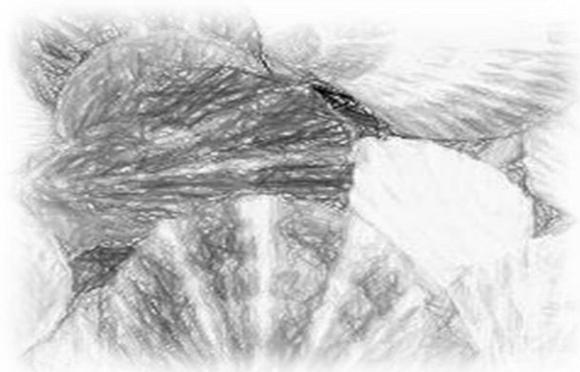


**PACIFIC REGION**

**INTEGRATED FISHERIES  
MANAGEMENT PLAN**

**SCALLOP BY TRAWL**

**MAY 1, 2022 TO  
APRIL 30, 2023**



*Chlamys spp.*



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 Plan and the regulations, the 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.*

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Cat. No. Fs143-3/22-2133E-PDF ISBN 978-0-660-42277-0 ISSN 2564-002X

Correct citation for this publication:

Fisheries and Oceans Canada. 2022. Scallop by Trawl Fisheries Management Plan 2022/23. 22-2133: 79p



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## FOREWORD

The purpose of this Integrated Fisheries Management Plan (IFMP) is to identify the main objectives and requirements for the Scallop by Trawl fishery in the Pacific Region, as well as the management measures that will be used to achieve these objectives. This document also serves to communicate the basic information on the fishery and its management to Fisheries & Oceans Canada (DFO) staff, legislated co-management boards, First Nations 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*. 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.

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# **1. OVERVIEW**

## **1.1. Introduction**

This IFMP for Scallop by Trawl covers the period May 1, 2022 to April 30, 2023.

This IFMP provides a broad context to the management and interrelationships of all fishing sectors of the Spiny Scallop (*Chlamys hastata*) and Pink Scallop (*Chlamys rubida*) fishery in the Pacific Region (British Columbia, Canada).

Section 1 provides an overview of the commercial, recreational and First Nations fisheries. Section 2 presents a biological synopsis and stock assessment. Section 3 describes new considerations for Indigenous knowledge. Section 4 provides a socio-economic profile. Section 5 describes the emerging management issues that may impact management measures in the fishery. Section 6 describes objectives for the fishery, reflecting stock status presented in Section 2 and to address the issues identified in Section 5. Section 7 discusses access and allocation. Section 8 directs to the Appendices for the fishery management procedures that will be employed during the year to meet the objectives. Section 9 describes shared stewardship arrangements to achieve objectives. Section 10 describes the enforcement measures to achieve the objectives. Section 11 describes the ways and means by which the achievement of the objectives will be assessed in the following year. Sections 12, 13 and 14 provide references, internet sites and a glossary to define terms. Sections 15 and 16 provide contacts and information on the Scallop by Trawl Advisory Board, the main consultation process for the fishery. In future, Section 17 will provide an annual review of the previous year of the fisheries based on the performance measures provided in Section 11.

The Commercial Harvest Plan for Scallop by Trawl is attached to this IFMP as Appendix 1. For information about First Nations harvest of scallops for food, social and ceremonial (FSC) purposes and the recreational fishery, please refer to Section 1 and 7 (this document). Appendix 2 provides descriptions of commercial Scallop Management Areas and other information related to harvesting areas. Appendix 3 is an example of a Scallop by Trawl commercial harvest log. Appendix 4 discusses fishing vessel safety.

## **1.2. History**

Two species of scallops, Pink Scallop (*Chlamys rubida*) and Spiny Scallop (*Chlamys hastata*) are harvested from in-shore waters in the trawl fishery. The Pink and Spiny Scallop fisheries began in 1982 and Experimental or Exploratory Guidelines for the fisheries have been in place since 2000.

The scallop fishery began under a commercial ZI licence that allowed for harvest of both Pink and Spiny Scallops by dive and trawl gear. In 1993, the dive and trawl fisheries were split. The dive fishery continued under the ZI licence and a separate licence category, ZR, was created for the trawl fishery. There was no limit to the number of licences issued annually in either fishery.

Historically, there were few management controls on the commercial fishery. A minimum size limit of 55 mm measured through the longest diameter of the shell perpendicular to the hinge was in effect for both species of commercially harvested scallops and some area closures existed.

The Minister of Fisheries and Oceans Canada discontinued the commercial scallop fisheries following the 1999 fishing season because the fisheries were data-limited with few management controls.

Since 2000, there has been a limited experimental harvest of Pink and Spiny Scallops by a small number of harvesters. In 2001, this experimental fishery was developed as part of Fisheries and Oceans Canada (DFO)'s New Emerging Fisheries Policy (NEFP) that allows gradual expansion of the fishery in order to develop a biologically-based assessment and management framework. The NEFP is precautionary in its approach to the development of new fisheries and thus harvests are relatively small-scale. Generally new fisheries development follows three stages – feasibility, exploratory and commercial.

In 2000, a 'Framework for Pink and Spiny Scallop Fisheries off the West Coast of Canada' was presented to the Pacific Science Advice Review Committee (now Canadian Science Advice Secretariat, CSAS) (Lauzier et al. 2000) and protocols for scallop dive and trawl surveys were developed based on this document. In 2005, a subsequent paper was presented to CSAS which analysed data from 2000–2002 from the experimental scallop fisheries and provided preliminary biological reference points as well as recommendations for the continued assessment and management of the fisheries (Lauzier et al. 2005). A report by Surry et al. (2012) provided updated information on natural mortality and growth rates of Pink and Spiny Scallops in British Columbia. Most recently, the Scallop by Trawl assessment plan was reviewed in 2014 (DFO 2015).

