

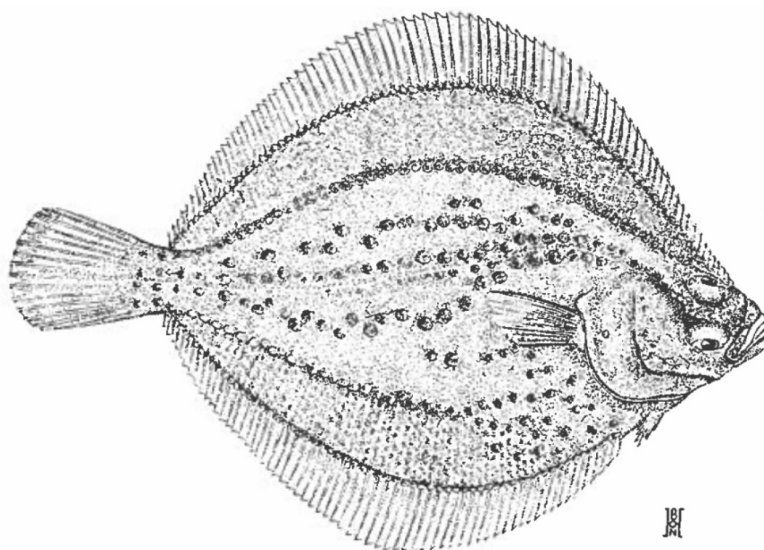
PACIFIC REGION

**INTEGRATED FISHERIES
MANAGEMENT PLAN**

GROUNDFISH

EFFECTIVE FEBRUARY 21, 2021

VERSION 1.1



Roughscale Sole (*Clidoderma asperrimum*)



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.

This page intentionally left blank

FOREWORD

The purpose of this Integrated Fisheries Management Plan (IFMP) is to identify the main objectives and requirements for the Groundfish fisheries 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>.

TABLE OF CONTENTS

1.	OVERVIEW OF THE FISHERY	6
1.1.	History.....	6
1.2.	Type of Fishery and Participants	6
1.3.	Location of Fishery	7
1.4.	Commercial Fishing Areas.....	7
1.5.	Governance	9
1.6.	Approval Process	10
2.	RESOURCE MANAGEMENT GOAL	10
3.	STOCK ASSESSMENT AND STATUS.....	12
3.1.	Biological Synopsis	12
3.2.	Indigenous Traditional Knowledge/Traditional Ecological Knowledge	12
3.3.	Stock Assessment and Science Advice	13
3.4.	Precautionary Approach (PA).....	16
3.5.	Research.....	17
4.	ECONOMIC, SOCIAL AND CULTURAL IMPORTANCE	19
4.1.	Indigenous Fisheries	20
4.2.	Recreational Fishery	21
4.3.	Commercial Fishery.....	25
5.	OTHER GROUND FISH MANAGEMENT ISSUES	34
5.1.	Depleted Species Concerns	34
5.2.	Oceans and Habitat Considerations	42
5.3.	Human Waste Containment Regulations	52
6.	ACCESS AND ALLOCATION.....	52
6.1.	Access and Allocations	52
7.	COMMERCIAL MANAGEMENT MEASURES	74
7.1.	Commercial Sector Groups	74
7.2.	Individual Vessel Accountability and Responsibility	74
7.3.	Sector Caps	74
7.4.	Reallocations of Individual Quota	74
7.5.	Multiple Hail-outs	75
7.6.	At-Sea Monitoring	75
8.	RECREATIONAL MANAGEMENT MEASURES	75
8.1.	Tidal Water Sport Fishing - Licensing and Regulations.....	75
8.2.	Licence Fees.....	76
8.3.	Online Regulations.....	76
8.4.	Using mobile devices and the FishingBC App	77
8.5.	E-licences and Paper licences	77
8.6.	Catch Reporting and the (iREC) Survey.....	77
9.	SHARED STEWARDSHIP ARRANGEMENTS	78
9.1.	Commercial Industry.....	78
9.2.	Fisheries and Oceans Canada.....	78
10.	COMPLIANCE PLAN	78
10.1.	Overview	78
10.2.	Enforcement Priorities	79
10.3.	Fishery Patrol Vessels	79

10.4.	Air Surveillance	80
11.	IN-SEASON UPDATES	80
12.	APPENDICES	82
13.	GLOSSARY	82

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*.

For additional information regarding indigenous fisheries, refer to section 6.1.1.

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

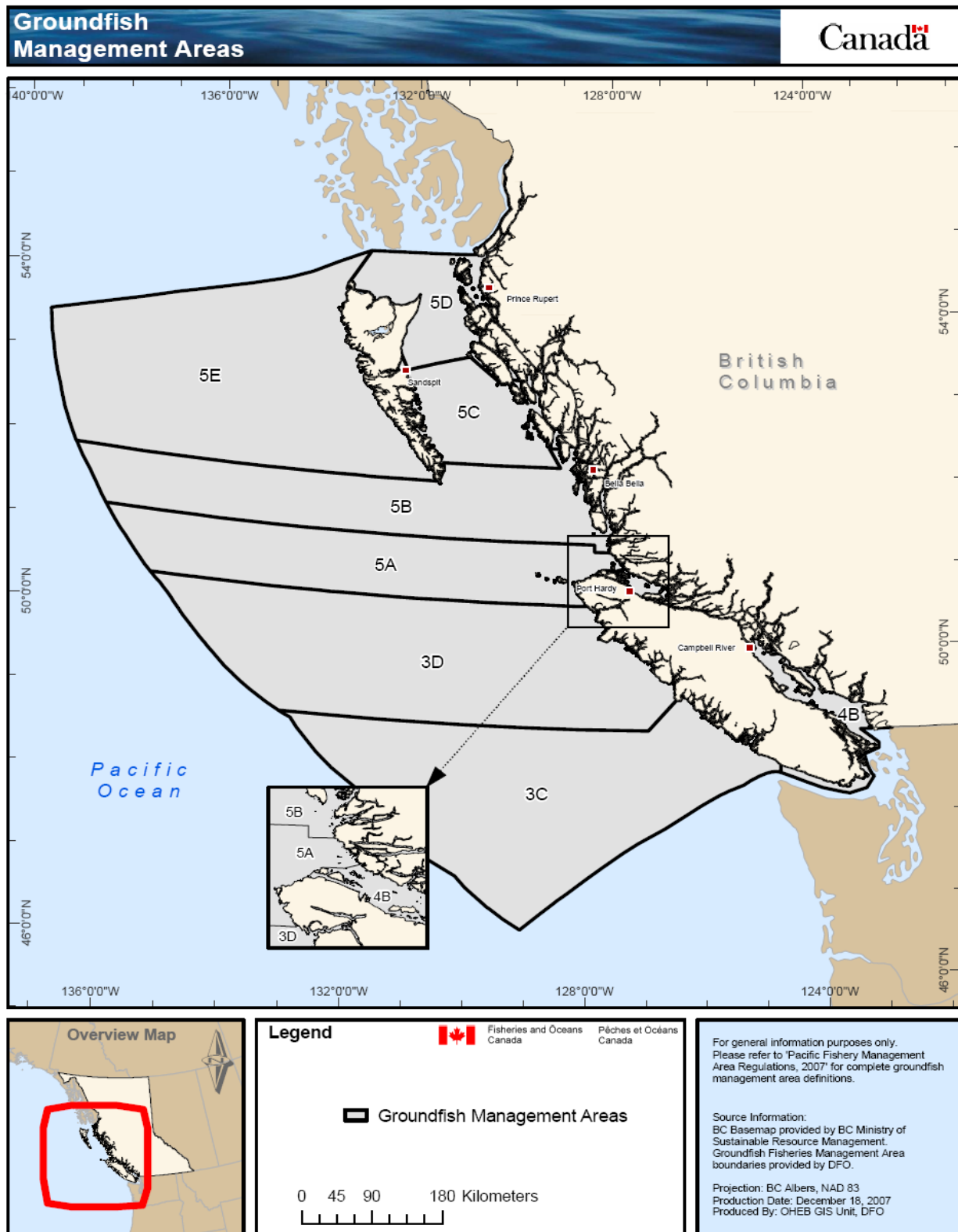
This Integrated Fisheries Management Plan (IFMP) addresses groundfish fisheries occurring in waters of the Pacific Ocean off the west coast of Canada.

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*.
- The *Coastal Fisheries Protection Act*.

In addition to these regulatory tools, the Department's Sustainable Fisheries Framework provides the policy basis for ensuring that Canadian fisheries support conservation and sustainable use of resources. The framework:

- establishes a precautionary approach to fisheries management
- provides the basis for an ecosystem approach to fisheries management
- includes tools to monitor and assess environmentally sustainable initiatives
- combines new and evolving fisheries management policies with current ones

The current suite of Sustainable Fisheries Framework policies showing Canada's commitment to the precautionary approach and the principles of ecosystem-based fisheries management include:

- [Policy on New Fisheries for Forage Species](#)
- [Guidance on Implementation of the Policy on Managing Bycatch](#)
- [Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas](#)
- [A Fishery Decision-Making Framework Incorporating the Precautionary Approach](#)
- [Ecological Risk Assessment Framework for Coldwater Corals and Sponge Dominated Communities](#)
- [Guidance for the Development of Rebuilding Plans under the Precautionary Approach Framework: Growing Stocks out of the Critical Zone](#)
- [Fishery Monitoring Policy](#)
- [Introduction to the procedural steps for implementing the Fishery Monitoring Policy](#)

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 key areas of focus that will align our activities with these goals over the long term.

Priority	Management measures
Implement a fisheries program that uses scientific evidence, the precautionary principle, and takes into account climate change when making decisions affecting fish stocks and ecosystem management.	<p>Implementation of the peer-reviewed Management Procedure Framework for British Columbia groundfish species to generate status assessments in a more timely manner. See section 3.3.1 for additional information.</p> <p>Continue to 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</p>

Priority	Management measures
	<p>section 1.5 and the harvest plan appendices for additional information.</p> <p>Continue a pilot for enhanced catch monitoring of groundfish trawl vessels with the use of electronic monitoring (EM) technology to supplement the current at-sea observer program. These enhanced monitoring measures will apply to trawl vessels where independent monitoring of all fishing activity cannot be covered by one observer. See Appendix 8 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>Consistent with regulation and policy under a renewed <i>Fisheries Act</i>, develop, implement, and monitor management measures to maintain major fish stocks at levels necessary to promote sustainability. Develop, implement, and monitor rebuilding plans for depleted major fish stocks.</p>	<p>Rebuilding plans for Bocaccio and Yelloweye Rockfish have been developed and continue to be evaluated as described in Appendix 9. A CSAS review of rebuilding strategies for Bocaccio and Yelloweye Rockfish occurred in late 2019 and will be used to renew rebuilding plans throughout 2021. See Appendix 9 for additional information.</p> <p>Continue measures implemented in 2019 for the protection of the Southern Resident Killer Whales. Southern Resident Killer Whale management measures are in place for 2021, which include measures that reduce the threats of fisheries related interactions and disturbance. See 5.1.6 for additional information.</p> <p>Develop new sampling protocols for salmon bycatch in groundfish trawl fisheries to assess stock-specific impacts. See Appendix 8.</p> <p>Incidental sub-legal Sablefish catch, and the associated release mortality, limits stock productivity. Candidate management procedures to reduce sub-legal mortality have been evaluated in via a Management Strategy Evaluation process and published in a Science Response. Drawing from existing advisory boards DFO continues work to implement management measures aimed</p>

Priority	Management measures
	at reducing the frequency and volume of sub-legal Sablefish bycatch. See Appendix 7.
Supporting implementation of marine spatial planning initiatives	<p>Canada's national network of MPAs is currently being advanced in five priority marine bioregions, including the Pacific Northern Shelf. A Marine Protected Area Network design scenario was shared in February 2019 with non-signatory First Nations and in early spring 2019 with stakeholders. All groups have been given the opportunity to provide feedback and are currently reviewing the design scenario. Governance partners will consider all input received from Indigenous groups and stakeholders and anticipate sharing a revised network design for further review in late autumn 2020. This was delayed in part due to COVID-19. Draft scenarios are under revision and will be subject to further consultation in 2021. See section 5.2.1.2 for additional information.</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.

During the 2020/21 fishery season, harvest advice has been published for Pacific Cod, Rougheye/Blackspotted Rockfish complex, and inside Yelloweye Rockfish population. A new approach for the provision of harvest advice was also published with the Management Procedure Framework for British Columbia Groundfish. Regularly provided updates for outside Yelloweye Rockfish population and Sablefish based on adopted management procedures were provided (section 6.1.5.4), as were updates for Pacific Hake and Halibut¹. During the 2021/22 fishery season, harvest advice is anticipated for Arrowtooth Flounder, Yellowmouth Rockfish, and updates for Bocaccio, Pacific Cod and the outside Yelloweye Rockfish population.

Upon receipt of science advice and in consultation with Departmental advisory processes, catch limits have been reviewed for Pacific Cod, Rougheye/Blackspotted Rockfish complex, Bocaccio and the inside Yelloweye Rockfish population.

Pacific Cod

A Science Response provided updated advice for Pacific Cod stocks in 3CD and 5ABCD based on *Assessment of Pacific Cod (Gadus macrocephalus) for Hecate Strait and Queen Charlotte Sound (Area 5ABCD), and West Coast Vancouver Island (Area 3CD) in 2018 (2020/070)*. The 2018 assessment recommended updates in each area be provided in years immediately following the biennial groundfish synoptic bottom trawl survey (i.e., when the most recent survey index point is available). Fishery-independent synoptic bottom trawl surveys are typically conducted biennially in BC, usually occurring in even-numbered years for West Coast Vancouver Island (WCVI), and odd-numbered years in Queen Charlotte Sound and Hecate Strait. However, due to the coronavirus disease 2019 (COVID-19) pandemic, the scheduled 2020 WCVI survey did not occur. Nonetheless, a Science Response was completed with available catch data and 2019 survey data. The

¹ Pacific Halibut and Pacific Hake are two groundfish species with assessments that are delivered outside the CSAS 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 process.

Science Response estimated the 3CD stock to be in the Cautious Zone, as was the case in the 2018 assessment. However, the stock is estimated to have declined in abundance and is estimated to be closer to the LRP than in the previous assessment. The probability of the fishing mortality exceeding the limit removal rate (LRR) is less than 1% for all levels of catch up to 400 t. A concern noted within Science Response is the lack of a WCVI synoptic survey update in 2020. The Science Response recommend surveying this area as soon as it is feasible to do so, then updating this advice. The 5ABCD stock is estimated to be in the Cautious Zone, as it was in the 2018 assessment. The probability of the stock exceeding the LRR is less than 1% for all levels of catch up to 1,400 t. Given the science advice and recent fishery removals, the catch limit for 3CD is lowered from 500 t to 300 t, as described in section 6.1.5.4. No change had been made for the 5ABCD stock, which remains at 950 t.

Rougheye/Blackspotted Rockfish complex

Two spatial stocks of the Rougheye/Blackspotted (REBS) Rockfish complex have been identified along the BC coast, based loosely on the spatial distribution of genetically confirmed specimens from surveys: the northern REBS stock (REBS North) in groundfish management areas 5DE is predominantly comprised of Blackspotted Rockfish, and the southern stock (REBS South) in 3CD5AB is largely comprised of Rougheye Rockfish. The science advice noted an area of hybridization in area 5C and recognised that these spatial definitions only approximate the true species distribution. This distribution approach was adopted in the absence of a more reliable methodology to identify the species and their distribution.

Median biomass estimates for REBS North suggest that the stock is above the Upper Stock Reference point with > 99% probability (i.e. within the Healthy zone), and that the current exploitation rates is less than the rate associated with maximum sustainable yield. Given the science advice and recent fishery removals, the catch limit for REBS North is 800 t, as described in section 6.1.5.4. Median biomass estimates for REBS South suggest that the stock is above the Upper Stock Reference point with greater than 74% probability (i.e. within the Healthy zone), but that the current exploitation rates is greater than the rate associated with maximum sustainable yield. At current removal rates, the REBS South stock is projected to fall below the USR over the next 75 years (1.5 generations). Given the science advice and recent fishery removals, the catch limit for REBS South is 300 t, as described in section 6.1.5.4. The previous coastwide catch limit for Rougheye Rockfish was 1,144 t, and the combined catch limit for the REBS complex North and South totals 1,100 t. The Science Advisory Report recommends that the next REBS assessment occur by 2030, or sooner, subject to the availability of new information. During intervening years, the trend in abundance can be tracked by surveys which sample this species, as well as by commercial fishery CPUE. when additional catch indices and aging data will be available.

Bocaccio and Inside Yelloweye Rockfish

Through the process of regular evaluation of the rebuilding plans, science advice on stock status and rebuilding strategies for Bocaccio (December 2019) and the inside Yelloweye Rockfish population (June 2020) was provided.

Bocaccio spawning biomass is estimated to have declined by more than 95% over the past 50 years, with the most significant declines occurring prior to 1970 and after 1990. While Bocaccio is currently still estimated to be less than its Limit Reference Point, a significant recruitment event occurred in 2016. As a result of this event there is a greater than 90 percent probability that Bocaccio's estimated stock status will be greater than the Upper Stock Reference (USR) by 2025. The USR is the stock threshold below which removals must be progressively reduced in order to avoid reaching the LRP. A stock status above the USR is often referred to as the "healthy zone." This projected growth above the USR assumes a total annual mortality of up to 500 t. Estimated average mortality from all sources between 2015 – 2019 is 69 t. Bocaccio recruitment events and management responses of the same magnitude recently occurred in US waters.

Scientific advice for the inside Yelloweye Rockfish was provided through the application of a new management strategy evaluation framework recently developed for BC groundfishes (the Management Procedure [MP] Framework) (Anderson et al. 2020). This was the first stock to use the MP Framework, which was used to evaluate the performance of alternative data-limited MPs to support the current rebuilding plan for inside Yelloweye Rockfish population. None of the models estimated the median stock biomass to be below the LRP (the Critical zone) in 2019. Differences in estimates of inside Yelloweye Rockfish stock status between the current models and previous assessment were attributable to model structure choices. Based on performance relative to the objectives, the rank order of the five candidate management approaches was assessed and a MP with constant catch policy of 15 t was adopted.

DFO's 2001 rockfish conservation strategy set out four components: comprehensive catch monitoring; dramatically reduced fishing mortality; extensive fishery closed areas; and improved stock assessment and monitoring. All aspects of this conservation strategy remain important and are facilitated through DFO's integrated fishery management measures and Rockfish Conservation Areas. Rebuilding Plans for Bocaccio and associated management measures remain in effect. Given these measures and the science advice noted above the 2021/22 mortality cap for Bocaccio will be increased to 500 t from 363 t, while the 2021/22 mortality cap for inside Yelloweye Rockfish will remain at 15 t, as described in Appendix 9.

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 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 fisheries are 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) 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, supported through a Use of Fish agreement with Pacific Halibut Management Association (PHMA).

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 by DFO 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 are 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 the Pacific Halibut Management Association 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. In 2020, a third technician was not put on board the survey vessels due to COVID-19 measures. A third technician will again not be deployed in 2021.

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. 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. 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 but is currently on hiatus.

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.

The West Coast of Vancouver Island survey was not completed during 2020 due to COVID-19. The intent is to survey Hecate Strait, Queen Charlotte Sound and the West Coast of Vancouver Island in 2021.

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. The inlets survey was not completed in 2020 due to COVID-19 measures.

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 2019 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*.

Seven modern treaties (Nisga'a Final Agreement, Tsawwassen First Nation Final Agreement (TFA), Maa-nulth First Nations Final Agreement (MNA), Tla'amin Nation Final Agreement, Sechelt Self-government Act, Westbank First Nation Self-government Agreement and Yale First Nation Final Agreement) have been ratified in British Columbia.²

The Maa-nulth treaty includes five Nuu-cha-nulth First Nations (Ka:'yuk'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 using area specific openings and retention limits. There are no restrictions on the number of tidal water recreational licences.

² Details of concluded final agreements can be found at <https://www.rcaanc-cirnac.gc.ca/eng/1100100030588/1542730442128>

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 until a sharp increase to about 343,000 in 2015 (Figure 1). Since 2015, the number of tidal water licences has remained relatively stable³. 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, and therefore the latest available data is from 2015⁴. Resident and non-resident anglers fished an estimated 2 million days in BC tidal waters in 2015. The number of businesses in BC that provide recreational fishing services directly to anglers (e.g. guides and charters) is unknown.

³ <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/Stats/99tocurrent-eng.html>

⁴ <https://www.dfo-mpo.gc.ca/stats/rec/can/2015/index-eng.html>

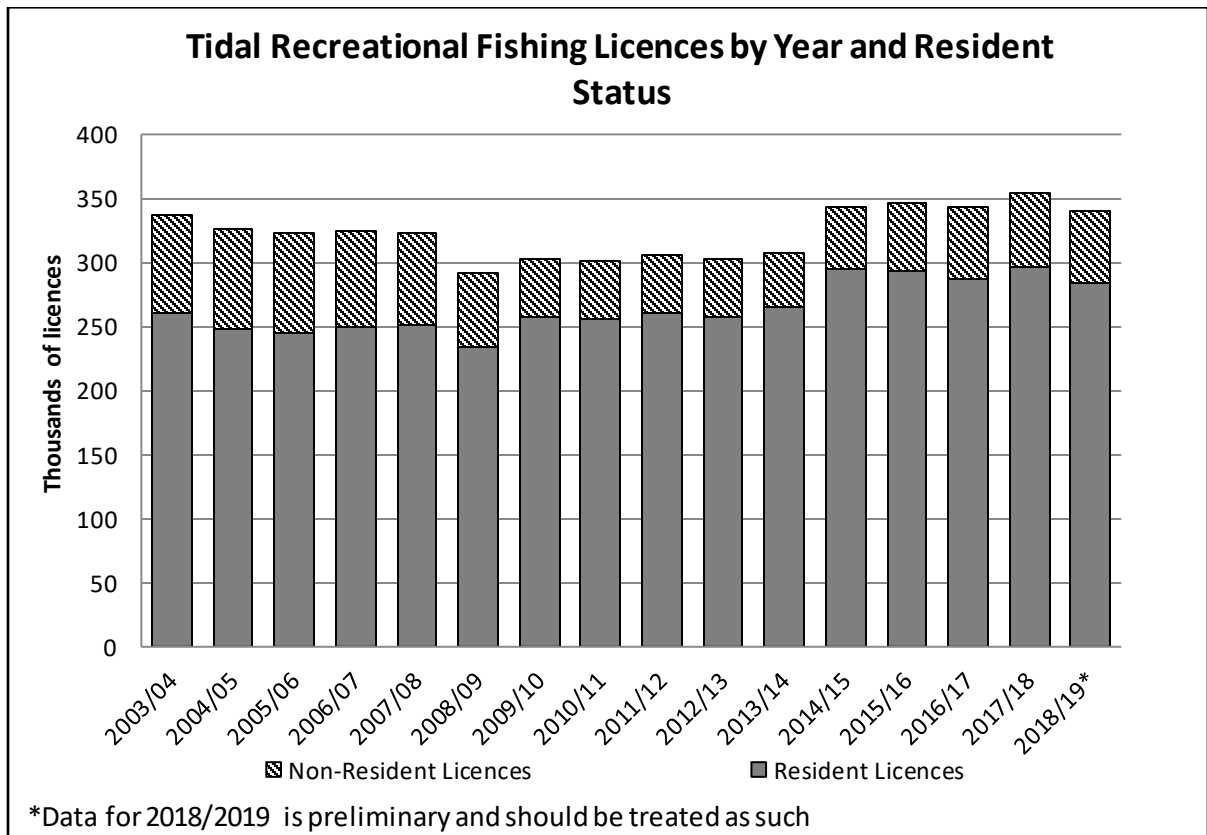


Figure 1. BC Tidal Water Recreational Fishing Licences by Canadian Resident Status, 2003/04-2018/19*. Source: DFO Internal Recreational Licensing data.⁵

4.2.2. Economic Contribution

Between 2010 and 2016, the contribution of the tidal waters recreational fishing sector (all species) to the real gross domestic product (GDP)⁶ and employment in BC grew by 24% and 20% respectively⁷. The data from the 2015 National Survey of Recreational Fishing indicates that groundfish accounted for approximately 27% of total direct fishing expenditures and about 20% of major purchases attributed to fishing 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

⁵ <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/Stats/99tocurrent-eng.html>

⁶ Gross Domestic Product includes wages to labour, owner profits and earnings, return on capital investments, changes in inventories, and depreciation on capital.

⁷ [BC Stats. BC Fisheries and Aquaculture Sector, 2016 Edition, 2018.](#)

economic values for the recreational fishing sector and the tourism sector. Approximately 27% 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).

From 2010-2015, the number of tidal water resident anglers increased by 6% to 176,819, and the number of Canadian non-resident and foreign anglers (outside of B.C.) also increased by 15% to 70,600 anglers.

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). Total expenditures (direct and major purchases) on groundfish were \$154.0M, representing about 25% of total recreational expenditures (all species). Relative to other regions, Georgia Strait was a key groundfish fishing area, with 31% of expenditures occurring in this region. The proportion of total groundfish expenditures were lower in other areas with 17% in West Coast Vancouver Island, 14% in Haida Gwaii, 11% in Johnstone Strait, 10% in North Coast, 10% in Barkley Sound, and 8% in Central Coast. The share of angler expenditures on groundfish as a proportion of all species varied by region. In Georgia Strait, groundfish represented 18% of direct expenditures of all species, while in Johnstone Strait, groundfish represented 45% of direct expenditures of all species. Similar results were seen for major purchase expenditures, with groundfish representing between 14% (Georgia Strait) and 44% (Johnstone Strait) of all species major purchases.

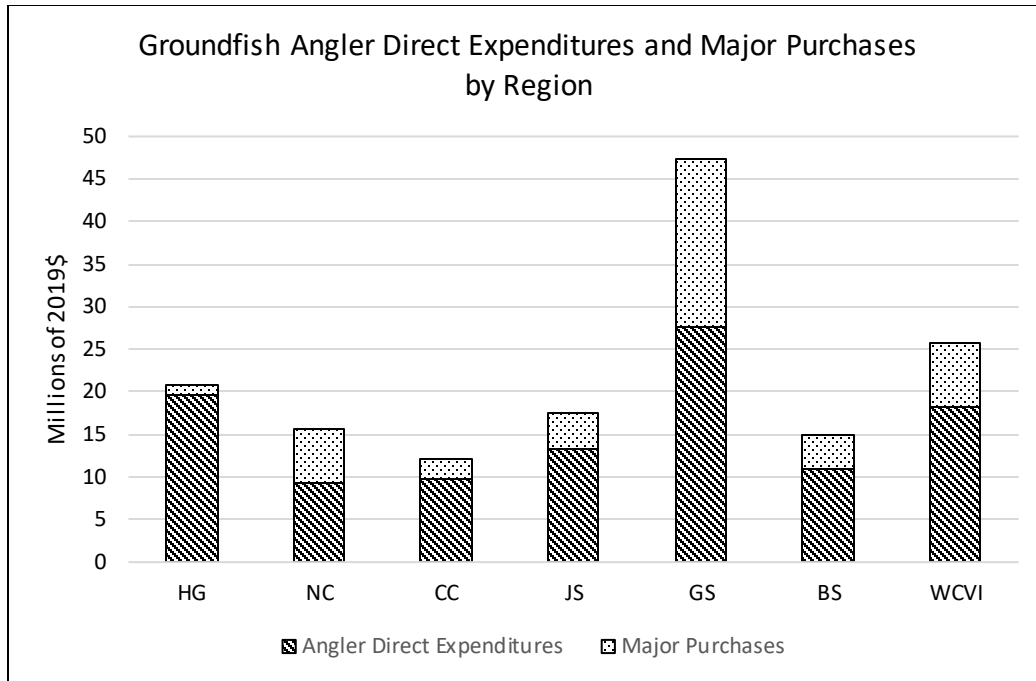


Figure 2. 2015 Angler Direct Expenditures and Major Purchase Expenditures for Groundfish (all groundfish) by Region (millions of 2019 dollars). Source: DFO internal analysis of National Survey of Recreational Fishing (2015).⁸ Note: HG = Haida Gwaii; NC = North Coast; CC = Central Coast; JS = Johnstone Strait; GS = Georgia Strait; BS = Barkley Sound; WCVI = West Coast Vancouver Island.

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.

4.3.1. Participation

The number of active vessels, and thus presumably crew, involved in the harvest of groundfish declined between 2009 and 2014, from 355 vessels to 327. After a slight resurgence until 2017, the number fell again in 2018 (315), but quickly recovered in 2019 as the number of active vessels increased to 335 (Figure 3).

⁸ 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>

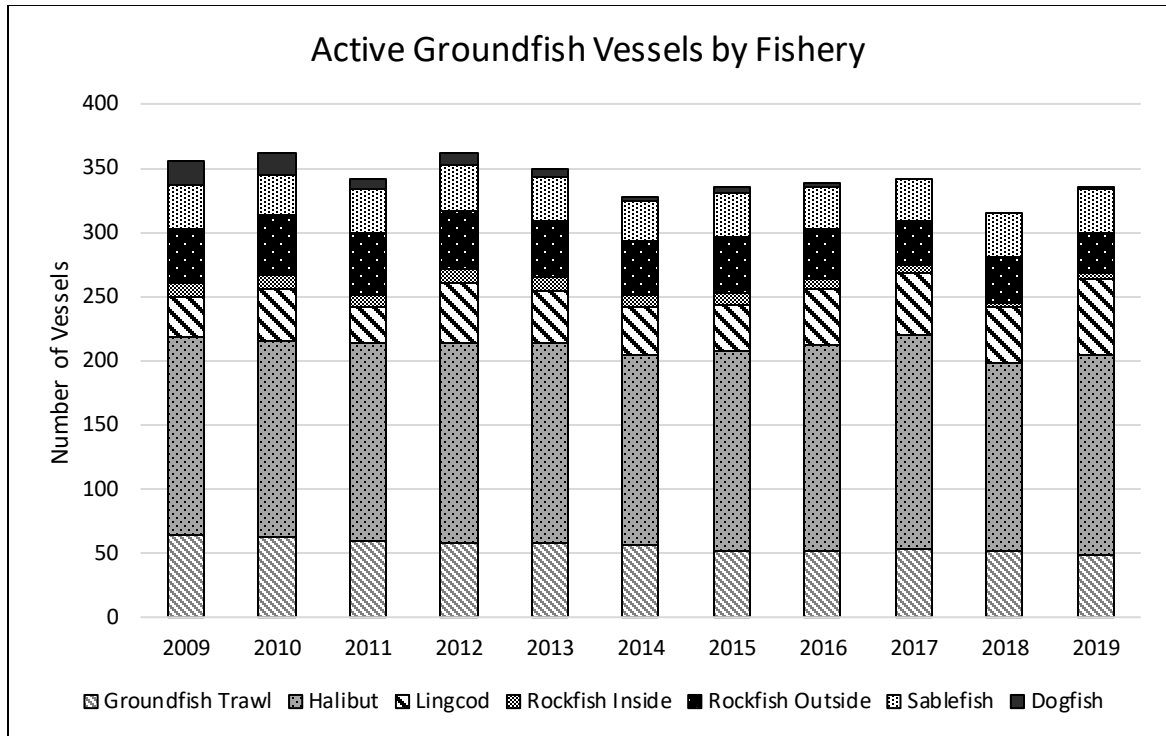


Figure 3. Active Groundfish Vessels by Fishery 2009-2019.

Source: DFO PacFish Database. Note: Some vessels fish multiple fisheries, thus may be represented more than once.

While groundfish vessels operate with between one and six individuals,⁹ 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.

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 2019 by the processing industry to its employees (for main groundfish species). In 2019, hake processing brought the highest total value of wages paid out to groundfish processing sector employees (\$26.4 million). 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.¹⁰

⁹ 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>

¹⁰ GS Gislason & Associates Ltd, 2017.

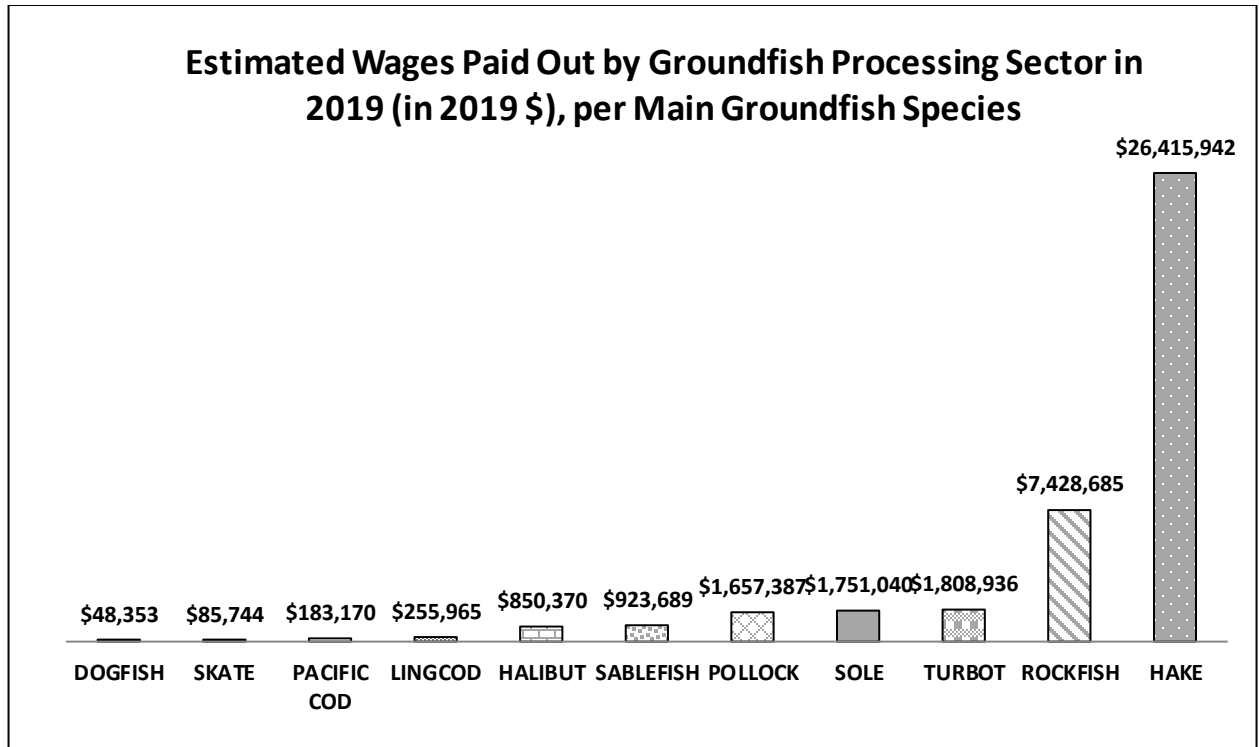


Figure 4. Estimated Wages Paid Out in the Groundfish Processing Sector in 2019 (in 2019 \$), by Main Groundfish Species. Source: DFO estimates based on Docksides Monitoring Program (DMP) landings, sales slip prices and GSGislason & Associates Ltd., 2017.

Indigenous participation in commercial groundfish fisheries may occur through communal commercial licences, or as organization (e.g. Commercial Fishing Enterprises) or individual ownership of licences and vessels. Information on individual ownership is not available. Communal commercial licences (F) identify communal Indigenous participation within commercial groundfish fisheries 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 17.5% of the Sablefish quota as well as small amounts of quota for most trawl species. In 2019, PICFI allocated groundfish licences and quota in agreements with 19 Commercial Fishing Enterprises.

4.3.2. Economic contribution

In 2007, the groundfish fisheries were the largest component of the fish harvesting sector and it was responsible for approximately 76% of all BC wild seafood landings and about

39% of their total value. In terms of the processing labour intensity, in 2016 the groundfish fisheries provided about 49% of all direct processing employment hours.¹¹

The real landed value of the groundfish fisheries was relatively stable between 2009 and 2013, and then increased by approximately 55% between 2014 and 2017. This increase was largely the result of an increase in landed value of the groundfish trawl fishery, totalling 89% over the same time period. The landed value of the groundfish fisheries declined by approximately 20%, from \$194.2 million in 2017 to \$155.4 million in 2019, mainly due to a 30% reduction in landed value of the Halibut fishery (Figure 5, Figure 6, Table 1). Figure 5 and 6 below present total BC groundfish landed value and volume for the last 10 years.

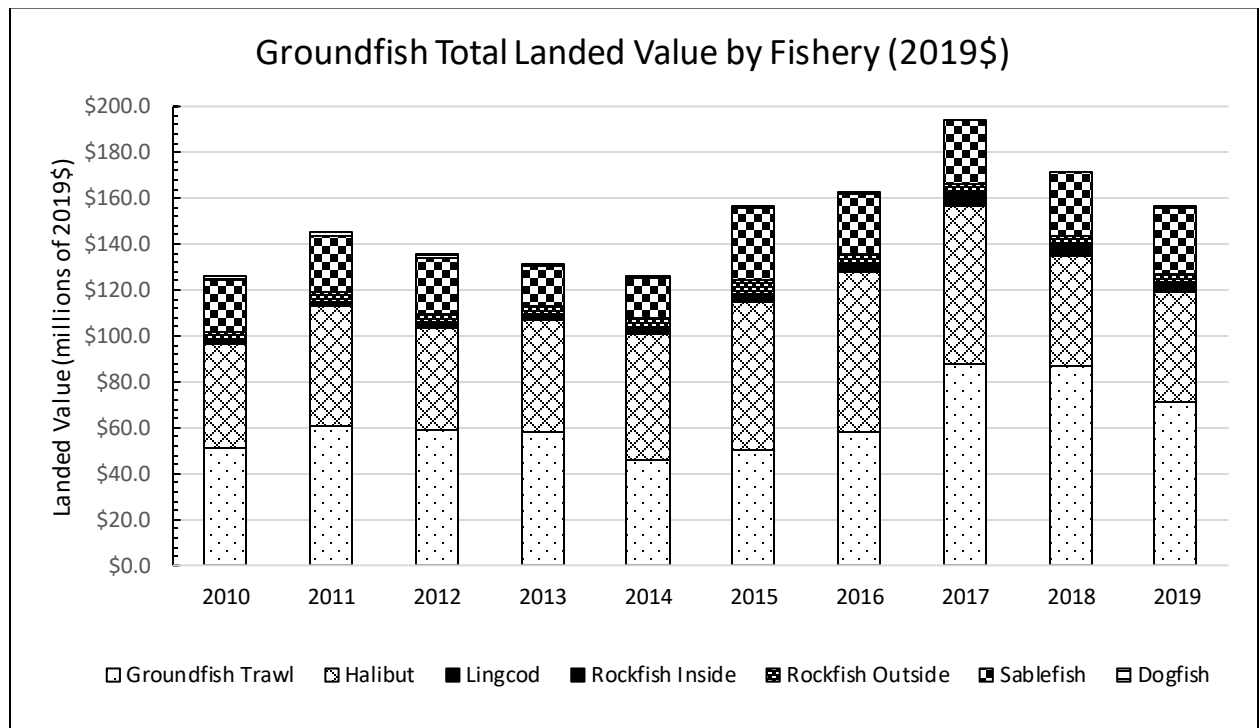


Figure 5: Groundfish Total Landed Value by Fishery 2010-2019 (in 2019 \$). Source: Landed volume and value calculated from Dockside Monitoring Program landings, Ground fish Fishery Observations System and sales slip prices.

¹¹ 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>.

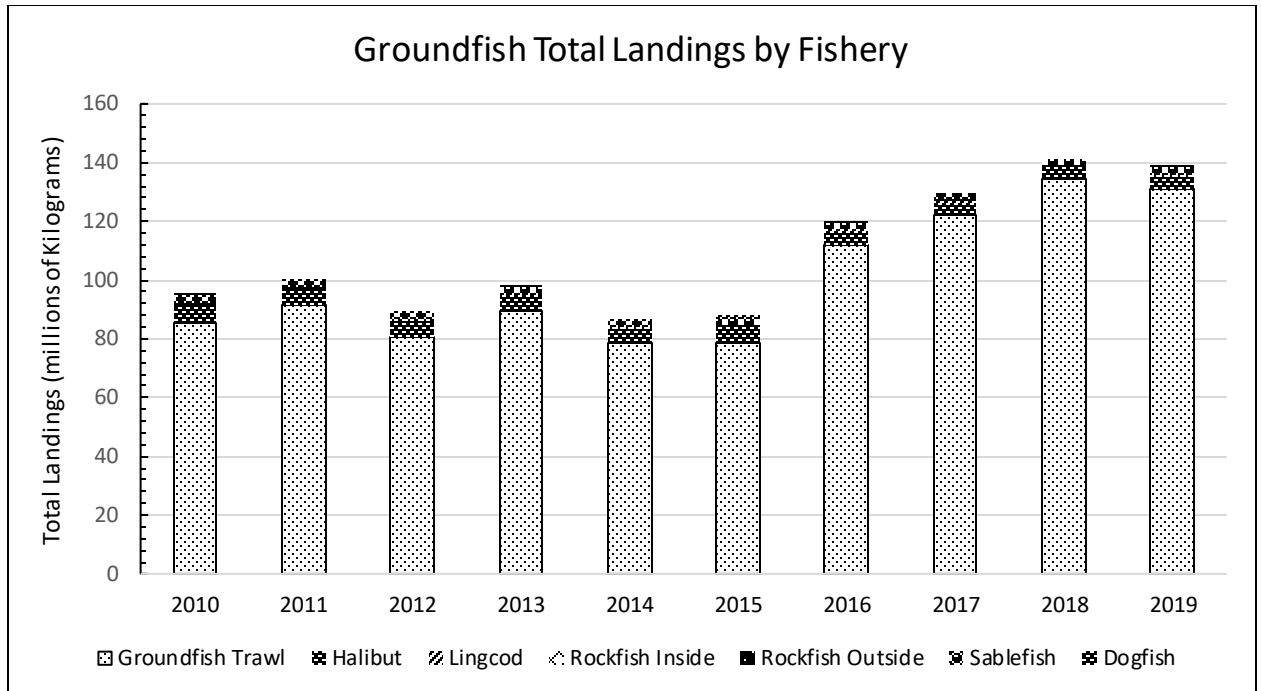


Figure 6: Groundfish Total Landed Volume by Fishery 2010-2019. Source: The landed volume and value is calculated from the Dockside Monitoring Program landings, Ground fish Fishery Observations System and sales slip prices.

The real wholesale value (see Figure 7, below) of the fishery fell by approximately 19% between 2009-2014. Since then the fishery has generally seen an decrease in wholesale value from \$334.0M in 2016 to around \$280.4M in 2019.

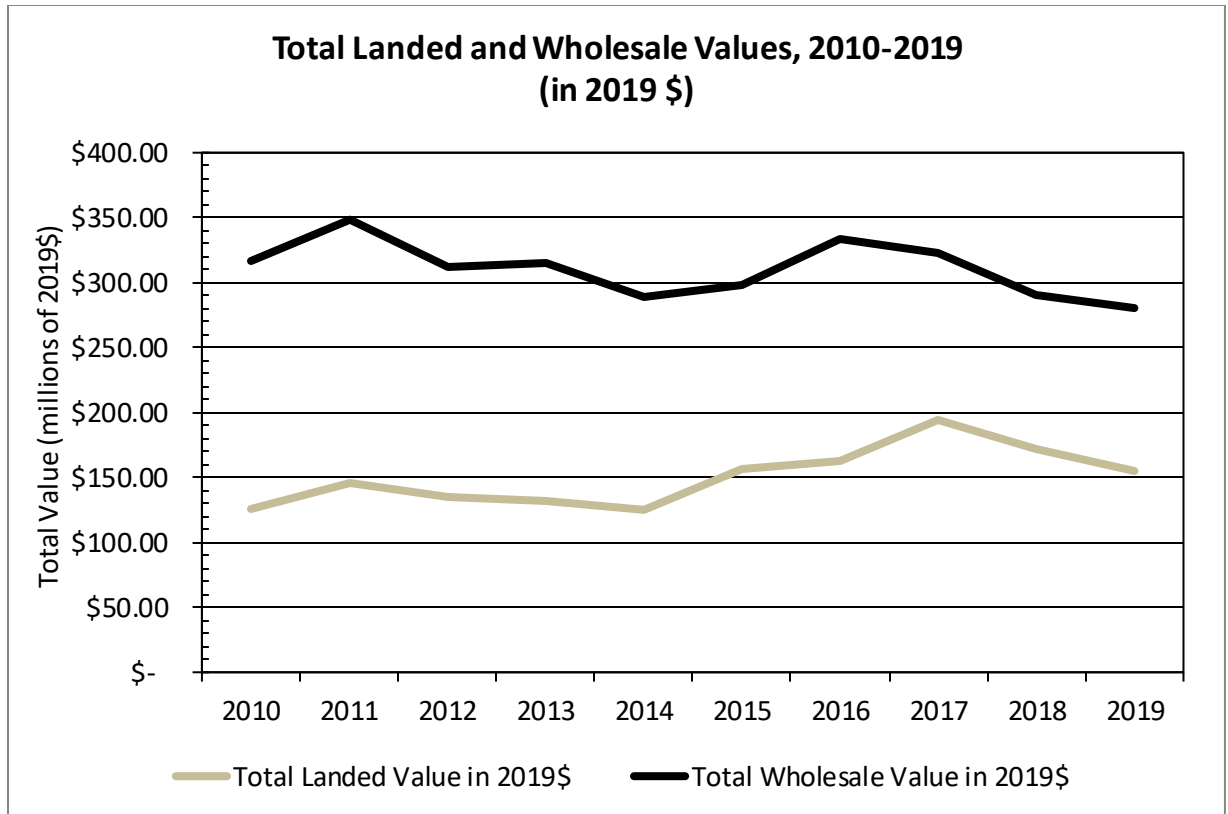


Figure 7: Total Landed and Wholesale Values, 2010-2019 (in 2019 \$). Source: DFO Official Catch matched to the best available price from sales slips. Wholesale value from British Columbia Seafood Year in Review 2007-2018. The 2019 wholesale value has been estimated based on the average ratio of past landed value to wholesale 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 from 2010 to 2013, with a slight dip in 2014 (Figure 8). Since 2014, export values have steadily increased. Cod and Halibut export prices show an upward trajectory from 2010-2016, while export prices for Sablefish demonstrate a downward trajectory over the same period. However, Sablefish prices have increased rapidly from 2017-2019, and the current price of \$13/kg is the highest Sablefish has seen this decade.

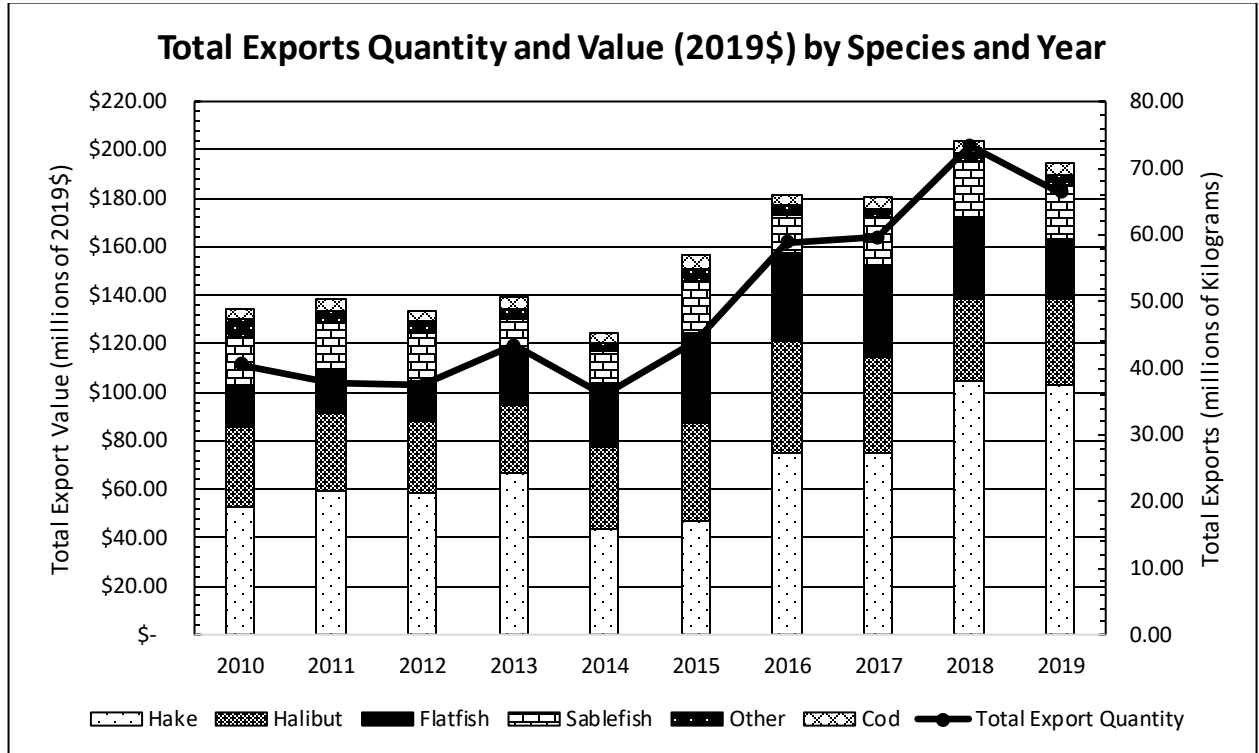


Figure 8. Total Groundfish Exports Quantity and Value by Species and Year, 2010-2019 (in 2019 \$).
Source: Statistics Canada. EXIM. Accessed September 29, 2020. Note: Other Groundfish species include Dogfish, Lingcod, Pollock and other.

In August 2014, the Russian Federation imposed an 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 2009 and 2013, groundfish exports from BC to Russia had increased by 101%, with Hake accounting for an average of 98% of the total value. During the initial year of the ban on exports to Russia (2014), the total volume of Hake exports from BC was down by 28% from the 2013 level and the total value decreased by about 35%. From 2014 to 2019 the value of Hake exports increased by 137%, despite reduced prices, as South Africa, Lithuania, Ukraine and other countries increased their imports (Figure 9). There was a 10% decline in the average export price of Hake from 2013-2019, but this was met with the aforementioned increased volume of exports.

