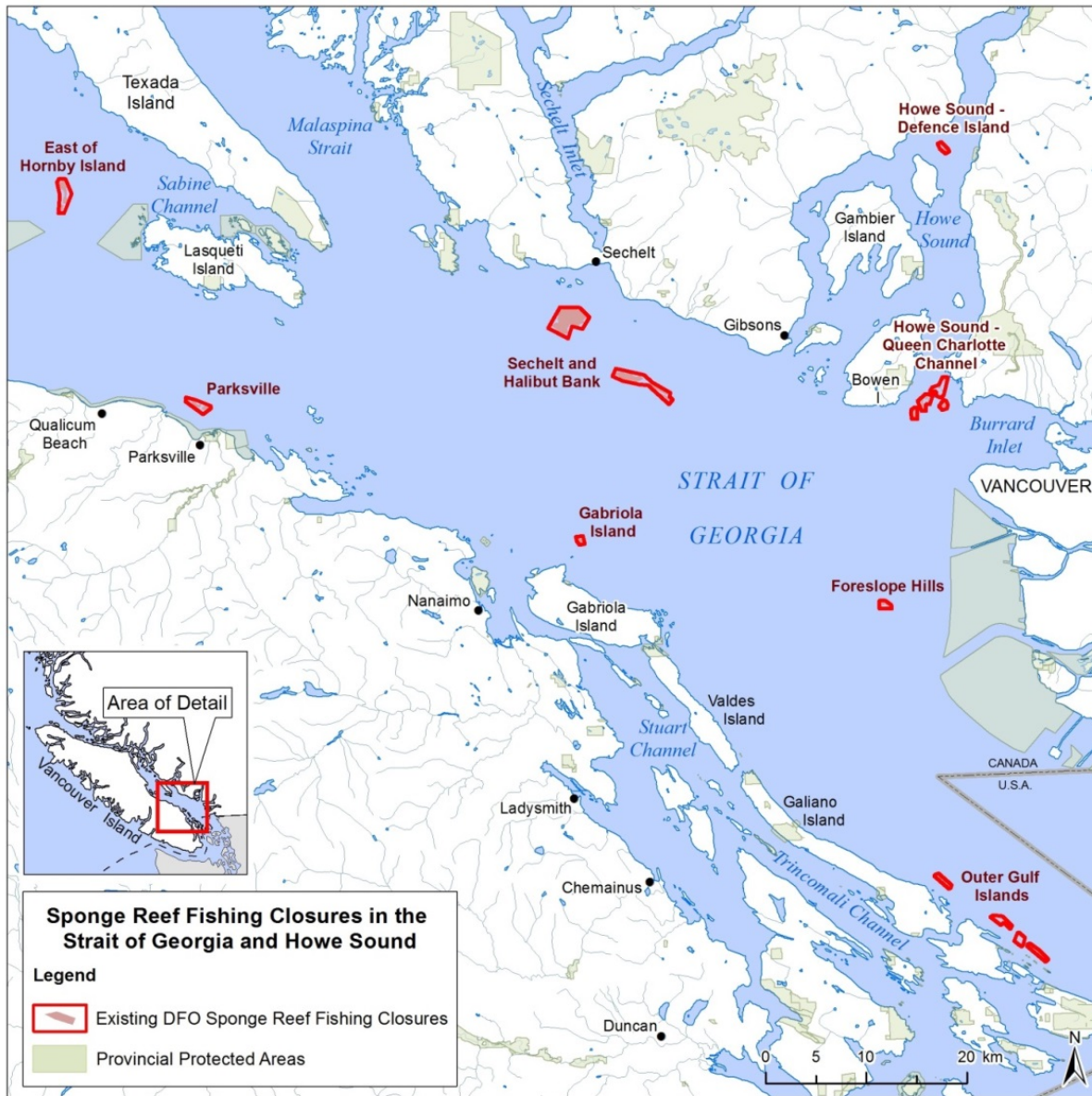


Figure 1 Strait of Georgia Glass Sponge Reef Locations.

DFO is asking the public to voluntarily avoid newly identified sponge reefs in Howe Sound with all bottom contact fishing gear until further scientific analysis and consultations regarding protection measures can occur. Latitudes and longitudes for the newly identified sponge reefs are listed below.

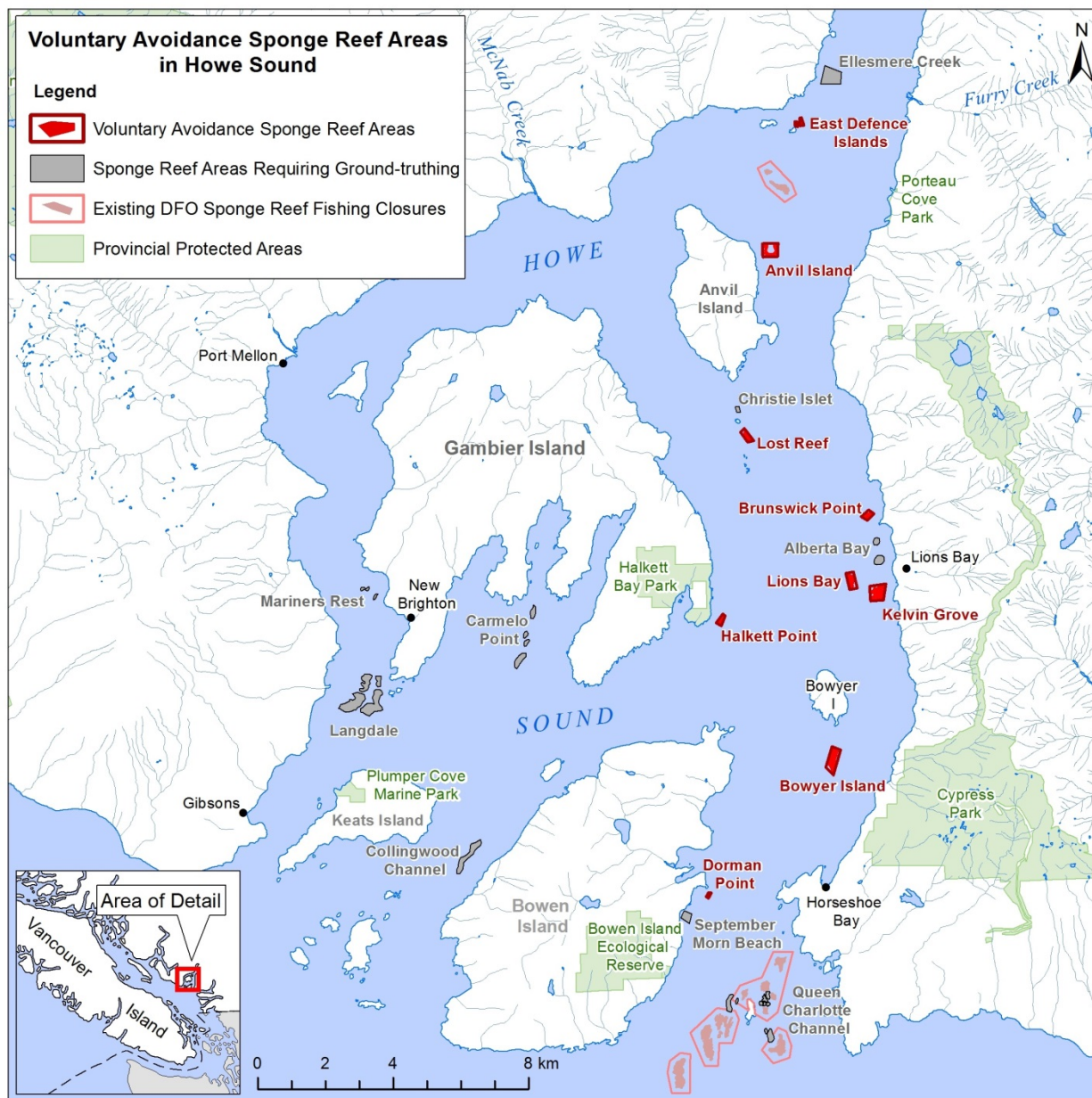


Figure 2 Map showing 13 newly identified sponge reefs in relation to existing Sponge Reef Conservation Areas and Rockfish Conservation Areas in Howe Sound.

2.10. East Defence Island (1)

Includes that portion of Subarea 28-4 that lies inside the area bounded by a line that:

| | | |
|------------------------------------|------------|-------------|
| begins at | 49 34.716N | 123 16.430W |
| then northeast to | 49 34.717N | 123 16.384W |
| then southeast to | 49 34.633N | 123 16.372W |
| then northwest to | 49 34.641N | 123 16.425W |
| thence back to the beginning point | | |

2.11. East Defence Island (2)

Includes that portion of Subarea 28-4 that lies inside the area bounded by a line that:

| | | |
|------------------------------------|------------|-------------|
| begins at | 49 34.770N | 123 16.312W |
| then true east to | 49 34.770N | 123 16.261W |
| then southeast to | 49 34.647N | 123 16.214W |
| then northwest to | 49 34.648N | 123 16.311W |
| thence back to the beginning point | | |

2.12. Anvil Island

Includes that portion of Subarea 28-4 that lies inside the area bounded by a line that:

| | | |
|------------------------------------|------------|-------------|
| begins at | 49 32.790N | 123 17.343W |
| then southeast to | 49 32.788N | 123 16.995W |
| then southwest to | 49 32.572N | 123 16.978W |
| then northwest to | 49 32.574N | 123 17.345W |
| thence back to the beginning point | | |

2.13. Lost Reef

Includes that portion of Subarea 28-2 that lies inside the area bounded by a line that:

| | | |
|------------------------------------|------------|-------------|
| begins at | 49 29.801N | 123 18.059W |
| then northeast to | 49 29.857N | 123 17.957W |
| then southeast to | 49 29.651N | 123 17.737W |
| then southwest to | 49 29.633N | 123 17.885W |
| thence back to the beginning point | | |

2.14. Brunswick Point

Includes that portion of Subarea 28-2 that lies inside the area bounded by a line that:

| | | |
|------------------------------------|------------|-------------|
| begins at | 49 28.384N | 123 15.181W |
| then northeast to | 49 28.479N | 123 14.987W |
| then southeast to | 49 28.417N | 123 14.870W |
| then southwest to | 49 28.315N | 123 15.038W |
| thence back to the beginning point | | |

2.15. Lions Bay

Includes that portion of Subarea 28-2 that lies inside the area bounded by a line that:

| | | |
|------------------------------------|------------|-------------|
| begins at | 49 27.483N | 123 15.611W |
| then northeast to | 49 27.499N | 123 15.420W |
| then southeast to | 49 27.239N | 123 15.347W |
| then southwest to | 49 27.227N | 123 15.536W |
| thence back to the beginning point | | |

2.16. Kelvin Grove

Includes that portion of Subarea 28-2 that lies inside the area bounded by a line that:

| | | |
|------------------------------------|------------|-------------|
| begins at | 49 27.268N | 123 15.047W |
| then northeast to | 49 27.290N | 123 14.639W |
| then southwest to | 49 27.036N | 123 14.715W |
| then southwest to | 49 27.032N | 123 15.037W |
| thence back to the beginning point | | |

2.17. Halkett Point

Includes that portion of Subarea 28-2 that lies inside the area bounded by a line that:

| | | |
|------------------------------------|------------|-------------|
| begins at | 49 26.771N | 123 18.823W |
| then northeast to | 49 26.912N | 123 18.660W |
| then southeast to | 49 26.879N | 123 18.594W |
| then southwest to | 49 26.722N | 123 18.700W |
| thence back to the beginning point | | |

2.18. Bowyer Island

Includes that portion of Subarea 28-2 that lies inside the area bounded by a line that:

| | | |
|------------------------------------|------------|-------------|
| begins at | 49 24.403N | 123 16.282W |
| then northeast to | 49 24.737N | 123 16.113W |
| then southeast to | 49 24.676N | 123 15.911W |
| then southwest to | 49 24.274N | 123 16.106W |
| thence back to the beginning point | | |

2.19. Dorman Point

Includes that portion of subarea 28-2 that lies inside the area bounded by a line that:

| | | |
|-----------|------------|-------------|
| begins at | 49 22.485N | 123 19.259W |
|-----------|------------|-------------|

| | | |
|------------------------------------|------------|-------------|
| then southeast to | 49 22.472N | 123 19.191W |
| then southwest to | 49 22.391N | 123 19.268W |
| then northwest to | 49 22.416N | 123 19.321W |
| thence back to the beginning point | | |

3. HECATE STRAIT AND QUEEN CHARLOTTE SOUND GLASS SPONGE REEFS MARINE PROTECTED AREA

Commercial harvesters are reminded that fishing with demersal hook and line, and trap gear is prohibited in the Marine Protected Area described below:

3.1. Northern Reef Marine Protected Area

Those waters of subareas 105-2 and 106-1 and is described as bounded by a series of rhumb lines drawn from a point:

| | | |
|---------------|---------------|----------------|
| commencing at | 53°11'52.9" N | 130°19'47.2" W |
| to a point at | 53°09'22.0" N | 130°18'53.0" W |
| to a point at | 53°02'54.5" N | 130°25'16.2" W |
| to a point at | 53°03'06.9" N | 130°30'35.6" W |
| to a point at | 53°07'17.8" N | 130°42'03.2" W |
| to a point at | 53°07'44.5" N | 130°46'26.5" W |
| to a point at | 53°13'28.7" N | 130°47'28.7" W |
| to a point at | 53°19'20.0" N | 130°54'24.2" W |
| to a point at | 53°24'05.4" N | 130°48'37.8" W |
| to a point at | 53°23'40.7" N | 130°42'52.2" W |
| to a point at | 53°18'42.5" N | 130°38'09.3" W |
| to a point at | 53°15'20.6" N | 130°33'01.3" W |

then back to the point of commencement.

Additional zoning information and management measures are described in section 3.4.