Until August 2007, DFO licensed the Scallop by Trawl harvest using a non-transferable exploratory fishing licence. Beginning in early 2009, DFO started consultations with all harvesters to discuss the possibility of moving to an IFMP-managed fishery using regular commercial licences. In 2015, the scallop by trawl exploratory fishery was assessed as being a good candidate to move to an IFMP-managed commercial fishery and implemented in 2016/17.

Historical information in addition to that presented here is available in the Canadian Manuscript Report of Fisheries and Aquatic Sciences series (Harbo and Wylie 2006).

CSAS reports are available at:

<http://www.isdm-gdsi.gc.ca/csas-sccs/applications/Publications/index-eng.asp>

### **1.2.1. Fishery Outlook**

DFO does not undertake new commercial fisheries without having industry self-funding arrangements in place. Participants are required to develop arrangements wherein they pay directly for the cost of services and any incremental costs to DFO.

DFO reviewed the exploratory fishery and determined that stocks can sustain a commercially viable fishery under the current assessment and management framework, and that the industry is able to fund its own management and assessment programs. The IFMP will be “adaptive” in nature; it will recognize past participation and work to date, it will establish a potential licensing pool, and it will develop criteria for future increases to licence opportunities. Expansion of the fishery may be considered for communal commercial access, should there be interest.

No expansion in the footprint of the fishing area or participation will occur without stock assessment surveys and habitat assessments. Development of fisheries in new areas, not historically fished, may be considered in future, and will follow the framework provided by Lauzier et al. (2000, 2005). Prior to any new fishing location being approved by DFO for a biomass survey or harvest opportunities, a habitat assessment of the area will be required.

This “adaptive management plan process” will evolve in future seasons to meet the principles of the Sustainable Fisheries Framework (SFF).

In addition, as part of an IFMP-managed scallop trawl fishery, DFO requires biologically-based quotas, assessment against the National Fishery Monitoring Policy (Section 5.1.2), a licence limitation process, a compliance framework, and a public consultation and advisory process.

Additional information about the Sustainable Fisheries Framework is available at:

<http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/overview-cadre-eng.htm>

### **1.3. Type of Fishery and Participants**

The Pacific Region scallop fisheries include commercial, First Nations and recreational fisheries.

#### **1.3.1. First Nations**

First Nations' harvest for food, social and ceremonial (FSC) purposes may occur coast-wide where authorized by an Aboriginal communal licence or, under treaty, a harvest document for domestic purposes. There are currently no communal licences or harvest documents issued for the use of scallop trawl gear.

Scallops harvested by hand-picking may be allocated under treaty, but were unallocated under the Maa-nulth, Tsawwassen, Tla'amin (Sliammon) and Nisga'a Treaties. Beaches were set aside on the west coast of Vancouver Island for intertidal bivalve harvest for domestic purposes under the Maa-nulth Final Agreement (treaty), where recreational and commercial fishing for intertidal bivalves is closed.

#### **1.3.2. Commercial**

Two species of scallop, Pink Scallop (*Chlamys rubida*) and Spiny Scallop (*Chlamys hastata*) are harvested from in-shore waters in the commercial trawl fishery. From 2000 up to and including the 2014/15 season, DFO licensed the commercial scallop by trawl fishery with a non-transferable exploratory licence. A non-transferable commercial licence category ZR was reinstated in the 2016/17 season following the NEFP. Up to seven participants were eligible for the exploratory fishery opportunity and now there are four. Three have been active in recent years.

#### **1.3.3. Aquaculture**

DFO licenses aquaculture activities for scallop but harvest of cultured product is not conducted by trawl gear. In 2021, 200 of the 478 shellfish aquaculture sites in BC are licensed to culture scallops. The focus of aquaculture effort on scallop is Weathervane Scallop (*Patinopecten caurinus*), Pacific Scallop (*Patinopecten* spp), and Japanese Scallop (*Mizuhopecten yessoensis*).

#### **1.3.4. Recreational**

A British Columbia Tidal Waters Sport Fishing Licence is required for the recreational harvest of all species of fish, including scallops, but the use of trawl gear is not permitted.

### **1.4. Location of Fishery**

Commercial fishing for Pink and Spiny Scallop has generally taken place along the southern BC coastline in Pacific Fishery Management Areas 13 and 14. The fishery continues in these areas, subject to biotoxin and sanitary contamination closures under the Canadian Shellfish Sanitation Program (CSSP). As the adaptive management strategy progresses, DFO will establish the criteria for potential expansion of the commercial fishing opportunity into other areas.

Permanent area closures are listed in Appendix 1 for the commercial fishery.

First Nations and recreational harvest may occur in areas approved for harvest under the CSSP and authorized under either a communal licence or, under treaty, a harvest document, or recreational licence. The BC coast north of Cape Caution (Areas 1 to 11 inclusive) is closed for the harvest of bivalves, unless the appropriate testing is in place to ensure safe harvest. Several First Nations and some commercial interests have established the necessary sampling required for small-scale harvest openings for all three sectors.