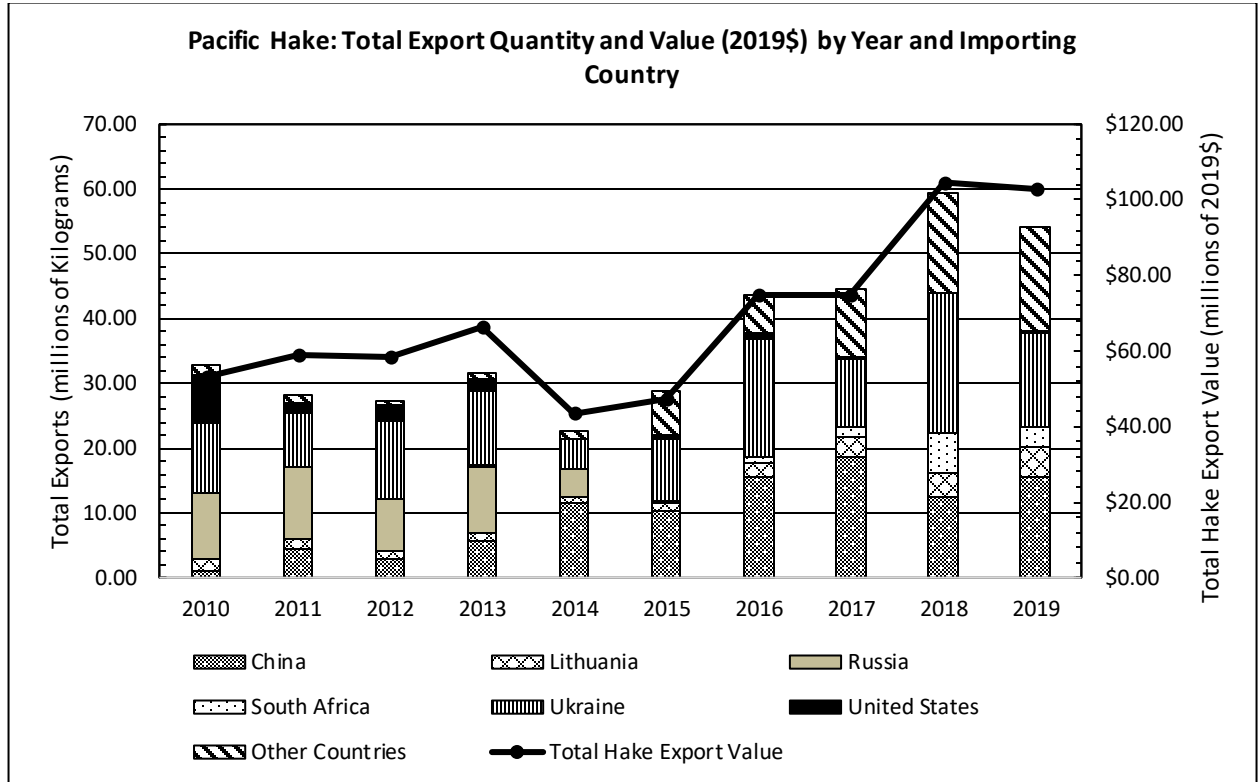


Figure 9. Total Volume of Hake Exports and Total Value of Hake Exports to Importing Country, 2010-2019 (in 2019 \$). Source: Statistics Canada. EXIM. Accessed September 29, 2020.

Many of the commercial groundfish fisheries in BC have 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.

Table 1. Summary of annual number of active vessels, and total annual revenue, by licence type (2015-2019). Total annual revenue in constant 2019 dollars.

Trawl					
	2015	2016	2017	2018	2019
Active Vessels (#)	52	51	53	51	49
Total Revenue, per fishery in millions of 2019\$	49.99	58.11	87.60	86.60	71.11
% of total annual groundfish value	32%	36%	45%	51%	46%
Halibut					
	2015	2016	2017	2018	2019
Active Vessels (#)	155	161	167	147	156
Total Revenue, per fishery in millions of 2019\$	64.74	69.50	69.29	48.61	48.22
% of total annual groundfish value	41%	43%	36%	28%	31%
Sablefish					
	2015	2016	2017	2018	2019
Active Vessels (#)	35	33	33	35	34
Total Revenue, per fishery in millions of 2019\$	31.56	26.14	27.88	27.66	28.49
% of total annual groundfish value	20%	16%	14%	16%	18%
Rockfish					
	2015	2016	2017	2018	2019
Active Vessels (#)	52	47	40	39	36
Total Revenue, per fishery in millions of 2019\$	6.15	4.95	4.41	3.77	3.54
% of total annual groundfish value	4%	3%	2%	2%	2%
Lingcod/Dogfish					
	2015	2016	2017	2018	2019
Active Vessels (#)	42	47	49	43	60
Total Revenue, per fishery in millions of 2019\$	3.66	3.45	5.07	4.65	4.01
% of total annual groundfish value	2%	2%	3%	3%	3%

Source: DFO estimates based on Dockside Monitoring Program landings, Groundfish fisheries Observations System and sales slip prices, DFO PacFish Database. 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 commercial groundfish fisheries 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.¹²

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.¹³ The commercial Halibut fishery harvested Halibut back to the 1880s, but the harvest was largely marketed in Seattle until the arrival of the railroad.¹⁴ 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 fisheries remain part of the BC coast¹⁵, 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

¹² 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.

¹³ For example: Forester, Joseph E. and Anne D. Forester. 1975. British Columbia's Commercial Fishing History. Hancock House Publishers Ltd., Saanichton, BC.

¹⁴ Forester, Joseph E. and Anne D. Forester. 1975. British Columbia's Commercial Fishing History. Hancock House Publishers Ltd., Saanichton, BC.

¹⁵ Robson, Peter A. and Michael Skog (editors). 1996. Working the Tides: A Portrait of Canada's West Coast Fishery. Harbour Publishing, Madeira Park, BC.

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 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 extirpated, endangered, or threatened 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, any part of its critical habitat or the residences of its individuals. Species listed as special concern are not included in these prohibitions.

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

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

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

Additional marine species, including 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
- Grey Whale, Pacific Coast Feeding Group population – Endangered
- Grey Whale, Western Pacific population - Endangered
- Northern Fur Seal – Threatened
- Steelhead Trout
 - Chilcotin River DU – Endangered
 - Thompson River DU - Endangered
- Sockeye Salmon – Sakinaw DU – Endangered
- Fraser Sockeye Salmon
 - Bowron-ES DU – Endangered
 - Cultus-L DU – Endangered
 - Francois-Fraser-S DU – Special Concern
 - Harrison D/S-L DU – Special Concern
 - Harrison U/S-L DU – Endangered
 - Kamloops-ES DU – Special Concern
 - Lillooet-Harrison-L DU – Special Concern
 - Nahatlatch-ES DU – Special Concern
 - North Barriere-ES DU – Threatened
 - Quesnel-S DU – Endangered
 - Seton-L DU – Endangered
 - Takla-Trembleur-ES^{tu} DU – Endangered
 - Takla-Trembleur-Stuart-S DU - Endangered
 - Taseko-ES DU – Endangered
 - Widgeon River-Type DU – Threatened
- Coho Salmon – Interior Fraser DU – Threatened
- Chinook Salmon – Okanagan DU – Endangered
- Southern BC Chinook Salmon
 - East Vancouver Island, Stream, Spring population – Endangered
 - Lower Fraser, Ocean, Fall population – Threatened
 - Lower Fraser, Stream, Spring population – Special Concern
 - Lower Fraser, Stream, Summer (Upper Pitt) population – Endangered
 - Lower Fraser, Stream, Summer population – Threatened
 - Middle Fraser, Stream, Fall population – Endangered
 - Middle Fraser, Stream, Summer population - Threatened
 - Middle Fraser, Stream, Spring (MFR+GStr) population – Threatened

- Middle Fraser, Stream, Spring population – Endangered
- North Thompson, Stream, Spring population – Endangered
- North Thompson, Stream, Summer population – Endangered
- South Thompson, Stream, Summer 1.2 population – Endangered
- Upper Fraser, Stream, Spring population – Endangered
- Southern Mainland-Boundary Bay Ocean Fall – Threatened
- Lower Fraser Ocean Summer - Endangered
- South Thompson Stream Summer 1.3 - Endangered
- Lower Thompson Stream Spring - Endangered
- East Vancouver Island Ocean Summer - Endangered
- East Vancouver Island Ocean Fall – Special Concern
- West Vancouver Island Ocean Fall (South) - Threatened
- West Vancouver Island Ocean Fall (Nootka&Kyquot) - Threatened

A species identification guide for Rockfish can be found here: <https://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/docs/rockfish-sebaste-idguide-eng.pdf>

A species guide to distinguish between White and Green Sturgeon can be found here: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/docs/sturgeon-lesturgeon-idguide-eng.pdf>

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. In Canadian waters, the primary threats to these SARA-listed 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:

<https://dfo-mpo.gc.ca/species-especes/publications/sharks/coc/coc-basking/index-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. The retention of sharks, other than North Pacific Spiny Dogfish, is prohibited in the Groundfish Hook and Line fisheries. Since the 2012/2013 season, the Groundfish trawl industry, in support of Fisheries and Oceans Canada's increased conservation efforts for some elasmobranchs (particularly SARA-listed species), has supported a prohibition on the selling and retention of Pacific Basking Shark, Tope (Soupfin) Shark, and Bluntnose Sixgill Shark. DFO has also introduced a prohibition on shark finning. See harvest plan appendices for further details.

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 the Groundfish Trawl Harvest Plan, which is Appendix 8 to this document.

5.1.3. Marine Mammal, Leatherback Sea Turtle and Basking Shark Sightings

The Department welcomes assistance in the reporting of any marine mammal, Leatherback Sea Turtle or Basking Shark entanglement or sighting. While there are many marine mammal 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).

Species identification guides for Sharks are available at <https://waves-vagues.dfo-mpo.gc.ca/Library/40757067.pdf>.

Guides to distinguish between pinnipeds, emphasizing differences between Steller and California Sea Lions can be found here: https://wildwhales.org/wp-content/uploads/2020/08/BCCSN_IDGuide_Pinniped_email.pdf, and between Sea and River Otters: https://wildwhales.org/wp-content/uploads/2020/05/BCCSN_IDGuide_Otters_vertical_4.pdf

Best practices to reduce entanglement and reporting an incident: <http://dev-public.rhq.pac.dfo-mpo.gc.ca/whales-baleines/docs/entanglements-empetirements-pub-eng.html>

Information on approach distances from Marine Mammal Regulations can be found here: <https://www.dfo-mpo.gc.ca/about-notre-sujet/publications/infographies-infographies/documents/100-200-400-eng.pdf>

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

5.1.4. 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 (animal condition)
- Nature of injury and supporting details (if possible)
- Location: Latitude/Longitude coordinates, landmarks
- Pictures/Video taken



5.1.5. 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. Depredation in commercial fisheries can also lead to increased likelihood of entanglement or injury to marine mammals.

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. It is prohibited to approach marine mammals to feed or attempt to feed them under s.7 of the *Marine Mammal Regulations*. 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: <http://www.pac.dfo-mpo.gc.ca/publications/marinemammals/depredation-4-2010-eng.pdf>

A useful depredation handout can be found at the BC Cetacean Sightings Network website: <https://wildwhales.org/threats/depredation/>

If you experience depredation by whales, please report the incident by email DFO.ORR-ONS.MPO@dfo-mpo.gc.ca or by calling 1-800-465-4336. Reporting all incidents will assist DFO managers and fish harvesters in understanding this problem and help in developing strategies to avoid it.

5.1.6. Southern Resident Killer Whales - Management Measures to Address Reduced Prey Availability, and Physical and Acoustic Disturbance

The Government of Canada is taking important steps to protect and recover the Southern Resident Killer Whale population, in keeping with direction provided in *Species at Risk Act* (SARA) recovery documents. In May 2018, the Minister of Fisheries and Oceans and Minister of Environment and Climate Change determined the Southern Resident Killer Whale population faces imminent threats to its survival and recovery. Given the status of the population and ongoing threats to Southern Resident Killer Whale recovery, DFO implemented a number of measures from 2018 to 2021, including measures aimed at increasing prey availability and accessibility for Southern Resident Killer Whales - particularly Chinook salmon—and reducing threats related to physical and acoustic disturbance in key foraging areas.

Since 2018, Indigenous groups, the Indigenous and Multi-Stakeholder Advisory Group, Technical Working Groups and stakeholders have provided recommendations and feedback to Ministers and Departments on a range of measures (including measures related to increasing prey availability, sanctuaries, vessel disturbance [both noise and physical disturbance], and contaminants) to support Southern Resident Killer Whale recovery.

The fishery management measures for the [2021 season](#) include Interim Sanctuary Zones in portions of Swifsure Bank and off the coasts of North Pender Island and Island prohibited vessels from entering and fishing within their boundaries (with some exceptions) from June 1 to November 30, 2021 as per the [Interim Order enacted under the Canada Shipping Act](#). For detailed coordinates, please see [FN0519](#).

These closures do not apply to individuals or vessels being used to fish for food, social or ceremonial purposes, or for domestic purposes pursuant to a treaty, under a license issued under the Aboriginal Communal Fishing License Regulations.

The Government of Canada is asking vessel operators to respect the following voluntary measures:

- Stop fishing (do not haul gear) within 1,000 metres of killer whales and let them pass;
- Reduce speed to less than 7 knots when within 1000m of the nearest marine mammal
- When safe to do so, turn off echo sounders and fish finders
- Place engine in neutral idle and allow animals to pass if your vessel is not in compliance with the approach distance regulations

- For more information on the best ways to help whales while on the water, when on both sides of the border, please visit: bewhalewise.org

For information regarding the Southern Resident Killer Whale management measures to support recovery, please contact the Marine Mammal Team (DFO.SRKW-ERS.MPO@dfp-mpo.gc.ca) or visit (<https://www.canada.ca/southern-resident-killer-whales>).

5.1.7. Rockfish Conservation Areas

There are 162 Rockfish Conservation Areas (RCAs) in British Columbia, covering roughly 4,350km² of the Canadian Pacific Coast. These areas are closed to a range of recreational and commercial fisheries to protect inshore rockfish and their habitat.

DFO is currently undertaking a multi-year review of the conservation effectiveness of RCAs, including meeting the national criteria and standards for marine refuges to better conserve sensitive areas and contribute towards Canada's Marine Conservation Targets (MCT). To meet these standards, the risks to inshore rockfish, their habitat, and benthic communities will need to be avoided or mitigated. Peer-reviewed science advice also recommends that boundary changes to some RCAs will improve their spatial design by better capturing rockfish habitat features. RCAs in the Northern Shelf Bioregion have been selected for the first phase of engagement to align with the MPA network planning process in that area. Workshops with First Nations and stakeholders and online consultations were held in 2019. A summary of what DFO heard is available online at: <https://www.pac.dfo-mpo.gc.ca/consultation/ground-fond/rca-acs/2020-heard-entendu-eng.html#6>. There will be more opportunities to provide feedback on Rockfish Conservation Areas in the Northern Shelf Bioregion in the near future. DFO is planning to review Rockfish Conservation Areas in other regions of British Columbia at a later date.

Further information on RCAs and the boundary proposals are available online at: <http://dfo-mpo.gc.ca/rockfish-conservation> or for further information on this, please contact DFO.RCA-ACS.MPO@dfo-mpo.gc.ca.

5.1.8. Bocaccio and Yelloweye Rockfish Rebuilding Plans

Based on science advice 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 rebuilding objectives and management measures to achieve those objectives. 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. Through the process of regular evaluation of the rebuilding plans, science advice on stock status and rebuilding strategies for Bocaccio and the outside Yelloweye Rockfish population was peer-reviewed in autumn 2019 and published in 2020. Updated science advice for the inside Yelloweye Rockfish stock was peer reviewed in the spring of 2020.

Science advice for both stocks of Yelloweye Rockfish sought to develop an adaptive, feedback-based framework for evaluating candidate management procedures against the rebuilding objectives. While the advice successfully developed stock assessment approaches and evaluated management measures against rebuilding objectives, further discussions with stakeholders and Indigenous groups are planned for 2021/22 to defined target biomass for the outside Yelloweye Rockfish stock given that the current conservation objectives of growing the stocks above the LRP have already been satisfied.

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 August 2019, the Government of Canada surpassed its milestone of protecting 10% of Canada's marine and coastal areas by 2020, a target which is a reflection of Canada's United Nation Convention on Biological Diversity Aichi Targets commitments, collectively referred to as Canada's marine conservation targets. The Government of Canada further committed domestically to protecting 25% by 2025, and working towards 30% by 2030.

More information on the background and drivers for Canada's marine conservation targets is available at the following link: <http://www.dfo-mpo.gc.ca/oceans/conservation/index-eng.html>.

To meet our marine conservation 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 at the following link:

<http://www.dfo-mpo.gc.ca/oceans/mpa-zpm-aoi-si-eng.html>.

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. One of the key priorities for the plan is the development of a marine protected area network. The planning for this network is well underway in the Northern Shelf Bioregion. It is anticipated that the network development will contribute to the Government of Canada’s commitment to protecting 25% of Canada’s oceans by 2025, and working toward 30% by 2030.

The PNCIMA Plan is available online at: <https://www.dfo-mpo.gc.ca/oceans/management-gestion/pncima-zgicnp-eng.html>

5.2.1.2. Northern Shelf Bioregion MPA Network

The Province of BC, the Government of Canada and 16 First Nations are working together to develop a Network of marine protected areas for the Northern Shelf Bioregion which extends from the top of Vancouver Island (Quadra Island/Bute Inlet and Brooks Peninsula) and reaches north to the Canada - Alaska border. This bioregion has the same footprint as the Pacific North Coast Integrated Management Area. The planning process is being developed under the policy direction outlined in the National Framework for Canada’s Network of MPAs as well as the Canada-British Columbia MPA Network Strategy.

A draft MPA network design, which consists of a map of areas proposed for conservation as well as potential management measures for proposed sites, was shared with First Nations, who are currently not part of the collaborative governance arrangement, and with members of the Network Advisory Committees in February 2019. The various sectors engaged in a review of the draft network design provided substantial input by January 30, 2020. A stakeholder forum was held in February 2020 to present and discuss feedback received. DFO completed its internal review of the draft design scenario and presented the report to the MPA Technical Team in March 2020. Governance partners are considering all input received to date and will be reporting out to stakeholders in late fall 2020. Revising the draft scenario will occur during the winter 2021 after which there will be further consultations, including public engagement in coastal communities, on scenario #2 and the accompanying socio-economic analysis. More information on MPA Network Planning can be found at: <http://www.mpanetwork.ca>

5.2.1.3. Marine Spatial Planning South Coast

As part of a national marine spatial planning (MSP) initiative, DFO in collaboration with the Province of BC, federal departments (Transport Canada, Natural Resources Canada, Environment and Climate Change Canada, Parks Canada) and Indigenous groups, have begun marine spatial planning efforts on the South Coast, including the Strait of Georgia and Southern Shelf bioregions. The intent of MSP is to improve coordination across jurisdictions and activities in the marine space, and work is underway to define scope and objectives of the project. In the early phases, engagement on governance is taking place internally with GC partners, and externally with the Province of BC and local First Nations (beginning with representative organisations like First Nations Fisheries Council). National MSP deliverables include: governance, a bioregional atlas, and a marine spatial plan. Harvesters can expect updates on this process via Advisory Boards in the future.

5.2.1.4. 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://www.dfo-mpo.gc.ca/oceans/conservation/areas-zones/index-eng.html>, and in Appendix 10 of this IFMP.

5.2.1.4.1. Endeavour Hydrothermal Vents (EHV) MPA

The EHV MPA was designated in 2003 with the objective of conserving the unique hydrothermal vent ecosystems. The hydrothermal vents lie in waters 2,250 m deep 250 km southeast of Vancouver Island. The occasional licenced commercial pelagic fishing that occurs very near the ocean surface in the MPA is not considered to be in conflict with the conservation objectives of the MPA and will continue. All commercial

groundfish fisheries are restricted within the Endeavour MPA. More information can be found online at: <http://www.dfo-mpo.gc.ca/oceans/mpa-zpm/endeavour/index-eng.html>..

5.2.1.4.2. S_Gaan K_Inghlas-Bowie Seamount (SK-B) MPA

The SK-B MPA (180 km west of Haida Gwaii) was designated in 2008 and was established to conserve and protect the unique biodiversity and biological productivity of the area's marine ecosystem, including 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, which was established under a Memorandum of Understanding (MOU). The Management Board (in consultation with the SK-B Advisory Committee) has recently finalized the [SK-B MPA Management Plan](#) which guides the conservation and protection of the SK-B ecosystem. In 2018, the Government of Canada and the Haida Nation closed all bottom-contact fishing at SK-B MPA as a precautionary management approach to protect sensitive benthic habitats, resulting in the MPA being closed to all commercial fishing activities. More information can be found online at: <http://www.dfo-mpo.gc.ca/oceans/mpa-zpm/bowie-eng.html>

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

The Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Area (Hecate MPA) was designated under the *Oceans Act* in February 2017 to conserve the biological diversity, structural habitat and ecosystem function of the glass sponge reefs. The Hecate MPA Regulations are available online at: <http://www.dfo-mpo.gc.ca/oceans/mpa-zpm/hecate-charlotte/index-eng.html>. The Hecate MPA 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, covering an area of approximately 2,410 square kilometers. The Hecate MPA zoning approach involves different management measures within each zone. Under the Hecate MPA Regulations, each glass sponge reefs Core Protection Zone (CPZ) is closed to all commercial, recreational, and Aboriginal fishing. Anchoring, cable installation, maintenance and repair are also prohibited in the CPZ. The Vertical Adaptive Management Zone (VAMZ) and Adaptive Management Zone (AMZ) is 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. For more detail on the fishery closure within the Hecate MPA, review Fishery Notice FN0198 found here: https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?DOC_ID=194216&ID=all&pg=view_notice. Scientific research, monitoring, and educational activities are allowed in the Hecate MPA if a proponent submits an activity plan to DFO and it receives Ministerial approval. Additional maps and shapefiles of the Hecate MPA are available at: <https://open.canada.ca/data/en/dataset/a1e18963-25dd-4219-a33f-1a38c4971250>.

5.2.1.4.4. Offshore Pacific Area of Interest

In May 2017, DFO announced a new Area of Interest (AOI) with the intention of making

it one of Canada's largest Marine Protected Areas by 2020. The proposed MPA extends from the toe of the continental slope to the westward boundary of Canada's Exclusive Economic Zone (EEZ) in the southern portion of the Offshore Pacific Bioregion. On average, the proposed MPA would be approximately 150 km away from the west coast of Vancouver Island, and would have an approximate area of 133,019 km². The conservation objective for the proposed MPA is to conserve, protect and enhance understanding of unique seafloor features including seamounts and hydrothermal vents and the marine ecosystems they support. 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>

Offshore Pacific Seamounts and Vents Closure

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 protects and conserves 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. Specific details of the closure can be found in the 2017 [Fisheries Notice 1241](#).

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>

5.2.1.4.5. Race Rocks Area of Interest

Race Rocks, an area off Rocky Point, south of Victoria (currently designated as a Provincial Ecological Reserve), has been identified as an area of interest.

5.2.1.5. National Marine Conservation Area Reserves (NMCARs)

5.2.1.5.1. 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 describes 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. The zoning plan can be found at: <https://www.pc.gc.ca/en/pn-np/bc/gwaiihaanas/info/consultations/gestion-management-2018>.

Refer to Fishery Notice 0536, released June 13, 2019 for a detailed description of the Strict Protection Zones and can be found at: https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=222098&ID=all

Council of the Haida Nation Fisheries Management Directions for the Gwaii Haanas Haida Heritage Site can be found at: <http://www.haidanation.ca/wp-content/uploads/2019/04/CHN-Fisheries-Management-Directions-FINAL.pdf#:~:text=COUNCIL%20OF%20THE%20HAIDA%20NATION%20FISHERIES%20MANAGEMENT%20DIRECTIONS,jurisdiction%20of%20the%20Council%20of%20the%20Haida%20Nation>.

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.

5.2.1.5.2. Southern Strait of Georgia National Marine Conservation Area Reserve

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-cnnmca/dgs-ssg>

5.2.1.6. Scott Islands Marine National Wildlife Area

The Scott Islands Marine National Wildlife Area (mNWA) is the first protected marine area established by Environment and Climate Change Canada (ECCC) under the Canada Wildlife Act. In support of the conservation objectives of the Scott Islands mNWA, DFO is consulting on new regulations under the Fisheries Act to restrict certain fisheries that pose a risk to seabirds. A Notice of Intent was published in Canada Gazette Part 1 in June 2018 indicating the proposed regulations would prohibit fishing for three key forage fish species that serve as a key food source for seabirds (Pacific sand lance, Pacific saury, and North Pacific krill) as well as groundfish bottom trawling (in portions of the mNWA consistent with existing commercial closures) and salmon gill net and seine for commercial, recreational, and Indigenous fishing for food, social and ceremonial purposes. The anticipated pre-publishing of the regulations in Canada Gazette 1 is expected to occur in early 2021.

For further information on this, please contact - DFO.ScottIslands-IlesScott.MPO@dfo-mpo.gc.ca

More information on the Scott Islands marine NWA can be found at: <https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/locations/scott-islands-marine.html>

The Scott Islands Protected Marine Area Regulations can be found at: <https://laws-lois.justice.gc.ca/eng/regulations/SOR-2018-119/index.html>

5.2.1.7. Strait of Georgia and Howe Sound Glass Sponge Reef Marine Refuges

Effective April 1st, 2019 all commercial, recreational and Indigenous food, social and ceremonial (FSC) bottom-contact fishing activities for prawn, shrimp, crab and groundfish, as well as the use of downrigger gear for recreational salmon trolling (restricted via Condition of Licence) are prohibited within portions of Subareas 28-2 and 28-4 to protect nine Howe Sound glass sponge reefs, as marine refuges. This includes prohibition of the following fishing activities:

- prawn and crab by trap
- shrimp and groundfish by trawl
- groundfish by hook and line
- use of downrigger gear in recreational salmon trolling

These eight closures are in addition to the nine areas closed to all commercial, recreational and Aboriginal FSC bottom-contact fishing activities in the Strait of Georgia and Howe Sound, established in 2015. In 2019, nine remaining areas in Howe Sound were ground-truthed to assess their ecological significance. The presence of five new live glass sponge reefs has been confirmed. A sixth site within an existing reef complex where only dead reef habitat was observed may have recovery potential. Consultations are underway on restrictions to all commercial, recreational and Indigenous FSC bottom-contact fishing activities, and the use of downrigger gear for recreational salmon troll in these reefs, with new management measures anticipated in-season in Spring 2021.

For further information on this, please contact Lindsay Klopp at Lindsay.Klopp@dfo-mpo.gc.ca.

Current closure locations and more information are available at: <https://www.dfo-mpo.gc.ca/oceans/ceccsr-cerceef/closures-fermetures-eng.html>

5.2.1.8. Ghost Gear Initiative

One of the biggest threats to oceans internationally is marine litter, and in particular, ghost fishing gear. Ghost gear refers to any fishing equipment or fishing-related litter that has been abandoned, lost or otherwise discarded and is some of the most harmful and deadly debris found in oceans.

In support of international efforts to reduce marine litter, in 2018, Canada signed the G7 Charlevoix Blueprint for Healthy Oceans, Seas and Resilient Coastal Communities. In doing so:

- Canada committed to accelerating the implementation of the 2015 Oceans Plastics Charter; and,
- Strengthened our domestic and international commitment to addressing marine litter by signing onto the Global Ghost Gear Initiative.

These commitments were further strengthened in DFO's 2019 Minister's Mandate Letter, emphasizing the importance of this work to Canadians.

Conditions of License to Report Lost and Retrieved Gear:

In the spring of 2020 it became a condition of license for commercial harvesters to report lost and retrieved fishing gear. Not reporting lost and or retrieved gear is now a chargeable offence that can have international trade implications.

For more information on how to report on lost/found gear in the Groundfish fisheries, please refer to Appendix 2 and the relevant harvest appendices.

Sustainable Fisheries Solutions and Retrieval Support Contributions Program (Ghost Gear Fund): In the summer of 2020, DFO funded seven organizations in Pacific Region to work on the retrieval, collection and responsible disposal of lost or otherwise discarded fishing gear. To learn more about the DFO Ghost Gear Fund, go to: <https://www.dfo-mpo.gc.ca/fisheries-peches/management-gestion/ghostgear-equipementfantome/programme/projects-projets-eng.html>

5.2.1.9. 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 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>

5.3. Human Waste Containment Regulations

Disposal of human waste into waters where shellfish are harvested or adjacent to shellfish harvest areas creates unnecessary and potentially serious health risks for shellfish consumers. In accordance with the Canadian Shellfish Sanitation Program (CSSP) and Regulations administered by Transport Canada, raw sewage (Human wastes, sewage or refuse) shall not be discharged from vessels while in or adjacent to shellfish areas. Vessels operating at a distance which does not allow for timely access to on-shore washroom facilities are expected to have a designated human waste receptacle on board. Receptacles could include a portable toilet, a fixed toilet, or other containment device as appropriate. Such devices must be made of impervious, cleanable materials and have a tight-fitting lid. (Refer to Division 4, Transport Canada's Vessel Pollution and Dangerous Chemicals Regulations under the *Canada Shipping Act*):

1. Portable toilets or other designated human waste receptacles shall be used only for the purpose intended, and shall be so secured and located as to prevent contamination of the shellfish area or any harvested shellfish on board by spillage or leakage.
2. The contents of toilets or other designated human waste receptacles shall be emptied only into an approved sewage disposal system.
3. Every person onboard a shellfish harvest vessel must wash and sanitize their hands after using or cleaning a waste receptacle, or after using an onshore washroom facility.

Information on Human Waste Containment Receptacle Requirements under the CSSP can be found at the following Canadian Food Inspection Agency internet site: <https://www.inspection.gc.ca/preventive-controls/fish/cssp/questions-and-answers/eng/1563470479199/1563470589053>

6. ACCESS AND ALLOCATION

6.1. Access and Allocations

6.1.1. First Nations

First Nations along BC's coast 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 harvests (for food, social or ceremonial purposes). 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?iŋ?ath 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. Five Nations Multi-Species Fishery Management Plan

Five Nuu-chah-nulth First Nations located on the west coast of Vancouver Island - Ahousaht, Ehatesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht (the Five Nations) – have an aboriginal right to fish for any species, with the exception of Geoduck, within their court-defined fishing territories and to sell that fish. Their fishing territories are located within portions of Pacific Fishery Management Areas (PFMA) 25/125, 26/126, 124 and all of PFMA 24. As part of the implementation of that right, the Department released in 2019 the first Five Nations Multi-Species Fishery Management Plan (FMP), developed in consultation with the Five Nations. The FMP includes specific details about the Five Nations’ right-based sale fishery, such as harvesting opportunities/access, licensing and designations, fishing area, gear, and fishery monitoring and catch reporting. For further information, the 2020/21 FMP can be found at: <https://waves-vagues.dfo-mpo.gc.ca/Library/40869374.pdf>. The 2021/22 FMP will be available in Spring 2021.

The implementation of the Five Nations’ right-based sale fishery is an ongoing process. Aspects of the Five Nations’ right-based sale fishery remain before the courts and

management changes may be necessary following future decisions. As a result, in-season management changes to this IFMP may occur. DFO will make efforts to advise stakeholders of any such changes in advance of their implementation.

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. The Department consults annually with the Sport Fishing Advisory Board in order to establish daily and possession limits, as well as maximum lengths for Halibut, dependent on the Halibut Recreational Allocation, as described below.

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. Please also see section 8 of this IFMP.

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 2020 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.

More information regarding the Experimental Recreational Halibut Program can be found here: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/halibut-fletan/presentation-eng.html>.

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 or access licenses, to the wild groundfish resource to assist industry development (growth and diversification).

Requests for access to the wild resource will be reviewed based on the provision of detailed project proposals including 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.

Species	Trawl Surveys (tonnes)	Longline Surveys (tonnes)	Sablefish surveys, tagging, catch sampling (tonnes)	Total (tonnes)
Arrowtooth Flounder	12.7	0.0	0	12.7
Big Skate	0.8	0.0	0	0.9
Bocaccio Rockfish	0.6	0.0	0	0.6
Canary Rockfish	1.8	6.5	0	8.3
Copper, China, Tiger Rockfish	0.2	2.8	0	3.0
Dover Sole	5.7	0.0	0	5.7
English Sole	6.7	0.0	0	6.7
Lingcod	0.4	3.6	0	4.0
Longnose Skate	0.5	0.0	0	0.5
Longspine Thornyhead	0.0	0.0	0	0.0
Pacific Cod	2.1	0	0	2.1
Pacific Hake	0.2	0.0	0	0.2
Pacific Halibut	2.5	27.2	0	29.7
Pacific Ocean Perch	20.8	0.0	0	20.8
Petrale Sole	0.7	0.0	0	0.7
Quillback Rockfish	0.4	5.8	0	6.2
Redbanded Rockfish	1.7	11.6	0	13.3
Redstripe Rockfish	1.1	0.0	0	1.1
Rock Sole	1.7	0.0	0.0	1.7
Rougheye/Blackspotted Rockfish	1.0	20.6	0	21.6
Sablefish	3.0	0.4	85	88.4
Shortraker Rockfish	0.0	5.4	0	5.4

Shortspine Thornyhead	1.3	0.9	0	2.2
Silvergray Rockfish	9.5	12.7	0	22.2
Spiny Dogfish	1.1	0.0	0	1.1
Walleye Pollock	3.0	0.0	0	3.0
Widow Rockfish	0.1	0.0	0	0.1
Yelloweye Rockfish	0.0	16.6	0	16.6
Yellowmouth Rockfish	5.9	3.0	0	8.9
Yellowtail Rockfish	2.3	2.0	0	4.3

*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/Blackspotted	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 ¹⁶	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%

¹⁶ 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	46*	0	2,500	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	1,555	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/ Blackspotted rockfish	3CD5AB	9	0	117	0	167	0	0
	5CDE	24	0	313	0	446	0	0
	Sector total	33	0	430	0	614	0	0
Shortraker rockfish	Coastwide	9	0	102	0	126	0	0
Redstripe rockfish	3C/D, 5A/B/C	0	0	31*	0	1,150	0	0
	5D/E	0	0	12*	0	400	0	0
	Sector total	0	0	43*	0	1,550	0	0
Shortspine thornyheads	Coastwide	17	0	17	0	736	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	8	0	38	0	1	0	0
	5B	9	0	10	0	1	0	0
	5C, 5D	9	0	16	0	1	0	0
	5E	13	0	16	0	1	0	0
	4B	1	0	0	6	0	0	0
	Sector total	40	0	80	6	3	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	0	22	0	0	0
	Sector total	16	0	109	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	1	0	0

Species	Area	Halibut (tonnes)	Sablefish (tonnes)	ZN Outside (tonnes)	ZN Inside (tonnes)	Trawl (tonnes)	Dogfish (tonnes)	Lingcod (tonnes)
	4B	0	0	0	3	0	0	0
	Sector total	6.3	0	51	3	1	0	0
Bocaccio rockfish	Coastwide	0	0	0	0	414	0	0
Pacific cod	3C/D	0	0	0	0	300	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	1,250	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	2,510	0	0	241	0	0
Pollock	Gulf	0	0	0	0	1,115	0	0
	3C, 3D (including Area 20)	0	0	0	0	4,000	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

Species	Area	Halibut (tonnes)	Sablefish (tonnes)	ZN Outside (tonnes)	ZN Inside (tonnes)	Trawl (tonnes)	Dogfish (tonnes)	Lingcod (tonnes)
	Offshore ***	0	0	0	0	TBD	0	0
Halibut	Coastwide	2,350	0	0	0	454****	0	0
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	88	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	5,000	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 2021.

**** 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 / Blackspotted rockfish (3CD5AB)
Canary rockfish (5E)	Rougheye / Blackspotted rockfish (5CDE)
Silvergray rockfish (3C, 3D)	Redbanded rockfish (Coastwide)
Silvergray rockfish (5A, 5B)	Shortraker rockfish (Coastwide)
Silvergray rockfish (5C, 5D)	Shortspine thornyhead (Coastwide)

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 2021/22 fishing season. The values can change regularly. On September 1, the outgoing caps will be removed in Hook and Line sectors for Canary, Shortraker, Shortspine Thornyhead, Redbanded and Silvergray rockfish. On November 1, these caps will be removed in the trawl sector. Please consult the DFO website for the most current values:

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

		Sector (Outgoing)						
Species	Area	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

	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/ Blackspotted rockfish	3C, 3D, 5A, 5B	No Limit	No Limit	No Limit	No Limit	129,169	No Limit	No Limit
	5C, 5D, 5E	No Limit	No Limit	No Limit	No Limit	344,450	No Limit	No Limit
Sablefish	Coastwide	No Limit	590,127	No Limit	0	100,000	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
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 2021/22 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, Shortraker, Shortspine Thornyhead, Redbanded and Silvergray rockfish. On November 1 of each season, these caps will be removed in the Trawl sector. Please consult the DFO website for the most current values: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/publications-en.html>.

		Sector (Incoming)						
Species	Area	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	-	62,462	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	100,000	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
	5E	13,950	1,860	5,344	0	0	279	542

		Sector (Incoming)						
Species	Area	Halibut (pounds)	Sablefish (pounds)	ZN Outside (pounds)	ZN Inside (pounds)	Trawl (pounds)	Dogfish (pounds)	Lingcod (pounds)
	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/ Blackspotted rockfish	3C, 3D, 5A, 5B	No Limit	No Limit	No Limit	No Limit	97,551	No Limit	No Limit
	5C, 5D, 5E	No Limit	No Limit	No Limit	No Limit	260,137	No Limit	No Limit

		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	902,056	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	20,000	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	2,268	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. Since the 2011/12 season, there has been 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.

8. RECREATIONAL MANAGEMENT MEASURES

8.1. Tidal Water Sport Fishing - Licensing and Regulations

The recreational harvest of various fish, including groundfish species, in BC is regulated via the *British Columbia Sport Fishing Regulations, 1996* made under the *Fisheries Act*. A DFO Tidal Waters Sport Fishing licence is required for the recreational harvest of all species of fish and invertebrates. Groundfish species may generally be fished by hook and line, although in some cases trap and spear fishing is also allowed under the regulations. To review the current regulations for your area and species of interest please visit the BC Tidal Waters Sport Fishing Guide online at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.html>. See section 8.3. Harvesters should also review the recreational conditions of licence, as printed on the licence, as these describe additional restrictions and are subject to change.

Tidal Waters Sport Fishing licences may be purchased for a 1 day, 3 day, or 5 day period, or as an annual licence, covering the period April 1 to March 31 the following year. The annual licence fee is not pro-rated for annual licences purchased mid-season. Check for applicable fees in the Licence Fees table below. Fees depend on licence duration, age (senior, adult, juvenile) and residency status. Licences for juveniles (ages 15 and under) are free. Purchase your licence online via the National Recreational Licensing System:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/application-eng.html>.

Alternatively licences may be purchased over the counter at Independent Access Providers (IAPs) in many areas (note that the IAP may charge an additional service fee); visit the list of IAPs at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/iap-fai-eng.html>.

Only a Canadian resident may fish for halibut under an electronic licence in Areas 121, 23 and 123. Non-residents wishing to fish and retain halibut in Areas 121, 23 and 123, must obtain their licence from a licence vendor in Canada (Independent Access Provider). Please see the list of Independent Access Providers at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/iap-fai-eng.html>

8.2. Licence Fees

Licence type and duration	Fee: resident	Fee: non-resident
Annual licence, Adult (16-64 years of age)	\$21.46	\$103.22
Annual licence, Senior (65 years of age and over)	\$11.24	\$103.22
Annual licence, Juvenile (under 16 years of age)	Free	Free
5 day licence	\$16.35	\$31.68
3 day licence	\$11.24	\$19.42
1 day licence	\$5.37	\$7.15
Salmon Conservation Stamp (annual)	\$6.13	\$6.13

Notes:

- A Canadian resident is an individual who normally lives in Canada; proof of residency may be requested (driver's licence etc.)
- A non-resident is anyone who does not live in Canada
- Fees are governed by the BC Sport Fishing Regulations as established in 1996 - <http://laws-lois.justice.gc.ca/eng/regulations/SOR-96-137/index.html>; please note that the regulations do not provide for concessionary rates for people with disabilities
- An annually-purchased Salmon Conservation Stamp (\$6.00 + GST) must be affixed to licences held by anglers, both adult and juvenile, wishing to retain any species of Pacific salmon; a salmon stamp is not required for catch and release

8.3. Online Regulations

The regulations for recreational fishing are summarized online in the British Columbia Tidal Waters Sport Fishing Guide, which lists open and closed times, catch limits, size limits (where applicable) and open/closed areas: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.html>. When required, Fishery Notices are issued to advise of changes to the regulations which are kept up-to-date in the online Sport Fishing Guide; view or sign-up to receive Fishery Notice notifications by email at: <http://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm>. The old printed Sport Fish Guide booklet is no longer being produced/distributed, both to reduce costs and in recognition that the online guide does a better job at reporting in-season changes, which was not possible within the format of the printed guide. You may also call your local fishery office to obtain regulatory information for your area of interest – visit us at <http://www.dfo->

mpo.gc.ca/contact/regions/pacific-pacifique-eng.html to find a local area office, or call 604-666-0384 or email info@dfo-mpo.gc.ca.

8.4. **Using mobile devices and the FishingBC App**

The FishingBC App <http://www.fishingbcapp.ca/>, as developed by the Sport Fishing Institute of BC, may be downloaded to your mobile device (cell phone, tablet) to assist with accessing regulatory information for species/areas/fishing gear while out on the water (along with other functionality). Please note that the DFO website is the official site for regulatory information in the event of a discrepancy between the two.

8.5. **E-licences and Paper licences**

At this time most fishers continue to use the traditional paper copy of their licence; however an e-licence – which is an electronic/pdf copy of your licence – may be used on a mobile device; however there are restrictions on its use.

Please consider these licensing requirements before your fishing trip:

- For all recreational tidal water fishers that do not have an electronic copy of their licence on their mobile device - you must still have a paper copy of your licence with you as proof of licence purchase to show to a fishery officer
- For users of the FishingBC App, or on any electronic device, you may have a pdf copy of your licence on the device which must be immediately producible to show to a fishery officer; and a paper copy of the licence is not required unless you wish to retain any chinook, halibut, or lingcod
- For all fishers wishing to retain chinook, halibut, or lingcod, even if you have your e-licence and catch details in the App or in your mobile device, you must still have a paper copy of your licence with you to record catch on the licence for these three species

8.6. **Catch Reporting and the (iREC) Survey**

The Sport Fishing Advisory Board (SFAB) is the primary consultative body for the recreational fishing community, and includes individual representatives from all geographic regions in BC as well as delegates from a number of angling and service provider organizations. The SFAB and the recreational fishing sector strongly support effective fishery monitoring and catch reporting programs in recreational fisheries. The SFAB has been working with DFO on initiatives to strengthen fishing monitoring and catch reporting in the recreational fishery for a number of years.

Recreational harvesters are required as a condition of the Tidal Waters Sport Fishing Licence to report information on their recreational fishing activity and catch to DFO representatives when requested to do so, whether in person or via an internet survey. Recreational harvesters may be requested by a Fishery Officer or designated DFO representative at the dock, or through a creel or internet survey to provide catch/effort information on their recreational fishing activities.

The Internet Recreational Effort and Catch (iREC) Survey was initiated in 2012 to provide monthly estimates of effort for all methods of recreational fishing. New in 2018, survey participants are now selected at time of licence purchase, and have their iREC survey access code printed to their licence. A reminder notice will also be sent by email. By completing the survey, fishers provide information essential to understanding the full

impacts of the recreational fishery, and thus support sustainable fishery management. More information on the iREC Survey is available at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/irec-iarc/index-eng.html>.

9. SHARED STEWARDSHIP ARRANGEMENTS

9.1. 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 2020/21 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*.

9.2. 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.

10. COMPLIANCE PLAN

10.1. Overview

The Conservation and Protection (C&P) Branch, part of the Fisheries Management Branch, 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 continues to evolve 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 utilizes education, & stewardship; monitoring & surveillance; and major case management to assist in the conservation and protection of the fishery resources.

There are approximately 170 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, 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.

10.2. Enforcement Priorities

- Closed area fishing in rockfish conservation areas, sponge reef marine protection areas, marine conservation areas and other permanent and in-season fishing closures.
- Vessel Masters not providing all reasonable assistance to at-sea and dockside observers.
- Owner or any person in charge or in control of a fishing landing station not providing the dockside observer with such assistance as is reasonably necessary to enable observer to perform their duties.
- 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;
- False and misleading statements to at-sea and dockside observers
- Unauthorized commercial/FSC (dual) fishing;
- Non-deployment of seabird avoidance gear;
- Non-compliance with hail-out, hail-in, electronic monitoring and other elements of the 100 percent at-sea and dockside monitoring programs;

10.3. 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 metre 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.

10.4. 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.

REPORT FISHERIES VIOLATIONS TO:

DFO OBSERVE, REPORT, RECORD

Phone: 1-800-465-4336 (24/7 Line)

Email: DFO.ORR-ONS.MPO@dfo-mpo.gc.ca.

Please record: When, Where, Who, What, Why and How the illegal activity is occurring. (Note: If you wish to remain anonymous make this known to the radio operator).

Crime Stoppers:

Phone: 1-800-222-8477 (24/7 Line) www.bccrimestoppers.com

DFO Groundfish Enforcement Coordinator:

Ann Bussell, Desk: 604-666-4162; Email: Ann.Bussell@dfo-mpo.gc.ca

11. 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 2021	Initial IFMP issued.
1.1	20 Aug 2021	<ul style="list-style-type: none"> • Section 2, Southern Resident Killer Whale management measures updated • 5.1.4., Updated reporting requirements for Marine Mammal Incident Hotline • 5.1.5., Updated hyperlink and contact information for whale depredation reporting • 5.1.6., Updated wording for Southern Resident Killer Whale for 2021 season • 5.2.1.7. Updated wording for Strait of Georgia and Howe Sound Glass Sponge Reef Marine Refuges • 6.1.5.6., Administrative correction to Rougheye/Blackspotted sector cap • 6.1.5.7., Administrative correction to Rougheye/Blackspotted sector cap • Appendix 1, Updated DFO contact information • Appendix 6, section 6.3, Administrative correction to Annual ITQ cap • Appendix 7, section 12, new monitoring requirements for the offshore seamount fishery • Appendix 8, section 1.7., Updated wording for Southern Resident Killer Whale for 2021 season • Appendix 8, section 6.4., Updated wording for Strait of Georgia and Howe Sound Glass Sponge Reef Marine Refuges • Appendix 8, section 6.8.12., Updated Groundfish trawl and Area A Crab agreement • Appendix 8, section 16.1, Administrative correction to reported mortality rates • Appendix 9, Yellowmouth Rockfish Alternative Action Plan added • Appendix 10, section 2, Updated wording for Strait of Georgia and Howe Sound Glass Sponge Reef Marine Refuges • Appendix 10, section 7.6.2., Administrative correction to section title

		<ul style="list-style-type: none"> • Appendix 12, new advisory board representatives following May 2021 elections • Hake Harvest Plan addendum added
--	--	--

12. 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
 Addendum: Pacific Hake Harvest Plan

13. 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	1-800-465-4336
	1-877-535-7307
National On-Line Licencing System (NOLS)	fishing-peche@dfo-mpo.gc.ca

Regional Headquarters, Groundfish Management Unit

Regional Resource Manager, Groundfish	Adam Keizer	604-666-9033
Trawl Coordinator	Deirdre Finn	236-330-4139
Sablefish/Hook and Line Coordinator	Gwyn Mason	236-334-7534
Halibut/Hook and Line Coordinator	Maureen Finn	604-666-3279
Sustainability Coordinator	Rob Tadey	604-666-3991
Quota Officer	Sukriti Khanna	236-334-6269
Quota Officer	Anna Khan	604-666-5865
	Facsimile	604-666-8525

Regional Headquarters, Aboriginal Programs Directorate

A/ Director, Aboriginal Programs Directorate	Corey Jackson	604-666-7478
Manager, Aboriginal Fisheries Strategy	Ann Susnik	604-363-1647
Manager, Integrated Aboriginal Programs	Kelly Binning	604-666-6622
Manager, PICFI Enterprise Development	David Lau	604-666-4596

Science

Regional Groundfish Science Contact	Greg Workman	250-756-7113
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

A/ Regional Recreational Fisheries Coordinator	Greg Hornby	250-286-5886
A/South Coast Area Coordinator	Erika Watkins	250-286-5882
Recreational Fisheries Management Officer	Felix Markevicius	604-666-3637
A/ North Coast Area Coordinator	Darren Chow	250-627-3441
South Coast Area Coordinator	Brad Beaith	250-756-7190
Lower Fraser River Coordinator	Barbara Mueller	604-666-2370
BC Interior Coordinator	Dale Michie	250-851-4946

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

TABLE OF CONTENTS

1.	CATCH MONITORING	2
1.1.	Fishery Monitoring Policy	2
2.	AT SEA OBSERVER COVERAGE.....	3
3.	ELECTRONIC MONITORING SYSTEM.....	3
3.1.	Organizational Requirements.....	4
3.2.	Systems Requirements	6
3.3.	Administrative and reporting requirements	8
3.4.	Requirements prior to fishing when using EM:	9
3.5.	Requirements while fishing with EM:	10
3.6.	Measurement grid	11
3.7.	Evaluation	14
4.	INTEGRATED GROUND FISH FISHING LOG	15
5.	HAIL PROGRAM.....	16
6.	BAIT.....	16
7.	DOCKSIDE MONITORING AND VALIDATION.....	16
7.1.	Hail-in	16
7.2.	Designated Landing Locations.....	16
7.3.	Landing	16
7.4.	Halibut Tagging	18
7.5.	Transport of validated fish	18
8.	LOST AND FOUND GEAR REPORTING REQUIREMENTS	18
9.	MORTALITY RATES	19
10.	AVERAGE WEIGHTS	19
11.	SIZE LIMITS	20
11.1.	Halibut.....	20
11.2.	Lingcod	20
11.3.	Sablefish.....	20
11.4.	Dogfish-Unmarketable.....	20
12.	RESTRICTIONS	20
13.	FISHING LOG AUDIT.....	20
14.	QUOTA STATUS REPORT.....	22
15.	FISHER IDENTIFICATION NUMBERS	22
16.	FISH SLIPS	22
17.	INTEGRATED GROUND FISH FISHING LOGBOOK.....	23

1. CATCH MONITORING

Robust fishery monitoring information is essential for stock assessment and to effectively implement management measures such as target and bycatch limits, quotas and closed areas. Fishery monitoring information is also needed to support the long-term sustainable use of fish resources for Food, Social, and Ceremonial and other Indigenous fisheries, commercial fisheries, recreational fisheries, and to support market access for Canadian fish products.

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 Policy

Following multi-sectoral consultations, DFO released the national Fishery Monitoring Policy in 2019, replacing the regional “Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries” (2012). The Fishery Monitoring Policy seeks to provide dependable, timely and accessible fishery information through application of a common set of procedural steps used to establish fishery monitoring requirements across fisheries. Policy principles include respecting Indigenous and Treaty rights, linkage of monitoring requirements to the degree of risk and complexity of fisheries, linkage of monitoring programs to fishery and policy objectives while accounting for cost-effectiveness and practicality of implementation, and shared accountability and responsibility between DFO, Indigenous groups and stakeholders.