3.2. Central Reefs Marine Protected Area

Those waters of subareas 106-2, 107-1, and 107-2 and is described as bounded by a series of rhumb lines drawn from a point:

| | | |
|---------------|---------------|----------------|
| commencing at | 52°00'24.4" N | 129°14'12.6" W |
| to a point at | 51°55'50.5" N | 129°18'13.8" W |
| to a point at | 51°51'32.5" N | 129°36'37.4" W |
| to a point at | 51°53'00.7" N | 129°44'03.4" W |
| to a point at | 52°05'14.1" N | 129°36'14.1" W |
| to a point at | 52°08'46.0" N | 129°33'33.5" W |
| to a point at | 52°15'42.6" N | 129°44'12.3" W |
| to a point at | 52°29'35.4" N | 129°52'32.7" W |
| to a point at | 52°32'05.4" N | 129°53'06.2" W |
| to a point at | 52°34'05.6" N | 129°47'51.4" W |
| to a point at | 52°25'42.7" N | 129°35'12.2" W |

| | | |
|---|---------------|----------------|
| to a point at | 52°20'02.8" N | 129°29'51.7" W |
| to a point at | 52°09'52.3" N | 129°25'29.5" W |
| then back to the point of commencement. | | |

Additional zoning information and management measures are described in section 3.4.

3.3. Southern Reef Marine Protected Area

| | | |
|---|---------------|----------------|
| Those waters of area 110 and is described as bounded by a series of rhumb lines drawn from a point: | | |
| commencing at | 51°24'44.2" N | 128°47'58.3" W |
| to a point at | 51°18'32.5" N | 128°40'35.6" W |
| to a point at | 51°14'57.6" N | 128°47'01.2" W |
| to a point at | 51°14'33.9" N | 128°55'45.5" W |
| to a point at | 51°17'42.3" N | 129°00'29.0" W |
| to a point at | 51°19'24.5" N | 129°00'53.6" W |
| then back to the point of commencement. | | |

Additional zoning information and management measures are described in section 3.4.

HECATE STRAIT / QUEEN CHARLOTTE SOUND GLASS SPONGE REEFS MARINE PROTECTED AREAS
ZONES DE PROTECTION MARINES DES RÉCIFS D'ÉPONGES SILICEUSES DU DÉTROIT D'HECATE
ET DU BASSIN DE LA REINE-CHARLOTTE

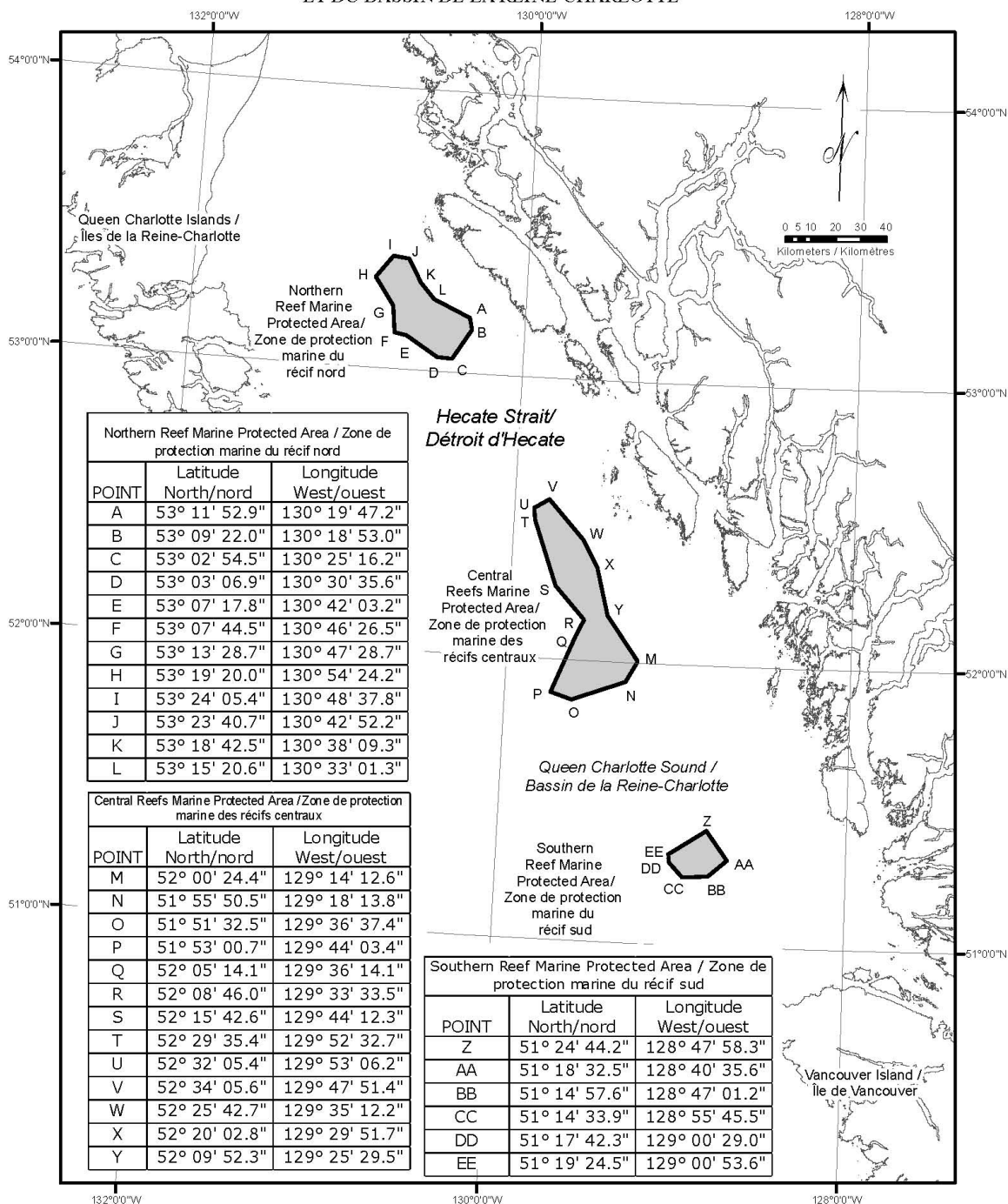


Figure 3. Hecate Strait and Queen Charlotte Sound Glass Sponge Reef Marine Protected Areas. Boundary coordinates are shown here in degrees-minutes-seconds (DMS-format), as per the format in the *Hecate Strait and Queen Charlotte Sound Glass Sponge Reef Marine Protected Areas Regulations, 2017*.

3.4. Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Area Zoning and Management Measures

Commercial harvesters are reminded fishing is prohibited in the Core Protective Zones (CPZ) described below. The Core Protective Zones for each reef extend vertically to various depths depending of the height of the reef. Fishing with mid-water hook and line gear is permitted in the Adaptive Management Zone (AMZ) and the Vertical Adaptive Management Zone (VAMZ).

3.4.1. Northern Reef Area

The Northern Reef Core Protected Zone (CPZ) described below extends to 100 meters from the sea surface.

| | | |
|---|---------------|----------------|
| Those waters of subareas 105-2 and 106-1 and is described as bounded by a series of rhumb lines drawn from a point: | | |
| commencing at | 53°18'40.4" N | 130°52'46.5" W |
| to a point at | 53°22'12.1" N | 130°47'01.7" W |
| to a point at | 53°22'20.2" N | 130°43'12.5" W |
| to a point at | 53°17'22.8" N | 130°38'18.2" W |
| to a point at | 53°15'01.7" N | 130°36'35.5" W |
| to a point at | 53°10'55.2" N | 130°20'19.3" W |
| to a point at | 53°04'30.2" N | 130°25'53.6" W |
| to a point at | 53°04'58.0" N | 130°32'16.9" W |
| to a point at | 53°07'22.2" N | 130°37'37.6" W |
| to a point at | 53°08'36.6" N | 130°39'29.5" W |
| to a point at | 53°08'41.8" N | 130°45'40.0" W |
| to a point at | 53°13'51.2" N | 130°46'41.2" W |
| then back to the point of commencement. | | |

3.4.2. Central Reefs Area

Both Zone 'A' and Zone 'B' of the Central Reef Core Protected Zone (CPZ) described below extend to 120 meters below the sea surface

Zone 'A'

| | | |
|---|---------------|----------------|
| Those waters of subareas 106-2 and 107-1 and is described as bounded by a series of rhumb lines drawn from a point: | | |
| commencing at | 52°14'03.4" N | 129°38'33.2" W |
| to a point at | 52°16'54.8" N | 129°43'13.4" W |
| to a point at | 52°21'57.1" N | 129°43'56.5" W |
| to a point at | 52°24'24.5" N | 129°47'22.8" W |
| to a point at | 52°29'05.9" N | 129°50'59.4" W |
| to a point at | 52°31'05.2" N | 129°50'13.9" W |
| to a point at | 52°31'06.7" N | 129°47'40.9" W |
| to a point at | 52°27'42.0" N | 129°40'25.1" W |
| to a point at | 52°25'22.9" N | 129°37'24.0" W |

| | | |
|---|---------------|----------------|
| to a point at | 52°19'47.0" N | 129°32'43.2" W |
| to a point at | 52°16'18.2" N | 129°33'22.8" W |
| to a point at | 52°20'02.8" N | 129°29'51.7" W |
| to a point at | 52°09'52.3" N | 129°25'29.5" W |
| then back to the point of commencement. | | |

Zone 'B'

| | | |
|--|---------------|----------------|
| Those waters of subarea 107-2 and is described as bounded by a series of rhumb lines drawn from a point: | | |
| commencing at | 51°54'43.1" N | 129°41'22.2" W |
| to a point at | 52°01'22.5" N | 129°35'48.4" W |
| to a point at | 52°05'13.5" N | 129°34'32.5" W |
| to a point at | 52°08'48.5" N | 129°31'44.1" W |
| to a point at | 52°08'51.3" N | 129°29'18.0" W |
| to a point at | 52°04'27.1" N | 129°21'17.3" W |
| to a point at | 51°59'40.8" N | 129°15'23.9" W |
| to a point at | 51°56'04.5" N | 129°18'46.2" W |
| to a point at | 51°52'55.7" N | 129°36'49.8" W |
| then back to the point of commencement. | | |

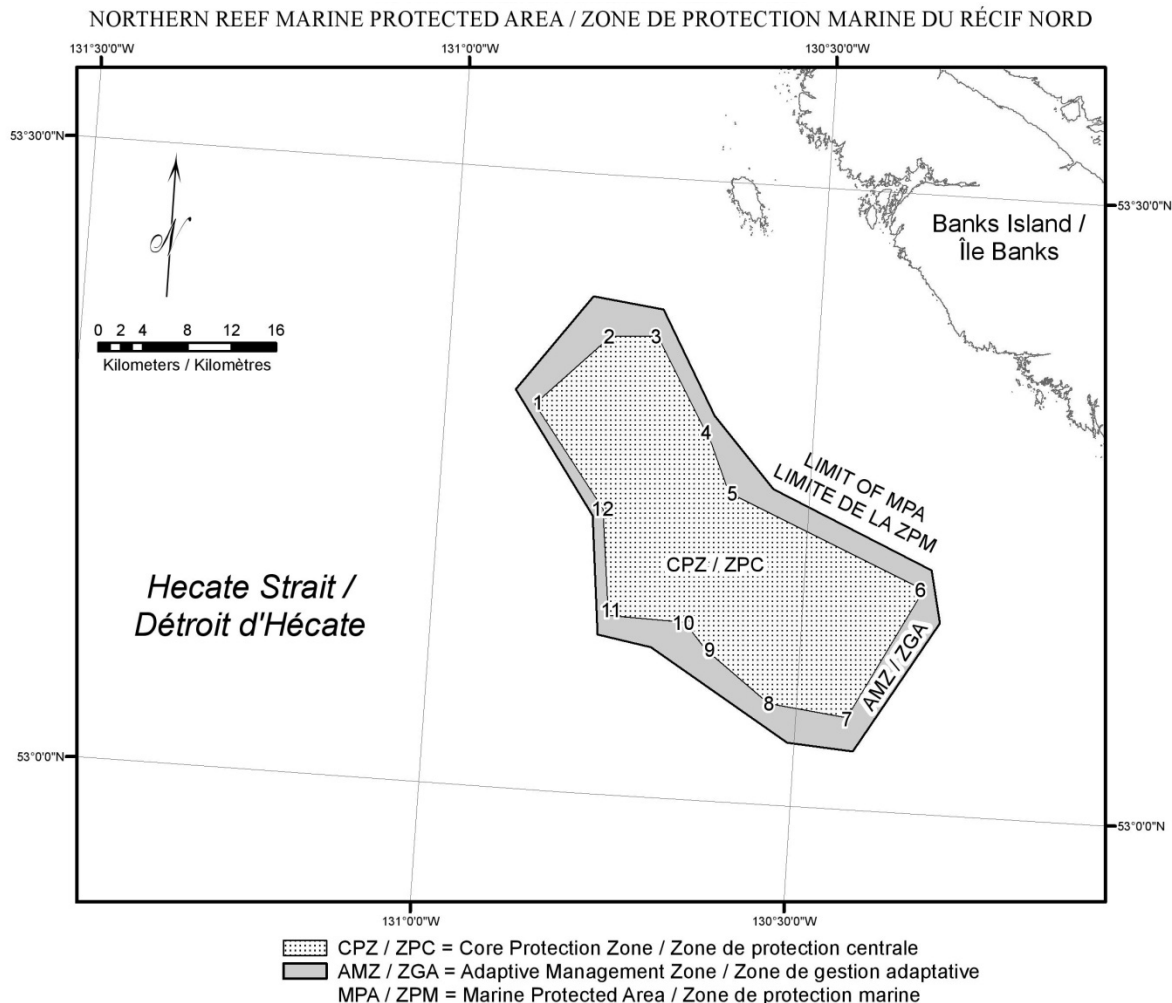
ending of the height of the reef. Fishing with mid-water hook and line gear is permitted in the Adaptive Management Zone (AMZ) and the Vertical Adaptive Management Zone (VAMZ).

3.4.3. Southern Reef Area

The Southern Reef Core Protected Zone (CPZ) described below extends to 146 meters below the sea surface.