Information about sanitary and biotoxin closures is available at:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/contamination/index-eng.html>

## **1.5. Fishery Characteristics**

### **1.5.1. Commercial**

The commercial scallop fishery is a competitive fishery managed by survey-based biomass estimates and area quotas. Pink and Spiny Scallops (“swimming scallops”), *Chlamys rubida* and *C. hastate*, are two of 23 scallop species found in BC, and are the only scallop species to occur in sufficient abundance to have supported successful commercial fisheries in BC waters (Bourne 1987). They are smaller than other scallop species, rarely exceeding a maximum shell height of 70 mm and 80 mm, respectively, measured perpendicular to the hinge (Bourne and Harbo 1987), and as such, are marketed whole, in the shell, fresh or frozen.

### **1.5.2. Aquaculture**

In December 2010, the *Pacific Aquaculture Regulations* came into effect, giving DFO the authority to govern the management and regulation of aquaculture activities at marine finfish, shellfish, freshwater/land-based and enhancement facilities. The Province of British Columbia continues to have authority over land tenures and workplace safety related to aquaculture in BC. New applications, amendments and related referrals are coordinated through Front Counter BC. DFO approves and issues aquaculture licences.

The focus of aquaculture activities on scallop is Weathervane Scallop (*Patinopecten caurinus*), Pacific Scallop (*Patinopecten* spp), and Japanese Scallop (*Mizuhopecten yessoensis*).

Information is available from the Front Counter BC at:

<http://www.frontcounterbc.gov.bc.ca/>

More information on Integrated Management of Aquaculture Plans and Aquaculture Management Committee Meetings is available by email from [IMAPS@dfo-mpo.gc.ca](mailto:IMAPS@dfo-mpo.gc.ca).

### **1.5.3. First Nations**

Indigenous harvest for food, social, and ceremonial (FSC) purposes may occur year round in the waters of British Columbia that are open for fishing under the Canadian Shellfish Sanitation Program (CSSP), and is limited to the gear specified for bivalve harvest in the communal licence or, under treaty, the harvest document. Scallop trawl gear is not specified.

Commitment to Reconciliation:

DFO is committed to the recognition and implementation of Indigenous and treaty rights related to fisheries, oceans, aquatic habitat, and marine waterways in a manner consistent with section 35 of the *Constitution Act, 1982*, the United Nations Declaration on the Rights of Indigenous Peoples

Act, and the federal Principles Respecting the Government of Canada's Relationship with Indigenous peoples. DFO-CCG Reconciliation Strategy provides a guidance document to better understand why and how reconciliation informs the work of the Department.

For further details on the United Nations Declaration on the Rights of Indigenous Peoples Act see <https://www.justice.gc.ca/eng/declaration/index.html>

For further details on the Principles Respecting the Government of Canada's Relationship with Indigenous peoples see <https://www.justice.gc.ca/eng/csjsj/principles-principes.html>

DFO's Reconciliation Strategy can be found at <https://www.dfo-mpo.gc.ca/fisheries-peches/aboriginal-autochtones/reconciliation-eng.html>

For further details on reconciliation in British Columbia and Yukon, refer to <https://www.pac.dfo-mpo.gc.ca/abor-autoc/reconciliation-pacific-pacifique-eng.html>

Information on Indigenous fisheries and reconciliation is available at: <http://www.pac.dfo-mpo.gc.ca/abor-autoc/index-eng.html>

Information on the Government of Canada work to advance reconciliation can be found here: <https://www.rcaanc-cirnac.gc.ca/eng/1400782178444/1529183710887>

#### FSC Fisheries:

Fish and marine resources are central to the culture, society, and well-being of First Nations and provide a critical connection to language, traditional knowledge, and health of communities. Fisheries & Oceans Canada (DFO) remains committed to respecting First Nations' Aboriginal right to fish for food, social and ceremonial (FSC) purposes, or domestic purposes under Treaty which has priority – after conservation – over other uses of the resource.

Section 35(1) of the *Constitution Act* recognizes and affirms the existing Aboriginal and Treaty rights of the Aboriginal 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 which found that the Musqueam First Nation has an Aboriginal right to fish for food, social and ceremonial (FSC) purposes. The Supreme Court found that where an Aboriginal group has a right to fish for FSC purposes, it takes priority, after conservation, over other uses of the resource. The Supreme Court has also indicated the duty to consult with Aboriginal Peoples 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:

- Improving relations with First Nations
- Providing a framework for the management of the First Nations fishery in a manner that was consistent with the Supreme Court of Canada's 1990 *Sparrow* decision
- Greater involvement of First Nations in the management of fisheries
- Increased participation in commercial fisheries (Allocation Transfer Program (ATP))

AFS continues to be one of the principal mechanisms – in addition to Treaties and reconciliation agreements - to support the development of relationships with First Nations including the consultation, planning and implementation of fisheries, and the development of capacity to undertake fisheries management, stock assessment, enhancement and habitat protection programs.

Canada and First Nation Long-term agreements: Treaties and Reconciliation Agreements:

#### *Court-defined Rights*

Five Nuu-chah-nulth First Nations located on the west coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht (the Five Nations) – have an Aboriginal right to fish for any species, with the exception of Geoduck, within their Fishing Territories and to sell that fish. It is important to note that access will align with *Species at Risk Act* (SARA) prohibitions.