The Fishery Monitoring Policy is part of DFO’s Sustainable Fisheries Framework and is available at: <https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/fishery-monitoring-surveillance-des-peches-eng.htm>

To ensure consistent national application of the Fishery Monitoring Policy, further guidance is provided through the “Introduction to the Procedural Steps of Implementing the Fishery Monitoring Policy”. Fisheries are first prioritized for assessment through collaboration with Indigenous groups and Stakeholders. Risk and data quality assessments are then conducted on priority stocks and associated fisheries and monitoring programs. Next, monitoring objectives are set in alignment with the Fishery Monitoring Policy, followed by specifying monitoring requirements and then monitoring programs are operationalized. Finally, a review and evaluation of the fishery monitoring programs against the monitoring objectives will be conducted and reported on.

The “Introduction to the Procedural Steps of Implementing the Fishery Monitoring Policy” is available at: <https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/fmp-implementation-ppsp-mise-en-oeuvre-eng.htm>

In cases where assessment of monitoring programs identifies a gap between the current and target level of monitoring, 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.). To support Fishery Monitoring Policy principles, 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 meet Fishery Monitoring Policy objectives. Where monitoring options are not feasible, alternative management approaches are required to reduce the 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.

In 2018, the Department drafted risk assessments for priority groundfish fisheries by gear type, including Hook and Line, and Trap for commercial and FSC dual fishing. The fishery risk (comprised of risk to main species, bycatch, and community and habitat) was identified as “high” for Hook and Line fisheries due to non-directed catch of COSEWIC-listed species (e.g., Yelloweye rockfish, Bocaccio rockfish), and requires a monitoring level of “Enhanced” to address the associated ecological risk. The 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).

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 gauge 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 10.
- 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

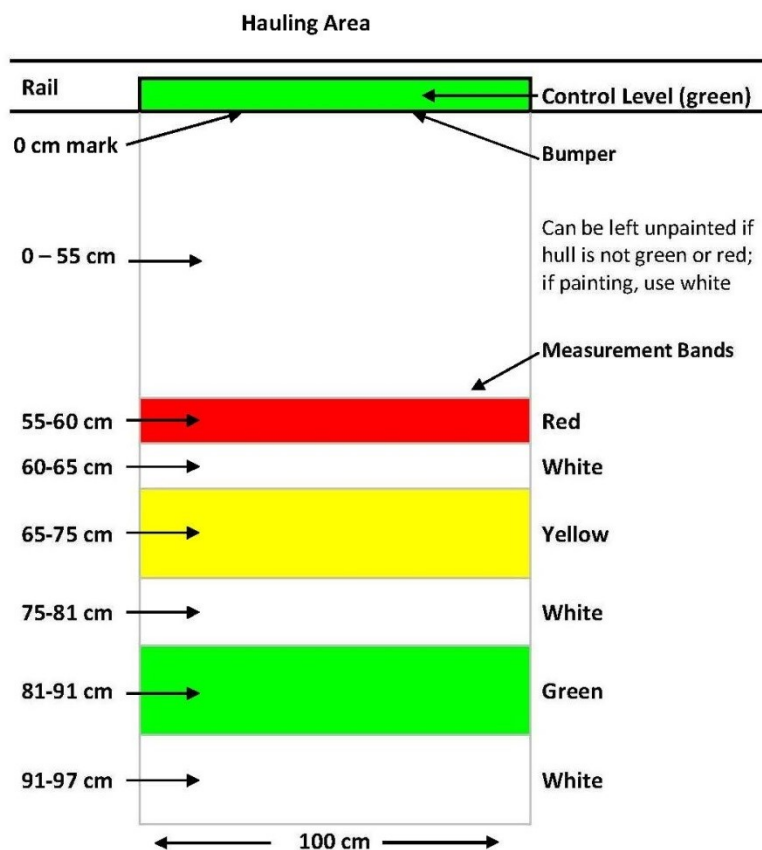


Figure 1. Measurement grid recommendations for vessels releasing at the rail.

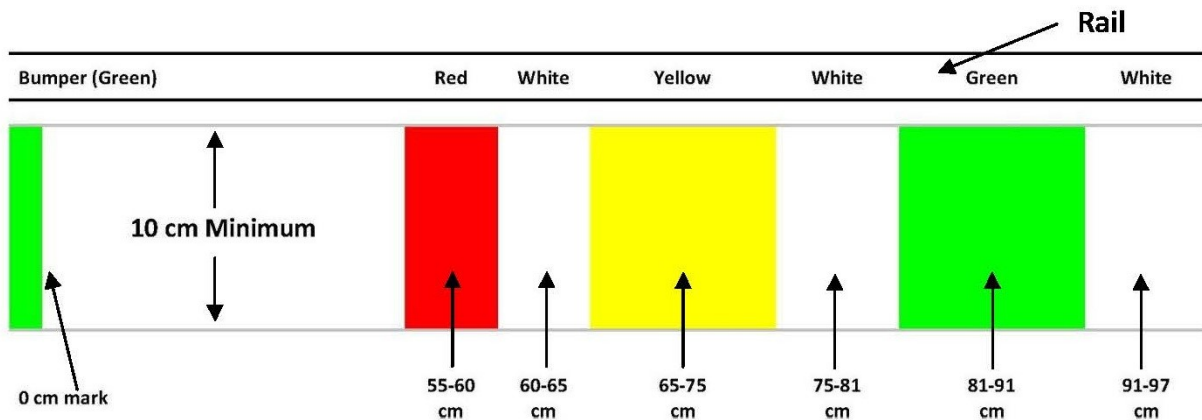


Figure 2. Measurement grid recommendations for vessels releasing after fish have come over the rail.

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.

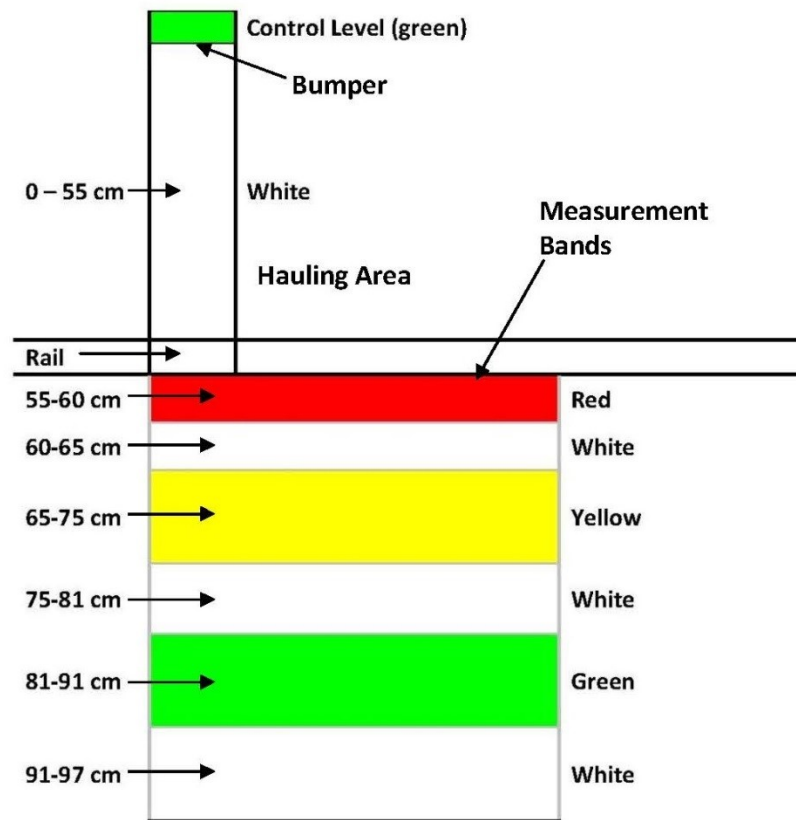


Figure 3. Measurement grid with infrastructure added for vessels without adequate freeboard.

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. LOST AND FOUND GEAR REPORTING REQUIREMENTS

As a signatory to the Global Ghost Gear Initiative, Canada has committed to implement new requirements on the reporting of lost and found fishing gear. Accordingly, new conditions have been added to licence conditions beginning in the 2020/2021 season, under the “Records that a vessel master shall keep” section of the conditions of licence. Harvesters are required to report on the gear type and amount, as well as the date, time and location that gear was lost or found. New fields have been added to the Integrated Groundfish Fishing Log to accommodate this change. Harvesters are reminded that they are responsible for complying with all conditions of licence. Harvesters are required to use the updated fishing log to report on lost/found gear. Please refer to the IFMP Front Section 5.2.1.8 for more information and Appendix 2 for an example of the updated fishing log. If your fishing logs do not have the additional section on gear reporting requirements, please contact Archipelago Marine Research Ltd. to ensure you have the updated versions.

9. 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%

10. 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.

11. SIZE LIMITS

11.1. 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.

11.2. 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.

11.3. 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.

11.4. Dogfish-Unmarketable

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

12. 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.

13. 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.

14. 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.

15. 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 hailing 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.

16. 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 vessel masters selling fish to the public are reminded that they must obtain a Fisher Vendor Licence, available from any provincial government agent, and as licensed vendors they will be required to record all public fish sales on fish slips. All record keeping requirements for a Fisher Vendor Licence are in the [Fish and Seafood Licensing Regulation](https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/fisheries-and-aquaculture/seafood-industry-licensing). Further provincial licensing information is available here: <https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/fisheries-and-aquaculture/seafood-industry-licensing>.

17. INTEGRATED GROUND FISH FISHING LOGBOOK

17.1 Example logbook page for trap gear

YEAR **2 0 1 2**

INTEGRATED GROUND FISH FISHING LOGBOOK

Vessel: Ground Fisher				FTCN:								DATE:			
VRN: 299999				Gear ID		Gear Type		Length of Skate (feet)		HOOK TRAP		ESCAPE RING			
Vessel Master: Joe Smith		Type	Size							Spacing (feet)	# per skate	# per trap	Diameter (inches)	Config.	
FIN: 123456		#Crew: 4	Trip #: 2												
Tab #1: K 99		Tab #2:													
Hail Out #(s): 32700 332/															
Hail In #(s): 3270 0339 /															
Target Spp. Sablefish															
Bait Spp. hake		Spp. Wt. 10													
Bait Spp. squid		Spp. Wt. 2													

Set/Haul		Set # 1		Haul # 1		Set/Haul		Set # 2		Haul # 2	
Gear/Skate Details		ID A	# Set 55	# Lost 0		Gear/Skate Details		ID A	# Set 60	# Lost 1	
Catch Area (GMU)		5D				Catch Area (GMU)		5D			
Set Start Date/Time		(mm/dd) 11/23		(hh:mm) 11:00		Set Start Date/Time		(mm/dd) 11/23		(hh:mm) 13:15	
Haul Start Date/Time		(mm/dd) 11/24		(hh:mm) 18:45		Haul Start Date/Time		(mm/dd) 11/24		(hh:mm) 22:00	
Haul End Date/Time		(mm/dd)		(hh:mm)		Haul End Date/Time		(mm/dd)		(hh:mm)	
Set Start Lat			5	4	1	3	7	5			
Set Start Long			1	3	0	4	7	8	2		
Set End Lat			5	4	1	3	6	2			
Set End Long			1	3	0	4	8	0	5		
Depth in fathoms		Start 142		Min 139		Depth in fathoms		Start 248		Min 245	
		End 165		Max 170				End 262		Max 268	

Species Name	Retained			Released			Species Name	Retained			Released		
	Weight	Pieces	Bait	Weight	Pieces	Liced		Weight	Pieces	Bait	Weight	Pieces	Liced
Halibut - Legal							Halibut - Legal				30	1	
Halibut - Sub-L	////	////	////				Halibut - Sub-L	////	////	////			
Sablefish - Legal	1000	236					Sablefish - Legal	1150	268				
Sablefish - Sub-L	////	////	////	200	30		Sablefish - Sub-L	////	////	////	65	5	
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	37				Rougheye	5			
SS Thornyhead			0	1	SS Thornyhead				
Redbanded					Redbanded	3			
Big Skate					Big Skate				
Longnose Skate			1		Longnose Skate				
Turbot			8		Turbot			29	
Pacific Cod					Pacific Cod				
Tagged Fish/Tag #(s): A0045026 Sablefish					A0040477 Sablefish				
IPHC USE:					Collected by:				
Comments: (Including marine mammal interactions, e.g. bycatch, collision, sightings of marine mammals entangled in fishing gear)									
Was gear lost or recovered? (circle one) Lost / Recovered					Which set did this occur in?				
Estimated amount of gear (e.g. # of skates): one trap					Haul #: 2				
Gear type: Trap					If recovered, was gear returned to land? Y / N				
<i>White Copy - Observer</i>					<i>Yellow copy - IPHC</i>				
<i>Pink Copy - Vessel Master</i>					<i>Page ____ of ____</i>				

17.2 Example logbook page for longline gear

YEAR				INTEGRATED GROUNDFISH FISHING LOGBOOK							
2012											
Vessel: Groundfisher # 1				FTCN:		DATE:					
VRN: 12356				Gear ID		HOOK/TRAP		ESCAPE RING			
Vessel Master: Rob Smith						Type	Size	Spacing (feet)	# per skate	# per trap	Diameter (inches)
FIN: 54321		#Crew: 4		Trip #:							
Tab #1: LOO1		Tab #2: K09		Length of Skate (feet)							
Hail Out #(s): 32900970		32700229		A SNAP		1850		BC 14		10 200	
Hail In #(s): 32901046		32700252		B							
Target Spp. Halibut/Sablefish				C							
Bait Spp. SQ		Spp. Wt. 8		D							
Bait Spp. HD		Spp. Wt. 8									

Set/Haul	Set # 1	Haul # 4	Set/Haul	Set # 2	Haul # 2
Gear/Skate Details	ID A # Set 4 # Lost		Gear/Skate Details	ID A # Set 4 # Lost	
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	5 2 2 6 . 2 8		Set Start Lat	5 1 1 0 . 1 0	
Set Start Long	1 3 0 5 1 . 3 5		Set Start Long	1 2 9 3 0 . 5 0	
Set End Lat	5 2 3 2 . 1 9		Set End Lat	5 1 0 8 . 0 0	
Set End Long	1 3 0 5 0 . 0 0		Set End Long	1 2 9 4 0 . 1 0	
Depth in fathoms	Start 44 Min 33 End 60 Max 64		Depth in fathoms	Start 100 Min 80 End 120 Max 120	

Species Name	Retained			Released			Species Name	Retained			Released		
	Weight	Pieces	Bait	Weight	Pieces	Liced		Weight	Pieces	Bait	Weight	Pieces	Liced
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		Liced	Species Name	Pieces		Bait	Pieces		Liced
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						
Canary	4						Shortraker	26					2

Tagged Fish/Tag #(s):

Sablefish A00731637, A00 744 833

IPHC USE:

Collected by:

Comments: (Including marine mammal interactions, e.g. bycatch, collision, sightings of marine mammals entangled in fishing gear)

Was gear lost or recovered? (circle one)	Lost / <u>Recovered</u>	Which set did this occur in?	1
Estimated amount of gear (e.g. # of skates):	half a skate	Haul #:	4
Gear type:	skate	If recovered, was gear returned to land?	<u>Y</u> / N

White Copy - Observer

Yellow copy - IPHC

Pink Copy - Vessel Master

Page ____ of ____

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

TABLE OF CONTENTS

1.	MANAGEMENT UPDATES & CHANGES FOR 2021/2022	2
1.1.	In-Season Changes/Updates.....	2
1.2.	Lost and Found Gear Reporting Requirements	2
1.3.	Live rockfish landings: sampling protocol	2
1.4.	800 line/Circle Tow Seasonal Expansion of Closure	2
1.5.	Human Waste Contaminant Regulation.....	2
1.6.	Licensing Renewal Fees	3
2.	SPECIES.....	3
3.	GEAR.....	3
4.	QUOTAS AND OPEN TIMES.....	3
4.1.	Open Times	3
4.2.	Fishing Areas	4
4.3.	Halibut Landing Requirements	5
4.4.	Prohibition on Shark Finning	5
4.5.	Total Allowable Catch	5
5.	LICENSING.....	5
5.1.	Licence Category	6
5.2.	Licence Renewal Fees.....	6
5.3.	Licence Issuance	6
5.4.	Licence Amendments.....	7
5.5.	Licence Documents.....	7
5.6.	Vessel Replacement	7
6.	BAIT.....	7
7.	LINGCOD INDIVIDUAL TRANSFERABLE QUOTAS (ITQ).....	7
7.1.	Licence Issuance	8
7.2.	Species Area Groups	8
7.3.	Annual ITQ Caps	8
7.4.	Trip Limits	9
7.5.	Fishing Restrictions for ITQ Excess Overage	10
7.6.	Rules for Carryover of ITQ Overage and Underage.....	10
7.7.	Research Allocation	11
7.8.	Retention of Lingcod by Salmon Troll	11
8.	DOGFISH INDIVIDUAL TRANSFERABLE QUOTAS (ITQ).....	12
8.1.	Species Area Groups	12
8.2.	Dogfish Development Quota (DDQ)	12
8.3.	Annual ITQ Caps	12
8.4.	Trip Limits	14
8.5.	Fishing Restrictions for ITQ Excess Overage	14
8.6.	Rules for Carryover of ITQ Overage and Underage.....	15
9.	REALLOCATION PROCEDURES	15
9.1.	Reallocation of Directed and Non-Directed Species ITQ.....	15
10.	DUAL FISHING	16
11.	CLOSURES.....	17

1. MANAGEMENT UPDATES & CHANGES FOR 2021/2022

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. Lost and Found Gear Reporting Requirements

As a signatory to the Global Ghost Gear Initiative, Canada has committed to implement new requirements on the reporting of lost and found fishing gear. Accordingly, new conditions have been added to licence conditions beginning in the 2020/2021 season, under the “Records that a vessel master shall keep” section of the conditions of licence. Harvesters are required to report on the gear type and amount, as well as the date, time and location that gear was lost or found. New fields have been added to the Integrated Groundfish Fishing Log to accommodate this change. Harvesters are reminded that they are responsible for complying with all conditions of licence. Harvesters are required to use the updated fishing log to report on lost/found gear. Please refer to the IFMP Front Section 5.2.1.8 for more information and Appendix 2 for an example of the updated fishing log. If your fishing logs do not have the additional section on gear reporting requirements, please contact Archipelago Marine Research Ltd. to ensure you have the updated versions.

1.3. Live rockfish landings: sampling protocol

Starting in 2020, a sub-sampling protocol was adopted for implementation for all live-rockfish offloads to improve consistency at offloads, and minimize the time live fish spend out of water. Detailed information on the sampling protocol can be found in Appendix 4, section 8, and Appendix 5 section 9.

1.4. 800 line/Circle Tow Seasonal Expansion of Closure

An agreement was reached between representatives of the Groundfish Trawl Advisory Committee and the Halibut Advisory Board to implement a seasonal expansion of the pilot 800-line/circle tow closure to bottom trawl fishing from November 1, 2020 until March 31, 2021. This expanded seasonal closure is intended for the short term and will be re-evaluated during the 2021/2022 fishing season. The year-round pilot bottom trawl closure that was implemented in March 2019 continues to be in effect. A map along with coordinates is available in the Trawl Appendix 8 section 6.8.6.

1.5. Human Waste Contaminant Regulation

For information on Human Waste Containment Receptacle Requirements under the Canadian Shellfish Sanitation Program (CSSP) please refer to the IFMP Front Section 5.3.

1.6. Licencing Renewal Fees

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by the Consumer Price Index (CPI) published by Statistics Canada. For 2021, the annual licence fees will increase by 2.2%. The official licence fees will be posted online in 2021. A Fishery Notice ([FN0196](#)) was sent out in March 2020 informing of this change. More information on Licencing can be found in the respective species appendices.

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. QUOTAS AND OPEN TIMES

4.1. Open Times

With the exception of those seasonal and permanent closures noted in this plan, or closures announced in-season, the 2021/2022 fishery will commence 00:01 hours, February 21, 2021 and close at 23:59 hours, February 20, 2022. Following the closure of the fishery, all fish caught under the authority of a Schedule II licence eligibility must be landed and validated by a DFO-designated groundfish dockside observer no later than 23:59 hours, February 27, 2022.

The retention of Lingcod by hook and line gear in outside waters (see section 4.2) will be permitted from April 1, 2021 to 23:59 hours November 14, 2021. The retention of Lingcod by hook and line gear in inside waters (see section 4.2) will be permitted from May 1, 2021 to 23:59 hours November 14, 2021. 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, 2021.

The retention of Halibut by hook and line gear will be permitted from 12:00 hours, March 6, 2021. The directed Halibut fishery will close at 12:00 hours, December 7, 2021. Accordingly, all

Halibut must be landed and validated by a DFO-designated groundfish dockside observer no later than 12:00 hours, December 14, 2021.

To allow an orderly opening for the 2021 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

4.2.1. Lingcod Outside

Subject to closures described in Appendix 10 of this IFMP and variation orders, commercial Lingcod fishing is permitted to be carried out in Groundfish Management Areas 3C, 3D, 5A, 5B, 5C, 5D, and 5E, effective April 1, except areas:

1. Subareas 2-1 and 2-63 to 2-68; and 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 Subarea 2-68	53°15.208' N	132°43.597' W
then to Hunter Point	53°15.208' N	132°42.984' W

4.2.2. Lingcod Inside

Subject to closures described in Appendix 10 of this IFMP and variation orders, commercial Lingcod fishing is permitted to be carried out in Groundfish Management Area 4B, effective May 1, except areas:

Areas 13 to 20, 22, 28 and 29.

4.2.3. Dogfish and other Schedule II species

Subject to closures described in Appendix 10 of this IFMP and variation orders, commercial Dogfish and other Schedule II species fishing is permitted to be carried out in Groundfish Management Areas 3C, 3D, 5A, 5B, 5C, 5D, 5E, and 4B, except areas:

1. Areas 22 and 28.
2. Subareas 2-1 and 2-63 to 2-68; and 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 Subarea 2-68	53°15.208' N	132°43.597' W
then to Hunter Point	53°15.208' N	132°42.984' W
3. Subareas 13-2 to 13-9, 13-11 and 13-27.
4. Subareas 14-11 and 14-14.
5. Subareas 16-3 and 16-4.

6. Subareas 17-7 and 17-14.
7. Subarea 18-8.
8. Subareas 19-1 and 19-6.
9. Subareas 20-6 and 20-7.
10. Subareas 29-7 to 29-17.

4.3. Halibut Landing Requirements

Where 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.

4.4. 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 removed at-sea and the remainder of the shark, sometimes still alive, is discarded overboard.

Amendments to the *Fisheries Act*, which came into force on June 21, 2019, include a prohibition on shark finning, which is defined as the “practice of removing fins from a shark and discarding the remainder of the shark while at sea”. With the addition of a prohibition on shark finning to the *Fisheries Act*, the relevant conditions have been removed from the licence conditions. However, the act of shark finning remains prohibited in all groundfish fisheries.

4.5. Total Allowable Catch

The total allowable catch is reported in section 6 of this IFMP.

5. LICENSING

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

All fish harvesters/Licence Holders/vessel owners are 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

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by the Consumer Price Index (CPI) published by Statistics Canada.

The commercial Schedule II Species (Category C) licence renewal fee may be found on the following link: <https://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/fees-frais-21-22-eng.html>. There is no annual licence renewal fee for communal commercial category FC licences.

5.3. 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 20th of the current fishing year will cease and licence issuance requests will be unable to be considered in the 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.html#toc5.2.1>

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 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.

5.4. 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 2021/2022 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>

5.5. Licence Documents

Schedule II Species licence documents are valid from the date of issue to February 20, 2022.

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

5.6. 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, 2022 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.htm#toc5.2.1>

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

- Meet any Ministerial conditions placed on the licence eligibility.
- 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).
- 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	2.00
Redbanded rockfish	Coastwide	2.00

7.3.4. Quota Landings Caps

Species	Areas	Quota Landings Cap
Yelloweye rockfish	Coastwide	Cap increases in 400 blocks up to 2,491, once a 400 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:	
	400 pounds where 10,000 pounds or less of Lingcod is landed	400 pounds plus 2% of the amount of Lingcod landed in excess of 10,000 pounds, to a maximum of 1,200 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

Licence eligibilities that exceed their total Lingcod ITQ by area by more than 10%, 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 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, 2022, will carry overages into the new season (see section 7.6). 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 2022/2023 season are processed in mid-March, 2022.

7.6. Rules for Carryover of ITQ Overage and Underage

7.6.1. Carryover of Directed Species ITQ Underage

Licence eligibilities with catch less than ITQ, including reallocations made during the year, will be permitted to carryover uncaught ITQ up to 30% of their total Lingcod ITQ at the end of the fishing season. This equivalent poundage will be added to the licence ITQ in 2022/2023. Any amount above the 30% will be forgone.

7.6.2. Carryover of Non-direct 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 2022/2023. 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 2022/2023. Any amount above the 10% will be forgone.

7.6.3. Carryover of Lingcod and Non-Directed ITQ Overage

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 2022/2023. 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.

7.7. 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 2021 hard bottom 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	876
	5CDE	7,084

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-aiguillet/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 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/Blackspotted rockfish	Coastwide	0.50
Sablefish ²	Coastwide	1.00
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 ^ψ
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†
------------	----------------------------	--	--	--	---

‡Halibut allocations can continue to occur in blocks up to 10,000 lbs for every 200,000 lbs of Dogfish landed.

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

∞Sablefish 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:	
	400 pounds where 10,000 pounds or less of Dogfish is landed	400 pounds plus 2% of the amount of Dogfish landed in excess of 10,000 pounds, to a maximum of 1,200 pounds of Bocaccio
Skate (4B)	6,000	

8.5. Fishing Restrictions for ITQ Excess Overage

Licence eligibilities that exceed their total Dogfish ITQ by area by more than 10%, or 5,000 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 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, 2022, will carry overages into the new season (see section 8.6 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 2022/2023 season are processed in mid-March, 2022.

8.6. Rules for Carryover of ITQ Overage and Underage

8.6.1. Carryover of Directed Species ITQ Underage

Licence eligibilities with catch less than ITQ, including reallocations made during the year, will be permitted to carryover uncaught Dogfish and Halibut ITQ up to 10% of their total ITQ at the end of the fishing season. This equivalent poundage will be added to the licence ITQ in 2022/2023. Any amount above the 10% will be forgone.

8.6.2. Carryover of Non-directed Species ITQ Underage

Licence eligibilities with non-directed species (rockfish, Sablefish and Lingcod) 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 2022/2023. Any amount above the 30% will be forgone.

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

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 2022/2023. 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.

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 2022/2023 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 2021/2022 licence must be issued prior to any ITQ being reallocated.
- 9.1.3. Request for temporary reallocation for the 2021/2022 season must be received by 16:00 hours Pacific Time on February 20, 2021 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, 2021 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 2021/2022 season will not be processed until 08:00 hours local time March 15, 2021.

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

TABLE OF CONTENTS

1.	MANAGEMENT UPDATES & CHANGES FOR 2021/2022	2
1.1.	In-Season Changes/Updates.....	2
1.2.	Lost and Found Gear Reporting Requirements	2
1.3.	Live rockfish landings: sampling protocol	2
1.4.	800 line/Circle Tow Seasonal Expansion of Closure	2
1.5.	Human Waste Contaminant Regulation.....	2
1.6.	Licensing Renewal Fees	3
2.	SPECIES.....	3
3.	GEAR.....	3
4.	QUOTAS AND OPEN TIMES.....	3
4.1.	Open Times	3
4.2.	Fishing Areas	3
4.3.	Halibut Landing Requirements	4
4.4.	Prohibition on Shark Finning	4
4.5.	Total Allowable Catch	4
5.	LICENSING.....	4
5.1.	Licence Category	4
5.2.	Licence Renewal Fees.....	5
5.3.	Licence Issuance	5
5.4.	Licence Options	5
5.5.	Licence Amendments.....	6
5.6.	Licence Documents.....	6
5.7.	Vessel Redesignations.....	6
5.8.	Licence Eligibility Nominations	7
6.	BAIT.....	7
7.	ROCKFISH INDIVIDUAL TRANSFERABLE QUOTAS (ITQ)	7
7.1.	Annual ITQ Caps	7
7.2.	Trip Limits	8
7.3.	Fishing Restrictions for ITQ Excess Overages	9
7.4.	Reallocation of Directed and Non-Directed Species ITQ.....	9
7.5.	Rules for Carryover of ITQ Overage and Underage.....	10
8.	LIVE ROCKFISH OFFLOAD SAMPLING PROTOCOL	10
9.	DUAL FISHING	11
10.	CLOSURES.....	12

1. MANAGEMENT UPDATES & CHANGES FOR 2021/2022

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. Lost and Found Gear Reporting Requirements

As a signatory to the Global Ghost Gear Initiative, Canada has committed to implement new requirements on the reporting of lost and found fishing gear. Accordingly, new conditions have been added to licence conditions beginning in the 2020/2021 season, under the “Records that a vessel master shall keep” section of the conditions of licence. Harvesters are required to report on the gear type and amount, as well as the date, time and location that gear was lost or found. New fields have been added to the Integrated Groundfish Fishing Log to accommodate this change. Harvesters are reminded that they are responsible for complying with all conditions of licence. Harvesters are required to use the updated fishing log to report on lost/found gear. Please refer to the IFMP Front Section 5.2.1.8 for more information and Appendix 2 for an example of the updated fishing log. If your fishing logs do not have the additional section on gear reporting requirements, please contact Archipelago Marine Research Ltd. to ensure you have the updated versions.

1.3. Live rockfish landings: sampling protocol

Starting in 2020, a sub-sampling protocol was adopted for implementation for all live-rockfish offloads to improve consistency at offloads, and minimize the time live fish spend out of water. Detailed information on the sampling protocol can be found in Appendix 4, section 8, and Appendix 5 section 9.

1.4. 800 line/Circle Tow Seasonal Expansion of Closure

An agreement was reached between representatives of the Groundfish Trawl Advisory Committee and the Halibut Advisory Board to implement a seasonal expansion of the pilot 800-line/circle tow closure to bottom trawl fishing from November 1, 2020 until March 31, 2021. This expanded seasonal closure is intended for the short term and will be re-evaluated during the 2021/2022 fishing season. The year-round pilot bottom trawl closure that was implemented in March 2019 continues to be in effect. A map along with coordinates is available in the Trawl Appendix 8 section 6.8.6.

1.5. Human Waste Contaminant Regulation

For information on Human Waste Containment Receptacle Requirements under the Canadian Shellfish Sanitation Program (CSSP) please refer to the IFMP Front Section 5.3.

1.6. Licencing Renewal Fees

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by the Consumer Price Index (CPI) published by Statistics Canada. For 2021, the annual licence fees will increase by 2.2%. The official licence fees will be posted online in 2021. A Fishery Notice ([FN0196](#)) was sent out in March 2020 informing of this change. More information on Licencing can be found in the respective species appendices.

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. QUOTAS AND OPEN TIMES

4.1. Open Times

With the exception of those seasonal and permanent closures noted in this plan, or closures announced in-season, the 2021/22 Rockfish by Hook and Line (Inside ZN) fishery will commence 00:01 hours, February 21, 2021 and close at 23:59 hours, February 20, 2022. Following the closure of the fishery, all fish caught under the authority of a Rockfish by Hook and Line (Inside ZN) licence eligibility must be landed and validated by a DFO-designated groundfish dockside observer no later than 23:59 hours, February 27, 2022.

The retention of Halibut by hook and line gear will be permitted from 12:00 hours, March 6, 2021. The directed Halibut fishery will close at 12:00 hours, December 7, 2021. Accordingly, all Halibut must be landed and validated by a DFO-designated groundfish dockside observer no later than 12:00 hours, December 14, 2021.

4.2. Fishing Areas

Subject to closures described in Appendix 10 of this IFMP and variation orders, commercial fishing for Rockfish by Hook and Line (Inside ZN) is permitted to be carried out in Groundfish Management Areas 4B, defined as areas:

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*.

4.3. Halibut Landing Requirements

Where 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.

4.4. 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 removed at-sea and the remainder of the shark, sometimes still alive, is discarded overboard.

Amendments to the *Fisheries Act*, which came into force on June 21, 2019, include a prohibition on shark finning, which is defined as the “practice of removing fins from a shark and discarding the remainder of the shark while at sea”. With the addition of a prohibition on shark finning to the *Fisheries Act*, the relevant conditions have been removed from the licence conditions. However, the act of shark finning remains prohibited in all groundfish fisheries.

4.5. Total Allowable Catch

The total allowable catch is reported in section 6 of this IFMP.

5. LICENSING

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

All fish harvesters/Licence Holders/vessel owners are 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 rockfish category ZN or communal commercial category FZN licence eligibility is limited entry and party based.

5.2. Licence Renewal Fees

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by Consumer Price Index (CPI) published by Statistics Canada.

The commercial rockfish Species (Category ZN) licence renewal fee may be found on the following link: <https://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/fees-frais-21-22-eng.html>. There is no annual licence renewal fee for communal commercial category FZN licences.

5.3. 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 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.html#toc5.2.1>

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 2021.
- 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, unless issued as Option N. 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.

5.4. Licence Options

The designated vessel may not exceed 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.html#toc5.2.1>

5.5. 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 2021/2022 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>

5.6. Licence Documents

Rockfish licence documents are valid from the date of issue to February 20, 2022.

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.

5.7. Vessel Redesignations

Redesignation of rockfish licences is permitted at any time during the year, provided that all Conditions of Licence has been met.

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

- 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. MVL waived if issued as Option N.

Request for redesignation must be submitted by the licence holder 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.html#toc5.2.1>

5.8. 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.

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.

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.

7. ROCKFISH INDIVIDUAL TRANSFERABLE QUOTAS (ITQ)

7.1. 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 permitted.

7.1.1. 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

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

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

Species	Areas	Licence Species Cap (pounds)
Quillback rockfish	4B	15,162
Copper, China and Tiger rockfish	4B	1,931
Yelloweye rockfish	4B	4,095

7.1.3. Quota Holdings Caps (Non-Directed Species)

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

7.1.4. 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.

7.2. 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
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:

Species	Trip Limit (pounds)	
	400 pounds where 10,000 pounds or less of quota applicable rockfish is landed	400 pounds plus 2% of the amount of quota applicable rockfish landed in excess of 10,000 pounds, to a maximum of 1,200 pounds of Bocaccio

7.3. Fishing Restrictions for ITQ Excess Overages

Licence eligibilities that exceed their total Rockfish ITQ by area by more than 10%, 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 exceed their total ITQ by area for non-directed species by more than 10%, 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, 2022, will carry overages into the new season (see section 6.5.2 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 2022/2023 season are processed in mid-March.

7.4. 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 2021/2022 ZN fishery.

- 7.4.1. 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.
- 7.4.2. The 2021/2022 ZN licence must be issued prior to any ITQ being reallocated.
- 7.4.3. Request for temporary reallocation requests for the 2021/2022 season must be received by 16:00 hours Pacific Time on February 20, 2021 in order to be processed.
- 7.4.4. Requests for permanent reallocation of ITQ must be received by 16:00 hours local time on February 2, 2022 in order to be processed.
- 7.4.5. 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.
- 7.4.6. 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.

7.4.7. ITQ that has already been caught or deemed “fished” cannot be reallocated.

7.4.8. The minimum quantity of ITQ that may be reallocated is one pound.

7.4.9. Temporary reallocations are only valid for the current fishing season.

7.4.10. Reallocations for the 2021/2022 season will not be processed until 8:00 hours local time March 15, 2021.

7.5. Rules for Carryover of ITQ Overage and Underage

7.5.1. Carryover of Directed Species ITQ Underage

Licence eligibilities with Rockfish catch less than ITQ, including reallocations made during the year, will be permitted to carryover uncaught ITQ up to 10% of their total Rockfish ITQ at the end of the fishing season. This equivalent poundage will be added to the licence ITQ in 2022/2023. Any amount above the 10% will be forgone.

7.5.2. Carryover of Non-Directed Species ITQ Underage

Licence eligibilities with non-directed species catch less than ITQ, including reallocations made during the year, will be permitted to carryover uncaught ITQ up to 10% 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 2022/2023. Any amount above the 10% will be forgone.

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

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 2022/2023. 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.

8. LIVE ROCKFISH OFFLOAD SAMPLING PROTOCOL

In 2020, a sub-sampling protocol was adopted for implementation for all live-rockfish offloads to improve consistency at offloads, and minimize the time live fish spend out of water. These measures aim to address concerns regarding product mortality that can occur when sorting and enumerating fish at the dock. The protocol was developed in collaboration by the Department and members of the Groundfish Hook and Line Sub-Committee.

The following procedures apply to all live rockfish offloads where there is enough fish to meet the sampling requirements. The major species in a live offload, such as Copper and Quillback, may be sampled whenever one of the following are true according to the skipper's estimate:

- More than 100 pieces (roughly 200 lbs) of each major species are expected to be offloaded and the species are fully sorted; Or,
- More than 250 pieces (roughly 500 lbs) of either Copper or Quillback are expected to be offloaded and the species remain mixed.

When sampling is conducted, the major species may be sorted, or remain mixed. A minimum of 20% or 50 pieces of each of the major species (whichever is greater) will be sampled. Sampling will be permitted for major offload species such as Copper and Quillback, however, minor species such as Tiger and China must continue to be sorted, counted, and weighed by species.

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

TABLE OF CONTENTS

1.	MANAGEMENT UPDATES & CHANGES FOR 2021/2022	2
1.1.	In-Season Changes/Updates.....	2
1.2.	Lost and Found Gear Reporting Requirements	2
1.3.	Live rockfish landings: sampling protocol	2
1.4.	800 line/Circle Tow Seasonal Expansion of Closure	2
1.5.	Human Waste Contaminant Regulation.....	2
1.6.	Licencing Renewal Fees	3
2.	SPECIES.....	3
3.	GEAR.....	3
4.	QUOTAS AND OPEN TIMES.....	3
4.1.	Open Times.....	3
4.2.	Fishing Areas	4
4.3.	Halibut Landing Requirements	4
4.4.	Prohibition on Shark Finning	4
4.5.	Total Allowable Catch	4
5.	LICENSING.....	4
5.1.	Licence Category	5
5.2.	Licence Renewal Fees.....	5
5.3.	Licence Issuance	5
5.4.	Licence Options	6
5.5.	Licence Amendments.....	6
5.6.	Licence Documents.....	6
5.7.	Vessel Redesignations.....	6
5.8.	Licence Eligibility Nominations	7
6.	BAIT.....	7
7.	RESEARCH ALLOCATION	7
8.	ROCKFISH INDIVIDUAL TRANSFERABLE QUOTAS (ITQ)	8
8.1.	Annual ITQ Caps	8
8.2.	Trip Limits	10
8.3.	Fishing Restrictions for ITQ Excess Overage	11
8.4.	Reallocation of Directed and Non-Directed Species ITQ.....	11
8.5.	Rules for Carryover of ITQ Overage and Underage.....	12
9.	LIVE ROCKFISH OFFLOAD SAMPLING PROTOCOL	12
10.	DUAL FISHING	13
11.	CLOSURES.....	14

1. MANAGEMENT UPDATES & CHANGES FOR 2021/2022

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. Lost and Found Gear Reporting Requirements

As a signatory to the Global Ghost Gear Initiative, Canada has committed to implement new requirements on the reporting of lost and found fishing gear. Accordingly, new conditions have been added to licence conditions beginning in the 2020/2021 season, under the “Records that a vessel master shall keep” section of the conditions of licence. Harvesters are required to report on the gear type and amount, as well as the date, time and location that gear was lost or found. New fields have been added to the Integrated Groundfish Fishing Log to accommodate this change. Harvesters are reminded that they are responsible for complying with all conditions of licence. Harvesters are required to use the updated fishing log to report on lost/found gear. Please refer to the IFMP Front Section 5.2.1.8 for more information and Appendix 2 for an example of the updated fishing log. If your fishing logs do not have the additional section on gear reporting requirements, please contact Archipelago Marine Research Ltd. to ensure you have the updated versions.

1.3. Live rockfish landings: sampling protocol

Starting in 2020, a sub-sampling protocol was adopted for implementation for all live-rockfish offloads to improve consistency at offloads, and minimize the time live fish spend out of water. Detailed information on the sampling protocol can be found in Appendix 4, section 8, and Appendix 5 section 9.

1.4. 800 line/Circle Tow Seasonal Expansion of Closure

An agreement was reached between representatives of the Groundfish Trawl Advisory Committee and the Halibut Advisory Board to implement a seasonal expansion of the pilot 800-line/circle tow closure to bottom trawl fishing from November 1, 2020 until March 31, 2021. This expanded seasonal closure is intended for the short term and will be re-evaluated during the 2021/2022 fishing season. The year-round pilot bottom trawl closure that was implemented in March 2019 continues to be in effect. A map along with coordinates is available in the Trawl Appendix 8 section 6.8.6.

1.5. Human Waste Contaminant Regulation

For information on Human Waste Containment Receptacle Requirements under the Canadian Shellfish Sanitation Program (CSSP) please refer to the IFMP Front Section 5.3.

1.6. Licencing Renewal Fees

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by the Consumer Price Index (CPI) published by Statistics Canada. For 2021, the annual licence fees will increase by 2.2%. The official licence fees will be posted online in 2021. A Fishery Notice ([FN0196](#)) was sent out in March 2020 informing of this change. More information on Licencing can be found in the respective species appendices.

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. QUOTAS AND OPEN TIMES

4.1. Open Times

With the exception of those seasonal and permanent closures noted in this plan, or closures announced in-season, the 2021/22 Rockfish by Hook and Line (Outside ZN) fishery will commence 00:01 hours, February 21, 2021 and close at 23:59 hours, February 20, 2022. Following the closure of the fishery, all fish caught under the authority of a Rockfish by Hook and Line (Outside ZN) licence eligibility must be landed and validated by a DFO-designated groundfish dockside observer no later than 23:59 hours, February 27, 2022.

The retention of Lingcod by hook and line gear will be permitted from April 1, 2021 to 23:59 hours November 14, 2021. 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, 2021.

The retention of Halibut by hook and line gear will be permitted from 12:00 hours, March 6, 2021. The directed Halibut fishery will close at 12:00 hours, December 7, 2021. Accordingly, all Halibut must be landed and validated by a DFO-designated groundfish dockside observer no later than 12:00 hours, December 14, 2020.

To allow an orderly opening for the 2021 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 Appendix 10 of this IFMP and variation orders, commercial fishing for Rockfish by Hook and Line (Outside ZN) is permitted to be carried out in Groundfish Management Areas 3C, 3D, 5A, 5B, 5C, 5D, and 5E. Halibut Landing Requirements

Where 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.

4.3. 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 removed at-sea and the remainder of the shark, sometimes still alive, is discarded overboard.

Amendments to the *Fisheries Act*, which came into force on June 21, 2019, include a prohibition on shark finning, which is defined as the “practice of removing fins from a shark and discarding the remainder of the shark while at sea”. With the addition of a prohibition on shark finning to the *Fisheries Act*, the relevant conditions have been removed from the licence conditions. However, the act of shark finning remains prohibited in all groundfish fisheries.

4.4. Total Allowable Catch

The total allowable catch is reported in section 6 of this IFMP.

5. LICENSING

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

All fish harvesters/Licence Holders/vessel owners are 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.

5.1. Licence Category

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

5.2. Licence Renewal Fees

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by Consumer Price Index (CPI) published by Statistics Canada. The commercial rockfish Species (Category ZN) licence renewal fee may be found on the following link: <https://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/fees-frais-21-22-eng.html>. There is no annual licence renewal fee for communal commercial category FZN licences.

5.3. 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 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.html#toc5.2.1>

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 2021.
- 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, unless issued as Option N.

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.

5.4. 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.html#toc5.2.1>

5.5. 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 2021/2022 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>

5.6. Licence Documents

Rockfish licence documents are valid from the date of issue to February 20, 2022.

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.

5.7. Vessel Redesignations

Redesignation of rockfish licences is permitted at any time during the year, provided that all Conditions of Licence has been met

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

- 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. MVL waived if issued as Option N.

Request for redesignation must be submitted by the licence holder 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.htm#toc5.2.1>

5.8. 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.

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.

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.

7. 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 2021/2022 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/Blackspotted rockfish	22.6
Shortraker rockfish	5.4
Yellowmouth rockfish	3.0
Yellowtail rockfish	2.0
Shortspine Thornyheads	0.9

8. ROCKFISH INDIVIDUAL TRANSFERABLE QUOTAS (ITQ)

8.1. Annual ITQ Caps

8.1.1. 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
	5A/B	1,831
	5C/D	848
	5E	885
Silvergray rockfish	3C/D	2,373
	5A/B	4,630
	5C/D	4,202

Species	Areas	TAC Holdings Cap (pounds)
	5E	2,733
Shortraker rockfish	Coastwide	5,874
Redbanded rockfish	Coastwide	10,529
Rougheye/Blackspotted rockfish	Coastwide	26,031
Shortspine Thornyhead	Coastwide	980
Big skate	Coastwide	300
Longnose skate	Coastwide	1,000

8.1.2. 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/Blackspotted 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

8.1.3. 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

8.1.4. 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		

8.2. 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	
Sole and Flounder	No limit	
Bocaccio	Landings (round weight) per trip may not exceed:	
	400 pounds where 10,000 pounds or	400 pounds plus 1% of the amount of quota applicable

Species	Trip Limit (pounds)	
	less of quota applicable rockfish is landed	rockfish landed in excess of 10,000 pounds, to a maximum of 1,200 pounds of Bocaccio

8.3. Fishing Restrictions for ITQ Excess Overage

Licence eligibilities that exceed their total Rockfish ITQ by area 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 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, 2021, will carry overages into the new season (see section 7.6.2 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 2021/2022 season are processed in mid-March.

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 2021/22 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" 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 on board when fishing.
- 8.4.2. The 2021/2022 ZN licence must be issued prior to any ITQ being reallocated.
- 8.4.3. Request for temporary reallocation requests for the 2021/2022 season must be received by 16:00 hours Pacific Time on February 20, 2021 in order to be processed.
- 8.4.4. 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.
- 8.4.5. Requests for permanent reallocation of ITQ must be received by 16:00 hours local time on February 2, 2022 in order to be processed.

- 8.4.6. 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.
- 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 2021/2022 season will not be processed until 8:00 hours local time March 15, 2021.

8.5. Rules for Carryover of ITQ Overage and Underage

8.5.1. Carryover of Directed Species ITQ Underage

Licence eligibilities with Rockfish catch less than ITQ, including reallocations made during the year, will be permitted to carryover uncaught ITQ up to 30% of their total Rockfish ITQ at the end of the fishing season. This equivalent poundage will be added to the licence ITQ in 2022/2023. Any amount above the 30% will be forgone.

8.5.2. 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 2022/2023. 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 2022/2023. Any amount above the 10% will be forgone.

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

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 2022/2023. 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

9. LIVE ROCKFISH OFFLOAD SAMPLING PROTOCOL

In 2020, a sub-sampling protocol was adopted for implementation for all live-rockfish offloads to improve consistency at offloads, and minimize the time live fish spend out of water. These measures aim to address concerns regarding product mortality that can occur when sorting and enumerating fish at the dock. The protocol was developed in collaboration by the Department and members of the Groundfish Hook and Line Sub-Committee.

The following procedures apply to all live rockfish offloads where there is enough fish to meet the sampling requirements. The major species in a live offload, such as Copper and Quillback, may be sampled whenever one of the following are true according to the skipper's estimate:

- More than 100 pieces (roughly 200 lbs) of each major species are expected to be offloaded and the species are fully sorted; Or,
- More than 250 pieces (roughly 500 lbs) of either Copper or Quillback are expected to be offloaded and the species remain mixed.

When sampling is conducted, the major species may be sorted, or remain mixed. A minimum of 20% or 50 pieces of each of the major species (whichever is greater) will be sampled. Sampling will be permitted for major offload species such as Copper and Quillback, however, minor species such as Tiger and China must continue to be sorted, counted, and weighed by species.

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

TABLE OF CONTENTS

1.	MANAGEMENT UPDATES & CHANGES FOR 2021/2022.....	3
1.1.	In-Season Changes/Updates	3
1.2.	Lost and Found Gear Reporting Requirements	3
1.3.	Live rockfish landings: sampling protocol	3
1.4.	800 line/Circle Tow Seasonal Expansion of Closure	3
1.5.	Human Waste Contaminant Regulation	3
1.6.	Licencing Renewal Fees.....	3
2.	SPECIES.....	4
3.	GEAR.....	4
4.	QUOTAS AND OPEN TIMES.....	4
4.1.	Open Times.....	4
4.2.	Fishing Areas.....	5
4.3.	Halibut Landing Requirements	5
4.4.	Commercial and Recreational Total Allowable Catch	5
5.	LICENSING.....	6
5.1.	Licence Category.....	6
5.2.	Licence Renewal Fees.....	7
5.3.	Licence Issuance	7
5.4.	Licence Amendment.....	7
5.5.	Licence Documents	8
5.6.	Vessel Replacement.....	8
5.7.	Temporary Vessel Replacement.....	9
6.	SECTOR RULES.....	9
6.1.	4B (Strait of Georgia) Halibut Fishery	9
6.2.	Rockfish ITQ	10
6.3.	Annual ITQ Caps.....	10
6.4.	Trip Limits.....	12
6.5.	Fishing Restriction for exceeding an ITQ	13
6.6.	Reallocation of Directed and Non-Directed Species ITQ.....	13
6.7.	Rules for Carryover of Quota Overage and Underage.....	14
6.8.	Prohibition on Shark Finning.....	15
7.	BAIT.....	15
8.	COMBINED HALIBUT AND SABLEFISH FISHING.....	15
9.	DUAL FISHING.....	16
10.	RECREATIONAL FISHING.....	17
11.	CLOSURES	17

THIS PAGE INTENTIONALLY BLANK

1. MANAGEMENT UPDATES & CHANGES FOR 2021/2022

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/publications-eng.html>

1.2. Lost and Found Gear Reporting Requirements

As a signatory to the Global Ghost Gear Initiative, Canada has committed to implement new requirements on the reporting of lost and found fishing gear. Accordingly, new conditions have been added to licence conditions beginning in the 2020/2021 season, under the “Records that a vessel master shall keep” section of the conditions of licence. Harvesters are required to report on the gear type and amount, as well as the date, time and location that gear was lost or found. New fields have been added to the Integrated Groundfish Fishing Log to accommodate this change. Harvesters are reminded that they are responsible for complying with all conditions of licence. Harvesters are required to use the updated fishing log to report on lost/found gear. Please refer to the IFMP Front Section 5.2.1.8 for more information and Appendix 2 for an example of the updated fishing log. If your fishing logs do not have the additional section on gear reporting requirements, please contact Archipelago Marine Research Ltd. to ensure you have the updated versions.

1.3. Live rockfish landings: sampling protocol

Starting in 2020, a sub-sampling protocol was adopted for implementation for all live rockfish offloads to improve consistency at offloads, and minimize the time live fish spend out of water. More information on the sampling protocol can be found in Appendix 4, section 8, and Appendix 5 section 9.