Those waters of area 110 and is described as bounded by a series of rhumb lines drawn from a point:

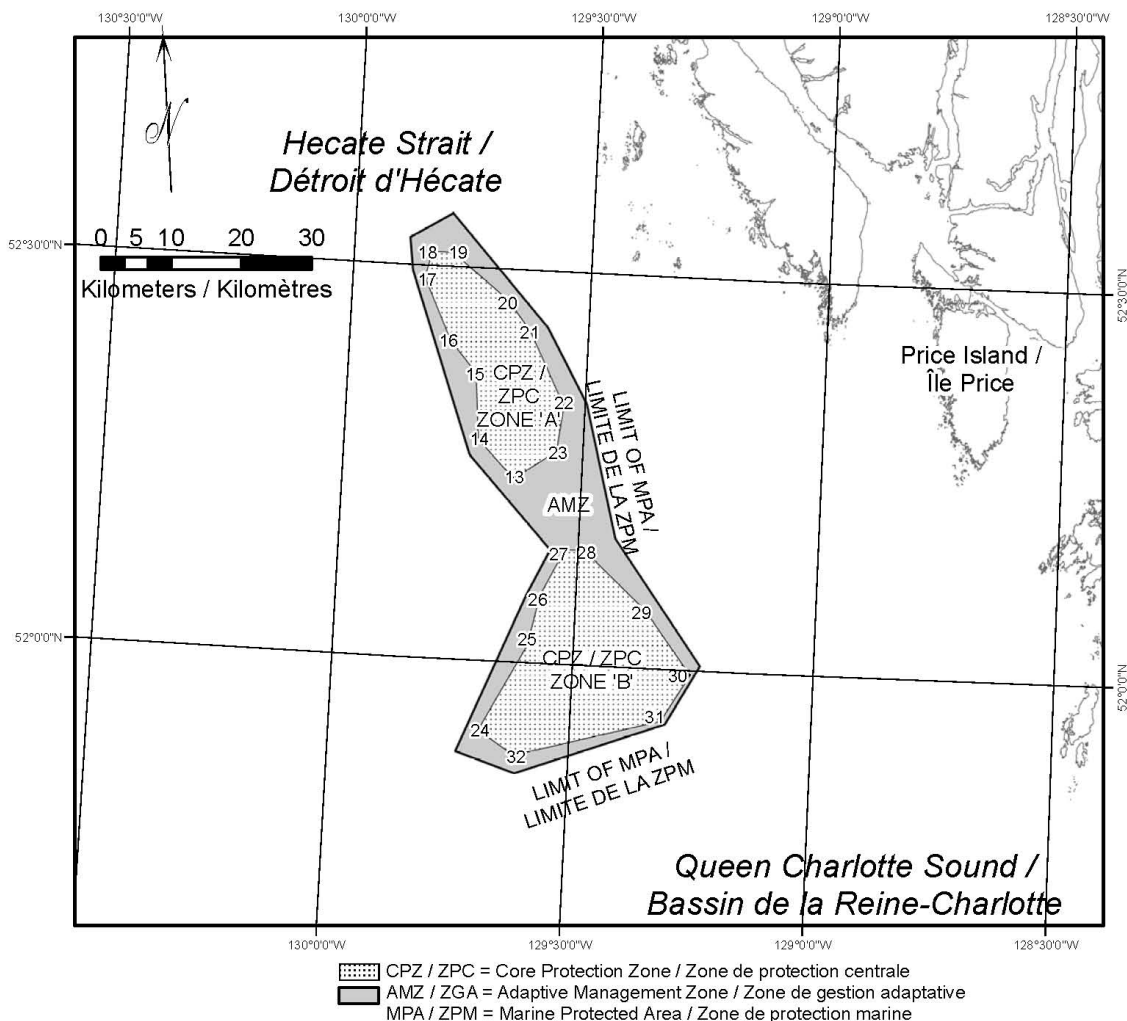
| | | |
|---|---------------|----------------|
| commencing at | 51°17'59.2" N | 128°57'31.9" W |
| to a point at | 51°19'30.8" N | 128°58'22.7" W |
| to a point at | 51°23'41.9" N | 128°48'50.9" W |
| to a point at | 51°19'17.5" N | 128°42'33.6" W |
| to a point at | 51°18'24.5" N | 128°42'37.7" W |
| to a point at | 51°15'56.0" N | 128°47'04.2" W |
| | 51°15'52.2" N | 128°54'20.4" W |
| then back to the point of commencement. | | |



| Northern CPZ / ZPC nord | | |
|-------------------------|------------------------|-------------------------|
| POINT | Latitude North/nord | Longitude West/ouest |
| 1 | 53° 18' 40.4" | 130° 52' 46.5" |
| 2 | 53° 22' 12.1" | 130° 47' 01.7" |
| 3 | 53° 22' 20.2" | 130° 43' 12.5" |
| 4 | 53° 17' 22.8" | 130° 38' 18.2" |
| 5 | 53° 15' 01.7" | 130° 36' 35.5" |
| 6 | 53° 10' 55.2" | 130° 20' 19.3" |
| 7 | 53° 04' 30.2" | 130° 25' 53.6" |
| 8 | 53° 04' 58.0" | 130° 32' 16.9" |
| 9 | 53° 07' 22.2" | 130° 37' 37.6" |
| 10 | 53° 08' 36.6" | 130° 39' 29.5" |
| 11 | 53° 08' 41.8" | 130° 45' 40.0" |
| 12 | 53° 13' 51.2" | 130° 46' 41.2" |

Figure 4. Northern Reef Marine Protected Area. Boundary coordinates are shown here in degrees-minutes-seconds (DMS-format), as per the format in the *Hecate Strait and Queen Charlotte Sound Glass Sponge Reef Marine Protected Areas Regulations, 2017*.

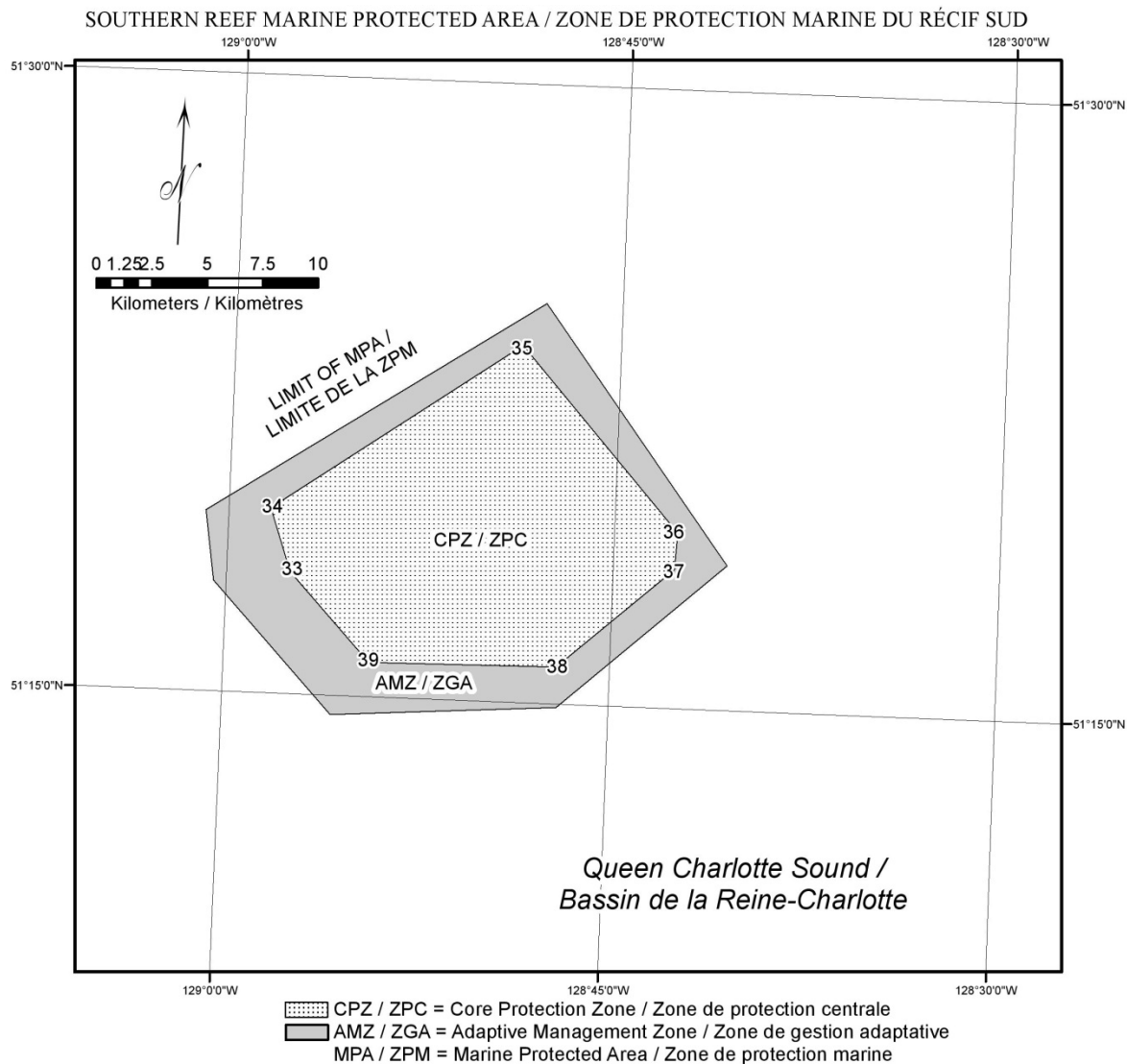
CENTRAL REEFS MARINE PROTECTED AREA / ZONE DE PROTECTION MARINE DES RÉCIFS CENTRAUX



| Central CPZ / ZPC centrale - Zone 'A' | | |
|---------------------------------------|---------------------|----------------------|
| POINT | Latitude North/nord | Longitude West/ouest |
| 13 | 52° 14' 03.4" | 129° 38' 33.2" |
| 14 | 52° 16' 54.8" | 129° 43' 13.4" |
| 15 | 52° 21' 57.1" | 129° 43' 56.5" |
| 16 | 52° 24' 24.5" | 129° 47' 22.8" |
| 17 | 52° 29' 05.9" | 129° 50' 59.4" |
| 18 | 52° 31' 05.2" | 129° 50' 13.9" |
| 19 | 52° 31' 06.7" | 129° 47' 40.9" |
| 20 | 52° 27' 42.0" | 129° 40' 25.1" |
| 21 | 52° 25' 22.9" | 129° 37' 24.0" |
| 22 | 52° 19' 47.0" | 129° 32' 43.2" |
| 23 | 52° 16' 18.2" | 129° 33' 22.8" |

| Central CPZ / ZPC centrale - Zone 'B' | | |
|---------------------------------------|---------------------|----------------------|
| POINT | Latitude North/nord | Longitude West/ouest |
| 24 | 51° 54' 43.1" | 129° 41' 22.2" |
| 25 | 52° 01' 22.5" | 129° 35' 48.4" |
| 26 | 52° 05' 13.5" | 129° 34' 32.5" |
| 27 | 52° 08' 48.5" | 129° 31' 44.1" |
| 28 | 52° 08' 51.3" | 129° 29' 18.0" |
| 29 | 52° 04' 27.1" | 129° 21' 17.3" |
| 30 | 51° 59' 40.8" | 129° 15' 23.9" |
| 31 | 51° 56' 04.5" | 129° 18' 46.2" |
| 32 | 51° 52' 55.7" | 129° 36' 49.8" |
| | | |
| | | |

Figure 5. Central Reefs Marine Protected Area. Boundary coordinates are shown here in degrees-minutes-seconds (DMS-format), as per the format in the *Hecate Strait and Queen Charlotte Sound Glass Sponge Reef Marine Protected Areas Regulations, 2017*.



| Southern CPZ / ZPC sud | | |
|------------------------|------------------------|-------------------------|
| POINT | Latitude North/nord | Longitude West/ouest |
| 33 | 51° 17' 59.2" | 128° 57' 31.9" |
| 34 | 51° 19' 30.8" | 128° 58' 22.7" |
| 35 | 51° 23' 41.9" | 128° 48' 50.9" |
| 36 | 51° 19' 17.5" | 128° 42' 33.6" |
| 37 | 51° 18' 24.5" | 128° 42' 37.7" |
| 38 | 51° 15' 56.0" | 128° 47' 04.2" |
| 39 | 51° 15' 52.2" | 128° 54' 20.4" |

Figure 6. Southern Reef Marine Protected Area. Boundary coordinates are shown here in degrees-minutes-seconds (DMS-format), as per the format in the *Hecate Strait and Queen Charlotte Sound Glass Sponge Reef Marine Protected Areas Regulations, 2017*.

HECATE STRAIT / QUEEN CHARLOTTE SOUND GLASS SPONGE REEFS MARINE PROTECTED AREAS
ZONES DE PROTECTION MARINES DES RÉCIFS D'ÉPONGES SILICEUSES DU DÉTROIT D'HÉCATE
ET DU BASSIN DE LA REINE-CHARLOTTE

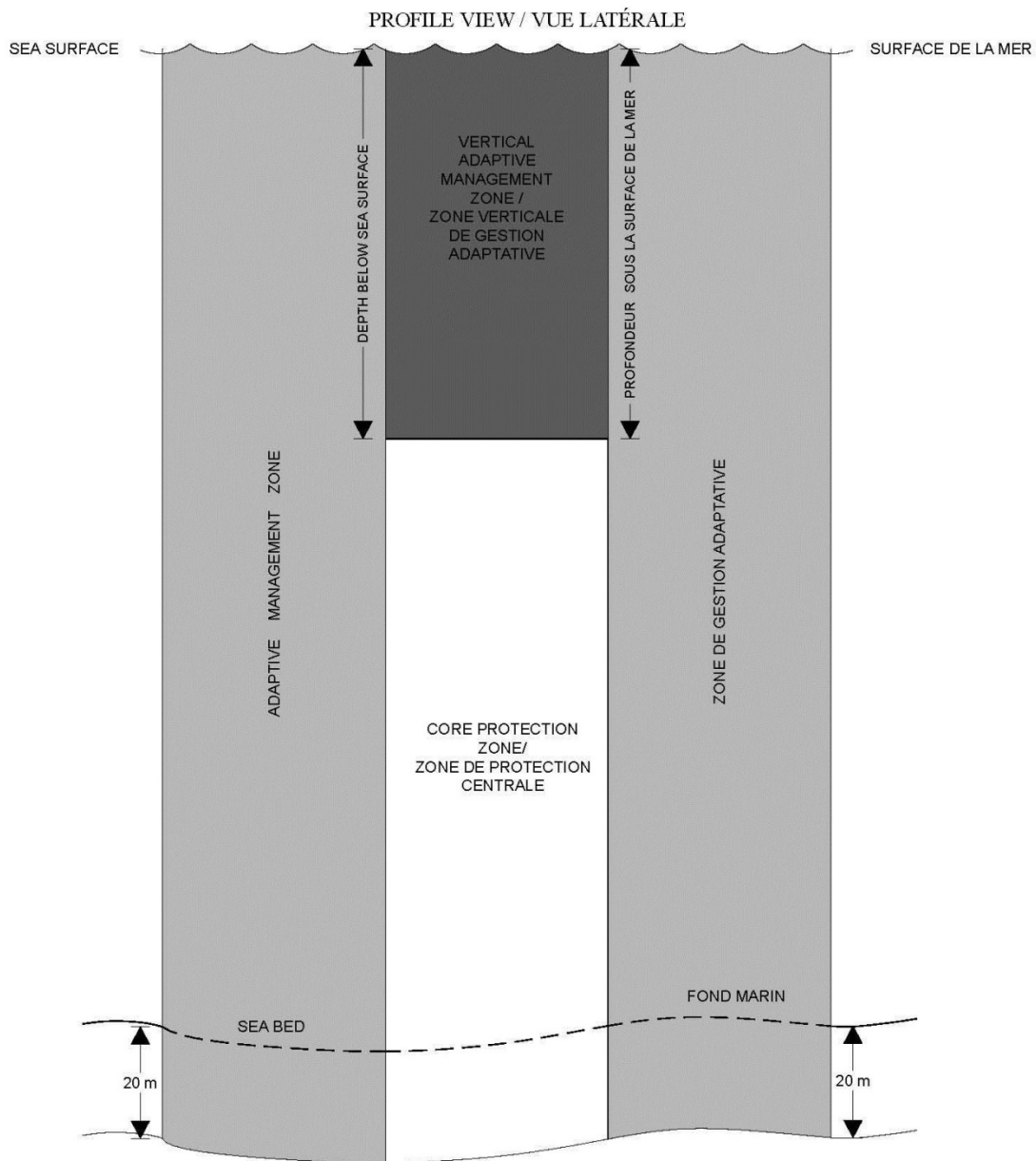


Figure 7. Illustration delineating the Core Protection Zone, the Adaptive Management Zone and the Vertical Adaptive Management Zone.