#### *Treaties*

There are four modern treaties in British Columbia, which all have fisheries chapters: Nisga'a Final Agreement, Tsawwassen First Nation Final Agreement, Maa-nulth First Nations Final Agreement, and Tla'amin (Sliammon) Nation Final Agreement. Through these treaties, Nations work with DFO to manage treaty fisheries on an annual basis. There are also historic treaties in British Columbia (Douglas Treaties and Treaty 8). For a detailed list of long-term fisheries arrangements in BC and Yukon, please see the internet at <https://www.pac.dfo-mpo.gc.ca/abor-autoc/treaty-traites-eng.html>.

Fisheries chapters in modern treaties may articulate a treaty fishing right for domestic purposes that are protected under Section 35 of the *Constitution Act*, 1982. Negotiated through a side agreement, some modern treaty First Nations have commercial access through a Harvest Agreement outside of the constitutionally protected treaty. Scallops were unallocated under the Maa-nulth, Tsawwassen, Tla'amin and Nisga'a Treaties.

#### *Reconciliation Agreements*

In addition to negotiating treaties, the Government of Canada and Indigenous peoples can also negotiate Recognition of Indigenous Rights and Self-Determination (RIRSD) agreements, to explore new ways of working together to advance the recognition of Indigenous rights and self-determination. These agreements are led by Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). With participation from relevant departments, DFO can also negotiate Fisheries Resources Reconciliation Agreements directly with First Nations to advance reconciliation with First Nations. These agreements seek to advance reconciliation and enhance First Nations and DFO collaborative governance and management on fisheries, marine and aquatic matters.

Reconciliation agreements work within the legislative framework of the *Fisheries Act*. The Act provides the Minister of Fisheries, Oceans and the Canadian Coast Guard with the legislative authority for the proper management and control of the fisheries, the conservation and protection of fish, and regulation of the fishery.

Since 2019, the Government of Canada entered into several agreements with First Nations that lay the foundation for incremental development and implementation of new arrangements for collaborative governance on fisheries and marine matters. A ‘framework agreement’ sets out the subject matter for negotiation and describes how negotiations will proceed towards a final agreement. A ‘final agreement’ includes detailed commitments the Parties have agreed to implementing and governs the relationship between the Parties for its term.

See the BC Treaty Commission at <https://www.bctreaty.ca/index.php> and CIRNAC for more information on current treaty tables at <https://www.rcaanc-cirnac.gc.ca/eng/1100100028574/1529354437231> and for current RIRSD tables at <https://www.rcaanc-cirnac.gc.ca/eng/1511969222951/1529103469169>.

#### Framework Agreements:

- *GayGahlda “Changing Tide” Framework Agreement* between Haida and Canada
- *Haíl̓cistut Incremental House Post Agreement* between Heiltsuk and Canada
- *Reconciliation Framework Agreement for Fisheries Resources* between A-Tlegay Member Nations (We Wai Kai Nation, Wei Wai Kum First Nation, Kwiakah First Nation, Tlowitsis Nation, and K’ómoks First Nation) and Canada

#### Final Agreements:

- *Coastal First Nations Fisheries Resource Reconciliation Agreement* between Canada and Metlakatla, Gitxaala, Gitga’at, Kitasoo/Xai-Xais, Nuxalk, Heiltsuk, Wuikinuxv, and Haida Nations
- *Gwet’sen Nilt’I Pathway Agreement* between T̓silhqot’in, Canada and BC
- *Burrard Inlet Environmental Science and Stewardship Agreement* between Tsleil-Waututh Nation and Canada

As DFO and First Nations develop and implement new fisheries and collaborative governance arrangements, DFO works with these Nations to engage neighbouring First Nations and stakeholders (e.g. commercial and recreational sectors).

#### **1.5.4. Recreational**

The recreational fishery may be open year round, subject to available sanitary and biotoxin contamination sampling and results, and is limited to hand picking and diving.

#### **1.6. Governance**

The scallop fisheries are governed by the *Fisheries Act* (R.S., 1985, c. F-14) and regulations made thereunder, including the *Fishery (General) Regulations* (e.g., conditions of licence), the *Pacific Fishery Regulations* (e.g., open times), the *British Columbia Sport Fishing Regulations*, the *Aboriginal Communal Fishing Licences Regulations* and the *Pacific Aquaculture Regulations*. Areas and Subareas are described in the *Pacific Fishery Management Area Regulations*.

Marine Protected Areas may be established under the *Oceans Act* (1996, c. 31). National Marine and Wildlife Conservation areas may be established under the *Canada National Marine Conservation Areas Act* (2002, c. 18). Marine National Wildlife Areas may be established under the *Canada Wildlife Act* (1985, c. W-9).

Species listed as extirpated, endangered, threatened or special concern are governed by the *Species At Risk Act* (2002, c. 29) (SARA) which has implications for the management of fisheries that impact listed species. In addition to existing prohibitions under the *Fisheries Act*, it is illegal under the SARA to kill, harm, harass, capture, take, possess, collect, buy, sell or trade any listed endangered or threatened animal or any part or derivative of an individual.

These documents are available at:

<http://www.dfo-mpo.gc.ca/acts-lois/index-eng.htm>

More information on the SARA is available at:

<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>

The Sustainable Fisheries Framework is a toolbox of existing and new policies for DFO to sustainably manage Canadian fisheries by conserving fish stocks while supporting the industries that rely on healthy fish populations. The Sustainable Fisheries Framework provides planning and operational tools that allow these goals to be achieved in a clear, predictable, transparent, and inclusive manner, and provides the foundation for new conservation policies to implement the ecosystem and precautionary approaches to fisheries management. These policies include:

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

For more information on the Sustainable Fisheries Framework and its policies, please visit: <https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/overview-cadre-eng.htm>

As required under the SFF, DFO annually tracks the performance of major fish stocks that it manages through the Sustainability Survey for Fisheries. The fish stocks are selected for their economic, environmental and/or cultural importance. The vast majority of the landings from fisheries managed by DFO come from these fish stocks. The survey reports on DFO's progress to implement its SFF policies, which guide the management of Canada's fisheries, and on other information about these fish stocks. The results of previous Sustainability Surveys are available online: <http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/survey-sondage/index-en.html>

Scientific advice for this fishery is peer-reviewed primarily through a process managed under the Canadian Science Advice Secretariat (CSAS).