1.4. 800 line/Circle Tow Seasonal Expansion of Closure

An agreement was reached between representatives of the Groundfish Trawl Advisory Committee and the Halibut Advisory Board to implement a seasonal expansion of the pilot 800-line/circle tow closure to bottom trawl fishing from November 1, 2020 until March 31, 2021. This expanded seasonal closure is intended for the short term and will be re-evaluated during the 2021/2022 fishing season. The year-round pilot bottom trawl closure that was implemented in March 2019 continues to be in effect. A map along with coordinates is available in the Trawl Appendix 8 section 6.8.6.

1.5. Human Waste Contaminant Regulation

For information on Human Waste Containment Receptacle Requirements under the Canadian Shellfish Sanitation Program (CSSP) please refer to the IFMP Front Section 5.3.

1.6. Licencing Renewal Fees

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by the Consumer Price Index (CPI) published by Statistics Canada.

For 2021, the annual licence fees will increase by 2.2%. The official licence fees will be posted online in 2021. A Fishery Notice ([FN0196](#)) was sent out in March 2020 informing of this change. More information on Licencing can be found in the respective species appendices.

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 2021 Halibut fishery will commence at 12:00 hours, March 6 and will close at 12:00 hours, December 7, 2021. 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, December 14, 2021.

To allow an orderly opening for the 2021 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 April 1 to 23:59 hours November 14, 2021. Accordingly, all Lingcod must be landed and validated by a DFO-designated groundfish dockside observer no later than 23:59 hours, November 21, 2021.

4.2. Fishing Areas

Subject to closures described in Appendix 10 of this IFMP 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. Halibut Landing Requirements

Where 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.

4.4. Commercial and Recreational Total Allowable Catch

For 2021, the International Pacific Halibut Commission (IPHC) recommended a Canadian commercial and recreational catch limit of 2,791.89 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 2,887.15 tonnes to include recreational discard mortality, and commercial discard mortality of fish over 66 cm in length. 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 2021, up to 27.22 tonnes of Halibut has been notionally allocated from the commercial TAC to support a synoptic longline survey.

In 2021 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 **	2,349.75 tonnes	5,180,250 pounds
Recreational TAC	414.93 tonnes	914,750 pounds
Total Allowable Catch ***	2,975.60 tonnes	6,560,000 pounds

* Excludes treaty allocations relinquished from the commercial TAC totalling 11.6 tonnes.

** Includes treaty allocations relinquished from the commercial TAC totalling 11.6 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 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

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by the Consumer Price Index (CPI) published by Statistics Canada.

The commercial Halibut Species (Category L) licence renewal may be found on the following link: <https://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/fees-frais-21-22-eng.html>. 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 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.html#toc5.2.1>

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, 2022.

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/Blackspotted 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/Blackspotted, 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)
Quillback Rockfish	Coastwide	8,000
Copper, China and Tiger Rockfish (total)	Coastwide	3,000
Silvergray Rockfish	Coastwide	8,000
Canary Rockfish	Coastwide	3,500
Longnose Skate	Coastwide	8,000
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	3,000 if 0 < Halibut* landed < 25,901		6,000 if 25,901 < Halibut* landed
		Cap increases in 1,500 blocks up to 6,000, once a 1,500 block is caught		
Shortraker Rockfish	Coastwide	8,000 if 0 < Halibut* landed < 25,901	16,000 if 25,901 < Halibut* landed < 51,802	20,000 if > 51,802 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		
Rougheye/Blackspotted 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		

Species	Areas	Quota Landings Caps (fresh, round pounds)			
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 < 12,951	8,360 if 12,951 < Halibut* landed < 25,901	12,540 if > 25,901 < Halibut* landed < 38,852	14,250 if > 38,852 < Halibut* landed < 51,802

*Fresh, dressed, head-off weight

Note: 12,951 = 0.25% of Commercial Halibut TAC; 25,901 = 0.5% of Commercial Halibut TAC; 38,852 = 0.75% of commercial Halibut TAC; 51,802 = 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 2021/2022 commercial TAC of 2,349.75 tonnes (5,180,250 pounds), the maximum poundage that may be held in permanent and temporary quota by a vessel for 2021/2022 is 23.50 tonnes (51,802 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 2021/2022 commercial TAC of 2,349.75 tonnes (5,180,250 pounds), the minimum poundage that must be permanently held by a vessel for 2021/2022 is 0.27 tonnes (595 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:	
	400 pounds where 10,000 pounds or less of Halibut* is landed	400 pounds plus 2% of the amount of Halibut landed in excess of 10,000 pounds, to a maximum of 1,200 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, 2022, 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 2022/2023 season are processed in mid-March of 2022 (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 2021/2022 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 2021 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, 2022 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, 2022 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 2021/2022 season will not be processed until 8:00 hours local time March 15, 2021.
- 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 2022/2023. 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 2022/2023. 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 2022/2023. 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 2022/2023. 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.

6.8. 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 removed at-sea and the remainder of the shark, sometimes still alive, is discarded overboard.

Amendments to the *Fisheries Act*, which came into force on June 21, 2019, include a prohibition on shark finning, which is defined as the “practice of removing fins from a shark and discarding the remainder of the shark while at sea”. With the addition of a prohibition on shark finning to the *Fisheries Act*, the relevant conditions have been removed from the licence conditions. However, the act of shark finning remains prohibited in all groundfish fisheries.

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. For more details on the management of the recreational fishery, please refer to section 8 of the IFMP.

11. CLOSURES

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

Appendix 7: Sablefish Commercial Harvest Plan

TABLE OF CONTENTS

1.	MANAGEMENT UPDATES & CHANGES FOR 2021/2022.....	3
1.1.	In-Season Changes/Updates	3
1.1.	Lost and Found Gear Reporting Requirements	3
1.2.	Live rockfish landings: sampling protocol	3
1.3.	800 line/Circle Tow Seasonal Expansion of Closure	3
1.4.	Human Waste Contaminant Regulation	3
1.5.	Licensing Renewal Fees.....	3
1.6.	Sub-legal Sablefish	4
1.7.	Partial Offloads	4
1.8.	Seamounts.....	4
2.	SPECIES.....	5
3.	GEAR.....	5
4.	QUOTAS AND OPEN TIMES.....	5
4.1.	Open Times.....	5
4.2.	Fishing Areas.....	6
4.3.	Halibut Landing Requirements	6
4.4.	Total Allowable Catch	6
5.	LICENSING.....	7
5.1.	Licence Category.....	8
5.2.	Licence Renewal Fees.....	8
5.3.	Licence Issuance	8
5.4.	Licence Amendment.....	9
5.5.	Licence Documents	9
5.6.	Vessel Replacement.....	9
5.7.	Temporary Vessel Replacement.....	10
6.	SECTOR RULES.....	10
6.1.	Annual ITQ Caps.....	10
6.2.	Trip Limits.....	12
6.3.	Fishing Restrictions for Exceeding ITQ Species Caps	12
6.4.	Reallocation of Directed and Non-Directed Species ITQ.....	13
6.5.	Rules for Carryover of Quota Overage and Underage.....	14
6.6.	Shark Finning Prohibitions	14
7.	BAIT.....	15
8.	COMBINED HALIBUT AND SABLEFISH FISHING.....	15
9.	DUAL FISHING.....	15
10.	RECREATIONAL FISHING.....	16
11.	CLOSURES	16
12.	OFFSHORE SOUTHERN SEAMOUNT FISHERY	16
12.1.	North Pacific Fisheries Commission	16
12.2.	Open Times.....	17
12.3.	Gear and Monitoring Requirements	17
12.4.	Annual and Monthly Catch Limits	18

THIS PAGE IS INTENTIONALLY LEFT BLANK

1. MANAGEMENT UPDATES & CHANGES FOR 2021/2022

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>

1.1. Lost and Found Gear Reporting Requirements

As a signatory to the Global Ghost Gear Initiative, Canada has committed to implement new requirements on the reporting of lost and found fishing gear. Accordingly, new conditions have been added to licence conditions beginning in the 2020/2021 season, under the “Records that a vessel master shall keep” section of the conditions of licence. Harvesters are required to report on the gear type and amount, as well as the date, time and location that gear was lost or found. New fields have been added to the Integrated Groundfish Fishing Log to accommodate this change. Harvesters are required to use the updated Fishing Log to report on lost/found gear. Please refer to the front section 5.2.1.8 for more information and appendix 2 for an example of the updated Fishing Log. If your Fishing Logs do not have the additional section on gear reporting requirements, please contact Archipelago Marine Research Ltd. to ensure you have the updated versions.

1.2. Live rockfish landings: sampling protocol

Starting in 2020, a sub-sampling protocol will be adopted for implementation for all live-rockfish offloads to improve consistency at offloads, and minimize the time live fish spend out of water. More information on the sampling protocol can be found in Appendix 4 (section 8) and in Appendix 5 (section 9).

1.3. 800 line/Circle Tow Seasonal Expansion of Closure

An agreement was reached between representatives of the Groundfish Trawl Advisory Committee and the Halibut Advisory Board to implement a seasonal expansion of the pilot 800-line/circle tow closure to bottom trawl fishing from November 1, 2020 until March 31, 2021. This expanded seasonal closure is intended for the short term and will be re-evaluated during the 2021/2022 fishing season. The year-round pilot bottom trawl closure that was implemented in March 2019 continues to be in effect. A map along with coordinates is available in the Trawl Appendix 8 section 6.8.6.

1.4. Human Waste Contaminant Regulation

For information on Human Waste Containment Receptacle Requirements under the Canadian Shellfish Sanitation Program (CSSP) please refer to the IFMP Front Section 5.3.

1.5. Licencing Renewal Fees

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by the Consumer Price Index (CPI) published by Statistics Canada.

For 2021, the annual licence fees will increase by 2.2%. The official licence fees will be posted online in 2021. A Fishery Notice ([FN0196](#)) was sent out in March 2020 informing of this change. More information on Licencing can be found in the respective species appendices.

1.6. 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.

1.7. 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.

1.8. Seamounts

Seamount fisheries within the Exclusive Economic Zone (EEZ) have been closed to bottom-contact fishing. The northern seamounts have been closed within SGaan Kinghlas – 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. For vessels participating in the Sablefish seamount fishery, there will be an annual and monthly catch limits. Monthly limits are defined in the table below and are subject to the annual catch limit. If the annual catch limit has been achieved in-season

(e.g. prior to September 30) all monthly fishing opportunities may not be issued. The 2021/2022 Sablefish annual catch limit for the seamount fishery is TBD (fresh, round weight).

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 2021/21 Sablefish fishery will commence 00:01 hours, February 21, 2021 and close at 23:59 hours, February 20, 2022. 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, 2022.

No Halibut may be retained until the 2021 Halibut fishery commences at 12:00 hours, March 6, 2021. The directed Halibut fishery will close at 12:00 hours, December 7, 2021. Accordingly, all Halibut must be landed and validated by a DFO-designated groundfish dockside observer no later than 12:00 hours, December 14, 2021.

The retention of Lingcod by hook and line gear will be permitted from April 1, 2021 to 23:59 hours November 14, 2021. 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, 2021.

To allow an orderly opening for the 2021 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 Appendix 10 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. Halibut Landing Requirements

Where 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.

4.4. Total Allowable Catch

The 2021 coastwide Sablefish total allowable catch (TAC) is 2,887 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 totaling 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 2021 the Sablefish TAC has been allocated as:

Food, Social, and Ceremonial	45.36 tonnes	100,000 pounds
Research; PHMA survey	0.4 tonnes	882 pounds
Use of Fish allocation; trap survey	85.00 tonnes	187,393 pounds
Use of Fish allocation; trawl survey	3 tonnes	6,614 pounds
Category K licence eligibility TAC	2,510 tonnes	5,533,148 pounds
Category T licence eligibility TAC	241 tonnes	530,576 pounds
Aquaculture broodstock collection	0.1% of TAC	6,070 pounds
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 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

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by the Consumer Price Index (CPI) published by Statistics Canada.

The commercial Sablefish Species (Category K) licence renewal fee may be found on the following link: <https://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/fees-frais-21-22-eng.html>. There is no annual licence renewal fee for communal commercial category FK licences.

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 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.html#toc5.2.1>

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, 2022.

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	51,803
Lingcod	Coastwide	33,772
Canary rockfish	Coastwide	14,542
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/Blackspotted 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: 51,803 = 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 51,803, for every 10,000 Sablefish caught

Species	Areas	Quota Landings Caps (fresh, round pounds)
Yelloweye rockfish	Coastwide	Cap increases in 2,000 blocks up to 5,000, for every 10,000 Sablefish caught
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: 51,803 = 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:	
	400 pounds where 10,000 pounds or less of Sablefish is landed	400 pounds plus 2% of the amount of Sablefish landed in excess of 10,000 pounds, to a maximum of 1,200 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, 2022, 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 2021/2022 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 2021/2022 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 2021/2022 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, 2022 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, 2022 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 2021/2022 season will not be processed until 8:00 hours local time March 15, 2021.
- 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 2022/2023. 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 2022/2023. 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 2022/2023. 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 2022/2023. ITQ to cover these overages will count against the ITQ caps during the season in which the ITQ is allocated to the licence eligibility.

6.6. Shark Finning Prohibitions

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 removed at-sea and the remainder of the shark, sometimes still alive, is discarded overboard.

Amendments to the *Fisheries Act*, which came into force on June 21, 2019, include a prohibition on shark finning, which is defined as the "practice of removing fins from a shark and discarding the remainder of the shark while at sea". With the addition of a prohibition on shark finning to the *Fisheries Act*, the relevant conditions have been

removed from the licence conditions. However, the act of shark finning remains prohibited in all groundfish fisheries.

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 are 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. North Pacific Fisheries Commission

The North Pacific Fisheries Commission (NPFC) is a regional management fisheries organization (RFMO) established in 2015 to ensure the long-term protection and sustainable use of fisheries resources in its Convention Area (CA). Canada is a strong proponent of robust monitoring, compliance and surveillance (MCS) measures in RFMOs, including the NPFC, where it has been instrumental in developing key MCS regimes, such as High Seas Boarding and Inspection protocols. At the annual meeting held in late February 2021, under Canada's leadership, a Vessel Monitoring System (VMS) measure was adopted by the NPFC. An update on the development of this measure was presented to the Sablefish Advisory Committee in November 2018. The introduction of the VMS is an important measure to ensure the long-term sustainability of all fisheries covered by the NPFC, including Sablefish. As the southern seamount fishery is located in the NPFC CA, any vessels participating in this fishery are subject to the NPFC Conservation and Management Measures (CMMs), which can be found at www.npfc.int.

Effective July 10, 2021, all vessels fishing in the CA will be required to have a satellite-based monitoring system that transmits VMS data in real-time, in addition to the monitoring requirements in the regular commercial Sablefish fishery. For details regarding accepted VMS unit models and installation, please contact DFO.VMSSupport-SSNSoutien.MPO@DFO-MPO.gc.ca.

12.2. 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 emailed to licence eligibility holders early in the 2021 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.

The southern seamount fishery is located in the North Pacific Fishery Commission (NPFC) Convention Area (CA), and as such, any vessels participating in this fishery are subject to the NPFC Conservation and Management Measures (CMMs), which can be found at www.npfc.int.

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.

12.3. 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, as well as the requirements set out by the

NPFC. As NPFC requirements can change over time, participating vessels are encouraged to stay informed of these developments by visiting www.npfc.int.

12.4. Annual and Monthly Catch Limits

For vessels participating in the Sablefish seamount fishery, there will be an annual and monthly catch limits. Monthly limits are defined in the table below and are subject to the annual catch limit. If the annual catch limit has been achieved in-season (e.g. prior to September 30) all monthly fishing opportunities may not be issued. The 2021/2022 Sablefish annual catch limit for the seamount fishery is 100 tonnes (fresh, round weight).

Species	Monthly Vessel Limit (fresh, round tonnes)	Monthly Vessel Limit (fresh, round pounds)
Sablefish	34.0	75,000
Rougheye/Blackspotted rockfish	2.27	5,000
Other rockfish, sole and flounder	0.45	1,000

Appendix 8: 2021/2022 Groundfish Trawl Commercial Harvest Plan

TABLE OF CONTENTS

1.	MANAGEMENT CHANGES AND REMINDERS FOR 2021/2022	3
1.1.	In-Season Changes/Updates	3
1.2.	Pilot 800 Line/Circle Tow Bottom Trawl Closure & Seasonal Expansion	3
1.3.	Emergency Electronic Monitoring (EM) Program	3
1.4.	Groundfish Trawl and Area A Crab Gentlemen's Agreement	3
1.5.	Groundfish Trawl Northern Fleet and Processing Gentlemen's Agreement	3
1.6.	Lost and Found Gear Reporting Requirements	4
1.7.	Southern Resident Killer Whales – Fisheries Management Measures to Support Chinook Salmon Prey Availability	4
1.8.	Human Waste Contaminant Regulation	4
1.9.	Licensing Renewal Fees	4
1.10.	Improvements to Monitoring of Chinook Bycatch	4
1.11.	Offshore Pacific Hake Management Plan	5
1.12.	Pacific Groundfish Integrated Fishery Website	5
1.13.	Area-based Halibut Mortality Rate	5
2.	APPLICATION	5
3.	OPEN TIMES	5
4.	FISHING AREAS	5
5.	SPECIES CLOSURES	5
5.1.	Lingcod	6
5.2.	Rockfish	6
6.	SPATIAL CLOSURES	6
6.1.	Gwaii Haanas National Marine Conservation Area	6
6.2.	Rockfish Conservation Areas	8
6.3.	Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Areas	8
6.4.	Strait of Georgia and Howe Sound Glass Sponge Reef Marine Refuges	9
6.5.	Offshore Pacific Seamounts and Vents Closure	9
6.6.	SGaan Kinghlas-Bowie Seamount (SK-B) MPA	10
6.7.	Habitat Conservation Bottom Trawl Open and Closed Areas	10
6.8.	In-season Groundfish Trawl Closures – Outside Waters	28
6.9.	In-season Groundfish Trawl Closures – Inside Waters	34
6.10.	Gulf - Bottom Trawl Closures by Subarea	35
6.11.	Gulf - Mid-water Trawl Closures by Subarea	37
6.12.	Groundfish Trawl Northern Fleet and Processing Gentlemen's Agreement	38
7.	GEAR	38
8.	LICENSING	41
8.1.	National Online Licensing System (NOLS) Client Support - Licensing Services	41
8.2.	Licence Category	41
8.3.	Licence Renewal Fees	41
8.4.	Licence Application and Issuance	42
8.5.	Requirement and Issuance of Valid Licence Amendments	44
8.6.	Vessel Replacement Rules for Groundfish Trawl	44
9.	GROUNDFISH SPECIES AND ALLOWABLE CATCHES	46
9.1.	Prohibited Species	46
9.2.	Species Permitted to be Fished	46
9.3.	Research Allocation	49
9.4.	Annual Trawl Total Allowable Catches	50
9.5.	Voluntary Relinquishment	52

9.6.	Bocaccio Rockfish Measures.....	52
9.7.	Shark Finning Prohibition	53
9.8.	100% Rockfish Retention.....	53
10.	TRAWL INDIVIDUAL VESSEL QUOTA ALLOCATIONS	53
10.1.	Trawl Individual Vessel Allocation Formula	53
11.	INDIVIDUAL VESSEL QUOTA REALLOCATION RULES	54
11.1.	Reallocation Rules for Inter-Sector Non-T IVQ.....	54
11.2.	Groundfish Trawl 2021/2022 Reallocation Sector Rules.....	54
11.3.	Individual Vessel Quota Species Cap.....	55
11.4.	Individual Vessel Quota Holdings Cap.....	57
11.5.	Groundfish Equivalents.....	57
11.6.	Quota Overages in Excess of IVQ Holdings	58
11.7.	Quota Carryover.....	58
12.	GROUNDFISH DEVELOPMENT AUTHORITY	60
12.1.	Groundfish Development Quota	60
12.2.	Code of Conduct Quota.....	61
13.	CATCH MONITORING AND VALIDATION	61
13.1.	Catch Reporting	61
13.2.	Port Monitoring.....	61
13.3.	At Sea Monitoring	62
13.4.	Conversion Factors.....	67
14.	HALIBUT BY-CATCH MANAGEMENT PLAN.....	67
14.1.	Halibut Prohibition	67
14.2.	Halibut Mortality Fleet Cap.....	67
14.3.	Halibut Species Mortality Cap.....	67
14.4.	Halibut Bycatch Reallocation	67
14.5.	Halibut Bycatch Quota Overage	68
14.6.	Halibut Bycatch Underage.....	68
14.7.	Area-based Halibut Mortality Rate and Average Weight	68
15.	HABITAT CONSERVATION MEASURES: CORALS AND SPONGES.....	68
15.1.	Coral and Sponge Retention Rules.....	69
15.2.	Fleet-wide Habitat Bycatch Conservation Limit.....	69
15.3.	Corals and Sponges Subject to Management Measures.....	69
15.4.	Habitat Bycatch Conservation Limit Mortality Cap.....	69
15.5.	Habitat Bycatch Conservation Limit Reallocation	69
15.6.	Habitat Bycatch Conservation Limit Quota Overage.....	69
15.7.	Habitat Bycatch Conservation Limit Underage	69
15.8.	Habitat Conservation Review Committee	70
15.9.	Encounter Protocol.....	70
16.	FISH RELEASED AT SEA	71
16.1.	Mortality Rates.....	71
17.	SPECIES AT RISK SHARK ENCOUNTER PROTOCOL	72
18.	HAKE FISHERY	73
19.	EXAMPLE OF GROUNDFISH TRAWL FISHING LOGBOOK.....	75

1. MANAGEMENT CHANGES AND REMINDERS FOR 2021/2022

Following is a summary of reminders and changes adopted for the Groundfish trawl fishery for the 2021/2022 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. Pilot 800 Line/Circle Tow Bottom Trawl Closure & Seasonal Expansion

An agreement was reached between representatives of the GTAC and HAB to implement a seasonal expansion of the pilot 800-line/circle tow bottom trawl closure from November 1, 2020 until March 31, 2021 to limit harvest of spawning aggregations of arrowtooth flounder and halibut. This expanded seasonal closure is intended for the short term and will be re-evaluated during the 2021/2022 fishing season.

The year-round pilot bottom trawl closure that was implemented in March 2019 continues to be in effect. See section 6.8.11 of this Harvest Plan for more details.

1.3. Emergency Electronic Monitoring (EM) Program

On April 2, 2020 the Minister of Fisheries and Oceans Canada issued a Fishery Management Order temporarily suspending the requirement for on board at-sea observers for 45 days to help protect the health of observers and fishers from the spread of COVID-19. On the advice of the GTAC, DFO implemented an emergency EM pilot program for at-sea monitoring in the groundfish trawl fishery.

Upon expiry of the Fishery Management Order (FMO) and following consultations with stakeholders, DFO postponed a full reinstatement of the ASOP in light of continued health and safety concerns raised by harvesters and some coastal communities about increases in cases of COVID-19 in British Columbia. In the continued absence of a fully reinstated ASOP, the Emergency EM Program for at-sea monitoring in response to COVID-19 may continue to be deployed as an alternative mitigating management measure for all Option A groundfish trawl vessels. See section 13.3.2 of this Harvest Plan for more details.

1.4. Groundfish Trawl and Area A Crab Gentlemen's Agreement

A shared access agreement was again reached between the Area A crab fleet and the groundfish trawl fleet regarding shared access for a portion of Northern Hecate Strait (east northeast of Rose Point and west of Butterworth Rock) for the 2021/2022 fishing season. Details of this agreement were communicated in-season via a fishery notice. See Section 6.8.12 of this Harvest Plan for more details.

1.5. Groundfish Trawl Northern Fleet and Processing Gentlemen's Agreement

In an effort to support smaller trawl vessels delivering fresh fish to processing operations in northern communities, the GTAC approved an agreement where all option A trawl vessels are permitted to fish by bottom trawl or midwater trawl in a defined area; however, only those vessels delivering fresh fish are permitted to bottom trawl. See Section 6.12 of this Harvest Plan for more details.

1.6. Lost and Found Gear Reporting Requirements

As a signatory to the Global Ghost Gear Initiative, Canada has committed to implement new requirements on the reporting of lost and found fishing gear. Accordingly, new conditions have been added to licence conditions beginning in the 2020/2021 season, under the “Records that a vessel master shall keep” section of the conditions of licence. Harvesters are required to:

- a. report on the gear type and amount, as well as the date, time and location that gear was lost or found; and
- b. submit a form, which can be found at: <https://www.dfo-mpo.gc.ca/fisheries-peches/commercial-commercial/reports-declaration-eng.html>.

The Department will continue to collaborate with the third-party monitoring service provider and industry to ensure that Canada is meeting its domestic and international commitments.

1.7. Southern Resident Killer Whales – Fisheries Management Measures to Support Chinook Salmon Prey Availability

To reduce noise and physical disturbance from vessels in portions of Southern Resident killer whale foraging areas, Interim Sanctuary Zones will be in effect from June 1 to November 30, 2021. Specifically, vessel traffic will be prohibited in a portion of Swiftsure Bank and off North Pender and Saturna Islands as per the [Interim Order](#) enacted under the *Canada Shipping Act*. Some exceptions will apply for, for example, vessels involved in Indigenous fishing for food, social or ceremonial purposes and vessels involved in emergency response. A Fishery Notice ([FN0519](#)) was sent out May 31, 2021, informing of the Interim Sanctuary Zones, which includes detailed coordinates. For more information on the suite of 2021 Southern Resident Killer Whale management measures, please visit: <https://www.canada.ca/southern-resident-killer-whales>.

1.8. Human Waste Contaminant Regulation

For information on Human Waste Containment Receptacle Requirements under the Canadian Shellfish Sanitation Program (CSSP) please refer to the IFMP Front Section 5.3.

1.9. Licencing Renewal Fees

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by the Consumer Price Index (CPI) published by Statistics Canada. For 2021, the annual licence fees will increase by 2.2%. The official licence fees will be posted online in 2021. A Fishery Notice ([FN0196](#)) was sent out in March 2020 informing of this change. More information on Licencing can be found in Section 8.3 of this Harvest Plan.

1.10. Improvements to Monitoring of Chinook Bycatch

To ensure the protection of at-risk Chinook stocks and better understand potential impacts of bycatch from the groundfish trawl fishery, changes to catch monitoring and requirements for retention of salmon will be introduced in 2021. New monitoring procedures will be developed in consultation with the groundfish industry with the objective of accurately estimating the number of Chinook salmon caught by stock and age.

1.11. Offshore Pacific Hake Management Plan

Offshore Pacific hake management measures, including the Total allowable catch (TAC) for the 2021 season are not included in this document and will be released in-season in an addendum to this harvest plan.

1.12. Pacific Groundfish Integrated Fishery Website

For information of the Groundfish Fishery in the Pacific Region please visit our website at the following address: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/index-eng.html>

1.13. Area-based Halibut Mortality Rate

For the 2021/22 fishing year where electronic monitoring is deployed as an alternative mitigating management measure during the COVID-19 pandemic, option A vessels will be subject to an area-based halibut mortality rate and average weight. See Sections 13.3.2 and 14.7 of this Harvest Plan for more information.

2. APPLICATION

The management strategies and harvest levels contained in this plan apply to vessels operating under the authority of a 2021/2022 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, 2021 to February 20, 2022.

4. FISHING AREAS

Fishing is permitted coast wide with the exception of annual and season closures described in sections 5 and 6 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. SPATIAL CLOSURES

6.1. Gwaii Haanas National Marine Conservation Area

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 describes 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 is prohibited. The zoning plan can be found at: <https://www.pc.gc.ca/en/pn-np/bc/gwaiihaanas/info/consultations/gestion-management-2018>. The fishery notice, which describes the strict protection zones, can be found at: https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=222098&ID=all.

Refer to Fishery Notice 0536, released June 13, 2019 for a detailed description of the Strict Protection Zones and can be found at: https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=222098&ID=all

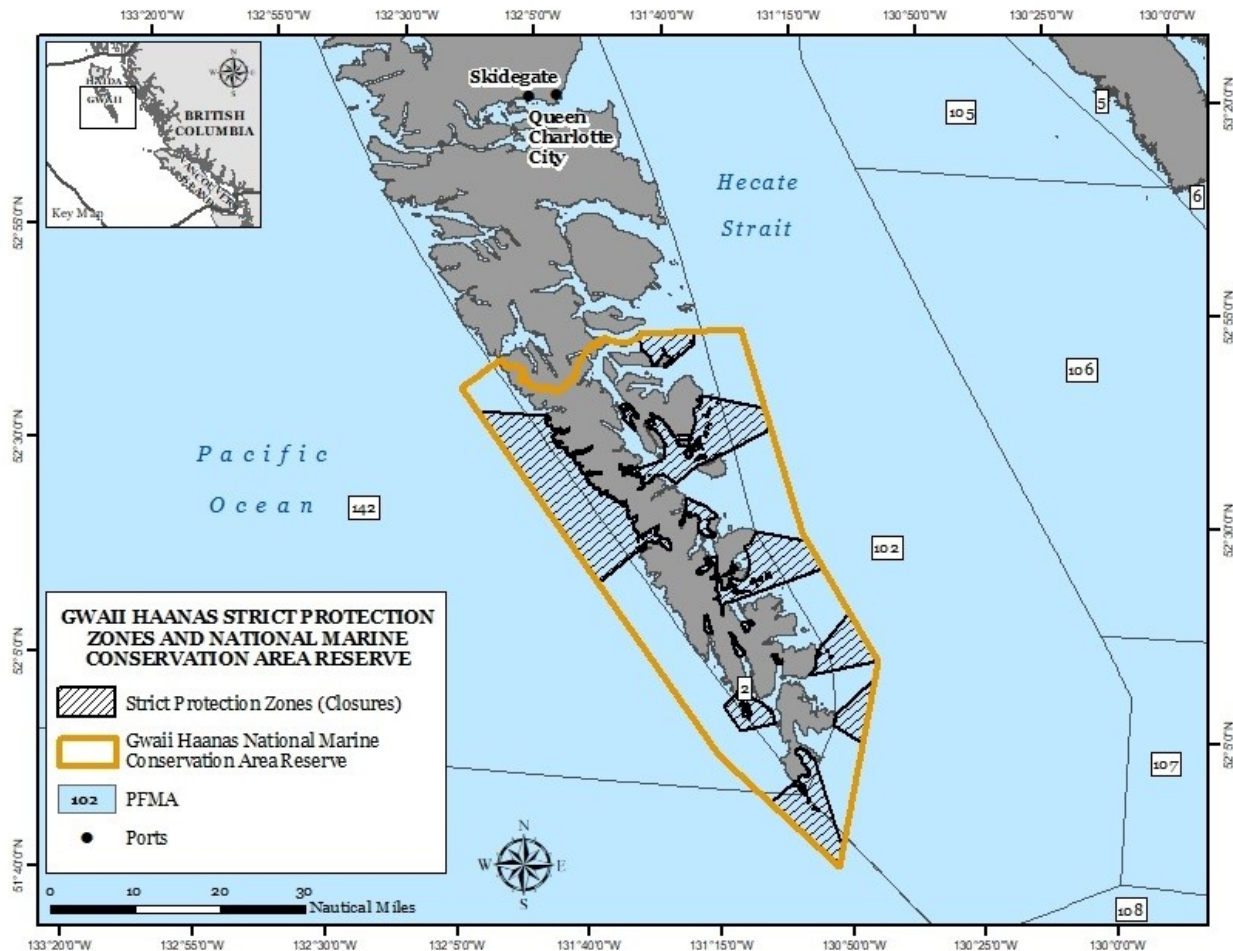
Council of the Haida Nation Fisheries Management Directions for the Gwaii Haanas Haida Heritage Site can be found at:

<http://www.haidanation.ca/wp-content/uploads/2019/04/CHN-Fisheries-Management-Directions-FINAL.pdf#:~:text=COUNCIL%20OF%20THE%20HAIDA%20NATION%20FISHERIES%20MANAGEMENT%20DIRECTIONS,jurisdiction%20of%20the%20Council%20of%20the%20Haida%20Nation.>

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.

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.



6.2. 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. As of May 1, 2019, South Moresby and Lyell Island RCAs have been superseded and replaced by the strict protection zones of the Gwaii Haanas National Marine Conservation Area Reserve. There are currently 162 RCAs.

DFO is undertaking a multi-year review of the conservation effectiveness of RCAs including meeting the national criteria and standards for marine refuges to better conserve sensitive areas and contribute towards Canada's Marine Conservation Targets (MCT). RCAs in the Northern Shelf Bioregion have been selected for the first phase of engagement to align with the MPA network planning process in that area. Engagement in other bioregions will occur in subsequent years.

Further information on RCAs and the boundary proposals are available online at: <http://dfo-mpo.gc.ca/rockfish-conservation> or for further information on this, please contact DFO.RCA-ACS.MPO@dfo-mpo.gc.ca

6.3. Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Areas

The Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Area (Hecate MPA) was designated under the *Oceans Act* in February 2017 to conserve the biological diversity, structural habitat and ecosystem function of the glass sponge reefs. Under the Hecate MPA Regulations, each glass sponge reefs Core Protection Zone (CPZ) is closed to all commercial, recreational, and Aboriginal fishing. Anchoring, cable installation, maintenance and repair are also prohibited in the CPZ. The Vertical Adaptive Management Zone (VAMZ) and Adaptive Management Zone (AMZ) is 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. Additional maps and shapefiles of the Hecate MPA are available at: <https://open.canada.ca/data/en/dataset/a1e18963-25dd-4219-a33f-1a38c4971250>.

6.4. Strait of Georgia and Howe Sound Glass Sponge Reef Marine Refuges

Effective April 1st, 2019 all commercial, recreational and Indigenous food, social and ceremonial (FSC) bottom-contact fishing activities for prawn, shrimp, crab and groundfish, as well as the use of downrigger gear for recreational salmon trolling (restricted via Condition of Licence) are prohibited within portions of Subareas 28-2 and 28-4 to protect nine Howe Sound glass sponge reefs, as marine refuges.

This includes prohibition of the following fishing activities:

- prawn and crab by trap
- shrimp and groundfish by trawl
- groundfish by hook and line
- use of downrigger gear in recreational salmon trolling

These eight new closures are in addition to the nine areas closed to all commercial, recreational and Indigenous FSC bottom-contact fishing activities in the Strait of Georgia and Howe Sound, established in 2015. In 2019, nine remaining areas in Howe Sound were ground-truthed to assess their ecological significance. The presence of five new live glass sponge reefs has been confirmed. A sixth site within an existing reef complex where only dead reef habitat was observed may have recovery potential. Consultations are underway on restrictions to all commercial, recreational and Indigenous FSC bottom-contact fishing activities, and the use of downrigger gear for recreational salmon troll in these reefs, with new management measures anticipated in-season in Spring 2021

For further information on this, please contact Lindsay Klopp at Lindsay.Klopp@dfo-mpo.gc.ca.

Current closure locations and more information are available at: <https://www.dfo-mpo.gc.ca/oceans/ceccsr-cerceef/closures-fermetures-eng.html>

6.5. Offshore Pacific Seamounts and Vents Closure

As of November 10, 2017 the Offshore Pacific Seamounts and Vents Fishery Closure is in effect. The areas described in Appendix 10 of the Groundfish IFMP 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 here: <http://dfo-mpo.gc.ca/oceans/oeabcm-amcepz/refuges/offshore-hauturiere-eng.html>

6.6. 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 the 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-BMPA can be found in the Groundfish IFMP and Appendix 10.

6.7. Habitat Conservation Bottom Trawl Open and Closed Areas

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 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.

As a result, fishing with bottom trawl is restricted to those areas described in sections 6.1.1 to 6.1.6 above (Gwaii Haanas National Marine Conservation Area), sections 6.7.1 and 6.7.2 below and Pacific Fishery Management Areas 13 to 20 and 29, and Subareas 12-1 to 12-13 and 12-15 to 12-43.

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 15 of this plan.

6.7.1. 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
49° 59.809 N	127° 43.229 W	at

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	

6.7.2. Areas Closed to Bottom Trawling

The following areas found within the area open for bottom trawling set out above in section 6.7.1 are closed year round to bottom trawling.

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	

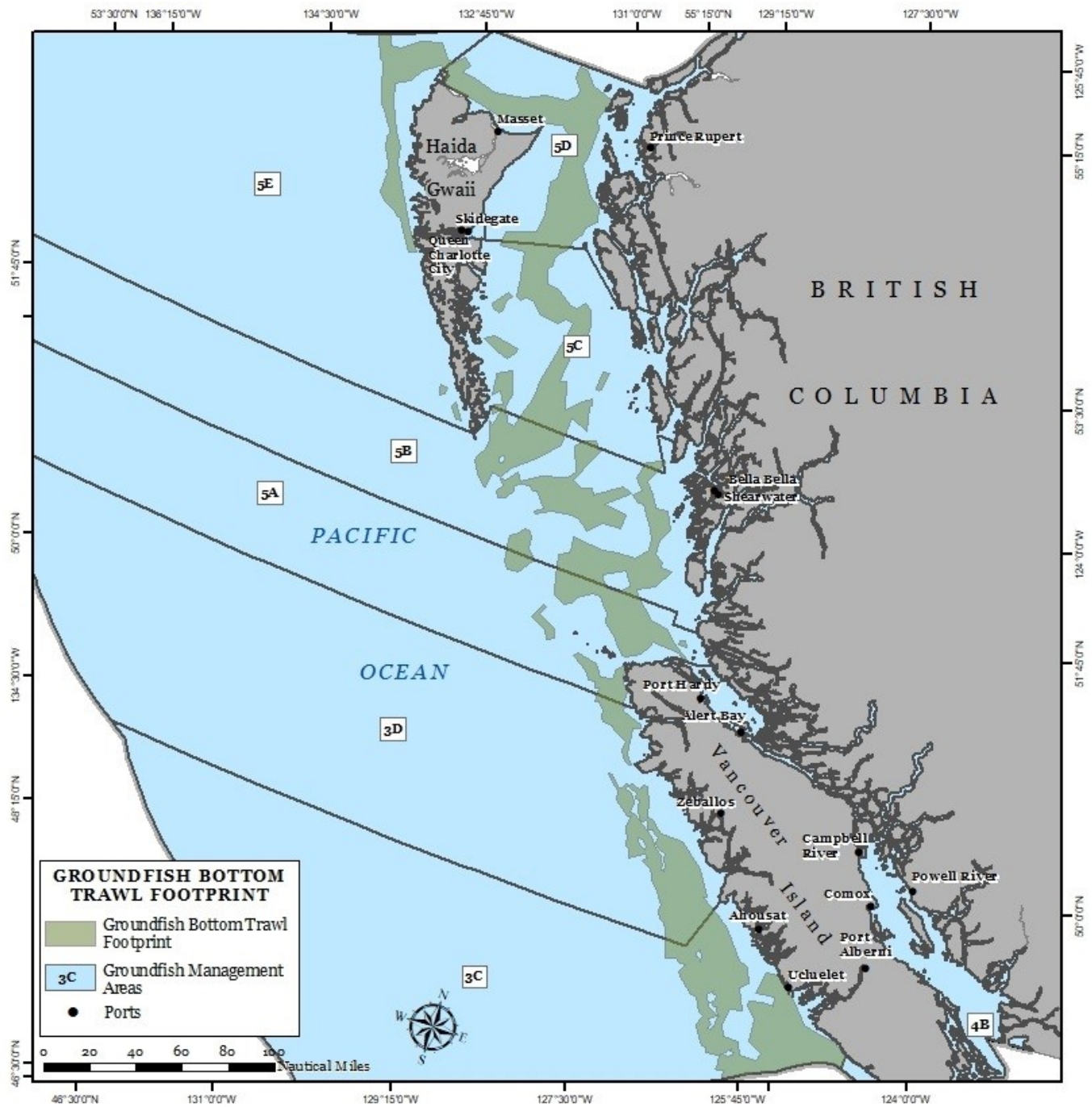
The area bounded by a line starting at the following coordinates:		
Latitude	Longitude	
49° 35.186 N	127° 31.480 W	to
49° 37.537 N	127° 35.559 W	to
49° 37.539 N	127° 37.938 W	to
49° 36.244 N	127° 37.918 W	to
49° 34.738 N	127° 35.929 W	to
49° 33.678 N	127° 32.327 W	to
49° 33.698 N	127° 31.097 W	then back 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	

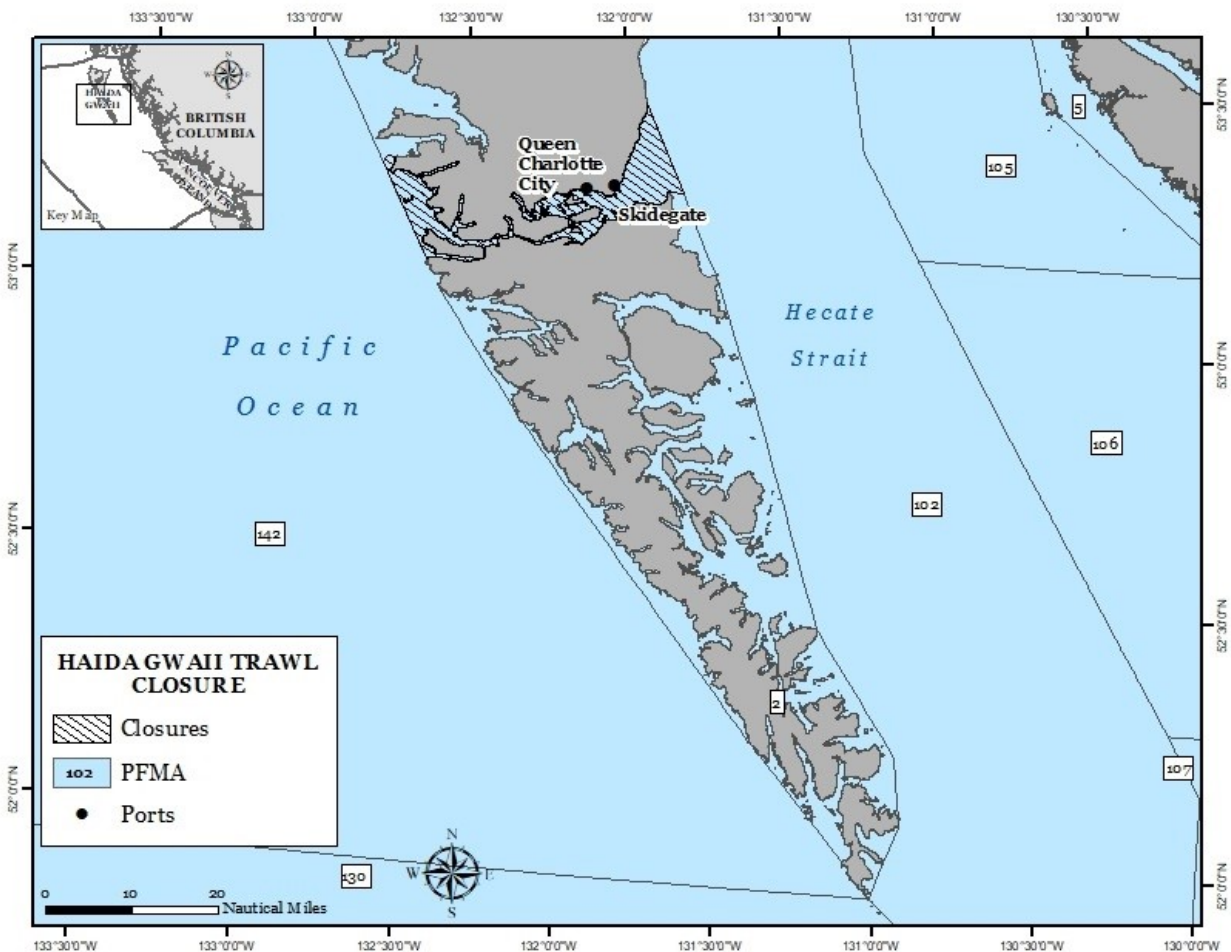
The area bounded by a line starting at the following coordinates:		
Latitude	Longitude	
51° 17.705 N	129° 00.483 W	to
51° 14.565 N	128° 55.758 W	to
51° 14.960 N	128° 47.020 W	to
51° 18.542 N	128° 40.593 W	to
51° 24.737 N	128° 47.972W	to
51° 19.408 N	129° 00.893 W	t then back to the starting point at
51° 17.705 N	129° 00.483 W	



6.7.3. Haida Gwaii

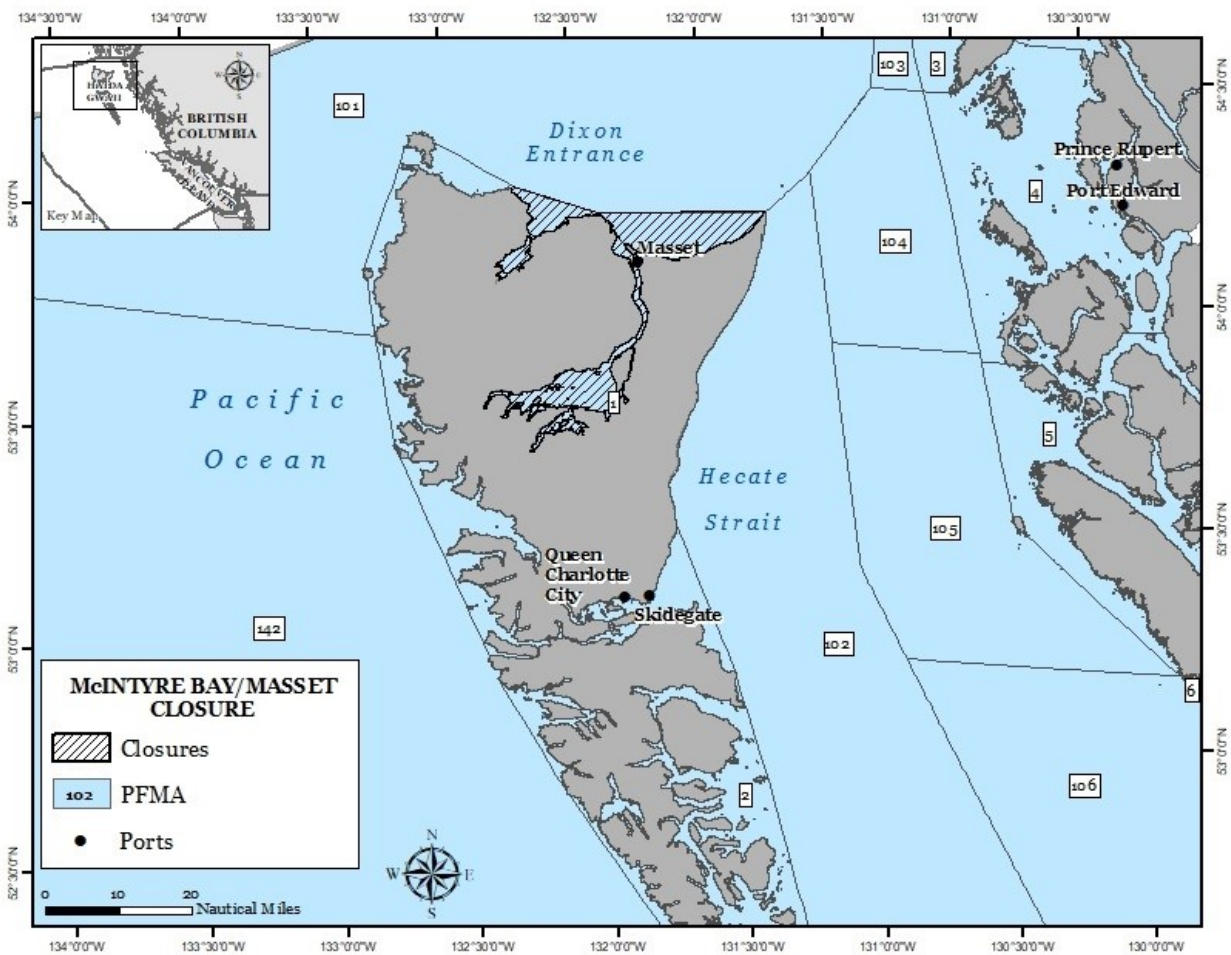
- 6.7.4. Closed to all trawling (includes both bottom and midwater gear) year-round in Subareas 2-1, 2-63 to 2-68 and those portions of Subarea 2-69 described below. The intent of the closure is to reduce harvesting pressure on localized stocks of fish and to provide improved access to food, social and 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



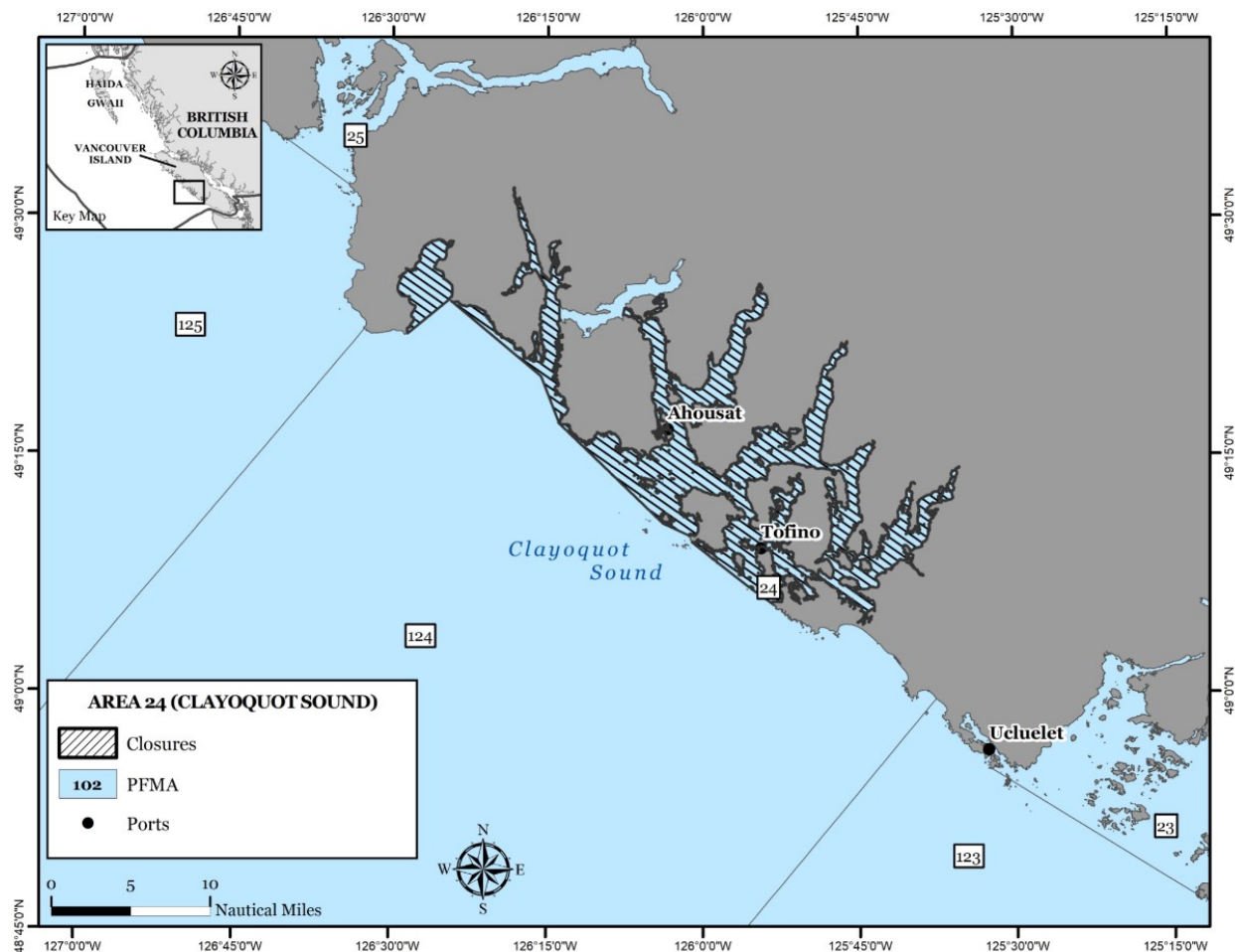
6.7.5. McIntyre Bay/Masset

- 6.7.6. 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.