4. OFFSHORE PACIFIC SEAMOUNTS AND VENTS

As of November 10, 2017 the Offshore Pacific Seamounts and Vents Fishery Closure is in effect. The areas described below are closed to all commercial and recreational bottom contact fisheries using bottom trawl, hook and line, and trap gear for Groundfish, Halibut, Sablefish, and Shellfish.

The Fisheries Act closure aims to provide protection to ecologically and biologically significant seamount and hydrothermal vent features within the Offshore Pacific Bioregion. More information on the Offshore Pacific AOI can be found on the internet here: <http://www.dfo-mpo.gc.ca/oceans/aoi-si/offshore-hauturiere-eng.html>.

The closure is as laid out in Variation Orders 2017-603 and 2017-616 and is described as follows:

Those waters within Pacific Fishery Management Subareas 123-9, 124-1, 124-2, 125-6, 126-3, 126-4, 127-2, 127-4, and 130-1 inside an area bounded by a series of rhumb lines that:

| | | | | |
|----|-----------|--------------|---------------|--|
| 1 | begin at: | 46° 48' 50"N | 129° 43' 49"W | [on the boundary of the EEZ*, Subarea 125-6] |
| 2 | then to | 46° 57' 56"N | 129° 35' 21"W | |
| 3 | then to | 47° 20' 47"N | 129° 35' 07"W | |
| 4 | then to | 47° 58' 28"N | 129° 20' 36"W | |
| 5 | then to | 47° 38' 29"N | 130° 11' 09"W | |
| 6 | then to | 47° 55' 46"N | 130° 40' 55"W | |
| 7 | then to | 48° 27' 07"N | 130° 28' 55"W | |
| 8 | then to | 49° 04' 14"N | 131° 23' 35"W | |
| 9 | then to | 48° 46' 44"N | 132° 28' 38"W | |
| 10 | then to | 49° 11' 35"N | 132° 52' 15"W | |
| 11 | then to | 49° 33' 55"N | 133° 09' 51"W | |
| 12 | then to | 49° 31' 16"N | 133° 47' 59"W | |
| 13 | then to | 49° 57' 44"N | 134° 03' 07"W | |
| 14 | then to | 50° 05' 02"N | 133° 40' 17"W | |
| 15 | then to | 50° 06' 40"N | 133° 27' 16"W | |
| 16 | then to | 50° 05' 04"N | 131° 55' 58"W | |
| 17 | then to | 50° 26' 52"N | 132° 00' 12"W | |
| 18 | then to | 50° 38' 19"N | 131° 20' 40"W | |
| 19 | then to | 51° 03' 52"N | 130° 30' 22"W | |
| 20 | then to | 50° 46' 07"N | 130° 04' 35"W | |
| 21 | then to | 50° 24' 19"N | 130° 00' 37"W | |
| 22 | then to | 50° 13' 53"N | 129° 32' 03"W | |
| 23 | then to | 49° 37' 42"N | 129° 58' 56"W | |
| 24 | then to | 48° 39' 08"N | 128° 24' 12"W | |

| | | | | |
|----|---|--------------|---------------|--|
| 25 | then to | 47° 38' 10"N | 127° 08' 52"W | [on the boundary of the EEZ*, Subarea 123-9] |
| 26 | then following the EEZ* to | 47° 10' 18"N | 128° 02' 44"W | [on the boundary of the EEZ*, Subarea 124-1] |
| 27 | then to | 47° 46' 26"N | 128° 44' 50"W | |
| 28 | then to | 47° 03' 55"N | 129° 00' 51"W | |
| 29 | then to | 46° 42' 15"N | 129° 01' 06"W | |
| 30 | then to | 46° 32' 20"N | 129° 09' 24"W | [on the boundary of the EEZ*, Subarea 124-2] |
| 31 | then following the EEZ* to the beginning point. | | | |

*EEZ: Exclusive Economic Zone boundary

You can find additional information on the Offshore Pacific Seamounts and Vents Closure webpage at: <http://www.dfo-mpo.gc.ca/oceans/oeabcm-amcepz/refuges/offshore-hauturiere-eng.html>

5. SGAAN KINGHLAS-BOWIE SEAMOUNT (SK-B) MPA

Commercial fishing activities within the MPA have been managed through the Integrated Fisheries Management Plan process. In October 2017, the SK-B Management Board recommended to the Council of the Haida Nation (CHN) and Minister that SK-B MPA be permanently closed to all bottom-contact fisheries. The closure is intended to protect sensitive benthic habitat from serious and irreversible harm (i.e., crushing, damaging, or destroying cold water coral and sponges with a recovery time greater than 20 years). Additional information on the SK-B MPA can be found in IFMP section 8.2.1.3.

6. GWAII HAANAS NATIONAL MARINE CONSERVATION AREA

As noted in section 5.2.1.4.1 of the front section of the IFMP, a new management plan for the Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site was approved by Canada and the Haida Nation in November 2018, following an extensive consultation process. The final zoning plan includes several areas of strict protection, where commercial and recreational fishing are prohibited (See Strict Protection Zones in figure 8 below). The implementation of these closures may take some time. However, steps are being taken to undertake this work and each closure will be communicated via Fishery Notice as it is implemented.

Users of the Gwaii Haanas marine area should be aware that adjacent land is managed under the authority of the Canada National Parks Act and its regulations and, as specified in the Gwaii Haanas Agreement (1993), there is "no extraction or harvesting by anyone of the resources of the lands and non-tidal waters of the Archipelago for or in support of commercial enterprise" (s3.3). There are specific requirements for visiting the terrestrial portion of Gwaii Haanas, and advanced

planning is necessary. Please contact the Gwaii Haanas administration office at 1-877-559-8818 for further information. For background information, see IFMP section 8.2.

The Gwaii Haanas Gina 'Waadluxan KilGuhlGa Land-Sea-People Management Plan 2018 available here: <https://www.pc.gc.ca/en/pn-np/bc/gwaiihaanas/info/consultations>.

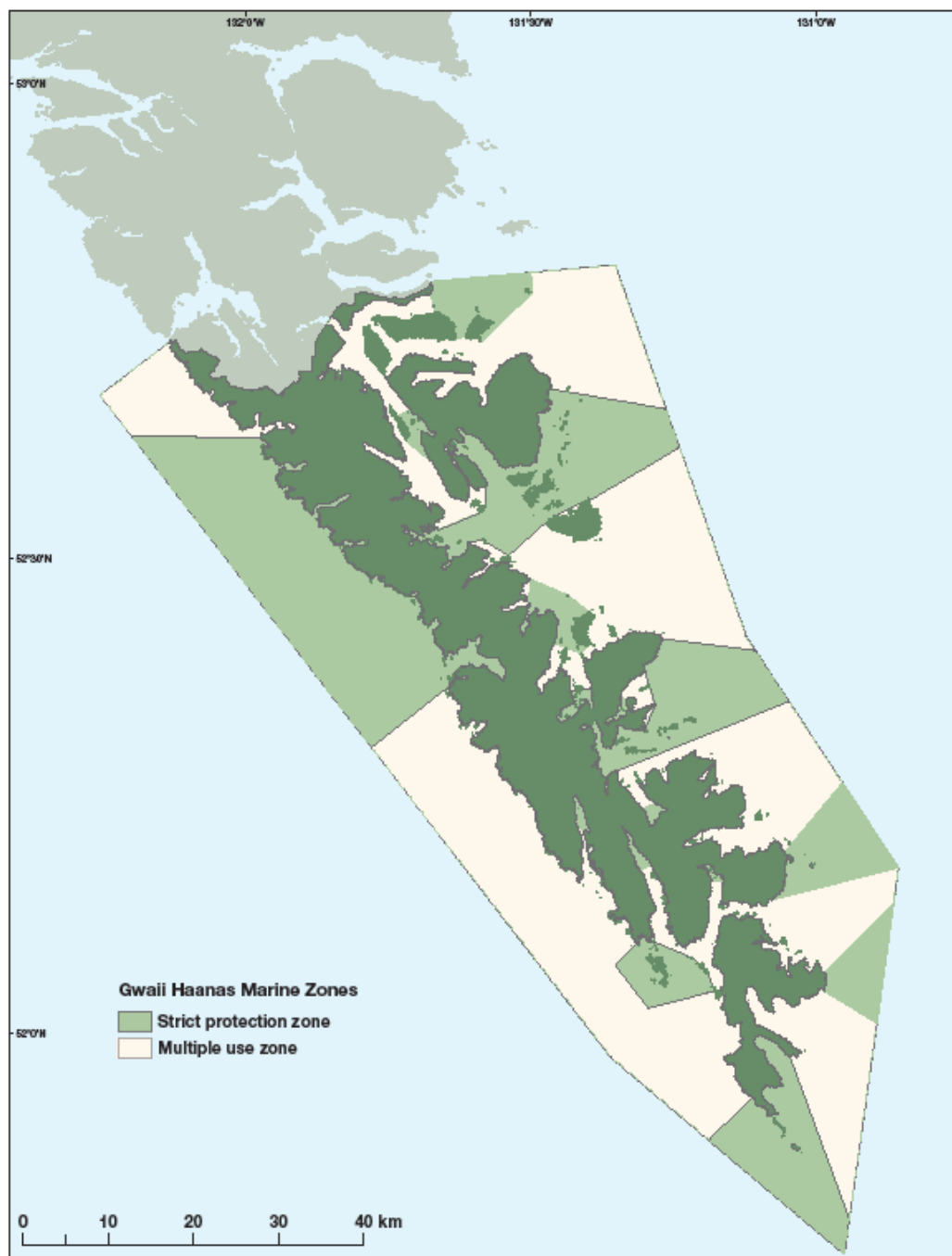


Figure 8. Gwaii Haanas National Marine Conservation areas.

Commercial and recreational fishers and harvesters are reminded that extraction of any kind (e.g., fishing, kelp harvest) is not permitted in the areas described below:

6.1. Burnaby Narrows

Those waters of Subareas 2-13 and 2-16 inside a line:

| | | |
|---|---------------|--------------|
| commencing at | 52°23.049 N | 131°23.438 W |
| then east to | 52°23.077 N | 131°22.908 W |
| following the southern shoreline of Kat Island east to | 52°23.107 N | 131°22.274 W |
| then east to | 52°23.295 N | 131°21.34W |
| following the western shoreline of Burnaby Island south to | to 52°20.951N | 131°20.509 W |
| then west to | 52°20.733 N | 131°21.072 W |
| then north following the eastern shoreline of Moresby Island back to the point of commencement. | | |

6.2. Louscoone Estuary

Those waters of Subareas 2-33 and 2-34 north of a line:

| | | |
|-------------------|-------------|--------------|
| drawn from | 52°11.836 N | 131°15.658 W |
| then true east to | 52°12.271 N | 131°14.594 W |

6.3. Flamingo Estuary

Those waters of Subarea 2-37 north of a line:

| | | |
|-------------------|-------------|--------------|
| drawn from | 52°14.456 N | 131°22.234 W |
| then southeast to | 52°14.246 N | 131°21.489 W |

6.4. Gowgaia Estuary

Those waters of Subarea 2-41 east of a line:

| | | |
|-------------------|-------------|--------------|
| drawn from | 52°24.944 N | 131°32.138 W |
| then southeast to | 52°24.238 N | 131°32.024 W |

6.5. Cape Saint James

Those waters of Subareas 2-19, 102-3, 130-3 and 142-1 inside a line:

| | | |
|--|----------------|--------------|
| commencing at | 51°56.523 N | 131°01.522 W |
| then southwest to | 51°55.627 N | 131°02.574 W |
| then southeast to | 51°52.5 N | 130°57.919 W |
| then south to | to 51°51.676 N | 130°57.805 W |
| then southeast to | 51°50.349 N | 130°56.442 W |
| then northeast to | 51°51.062 N | 130°54.717 W |
| then north to | 51°53.888 N | 130°55.608 W |
| then northwest to | 51°58.671 N | 130°59.464 W |
| then west to | 51°58.743 N | 131°00.606 W |
| and then following the southern shore of Kungit Island to the point of commencement. | | |

6.6. SGang Gwaay

Those waters of Subareas 2-31 and 142-1 inside a 3 km radius from the centre point on Anthony Island located at:

52°05.655' N 131°13.178' W

7. OTHER FISHERY CLOSURES

7.1. Strait of Georgia Lingcod

Closed year-round to the retention of Lingcod in the commercial fishery in Areas and Subareas 13 to 19, 20-5 to 20-7, 28 and 29. yearround

| Area/Subarea | Rationale for Closure |
|-------------------------------|--|
| 13-2 to 13-9, 13-11 and 13-27 | Closed to all commercial fishing. |
| 14-11 and 14-14 | Harbour areas. |
| 16-3 and 16-4 | Harbour areas. |
| 17-7 and 17-14 | Harbour areas. |
| 17-20 and 17-21 | Protect shallow water environment. |
| 18-8 | Harbour areas. |
| 19-1 | Harbour areas. |
| 19-6 | Protect shallow water environment. |
| 19-7 to 19-12 | Designated sport-fishing area (open for dogfish only). |
| 20-6 and 20-7 | Harbour areas. |
| 28 | Designated sport-fishing areas. |
| 29-7 to 29-17 | Protect shallow water environment and Fraser River. |
| 22 | Protect shallow fresh water environment. |

7.2. Haida Gwaii

Subareas 2-1, 2-31 to 2-37, 2-63 to 2-68; and that portion of Subarea 2-69 from Hunter Point to Fame Point shoreward of the coordinates laid out below. These areas are closed year round for all commercial groundfish fisheries. The intent of the closure is to reduce harvesting pressure on localized stocks of fish and to provide improved access for First Nations food, social and ceremonial purposes.