Approval Process:

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

## **2. STOCK ASSESSMENT AND SCIENCE**

### **2.1. Biological Synopsis**

Pink and Spiny Scallops are discontinuously distributed throughout BC in small discrete beds. Aggregations may be found within close proximity of each other (within 10 km) or in relative isolation. Pink and Spiny Scallops are found sub-tidally to depths of 200 m (Bernard 1983). The distribution of the two species overlaps, and a single scallop aggregation or bed often contains both species. In general, Pink Scallops tend to be found on softer substrates than Spiny Scallops, and have a broader depth distribution, extending to 200 m, compared to 150 m for Spiny Scallops. There have been no detailed studies of natural populations of Pink and Spiny Scallops in BC, and the complete distribution and degree of exchange or dispersal between and among discrete aggregations is unknown.

Pink and Spiny Scallops are smaller than other scallop species, and rarely exceed a maximum shell height of 70 and 80 mm, respectively. Sexes are separate with spawning occurring twice per year in spring and fall for Pink Scallops, and once per year in the summer for Spiny Scallops (MacDonald et al. 1991). Larvae are pelagic, with settlement thought to occur within 5-6 weeks. Both species are sexually mature at 25-35 mm shell height or approximately two years old. Pink Scallops grow more slowly than Spiny Scallops and achieve a smaller maximum shell height. Both species are approximately 3-4 years old when they reach a shell height of 55 mm. Maximum age for both species is estimated to be six years (Bourne and Harbo 1987, MacDonald et al. 1991). For both species, reproductive effort increases with age, with annual gamete production continuing to steadily increase in Spiny Scallops, exceeding somatic production after five years; while for Pink scallops annual gamete production reaches an asymptotic maximum after four years and never exceeds somatic production (MacDonald et al. 1991).

### **2.2. Ecosystem Interactions**

Scallops are suspension feeders, feeding on single-celled algae. As larvae, scallops are assumed to be vulnerable to predation from larger zooplankton and planktivorous fish. Known predators of adult Pink and Spiny Scallops include sea stars, as well as octopus (Gillespie et al. 1998) and Sea Otters (Wolt, C.M., unpublished data). Large fluctuations in scallop abundance would likely affect the abundance and foraging strategy of their predators as well as the structure of the benthic food web.

Live scallops are frequently encrusted on both valves by one of two sponges, *Myxilla incrustans* or *Mycale adhaerens*, with which they share a mutualistic relationship. The sponges provide some protection for scallops from predation by sea stars (Bloom 1975, Farren and Donovan 2007), while living on scallop valves increases sponge survival by providing protection from predators such as dorid nudibranchs (Bloom 1975) and by reducing the effects of sediment accumulation (Burns and Bingham 2002).

### 2.3. Stock Assessment

Scallop trawl biomass surveys are conducted in collaboration with the West Coast Scallop Harvesters Association. Estimates of biomass are based on fishery independent surveys of known harvestable populations of Pink and Spiny Scallops on a bed-by-bed basis (Lauzier et al. 2000, 2005; DFO 2015). Although assessment on a larger scale is desirable due to the limited resources available for estimating biomass, a consistent time series of biomass surveys and biological data from a variety of areas is necessary to investigate whether changes in biomass and populations dynamics appear correlated between different areas. To date, repeat surveys have been conducted at the following locations:

Location	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2017	2018	2019	2020	2021
Cape Lazo	*							*									
Elk Point	*		*			*	*		*		*		*		*		*
Granite Point	*				*		*					*			*		*
Hole in the Wall	*		*		*			*		*		*					
Moriarty Point	*		*			*	*		*		*		*		*		
Octopus Islands	*						*										
Okisollo	*					*	*					*					*
SW Quadra	*					*		*		*	*		*		*		*
Wilby Shoal	*		*				*			*					*		
Willow Point	*						*										*

See Appendix 1 and 2 for full descriptions of these areas and the Total Allowable Catch applied as a result of survey.

### 2.4. Stock Scenarios

Long-term trends in Pink and Spiny Scallop stock abundance are not available yet. A sufficient time-series, if implemented on an annual basis, is necessary to determine stock status using the current assessment framework. Survey results to date for some areas indicate high variation in stock sizes.

### 2.5. Precautionary Approach

DFO 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 to commercial, recreational, and FSC fishing:

<http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/precaution-eng.htm>

In general, the precautionary approach 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 the risk of serious harm to fish stocks or their ecosystem. This approach is widely accepted internationally as an essential part of sustainable fisheries management.

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

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

The 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 Precautionary Approach Framework (PA) 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 timeframe.

Amendments to the *Fisheries Act* (Bill C-68) were passed into legislation in 2019 and include new authorities to amend the *Fishery (General) Regulations* and requirements to maintain major fish stocks prescribed under regulation at sustainable levels, and develop and implement rebuilding plans for stocks that have declined to their critical zone. The proposed regulatory amendments draw upon the 2013 Guidance for the development of rebuilding plans under the Precautionary Approach Framework: Growing stocks out of the critical zone.