6.7.7. Area 24 (Clayoquot Sound)

6.7.8. 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.



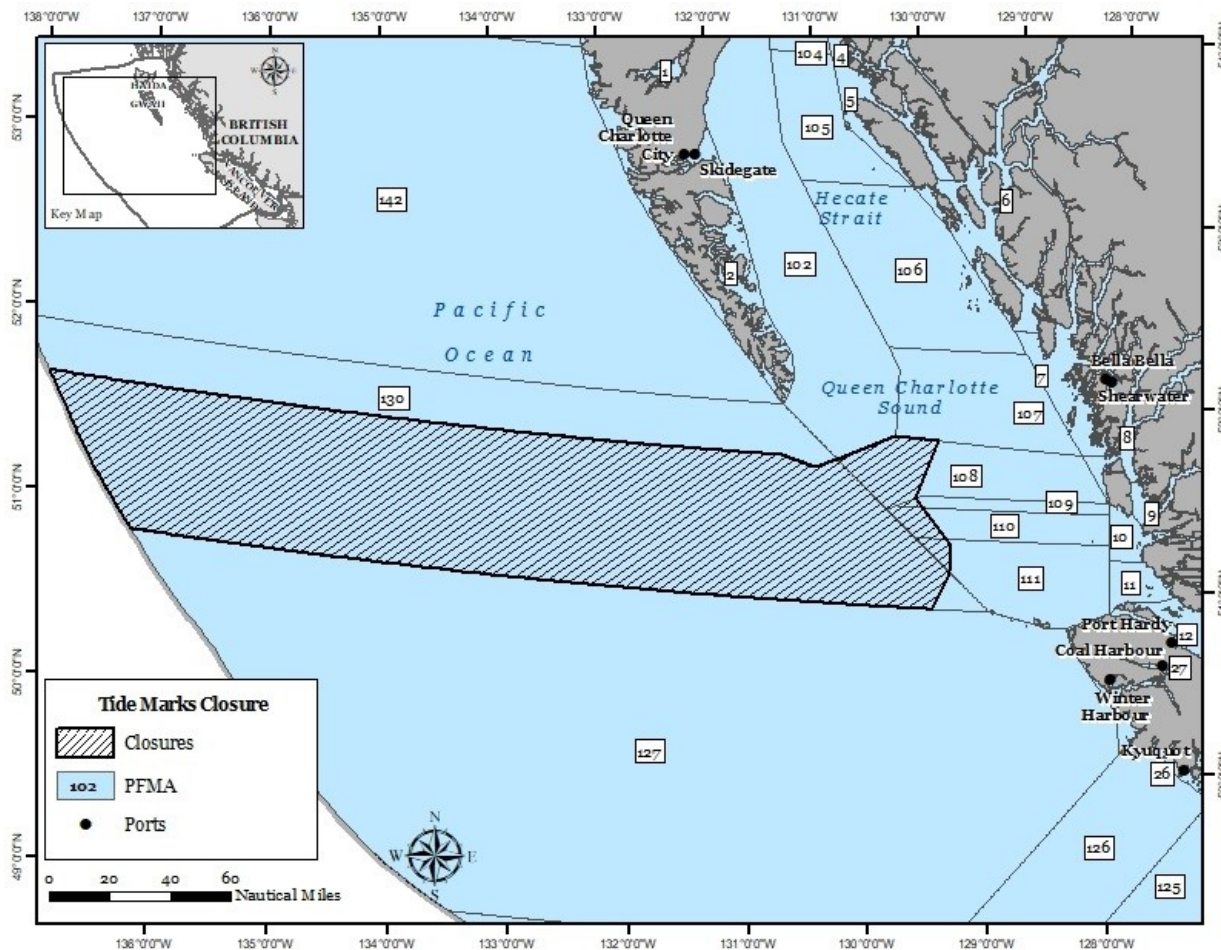
6.8. In-season Groundfish Trawl Closures – Outside Waters

In addition to the closures above, the following area closures are also in effect for all trawl vessels during the 2021/2022 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.

6.8.1. Tide Marks

6.8.2. Closed to all trawling (includes both bottom and midwater) from February 21, 2021 to May 31, 2021 and from October 1, 2021 to March 31, 2022 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

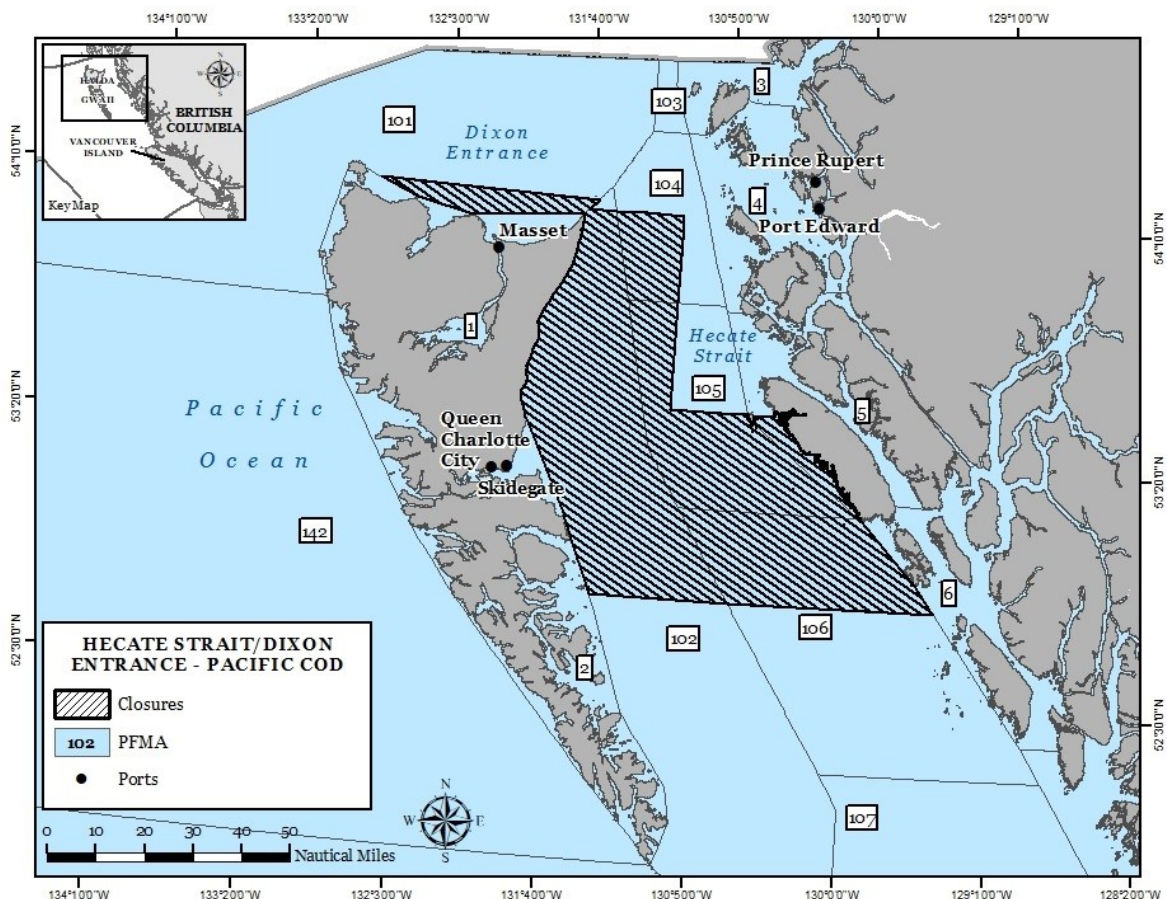
N. lat. 130 deg 42.02 min W. long. then to 51 deg 48 min N. lat. 130 deg 00 min W. long. then to 51 deg 47 min N. lat. 129 deg 37 min W. long. then to 51 deg 28 min N. lat. 129 deg 48 min W. long. then to 51 deg 13 min N. lat. 129 deg 28 min W. long. then true south to 51 deg 04 min N. lat. 129 deg 28 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.



6.8.3. Hecate Strait/Dixon Entrance - Protection of Pacific Cod

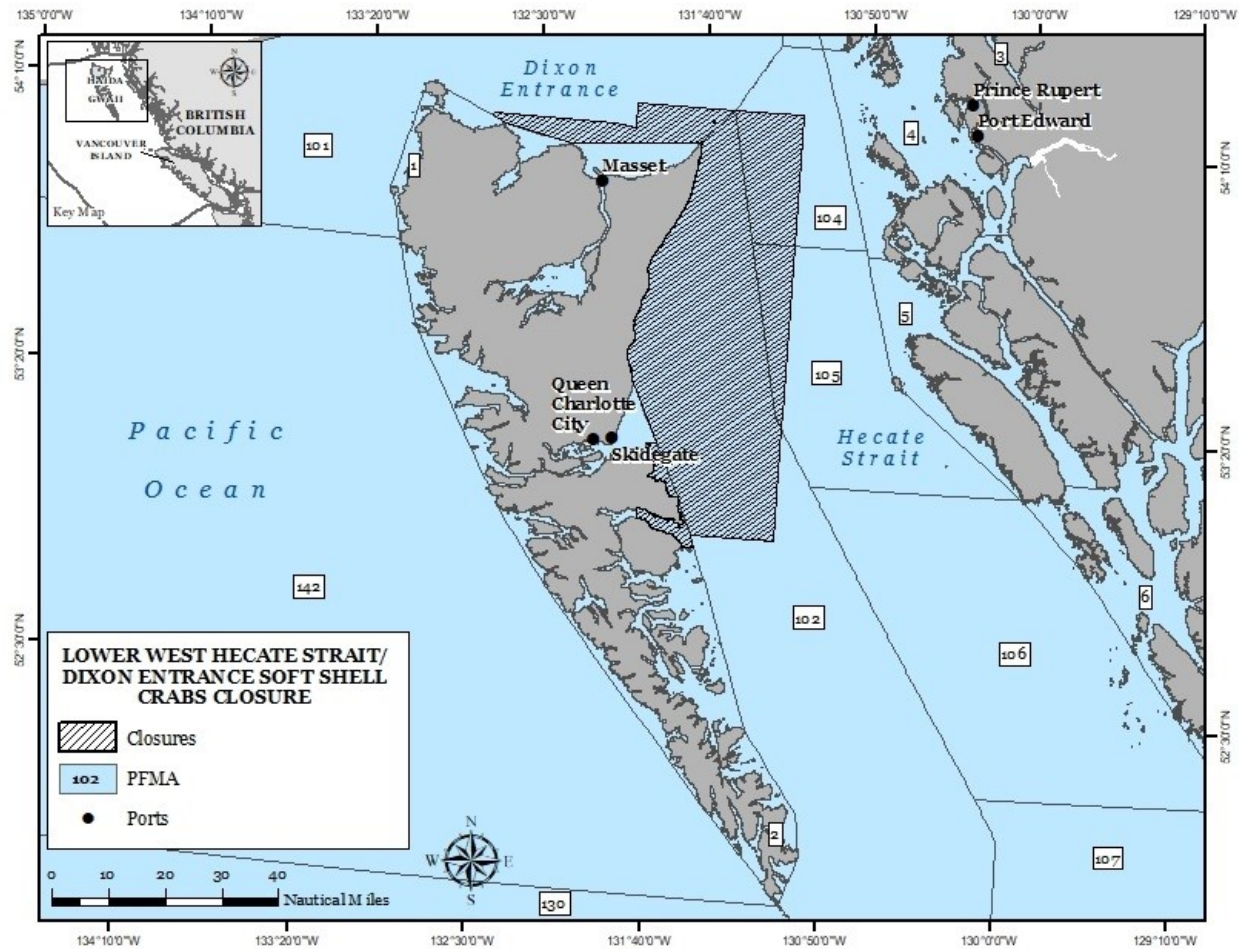
6.8.4. Closed to all trawling (includes both bottom and midwater) from January 1, 2021 through April 30, 2021 in those portions of area 101, south of 54° 12' N latitude and in those waters of areas 102, 104, 105 and subarea 5-20 found south and westerly of a line commencing at 54° 10' N latitude 131° 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.



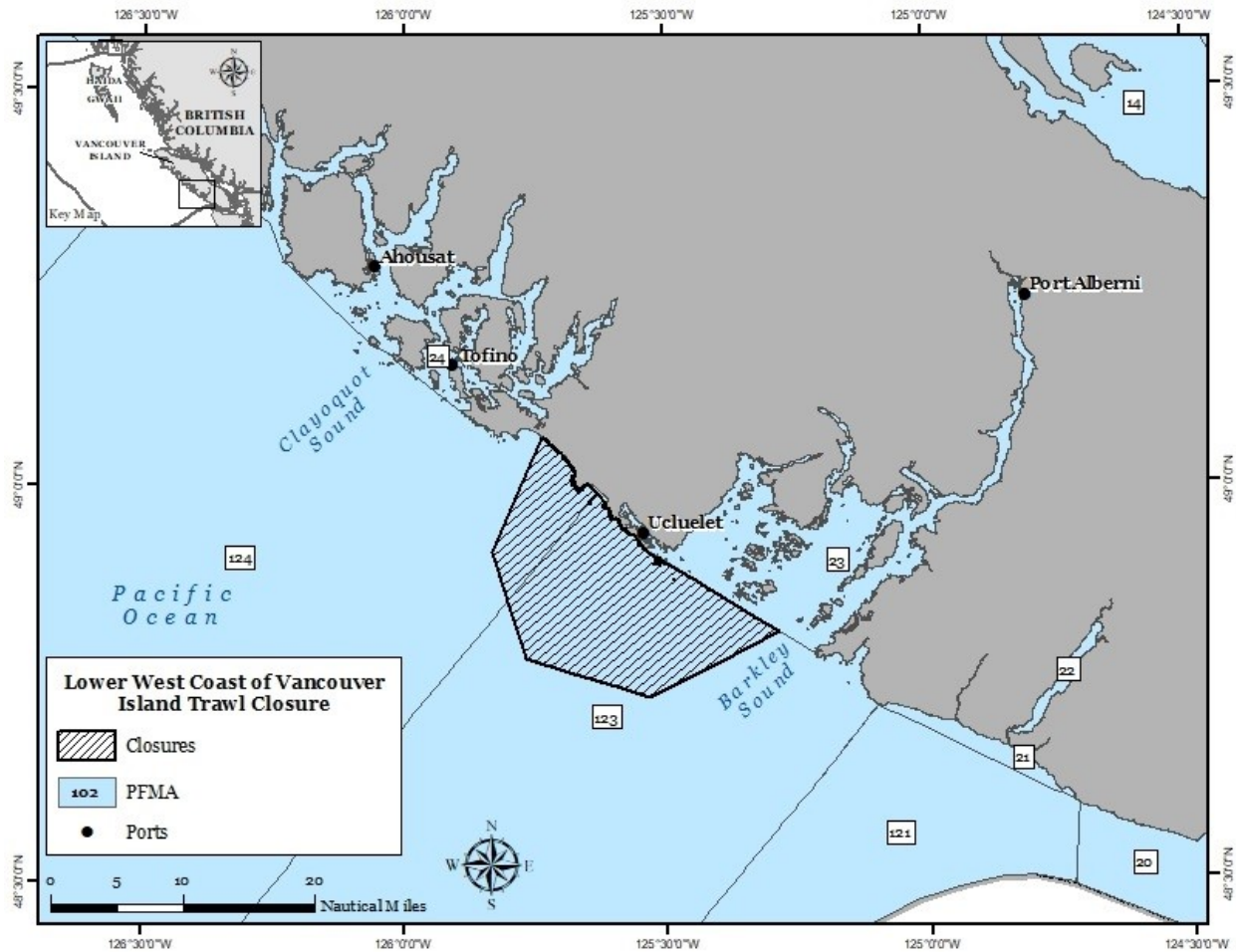
6.8.5. Lower West Hecate Strait/Dixon Entrance - Protection of Soft Shell Crabs

6.8.6. Closed to bottom trawling from June 1, 2021 through July 15, 2021 in Subareas 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.



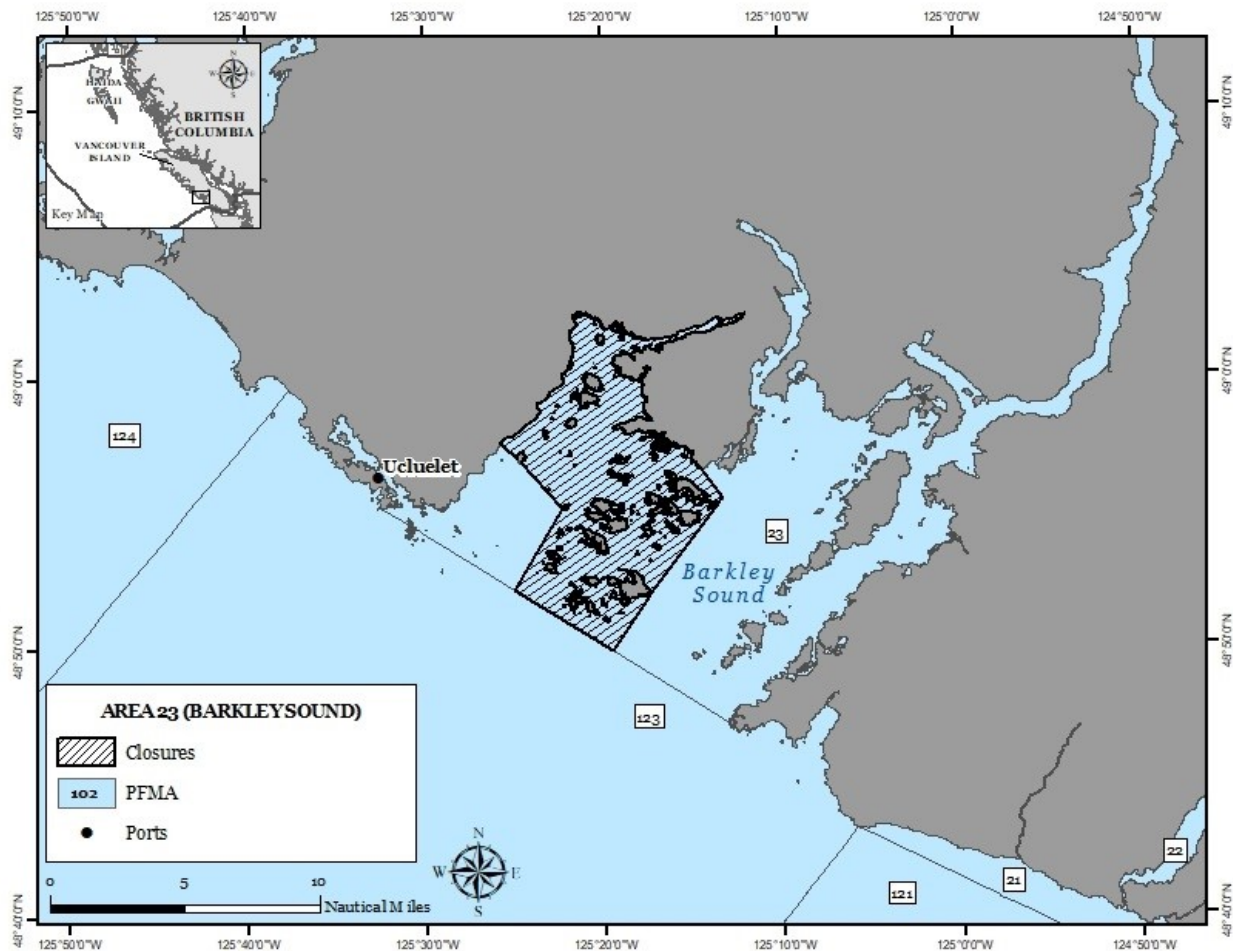
6.8.7. Lower West Coast Vancouver Island - Protection of Pacific Cod

6.8.8. Closed to all trawling (includes both bottom and midwater) from January 1, 2021 through to March 31, 2021 and from January 1, 2022 to March 31, 2022 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.



6.8.9. Area 23 (Barkley Sound)

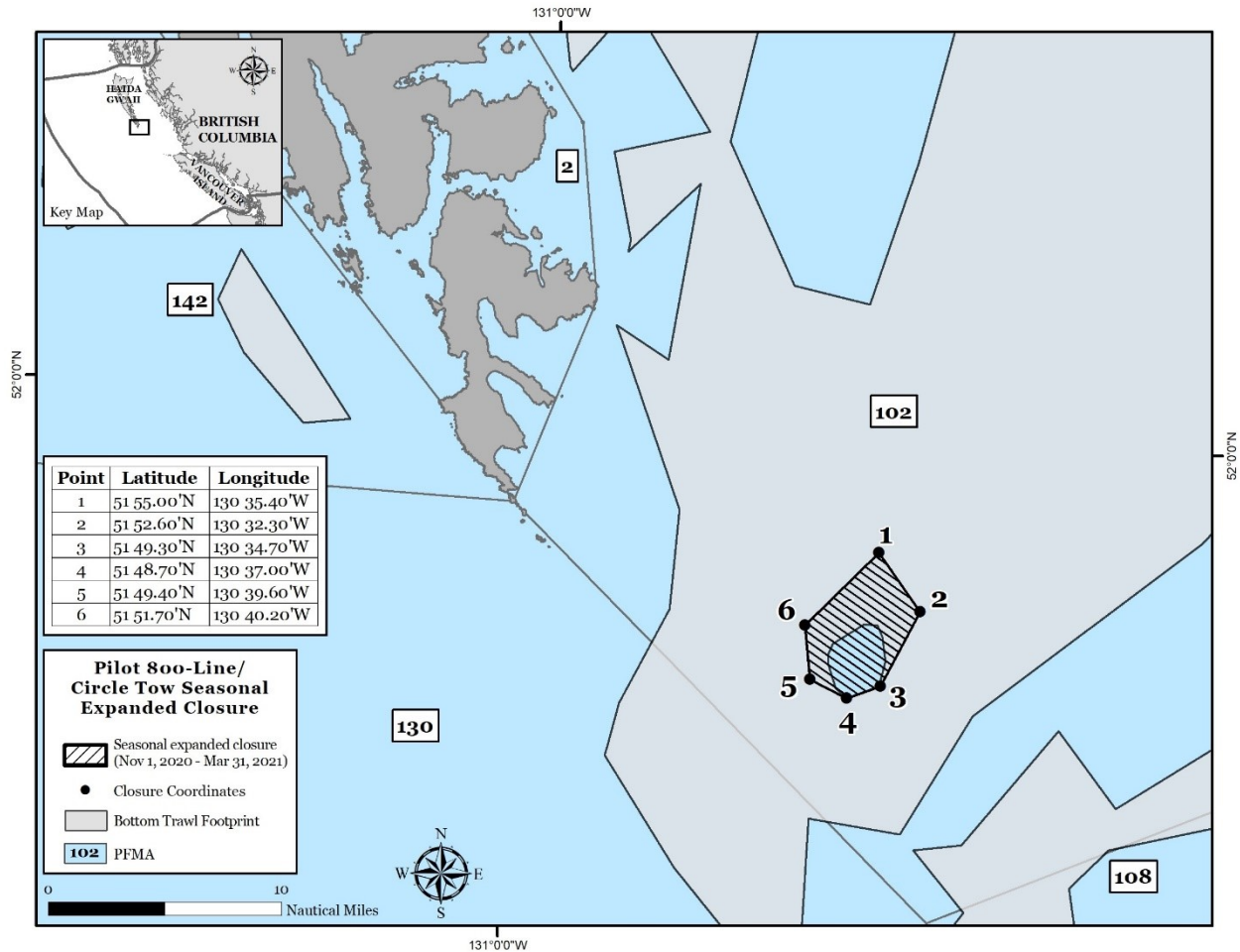
6.8.10. Closed to all trawling (includes both bottom and midwater) from February 25, 2021 through March 25, 2021 in Subareas 23-8 to 23-10. The intent of this closure is to reduce gear conflicts during the roe herring season.



6.8.11. 800 line/Circle Tow Seasonal Expansion of Closure

Closed to groundfish bottom trawl fishing from 12:00 (noon) local time on Sunday, November 1, 2020 until 12:00(noon) local time on Wednesday, March 31, 2021 in those portions of subarea 102-3 inside a line commencing at a point in water at 51° 55.000'N latitude 130° 35.400'W longitude then southeast to 51° 52.600'N latitude 130° 32.300'W longitude then southwest to 51° 49.300'N latitude 130° 34.700'W longitude then southwest to 51° 48.700'N latitude 130° 37.000'W longitude then northwest to 51° 49.400'N latitude 130° 39.600'W longitude then northwest to 51° 51.700'N latitude 130° 40.200'W longitude then back to the starting point 51° 55.000'N latitude 130° 35.400'W longitude.

The intent of this expanded seasonal closure is to further protect arrowtooth flounder and halibut spawning aggregations. The year-round pilot bottom trawl closure that was implemented in March 2019 continues to be in effect.



6.8.12. Groundfish Trawl and Area A Crab Agreement

A shared access agreement was again reached between the Area A crab fleet and the groundfish trawl fleet regarding shared access for a portion of Northern Hecate Strait (east northeast of Rose Point and west of Butterworth Rock) for the 2021/2022 fishing season. All terms of the 2020 shared access agreement remain unchanged for the 2021 season with the exception of access by the groundfish trawl fleet beginning as of 08:00 hours on August 1, 2021. Please refer to the 2020 notice FN0593 for geographic coordinates and terms of the agreement:

https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=233687&ID=all.

Refer to the following fishery notices for more information regarding timing of the 2021 agreement:

1. FN0744: https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=248198&ID=all

2. FN0804: https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=248933&ID=all

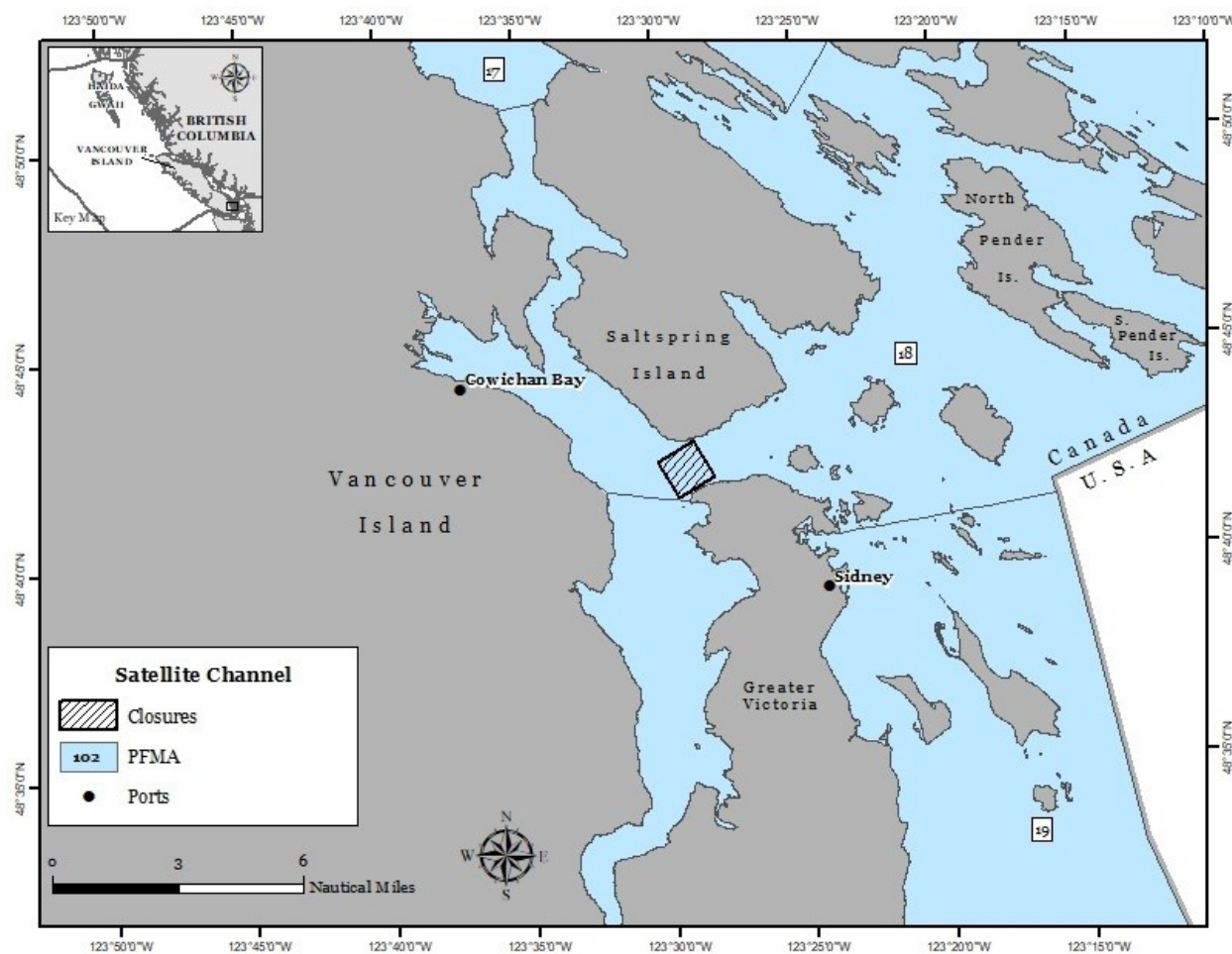
6.9. In-season Groundfish Trawl Closures – Inside Waters

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.

6.9.1. Satellite Channel

Closed year round to all trawling (includes both bottom and midwater) in that portion of Subarea 18-6 and 18-7 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.)



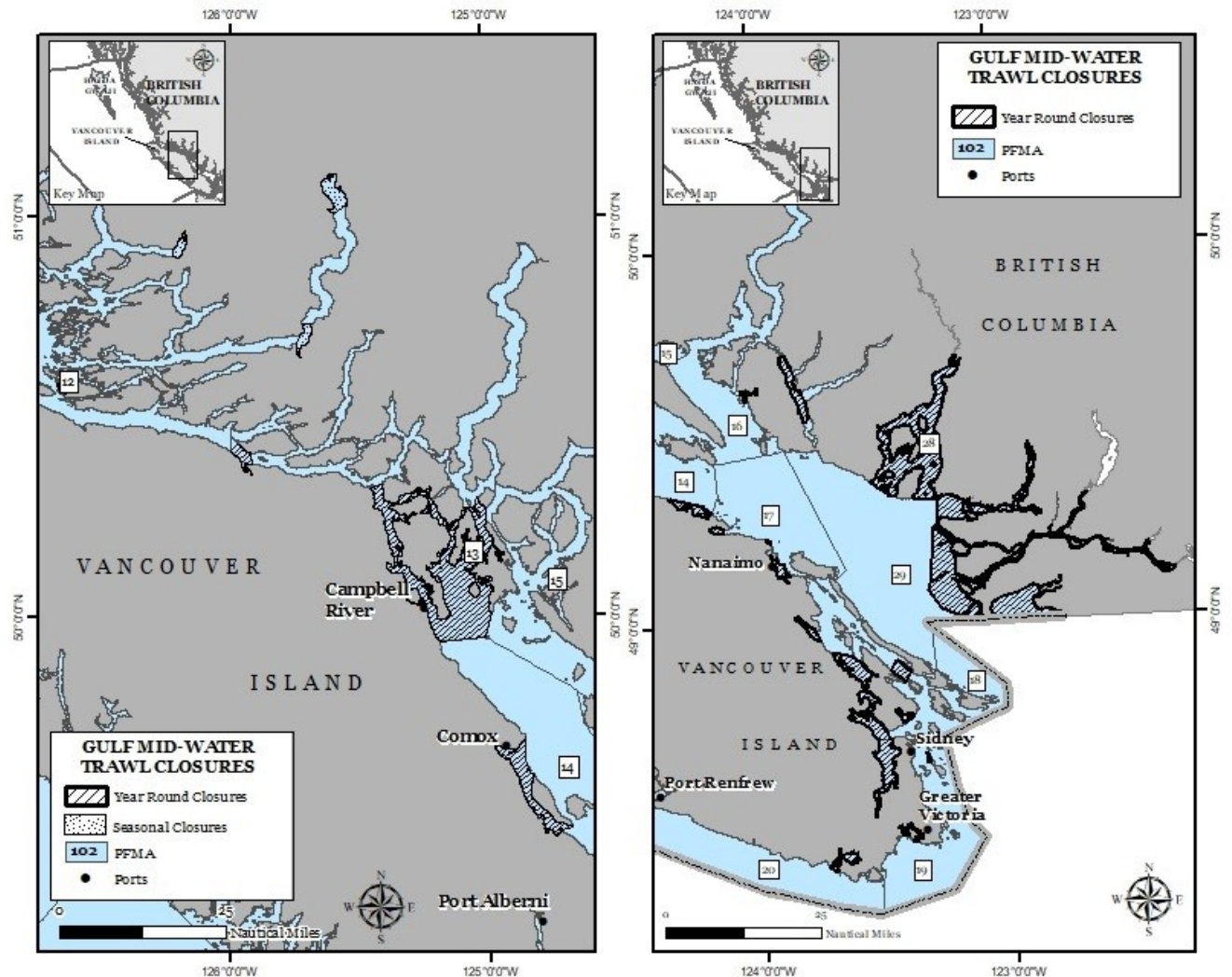
6.10. Gulf - Bottom Trawl Closures by Subarea

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 western shore of Gilford Island to the point of commencement at Slope Point.	All year
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 September30
14-9,14-10,14-12	Entire Subareas	April 1 to September30
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

Subarea(s)	Closure Description	Period Closed
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

6.11. 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
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



6.12. Groundfish Trawl Northern Fleet and Processing Gentlemen's Agreement

In an effort to support smaller trawl vessels delivering fresh fish to processing operations in northern communities, the GTAC approved an agreement where all option A trawl vessels are permitted to fish by bottom trawl or midwater trawl in the following defined area; however, only those vessels delivering fresh fish are permitted to bottom trawl:

South eastern point:	54 04.20	131 01.38
North eastern point:	54 33.14	131 01.45
North western point:	54 26.23	131 29.76
South western point:	54 16.72	131 29.55

Industry details of the gentlemen's agreement are available by contacting Bruce Turris, the Executive Director of the CGRCS at (604) 524-0005 or by email: bruceturris@shaw.ca.

7. 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 bottom and mid-water trawl gear.

7.1.1. 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.

7.1.2. 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.

7.1.3. Gear Restrictions

Subject to the provision below, 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).

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).

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 had been discussed and endorsed by the groundfish trawl industry and became a mandatory condition of the groundfish trawl licence beginning the 2016/2017 season.

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.

7.1.4. Trawl Net Escape Panel

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.

7.1.5. 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.

7.1.6. 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.

7.1.7. 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.

7.1.8. 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 2021/2022 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.

8. LICENSING

8.1. 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.

8.2. 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.

8.3. Licence Renewal Fees

In accordance with the Service Fees Act, annual licence renewal fees will be adjusted by the annual rate of inflation determined by the Consumer Price Index (CPI) published by Statistics Canada.

The commercial groundfish trawl licence renewal fee is based on the combination of a base licence fee of \$511.00 and the Permanent IVQ holdings of the licence on February 20th, measured in pounds. The commercial groundfish trawl licence renewal fee may be found on the following link: <http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/renewalfees-fraisrenouvellement-eng.html>

There is no annual licence renewal fee for communal commercial category FT license.

8.4. 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.html#toc5.2.1>

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.

8.4.1. 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/fisheries-peches/sdc-cps/products-produits/user-manual-utilisateurs-sec5-eng.html#toc5.2.1>

A general description of the permitted activities under each option are:

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.

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.

8.4.2. 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.

8.5. 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.html>

Option B vessels will be issued monthly amendments. The owner of an Option B vessel must submit a 2021/2022 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 2021/2022 groundfish trawl licence prior to fishing.

Contact either of the Groundfish Management Unit Quota officers at groundfishivq@dfo-mpo.gc.ca for further information.

8.5.1. Licence Documents

Groundfish Trawl licence documents are valid from the date of issue to February 20, 2022.

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

8.6. 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-pecche@dfo-mpo.gc.ca.

9. GROUND FISH SPECIES AND ALLOWABLE CATCHES

9.1. 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 pallasi</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 zyopterus</i>
Bluntnose Sixgill Shark	<i>Hexanchus griseus</i>
Eulachon	<i>Thaleichthys pacificus</i>

9.2. 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>
Rougheye /Blackspotted rockfish	<i>Sebastes aleutianus/melanostictus</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>Citharichthys sordidus</i>
Petrale 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 alahunga</i>
Bluefin	<i>Thunnus thynnus</i>
Pacific bonito	<i>Sarda chiliensis lineolata</i>
Skipjack	<i>Euthynnus pelamis</i>
Yellowfin	<i>Thunnus 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	

9.3. Research Allocation

To support groundfish research and account for unavoidable mortality incurred during the 2021 Groundfish Trawl Multi-species surveys planned for the Queen Charlotte Sound (QCS), Groundfish management areas 5A and 5B, and the Hecate Strait (HS), Groundfish management areas 5C and 5D, the following quantities will be subtracted from the Groundfish Trawl TAC's set out in the section below prior to allocating quota to individual licences. Please note the West Coast of Vancouver Island (WCVI) survey that was cancelled in 2020 due to the COVID-19 pandemic will be completed in 2021.

Species	5AB - QCS Research Allocation (mt)	5CD - HS Survey Allocation (mt)	Total Research Trawl Allocation (mt)
Arrowtooth Flounder	0.0	12.7	12.7
Big Skate	0.0	0.8	0.8
Bocaccio Rockfish	0.5	0.0	0.6
Canary Rockfish	1.7	0.2	1.8
Copper, China, Tiger Rockfish	0.0	0.2	0.2
Dover Sole	0.7	5.1	5.7
English Sole	0.3	6.4	6.7
Lingcod	0.2	0.2	0.4
Longnose Skate	0.1	0.4	0.5
Longspine Thornyhead	0.0	0.0	0.0
Pacific Cod	0.3	1.9	2.1
Pacific Hake	0.0	0.2	0.2
Pacific Halibut	0.0	2.5	2.5
Pacific Ocean Perch	19.4	1.5	20.8
Petrale Sole	0.3	0.4	0.7
Quillback Rockfish	0.1	0.3	0.4
Redbanded Rockfish	1.3	0.4	1.7
Redstripe Rockfish	0.9	0.2	1.1
Rock Sole	0.0	1.7	1.7
Rougheye/Blackspotted Rockfish	0.9	0.0	1.0
Sablefish	0.4	2.6	3.0
Shortraker Rockfish	0.0	0.0	0.0
Shortspine Thornyhead	1.0	0.3	1.3
Silvergray Rockfish	8.9	0.6	9.5
Spiny Dogfish	0.0	1.1	1.1
Walleye Pollock	0.4	2.6	3.0
Widow Rockfish	0.1	0.0	0.1
Yelloweye Rockfish	0.0	0.0	0.0
Yellowmouth Rockfish	5.9	0.0	5.9
Yellowtail Rockfish	1.5	0.7	2.3

9.4. Annual Trawl Total Allowable Catches

TACs listed below have been set for the commercial groundfish trawl fishery for the 2021/2022 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	2,500
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
Rougeye/Blackspotted Rockfish ⁹	3C/D, 5A/B	167
	5C/D/E	446
	Coastwide	614
Shortraker Rockfish	Coast-wide	126
Redstripe Rockfish	3C/D, 5A/B/C	1,150
	5D/E	400
	Coast-wide total	1,550
Shortspine Thornyheads	Coast-wide	736
Longspine Thornyheads	Coast-wide	405
Redbanded Rockfish	Coast-wide	293
Bocaccio Rockfish	Coast-wide	414
Yelloweye Rockfish	Coast-wide ⁴	3
Quillback	Coast-wide ⁴	4
Copper, China And Tiger Rockfish	Coast-wide ⁴	1

Species	Management Area	TAC¹(tonnes)
Pacific Cod	3C/D	300
	5A/B	250
	5C/D/E	700
	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	257
Pollock	Gulf ³	1,115
	3C/D (includes Area 20)	4,000
	5A/B (includes Area 11, 12)	2,500
	5C/D/E	1,318
	Coast-wide total	7,818
Hake	Gulf ³	7,000
	Offshore	30,000
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	5,000
¹ All quotas are in round weight and metric tonnes (mt).		

Species	Management Area	TAC ¹ (tonnes)
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/DIVQ 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 April.		
⁹ The TAC has been divided into two spatial stocks of the Rougheye/Blackspotted (REBS) Rockfish complex identified along the BC coast: the northern stock (REBS north) in 5DE is predominantly comprised of Blackspotted Rockfish, and the southern stock (REBS south) in 3CD5AB is largely comprised of Rougheye Rockfish.		

9.5. Voluntary Relinquishment

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.

9.6. 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. Following a significant recruitment event in 2016, the trawl TAC was increased to 200 tonnes in-season during the 2019/2020 season, 300 tonnes for the 2020/2021 season, and then to 414 tonnes for the 2021/2022 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.

9.7. Shark Finning Prohibition

Amendments to the *Fisheries Act*, which came into force on June 21, 2019, include a prohibition on shark finning, which is defined as the “practice of removing fins from a shark and discarding the remainder of the shark while at sea”. The practice of shark finning was prohibited in all groundfish fisheries prior to the *Fisheries Act* amendments, which was described in licence conditions. With the addition of a prohibition on shark finning to the *Fisheries Act*, the relevant conditions have been removed from the licence conditions. However, the act of shark finning remains prohibited in all groundfish fisheries.

9.8. 100% Rockfish Retention

Mandatory 100% rockfish retention for all option A vessels was recommended by GTAC on January 30th, 2020, with full implementation to commence of May 15, 2020. As a result of the suspension of the At-Sea Observer Program to help protect the health of observers and fishers from the spread of COVID-19, the requirement for 100% retention of rockfish was implemented early on April 14, 2020. Refer to FN0379 for more information.

10. TRAWL INDIVIDUAL VESSEL QUOTA ALLOCATIONS

For the 2021/2022 fishing year, the commercial groundfish trawl TACs, less the research allocation for the Groundfish Trawl Multi-species survey(s), are allocated as IVQ accordingly:

- a. 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, 2021.
- b. 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).

10.1. Trawl Individual Vessel Allocation Formula

10.1.1. 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.

10.1.2. 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.

11. INDIVIDUAL VESSEL QUOTA REALLOCATION RULES

11.1. Reallocation Rules for Inter-Sector Non-T IVQ

The 2021/2022 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.

11.2. Groundfish Trawl 2021/2022 Reallocation Sector Rules

11.2.1. Reallocation Rules effective February 21st, 2021

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.

Groundfish trawl IVQ and Non-T groundfish IVQ can be reallocated between groundfish trawl vessels holding a valid 2021/2022 groundfish trawl licence and vessels holding valid appropriate groundfish licences.

The IVQ percentage held on a groundfish trawl licence as of midnight February 2nd, 2021 will establish the initial permanent IVQ holdings for that groundfish trawl licence for the 2021/2022 season.

Requests for reallocation of groundfish IVQ must be received by DFO by 16:00 hours on February 2nd, 2022 in order to be processed and determine the permanent IVQ holdings for that groundfish trawl licence used for initial licence issuance for the 2022/2023 season.

Only uncaught IVQ is eligible for reallocation.

Permanent reallocation requests can 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).

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).

Requests for temporary reallocation unfished IVQ must be received by GMU by 16:00 hours local time on February 20, 2022 in order to be processed and have affect in the current fishing season.

Temporary reallocations of IVQ are only valid for the current fishing year.

The minimum quantity of IVQ that may be temporarily reallocated is one pound.

The maximum quantity of IVQ on a groundfish trawl licence is subject to the individual vessel holdings cap and coast-wide species caps.

11.3. Individual Vessel Quota Species Cap

11.3.1. 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%
Silvergray Rockfish	4%	8%
Pacific Ocean Perch	5%	9%
Yellowmouth Rockfish	5%	8%
Rougheye/Blackspotted Rockfish	7%	11%
Shortraker Rockfish	7%	10%

Species	Permanent Species Cap	Temporary Species Cap
	(% of Trawl sector coast-wide TAC)	(% of Trawl sector coast-wide TAC)
Redstripe Rockfish	5%	7%
Bocaccio Rockfish	4%	12%
Shortspine Thornyheads	10%	10%
Longspine Thornyheads	10%	10%
Redbanded Rockfish	7%	10%
Pacific Cod	4%	12%
Dover Sole	5%	10%
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%	10%
Hake (Offshore JV)	10%	20%
Halibut	4%	8%
Big Skate	5%	7.5%
Longnose Skate	5%	7.5%
Arrowtooth Flounder	8%	8%
Corals and Sponges	4%	6%

11.3.2. 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 6.1.5.6 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%	20%
Silvergray Rockfish	10%	10%	20%
Rougheye/Blackspotted Rockfish	5%	10%	20%
Shortraker Rockfish	5%	10%	20%
Shortspine Thornyheads	5%	10%	20%
Longspine Thornyheads	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)
Redbanded Rockfish	5%	10%	20%
Lingcod	10%	10%	10%
Spiny Dogfish	10%	10%	10%
Sablefish	10%	10%	10%
Big Skate	10%	10%	10%
Longnose Skate	10%	10%	10%
All other species	0%	0%	0%

11.4. 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.

11.5. 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

Species	GFE
Silvergray Rockfish	1.20
Pacific Ocean Perch	1.00
Yellowmouth Rockfish	1.19
Rougheye/Blackspotted 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
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
--------------	--

11.6. Quota Overages in Excess of IVQ Holdings

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.

11.7. 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, with the exceptions listed below, held on the licence are used in the calculation of carryover quantities for the next season.

Carryover of Canary, Redbanded, Rougheye/Blackspotted, Shortraker and Silvergray rockfish, as well as Big and Longnose Skate from other sectors (non trawl quota) will be permitted. For those species, up to thirty (30) percent of a licences uncaught non trawl rockfish quota and fifteen (15) percent of a licences uncaught non trawl skate quota may be carried over.

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.

11.7.1. 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.

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/form-eng.html>

For licence status reports (LSR) and inquiry related to quota reallocation requests, Quota Officers can be reached at: groundfishivq@dfo-mpo.gc.ca

12. 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 2021/2022 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.

12.1. Groundfish Development Quota

For 2021/2022, 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.

12.2. 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 2021/2022 Operations Plan.

13. CATCH MONITORING AND VALIDATION

13.1. 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 the new groundfish trawl industry 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 2021/2022 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.

13.2. Port Monitoring

A comprehensive industry funded one hundred (100) percent port monitoring program shall continue in the 2021/2022 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 2021/2022 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 2021/2022 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 2021/2022 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.

13.3. 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.

13.3.1. Option A Monitoring Requirements

Notwithstanding Section 13.3.2 and [FN1125](#) for the use of electronic monitoring during the COVID-19 pandemic, 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 2021/2022 season except when the vessel is hauled 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 2021 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.

13.3.2. Emergency Electronic Monitoring Program

On April 2, 2020 the Minister of Fisheries and Oceans Canada issued a Fishery Management Order temporarily suspending the requirement for on board at-sea observers for 45 days to help protect the health of observers and fishers from the spread of COVID-19. On the advice of the Groundfish Trawl Advisory Committee (GTAC) and for the duration of the Fishery Management Order, DFO implemented an emergency Electronic Monitoring (EM) pilot program for at-sea monitoring in the groundfish trawl fishery. These measures were required to ensure continued comprehensive and independent catch monitoring of the groundfish trawl fleet. A conditional resumption of the ASOP under a new FMO 2020 03 was issued on May 15, 2020 and was subsequently renewed for 45 days, until August 12, 2020 inclusively.

Upon expiry of the Fishery Management Order (FMO) and following consultations with stakeholders, DFO postponed a full reinstatement of the ASOP in light of continued health and safety concerns raised by harvesters and some coastal communities about increases in cases of COVID-19 in British Columbia. In the continued absence of a fully reinstated ASOP, the Emergency EM Program for at-sea monitoring in response to COVID-19 may continue to be deployed as an alternative mitigating management measure for all Option A groundfish trawl vessels.

DFO acknowledges that while Public Health authorities and WorkSafeBC have outlined the manner in which vessels can safely fish in the context of COVID-19, and that at-sea observer deployment procedures should be able to satisfy these requirements, the situation is changing rapidly and requires further consideration.

DFO continues to work closely with stakeholders and the catch monitoring service provider to refine the safe work procedures that will enable full at-sea observer deployment on all option A vessels at a later date. Key considerations include minimizing risk of infection transmission between vessel crew and at-sea observers, and ensuring that the ASOP service provider can complete observer training and meet the staffing requirements of the fishery.

Option A trawl vessels may elect to carry an at-sea observer, subject to at-sea observer availability, rather than utilize the emergency EM program. When at-sea observer services are used, harvesters and the ASOP service provider will be expected to follow all applicable provincial COVID-19 guidelines. Public Health authorities and WorkSafeBC have outlined the manner in which vessels can safely fish in the context of COVID-19.

For trawl vessels to accommodate an at-sea observer, the vessel shall have safe work protocols and procedures in place that are consistent with Provincial Health Authority

guidelines. These safe work protocols and procedures shall be available for inspection by the service provider and DFO. The service provider may refuse to provide ASOP services if these protocols and procedures are deemed to be inconsistent with the Provincial Health Authority guidelines.

If a harvester desires to use an at-sea observer to fulfill their at-sea monitoring requirements, please contact the Trawl Coordinator at Deirdre.Finn@dfo-mpo.gc.ca to discuss at-sea observer deployment criteria and opportunities.