Subarea 2-69:

| | | |
|--|--------------|---------------|
| The portion of Subarea 2-69 inside a line: | | |
| that begins at Fame Point | 53°17.060' N | 132°42.415' W |
| then to | 53°17.060' N | 132°43.800' W |
| then to | 53°16.350' N | 132°44.700' W |
| then abutting the boundary of 2-68 | 53°15.208' N | 132°43.597' W |

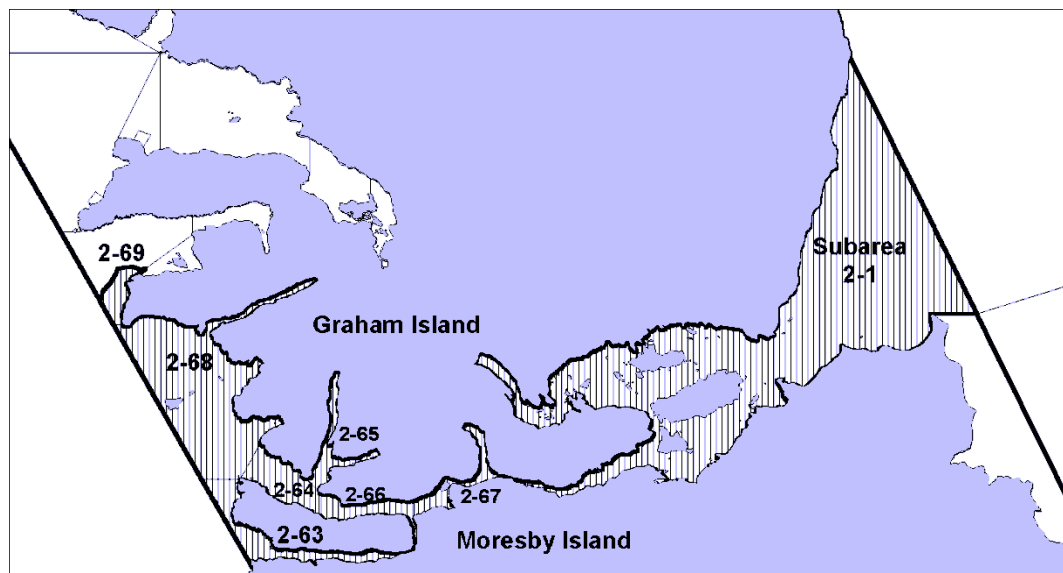


Figure 9. Haida Gwaii closed areas

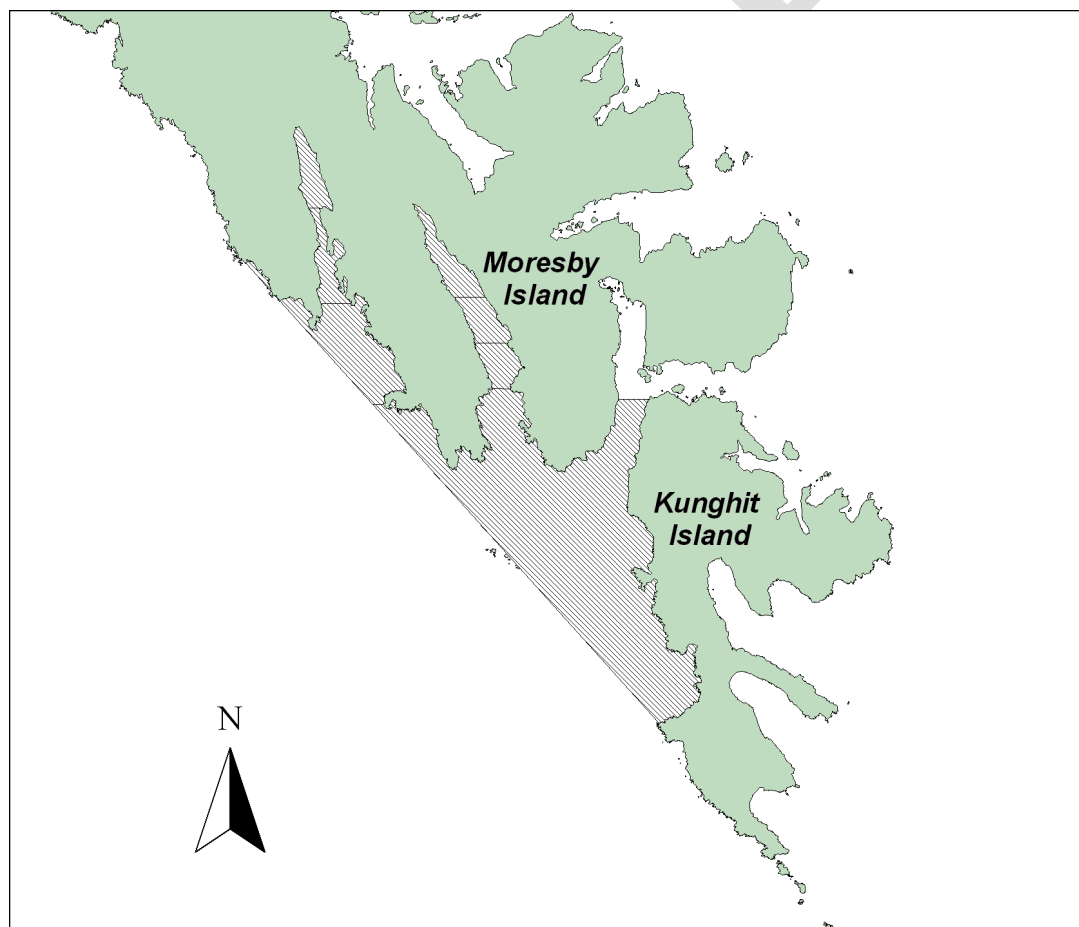


Figure 10. Haida Gwaii closed areas.

7.3. Swiftsure Commercial

Those portions of Subareas 121-1 and 121-2 inside a line:
 that begins at 48°34.0' N 125°06.0' W
 then true east to 48°34.0' N 124°54.2' W
 then to 48°29.62' N 124°43.4' W
 then following the International Boundary
 between Canada and the United States of
 America to 48°29.3' N 124°58.0' W
 then to the beginning point.

7.4. Swiftsure Recreational

Those portions of Subareas 121-1 and 121-2 inside a line:
 that begins at 48°34.0' N 125°06.0' W
 then true east to 48°34.0' N 124°54.2' W
 then to 48°29.62' N 124°43.4' W
 then following the International Boundary
 between Canada and the United States of
 America to 48°29.55' N 124°56.2' W
 then to the beginning point.

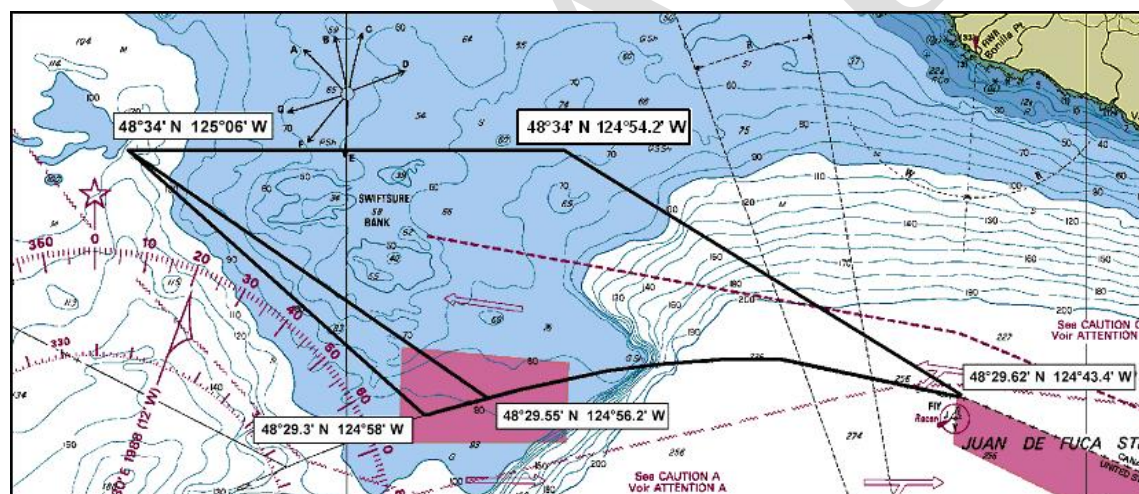


Figure 11. Swiftsure closure locations.

7.5. Seasonal Closures

7.5.1. 72-Hour “Halibut Opening” Closure

These closures go into effect 72 hours prior to the Halibut opening each year for all commercial hook and line fishing vessels. Their intent is to ensure a fair and orderly opening for the Halibut fishery.

Those portions of Area 101 that are:

east of the meridian passing through 134°00.0' west longitude;
west of the meridian passing through 132°40.0' west longitude; and
south of the parallel passing through 54°30.0' north latitude.

Those portions of Subareas 102-2, 102-3, 108-2, 130-2, 130-3 and 142-1 that are inside a line that:

| | | |
|--------------------|------------|--------------|
| that begins at | 52°11.0' N | 131°22.16' W |
| then westerly to | 52°10.0' N | 131°30.0' W |
| then true south to | 51°30.0' N | 131°30.0' W |
| then true east to | 51°30.0' N | 130°00.0' W |
| then true north to | 52°10.0' N | 130°00.0' W |
| then westerly to | 52°13.0' N | 131°00.3' W |

Those portions of Area 111 and Subarea 130-1 that lie inside a line that:

| | | |
|---|------------|-------------|
| begins at | 51°15.0' N | 130°00.0' W |
| then true east to | 51°15.0' N | 129°30.0' W |
| then true south to | 51°00.0' N | 129°30.0' W |
| then true west to | 51°00.0' N | 130°00.0' W |
| then true north to the beginning point. | | |

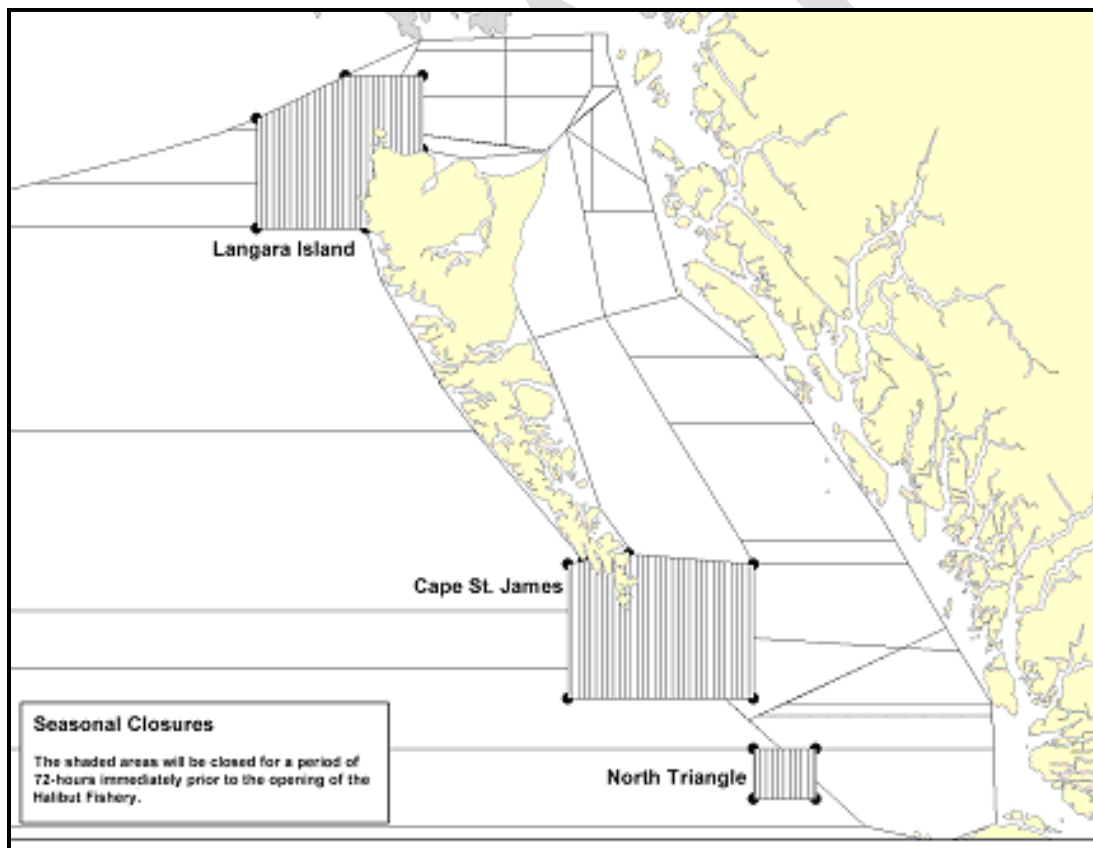


Figure 12. Map of 72-hour “Halibut opening” closure areas

Appendix 11: Fishing Vessel Safety

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DRAFT

1. OVERVIEW – FISHING VESSEL SAFETY

Vessel owners and masters have a duty to ensure the safety of their crew and vessel. Adherence to safety regulations and good practices by owners, masters and crew of fishing vessels will help save lives, prevent vessel damage and protect the environment. All fishing vessels must be in a seaworthy condition and maintained as required by Transport Canada (TC), WorkSafeBC, and other applicable agencies. Vessels subject to inspection should ensure that the certificate of inspection is valid for the area of intended operation.