Information on the regulatory proposal regarding fish stocks and rebuilding plans is available at:

<http://www.dfo-mpo.gc.ca/fisheries-peches/consultation/consult-maj-pri-eng.html>

The regulatory proposal was consulted on from December 2018 to March 2019 with pre-publication of the proposed regulation in Canada Gazette Part I on January 2, 2021. The regulation will come into effect upon publication in Canada Gazette Part II. The publication is available at: <https://gazette.gc.ca/rp-pr/p1/2021/2021-01-02/html/reg1-eng.html>

Currently, for BC Pink and Spiny Scallops stocks, there is a paucity of biological and time series data so moving forward on this requirement will need to take place over several years. The current assessment framework, if implemented on an annual basis, will facilitate the development of PA compliant provisional reference points which can then be evaluated to test for robustness to various stock size scenarios.

## **2.6. Research**

The primary source of uncertainty in the assessment of Pink and Spiny Scallop stocks is the paucity of biological and time series data. Fishery independent surveys are the main source of stock abundance and research data.

Additional scientific information on Pink and Spiny Scallop stocks and the fishery is available at:

<http://www.isdm-gdsi.gc.ca/csas-sccs/applications/Publications/index-eng.asp>

See references in Section 12.

DFO may investigate the establishment of closed areas to serve as scallop refugia or no harvest “control” sites. Benefits of establishing such closures would include the potential for comparative studies of harvest rates for use in stock assessments and, in addition, such areas would serve as potential sources of spawning recruitment. Input from experienced scallop harvesters will be sought in identifying these areas.

## **3. INDIGENOUS KNOWLEDGE**

In 2019, the *Fisheries Act* was amended to include provisions for where the Minister may, or shall consider Indigenous knowledge in making decisions pertaining to fisheries, fish and fish habitat, as well as provisions for the additional protection of that knowledge when shared in confidence.

The term Indigenous knowledge may not be universally used, and other terms such as Indigenous Knowledge Systems, Traditional Knowledge, Traditional Ecological Knowledge, or Aboriginal Traditional Knowledge, which all convey similar concepts, may be used instead.

Indigenous knowledge can inform and fill knowledge gaps related to the health of fish stocks, and aid decision making related to fisheries management. The Government of Canada and the scientific community acknowledge the need to access and incorporate Indigenous knowledge in meaningful and respectful ways. Work is underway at a National level to develop processes for how DFO receives Indigenous knowledge and applies it to inform decision making. This will include consideration of how to engage knowledge holders, and how to ensure that the knowledge can be shared and considered in a mutually acceptable manner by both knowledge holders and the broader community of First Nations, stakeholders, managers, and policy makers involved in the fisheries. This work will be an iterative process done in collaboration with First Nations, Indigenous groups and knowledge holders, to ensure protection of the knowledge provided.

## **4. ECONOMIC PROFILE OF THE FISHERY**

The intent of this section is illustrative, and it provides a socio-economic context of the Scallop by Trawl fisheries in BC.

In recent years up to four commercial licences have been issued annually, with three licences active. Landings have been in the order of 25,000 to 35,000 lb/year.

There is little or no information that can be provided publicly about the fishery at this time as the participation has been low and the data is protected by confidentiality policies. Future IFMPs will include an expanded summary of the history and current economic state of the commercial fishery.

The Scallop by Trawl fishery is market-driven. To date there has been limited participation in the fishery. As the regularity of harvest increases, it is expected that the market for the scallops will increase.

## **5. MANAGEMENT ISSUES**

The following emerging issues may impact the management measures in place for the Scallop by Trawl fisheries.

### **5.1. Conservation and Sustainability**

#### **5.1.1. Stock Status**

While there are abundance estimates for some scallop management areas, not all are assessed in a consistent fashion. This lack of stock assessment information is an ongoing issue, hampers DFO's ability to monitor the status of populations, and limits the commercial industry's opportunity to expand. It is not currently practical to assess every scallop bed in BC and future efforts may be required to explore options for alternative assessment frameworks for the fishery while meeting the objectives under the Sustainable Fisheries Framework.

#### **5.1.2. National Fishery Monitoring Policy**

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 FSC and other Indigenous fisheries, commercial fisheries, recreational fisheries, and to support market access for Canadian fish products.

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.

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". Fish Stocks 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 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>

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 Indigenous groups and stakeholders 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.

## **5.2. Social, Cultural and Economic**

### **5.2.1. Commercial**

There are a number of issues impacting the economic viability of the commercial scallop fishery. These issues include the limited area permitted for harvest as a result of survey requirements, the potential loss of area as a result of the expansion of aquaculture tenures, treaty settlements and water quality concerns. DFO will work with licence eligibility holders to develop solutions to these issues and adapt the fishery accordingly. Advice from harvesters and other interested parties will continue to be considered.

### **5.2.2. First Nations**

Opportunity for scallop harvest by hand picking is typically provided coincident with the CSSP sampling for commercial purposes, and the CSSP is not implemented in all areas. However, DFO is not aware of any issues with First Nations’ access to scallop.

### **5.2.3. Recreational**

Opportunity for scallop harvest by hand picking and diving is typically provided coincident with CSSP sampling for commercial purposes, and the CSSP is not implemented in all areas. However, DFO is not aware of any issues with recreational access to scallop.