13.3.2.1. Program and System Requirements

All vessels fishing under the groundfish trawl Option A licence conditions shall:

- a. complete both the At-sea Log and the Groundfish Trawl Fishing Logbook;
- b. have installed and operational on board a functioning v5 EM system from Archipelago Marine Research. See Section 3 of Appendix 2 in this IFMP for more information on EM monitoring system requirements;
- c. have installed fixed measuring grids (see Figure 2 of Appendix 2 in this IFMP) in all sorting areas above and below deck and have EM technicians position cameras to ensure proper view of measuring grids;
- d. have a minimum of two closed circuit television cameras suitable for the fishing-deck work environment. One camera must be configured with a wide angle lens to provide a clear view of the catch retrieval process. Additional cameras in all sorting/discard areas are required for the accurate viewing and measurement of released fish. Receiving tank vessels must have a minimum of two additional cameras in the processing facility below deck, located at the shoot of the receiving tank and all sorting/discard areas;
- e. pass all released lingcod and sablefish over the measuring grid for unobstructed EM viewing prior to release back to the water;
- f. retain all rockfish catch for validation during offload;
- g. limit fishing to three of the following six management areas during a single trip: 3C, 3D, 5A and 5B, 5C, 5D, 5E;
- h. separate catch from each management area into separate holding tanks on the vessel;
- i. be subject to an area-based mortality rate of 35% and average weight of 12 lbs in 3CD5ABE and 29% and 8 lbs in 5CD for all halibut released from the trawl deck. A fixed mortality rate of 100% will be applied to all halibut released below deck on receiving tank vessels; and
- j. ensure that the EM system is continuously powered on and not turned off at any time until the hard drive is removed at the conclusion of each trip.

All vessels must contact AMR immediately using the EM service hotline at 250-383-3203 if the EM system becomes inoperative or malfunctions in any way. If the system cannot be repaired at sea, the vessel shall stop fishing and return to port immediately. Vessels failing to comply with all emergency EM program requirements may be refused permission to fish under this option, required to take an at-sea observer, or prohibited from fishing.

13.3.2.2. Auditing

Following every trip landing, an audit is completed by a service provider approved by the Department. The current audit uses the video data to compare fishing log total catch volume estimates by tow, and total retained and released catch by species by randomly selected tows (25% of tows for receiving tank vessels and 10% of tows for all other vessels).

The GPS and other sensor data are compared to the number of fishing events and location of fishing in the fishing log. Total retained species catch volumes from dockside monitoring program data are also compared against the fishing log.

DFO continues to develop this audit program jointly with industry and the service provider. More information will be provided in subsequent versions of this IFMP.

13.3.3. 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 2021/2022 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.

13.3.4. 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.

13.4. 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 2021/2022 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.

14. HALIBUT BY-CATCH MANAGEMENT PLAN

14.1. 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.

14.2. Halibut Mortality Fleet Cap

For the 2021/2022 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.

14.3. 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.

14.4. Halibut Bycatch 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.

14.5. Halibut Bycatch 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.

14.6. Halibut Bycatch 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.

14.7. Area-based Halibut Mortality Rate and Average Weight

For the 2021/22 fishing year where electronic monitoring is deployed as an alternative mitigating management measure during the COVID-19 pandemic, option A vessels will be subject to an area-based halibut mortality rate as described in 13.3.2.1. Average weights and mortality rates are based on 2019/20 at-sea observer data where average weights were compared to synoptic trawl survey data. Trawl fishing occurring in area 5CD is considered unique, primarily targeting soles and flounders, and smaller halibut are typically caught compared to other areas. 5CD has also been identified as a nursery ground for juvenile halibut.

15. 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 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.
- 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:

15.1. Coral and Sponge Retention Rules

Corals and Sponges are not permitted to be retained unless authorized by Fisheries and Oceans Canada.

15.2. Fleet-wide Habitat Bycatch Conservation Limit

For the 2021/2022 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 %.

15.3. 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	Calcereous
Stony	Stylatula elongate	Glass
Alcyonaria	Sea pens	Bath
Gorgonian	Sea whips	
Paragorgia arborea	Virgularia	
Paragorgia pacifica		

15.4. 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.

15.5. 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.

15.6. 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.

15.7. 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.

15.8. 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.

15.9. 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.

16. 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.

16.1. 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
All species entering a receiving tank ²	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: ((2hrs x 10%)* est. release weight) + (((20min/60min) x 10%)* released weight)	

Species	Mortality Rates
² Any vessel equipped with a receiving tank will have 100% mortality applied to fish released at sea below deck.	

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.

Notwithstanding Sections 13.3.2 and 14.7 for the use of electronic monitoring during the COVID-19 pandemic, 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.

17. 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 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.

18. 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:

https://archive.fisheries.noaa.gov/wcr/fisheries/management/whiting/pacific_whiting.html

The 2021/2022 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 2021.

19. EXAMPLE OF GROUNDFISH TRAWL FISHING LOGBOOK

Fisheries and Oceans Canada / Pêches et Océans Canada		GROUNDFISH TRAWL FISHING INFORMATION LOG		Page <u>2</u> of <u>2</u>	
Vessel Name <u>SEA WATER</u>		VRN# <u>29999</u>	Licence # <u>T0155</u>	Trip # <u>55</u>	Hall Out# <u>21810476</u>
Captain <u>JOHN DOE</u>		CAPT. FIN # <u>1234567</u>	Port of Landing <u>UCL</u>	Hall In# <u>21824596</u>	
At Sea Observer <u>DON TRIP</u>		Code <u>18637</u>	Offload Location <u>BORNSTEIN</u>	Departure Date <u>20/05/04</u>	
			Buyer/Processor <u>SEA DRIFT</u>	Landing Date <u>30/05/04</u>	
Tow #	BT or MT				
Date					
Name of Grounds					
Fishing Area					
Time (24hr clock)					
Set: Latitude					
Longitude					
Mid: Latitude					
Longitude					
Haul: Latitude					
Longitude					
Fishing Depth					
Meters					
Fathoms					
Tow Speed - Codend					
Gear Depth					
Spread					
TS - Target Species	TS	retained (lb)	released (lb)	TS	retained (lb)
418 Yellowtail RF					
417 Widow RF					
437 Canary RF					
406 Silvergrey RF					
396 Pacific Ocean Perch					
440 Yellowmouth RF					
394 Roughie RF					
403 Shorttraker RF					
439 Redstripe RF					
401 Redbanded RF					
435 Bocaccio					
451 Shortspine TH	3	0	3	110	
453 Longspine TH					
626 Dover Sole	1	14000	100	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		130		130	
Tow Comments:					
Log removed by:					

White Copy - DFO Original • Yellow Copy - DFO • Pink Copy - Vessel

Appendix 9: Rebuilding & Alternative Approach Plans for Groundfish Species

TABLE OF CONTENTS

1.	REBUILDING PLANS FOR GROUND FISH SPECIES	2
1.1.	FOREWORD	2
1.2.	INTRODUCTION.....	2
1.3.	OVERVIEW OF THE FISHERY	2
1.4.	BIOLOGICAL SYNOPSIS AND STOCK STATUS	3
1.4.1.	Bocaccio.....	3
1.4.2.	Yelloweye Rockfish.....	4
1.5.	SOCIO-ECONOMIC AND CULTURAL IMPORTANCE	5
1.6.	MANAGEMENT ISSUES	5
1.7.	OBJECTIVES	6
1.7.1.	Bocaccio.....	7
1.7.2.	Yelloweye Rockfish - inside stock	7
1.7.3.	Yelloweye rockfish - outside stock	7
1.8.	MANAGEMENT MEASURES	8
1.8.1.	Bocaccio.....	8
1.8.2.	Yelloweye Rockfish – inside stock	10
1.8.3.	Yelloweye Rockfish – outside stock	11
1.9.	COST BENEFIT ANALYSIS	12
1.10.	ROLES AND RESPONSIBILITIES	12
1.11.	EVALUATION AND PERFORMANCE REVIEW	12
2.	ALTERNATIVE APPROACH PLANS FOR YELLOWMOUTH ROCKFISH.....	13
2.1.	FOREWORD	13
2.2.	INTRODUCTION.....	14
2.3.	BIOLOGY	14
2.4.	STOCK STATUS AND FISHERY OVERVIEW	14
2.5.	ADDITIONAL MANAGEMENT MEASURES.....	14

1. REBUILDING PLANS FOR GROUND FISH SPECIES

1.1. FOREWORD

Fisheries and Oceans Canada (DFO) has developed “*A Fisheries Decision-Making Framework Incorporating the Precautionary Approach*” (PA Framework) within the Sustainable Fisheries Framework. It outlines the departmental methodology for applying the precautionary approach 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), i.e., in the “critical zone” of the PA Framework, 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 overarching goal of any rebuilding process is to grow depleted stocks up through the cautious zone and ultimately into the healthy zone above the Upper Stock Reference (USR). The purpose of rebuilding plans is to identify rebuilding objectives for any depleted species as well as the management measures that will be used to achieve these objectives.

This section 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 covered by other management planning tools for depleted species, such as groundfish species that require a recovery or management plan under the Species At Risk Act.

This document also serves to communicate basic information about the stocks and management of fisheries that affect the stocks to DFO staff, legislated co-management boards and other fishery interests. This plan provides a common understanding of the basic “rules” for rebuilding the stocks.

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.

1.2. INTRODUCTION

Groundfish stocks currently subject to rebuilding plan provisions are: Bocaccio and Yelloweye rockfish (outside and inside populations).

1.3. OVERVIEW OF THE FISHERY

These stocks 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 Rockfish are primarily caught in the groundfish hook and line fisheries as incidental catch, and are also caught incidentally in the groundfish trawl and salmon troll fisheries.
- Recreational fisheries: Bocaccio and Yelloweye Rockfish are primarily caught incidentally by recreational anglers when fishing for rockfish, Lingcod, and salmon.
- Food, Social, and Ceremonial and domestic (treaty) fisheries: catch reports include records of Bocaccio and Yelloweye Rockfish. Yelloweye is much more commonly reported as catch than Bocaccio.

Catch information for these stocks in the commercial salmon troll fishery, recreational fisheries, and Food, Social, and Ceremonial fisheries is limited.

1.4. BIOLOGICAL SYNOPSIS AND STOCK STATUS

1.4.1. Bocaccio

Bocaccio rockfish are ubiquitous along the Pacific coast of Canada. They are relatively short lived compared to other rockfish species reaching maximum ages around 50-55 years and an estimated generation time of 20. They are most often caught in the groundfish trawl fishery on the edge of the continental shelf and along the edges in Queen Charlotte Sound and the more southern sections of Hecate Strait. Bocaccio are a schooling semi-pelagic species that likely prefer high-relief boulder fields and rocks between depths of 60-340 m rather than specific sites. Currently Bocaccio are treated as a single coastwide stock.

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. The COSEWIC assessment triggered the Government of Canada to consider listing Bocaccio under SARA. Consultations concluded in 2017, and a decision is currently pending.

Through the process of regular evaluation of the rebuilding plans, science advice on stock status and rebuilding strategies for Bocaccio was peer-reviewed in autumn 2019. DFO Science published an updated stock assessment in 2020 that built on previous work from 2009 and 2012. The Bocaccio stock has experienced a nearly continuous decline from the start of 1935, interrupted only by a relatively level plateau between 1970-86 due to good recruitment events in 1969, 1976 and 1978. The stock declined again from 1987 onwards until a very large recruitment event in 2016 estimated to be 44 times larger than the long term average recruitment. While Bocaccio is currently still estimated to be less than its LRP (i.e. in the PA critical zone), there is a greater than 99% and 90 % probability Bocaccio’s estimated stock status will be greater than the LRP and USR respectively by 2025. This projected growth above the LRP and USR assumes a annual fishing mortality of 400 tonnes (t). Estimated average mortality from all sources between 2015 – 2019 is 69 t. Bocaccio recruitment events and management responses of the same magnitude recently occurred in US waters.

Detailed descriptions of available information on Bocaccio biology and distribution, habitat requirements, and stock scenarios can be found online in the Canadian Science Advisory Secretariat publications: <http://www.isdm-gdsi.gc.ca/csas-sccs/applications/Publications/search-recherche-eng.asp>.

1.4.2. Yelloweye Rockfish

Yelloweye Rockfish are a long-lived species (up to 121 years in B.C., Keppel and Olsen 2019), occurring in rocky benthic habitats that have a patchy, discontinuous distribution along BC's inner coast (Yamanaka et al. 2011). These life history traits make the species vulnerable to overexploitation by fisheries.

1.4.2.1. Inside Population

Occurring in Queen Charlotte Strait, Johnstone Strait, Strait of Georgia and the Strait of Juan de Fuca in British Columbia, the inside Yelloweye Rockfish stock is considered to be data-limited, as there is limited age composition data, biological data from commercial, recreational and First Nation fisheries and uncertainty in the magnitude of historical catches. The stock was assessed as being below the LRP in 2010 (Yamanaka et al. 2011; DFO 2012). 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 $B_{2009} < 0.4 * B_{msy}$.

Updated science advice was peer reviewed in June 2020. The new assessment provides scientific advice through application of a new management strategy evaluation framework recently developed for BC groundfish, the Management Procedure Framework (Anderson et al. 2020). The MP Framework evaluated the performance of alternative data-limited MPs to support re-evaluation of the current rebuilding plan for Inside Yelloweye Rockfish. The MP Framework was used to evaluate the ability of 34 data-limited MPs to meet the proposed principal objective of rebuilding the stock above the LRP (0.4 BMSY) over 1.5 generations (56 yrs) with at least a 95% probability of success.

Closed-loop simulation screened out MPs that did not meet basic performance criteria, resulting in five remaining candidate MPs: two annual constant-catch MPs (10 and 15 tonnes), and three MPs that adjust the total allowable catch (TAC) based on a survey index of abundance. All five final MPs met the principle performance metric with greater than 0.98 probability, across all four OM reference set scenarios.

None of the reference set OMs estimated the median stock biomass to be below the LRP in 2019. Differences in estimates of Inside Yelloweye Rockfish stock status between the current OMs and previous assessment were attributable to model structure choices.

Further discussions with stakeholders and Indigenous groups are required to determine a target biomass given that the current conservation objectives of growing the stock above the LRP have already been satisfied.

Inside Yelloweye are also listed under the Species at Risk Act (SARA) as a Species of Special Concern (COSEWIC 2008).

1.4.2.2. Outside population

Through the process of regular evaluation of the rebuilding plans, science advice on stock status and rebuilding strategies the Yelloweye Rockfish outside population (groundfish management areas 3 and 5) was peer-reviewed in autumn 2019. DFO Science published an updated stock assessment in 2020 that built on previous work from 2015.

The 2015 assessment estimated that the stock had a 63% probability of being in the PA critical zone, whereby $B_{2014} < 0.4 * B_{msy}$. The 2019 assessment reported that the Yelloweye Rockfish outside population spawning biomass declined rapidly by 49-79 % over the past 30 years, but all model scenarios indicate that Yelloweye Rockfish is currently above its LRP (with a greater than 99% probability), and USR (i.e. the PA healthy zone). This revised perception of stock status is driven by a new assessment approach that considered peer-review advice from the 2015 assessment, including making use of available age data and consideration of different abundance trends within the coastwide stock.

The requested science advice for Yelloweye Rockfish sought to develop an adaptive, feedback-based framework for evaluating candidate management procedures against the rebuilding objectives. While the advice successfully developed stock assessment approaches and evaluated management measures against rebuilding objectives, further discussions with stakeholders and Indigenous groups are required to determine a target biomass given that the current conservation objectives of growing the stock above the LRP have already been satisfied.

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 can be found online in the Canadian Science Advisory Secretariat publications: <http://www.isdm-gdsi.gc.ca/csas-sccs/applications/Publications/search-recherche-eng.asp>.

1.5. SOCIO-ECONOMIC AND CULTURAL IMPORTANCE

As described above, Bocaccio and Yelloweye Rockfish are components of the catch in multiple fisheries. The *Social, Cultural, and Economic Importance* sections of the corresponding IFMPs (e.g. groundfish, salmon) describe the importance of these fisheries.

1.6. 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. Groundfish hook and line, salmon troll, recreational, and FSC fisheries account for some additional mortality. Commercial catch of Yelloweye Rockfish is largest in the Pacific Halibut and Rockfish Outside commercial 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 Rockfish also comprises a significant proportion of the total fishing mortality. Rockfish species (*Sebastes*) often suffer barotrauma when they are caught and brought to the ocean's surface because they have a closed, or physoclastic, gas bladder. As a result of this trauma most caught and released rockfish do not survive.

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 Rockfish 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.

In balancing timely and responsible management that reflects the best available science, mortality caps are outlined below to satisfy current rebuilding plan conservation objectives. Work to refine rebuilding objectives and management measures will occur throughout 2021.

1.7. 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.

In general, rockfish are slow growing, low productivity, and have long generation times. Taking this into account, the DFO Groundfish Management Unit has refined the PA Framework primary objective described above and developed specific objectives for Bocaccio and Yelloweye stocks below.

1.7.1. Bocaccio

The primary conservation objective for Bocaccio Rockfish is to:

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.

1.7.2. Yelloweye Rockfish - inside stock

The primary conservation objective for the Yelloweye Rockfish inside stock 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, milestones 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.

In the interim, management procedures and potential 2020 catch limits were identified that satisfy all rebuilding plan conservation objectives, maintain a minimum catch to facilitate other fisheries where Yelloweye Rockfish is bycatch, and would provide a relatively stable Yelloweye Rockfish biomass over the next 10 years.

1.7.3. Yelloweye rockfish - outside stock

The primary conservation objective for the Yelloweye Rockfish outside stock is to:

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.

In the interim, management procedures and potential 2020 catch limits were identified that satisfy all rebuilding plan conservation objectives, maintain a minimum catch to facilitate other fisheries where Yelloweye Rockfish is bycatch, and would provide a relatively stable Yelloweye Rockfish biomass over the next 10 years.

1.8. MANAGEMENT MEASURES

DFO's 2001 rockfish conservation strategy was built on the following four pillars: comprehensive catch monitoring; dramatically reduced fishing mortality; extensive fishery closed areas; and improved stock assessment and monitoring. All aspects of this conservation strategy remain important and are facilitated through DFO's integrated fishery management plan (IFMP) for Groundfish. Rebuilding Plans for Bocaccio and Yelloweye Rockfish and associated management measures remain in effect, but DFO would like to engage with stakeholders and Indigenous groups throughout 2021/22 to revise rebuilding plans objectives in a manner that is consistent with the modernized *Fisheries Act* and the best available science. Given these measures and the science advice noted above, DFO has established the following mortality caps for Bocaccio and inside and outside Yelloweye Rockfish in support of the current rebuilding objectives for these stocks.

1.8.1. Bocaccio

Based on science information, the Department set out a plan in 2013 for stepped reductions of total Bocaccio harvest from the estimated total catch mortality of 137 metric tonnes (t) in 2012 to a mortality cap of 75 t over 3 years (2013/14 to 2015/16). The mortality cap, which accounts for Indigenous fishing opportunities, was broken out to identify sector-specific mortality caps. Through the process of regular evaluation of the rebuilding plan, science advice on stock status and rebuilding strategies for Bocaccio was peer-reviewed in autumn 2019. Based on this science information, the 2021/22 mortality cap for Bocaccio will be increased to 500 t, in the same proportion as the 2013 mortality cap.

	Sector-specific mortality caps (tonnes)				
Mortality cap	Mortality cap after FSC	Commercial groundfish trawl	Commercial groundfish hook and line	Commercial salmon troll	Recreation
500	493	414	31	24	23

Taking into consideration advice provided by fishing interests, the Department implemented management measures and other strategies to help achieve the rebuilding objectives.

The Department is working collaboratively with all fishing interests to achieve for Bocaccio conservation and rebuilding. Commercial groundfish fisheries are already subject to 100% at sea

and dockside monitoring, which helps ensure accurate reporting. 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;
- Zero retention of Bocaccio in recreational fisheries
- Identifying and implementing the tools required to conserve Bocaccio.

Additional management measures were introduced in 2013/14 for several commercial fisheries to further support Bocaccio rebuilding. In 2013/14, the Rebuilding Plan implemented management measures to limit catch below the mortality caps, including:

- Groundfish trawl: the establishment of a TAC, 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.

The 2014 evaluation of rebuilding measures indicated that further action was required to reduce mortality below the cap, so for the 2015/16 season the trip limit for Bocaccio in groundfish hook and line and trap fisheries was lowered¹, and the TAC in the trawl fishery was reduced from 150 t to 110 t, and then to 80 t in 2016/17. From 2013-2017 commercial groundfish fisheries reduced mortality by 51 % to an annual average of 60 t, with groundfish trawl fisheries responsible for more than 87 % of the catch.

Survey data from 2016 and 2017 suggests a significant recruitment event occurred in recent years with increases in catch per unit effort and a notable decrease in length-frequency which indicates many more small fish are present. There is limited market value of Bocaccio and strong incentives to avoid incidental catch but nonetheless Bocaccio mortality in the trawl fishery increased from 54 t in 2017/18 to 107 t in 2018/19. Commercial catch composition suggest this increase is the result of the recruitment event. Similar events have occurred in neighbouring waters. The US National Oceanic and Atmospheric Administration (NOAA) Fisheries defines two offshore populations (south and north; the northern population concentrated in Canadian waters) and developed a rebuilding plan for the southern population in the early 2000s. In March 1999 the southern population was estimated to be at 2 % of its unfished population size and was declared overfished. A rebuilding target date was set for 2026, with a catch limit of 20 t. The US rebuilding plan adopted a “buffer strategy” in setting catch limits to address the large, episodic recruitment pattern inherent in Bocaccio’s population dynamics. Catch limits for 2007-2016 ranged from 218 t to 362 t. The stock was estimated at 26 % of unfished population size in 2011, and 49 % in 2017, in large part due to recent strong recruitment events (1999, 2010, and 2013 year classes). In 2017 NOAA Fisheries declared Bocaccio rebuilt five years ahead of schedule owing to strong recruitment, and increased the catch limit by 270 % to 2,011 t in 2019.

¹ 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, to a maximum of 600 pounds of Bocaccio.

In Outside waters the recreational fishery's daily limit for rockfish is three, of which only one may be Quillback Rockfish, China Rockfish, or Tiger Rockfish, and of which zero may be Yelloweye Rockfish, or Bocaccio. The Outside fishery is open April 1 to November 15. In Inside waters the recreational fishery's daily limit for rockfish is one, of which zero may be Yelloweye Rockfish, or Bocaccio. The Inside fishery is open May 1 to September 30.

Given that any incidental catch must be discarded, management measures have been implemented to reduced discard mortality. The use of descending devices that return fish to depth may increase the survival rate for released rockfish. As of 2019 recreational anglers in vessels are required to immediately return all rockfish that are not being retained to the water and to a similar depth from which they were caught by use of an inverted weighted barbless hook or other purpose-built descender device.

Food, Social, and Ceremonial mortality has not been restricted as part of the Rebuilding Plan but is accounted for within the mortality cap.

1.8.2. Yelloweye Rockfish – inside stock

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. Through the process of regular evaluation of the rebuilding plan, science advice on stock status and rebuilding strategies for Yelloweye Rockfish inside stock was peer-reviewed in the spring of 2020. Based on updated science information, the 2021/22 mortality cap will remain at 15 t.

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 Appendix 6.

In Inside waters the recreational fishery's daily limit for rockfish is one, of which zero may be Yelloweye Rockfish, or Bocaccio. The Inside fishery is open May 1 to September 30.

Given that any incidental catch must be discarded, management measures have been implemented to reduced discard mortality. The use of descending devices that return fish to depth may increase the survival of released catch. As of 2019 recreational anglers in vessels shall immediately return all rockfish that are not being retained to the water and to a similar depth from which they were caught by use of an inverted weighted barbless hook or other purpose-built descender device. 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.

		Sector-specific mortality caps (tonnes)			
Mortality cap	Mortality cap after FSC	Research	Commercial Rockfish Fishery	Commercial Halibut Fishery – Area 12 only	Recreational
15	12	1	6	1	4

1.8.3. Yelloweye Rockfish – outside stock

Based on science information, the Department set out a plan in 2016 for stepped reductions of total Yelloweye Rockfish outside population harvest from the estimated total catch mortality of 287 t in 2014 to a mortality cap of 100 t over 3 years (2016/17 to 2018/19). The mortality cap, which accounts for Indigenous fishing opportunities, was broken out to identify sector-specific mortality caps (see below). Through the process of regular evaluation of the rebuilding plan, science advice on stock status and rebuilding strategies for Yelloweye Rockfish outside population was peer-reviewed in autumn 2019. Based on updated science information, the 2021/22 mortality cap for Yelloweye Rockfish outside population will be increased to 217 t. The mortality cap will maintain the same proportions as the 2016 mortality cap except for survey mortality, which reflects harvest from the previous season in the manner consistent with how other survey mortalities are accounted for.

		Sector-specific mortality caps (tonnes)			
Mortality cap	Mortality cap after FSC	Research	Non-groundfish commercial fishery	Recreational fishery	Commercial groundfish fishery
217	172	16.6	1.2	33	121

Taking into consideration advice provided by fishing interests, the Department implemented management measures and other strategies to help achieve the rebuilding objectives.

The Department is working collaboratively with all fishing interests to achieve for Yelloweye Rockfish outside population conservation and rebuilding. Commercial groundfish fisheries are already subject to 100% at sea and dockside monitoring, which helps ensure accurate recording of all catch. For the salmon troll, recreational, and FSC fisheries, the current emphasis is on increasing awareness and reducing mortality on Yelloweye Rockfish while targeting other species.

Taking into consideration advice provided by stakeholders, the Department reduced the commercial groundfish TAC by 78% between 2015/16 and 2019/20, 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 Rockfish were reduced in 2016/17 from three to two in the north and from two to one in the south, and improvements to reporting and avoidance of

Yelloweye were promoted for the salmon troll fishery (where retention of Yelloweye is already prohibited). In 2018 the recreational daily limit was reduced to zero.

Currently in Outside waters the recreational fishery's daily limit for rockfish is three, of which only one may be Quillback Rockfish, China Rockfish, or Tiger Rockfish, and of which zero may be Yelloweye Rockfish, or Bocaccio. The Outside fishery is open April 1 to November 15. Given that any incidental catch must be discarded, management measures have been implemented to reduced discard mortality. The use of descending devices that return fish to depth may increase the survival of released catch. As of 2019, recreational anglers in vessels shall immediately return all rockfish that are not being retained to the water and to a similar depth from which they were caught by use of an inverted weighted barbless hook or other purpose-built descender device. Management measures are reviewed annually and 2018 annual mortality is estimated at 30 t.

Food, Social, and Ceremonial mortality has not been restricted as part of the Rebuilding Plan but is accounted for within the mortality cap.

1.9. COST BENEFIT ANALYSIS

Stock rebuilding efforts may be associated with socioeconomic costs. Due to the biological characteristics of Bocaccio and Yelloweye Rockfish, rebuilding the stock from a depleted state towards a target reference point will be a long term initiative, and may constrain opportunities to harvest healthy species, given that Bocaccio and Yelloweye Rockfish are caught as part of multi-species fisheries and when targeting other species.

The objectives and management measures developed for rebuilding Bocaccio and Yelloweye Rockfish 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 Rockfish 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 Rockfish stocks, as healthy stocks will allow for the prosecution of relevant fisheries with fewer conservation constraints.

1.10. 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 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.

1.11. EVALUATION AND PERFORMANCE REVIEW

As outlined above 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 and recreational fisheries will continue to be on annual reviews of performance against the mortality caps outlined in this plan. The annual review process consists of the following elements:

- Review 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 or the Groundfish IFMP, both of which are renewed for issuance on February 21 of each year.

To evaluate commercial groundfish catch relative to the mortality caps, current sector year to date catch estimates for each commercial groundfish sector are available here:

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

Current fishery monitoring and catch reporting programs in the recreational and salmon troll fisheries constrain the Department's ability to generate accurate catch estimates for groundfish species in these fisheries. Work is ongoing in the recreational fishery to develop options for more comprehensive estimates of rockfish catch as well as the efficacy of descending devices in Pacific.

2. ALTERNATIVE APPROACH PLANS FOR YELLOWMOUTH ROCKFISH

2.1. FOREWORD

Fisheries and Oceans Canada's (DFO) [*Species at Risk Act*](#) (SARA) [*Listing Policy and Directive for "Do Not List" Advice*](#) requires an Alternative Approach Plan (AAP) be developed when a recommendation is being made to not list a species under SARA. An AAP outlines the measures that will be taken to manage and conserve a species when it is not listed under SARA. As per the reporting requirement in the Species at Risk Act Directive for "Do Not List" Advice, the Regional Director General, Pacific Region, will report to the Policy and Operations Committee on the species status and progress made on the measures identified in the AAP within five years of the posting of a "do not list" decision in Canada Gazette II. The Regional Director General of the Lead Region must also recommend an approach forward for Committee approval.

This section summarizes the recommended alternative approach to managing Yellowmouth Rockfish (*Sebastes reedi*), for the Policy and Operations Committee's consideration. Further details on Yellowmouth Rockfish management are available in Appendix 8: Groundfish Trawl Commercial Harvest Plan of the Groundfish Integrated Fisheries Management Plan (IFMP).

2.2. INTRODUCTION

In 2010, Yellowmouth Rockfish was recommended as "Threatened" by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). A subsequent peer-reviewed stock assessment (DFO 2012) by DFO Science estimates the Yellowmouth Rockfish stock to be in the Healthy Zone under the [Sustainable Fisheries Framework](#) (SFF) policy [A Fisheries Decision-Making Framework Incorporating the Precautionary Approach](#) (PA Framework).

In 2017, the Government of Canada made the [decision not to add Yellowmouth Rockfish to the List of wildlife species at risk](#) set out in Schedule 1 to the *Species at Risk Act*. Adding the species to the List would have resulted in significant and immediate negative socio-economic impacts on the fishing industry due to the triggering of the general prohibitions, and the incremental benefits would likely be small.

2.3. BIOLOGY

Yellowmouth Rockfish belong to the family *Sebastidae* and is distinguished from other rockfish by its black, yellow, and red markings in its mouth. The life history of Yellowmouth Rockfish remains largely unknown, but probably follows similar patterns to other *Sebastes* species, with release of larvae that spend months free-swimming in the pelagic zone before settling to the bottom as juveniles. More information on Yellowmouth biology and distribution, habitat requirements, and stock scenarios can be found online in the Canadian Science Advisory Secretariat publications: <https://waves-vagues.dfo-mpo.gc.ca/Library/347270.pdf>

2.4. STOCK STATUS AND FISHERY OVERVIEW

Science advice indicates that the Yellowmouth Rockfish stock is in the Healthy zone. Harvests in the commercial groundfish fisheries are assumed to be the current primary source of human-induced mortality for Yellowmouth Rockfish. Commercial groundfish catch reconstructions from 1996 to 2010 estimate greater than 98 percent of Yellowmouth Rockfish catch occurs in the groundfish trawl fishery. Yellowmouth Rockfish is an important commercial species in British Columbia (BC), often caught along with Pacific Ocean Perch (*S. alutus*). A trawl fishery for slope rockfish has existed in BC since the 1940s. In 2021, commercial total allowable catch (TAC) for Yellowmouth is 2442 tonnes, approximately 4% of biomass and managed above the upper stock reference point. Harvest information in other commercial, recreation and First Nations' food, social and ceremonial (FSC) is limited.

2.5. ADDITIONAL MANAGEMENT MEASURES

Under DFO's alternative approach, it is proposed that Yellowmouth Rockfish will continue to be managed under the [Fisheries Act](#) as part of the Groundfish IFMP. Sustainable management measures ensure the stock remains in the Healthy Zone under the PA Framework, while imposing fewer socio-economic impacts on Canadians. The Department will also consider the following additional management measures:

1. If the population falls below the Healthy zone, the Groundfish Management Unit will adjust the total allowable catch (TAC) according to updated science information. As Yellowmouth is currently in the Healthy Zone under the PA Framework, no changes to the TAC are proposed at this time.
2. A new stock assessment is anticipated in 2021/2022, after which Science will conduct decadal stock assessment updates to ensure continued implementation of these management measures under the *Fisheries Act*. Pending review of the 2021/2022 assessment and current stock status, management measures will be revised as required.
3. Pending new science advice, trends in both survey biomass indices and commercial CPUE will be reviewed annually by Science and Fisheries Management as part of the annual groundfish management work planning process.

These proposed management measures are considered sufficient to provide adequate protection for the species and maintain its status in the Healthy Zone. Outcomes from the application of this plan will be reviewed periodically by Fisheries Management to determine if changes to the approach are warranted.

Appendix 10: Fishery Closures for Groundfish Hook and Line Fisheries

TABLE OF CONTENTS

1.	ROCKFISH CONSERVATION AREAS	2
2.	STRAIT OF GEORGIA AND HOWE SOUND GLASS SPONGE REEF MARINE REFUGES 2	
3.	HECATE STRAIT AND QUEEN CHARLOTTE SOUND GLASS SPONGE REEFS MARINE PROTECTED AREA	3
3.1.	Northern Reef Marine Protected Area	3
3.2.	Central Reefs Marine Protected Area	4
3.3.	Southern Reef Marine Protected Area	4
3.4.	Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Area Zoning and Management Measures	4
4.	OFFSHORE PACIFIC SEAMOUNTS AND VENTS CLOSURE	9
5.	SGAAN KINGHLAS-BOWIE SEAMOUNT (SK-B) MPA	10
6.	GWAII HAANAS NATIONAL MARINE CONSERVATION AREA	12
7.	OTHER FISHERY CLOSURES	13
7.1.	Strait of Georgia Lingcod	13
7.2.	Georgia Strait and WCVI Closures	13
7.3.	Haida Gwaii	15
7.4.	Swiftsure Commercial	16
7.5.	Swiftsure Recreational	16
7.6.	Seasonal Closures	17

1. ROCKFISH CONSERVATION AREAS

There are 162 Rockfish Conservation Areas (RCAs) in British Columbia, covering roughly 4,350km² of the Canadian Pacific Coast. These areas are closed to a range of recreational and commercial fisheries to protect inshore rockfish and their habitat.

DFO is currently undertaking a multi-year review of the conservation effectiveness of RCAs, including meeting the national criteria and standards for marine refuges to better conserve sensitive areas and contribute towards Canada's Marine Conservation Targets (MCT). To meet these standards, the risks to inshore rockfish, their habitat, and benthic communities will need to be avoided or mitigated. Peer-reviewed science advice also recommends that boundary changes to some RCAs will improve their spatial design by better capturing rockfish habitat features. RCAs in the Northern Shelf Bioregion have been selected for the first phase of engagement to align with the MPA network planning process in that area. Workshops with First Nations and stakeholders and online consultations were held in 2019. A summary of what DFO heard is available online at: <https://www.pac.dfo-mpo.gc.ca/consultation/ground-fond/rca-ac/2020-heard-entendu-eng.html#6>. There will be more opportunities to provide feedback on Rockfish Conservation Areas in the Northern Shelf Bioregion in the near future. DFO is also planning to review Rockfish Conservation Areas in other regions of British Columbia at a later date.

Further information on RCAs and the boundary proposals are available online at: <http://dfo-mpo.gc.ca/rockfish-conservation> or for further information on this, please contact DFO.RCA-ACS.MPO@dfo-mpo.gc.ca.

2. STRAIT OF GEORGIA AND HOWE SOUND GLASS SPONGE REEF MARINE REFUGES

Effective April 1st, 2019 all commercial, recreational and Indigenous food, social and ceremonial (FSC) bottom-contact fishing activities for prawn, shrimp, crab and groundfish, as well as the use of downrigger gear for recreational salmon trolling (restricted via Condition of Licence) are prohibited within portions of Subareas 28-2 and 28-4 to protect nine Howe Sound glass sponge reefs, as marine refuges.

This includes prohibition of the following fishing activities:

- prawn and crab by trap
- shrimp and groundfish by trawl
- groundfish by hook and line
- use of downrigger gear in recreational salmon trolling

These eight closures are in addition to the nine areas closed to all commercial, recreational and Indigenous FSC bottom-contact fishing activities in the Strait of Georgia and Howe Sound, established in 2015. In 2019, nine remaining areas in Howe Sound were ground-truthed to assess their ecological significance. The presence of five new live glass sponge reefs has been confirmed. A sixth site within an existing reef complex where only dead reef habitat was observed may have recovery potential. Consultations are underway on restrictions to all commercial, recreational and Indigenous FSC

bottom-contact fishing activities, and the use of downrigger gear for recreational salmon troll in these reefs, with new management measures anticipated in-season in Spring 2021.

For further information on this, please contact Lindsay Klopp at Lindsay.Klopp@dfo-mpo.gc.ca.

Current closure locations and more information are available at: <https://www.dfo-mpo.gc.ca/oceans/ceccsr-cerceef/closures-fermetures-eng.html>

3. HECATE STRAIT AND QUEEN CHARLOTTE SOUND GLASS SPONGE REEFS MARINE PROTECTED AREA

The Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Area (Hecate MPA) was designated under the *Oceans Act* in February 2017 to conserve the biological diversity, structural habitat and ecosystem function of the glass sponge reefs. Under the Hecate MPA Regulations, each glass sponge reefs Core Protection Zone (CPZ) is closed to all commercial, recreational, and Aboriginal fishing. Anchoring, cable installation, maintenance and repair are also prohibited in the CPZ. The Vertical Adaptive Management Zone (VAMZ) and Adaptive Management Zone (AMZ) are currently closed to all commercial bottom contact fishing activities for prawn, shrimp, crab and groundfish, as well as for midwater trawl for groundfish. For an illustration of the spatial relationship among the CPZs, AMZs, and VAMZs, see Figure 2. Additional information can be found in IFMP section 5.2.1. For more information, the Hecate MPA Regulations are available online at: <http://www.dfo-mpo.gc.ca/oceans/mpa-zpm/hecate-charlotte/index-eng.html>

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.

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 Core Protected Zone

The Northern Reef CPZ (described below) includes those waters below a depth of 100 meters below 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 CPZs

Both Zone 'A' and Zone 'B' of the Central Reef CPZs (described below) include those waters below a depth of 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 CPZ

The Southern Reef CPZ (described below) includes those waters below a depth of 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
to a point at	51°15'52.2" N	128°54'20.4" W
then back to the point of commencement.		

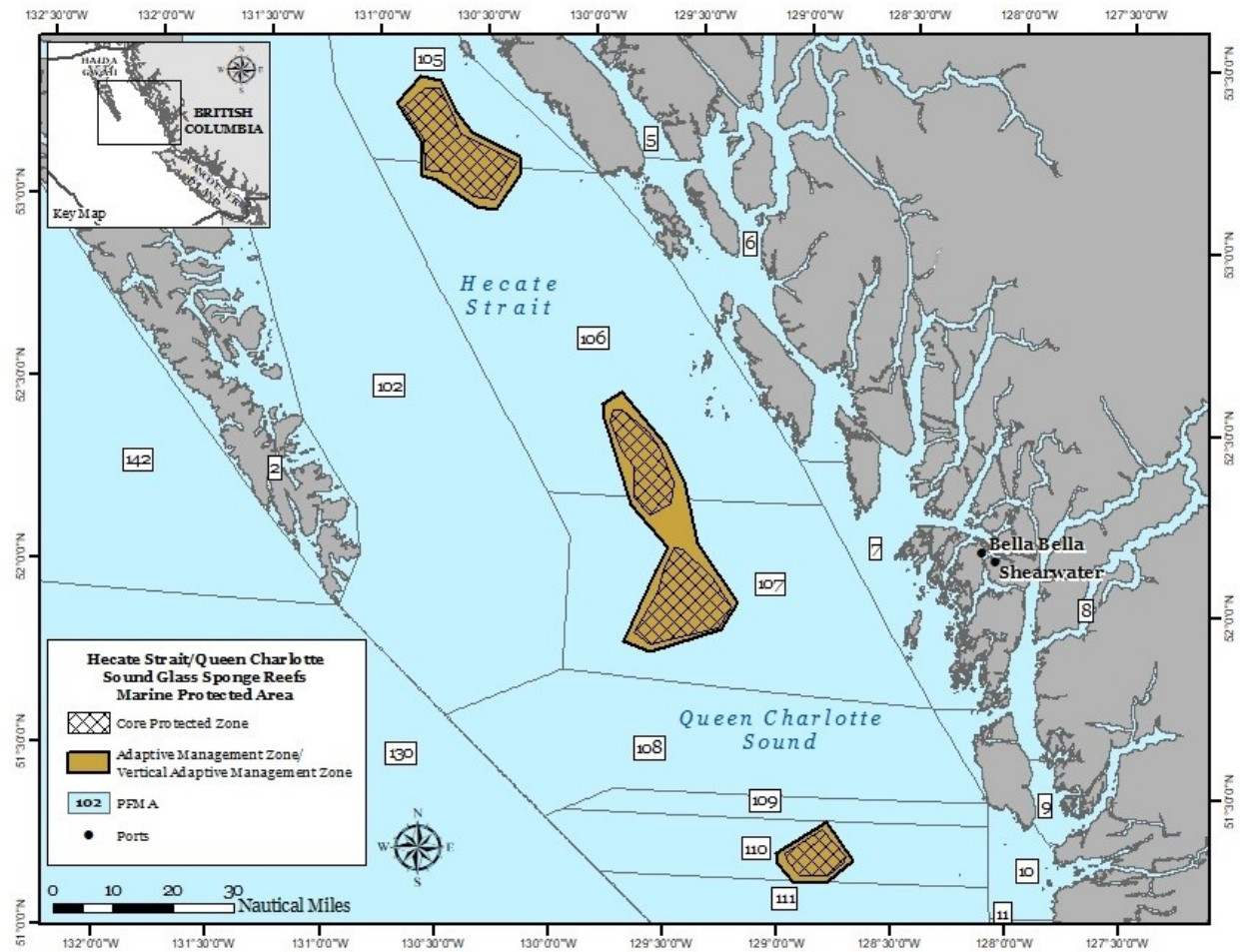


Figure 1. Hecate Strait and Queen Charlotte Sound Glass Sponge Reef Marine Protected Areas.

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

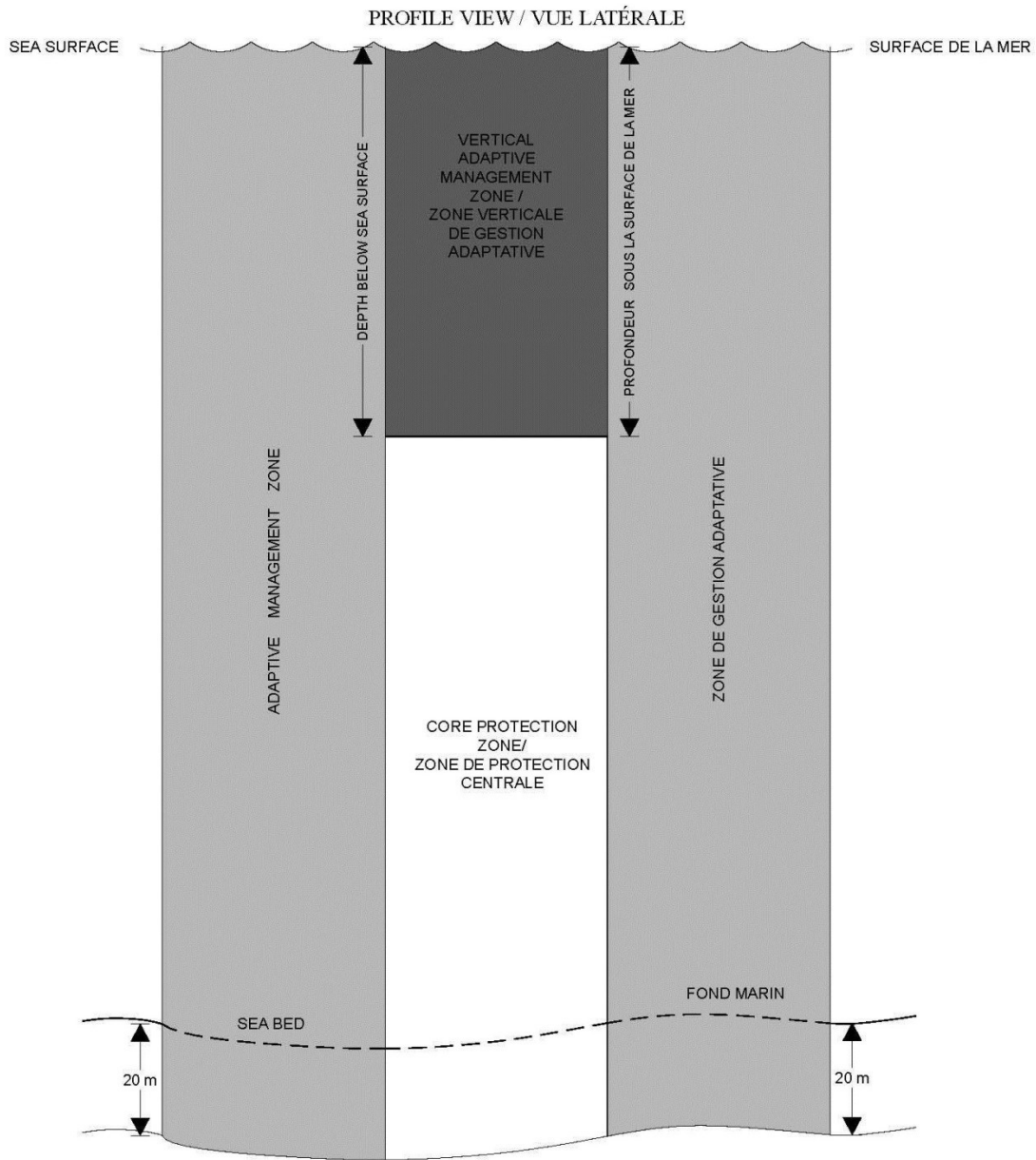


Figure 2. Illustration delineating the Core Protection Zone, the Adaptive Management Zone and the Vertical Adaptive Management Zone.

4. OFFSHORE PACIFIC SEAMOUNTS AND VENTS CLOSURE

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. Additional information can be found in IFMP section 5.2.1 More information on the Offshore Pacific AOI can be found here: <https://www.dfo-mpo.gc.ca/oceans/aoi-si/offshore-hauturiere-eng.html>

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

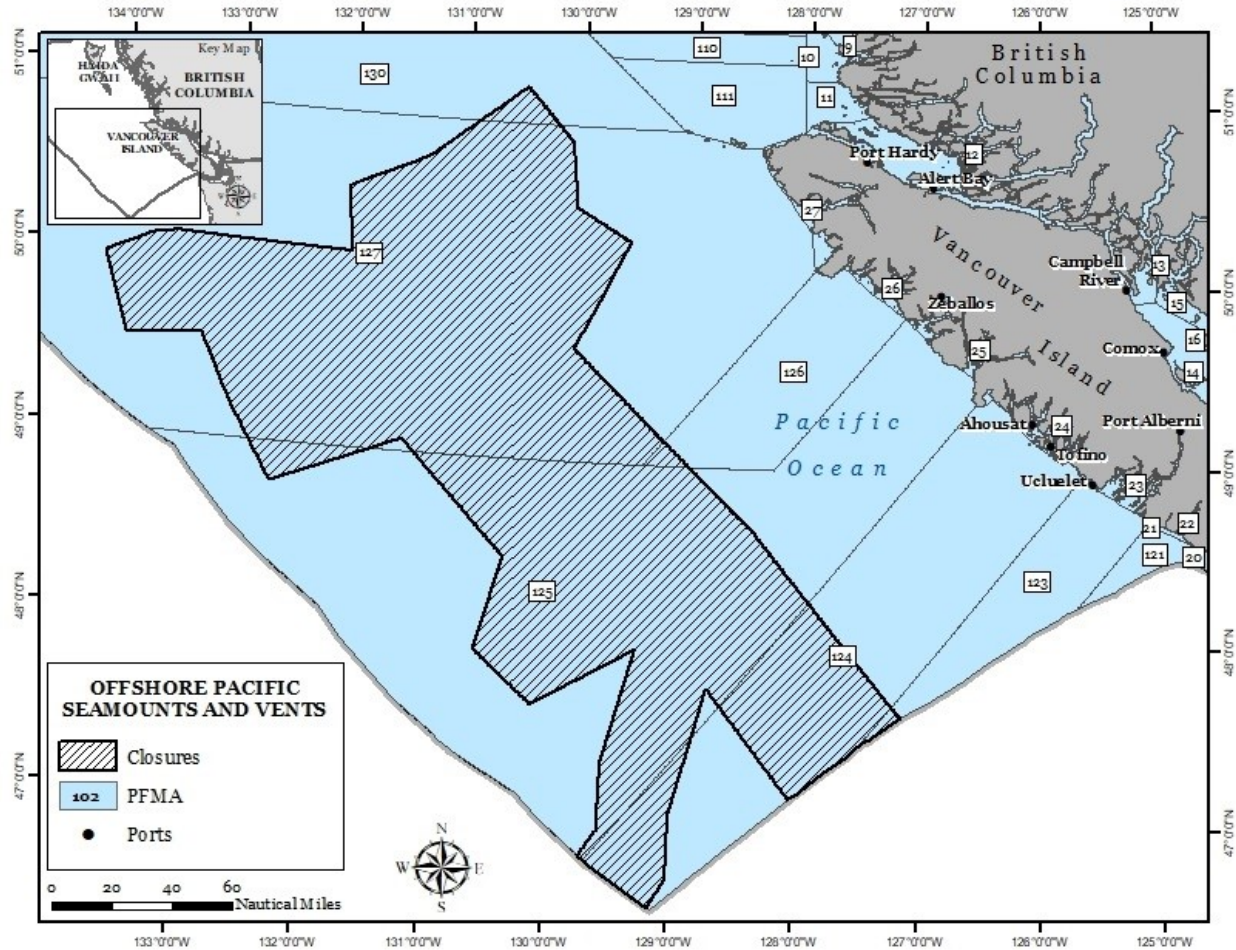


Figure 3: Offshore Pacific Seamounts and Vents Fishery Closure

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 5.2.1. For more information, the SK-B MPA Regulations are available online at: <https://www.dfo-mpo.gc.ca/oceans/mpa-zpm/bowie-eng.html>

Those waters of subareas 101-1 and 142-2 and is described as bounded by a series of rhumb lines drawn from a point:

commencing at	53°03'07.6" N	135°50'25.9" W	
to a point at	53°16'20.9" N	134°59'55.4" W	
to a point at	53°39'49.2" N	135°17'04.9" W	
to a point at	53°39'18.0" N	135°53'46.5" W	
to a point at	53°52'16.7" N	136°30'23.1" W	EEZ Boundary
Then following the EEZ Boundary to a point at	53°49'19.6" N	136°47'33.1" W	EEZ Boundary
to a point at	53°40'02.5" N	136°57'03.5" W	
to a point at	53°13'59.2" N	136°10'00.0" W	
then back to the point of commencement.			