In the federal government, responsibility for shipping, navigation, and vessel safety regulations and inspections lies with TC; emergency response with the Canadian Coast Guard (CCG) and DFO has responsibility for management of the fisheries resources. In BC, WorkSafeBC exercises jurisdiction over workplace health and safety and conducts inspections on commercial fishing vessels in order to ascertain compliance with the Workers Compensation Act (WCA) and the Occupational Health and Safety Regulation (OHSR). DFO (Fisheries and Aquaculture Management (FAM) and CCG) and TC through a Memorandum of Understanding (MOU, 1996) have formalized cooperation to establish, maintain and promote a safety culture within the fishing industry.

Before departing on a voyage the owner, master, or operator must ensure that the fishing vessel is capable of and safe for the intended voyage and fishing operations. Critical factors for a safe voyage include the seaworthiness of the vessel, having the required personal protective and life-saving equipment in good working order, crew training, and knowledge of current and forecasted weather conditions. As safety requirements and guidelines may change, the vessel owner, crew, and other workers must be aware of the latest legislation, policies and guidelines prior to each trip.

There are many useful tools available for ensuring a safe voyage. These include:

- Education and training programs
- Marine emergency duties training
- Fish Safe – Stability Education Program & 1 Day Stability Workshop
- Fish Safe – SVOP/Safe on the Wheel Course
- Fish Safe – Safest Catch Program – FREE for BC commercial fishers
- First Aid training
- Radio Operators Course
- Fishing Masters Certificate training
- Small Vessel Operators Certificate training
- Publications:
 - Transport Canada Publication TP 10038 Small Fishing Vessel Safety Manual (can be obtained at Transport Canada Offices from their website at: <http://www.tc.gc.ca/eng/marinesafety/tp-tp10038-menu-548.htm>)

- Amendments to the Small Fishing Vessel Inspection Regulations (can be obtained from: <http://www.gazette.gc.ca/rp-pr/p2/2016/2016-07-13/html/sor-dors163-eng.php>)
- Gearing Up for Safety – WorkSafeBC
- Safe At Sea DVD Series – Fish Safe
- Stability Handbook – Safe at Sea and Safest Catch – DVD Series
- Safest Catch Log Book
- Safety Quick

For further information see: www.tc.gc.ca/eng/marinesafety/menu.htm
www.fishsafebc.com
www.worksafebc.com

2. IMPORTANT PRIORITIES FOR VESSEL SAFETY

There are three areas of fishing vessel safety that should be considered a priority. These are: vessel stability, emergency drills, and cold water immersion.

2.1. Fishing Vessel Stability

Vessel stability is paramount for safety. Care must be given to the stowage and securing of all cargo, skiffs, equipment, fuel containers and supplies, and also to correct ballasting. Fish harvesters must be familiar with their vessel's centre of gravity, the effect of liquid free surfaces on stability (i.e. loose water or fish on deck), loading and unloading operations, watertight integrity and the vessel's freeboard. Know the limitations of your vessel; if you are unsure contact a reputable naval architect, marine surveyor or the local Transport Canada Marine Safety Office.

Fishing vessel owners are required to develop detailed instructions addressing the limits of stability for each of their vessels. These instructions must include detailed safe operation documentation kept on board the vessel. Examples of detailed documentation include: engine room procedures; maintenance schedules to ensure watertight integrity; and, instructions for regular practice of emergency drills.

The *Fishing Vessel Safety Regulations* currently require, with certain exceptions, a full stability assessment for vessels between 15 and 150 gross tons that do not exceed 24.4 metres in length, and include fishing vessels involved in the catch of herring or capelin. In 2017, Transport Canada Marine Safety (TC) issued Ship Safety Bulletin (SSB) [No. 03/2017](#) announcing the coming into force of the New Fishing Vessel Safety Regulations. The initial regulations were published in the Canada Gazette Part II on July 13, 2016 and came into force on July 13, 2017. The bulletin includes important information on changes to requirements for Written Safety Procedures, Safety Equipment and Vessel Stability.

As of July 13, 2017, the following fishing vessels must successfully undergo a stability assessment by a competent person:

- A new fishing vessel that has a hull length of more than 9 m;

- A fishing vessel more than 9 m and that has undergone a major modification or a change in activity that is likely to adversely affect its stability ;
- A fishing vessels that is fitted with an anti-roll tank at any time;
- A fishing vessel more than 15 gross tonnage and used for catching herring or capelin during the period beginning on July 6, 1977 and ending on July 13, 2017

A fishing vessel that is not required to undergo a stability assessment shall have adequate stability to safely carry out the vessel's intended operations. Guidelines have been developed and are available online to help small fishing vessel owners and operators meet their regulatory requirements. Additionally, Transport Canada published a Stability Questionnaire ([SSB No. 04/2006](#)) and Fishing Vessel Modifications Form ([SSB No. 01/2008](#)) which enable operators to identify the criteria which will trigger a stability assessment. Please contact the nearest Transport Canada office if you need to determine whether your vessel requires one, or to receive guidance on obtaining competent assessor.

In 2008, TC is updating [SSB No. 01/2008](#), which sets out a voluntary record of modifications for the benefit of owners/masters of any fishing vessels. For vessels of more than 15 gross tons, the record of modifications was to be reviewed by TC inspectors during regular inspections and entered on the vessel's inspection record. However, information gathered during the Transportation Safety Board's (TSB) Safety Issues Investigation into the fishing industry showed minimal recording of vessel modifications prior to this date.

The TSB has investigated several fishing vessel accidents since 2005 and found a variety of factors that effected the vessel's stability were identified as contributing factors in vessels capsizing, such as with: [M05W0110](#) - *Morning Sunrise*, [M07M0088](#) - *Big Sisters*, [M08W0189](#) - *Love and Anarchy*, [M09L0074](#) - *Le Marsouin I*, [M10M0014](#) - *Craig and Justin*, [M12W0054](#) - *Jessie G*, [M12W0062](#) - *Pacific Siren*, [M14P0121](#) - *Five Star*, [M15P0286](#) - *Caledonian*, [M16A0140](#) - *C19496NB*, [M17C0061](#) - *Emma Joan* and [M17P0052](#) - *Miss Cory*.

Vessel masters are advised to carefully consider stability when transporting gear. Care must be given to the stowage and securing of all traps, cargo, skiffs, equipment, fuel containers and supplies and also to correct ballasting. Know the limitations of your vessel; if you are unsure contact a reputable marine surveyor, naval architect or the local Transport Canada Marine Safety office.

WorkSafeBC's Occupational Health and Safety Regulation (OHSR) requires owners of fishing vessels to provide documentation on board, readily accessible to crewmembers, which describes vessel characteristics, including stability.

In 2013, Fish Safe developed a code of best practices for the food and bait herring fishery and the prawn fishery: 'Food and Bait – Best Practice Reminders'; 'Prawn Industry - Best Industry Recommended Practices.' Please contact Ryan Ford at Fish Safe for a copy of the program materials they developed to address safety and vessel stability in these fisheries. Ryan Ford – Cell phone: (604) 739-0540 - Email: ryan@fishsafebc.com.

2.2. Emergency Drill Requirements

The *Canada Shipping Act, 2001* requires that the Authorized Representative of a Canadian Vessel shall develop procedures for the safe operation of the vessel and for dealing with emergencies. The Act also requires that crew and passengers receive safety training. The Marine Personnel Regulations require that all personnel on board required to meet the minimum safe manning levels have received MED (Marine Emergency Duties) training to an A1 or A3 level, depending on the vessel's voyage limits, within 6 months of serving aboard. MED A3 training is 8 hours in duration and is applicable to seafarers on fishing vessels less than 150 GRT that are within 25 miles from shore (NC2). MED A1 training is 19.5 hours duration and is applicable to all other fishing vessels.

MED provides a basic understanding of the hazards associated with the marine environment; the prevention of shipboard incidents; raising and reacting to alarms; fire and abandonment situations; and the skills necessary for survival and rescue.

WorkSafeBC's Occupational Health and Safety Regulation (OHSR) requires written rescue and evacuation procedures for work on or over water. Additionally, fishing vessel masters must establish procedures and assign responsibilities to each crewmember to cover all emergencies, including the following: crewmember overboard, fire on board, flooding of the vessel, abandoning ship, and calling for help.

Between 2011 and 2015 the TSB investigated 17 fishing vessel accidents which resulted in 17 fatalities. The reports findings highlighted the lack of safety drills and safety procedures and practices.

The Safest Catch program, delivered by Fish Safe and free to BC commercial fishers, includes comprehensive practice of drills such as abandon ship, man overboard and firefighting drills.

2.3. Cold Water Immersion

Drowning is the number one cause of death in BC's fishing industry. Cold water is defined as water below 25 degrees Celsius, but the greatest effects occur below 15 degrees C. BC waters are usually below 15 degrees C. Normal body temperature is around 37 degrees Celsius; cold water rapidly draws heat away from the body. The effects of cold water on the body occur in four stages: cold shock, swimming failure, hypothermia and post-rescue collapse. Know what to do to prevent you or your crew from falling into the water and what to do if that occurs. More information is available in the WorkSafeBC Bulletin Cold Water Immersion (available from the WorkSafeBC website at www.worksafebc.com).

WorkSafeBC currently requires workers who are employed under conditions which involve a risk of drowning to wear a PFD or lifejacket with sufficient buoyancy to keep the worker's head above water. Where there is a risk of entering the water, the use of a

PFD will prepare a crewmember to remain afloat, to survive the effects of cold shock, reduce the need to swim and give rescuers time to respond.

It has been demonstrated time and again that, when worn, PFD's save lives - and the chance of surviving a mishap increases significantly when these devices are worn while working on deck.

Resulting from the TSB investigations into the Diane Louise - [M14P0110](#) and the Caledonian – [M15P0286](#) fishing vessel accidents the Board recommended that both TC and WorksafeBC require that persons wear a suitable personal flotation devices (PFDs) at all times when: on the deck of a commercial fishing vessel; or, when on board a commercial fishing vessel without a deck or deck structure, and ensure that programs are developed to confirm compliance.

2.4. Other Issues

2.4.1. Weather

Vessel owners and masters are reminded of the importance of paying close attention to current weather trends and forecasts during the voyage. Marine weather information and forecasts can be obtained on VHF channels 21B, Wx1, Wx2, Wx3, or Wx4. Weather information is also available from Environment Canada website at: http://www.weatheroffice.gc.ca/marine/index_e.html

2.4.2. Emergency Radio Procedures

Vessel owners and masters should ensure that all crew are able to activate the Search and Rescue (SAR) system early rather than later by contacting the Canadian Coast Guard (CCG). It is strongly recommended that all fish harvesters carry a registered 406 MHz Emergency Position Indicating Radio Beacon (EPIRB). These beacons should be registered with the National Search and Rescue secretariat. When activated, an EPIRB transmits a distress call that is picked up or relayed by satellites and transmitted via land earth stations to the Joint Rescue Co-ordination Centre (JRCC), which will task and co-ordinate rescue resources.

Fish harvesters should monitor VHF channel 16 or MF 2182 KHz and make themselves and their crews familiar with other radio frequencies. All crew should know how to make a distress call and should obtain their restricted operator certificate from Industry Canada. However, whenever possible, masters should contact the nearest Canadian Coast Guard (CCG) Marine Communications and Traffic Services (MCTS) station (on VHF channel 16 or MF 2182 kHz) prior to a distress situation developing. Correct radio procedures are important for communications in an emergency. Incorrect or misunderstood communications may hinder a rescue response.

Since August 1, 2003 all commercial vessels greater than 8 metres in length are required to carry a Class D VHF Digital Selective Calling (DSC) radio. A registered DSC VHF radio has the capability to alert other DSC equipped vessels in your immediate area and MCTS that your vessel is in distress. Masters should be aware that they should register

their DSC radios with Industry Canada to obtain a Marine Mobile Services Identity (MMSI) number or the automatic distress calling feature of the radio may not work. For further information see the Coast Guard website at: <http://www.ccg-gcc.gc.ca/eng/CCG/Home> or go directly to the Industry Canada web page: www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01032.html

A DSC radio that is connected to a GPS unit will also automatically include your vessel's current position in the distress message. More detailed information on MCTS and DSC can be obtained by contacting a local Coast Guard MCTS centre (located in [Victoria](#) or [Prince Rupert](#)) or from the Coast Guard website: www.ccg-gcc.gc.ca/Pacific).

2.4.3. Collision Regulations

Fish harvesters must be knowledgeable of the *Collision Regulations* and the responsibilities between vessels where risk of collision exists. Navigation lights must be kept in good working order and must be displayed from sunset to sunrise and during all times of restricted visibility. To help reduce the potential for collision or close quarters situations which may also result in the loss of fishing gear, fish harvesters are encouraged to monitor the appropriate local Vessel Traffic Services (VTS) VHF channel when travelling or fishing near shipping lanes or other areas frequented by large commercial vessels. Vessels required to participate in VTS include:

- a) every ship twenty metres or more in length,
- b) every ship engaged in towing or pushing any vessel or object, other than fishing gear,
- c) where the combined length of the ship and any vessel or object towed or pushed by the ship is forty five metres or more in length; or
- d) where the length of the vessel or object being towed or pushed by the ship is twenty metres or more in length.

Exceptions include:

- a) a ship towing or pushing inside a log booming ground,
- b) a pleasure yacht **less than** 30 metres in length, and
- c) a fishing vessel that is **less than** 24 metres in length and not **more than** 150 tons gross.

More detailed information on VTS can be obtained by calling (250) 363-8904 or from the Coast Guard website: <http://www.ccg-gcc.gc.ca/eng/CCG/Home>.

2.4.4. Buddy System

Fish harvesters are encouraged to use the buddy system when transiting and fishing as this allows for the ability to provide mutual aid. An important trip consideration is the use of a sail/voyage plan which includes the particulars of the vessel, crew and voyage. The sail plan should be left with a responsible person on shore or filed with the local

MCTS. After leaving port the fish harvester should contact the holder of the sail plan daily or as per another schedule. The sail plan should ensure notification to JRCC when communication is not maintained which might indicate your vessel is in distress. Be sure to cancel the sail plan upon completion of the voyage.