## **5.3. Compliance**

The CSSP requires DFO to monitor and patrol all harvesting activities, however resources are becoming limited for such activities. Processing plants must be able to ensure that the commercial product they receive has been harvested legally in approved growing waters.

## 5.4. Ecosystem

### 5.4.1. 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 its 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>

#### *5.4.1.1. Northern Shelf Bioregion Marine Protected Areas Network*

The Government of Canada, the Province of BC and 18 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 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, and is informed by previously developed First Nation marine plans.

Draft MPA network design scenario 1, which consists of areas proposed for conservation as well as their proposed management measures was shared with non-partnering First Nations, who are not part of the collaborative governance arrangement, and with members of the Network Integrated and Ocean Advisory Committees in February 2019.

Governance partners considered all the input received about the first network scenario and developed scenario 2, which was discussed and further revised by partners and stakeholders during workshops held during the winter and spring of 2021. Throughout the summer and fall 2021, significant technical work was undertaken to develop a draft Network Action Plan which describes the draft network design scenario, as well as additional information such as proposed designation tools, implementation timelines, and monitoring recommended governance frameworks. Considerations are underway with respect to next steps for the process, including timelines for consultation and engagement. The Department will share more information as it becomes available.

More information on MPA Network Planning is available at:

<http://www.mpanetwork.ca>

The Pacific North Coast Integrated Management Area Plan is available at:

<https://www.dfo-mpo.gc.ca/oceans/management-gestion/index-eng.html>

#### 5.4.1.2. Rockfish Conservation Areas

There are 162 Rockfish Conservation Areas (RCAs) in BC, covering roughly 4,350km<sup>2</sup> 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 (Section 5.4.1.1). Workshops with First Nations and stakeholders and online consultations were held in 2019. A summary of what we heard is available online at: <https://www.pac.dfo-mpo.gc.ca/consultation/ground-fond/rca-accs/2020-heard-entendu-eng.html#6>. There will be more opportunities to provide feedback on RCAs 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.

For further information on this, please contact [DFO.RCA-ACS.MPO@dfo-mpo.gc.ca](mailto:DFO.RCA-ACS.MPO@dfo-mpo.gc.ca).

#### 5.4.1.3. 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.

#### 5.4.1.4. 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>

#### *5.4.1.5. Strait of Georgia and Howe Sound Glass Sponge Reef Marine Refuges*

17 marine refuges were established between 2016 and 2019 under the Strait of Georgia and Howe Sound Glass Sponge Reef Conservation Initiative, which aims to protect glass sponge reefs from all bottom-contact fishing activities in alignment with DFO's Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas. All commercial, recreational and Indigenous food, social and ceremonial (FSC) bottom-contact fishing activities for prawn, shrimp, crab and groundfish, are prohibited within the 17 marine refuges as well as the use of downrigger gear for recreational salmon trolling (restricted via Condition of Licence) is prohibited within portions of Subareas 28-2 and 28-4 to protect Howe Sound glass sponge reefs. Prohibition fishing activities include:

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

For further information on this, please contact Danielle Derrick at [Danielle.Derrick@dfo-mpo.gc.ca](mailto:Danielle.Derrick@dfo-mpo.gc.ca).

A description of the closures is provided on the Strait of Georgia and Howe Sound Glass Sponge Reef Conservation Initiative website, here: <https://www.dfo-mpo.gc.ca/oceans/ceccsr-cerceef/closures-fermetures-eng.html>

Coordinates of the new closures are also available via Fisheries Notice FN0039, accessible here: [https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view\\_notice&DOC\\_ID=254231&ID=all](https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=254231&ID=all)

#### *5.4.1.6. 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. Parks Canada consultations on the feasibility assessment are ongoing. 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 NMCR in the southern Strait of Georgia is available on the internet at: <https://www.pc.gc.ca/en/amnc-nmca/cnamnc-cnmca/dgs-ssg>

#### **5.4.2. Marine Spatial Planning South Coast**

As part of a national marine spatial planning initiative, DFO is in pre-planning phase, collaborating with Indigenous groups and organizations, the Province of BC, and other federal departments (Transport Canada, Natural Resources Canada, Environment and Climate Change Canada, Parks Canada and others), to gather information and data relevant to a marine spatial planning process in southern BC, which includes the Strait of Georgia and Southern Shelf bioregions. The concept of marine spatial planning is to improve coordination across jurisdictions and activities in the marine space. Deliverables by 2023 include: recommendations for a trilateral governance model/approach, a Marine Atlas (working draft), and a Framework to inform future planning phases, including the development of a marine spatial plan. Harvesters can expect updates on this process in the future.

#### **5.4.3. Gear Impacts**

The trawl used in BC is called a butterfly scallop trawl and is different than the drags and dredges used in other scallop fisheries (Lauzier et al. 2005). The butterfly scallop trawl is designed to capture Pink and Spiny Scallops as they are swimming, and to minimize habitat impacts and the bycatch of non-target species as the crossbar and the bottom on the trawl net is usually 20 cm off the bottom. The trawl frame sits on several steel runners that contact the bottom. Most mobile organisms are able to avoid the trawl as the tow speed is approximately 0.5-0.7 knots (Lauzier et al. 2005).

##### *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. It 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 the Canada-Wide Action Plan on Zero Plastic Waste Phase 2 developed by the Canadian Council of Ministers of the Environment, available from: <https://ccme.ca/en/current-activities/waste>.