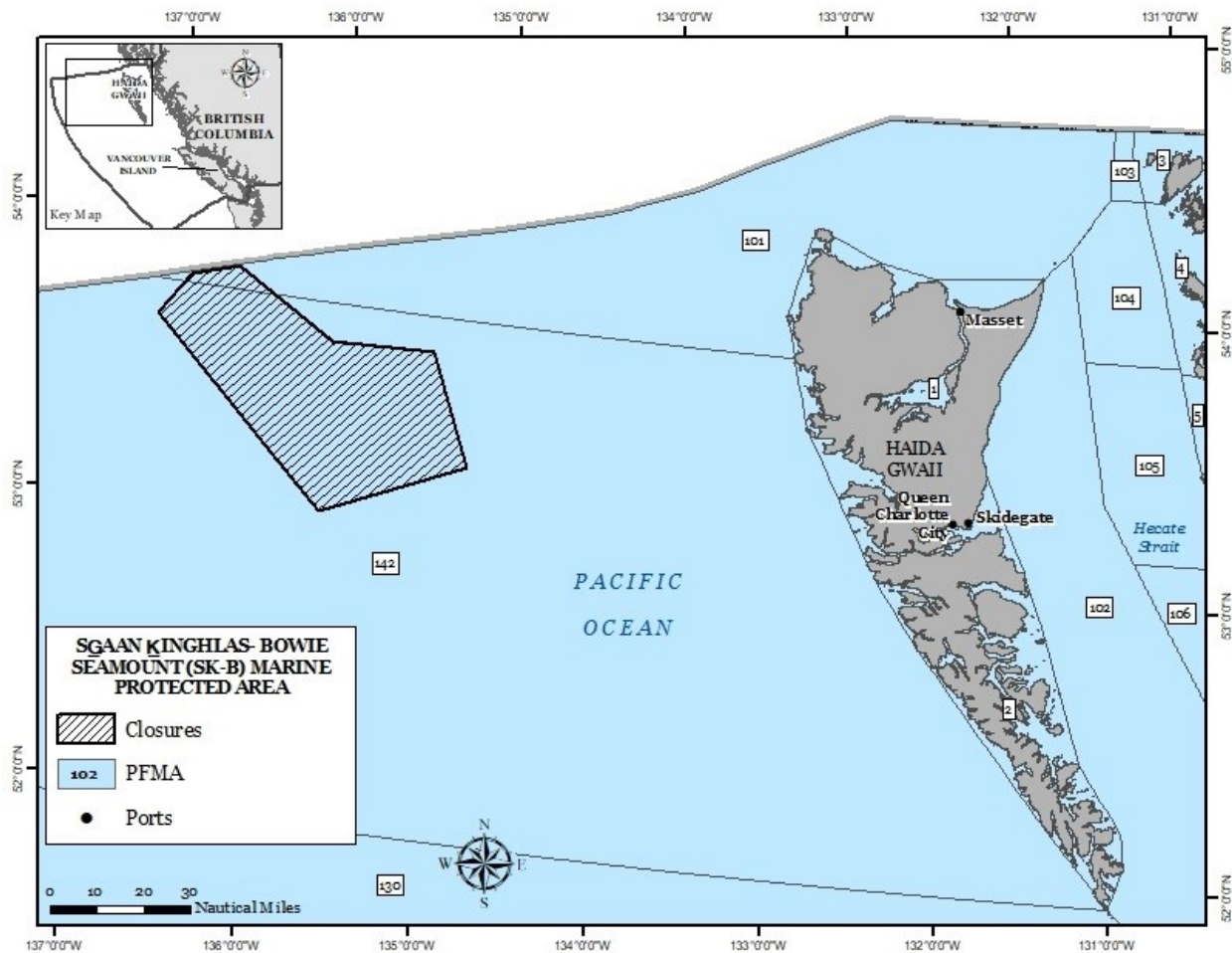


Figure 4. Sgaan Kinghlas-Bowie Seamount (SK-B) MPA.

6. GWAII HAANAS NATIONAL MARINE CONSERVATION AREA

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 describes 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 is prohibited. The zoning plan can be found at: <https://www.pc.gc.ca/en/pn-np/bc/gwaiihaanas/info/consultations/gestion-management-2018>. The fishery notice, which describes the strict protection zones, can be found at: https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=222098&ID=all.

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.

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.

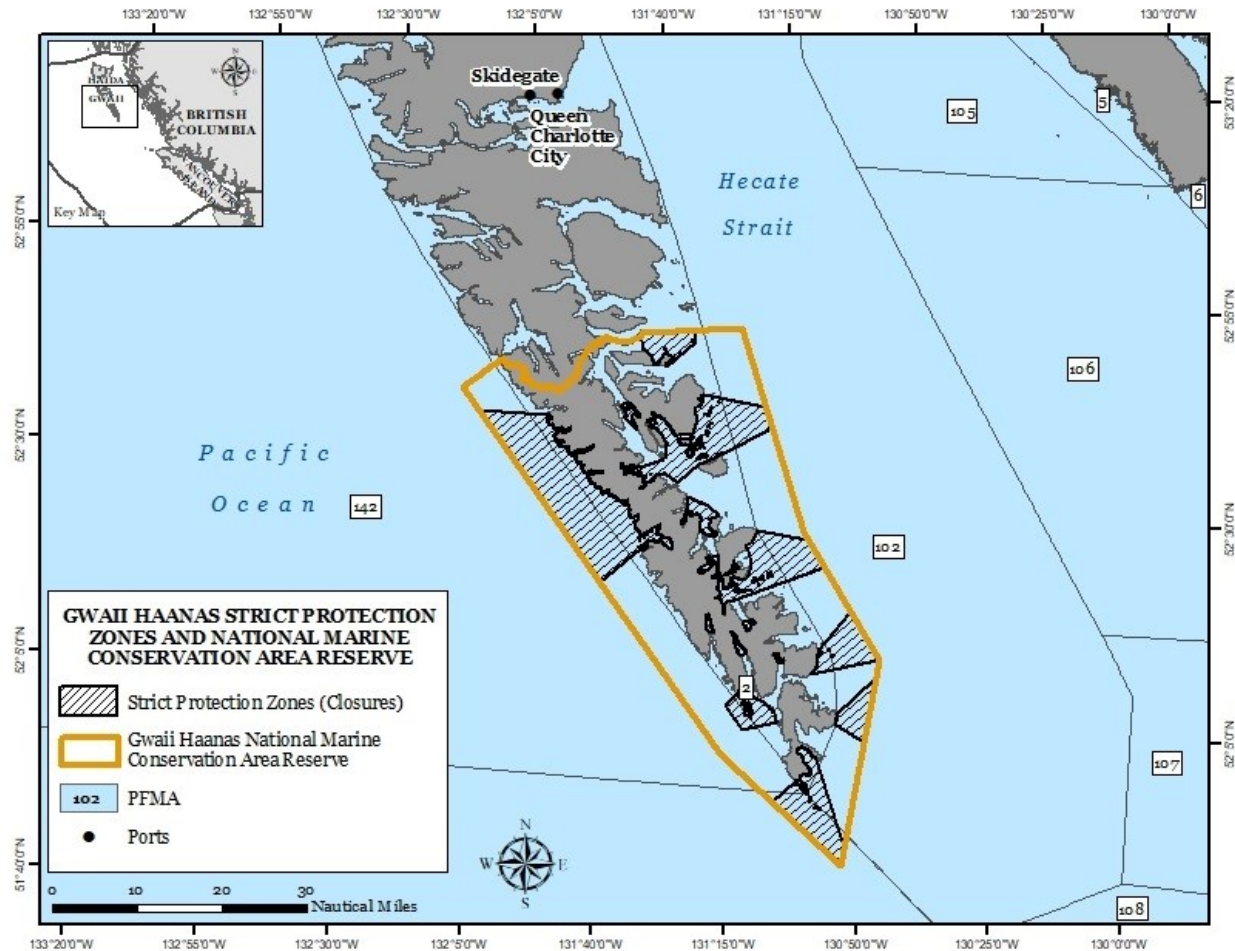


Figure 5. Gwaii Haanas National Marine Conservation Area Reserve and Haida Heritage Site and Gwaii Haanas Strict Protection Zones.

7. OTHER FISHERY CLOSURES

7.1. Strait of Georgia Lingcod

Closed year-round to the retention of Lingcod in the hook and line commercial fisheries in Areas and Subareas 13 to 19, 20-5 to 20-7, 28 and 29.

7.2. Georgia Strait and WCVI Closures

Area/Subarea	Rationale for Closure
13-2 to 13-9, 13-11 and 13-27	Closed to all commercial fishing.

Area/Subarea	Rationale for Closure
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.
22	Protect shallow fresh water environment.
28-1 to 28-14	Designated sport-fishing areas.
29-7 to 29-17	Protect shallow water environment and Fraser River.

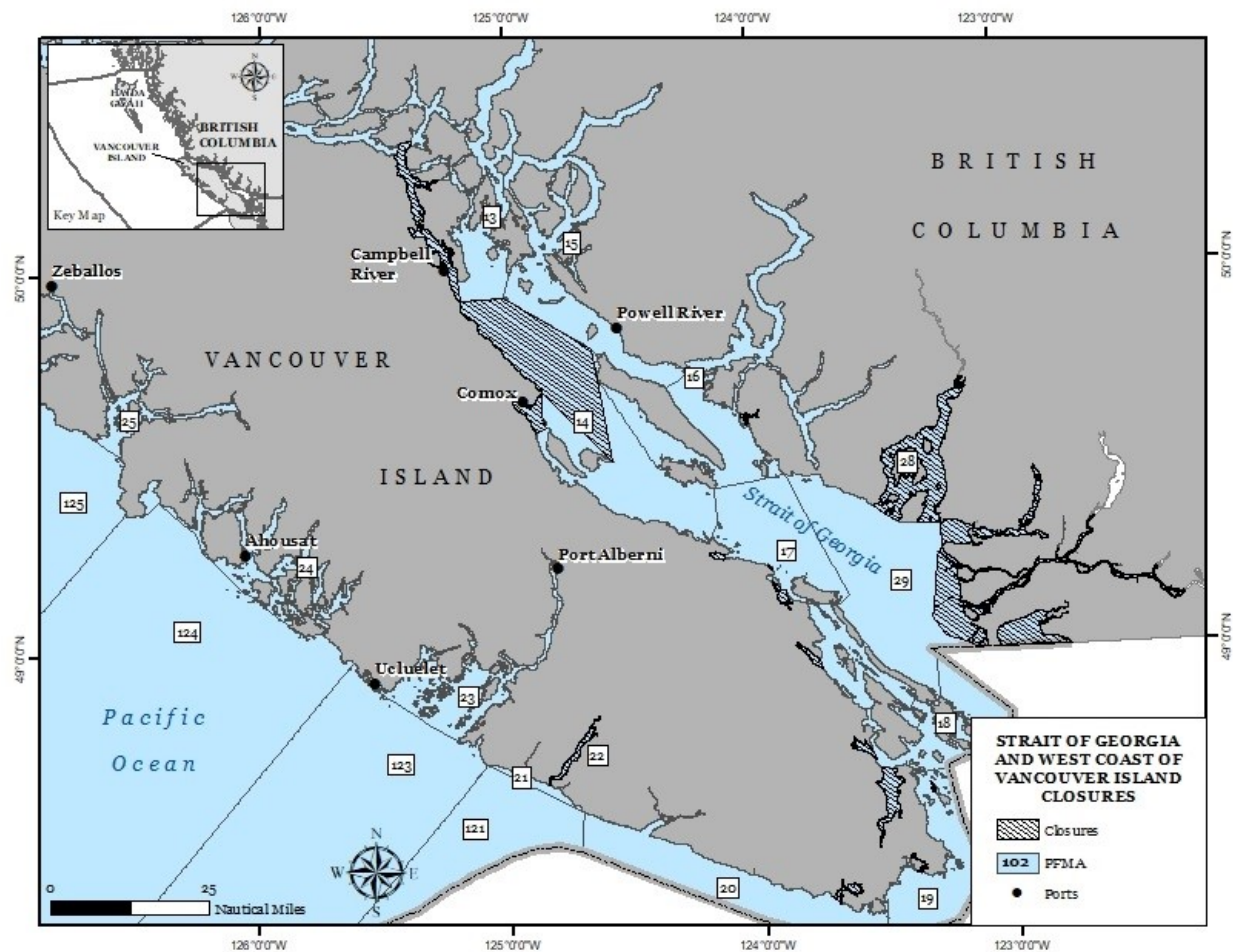


Figure 6. Georgia Strait and WCVI closures.

7.3. Haida Gwaii

Subareas 2-1, 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

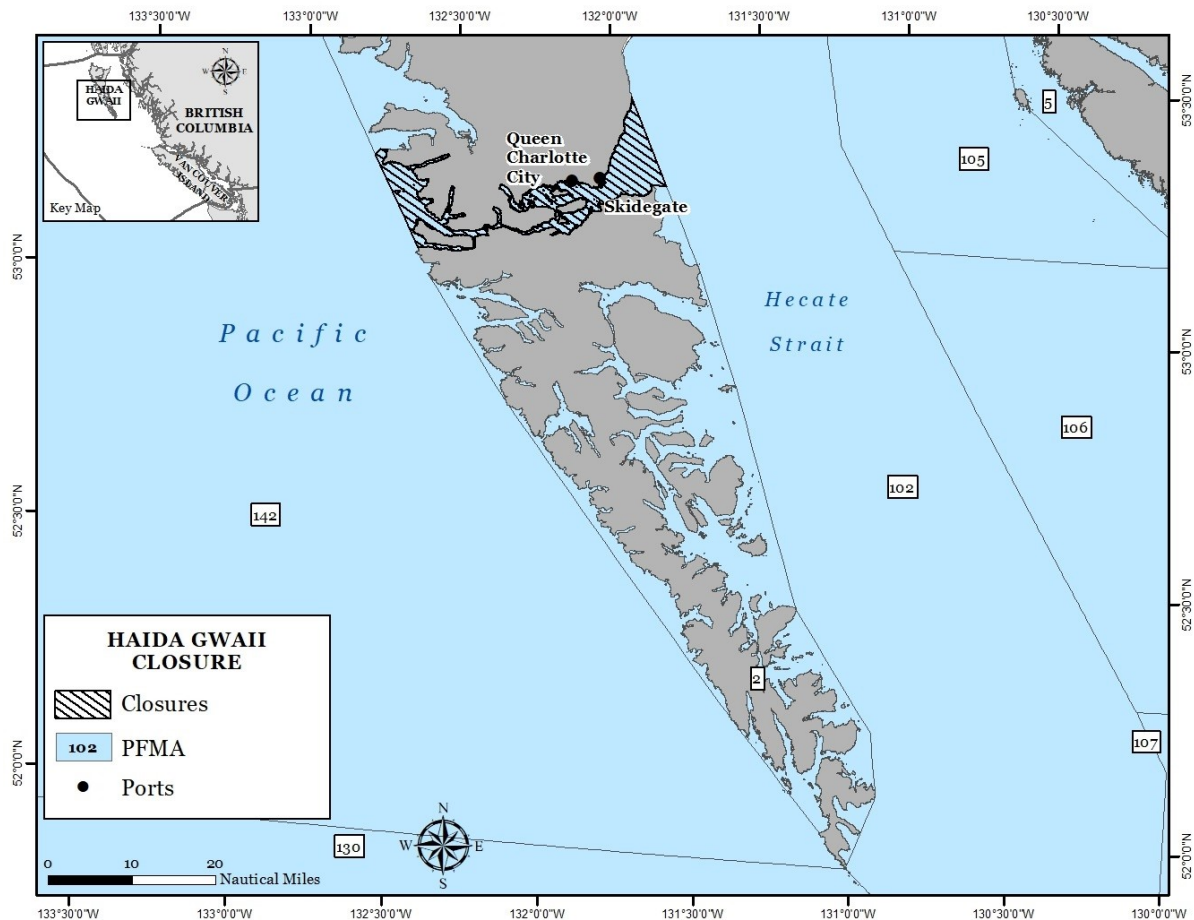


Figure 7. Haida Gwaii closed areas.

7.4. Swiftsure Commercial

Those portions of Subareas 121-1 and 121-2 inside a line:		
commencing at a point in water located at	48°34.000' N	125°06.000' W
due east to a point in water located at	48°34.000' N	124°54.200' W
thence southeasterly to a point in water at	48°29.618'N	124°43.553'W
thence due west to point in water located at		
	48°29.275'N	124°58.000'W
and thence northwesterly back to the point of commencement.		

7.5. Swiftsure Recreational

Those portions of Subareas 121-1 and 121-2 inside a line:		
that begins at	48°34.000' N	125°06.000' W
then true east to	48°34.000' N	124°54.200' W
then southeasterly to the International Boundary, outer perimeter at	48°29.618' N	124°43.553' W
then westerly following the International Boundary outer perimeter to		
	48°29.605' N	124°56.190' W
then northwesterly to the beginning point.		

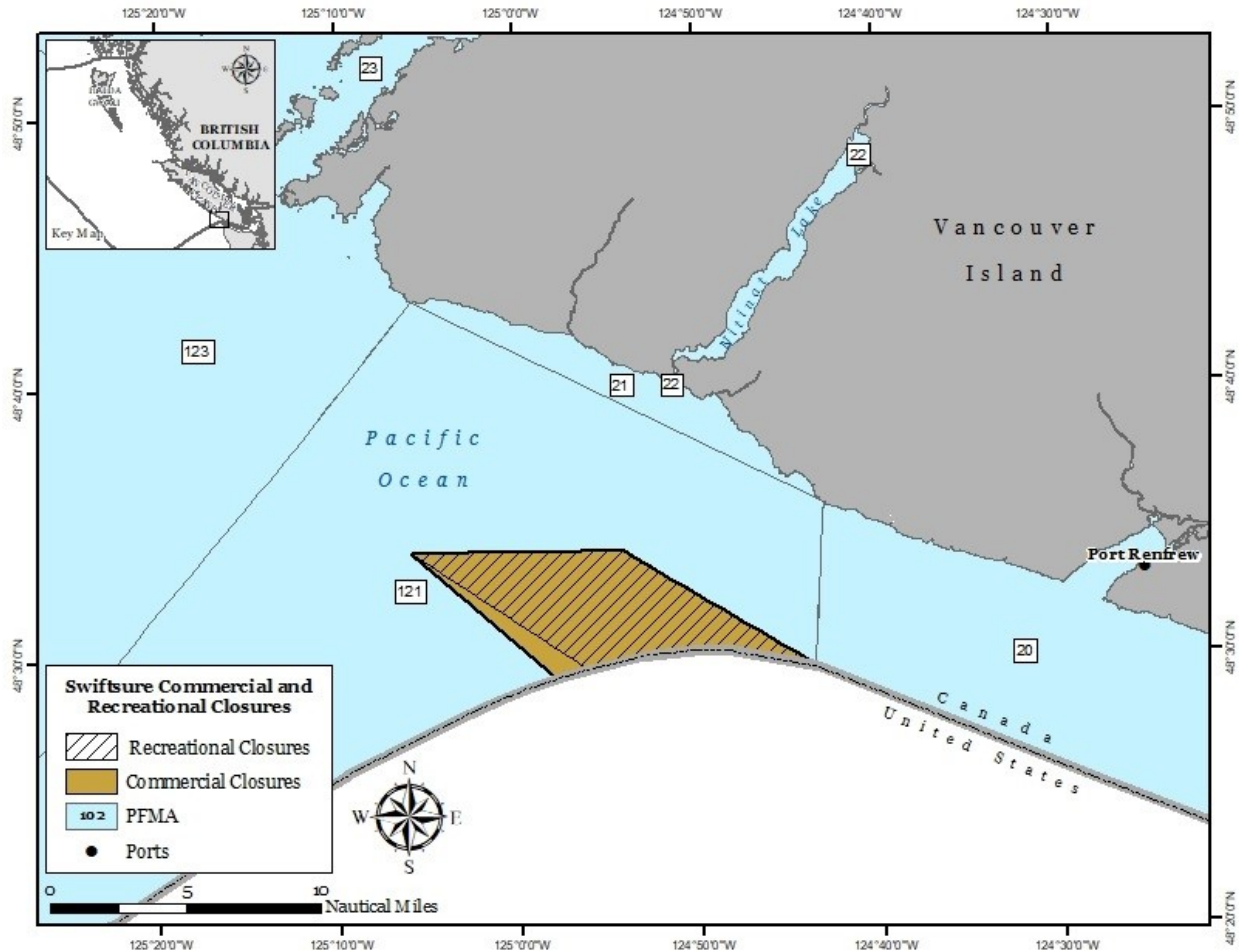


Figure 8. Swiftsure closure locations.

7.6. Seasonal Closures

7.6.1. 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.		

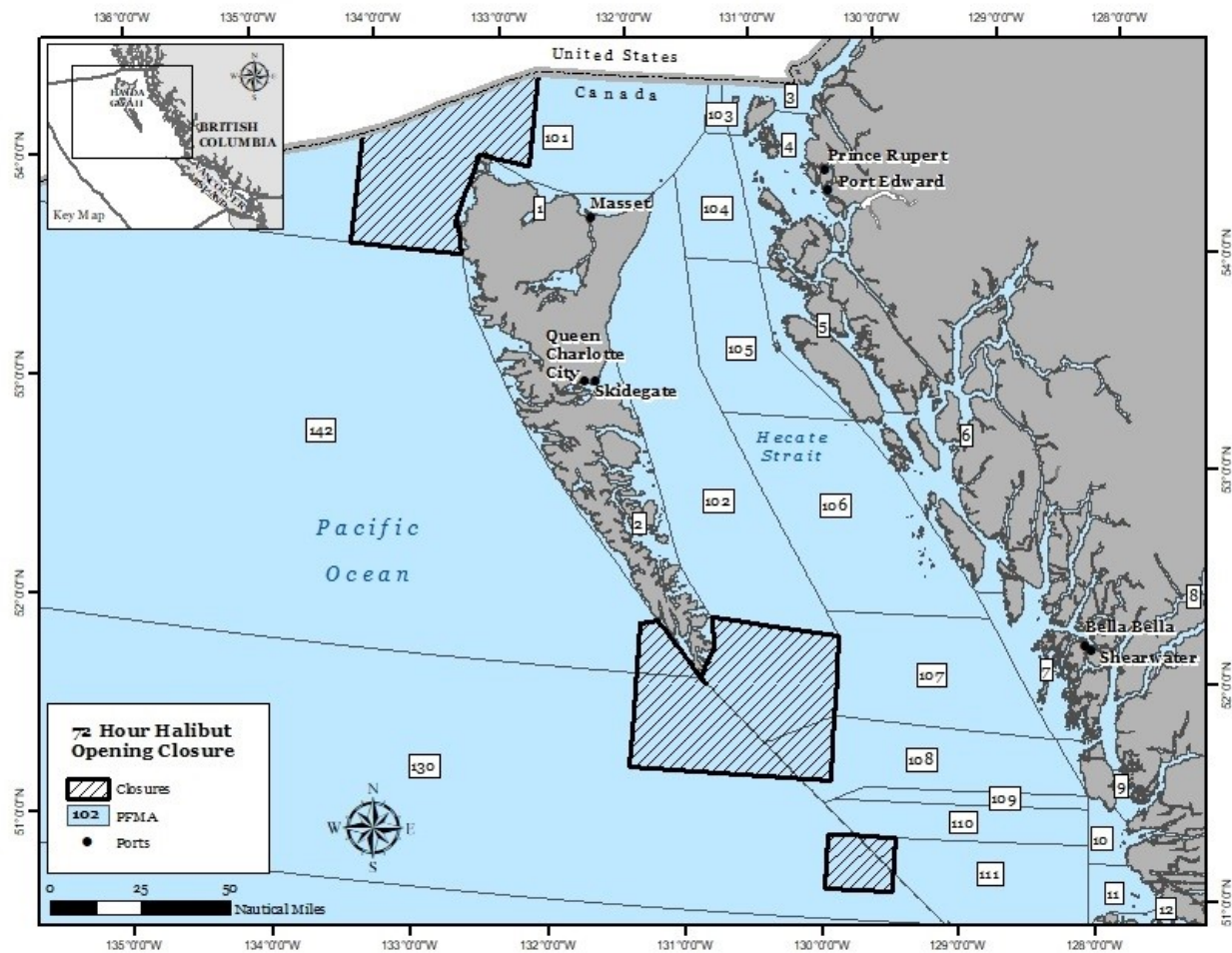


Figure 9. Map of 72-hour “Halibut opening” closure areas

7.6.2. Southern Resident Killer Whale Seasonal Closure

Southern Resident Killer Whales – Management Measures to Address Reduced Prey Availability, and Physical and Acoustic Disturbance. Please refer to IFMP section 5.1.6 and to Fishery Notices for additional information.

Appendix 11: Fishing Vessel Safety

TABLE OF CONTENTS

1.	OVERVIEW – FISHING VESSEL SAFETY	2
2.	IMPORTANT PRIORITIES FOR VESSEL SAFETY	3
2.1.	Fishing Vessel Stability	3
2.2.	Emergency Drill Requirements	5
2.3.	Cold Water Immersion.....	6
2.4.	Other Issues	7
3.	WORKSAFEBC	8
4.	FISH SAFE BC	10
5.	TRANSPORTATION SAFETY BOARD	11

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. The Transportation Safety Board is an independent agency that advances transportation safety by investigating selected occurrences in the air, marine, pipeline and rail modes of transportation including fishing vessel occurrences. 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).

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, adequate number of properly trained crew, 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 (Subsidized rate for BC commercial fishers provided)
- Fish Safe – Safest Catch program – **FREE** for BC commercial fishers
- Fish Safe *Safe At Sea* DVD Series – Fish Safe
- Fish Safe Stability Handbook – *Safe at Sea* and *Safest Catch* – DVD Series
- Fish Safe *Safest Catch* Log Book
- Fish Safe *Safety Quik*
- First Aid training
- Radio Operators Course (Subsidized rate for BC commercial fishers provided)
- Fishing Masters Certificate training
- Small Vessel Operators Certificate training
- Publications:
 - *Gearing Up for Safety* - WorkSafeBC

- 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>)
- Safety Issues Investigation into Fishing Safety in Canada report can be accessed: <https://www.tsb.gc.ca/eng/rapports-reports/marine/etudes-studies/M09Z0001/M09Z0001.html>

For further information see:

<https://tc.canada.ca/en/marine-transportation>

www.fishsafebc.com

www.worksafebc.com

www.tsb.gc.ca/eng/rapports-reports/marine/index.html

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 preparedness, 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 to correct ballasting. Fish harvesters must be familiar with their vessel's centre of gravity, the effect of liquid free surfaces on stability (e.g. 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 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.

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, new regulations pertaining to stability assessments to be performed by a competent person came into effect, as follows:

- A new fishing vessel that has a hull length of more than 9 m where the vessel construction was started or that a contract was signed for the construction after July 13, 2018;
- 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 vessel 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
- For an existing fishing vessel that is not required to undergo a stability assessment, the owner shall be capable of demonstrating that their vessel has 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
- Two good resources can be found here: [TP 15393 - Adequate stability and safety guidelines for fishing vessels \(2018\)](#) and [TP 15392 – Guidelines for fishing vessel major modification or a change in activity \(2018\)](#)

Further, the new Regulation requires a “Stability Notice” to be developed after a stability assessment. This notice includes a simple diagrammatic of the vessel, its tanks and fish holds, or deck storage as the case may be. It is intended to assist fishing vessel crews in quickly determining the safe carriage limits of the vessel without having to reference a complicated Trim and Stability Book.

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 2019, TC provided an updated [SSB 03/2019](#), 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*, [M17P0052](#) – *Miss Cory*, [M18P0073](#) – *Western Commander* and [M18A0425](#) – *Charlene A*.

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 Regulations (OHSR) require owners of fishing vessels to provide documentation on board, readily accessible to crew members, which describes vessel characteristics, including stability.

Fish Safe has developed a code of best practices for the food and bait/roe herring fisheries and the prawn fishery: These Best Practices are available on Fish Safe's website for convenient download here: <https://www.fishsafebc.com/best-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 – office: (604) 261-9700 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.

To assist fishers in meeting their crew training requirements, Fish Safe has created a downloadable '*New Crew Orientation Form and How To Guide*' available on Fish Safe's website here: <https://www.fishsafebc.com/downloadable-tools>

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 crew member to cover all emergencies, including the following: crew member overboard, fire on board, flooding of the vessel, abandoning ship, and calling for help. Fishing vessel masters are also required to conduct emergency drills at the start of each fishing season, when there is a change of crew, and at periodic intervals to ensure that crewmembers are familiar with emergency procedures.

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).

Under the recently amended (June 2019) OHS Regulation, section 24.96.1, a crewmember must wear a PFD or lifejacket when on board a fishing vessel that has no deck or deck structure or when on the deck of a fishing vessel that has a deck or deck structure.

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.

Section 8.26, which requires workers to wear a PFD or lifejacket when working “under conditions which involve a risk of drowning”, would continue to apply to fishing crewmembers and other workers (e.g. when they are working on shore, docks and other vessels).

The specific requirements can be found on WorkSafeBC's PFD Primer provided on Fish Safe's website here: <https://www.fishsafebc.com/cold-water-survival>.

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. The TSB notes that there have been several recent occurrences on board vessels not equipped with an EPIRB, and that were either unable or did not use any other means of emergency signaling distress (e.g. M14P0121, M14A0289, M150189, M16A0327, M18A0076, M18A0303, M18A0078, M18P0184, M19A0082, M19P0242, M20A0258, M20A0160) which resulted in 24 fatalities.

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. Further information is available at [Radio Aids to Marine Navigation General](#)

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 DSC can be found here: [TC DSC Safety Bulletin](#). Questions regarding Coast Guard DSC capabilities can be

obtained by contacting your local MCTS centre (Prince Rupert MCTS (250)627-3070 or Victoria MCTS (250)363-6333).

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 either Prince Rupert MCTS (250)627-3070 or Victoria MCTS (250)363-6333 or from the Coast Guard website: [MCTS Radio Aids to Marine Navigation Traffic](#).

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, the requirement to wear personal flotation devices (PFDs), 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, eye and face protection, limb and body protection and personal flotation devices (PFDs) when working on the dock. Part 12 addresses issues related to tools, machinery and equipment, including safeguarding. Part 15 addresses issues related to rigging.

Both owners and masters of fishing vessels are considered to be employers. Under the *Workers Compensation Act* and the OHS Regulation (OHSR) they have varying and overlapping duties and responsibilities. Masters, because they have the most control during fishing and related activities, are considered to be the employer with primary responsibility for the health and safety of the crew.

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/ Richmond/Delta	(604) 244-6477
Mark Lunny	Courtenay	(250) 334-8732
Cody King	Courtenay	(250) 334-8733
Gregory Matthews	Courtenay	(250) 334-8734

Paul Matthews	Courtenay	(250) 334-8741
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, OHS Consultation and Education Services, at (604) 233-4062 or by email: tom.pawlowski@worksafebc.com or Tim Pryde, OHS Consultant at (604) 802-2954 or by email: tim.pryde@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.

As referenced throughout the above documentation, Fish Safe provides a broad range of courses, programs and services that are either free for BC commercial fishers or highly subsidized.

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 pacific region 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 pacific region released one investigation report:

- the capsizing of the trawl [*Caledonian*](#) and subsequent fatalities.

In 2018 the TSB pacific region 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

In 2020 the TSB pacific region is currently investigating the fatal accident involving the [*Arctic Fox II*](#) on August 11.

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 harvesters 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 harvesters still do not wear them. TC regulations currently require that PFDs be worn

only if harvesters identify a risk, however; you never know when you could end up in the water. So the TSB is recommending to TC 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. In June 2019, WorksafeBC amended its fishing regulation related to the use of PFDs. Under the amendments, crewmembers must wear a PFD or lifejacket when on board a fishing vessel that has no deck or deck structure, or when on the deck of a fishing vessel that has a deck or deck structure. Crewmembers are not required to wear lifejackets or PFDs below deck or when inside a deck structure where there is risk of entrapment. This amendment removes the need for a risk of drowning to be present before a PFD must be worn.

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.bst-tsb.gc.ca/eng/surveillance-watchlist/marine/2018/marine.html>

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.

Recently the TSB produced a Safe at Sea: Activity book on fishing safety intended for the next generation of fish harvesters (ages 4-7). Download a copy.

[www.tsb.gc.ca > eng > medias-media > prudence-safe > safe-at-sea](http://www.tsb.gc.ca/eng/medias-media/prudence-safe/safe-at-sea)

Glenn Budden, Investigator, Marine - Fishing Vessels
Transportation Safety Board of Canada
4 - 3071 No. 5 Road
Richmond, BC, V6X 2T4
Telephone: (604) 619-6090
Email: glenn.budden@tsb-bst.gc.ca

Appendix 12: Groundfish Advisory Committee Contacts

TABLE OF CONTENTS

1.	GROUND FISH ADVISORY COMMITTEE CONTACTS.....	2
1.1.	Halibut Advisory Board (HAB).....	2
1.2.	Groundfish Trawl Advisory Committee (GTAC).....	6
1.3.	Sablefish Advisory Committee (SAC).....	9
1.4.	Groundfish Hook and Line Sub-committee (GHLSC)	11
2.	COMMERCIAL INDUSTRY CAUCUS (CIC)	13
3.	GROUND FISH INTEGRATED ADVISORY BOARD (GIAB)	16

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)

ELECTED COMMERCIAL MEMBERS			
Name	Address	Phone	Email Address
Terry Henshaw Annieville Halibut Association	9155 Hardy Road Delta, BC V4C 7V8	Phone (604) 581-9230 Cell (604) 341-3809	tonic1949@gmail.com
John Danroth Alternate, Annieville Halibut Association	23290-34a Avenue, Langley, BC V2Z 2H6	Phone: 604 290 3172	johndanroth@gmail.com
Bob Carpenter Annieville Halibut Association	2510 Lynburn Crescent, Nanaimo, V9S 3T4	(250) 616-8172	carpybob@icloud.com
Ed Peniuk Alternate, Annieville Halibut Association	3760 Norwell Drive, Nanaimo, BC V9T 1Y1		kpeniuk@shaw.ca
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 B.C. Halibut Longliners Association			
Andy Olson B.C. Halibut Longliners Association			executive.director@shoal.ca
Alternate TBA B.C. Halibut Longliners Association			

Quinton Sample Pacific Coast Fishing Vessel Owners' Guild	1939 Marten Ave, Comox, BC	(250) 218-1835	quintonsample@gmail.com
Alternate TBA Pacific Coast Fishing Vessel Owners' Guild			
Angus Grout Pacific Coast Fishing Vessel Owners' Guild		Phone (250) 339-7753 Cell (250) 898-1250	rommel@telus.net
David Boyes Alternate, Pacific Coast Fishing Vessel Owners' Guild	499 Powerhouse Road Courtenay, BC V9N 9L1	Phone (250) 338-2188 Fax (250) 338-2183	mcboyes@telus.net
Lyle Pierce Pacific Coast Fishing Vessel Owners' Guild	2331 Seabank Road, Courtenay, BC	Phone (250) 339-9508 Cell (250) 897-5409	lyle_p@shaw.ca
Alternate TBA Pacific Coast Fishing Vessel Owners' Guild			
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 Nightingale Alternate, Steveston Halibut Association	4420 Maple Lane Ladner, BC V4K 2Z5	Phone (604) 946-0947 Fax (604) 946-0947 Cell (604) 862-3479	jnightingale@dccnet.com
Robert Hauknes Independant		Cell (778) 386-2472	robert_hauknes@hotmail.com
Jordan Belveal Independant			jordan@jordanbelveal.com
Dave Renwall Alternate, Independent			reefraider1@gmail.com
APPOINTED MEMBERS¹			
Name	Address	Phone	Email Address
Kilian Stehfest Environmental organizations	219 – 2211 W. 4 th Avenue, Vancouver BC V6K 4S2		kstehfest@davidsuzuki.org
Cliff Atleo Nuu-chah-nulth First Nations			c.atleo71@shaw.ca

¹ Appointed members subject to change following 2021 appointment process

Darryl Tate Alternate, Nuu-chah-nulth First Nations		(250) 745-3333	dtate@ditidaht.ca
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
Shawn Cowpar The Council of Haida Nation		(250) 637-1551	shawn.cowpar@haidanation.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.wilson@iphc.int
Dr. Basia Hutniczak Alternate, International Pacific Halibut Commission	2320 West Commodore Way, Suite 300 Seattle, WA USA 98199-1287	Phone (206) 634-1838 Fax (206) 632-2983	Barbara.hutniczak@iphc.int
Paul Ryall International Pacific Halibut Commission Commissioner	#200-401 Burrard Street Vancouver, B.C. V6C 3S4		paul.ryall@dfo-mpo.gc.ca
Neil Davis International Pacific Halibut Commission Commissioner			neil.davis@dfo-mpo.gc.ca
Peter de Greef International Pacific Halibut Commission Commissioner	1650 Eagle Way North Saanich, BC V8L 6B2	Phone (250) 661-0637	peterjdegreef@hotmail.com
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
Blake Tipton Processor	SM Products Ltd. 3827 River Road West, Delta, BC, V4K 3N2	Phone (604) 290-2454	lily@halibut.ca
Brad Mirau Alternate, Processor	Aero Trading Co Ltd., #200-8592 Fraser Street, Vancouver, BC,	Phone (250) 802-3024	brad@aerotrading.ca

	V5X 3Y3		
Chuck Ashcroft Sport Fishing Advisory Board		(250) 338-9935	chuckashcroft@telus.net
Martin Paish Sport Fishing Advisory Board			martinpaish1@gmail.com
Mike Fowler Sport Fishing Advisory Board			midon@protonmail.ch
Russell Cameron Union, UFAWU/UNIFOR	RR1 S-6 C-9 Madeira Park, BC V0N 2H0	(604) 740-6434	russelljcameron@yahoo.ca
Jory Tarkanen Alternate, Union – UFAWU/UNIFOR		(250) 650-1066	jtarkanen6@gmail.com
Bruce Turriss Groundfish Trawl Advisory Committee			bruceturriss@shaw.ca
Brian Mose Alternate, Groundfish Trawl Advisory Committee			bmosc@uniserve.com

PARTICIPANT OBSERVERS

Name	Address	Phone	Email Address
Maureen Finn DFO Halibut Coordinator, HAB Chair	#200-401 Burrard Street Vancouver, B.C. V6C 3S4	Phone (604) 666-3279 Cell: (778) 835-5772 Fax (604) 666-8525	maureen.finn@dfo-mpo.gc.ca
Greg Hornby DFO A/Regional Rec Fish Coordinator	940 Alder Street, Campbell River, BC, V9W 2P8	(250) 286 5886	Greg.Hornby@dfo-mpo.gc.ca
Adam Keizer DFO Regional Groundfish Manager	#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	(604) 666-4162	ann.bussell@dfo-mpo.gc.ca
Mike Turner Senior Manager, Intergovernmental Relations Fisheries and Aquaculture	545 Superior Street Victoria, BC V8V 1T7	Phone (778) 698-3129 Cell (250) 886-6318	michael.r.turner@gov.bc.ca

Science Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries			
Darah Gibson Industry Specialist, Marine Fisheries and Seafood Science, Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries		Cell (250) 893-0260	darah.gibson@gov.bc.ca

1.2. Groundfish Trawl Advisory Committee (GTAC)

ELECTED COMMERCIAL MEMBERS			
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
Sarah Buston (alt. for Mike Buston)			sarahbuston@gmail.com
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
Lyle Andreesen (alt. for Brian Dickens)			lyleandreesen@gmail.com
Gary Krause	1631 11 Avenue E, Prince Rupert, B.C. V8J 2X5	Phone (250) 627-1957 Cell: Fax (250) 624-3886	phantom@citytel.net
Art Malcolm (alt. for Gary Krause)			artdmalcolm@gmail.com
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
TBD (alt. for Shannon Mann)			

Bob Morreau	1036 208 Street Langley, B.C. V2Z 1T4	Phone (604) 534-1760 Cell: (604) 725-9309 Fax (604) 534-2460	morreaufishing@gmail.com
John Roach	19915 1st Ave , Langley, BC V2Z. 0A4	Phone (604) 536-1397 Cell (604) 880-2234 Fax (604) 535-7546	jrfishing@shaw.ca
Daniel Mose (alt. for John Roach)			danmose@hotmail.com
Joseph Greene	3530 Falcon Drive, Nanaimo, BC V9T 4G8	Phone (250) 751-1093 Cell (250) 616-8070	Jmgreene@shaw.ca
Calvin Decker (alt. for Joseph Greene)			calvin.decker.cd@gmail.com
Mitchell Andersen	9098 Skipsey Rd Port Alberni, BC V9Y 9C1	Phone (778) 419 2017 Cell (250) 735 0046	mitchell_andersen@hotmail.com
Deacon (Albert) Melnychuk	27071 35B Ave, Langley, BC V4w 0C3	Phone (604) 813-1279	Viking4@shaw.ca
Cody Melnychuk (alt. for Deacon Melnychuk)	21433 94 Avenue Langlet, BC V1M 1R3	Phone (778) 988 7141	melnchukcody@gmail.com
Ramon (Ray) Dunabeitia	PO. Box 2145 Port Hardy, BC V0N 2P0	Phone (250) 213-3680	r.dun@live.ca
Matthew Dunabeitia (alt. for Ray Dunabeitia)			m_dunabeitia@hotmail.com

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	deepsea@citytel.net
Robert Hughes - (Lax Kw'alaams First Nation) (alt. Andrew Tait/Ted White)			robby_council@laxband.com
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

TBD -(Association of Pacific Hake Fishermen)			
Kilian Stehfest - (David Suzuki Foundation)	219–2211 W4th Ave Vancouver, BC V6K 4S2		kstehfest@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
Tracy Ronlund - (alt. Fisher Bay Seafoods)		Cell: (250) 812-8112	tracy@fisherbayseafood.com
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 NanOOSE Bay, B.C. V9P 9G8	Phone (250) 248-0969 Fax (250) 752-1032	bmose@uniserve.com
James Lawson - (UNFAWU/Unifor)			president@ufawu.org
Jim McIsaac - (alt. UFAWU/ Unifor)	200-4248 Glanford Ave Victoria, BC V8Z 4B8	Phone (250)384-4423 Cell (250) 818-1114	jamcisaac@shaw.ca
Lyle Pierce – (Halibut Advisory Board (HAB))	472 Condor Comox B.C. V9M 1J7	Phone (250) 339 9508 Fax (250) 339 9568 Cell 250-897-5409	lyle_p@shaw.ca
Chris Sporer – (alt. HAB)			phma@citytel.net
Angus Grout – (alt. HAB)		Phone (250) 339-7753 Cell (250) 898-1250	rommel@telus.net

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 Industry Specialist, Marine Fisheries and Seafood Science, Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries		Cell (250) 893-0260	darah.gibson@gov.bc.ca
Kevin Romanin Senior Seafood Analyst Science, Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries	545 Superior Street Victoria, BC V8V 1T7	Phone (778) 974-4884 Cell (250) 880-0958	kevin.romanin@gov.bc.ca
Deirdre Finn (DFO – Chair Pacific Region Trawl Coordinator)	#200-401 Burrard St. Vancouver, B.C. V6C 3S4	Phone (236) 330-4139	Deirdre.Finn@dfo-mpo.gc.ca
Ann Bussell - (DFO Regional Groundfish Enforcement Coordinator)	#200-401 Burrard St. Vancouver, B.C. V6C 3S4	Phone (604) 666-4162	ann.bussell@dfo-mpo.gc.ca

1.3. Sablefish Advisory Committee (SAC)

ELECTED COMMERCIAL MEMBERS			
Name	Address	Phone	Email Address
Brewster Woodburn Canadian Sablefish Association, Longline representative		(250) 927-1850	clydewoodburn@gmail.com
James DeGreef Alternate, Canadian Sablefish Association, Longline representative			james.degrees@gmail.com
Tom Russell Canadian Sablefish Association, Longline representative		(250) 949-1871	quatsinostar@gmail.com
Robbie Heggelund Alternate, Canadian Sablefish Association, Longline representative			rheggelund@gmail.com
Deacon Melnychuk Canadian Sablefish Association, Trap representative		(604) 813-1279	ciking4@shaw.ca

Jennifer King Alternate, Canadian Sablefish Association, Trap representative			Jenncandace73@hotmail.com
Kyle Brynjolfson Canadian Sablefish Association, Trap representative		(778) 240-1463	shareekyle@gmail.com
Karin Goddard Alternate, Canadian Sablefish Association, Trap representative			tbfishco@gmail.com
Bruce Hale (alternate)		(250) 661-9606	bruce@fasseafood.com
Rob Kronlund (alternate)		(250) 880-5787	interfacefisheries@gmail.com
APPOINTED MEMBERS			
Chris Acheson Canadian Sablefish Association, Executive Director, SAC Co-Chair	P.O. Box 297, Ganges Salt Spring Island, B.C. V8K 2V9	(250) 537-0910 (604) 277-5773	cacheson@canadiansablefish.com
Erling Olsen Canadian Sablefish Association, President		(604) 329-4818	erling@leaderfishing.com
Bob Fraumeni Canadian Sablefish Association, Vice President		(250) 661-9602	rghf@fasseafood.com
Environmental organizations TBA			
Environmental organizations Alternate TBA			
First Nations TBA			
First Nations Alternate TBA			
Brian Mose Groundfish Trawl Advisory Committee	2342 Andover Road NanOOSE Bay, B.C. V9P 9G8	Phone (250) 248-0969 Fax (250) 752-1032	bmose@uniserve.com
Bruce Turriss Alternate, Groundfish Trawl Advisory Committee	333 Third St. New Westminster, B.C. V3L 2R8	Phone (604) 524-0005 Fax (604) 524-0150	bruceturriss@shaw.ca
Chris Heras Processor, Worldwide Seafoods (1997) Ltd.		(604) 771-8071	chris_wws@telus.net
Processor Alternate TBA			
PARTICIPANT OBSERVERS			
Gwyn Mason DFO Sablefish Coordinator, SAC Co-Chair	#200-401 Burrard Street Vancouver, B.C. V6C 3S4	Phone (604) 666-3244 Cell (236) 334-7534 Fax (604) 666-8525	Gwynhyfar.Mason@dfo-mpo.gc.ca

Adam Keizer DFO Regional Manager, Groundfish	#200-401 Burrard Street Vancouver, B.C. V6C 3S4	(604) 666-9033 Fax (604) 666-8525	adam.keizer@dfo-mpo.gc.ca
Kendra Holt DFO Research Biologist	9860 West Saanich Rd Sidney, BC V8L 4B2	(250) 363-6410	Kendra.Holt@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
Kevin Romanin Senior Seafood Analyst Science, Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries	545 Superior Street Victoria, BC V8V 1T7	Phone (778) 974-4884 Cell (250) 880-0958	kevin.romanin@gov.bc.ca
Mike Turner Senior Manager, Intergovernmental Relations Fisheries and Aquaculture Science Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries	545 Superior Street Victoria, BC V8V 1T7	Phone (778) 698-3129 Cell (250) 886-6318	michael.r.turner@gov.bc.ca
Darah Gibson Industry Specialist, Marine Fisheries and Seafood Science, Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries		Cell (250) 893-0260	darah.gibson@gov.bc.ca
Aquaculture fisheries representative TBA			
Sean Cox Canadian Sablefish Association, Science Advisor	8888 University Drive Burnaby, B.C. V5A 1S6	(778) 782-5778	spcox@sfu.ca
Rob Kronlund Canadian Sablefish Association/Interface Fisheries Consulting Ltd., Advisor		(250) 880-5787	interfacefisheries@gmail.com

1.4. Groundfish Hook and Line Sub-committee (GHLSC)

ELECTED COMMERCIAL MEMBERS			
Name	Address	Phone	Email Address

Gary Wick (Outside ZN)			garyjwick@icloud.com
Herb Van Grootel (Outside ZN)	41 - 50 th Street Delta, B.C. V4M 2S5	Phone (604) 948-2741 Cell: (604) 328-5555 Fax (604) 948-2741	herb.vg@telus.net
Jim Nightingale (ZN Alternate)	4420 Maple Lane Ladner, BC V4K 2Z5	Phone (604) 946-0947 Fax (604) 946-0947 Cell (604) 862-3479	jnightingale@dccnet.com
Johnny 'Zeke' Pellegrin (Outside ZN)		Cell: 250-830-7621	zekepellegrin@telus.net
Jordan Belveal (Outside ZN)	3260 Fairway Cres Nanaimo BC V9T 3B1	Cell: 250-616-1394	jordan@jordanbelveal.com
Frank Lightfoot (Inside ZN)	1850 19th Ave Campbell River BC V9W 4M5	Phone: 250-287-3611 Cell: 250-202-1390	franklpwr@gmail.com
Alvin Hui (Inside ZN Alternate)		Phone 604-689-1608; Cell 604-732-3898	tiara fisheries@hotmail.com
Henry Heggelund (Outside ZN Alternate)	P.O. Box 476 Sooke, B.C. V9Z 1H4	Phone (250) 642-3316 Fax (250) 642-3076	hheggelund@shaw.ca
Bob Burkosky Appointed (Lingcod)		Cell: 250-954-9293	rburkos@shaw.ca
Steve Martinelli Appointed (Lingcod)	P.o Box 622 Quathiaski Cove B.C. V0P 1N0	Cell: 250-203-4744	stevemart33@yahoo.ca
Ryan Edwards Appointed (Dogfish)	Box 52 Ucluelet BC V0R 3A0.		captainryanedwards@gmail.com
PARTICIPANT OBSERVERS			
TBD DFO Chair	Regional FAM Officer DFO - RHQ #200-401 Burrard St Vancouver, B.C. V6C 3S4		
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
Mike Turner Senior Manager, Intergovernmental Relations	545 Superior Street Victoria, BC V8V 1T7	Phone (778) 698-3129 Cell (250) 886-6318	michael.r.turner@gov.bc.ca

Fisheries and Aquaculture Science Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries			
Kevin Romanin Senior Seafood Analyst Science, Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries	545 Superior Street Victoria, BC V8V 1T7	Phone (778) 974-4884 Cell (250) 880-0958	kevin.romanin@gov.bc.ca
Darah Gibson Industry Specialist, Marine Fisheries and Seafood Science, Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries		Cell (250) 893-0260	darah.gibson@gov.bc.ca
Shelagh McKellar Province of B.C., Ministry of Agriculture, Food and Fisheries, Industry Advisor, Seafood (Alternate)	545 Superior Street Victoria, BC V8V 1T7	Cell: 250 812-1842	Shelagh.McKellar@gov.bc.ca

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
Ryan Edwards (Dogfish)	Box 52 Uchuelet BC V0R 3A0.		captainryanedwards@gmail.com

Herb Van Grootel (Outside ZN)	41 – 50 th Street Delta, B.C. V4M 2S5	Phone (604) 948-2831 Fax (604) 948-2741 Cell 604-328-5555	herb.vg@telus.net
Jordan Belveal (Outside ZN)	3260 Fairway Cres Nanaimo BC V9T 3B1	Cell: 250-616-1394	jordan@jordanbelveal.com
Adrian Belveal (Alternate – Outside ZN)			adbel@shaw.ca
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
Angus Grout Pacific Coast Fishing Vessel Owners' Guild		Phone (250) 339-7753 Cell (250) 898-1250	rommel@telus.net
Lyle Pierce Pacific Coast Fishing Vessel Owners' Guild	2331 Seabank Road, Courtenay, BC	Phone (250) 339-9508 Cell (250) 897-5409	lyle_p@shaw.ca
Bob Burkosky (Lingcod)	1466 Memory Lane Qualicum Beach, BC V9K 2A9	Phone 250 752-5247 Cell 250 954-9293	rburkos@shaw.ca
Steve Martinelli (Lingcod)	P.o Box 622 Quathiaski Cove B.C. V0P 1N0	Cell: 250-203-4744	stevemart33@yahoo.ca
Chris Acheson (Sablefish)	209 Arbutus Rd., Saltspring Island V8K 2W3	Cell 250-537-9649	cacheson@canadiansablefish.com
Bob Fraumeni (Sablefish)		250 361-6944	rghf@fasseafood.com
Rob Kronlund Canadian Sablefish Association/Interface Fisheries Consulting Ltd., Advisor		(250) 880-5787	interfacefisheries@gmail.com
Kevin Woodburn (Sablefish Alternate)		250 228-1420	karenwoodburn@shaw.ca

TBD (Inside ZN)			
Brian Mose (Trawl GTAC)	Deep Sea Trawlers Association (DSTA) 2342 Andover Road NanOOSE Bay, B.C. V9P 9G8	Phone 250- 248-0969 Fax 250 752-1032	bmose@uniserve.com
Bruce Turriss (Trawl GTAC)	Canadian Groundfish and Research Conservation Society 333 Third Street New Westminster, B.C. V3L 2R8	Phone (604) 524- 0005 Fax (604) 524-0150 Cell 604-524-0005	bruceturriss@shaw.ca
Blake Tipton (H&L Processors)	SM Products Ltd., 3827 River Rd. West, Delta BC V4K 3N2	604-946-7665	blake@halibut.ca
PARTICIPANT OBSERVERS			
Adam Keizer Regional Manager, Groundfish	200 – 401 Burrard Street Vancouver, BC V6C 3S4	604 666-9033	adam.keizer@dfo-mpo.gc.ca
Mike Turner Senior Manager, Intergovernmental Relations Fisheries and Aquaculture Science Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries	545 Superior Street Victoria, BC V8V 1T7	Phone (778) 698-3129 Cell (250) 886-6318	michael.r.turner@gov.bc.ca
Kevin Romanin Senior Seafood Analyst Science, Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries	545 Superior Street Victoria, BC V8V 1T7	Phone (778) 974-4884 Cell (250) 880-0958	kevin.romanin@gov.bc.ca

Darah Gibson Industry Specialist, Marine Fisheries and Seafood Science, Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries		Cell (250) 893-0260	darah.gibson@gov.bc.ca
---	--	---------------------	--

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
Dianne St. Jacques <i>Mayor of Ucluelet</i>	Coastal Communities	dstjacques@ucluelet.ca
Patrick Marshall (Alternate)	Coastal Communities	patrick.marshall@coastbc.org
Dan Edwards	Commercial (Dogfish)	danedwards@telus.net
Chris Sporer	Commercial (Halibut)	phma@citytel.net
David Boyes (Alternate)	Commercial (Halibut)	mcboyes@telus.net
Lyle Pierce (Alternate)	Commercial (Halibut)	lyle_p@shaw.ca
Quinton Sample (Alternate)	Commercial (Halibut)	quintonsample@gmail.com
Walter Lancashire	Commercial (Lingcod)	walterlancashire@hotmail.com
Bob Burkosky (Alternate)	Commercial (Lingcod)	rpburkos@shaw.ca
David Dawson	Commercial (Processor)	ddawson@pacseafood.com
Blake Tipton (Alternate)	Commercial (Processor)	blake@halibut.ca

Herb van Grootel	Commercial (Rockfish)	herb.vg@telus.net
Chris Acheson	Commercial (Sablefish)	cacheson@canadiansablefish.com
Bruce Turris	Commercial (Trawl)	bruceturris@shaw.ca
Brian Mose (Alternate)	Commercial (Trawl)	bmose@uniserve.com
Scott Wallace, David Suzuki Foundation	Environmental	swallace@davidsuzuki.org
Terry Glavin (Alternate) Watershed Watch Salmon Society	Environmental	terry.glavin@gmail.com
Cliff Atleo Nuu-Chah-Nulth Tribal Council	First Nations	c.atleo71@shaw.ca
Darryl Tate (Alternate) Nuu-Chah-Nulth Tribal Council	First Nations	d.darryltate@gmail.com
Jim Lane (Alternate) Nuu-Chah-Nulth Tribal Council	First Nations	Jim.Lane@nuuchahnulth.org
Russ Jones Haida First Nation	First Nations	russ.jones@haidanation.com
Shawn Cowpar (Alternate) Haida First Nation	First Nations	Shawn.cowpar@haidanation.com
Jim McIsaac (UFAWU)	Labour	jamcisaac@shaw.ca
Kim Olsen (Alternate) UFAWU	Labour	president@ufawu.org
TBA	Province	
Gerry Kristianson SFAB	Recreational	gerrykr@telus.net
Chuck Ashcroft SFAB	Recreational	chuckashcroft@telus.net
Martin Paish SFAB	Recreational	martin_paish@obmg.com
PARTICIPANT OBSERVERS		
Adam Keizer Groundfish Management	Fisheries and Oceans Canada	adam.keizer@dfo-mpo.gc.ca
Greg Workman Groundfish Science	Fisheries and Oceans Canada	Greg.workman@dfo-mpo.gc.ca

<p>Kevin Romanin</p> <p>Senior Seafood Analyst Science, Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries</p>	<p>545 Superior Street Victoria, BC V8V 1T7</p>	<p>kevin.romanin@gov.bc.ca</p>
<p>Mike Turner</p> <p>Senior Manager, Intergovernmental Relations Fisheries and Aquaculture Science Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries</p>	<p>545 Superior Street Victoria, BC V8V 1T7</p>	<p>michael.r.turner@gov.bc.ca</p>
<p>Darah Gibson</p> <p>Industry Specialist, Marine Fisheries and Seafood Science, Policy and Inspection Division B.C. Ministry of Agriculture, Food and Fisheries</p>		<p>darah.gibson@gov.bc.ca</p>

Appendix 13: Fishing Hazards Advisory

TABLE OF CONTENTS

1.	NEPTUNE CANADA NETWORK, WEST COAST VANCOUVER ISLAND.....	2
----	--	---

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.