3. WORKSAFEBC

WorkSafeBC exercises jurisdiction over workplace health and safety, including the activities of crews of fishing vessels. Commercial fishing, diving, and other marine operations are subject to the provisions of the *Workers Compensation Act (WCA)* and requirements in Part 24 of the Occupational Health and Safety Regulation (OHSR). Examples of Part 24 regulatory requirements related to fishing include, but are not limited to, the requirement to establish emergency procedures, to conduct emergency drills, to provide immersion suits for the crew, to provide stability documentation for the vessel, safe work procedures, injury reporting, correction of unsafe working conditions, etc.

Other sections of the OHSR also apply to commercial fishing operations. For example, Part 3 addresses training of young and new workers, first aid, and employer incident/accident investigations. Part 4 addresses general conditions such as maintenance of equipment, workplace conduct and impairment. Part 8 addresses issues related to safety headgear, safety footwear, and personal flotation devices (PFDs). Part 12 addresses issues related to tools, machinery and equipment, including safeguarding. Part 15 addresses issues related to rigging.

Additionally, Part 3 of the *WCA* defines the roles and responsibilities of owners, employers, supervisors and workers. (Fishing vessel masters are considered to be employers under the *WCA*)

The OHSR and the *WCA* are available from the Provincial Crown Printers or by visiting the WorkSafeBC website: www.worksafebc.com

NOTE: Regarding the OHSR requirement to wear PFD's, WorkSafeBC has produced a video entitled "Turning the Tide – PFD's in the Fishing Industry". For more information on PFD use, including a link to the video, please access the following site:

<https://www.worksafebc.com/en/about-us/news-events/news-releases/2018/November/new-fishing-industry-safety-video?origin=s&returnurl=https%3A%2F%2Fwww.worksafebc.com%2Fen%2Fsearch%23q%3DTurning%2520the%2520Tide%26sort%3Drelevancy%26f%3Alanguage-facet%3D%5BEnglish%5D>

For further information, contact an Occupational Safety Officer:

Bruce Logan Vancouver/ (604) 244-6477

| | | |
|------------------|----------------|----------------|
| | Richmond/Delta | |
| Mark Lunny | Courtenay | (250) 334-8732 |
| Cody King | Courtenay | (250) 334-8733 |
| Gregory Matthews | Courtenay | (250) 334-8734 |
| Jessie Kunce | Victoria | (250) 881-3461 |

or the Manager of Interest for Marine and Fishing, Pat Olsen (250) 334-8777

For information on projects and initiatives related to commercial fishing health and safety please contact Tom Pawlowski, Manager, Industry and Labour Services, at (604) 233-4062 or by email: tom.pawlowski@worksafebc.com

4. FISH SAFE BC

Fish Safe encourages Vessel masters and crew to take ownership of fishing vessel safety. Through this industry driven and funded program Fish Safe provides fishing relevant tools and programs to assist fishers in this goal. The Fish Safe Stability Education Program and 1 Day Stability Workshop are available to all fishers who want to improve their understanding of stability and find practical application to their vessel's operation. The SVOP (Small Vessel Operator Proficiency) Course is designed to equip crew with the skills they need to safely navigate during their wheel watch. The Safest Catch Program, along with fisher-trained Safety Advisors, is designed to give fishers the tools they need to create a vessel specific safety management system.

Fish Safe is managed by Ryan Ford, Program Manager, and support staff including John Krgovich, Program Coordinator, Stephanie Nguyen, Program Assistant, Rhoda Huey, Bookkeeper/Administrative Assistant, and an experienced team of fisher Safety Advisors. All activities and program development is directed by the Fish Safe Advisory Committee (membership is open to all interested in improving safety on board fishing vessels). The Advisory Committee meets two to three times annually to discuss safety issues and give direction to Fish Safe in the development of education and tools for fish harvesters.

Fish Safe also works closely with WorkSafeBC to improve the fishing injury claims process. For further information contact:

| | |
|---------------------------|---|
| Ryan Ford | Cell: (604) 739-0540 |
| Program Manager | Office: (604) 261-9700 |
| Fish Safe | Email: ryan@fishsafebc.com |
| #100, 12051 Horseshoe Way | www.fishsafebc.com |
| Richmond, BC V7A 4V4 | |

5. TRANSPORTATION SAFETY BOARD

The Transportation Safety Board (TSB) is not a regulatory board. The TSB is an independent agency that investigates marine, pipeline, railway and aviation transportation occurrences to determine the underlying risks and contributing factors. Its sole aim is the advancement of transportation safety by reporting publicly through Accident Investigation Reports or Marine Safety Information Letters or Advisors. It is not the function of the Board to assign fault or determine civil or criminal liability. Under the TSB Act, all information collected during an investigation is completely confidential.

In 2014 the TSB released three investigation reports:

- the collision between trawl fishing vessel [Viking Storm](#) and US long line fishing vessel *Maverick* and the subsequent fatality,
- the person over board off the prawn fishing vessel [Diane Louise](#) and the subsequent fatality, and
- the capsizing of the crab fishing vessel [Five Star](#) and subsequent fatality.

In 2016 the TSB released one investigation report:

- the capsizing of the trawl [Caledonian](#) and subsequent fatalities.

In 2018 the TSB released two investigation reports:

- the capsizing and sinking of the *Miss Cory* and subsequent fatality
- the sinking of the *Western Commander* and loss of life

The TSB issued five recommendations following the *Caledonian* report. Three recommendations issued are aimed at ensuring all crews have access to adequate stability information that meets their needs. That means:

- All commercial fishing vessels should have a stability assessment appropriate for their size and operation.
- The information from that assessment must then be kept current, and it must be used to determine safe operating limits.

Moreover, these operating limits must be easily measurable, and relevant to the vessel's operation. For example, that could mean marking the sides of a vessel's hull to indicate the maximum operating waterline. Or maximum permitted loads can be specified in the most relevant unit of measure—total catch weight for instance, or the safe number of traps. Regardless, for it to be of real, practical use, the information must be presented in a format that is clearly understood and easily accessible to crew.

The other two recommendations address the most basic step that fishers can take: wearing a personal flotation device. Here in British Columbia, roughly 70 percent of all fishing-related fatalities in the past decade came while not wearing a PFD. Yet many fishers still don't wear them. Regulations currently require that PFDs be worn only if fishers identify a risk, however; you never know when you could end up in the water. So the TSB is recommending to TC and WorksafeBC to require persons to wear suitable personal flotation devices at all times when on the deck of a commercial fishing vessel or

when on board a commercial fishing vessel without a deck or deck structure and that programs are developed to confirm compliance.

For more information about the TSB, visit the website at www.tsb.gc.ca

For information about the TSB's investigation into fishing safety, or to view a brief video, visit:

<http://www.tsb.gc.ca/eng/medias-media/videos/marine/m09z0001/index.asp>

To view information on the TSB's recent safety Watchlist, visit:

<http://www.tsb.gc.ca/eng/surveillance-watchlist/marine/2018/marine.asp>

Reporting an Occurrence: www.tsb.gc.ca/eng/incidents-occurrence/marine/

After a reportable occurrence happens; you can fill out the TSB 1808 form or call the TSB at the contact information below.

Glenn Budden, Investigator, Marine - Fishing Vessels

Transportation Safety Board of Canada

4 - 3071 No. 5 Road

Richmond, BC, V6X 2T4

Telephone: 604-666-2712

Cell: (604) 619-6090

Email: glenn.budden@tsb.gc.ca

Appendix 12: Groundfish Advisory Committee Contacts

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1. GROUND FISH ADVISORY COMMITTEE CONTACTS

Department consults on a regular basis with advisory committees that represent the different sectors (Halibut, Groundfish Trawl, Sablefish and the Hook and Line fisheries). Membership includes selected licence holders representative, plus appointed members of the groundfish industry representing the full cross section of stakeholders involved in the industry (i.e. fish harvesters, processors, crewmembers, shoreworkers, coastal communities, and others). These committees meet regularly during the year to provide wide ranging advice to the Department to assist in the overall planning, management and enforcement of the each of their respective fisheries. Vessel owners and stakeholders are urged to communicate any comments or concerns to their appropriate advisory committee representatives for discussion at these meetings. The current members of each of these committees are as follows.

1.1. Halibut Advisory Board (HAB)

| Name | Address | Phone | Email Address |
|--|--|---|--|
| Elected Commercial Members | | | |
| Terry Henshaw Annieville Halibut Association | 9155 Hardy Road Delta, BC V4C 7V8 | Phone (604) 581-9230 Cell (604) 341-3809 Fax (604) 581-1248 | tonic1949@gmail.com |
| Alternate TBA Alternate, Annieville Halibut Association | | | |
| TBA Annieville Halibut Association | | | |
| Alternate TBA Alternate, Annieville Halibut Association | | | |
| Lorne Iverson B.C. Halibut Longliners Association | 7950 Hunter Street Burnaby, BC V4C 7V8 | Phone (604) 444-4461 Fax (604) 415-3999 | lorneiverson@telus.net |
| Alternate TBA Alternate, B.C. Halibut Longlines Association | | | |
| Alan Carl | 212 5th Ave East | Phone (250) 627- | porchers@citytel.net |

| Name | Address | Phone | Email Address |
|--|---|--|--|
| Northern Halibut Producers Association | Prince Rupert, BC V8J 1R7 | 7942 Fax (250) 627-7592 | |
| Alternate TBA Alternate, Northern Halibut Producers Association | | | |
| Quinton Sample Pacific Coast Fishing Vessel Owners' Guild | | | quintonsample@gmail.com |
| Alternate TBA Pacific Coast Fishing Vessel Owners' Guild | | | |
| David Boyes Pacific Coast Fishing Vessel Owners' Guild | 499 Powerhouse Road Courtenay, BC V9N 9L1 | Phone (250) 338-2188 Fax (250) 338-2183 | mcboyes@telus.net |
| Angus Grout Alternate, Pacific Coast Fishing Vessel Owners' Guild | | Phone (250) 339-7753 Cell (250) 8981250 | rommel@telus.net |
| Lyle Pierce Pacific Coast Fishing Vessel Owners' Guild | 472 Condor Street Comox, BC V9M 1J7 | Phone (250) 339 9508 Cell (250) 897-5409 Fax (250) 339 -9568 | lyle_p@shaw.ca |
| Alternate TBA Alternate, Pacific Coast Fishing Vessel Owners' Guild | | | |
| Wesley Erikson Pacific Coast Fishing Vessel Owners' Guild | | | erikson.w@gmail.com |
| Dale Erikson Alternate, Pacific Coast Fishing Vessel Owners' Guild | | Phone (250) 897 2177 | majesticbelle2@gmail.com |

| Name | Address | Phone | Email Address |
|---|--|---|--|
| Art Davidson Canadian Sablefish Association | 2290 Mills Road, Sidney BC V8L 2C4 | Phone 250-661-9619 | artdavidson@telus.net |
| Clyde Brewster Woodburn Alternate, Canadian Sablefish Association | PO Box 255 Errington, BC V0R 1V0 | Phone 250-927-1850 | clydewoodburn@gmail.com |
| Leslie Budden Alternate, Canadian Sablefish Association | | Phone 604-328-7835 | lbudden@canadiansablefish.com |
| Herb Van Grootel Steveston Halibut Association | 41 - 50th Street Delta, BC V4M 2S5 | Phone 604-948-2741 Fax 604-948-2741 Cell 604-328-5555 | herb.vg@telus.net |
| Jim Nightengale Alternate, Steveston Halibut Association | 4420 Maple Lane Ladner, BC V4K 2Z5 | Phone 604-946-0947 Fax 604-946-0947 Cell 604-862-3479 | jnightengale@dccnet.com |
| Robert Hauknes | | | robert_hauknes@hotmail.com |
| Appointed Members¹ | | | |
| Scott Wallace Environmental organizations | 219 – 2211 W. 4 th Avenue, Vancouver BC V6K 4S2 | 604-732-4228 ext. 1242 | swallace@davidsuzuki.org |
| Greg Taylor Alternate, Environmental organizations | | | Gtaylor.fishfirst@gmail.com |
| Cliff Atleo Nuu-chah-nulth First Nations | | | c.atleo71@shaw.ca |

¹ Appointed members subject to change following 2017 appointment process

| Name | Address | Phone | Email Address |
|--|---|--|--|
| Philip Edgar Alternate, Nuu-chah-nulth First Nations | | | |
| Frank Dragon Maa-nulth Fisheries Committee and Nations | 1727 Imperial Avenue, Port Coquitlam BC V3B 5R6 | 604-908-5023 | frankdragon16@yahoo.ca |
| Ron Frank Alternate, Maa-nulth Fisheries Committee and Nations | 2790 Smith Road, Courtenay BC V9J 1M5 | 250-334-7997 | ron.j.frank@gmail.com |
| Dr. David Wilson International Pacific Halibut Commission | 2320 West Commodore Way, Suite 300 Seattle, WA USA 98199-1287 | Phone (206) 634-1838 Fax (206) 632-2983 | david@iphc.int |
| Steve Keith International Pacific Halibut Commission | 2320 West Commodore Way, Suite 300 Seattle, WA USA 98199-1287 | Phone (206) 634-1838 Fax (206) 632-2983 | steve@iphc.int |
| Paul Ryall International Pacific Halibut Commission Commissioner | #200-401 Burrard Street Vancouver, B.C. V6C 3S4 | | paul.ryall@dfo-mpo.gc.ca |
| Jake Vanderheide International Pacific Halibut Commission Commissioner | | | jcheide@telus.net |
| Ted Assu International Pacific Halibut Commission Commissioner | | | |
| Christopher Sporer Pacific Halibut Management Association | #16046 617 Belmont Street New Westminster, BC V3M 6W6 | Phone (604) 523-1528 Fax (604) 648-8737 | phma@telus.net |

| Name | Address | Phone | Email Address |
|--|---|--|--|
| TBA Processor | | | |
| TBA Processor Alternate | | | |
| Chuck Ashcroft Sport Fishing Advisory Board | | | chuckashcroft@telus.net |
| Doug Daugert Sport Fishing Advisory Board | | | kumdisisland2@yahoo.ca |
| Gerry Kristanson Sport Fishing Advisory Board | | | gerrykr@telus.net |
| Martin Paish Alternate, Sport Fishing Advisory Board | | | martinpaish1@gmail.com |
| TBA Alternate, Sport Fishing Advisory Board | | | |
| Russell Cameron Union, UFAWU/CAW | RR1 S-6 C-9 Madeira Park, B.C. V0N 2H0 | Phone (604) 740-6434 | russelljcameron@yahoo.ca |
| TBA Union Alternate | | | |
| Participant Observers | | | |
| Shane Petersen DFO Halibut/Hook and Line Coordinator, HAB Chair | #200-401 Burrard Street Vancouver, B.C. V6C 3S4 | Phone (604) 666-3279 Fax (604) 666-8525 | shane.petersen@dfo-mpo.gc.ca |
| Carole Eros DFO Regional Rec | #200-401 Burrard Street | | carole.eros@dfo-mpo.gc.ca |

| Name | Address | Phone | Email Address |
|---|--|---|--|
| Fish Coordinator | Vancouver, B.C. V6C 3S4 | | |
| Adam Keizer DFO Regional Manager, Groundfish | #200-401 Burrard Street Vancouver, B.C. V6C 3S4 | Phone (604) 666-9033 Fax (604) 666-8525 | adam.keizer@dfo-mpo.gc.ca |
| Ann-Marie Huang DFO Halibut Science Advisor | | | ann-marie.huang@dfo-mpo.gc.ca |
| Ann Bussell DFO Regional Groundfish Enforcement Coordinator | #200-401 Burrard Street Vancouver, B.C. V6C 3S4 | | ann.bussell@dfo-mpo.gc.ca |
| Mike Turner Province of B.C., Ministry of Agriculture, Sector Development Branch, Business Development Division | 808 Douglas St. Victoria, BC V8W 9B4 | Phone (250) 356-1704 Cell (250) 886-6318 | michael.r.turner@gov.bc.ca |
| Darah Gibson Province of B.C., Ministry of Agriculture, Sector Development Branch, Marine Fisheries and Seafood | 808 Douglas St. Victoria, BC V8W 9B4 | Phone (250) 356-5362 Cell (250) 893-0260 | darah.gibson@gov.bc.ca |

1.2. Groundfish Trawl Advisory Committee (GTAC)

| Elected Licence Holder Representatives | | | |
|---|--|---|--|
| Name | Address | Phone | Email Address |
| Mike Buston | 8038 Lantzville Road Lantzville, B.C. V0R 2H0 | Phone (604) 940-9111 Cell (604) 817-4131 Fax (604) 940-9295 | mike@aqualineseafoods.com |

| Name | Address | Phone | Email Address |
|--|---|--|--|
| Brian Dickens | 1130 Robertson Blvd, Parksville, B.C. V9P 1Y2 | Phone (250) 248-1018 Cell: (250)726-8028 Fax (250) 248-1018 | brdickens@shaw.ca |
| Jim Harris | #22 447 Pym Street Parksville, B.C. V9P 2H9 | Cell (250) 741-6744 Phone: Fax: | seajharris@shaw.ca |
| Kris Ostrom | | | |
| Gary Krause | 1631 11 Avenue E, Prince Rupert, B.C., V8J 2X5 | Phone (250) 627-1957 Cell: Fax (250) 624-3886 | phantom@citytel.net |
| Shannon Mann | 2295 Commissioner Street Vancouver, B.C. V5L 1A4 | Office 604-215-7909 Cell 778-772-8238 Fax 604-215-7878 | shannonmann@marineseafoods.com |
| Bob Morreau | 1036 208 Street Langley, B.C. V2Z 1T4 | Phone (604) 534-1760 Cell: (604) 725-9309 Fax (604) 534-2460 | highline@telus.net |
| John Roach | 19915 1st Ave , Langley, BC V2Z. 0A4 | Phone (604) 536-1397 Cell (604) 880-2234 Fax (604) 535-7546 | jrfishing@shaw.ca |
| Joesph Greene | 3530 Falcon Drive, Nanaimo, BC V9T 4G8 | Phone (250) 751-1093 Cell (250) 616-8070 | Jmgreene@shaw.ca |
| Kelly Andersen | 15910 Pacific Ave. WhiteRock, BC V4B 1T1 | Phone (604) 619-7949 | Kelly.andersen@telus.net |
| Appointed members | | | |
| Name | Address | Phone | Email Address |
| Glen Kierce (Lax Kw'alaams First Nation) | 153 Alpine Drive Prince Rupert, B.C. V8J 4C5 | Phone (250) 624-4117 Cell (250) 660-0477 Fax () | deepsea@citytel.net |
| Jamie Robertson (Opt B Rep) | 4593 River Road W Delta, B.C., V4K 1R9 | Phone (604) 946-6710 Cell (778) 862-8488 Fax (604) 946-6702 | madone@telus.net |
| Tony McDermid (Opt B Rep) | 101-9650 First Street Sidney, B.C. V8L 3C9 | Phone (250) 654-0392 Cell (250) 213-3403 Fax (250) 656-9396 | roselyn@sidneywaterfront.com |
| Albert Radil (Association of Pacific Hake Fishermen) | | | aradil. |
| Scott Wallace (David Suzuki Foundation) | 219-2211 W4th Ave Vancouver, BC V6K 4S2 | Phone (604)732-4228 ext. 1242 | swallace@davidsuzuki.org |
| Theresa Williams – (Fisher Bay Seafoods) | 3326 Anchorage Ave. Victoria, B.C. V9C 1X2 | Phone (250) 478-9312 Fax (250) 478-9382 | theresa.williams@shaw.ca |

| Name | Address | Phone | Email Address |
|---|---|---|--|
| Dave Dawson – (S & S Seafoods Canada) | 12 Orwell Street, North Vancouver, B.C. V7J 2G1 | Phone (604) 726-0449 | ddawson@pacseafood.com |
| Ken Miller (alt. S&S Seafood Canada) | 12 Orwell Street, North Vancouver, B.C. V7J 2G1 | Phone (604) 928-9844 | kmiller@pacseafood.com |
| George Mukai – (Canadian Fishing Company) | Foot of Gore Street Vancouver, B.C. V6A 2Y7 | Phone (604) 681-0211 Fax (604) 681-3277 | George.Mukai@Canfisco.com |
| Phil Young – (alt. Canadian Fishing Company) | Foot of Gore Street Vancouver, B.C. V6A 2Y7 | Phone (604) 681-0211 Fax (604) 681-3277 | Phil.Young@Canfisco.com |
| Charlie Minns – (Groundfish Development Authority) | 356 Centennial Parkway Delta, B.C. V4L 1K7 | Phone (604) 943-3320 Cell (604) 880-1425 Fax (604) 943-1166 | cmimms@dccnet.com |
| Brian Mose – Deep Sea Trawlers Association) | 2342 Andover Road Nanose Bay, B.C. V9P 9G8 | Phone (250) 248-0969 Fax (250) 752-1032 | bmose@uniserve.com |
| Jim MacIssac (UFAWU/ Unifor) | 200-4248 Glanford Ave Victoria, BC V8Z 4B8 | Phone (250)384-4423 Cell (250) 818-1114 | jamcisaac@shaw.ca |
| Bruce Turris – (Canadian Groundfish and Research Conservation Society) | 333 Third St, New Westminster, B.C., V3L 2R8 | Phone (604) 524-0005 Fax (604) 524-0150 | bruceturris@shaw.ca |
| Darah Gibson Province of B.C., Ministry of Agriculture, Sector Development Branch, Marine Fisheries and Seafood | 808 Douglas St. Victoria, BC V8W 9B4 | Phone: 250-893-0260 | darah.gibson@gov.bc.ca |
| Rob Tadey DFO – Chair Pacific Region Trawl Co-ordinator | DFO – RHQ #200-401 Burrard St. Vancouver, B.C. V6C 3S4 | Phone (604) 666-3991 Cell (604) 250-1156 Fax (604) 666-8525 | Robert.Tadey@dfo-mpo.gc.ca |
| Ann Bussell DFO Regional Groundfish Enforcement Coordinator | #200-401 Burrard Street Vancouver, B.C. V6C 3S4 | Phone (604) 666-4162 | ann.bussell@dfo-mpo.gc.ca |

1.3. Sablefish Advisory Committee (SAC)

| Name | Address | Phone | Email Address |
|-------------|----------------|--------------|----------------------|
|-------------|----------------|--------------|----------------------|

| Name | Address | Phone | Email Address |
|--|---------|----------------|--|
| Elected Commercial Members | | | |
| Art Davidson Canadian Sablefish Association, Longline representative | | (250) 661-9619 | artdavidson@telus.net |
| Blair Pearl Alternate, Canadian Sablefish Association, Longline representative | | (604) 740-7451 | bpearl@dccnet.com |
| Brewster Woodburn Canadian Sablefish Association, Longline representative | | (250) 927-1850 | clydewoodburn@gmail.com |
| Tom Russell Alternate, Canadian Sablefish Association, Longline representative | | (250) 949-1871 | quatsinostar@gmail.com |
| Tim Joys Canadian Sablefish Association, Trap representative | | (604) 240-5097 | timjoys43@gmail.com |
| Deacon Melnychuk Alternate, Canadian Sablefish Association, Trap representative | | (604) 813-1279 | viking4@shaw.ca |
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| Name | Address | Phone | Email Address |
|---------|---------|-------|---------------|
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2. COMMERCIAL INDUSTRY CAUCUS (CIC)

The groundfish commercial industry in conjunction with Fisheries and Oceans Canada and the Province of British Columbia established an advisory committee called the “Commercial Industry Caucus (CIC)” to discuss and formulate advice on issues that cross all commercial sectors in the development and implementation of the integrated commercial groundfish fishery. Members of CIC are selected by each of the DFO Groundfish Advisory Committees and fishing sectors to represent that sectors interests. The general mandate of CIC is provide a forum for open discussion in the development of consensus advice on reforms to the Groundfish IFMP including in season management actions. Members of CIC are as follows:

| Name | Address | Phone | Email Address |
|---------------------------------------|--|--|--|
| Dave Dawson Trawl (Processor) | 2305 Commissioner Street, Vancouver, BC V5L 1A4 | Bus. Phone 604-254- 5751 Cell 604-776-0449? | ddawson@pacseafood.com |
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2.1. Groundfish Hook and Line SubcomMittee (GHLSC)

The Groundfish Hook & Line Subcommittee (GHLSC) is a forum for providing advice, and for communicating information and concerns, to Fisheries and Oceans Canada (DFO, the Department) on management and policy issues relating to the Lingcod, Dogfish and Rockfish (inside and outside) commercial fisheries in the Pacific Region. Advice will be forwarded directly to the Department on matters specific to the Lingcod, Dogfish and Rockfish fisheries and via the Commercial Industry Caucus (CIC) for matters that are inter-sectoral. This advice will be taken into consideration by the Minister to assist in the overall planning, management and enforcement of these fisheries. The Groundfish Hook and Line Sub-committee will serve as the forum for disseminating information from the Department back to the industry.

| Name | Address | Phone | Email Address |
|--|--|--|--|
| Clyde Brewster Woodburn (Outside ZN) | | (250) 248-3023 | clydewoodburn@gmail.com |
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3. GROUND FISH INTEGRATED ADVISORY BOARD (GIAB)

Following initial discussions with interested sectors and resource users, the Groundfish Management Unit, Fisheries and Oceans Canada convened a Working Group in early 2009 to develop a draft terms of reference for an integrated advisory board for all groundfish interests. The Terms of Reference have now been finalized and are available at: <http://www.pac.dfo-mpo.gc.ca/consultation/fisheries-peche/ground-fond/giab-ccipf/index-eng.htm>. This structure is intended to support Fisheries and Oceans Canada's commitment to taking a more integrated and cooperative approach to addressing a wide range of issues in the management of the groundfish fisheries in BC, and contribute to sustainable commercial, recreational and Food, Social, and Ceremonial fisheries. The members of this advisory board are as follows:

| Name | Interests | E-mail Address |
|---|------------------------|--|
| Des Nobels <i>Skeena Queen</i> <i>Charlotte Regional District</i> | Coastal Communities | dnobels@citytel.net |
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Appendix 13: Fishing Hazards Advisory

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1. NEPTUNE CANADA NETWORK, WEST COAST VANCOUVER ISLAND.....2

DRAFT

1. NEPTUNE CANADA NETWORK, WEST COAST VANCOUVER ISLAND

Ocean Networks Canada's NEPTUNE Observatory is deployed on the seafloor in the waters off the West Coast of Vancouver Island. The area involved is in the rectangular area bounded by 48 deg 40' N, 129 deg 10' W; 47 deg 40' N, 125 deg 16' W. The system layout is outlined in the included figure.

PLEASE BE AWARE that although we have made substantial efforts to bury the majority of the backbone cable and two 10 km heavy extension cables from the node at Barkley Canyon, **there remains some exposure in Folger Passage and Barkley Canyon areas.** At both sites the instruments are primarily located on the surface of the seafloor and are at high risk from trawling. Of particular note is a vertical profiler system with a suite of instruments that rises from the seafloor and breaches the sea surface and thus is at substantially higher risk. The vertical profiler is centred at 48° 25.6429' N and 126° 10.4493' W in 394 m of water. **Ocean Networks Canada has experienced two incidents of equipment damage in Barkley Canyon since the equipment was installed. Please avoid fishing in these areas** and refer to our information for Mariners pages and Electronic Navigational System files for upload for more details: <http://www.oceannetworks.ca/installations/notice-mariners>.

Ocean Networks Canada provides real-time data to people all over the world who influence public policy decisions, science, and public outreach. Benefits such as an advanced tsunami warning system, better understanding and recording of earthquakes, understanding ocean changes including spring phytoplankton blooms, oxygen levels, and trends in hypoxia highlight just a few of the potentials of this array. Real time data and more information, including notices to mariners, can be obtained on our website at www.oceannetworks.ca. We appreciate your support and cooperation in making this platform a success through its 25-year design life.



Figure 1. Ocean Networks Canada NEPTUNE Observatory areas of high risk to trawling. Additional caution should be exercised in areas indicated with a red box. (Bathymetry Data Sources: Saanich Inlet and Strait of Georgia bathymetry from Canadian Hydrographic Service; USGS Cascadia DEM report 99-369; University of Washington (UW), School of Oceanography, *R/V Thomas G. Thompson*, Multibeam cruise data - funding provided by KECK Foundation and UW; Plate Boundaries: Adapted from Dragert et al. Science, May 2001. Map adapted from original by: Center for Environmental Visualization, UW School of Oceanography.)