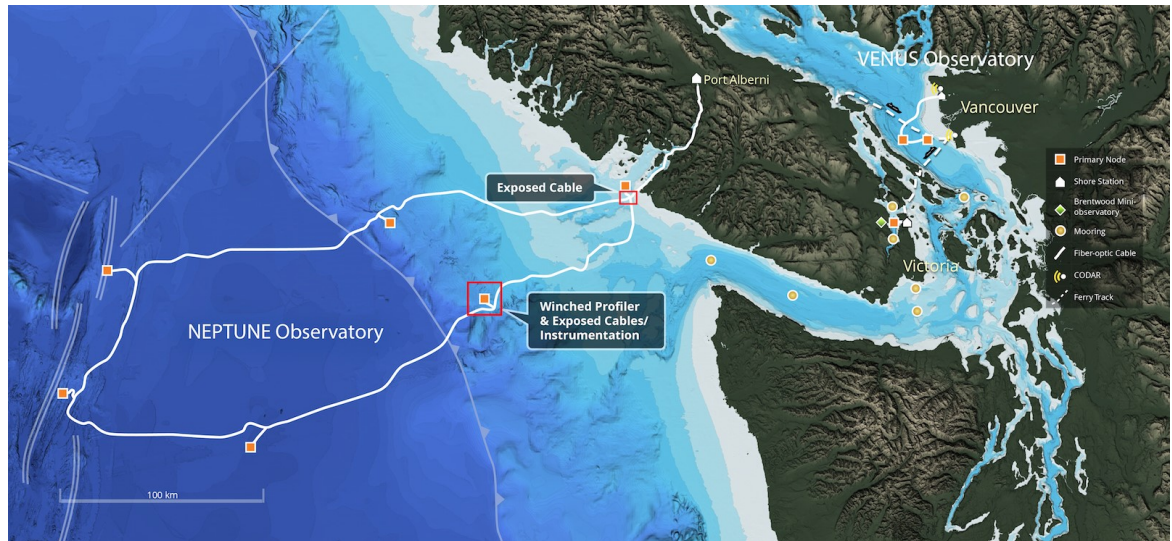


Figure 1. Ocean Networks Canada NEPTUNE Observatory areas of high risk to trawling. Additional caution should be exercised in areas indicated with a red box. (Bathymetry Data Sources: Saanich Inlet and Strait of Georgia bathymetry from Canadian Hydrographic Service; USGS Cascadia DEM report 99-369; University 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.)

ADDENDUM TO THE 2021/2022 INTEGRATED FISHERY MANAGEMENT PLAN FOR GROUND FISH

2021 OFFSHORE PACIFIC HAKE HARVEST PLAN

August 20, 2021

PACIFIC REGION

This Offshore Pacific Hake Harvest Plan is intended for general information purposes only. Where there is a discrepancy between this Plan, the IFMP for Groundfish and Fisheries Act and regulations made thereunder, the Fisheries Act and regulations are the final authority. *A description of Areas and Subareas referenced in this Plan can be found in the Pacific Fishery Management Area Regulations.*



Fisheries and Oceans Pêches et Océans
Canada Canada

FORWARD

The 2021 Pacific Hake Harvest Plan is an addendum to the 2021-22 Integrated Fisheries Management Plan for Groundfish (IFMP) and sets out the main objectives and management measures in effect for the Groundfish trawl fishery for Pacific Hake in the Pacific Region. These two documents in concert communicate the basic information on the fishery and its management to Fisheries and Oceans Canada (DFO) staff, legislated co-management boards and other stakeholders.

The IFMP and this addendum are not legally binding instruments which can form the basis of a legal challenge. Both documents can and are modified in-season when warranted and at no time fetters 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 IFMP in accordance with the powers granted pursuant to the Fisheries 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.

Management Summary	4
Application	4
Industry Fishery Objectives	4
Canada/Us Pacific Hake/Whiting Treaty	5
Total Allowable Catch	5
Allocations of Offshore Pacific Hake	5
Offshore Pacific Hake In-season Consultation	6
Catch Monitoring and Validation	6
Joint Venture Fishery	8
Marine Stewardship Certification	9
Fishery Season and Open Times	9
Waters in Which Fishing is Permitted	9
Prohibited Species	9
Groundfish Size Limits	9
Licensing Requirements	10
Licensing Quota Fees	10
Landing Requirements	10
Quota Overage/Underage Rules	10
Bycatch Allowances	11
Fish Released At Sea	12
Use of Packers	12
DFO Contacts	13
<i>Appendix 1: In-season Advisory Process</i>	14
<i>Appendix 2: Groundfish Trawl Pacific Hake At-Sea Monitoring Requirements.</i>	15
<i>Appendix 3: Electronic Monitoring System</i>	19
<i>Appendix 4 : Groundfish Trawl Paper Logbook</i>	27

Management Summary

The 2021 Canadian total allowable catch (TAC) for offshore Pacific Hake is 94,090 tonnes (t) plus carryover of 10,390 t from uncaught quota in 2020 for a adjusted TAC of 104,480 t. The Canadian coastwide TAC is unchanged from the previous year, which itself was a 33% reduction from the 2019/20 TAC.

The Groundfish Trawl Advisory's (GTAC) Hake Subcommittee met on May 17, 2021 and recommended to the Department that given the current hake abundance and the prognosis for the 2021 Pacific Hake fishery, the entire adjusted TAC be allocated as shoreside quota for the 2021 season.

A decision has been made to allocate the entire adjusted TAC as shoreside quota. There will be no JV fishery in 2021. The 2021 adjusted TAC is allocated as follows:

Shoreside - 100,840 t (includes 7,984 t of carryover from 2020-21 and 0.2 t for research)

Joint Venture - 3,640 t of carryover from 2020-21

For the Pacific hake fishery the following catch monitoring requirements are in effect:

All quota applicable catch will be applied against the vessel's Individual Vessel quota (IVQ) holdings. Groundfish trawl licence holders are accountable for all groundfish catch and responsible for ensuring sufficient IVQ holdings to cover assigned catch listed on the vessel's groundfish trawl licence.

The In-season Hake Advisory Committee (IHAC) will meet as required to address quantity, quality, delivery and harvesting issues related to the offshore Pacific hake fishery.

Application

The management strategies and TAC contained in this plan apply to groundfish trawl licensed vessels fishing for Offshore Pacific Hake by means of mid-water and bottom trawl gear off the West Coast of Canada including Juan de Fuca Strait. This harvest plan does not apply to the Gulf Pacific Hake fishery that occurs within the Strait of Georgia area and is subject to a separate TAC.

Industry Fishery Objectives

DFO, through its Sustainable Fisheries Framework and implementation of Ministerial policies, has established objectives and resource management goals for the groundfish fisheries in the Pacific Region. These objectives and goals can be found in the 2021-22 Integrated Fisheries Management Plan for Groundfish. In addition, the groundfish trawl industry agreed to the following objectives:

- To support the operations of the shoreside fishery in a manner consistent with DFO's stated Ministerial policy that shows priority for shoreside delivery.
- To maximize the overall value of the combined (shoreside and JV) hake fishery - this includes the value to vessel owners, crew, shoreside plants, workers, and coastal communities.

Canada/Us Pacific Hake/Whiting Treaty

On November 21, 2003, the Pacific Hake/Whiting Agreement was signed by the governments of Canada and the United States. The treaty has been ratified, and 2021 marks the tenth year of formal implementation.

As part of the Agreement, the eight member Joint Management Committee (JMC), four from each contacting party, recommends annual catch limits on the advice of the Joint Technical Committee (JTC) and the stakeholder Advisory Panel (AP). The JMC met virtually from March 15-17, 2021 to recommend the 2021 TAC.

As no agreement was reached on the 2021 Pacific Hake TAC among Canadian and US JMC members, both parties have established their own TAC via domestic regulatory processes.

Total Allowable Catch

The 2021 Canadian TAC for offshore Pacific Hake is 94,090 t plus carryover of 10,390 t from 2020-21 for an adjusted TAC of 104,480 t. The Canadian coastwide TAC is unchanged from the previous year, which itself was a 33% reduction from the 2019/20 TAC.

The Groundfish Trawl Advisory's (GTAC) Hake Subcommittee met on May 17, 2021 to discuss the 2021 outlook for the offshore Pacific Hake fishery. The Subcommittee concluded that given the current hake abundance and the prognosis for the 2021 Pacific Hake fishery, there is a likelihood that the projected shoreside processing needs would exceed the entire adjusted TAC. As such, the Subcommittee has recommended that the entire adjusted TAC be allocated as shoreside quota for the 2021-22 season. As a result, licencing of a foreign vessel to participate in a joint venture fishery will not occur in 2021.

On June 21, 2021, these recommendations were approved and the allocation of the 2021 adjusted TAC is as follows:

	Allocations (tonnes)			
	Initial allocation	Carryover allocation	Proposed in-season allocation	Total
Shoreside	30,000*	7,984	62,856	100,840
JV	0	3,640	0	3,640
Canadian TAC				104,480

* includes 0.2t for research

Allocations of Offshore Pacific Hake

Given annual allocation discussions and that Hake harvest advice is delivered after the general groundfish fishing season opens, the Department allocates quota in three phases between February and June to facilitate an orderly fishery: (1) an initial, notional allocation, (2) carryover from the previous season, and (3) an in-season allocation to reflect the harvest advice.

With the opening of the 2021-22 fishing season on February 21, 2021, the Department allocated 30,000 t of quota for shoreside delivery. An additional 11,623 t of carryover quota was allocated in March and the final 62,856t was allocated in June.

Offshore Pacific Hake In-season Consultation

To ensure proper control and management of the Pacific Hake fishery, DFO will continue to utilize the In-season Hake Advisory Committee (IHAC) to formulate advice and in-season operational measures to address priority access, quantity, quality, delivery and harvesting issues. The terms of reference for the IHAC committee are set out in [Appendix 1](#) of this plan.

DFO will consult with IHAC to oversee the fishery, address issues that arise, and solicit advice on in-season measures to resolve problems and support the fishery objectives.

The IHAC will meet regularly throughout the hake fishing season to review offshore hake stock movement, ensure priority access for shoreside vessels is being provided, and when necessary recommend operational modifications to the hake fishery. Consensus recommendations and advice from IHAC will be taken into consideration by DFO.

Industry has agreed that to ensure that both the shoreside and JV fishery, when it occurs, have access to the supply of fish necessary to be viable and successful, all stakeholders must work together cooperatively and constructively through existing advisory processes. Refer to Appendix 1 of this plan for more information.

Catch Monitoring and Validation

Port Monitoring

All hake deliveries are subject to 100% coverage by the Groundfish Trawl Dockside Monitoring Program (DMP).

At Sea Monitoring

All groundfish trawl licenced vessels fishing hake for shoreside delivery are subject to one hundred (100) per cent at-sea monitoring coverage. All Groundfish trawl vessel master/licence holders delivering fresh round hake for shoreside delivery have the option to carry either a groundfish at-sea observer or an electronic monitoring system (EM) to meet this 100% monitoring requirement. Notwithstanding Fishery Notice (FN) 1125 and the next section of this harvest plan that outlines the use of Emergency Electronic Monitoring (EM) Program for at-sea monitoring during the COVID-19 pandemic, all licenced groundfish trawl vessels with receiving tanks delivering frozen hake for shoreside delivery are required to carry both a groundfish at-sea observer and an EM system to meet this 100% monitoring requirement. It is the responsibility of individual groundfish trawl vessel master/licence holders to make arrangements for provision of the required at-sea monitoring program. Vessels will not be issued a hail-out number (required for each fishing trip) unless arrangements for the provision of 100% at-sea monitoring services are in place.

At-Sea Monitoring During the COVID-19 Pandemic

On April 2, 2020 the Minister of Fisheries and Oceans Canada issued a Fishery Management Order (FMO) 2020-01 temporarily suspending the requirement for on board at-sea observers for 45 days to help protect the health of observers and fishers from the spread of COVID-19. On the advice of the Groundfish Trawl Advisory Committee (GTAC), DFO implemented an emergency Electronic Monitoring (EM) Program for at-sea monitoring in the groundfish trawl fishery. These measures were required to ensure continued comprehensive and independent catch monitoring of the groundfish trawl fleet.

Upon expiry of the Fishery Management Order and following consultations with stakeholders, DFO postponed a full reinstatement of the At-Sea Observer Program (ASOP) in light of continued health

and safety concerns raised by harvesters and some coastal communities about increases in cases of COVID-19 in British Columbia. In the continued absence of a fully reinstated ASOP, the Emergency EM Program for at-sea monitoring in response to COVID-19 may continue to be deployed as an alternative mitigating management measure for all Option A groundfish trawl vessels. Refer to Section 13.3.2 of this IFMP for more information.

EM Pilot on Option A Vessels with Receiving Tanks (RTV)

A comprehensive ASOP was implemented in the groundfish trawl fishery in 1996 to strengthen stock assessment capabilities, to provide for stock specific management and to effectively monitor bycatch caps. Since then, the composition of the groundfish trawl fleet has changed, and now includes vessels where independent monitoring of all fishing activity requires more than one observer.

In response, the BC groundfish trawl industry, in collaboration with DFO, began to pilot the use of electronic monitoring (EM) technology in the 2019/20 fishing season to improve the accuracy of at-sea data collection. The EM system was initially being used to collect high quality data for the entire duration of each fishing trip and was comprised of video cameras to capture all fishing activity, GPS, hydraulic and rotational sensors. While the initial focus of the program was to use the data collected by the EM system to enhance reporting of Pacific Halibut and Sablefish at-sea releases, following the suspension of the ASOP in March 2020, many components of this pilot were used to develop the EEM Program which continues to be in place as an alternative mitigating management measure for the entire Option A fleet.

Archipelago Marine Research Ltd. (AMR) has been contracted by the industry as the single service provider for the certified at-sea monitoring for all groundfish fisheries off the west coast of Canada. Arrangements can be made by contacting AMR at either 250-383-4535 or 1-800-663-7152.

Electronic Monitoring System

Vessel masters/licence holders may only use an approved EM monitoring system that meets the specifications set out in [Appendix 2](#) of this plan.

Mandatory Retention of Catch

Notwithstanding FN1125 for the use of electronic monitoring during the COVID-19 pandemic, vessel masters/licence holders opting to use an electronic monitoring system and hail out as an Option A shoreside hake trip are required to retain and land all catch. No at-sea releases of any fish are allowed with the exception of prohibited species and undersized sablefish and lingcod, and vessel masters/licence holders must ensure that sufficient quantities of IVQ quota are secured to cover all catch. Failure to adhere to this mandatory retention will result in the vessel being required to carry an at-sea observer for the remainder of the season.

Notwithstanding FN1125 for the use of electronic monitoring during the COVID-19 pandemic, vessel masters/licence holders opting to carry an at-sea observer and hail out an option A quota observed trip are governed by normal mortality and at-sea release rules in place for the regular Option A groundfish trawl fishery.

Hail-Out Requirements Prior to Fishing for Pacific Hake

Notwithstanding FN1125 for the use of electronic monitoring during the COVID-19 pandemic, in order to support observer deployments in the at-sea monitoring program, and to ensure that Pacific Hake fishing activity reporting is consistent with all other groundfish trawl fisheries, it is a condition

of the groundfish trawl licence that vessel masters ensure that they have received a Hail-out number for each fishing trip from the service provider before leaving port on a fishing trip for Pacific hake.

A Hail-out report must be filed before the start of fishing trip for shoreside delivery - Pacific hake to the Designated Groundfish hail service provider. This may be done either electronically or by calling 1-866-658-0890 prior to the commencement of a fishing trip for Pacific Hake. Vessel masters who fail to provide advance notice of their intended fishing trip will not be issued a Hail-out number.

The groundfish trawl industry, through Canadian Groundfish Research and Conservation Society (CGRCS), has contracted Vericatch, formerly Integrated Quota Management Inc. (IQMI), as the sole service provider for all hail services for the groundfish trawl fleet for the current fishing season. Details of the groundfish trawl data management platform are available by contacting Bruce Turris, the Executive Director of the CGRCS at (604) 524-0005 or email: bruceturris@shaw.ca or Vericatch at 1-888-221-1953 or email: support@vericatch.com.

Hail-In Requirement When Fishing for Pacific Hake

It is a requirement for the master of a groundfish trawl licensed vessel to submit a Hail-In report as soon as fishing ceases on a shoreside hake trip. Hail-In reports must be made to the Designated Groundfish hail service provider either electronically or by calling 1-866-658-0890.

Catch Reporting

All groundfish trawl licensed vessels are required to accurately record and keep a record of all fishing activities in the electronic groundfish trawl fishing logbook on the groundfish trawl industry data management platform.

The vessel master must ensure that, prior to fishing, sufficient hard drive space on the data management platform is available to cover any fishing trip and that information is recorded for each tow, immediately after completion of the tow.

Data for each fishing event must be submitted in electronic form to the Department at the end of each trip.

The groundfish trawl sector has tasked the 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 Vericatch as the sole service provider for new data management platform for to the groundfish trawl fleet for the current fishing season. Details of the groundfish trawl data management platform are available by contacting Bruce Turris, the Executive Director of the CGRCS at (604) 524-0005 or email: bruceturris@shaw.ca or Vericatch at 1-888-221-1953 or email: support@vericatch.com.

Joint Venture Fishery

Since 1979, the Joint Venture (JV) program has provided benefits to the groundfish industry and aided in the development of the Canadian Shoreside hake industry. Annually an assessment of the need for a JV program is completed with hake fishery stakeholders and takes into account stock status, current industry needs and capabilities, and economics of the industry. Annual approval for a JV program lies with the Department.

The JV program entails Canadian groundfish trawl vessels delivering, via cod-end transfer, Pacific Hake to foreign fishing vessels licensed to operate in Canadian waters. A key principle of the industry

support for the JV program is the assurance that operations do not disrupt or interfere with the supply of groundfish and hake to Canadian processing plants.

To this end, the British Columbia Hake Consortium, as it has since 1979, is responsible for coordinating the JV program and fishing fleet on behalf of the groundfish industry. This includes securing available JV Hake IVQ, negotiating sales agreements with foreign partners, coordinating the day to day JV operations, and ensuring that issues involving the JV program which may or are perceived to compromise the needs of the shore-based processing industry are addressed. For additional information on the JV program or the Hake Consortium of British Columbia contact Mr. Dave Morris, President at (604) 681-0211, Cell (604) 290-8042, email: dave.morris@canfisco.com.

Marine Stewardship Certification

On November 25, 2014, the Pacific hake mid-water trawl fishery off the west coast of Canada and the United States earned Marine Stewardship Council (MSC) certification as a sustainable and well managed fishery. Pacific Hake is processed into frozen fillet, dressed and whole fish blocks and surimi products which service markets in North America, and internationally in Europe and Asia.

The Canadian and the U.S. fishery industry clients who sought the assessment now hold the MSC certificates for Pacific hake. The Canadian client represents vessels owners from the Canadian fleet and includes both onshore and at-sea operations. The U.S. clients represent virtually the entire U.S. onshore and at-sea hake processing sectors, and the mid-water trawl vessels that deliver their catch to the respective processing sectors.

Fishery Season and Open Times

The Offshore Pacific Hake fishery season is open from February 21, 2021 until February 20, 2022.

Waters in Which Fishing is Permitted

With the exceptions of annual and seasonal closures described in the Integrated Fisheries management Plan for Groundfish – Appendix, 8, Groundfish Trawl Harvest Plan and those areas set out within in-season variation orders issued by Fisheries and Oceans Canada, fishing for Offshore Pacific Hake by means of:

- a) midwater trawl gear is permitted in those waters, defined as “Offshore Hake Area” in Areas 1 to 12, 20 to 21, 23 to 27, 101 to 111, 121, 123 to 127, 130 and 142;
- b) bottom trawl gear is restricted to those waters open to bottom trawling.

In-season changes are announced through the Fisheries Public Notices system that can be found at the Department’s website: <http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm>.

Prohibited Species

The following species are prohibited by the conditions of the groundfish trawl licence: Pacific Halibut, all Salmon species, Green and White Sturgeon, Pacific Herring, Basking Shark, Tope Shark, Sixgill Shark, Wolf-eels and Eulachon. Prohibited species cannot be retained and must be returned to the water from which caught, unharmed if possible.

Groundfish Size Limits

Fishers are reminded of the following regulatory groundfish size limits:

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.

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.

Licensing Requirements

An Option A commercial groundfish trawl licence and appropriate holdings of Individual Vessel Quota (IVQ) is required to commercially harvest groundfish trawl species (including Pacific Hake). Groundfish trawl vessel owners and harvesters are reminded to carefully review and familiarize themselves with the groundfish trawl licence and attached conditions.

Prior to commencing to harvest under the authority of a groundfish trawl licence, a request for a Groundfish Trawl Licence Amendment form must be completed and submitted to DFO's Groundfish Management Unit (GMU). The owner of a groundfish trawl licensed vessel or the party authorised to request amendments must complete the amendment request form. It is a requirement that any Option A vessel must be in possession of a valid amendment prior to fishing. Contact a GMU Quota officer at either (604) 666-0010 or (604) 666-5865 for further information.

Licensing Quota Fees

Pacific Hake quota licence fees are assessed based on the permanent IVQ holdings of the licence as of February 2nd for the initial notional TAC and on the date of any in-season release of the Pacific Hake TAC as either Shoreside and/or JV delivery quota. Licence fees for Pacific Hake are \$4.88 per metric tonne quota which equates to \$.0018 per pound. DFO, upon payment of applicable quota fees, will amend the individual groundfish trawl licence to reflect the increased available quota for the licence.

Landing Requirements

To ensure proper control and management of the Offshore Hake fishery the following rules are in effect for the season:

- Pacific Hake Offshore allocated for shoreside delivery may only be delivered to land at a location set out in valid groundfish trawl licence conditions, whereas;
- Pacific Hake Offshore allocated for Joint Venture may, at the discretion of the licence holder, be delivered either to a foreign vessel licensed under the Coastal Fisheries Protection Act or delivered to land at a location set out in the 2021/2022 groundfish trawl licence.

Quota Overage/Underage Rules

Fishing Restrictions for Quota Overage

In addition to any of the rules set out in this plan, vessels whose landings exceed the species area specific IVQ holdings for Offshore Pacific hake shall be restricted from trawling for the remainder of the fishing year, or until such time as sufficient IVQ is reallocated to the licence to cover overages.

Quota Overage/Underage and Quota Carryover

To accommodate harvesters where difficulties have arisen and catches do not meet the exact IVQ holdings on a groundfish trawl licence, a carryover/underage policy has been implemented which allows harvesters to carry uncaught quota forward, or have catch, in limited quantities applied against the groundfish trawl licence IVQ allocation for the following year.

Subject to the annual review and advice of the Canada/US Pacific Hake Joint Management Committee (JMC) the allowed carryover/underage/overage provisions set out below may be subject to change.

- The carryover/underage/overage limit for uncaught Pacific Hake allocated for shoreside deliveries is calculated as 16.67% of the vessels IVQ/CCQ and Temporary holdings.
- The carryover limit for uncaught Pacific Hake allocated for Joint Venture Delivery is calculated as 15% of the vessels IVQ/CCQ and Temporary holdings. Catch overages are not allowed in the JV fishery, as catch is managed collectively through the Hake Consortium of British Columbia and participating licence holders.

All weights are fresh round weights as determined by information collected from the port validators, at-sea observers, viewing of electronic monitoring data, and reported by the vessel master in the vessel's electronic groundfish trawl fishing logbook.

Vessels in an overage situation can avoid relinquishment by reallocating applicable IVQ prior to hailing out for the vessel's next trip or within 30 days, whichever comes first.

Bycatch Allowances

Electronically Monitored Trips

Notwithstanding FN1125 for the use of electronic monitoring during the COVID-19 pandemic, a vessel opting to use an electronic monitoring system for shoreside delivery is permitted a groundfish bycatch allowance of 20% of the weight of hake landed per trip, excluding sablefish, mackerel, walleye Pollock, subject to available IVQ holdings on the vessel's groundfish trawl licence.

The bycatch allowance for sablefish is 3% of the weight of hake landed per trip subject to available IVQ holdings set out in the vessel's groundfish trawl licence. The bycatch allowance for walleye pollock is 30% of the weight of hake landed per trip. The bycatch allowance for mackerel is 6% of the weight of Offshore Pacific hake on the vessel's groundfish trawl licence. There is no catch allowance for the following prohibited species Pacific Halibut, Salmon species, Green and White Sturgeon, Pacific Herring, Basking Shark, Tope Shark, Sixgill Shark, Wolf-eels, Eulachon or undersize Lingcod or Sablefish.

All catch of groundfish, will be registered against the vessel and applied against the vessel's IVQ holdings.

At-Sea Observer Trips

Notwithstanding FN1125 for the use of electronic monitoring during the COVID-19 pandemic, bycatch allowances set out above do not apply to groundfish trawl vessels carrying an observer for the trip. In those cases vessels may retain all groundfish catch, subject to the IVQ holdings and conditions set out in the vessel's valid groundfish trawl licence and rules set out in the 2021/2022 Integrated Fisheries Management Plan for Groundfish Appendix 8, Groundfish Trawl Commercial Harvest Plan

Fish Released At Sea

Notwithstanding FN1125 for the use of electronic monitoring during the COVID-19 pandemic, for vessels utilizing onboard at-sea observers, all weight of all species of groundfish that are released at-sea shall be applied against the vessel's appropriate species/species-area group IVQ or bycatch cap subject to regulated size limits and mortality rates. For Pacific hake, a 100% mortality rate is applied regardless of the towing time.

For vessels utilizing electronic monitoring, electronic sensor data and video footage of each fishing event will be used to verify the vessel master's report of unavoidable releases at-sea recorded in the vessel's electronic groundfish trawl fishing logbook. Where discrepancies occur between the vessel master's reported releases and the independent viewer's assessment of releases for the fishing event, the viewing assessment of released fish will be adopted by DFO as correct and shall be deemed catch and applied against the vessel's appropriate species/species-area group IVQ holdings or bycatch cap.

Use of Packers

DFO has extended, for the 2021 season, the pilot program which permits the limited use of packers in the Offshore Shoreside Pacific Hake fishery.

Rules governing the pilot program are as follows:

- Eligibility to participate in the program is limited to only vessels holding a valid groundfish trawl licence. Packing by non-groundfish trawl licensed vessels is not allowed.
- Any groundfish trawl licensed vessels intending to participate in the pilot require an amendment to its current groundfish trawl licence conditions. Requests for the hake packing amendment must be submitted directly to the Groundfish Management Unit @ 604 666-0010.
- Packing operations are restricted to vessels targeting Pacific Hake in Offshore waters and using mid-water gear.
- Transfers of fish between vessels are restricted to cod-end transfer only.
- Enhanced hail-in/hail-out rules and logbook recording requirements are in effect for all vessels involved in packing operations.
- All vessels (fishing and transporting) are subject to 100 % at sea monitoring and audit. Notwithstanding FN1125 for the use of electronic monitoring during the COVID-19 pandemic, groundfish trawl vessel master/licence holders have the option to carry either a Groundfish At-Sea observer or an electronic monitoring system (EM) to meet this 100% monitoring requirement. Archipelago Marine Research Ltd (AMR) is the service provider for the Offshore Pacific hake at-sea monitoring program. AMR's contact phone number (250) 383-4535.
- It is the responsibility of individual groundfish trawl vessel master/licence holders to make arrangements with the EM service provider to ensure updated software for the pilot is installed on each vessel.

- Vessels will not be issued Hail-out number (required for each fishing trip) unless arrangements for the provision of 100% at-sea monitoring services including the new EM software are in place.
- Vessels masters/licence holders participating in the program are required to retain and land all catch and transshipped fish. (No at-sea releases of any fish are allowed.)
- Landings will be assigned against IVQ quota holding of the packing vessel. Packing vessels are responsible for ensuring sufficient quantities of Individual Vessel Quota for all species landed are secured to cover off all landings.
- Current species and holdings caps for the groundfish trawl sector are unchanged and remain in effect for the program.

DFO Contacts

For further information on any aspect of this management plan or the Pacific Groundfish Trawl fishery contact Deirdre Finn, Pacific Region Trawl Coordinator, either by phone at (236) 330-4139 or by email at deirdre.finn@dfo-mpo.gc.ca

For information regarding science and stock assessment, contact either Greg Workman by phone at (250) 756-7113 or email at greg.workman@dfo-mpo.gc.ca; or Chris Grandin by phone at (250) 756-7170 or by email at chris.grandin@dfo-mpo.gc.ca.

Appendix 1: In-season Advisory Process

The following in-season processes are established to ensure onshore processors receive priority access and consistent supply of hake during the season, and to provide advice to DFO on the in-season management of Pacific Hake:

In-season Hake Advisory Committee (IHAC):

The IHAC is expected to meet throughout the hake fishing season to review the hake fishery, ensure the provision of priority access for vessels delivering onshore, and make recommendations to DFO with respect to in-season management actions for the onshore and JV fisheries which may arise.

For further information on the IHAC process or conference call information contact Deirdre Finn, the Pacific Region Trawl Coordinator either at phone (236) 330-4139 or email deirdre.finn@dfo-mpo.gc.ca

Onshore Plant Committees (OPCs):

All vessel operators/licence owners actively fishing for onshore processors are expected to meet weekly (by conference call or in person) with plant representatives to discuss delivery schedules and quantity issues.

The OPCs and IHAC will only deal with in-season management of the fishery.

The GTAC Hake Subcommittee in conjunction with IHAC will continue participate in the in-season review process and provide general overarching advice to DFO on management of Pacific Hake fishery.

Appendix 2: Groundfish Trawl Pacific Hake At-Sea Monitoring Requirements.

Catch Monitoring

The Offshore Pacific Hake fishery is subject to one hundred percent (100%) at-sea monitoring of fishing activity and one hundred percent (100%) verification of landings. These two requirements are necessary to ensure a full and reliable accounting of fishing activity, location, date and time, and catch, whether retained, released or landed weight by species. The at-sea requirement may be met either through at-sea observer coverage or through the use of an Electronic Monitoring (EM) system. Dockside validation is supplied through the Groundfish Trawl Dockside Monitoring Program (DMP).

At Sea Observer Coverage

Notwithstanding FN1125 for the use of electronic monitoring during the COVID-19 pandemic, 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.

The BC groundfish trawl industry, in collaboration with DFO, began piloting the use of electronic monitoring (EM) technology during the 2019/20 fishing season to improve the accuracy of at-sea data collection. The EM system was being used to collect high quality data for the entire duration of each fishing trip. The system was comprised of video cameras to capture all fishing activity, GPS, hydraulic and rotational sensors. The initial focus of the program was to use the data collected by the EM system to enhance reporting of Pacific Halibut and Sablefish at-sea releases. Following the suspension of the ASOP in March 2020, many components of this pilot were used to develop the EEM Program which continues to be in place as an alternative mitigating management measure for the entire Option A fleet. Refer to Section 13.3.2 of this IFMP for more information on the suspension of the ASOP and the use of the EEM Program in response to COVID-19.

Archipelago Marine Research Ltd. (AMR) is the designated service provider for at-sea observers. 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.

Electronic Monitoring Program

The EM system allows for auditing, on a trip and set basis, the fishing activities of the vessel and in particular the disposition (retention) of all catch. Using an EM system is an alternative to the requirement to carry an at-sea observer.

The vessel masters/crew must ensure that the EM system is fully functional for the entire trip, that all cameras have a clear view of the vessel deck and are able to record the catch handling activities of the vessel crew at all times. Failure to ensure the functionality and visibility of the EM system to meet these requirements will result in higher level of data review at the vessels cost and/or the vessel being required to carry an at-sea observer on all subsequent trips.

It is the responsibility of vessel owners / licence holders to arrange for fishery electronic monitoring services from a service provider. Archipelago Marine Research Ltd. (AMR) is the EM service provider currently selected by the groundfish trawl industry to supply the Hake EM program.

Goals

In conjunction with the Groundfish Trawl Advisory Committee (GTAC) a comprehensive Hake EM program has been developed for the Offshore Pacific hake fishery for the season. Specific goals of the Hake EM program are:

- that all vessels opting for use of an electronic monitoring system are subject to 100% retention of all catch other than those species prohibited by licence condition;
- to require harvesters to accurately record catch information by fishing event in the electronic groundfish trawl fishing logbook;
- to collect electronic sensor and video information for all hake fishing trips;
- to conduct an audit between the fishers recorded activity and the electronic data captured by the EM system to ensure accuracy and adherence to the 100% retention requirement;
- to characterize and estimate size of at-sea releases, if they occur;
- to document all cod-end transfers and receipts for vessels with amendment to transfer and Pack fish for shoreside delivery;
- to provide a cost effective monitoring alternative to onboard at-sea observers; and

Information collected through the EM program could result in DFO assessing additional catch against the groundfish trawl licence groundfish holdings and/or requiring the vessel to take an at-sea observer.

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.

Appendix 3: Electronic Monitoring System

An Electronic Monitoring system allows for auditing, on a trip and set basis, of all fishing activities and in particular disposition (retention) of all catch. It is the responsibility of the vessel master to ensure that the EM system is fully functional for the entire trip, that all cameras have a clear view of the vessel deck and are able to record the catch handling activities of the vessel crew at all times. Failure to ensure the functionality and visibility of the EM system to meet these requirements will result in higher level of data review at the vessels cost and/or the vessel being required to carry an at-sea observer on all subsequent trips.

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 vessel master to view real time recording of EM imagery, enter time-stamped event markers into the sensor record, and conduct system checks to test system performance;
- b) operating software to record imagery during fishing events for analysis;
- c) peripheral sensor devices suitable for fishing-deck work environment, including GPS, an electronic hydraulic pressure transducer, and a winch rotation sensor;
- d) a minimum of two closed circuit television cameras per deck where handling, releasing, and sorting of fish occurs, 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) a minimum of two closed circuit television cameras per entrance of the reduction facility configured to provide a clear view of offal entering the reduction facility;

- f) 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; and
- g) the GPS, hydraulic and winch sensor data shall be logged to a data file at a frequency of once per ten seconds, continuously throughout the fishing trip.

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 1280 X 800 px 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 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 three 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 NMEA0183 – 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.

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 all systems are working must be completed and a Functionality Test Certificate Number (FTCN) will then be provided by the EM service provider for recording in the fishing log. The FTCN will expire thirty days from issuance; a valid FTCN 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) 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.

Requirements While Fishing With EM:

- a) Accurate recording of all fish caught and released in the fishing log is critical to both accurate determination of catch and cost-effective fishing log audit. All catch either retained or released must be accurately recorded by species and estimated weight groundfish trawl data management platform or in a groundfish trawl fishing logbook. 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 master

declares at hail-out until the vessel returns to port to offload and the technician removes the trip information. The EM system must not be 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. If the EM system cannot be repaired at port, the vessel must hail-in as soon as possible.
- d) All species must be retained and landed with the exception of prohibited species set out in the vessel's conditions of licence.
- e) 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 and the disposition of the catch must be visible to the camera.

EM Data Processing Requirements/Specifications

The following section outlines the procedures and data processing requirements for EM data. EM data processing involves analysis of both EM sensor and EM video data.

For the purposes of the EM program a fishing event is defined as the activation of the winch sensor, hydraulic sensor and a defined speed signature associated with these sensors. For the purposes of imagery viewing for a fishing event, the viewing will begin at the time the doors are brought back onto the boat at haul back and will finish when all fish have been processed or stowed.

All fishing events sensor data will be recorded and processed to ascertain/verify fishing locations for all fishing events and to determine if any abnormal/anomalous events outside the program's specifications have occurred that warrant further investigation. Dependent upon the type of Hake trip the following data/viewing specifications are in effect.

Regular Midwater Hake Trips (No Packing/Transshipping) Imagery Data

- 10% of all fishing events across all trips on the hard drive will be randomly selected for imagery viewing;
- A minimum of one set per hard drive will be viewed;
- For each fishing event selected for viewing, all image data will be viewed from the time the doors are brought in until all catch is processed/stowed; and

Identify type of activity for any abnormal/anomalous sensor trigger events.

Packers/Transshippers (Trips Where Cod-End Transferred To or Received From Another Vessel – Does Not Include Joint Venture Transfers)

Imagery Data

- Vessel delivering cod-end- View 100% of image data for each fishing event for trips where transfers occurred. Viewing will be from the time the doors are brought in, until all catch is processed and stowed, or transferred to another vessel;
- Vessel receiving cod-end - View 100% of imagery for each cod-end receipt, and the processing and stowage of the fish that were received;
- Identify type of activity for any abnormal/anomalous sensor trigger events;
- Vessels that have engaged in packing or transshipping activity must record the following information in the fisher logbook and to AMR at the time of hail in;
- Set number where cod-end transfer was made;
- Estimated total weight of cod-end that was transferred; and
- Name of vessel that received cod-end.

JV Hake Catcher Vessels

Sensor Data

- Process 100% of sensor data for all trips.

Imagery Data

- 10% of all fishing events across all trips on the hard drive will be randomly selected for imagery viewing.
- A minimum of one set per hard drive will be viewed.
- For each fishing event selected for viewing, all image data will be viewed from the time the doors are brought in until the cod-end is received by the processor.
- Identify type of activity for any abnormal/anomalous sensor trigger events.

Recording of At-Sea Releases

Imagery viewers will be classifying any releases that occur by release type and estimated weight into the categories set out below. In addition to determining the release classification type imagery viewers will estimate total release weight.

Release Type

- Bleeding: A tear was made in the coded to allow fish to flow out of the net.
- Net Flush: The cod-end was opened up and the contents were dumped into the water.
- Deck Discards: Catch that had been emptied onto the deck from the net was subsequently shoveled off the back and/or out the scuppers of the vessel.
- Net Cleaning: Small amounts of fish that were stuck in the net were picked out and discarded by hand.
- Selective: Catch was pre-sorted and discarded by hand, or mammals or sharks discarded.

Release Weight Categories:

The following weights levels (in lbs.) will be used to classify at sea releases:

- None = 0
- Low = < 2, 000
- Moderate = 2, 000 – 10,000
- Medium High = 10,000 – 20,000
- High = > 20,000

Humboldt squid and any other releases will be noted and documented in the comments field when detected.

Imagery Viewing Criteria

The following outlines situations which will require additional imagery viewing (in addition to the 10% viewing requirement) and what the additional viewing requirements are.

Vessel Exceeds the Trip Limit Bycatch Allowances

View 100% of the fishing events for the trip on which the bycatch overage occurred.

Viewer Estimates Releases In Excess Of 2,000 Lbs. That Have Not Been Documented in the Fisher Logbook

- View 100% of all fishing events on the entire hard drive
- Subsequent 100% viewing of all fishing trips for the remainder of the season until DFO has approved return to 10% viewing
- Additional viewing for the remainder of the season will require approval from DFO.

Sets with Fisher Logbook Releases in Excess Of 10,000 Lbs.

- View each fishing event with releases reported by the fisher to be in excess of 10,000 lbs.

Data Retrieval Intervals

For the 2021/22 Pacific hake fishery, servicing of the EM system and hard drive data retrieval is required **every thirty (30) calendar days** from the time of the last data retrieval/install event (provided the vessel has fished during this time). In addition all vessels are required to run a Functionality Test (see Section below). If these criteria are not met, the vessel should arrange for a data retrieval. Vessels are required to make arrangements for EM service/data retrievals at the time of hail in.

Functionality Testing

In order to ensure that all required data is being collected by the EM system, it is important that vessel operators monitor their systems to ensure proper functioning. Functionality tests must be performed prior to departure from the dock, and the system should be frequently monitored via the video monitor screen throughout the trip.

Functionality tests must be run before embarking on each trip to ensure all EM components are functioning and that there is a minimum of 15% disk storage space remaining **and the anticipated trip length is no greater than two fishing days.**

If either criterion is not met, the vessel must arrange for a data retrieval/EM service prior to the commencement of a hake trip.

Functionality test instructions are located on the back of the laminated V5 Electronic Monitoring System User Quick Reference Guide.

The EM system automatically creates a record each time a functionality test is performed.

Fishing Log Audit

For vessels utilizing electronic monitoring systems all information recorded in the groundfish trawl data management platform is subject to verification by comparison to electronic fishing information collected. Fishers are expected to record accurately all fishing information for each fishing event.

System Data Retrieval

Every thirty (30) days the video and sensor data from the EM system will be removed from the EM system by the EM system service provider. For every fifteen day period there will be an audit of the accuracy of the completed fishing log for each trip in the period. The audit uses the video and sensor data to confirm catch retention, disposition and the VMS output to confirm location of fishing. AMR is the designated service provider for the audit and will run a series of tests so that the following comparisons will be made:

- a) Fishing log reported releases compared to EM Video - to compare the observed releases against the fishing log record. Ten percent (10%) of all sets per trip (minimum 1 set) will be randomly selected for video review.
- b) 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.
- c) After the audit is complete, the logbook info, the DMP and audit adjustments 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.
- d) Catch release weights assigned against the vessels groundfish trawl licence based on EM data rather or in addition to the fishers recorded logbook data.
- e) Requirement to take an at-sea observer.

EM Program Reporting

The audit function of the program will result in the creation and delivery of various reports to the both vessel master/owner and to DFO.

Jointly to Vessel Master/Owner and DFO

- Logbook/EM Viewer Comparison report will be sent to vessel and DFO with next QSR following each data retrieval and processing of data. Each report will provide information on the accuracy of the fishing master to record information in comparison to imagery viewed.

Sent Bi-weekly to DFO

- At-Sea Release Reports by category.

DFO may at any time request additional information from the service provider to substantiate any abnormal activity. Information collected through the EM program may result in the additional catch being recorded against the groundfish trawl licence groundfish holdings.

Electronic Groundfish Trawl Fishing Log

All groundfish trawl licensed vessels are required to accurately record and keep a record of all fishing activities in the groundfish trawl electronic fishing logbook.

The fishing master must ensure that the data management platform is available for use, prior to fishing, that sufficient hard drive space are available to cover any fishing trip and that information is recorded for each tow, immediately after completion of the tow.

Complete data of all fishing activities, in electronic form, 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 Vericatch as the sole service provider to provide a data management platform for to the groundfish trawl fleet for the 2021/22 fishing season.

Details of the groundfish trawl data management platform are available by contacting Bruce Turris, the Executive Director of the CGRCS at (604) 524-0005, Fax (604) 524-01510, or email: bruceturris@shaw.ca or Vericatch at 1-888-221-1953 or email: support@vericatch.com

Information recorded in the groundfish trawl electronic logbook on trips where the fishing master/vessel owners has opted to use electronic monitoring will be subject to verification by an audit program utilizing the information gathered by electronic means.

It is the responsibility of the vessel owner or master to ensure that the all of the vessel's Groundfish fishing activity is fully and accurately recorded.

Appendix 4 : Groundfish Trawl Paper Logbook

Fisheries and Oceans Canada / Pêches et Océans Canada		GROUND FISH TRAWL FISHING INFORMATION LOG		Page 2 of 2	
Vessel Name SEA WATER		VRN# 29999	Licence # T0155	Trip # 55	Hall Out# 21810476
Captain JOHN DOE		CAPT. FIN # 1234567	Port of Landing UCL	Hall In# 21824596	
Offload Location BORNSTEIN		Departure Date 20/05/04			
At Sea Observer DON TRIP		Code 18637	Buyer/Processor SEA DRIFT	Landing Date 30/05/04	
Tow #	BT or MT				
Date					
Name of Grounds					
Fishing Area					
Time (24hr clock)					
Set:					
Latitude					
Longitude					
Mid:					
Latitude					
Longitude					
Haul:					
Latitude					
Longitude					
Fishing Depth					
Meters					
Fathoms					
Tow Speed -					
Codend					
Gear Depth					
Spread					
TS - Target Species					
418 Yellowtail RF					
417 Widow RF					
437 Canary RF					
406 Silvergrey RF					
396 Pacific Ocean Perch					
440 Yellowmouth RF					
394 Rougheye RF					
403 Shorttail RF					
439 Redstripe RF					
401 Redbanded RF					
435 Bocaccio					
451 Shortspine TH					
453 Longspine TH					
626 Dover Sole					
621 Rock Sole					
628 Lemon Sole					
607 Petrale Sole					
610 Rex Sole					
631 Starry Flounder					
602 Turbot					
222 Pacific Cod					
467 Lingcod					
044 Dogfish					
455 Sablefish					
229 Pollock					
225 Hake					
056 Bk Skate					
059 Longnose Skate					
540 Cabezon					
472 Sculpin					
614 Halibut					
Tow Comments:					
WEATHER GETTING BAD		CUT TRIP SHORT BAD			
GOING TO MAKE ONE		WEATHER!			
MORE TOW.					
Log removed by: _____					
While Copy - DFO Original • Yellow Copy - DFO • Pink Copy - Vessel					