##### *Condition of Licence to Report Lost and Retrieved Gear*

In Spring 2020, it became a mandatory condition of licence for commercial harvesters to report lost and retrieved fishing gear. While the Department is taking a stewardship approach to ghost gear and working with harvesters to reduce the effects of ghost fishing, the inclusion of the

reporting requirement as a condition of licence means that not reporting lost and/or retrieved gear is now a chargeable offence.

Lost gear can be reported through the online Fishing Gear Reporting System, available at: <https://www.dfo-mpo.gc.ca/fisheries-peches/commercial-commerciale/reporting-declaration-eng.html>.

*The Ghost Gear Fund (Sustainable Fisheries Solutions and Retrieval Support Contributions Program)*

2020-2022, the DFO Ghost Gear Fund has provided over \$18 million in funding to projects falling under four pillars of activity:

- Abandoned, lost or otherwise discarded fishing gear (ALDFG) retrieval
- Responsible disposal
- Acquisition and piloting of currently available innovative technologies
- International leadership

To learn more about the DFO Ghost Gear Fund, go to: <https://www.dfo-mpo.gc.ca/fisheries-peches/management-gestion/ghostgear-equipementfantome/program-programme/projects-projets-eng.html>

#### **5.4.4. Marine Mammal Protection Act**

In 2016, the U.S. published new regulations (80 FR 54390) pursuant to the *Marine Mammal Protection Act* which focus on the reduction of marine mammal bycatch in foreign commercial fishing operations. Under these regulations, harvesting nations intending to continue to export fish and fish products to the USA after January 1, 2023, must apply to the U.S. National Oceanic and Atmospheric Administration (NOAA) for a comparability finding for each of its commercial fisheries listed in the US List of Foreign Fisheries. The harvesting nation must demonstrate: 1) the prohibition of intentional mortality or serious injury of marine mammals in the course of commercial fishing operations; and 2) the implementation of a regulatory program comparable in effectiveness to the US, including mandatory reporting of marine mammal bycatch, monitoring programs and management/mitigation measures where appropriate.

Depending on information provided, foreign commercial fisheries that export fish and fish products to the United States can be classified as either “export” or “exempt” based on the frequency and likelihood of incidental mortality and serious injury of marine mammals.

DFO will continue to share information about the U.S. *Marine Mammal Protection Act* Import Provisions and the process for ensuring continued access to US markets. Further information can be found on the NOAA website: <https://www.fisheries.noaa.gov/foreign/marine-mammal-protection/noaa-fisheries-establishes-international-marine-mammal-bycatch-criteria-us-imports>, or by contacting the Regional Fisheries Coordinator or the DFO Marine Mammal Unit (MMU) (Contact: Lee Harber, Marine Mammal Advisor; [Lee.Harber@dfo-mpo.gc.ca](mailto:Lee.Harber@dfo-mpo.gc.ca)).

#### **5.4.5. Southern Resident Killer Whale Management Measures**

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, Oceans and the Canadian Coast

Guard 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 in 2018 through 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 with a focus in key foraging areas within Southern Resident Killer Whale critical habitat.

Since 2018, Indigenous groups, the Indigenous and Multi-Stakeholder Advisory Group (IMAG), Technical Working Groups (TWGs) 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.

For the 2022 fishing season, the Government of Canada intends to ensure actions for the 2022 season to mitigate threats of prey availability and acoustic and physical disturbance can be implemented to coincide with the return of Southern Resident Killer Whales in typically greater numbers to Canadian Pacific waters. Any in-season changes will be announced via Fishery Notices.

To address vessel disturbance in the presence of whales, a mandatory 400-metre vessel approach distance for all killer whales is in effect until May 31, 2022 in southern BC coastal waters between Campbell River and just north of Ucluelet. The Marine Mammal Regulations remain in effect year-round, and require maintaining a minimum 200 metre approach distance from all killer whales in Canadian Pacific waters other than those described above, and, 100 metres for other whales, porpoises and dolphins or 200 metres when the animal is in resting position or with a calf.

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](http://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@dfo-mpo.gc.ca](mailto:DFO.SRKW-ERS.MPO@dfo-mpo.gc.ca)) or visit <https://www.canada.ca/southern-resident-killer-whales>

#### **5.4.6. Marine Mammal Regulations**

The *Marine Mammal Regulations* provide direction on conservation and protection of marine mammals, provide guidance for recovery of Endangered Species under the *Species at Risk Act*, and set out provisions related to reducing human disturbance of marine mammals (e.g. viewing of marine mammals) and mandatory reporting requirements in the case there is accidental contact

with a marine mammal and a vessel or fishing gear. These regulations were amended in 2018 and now specify mandatory requirements to prevent disturbance of marine mammals.

As per section 7(2) of the *Marine Mammal Regulations*, disturbance is defined as a number of human actions including:

- Feeding, swimming or interacting with a marine mammal.
- Moving a marine mammal (or enticing/causing it to move).
- Separating a marine mammal from its group or going between it and a calf.
- Trapping a marine mammal or a group either between a vessel and the shore, or between a vessel and other vessels.
- Tagging or marking a marine mammal.
- Checking nautical charts for the locations of various protected areas and no go zones.
- Ensure to check nautical charts for the locations of various protected areas and no go zones.

Boats are required to maintain a minimum approach distance of 100 m for whales, dolphins or porpoises, 200m when whales, dolphins or porpoises are in a resting position or with a calf, and 200m from all Killer Whales in Pacific Canadian waters except when in southern BC coastal waters which requires a 400m minimum approach distance to all killer whales. For more information on safe boating behavior around whales please visit: [Watching Marine Mammals and Be Whale Wise](#).

Any operator of a vessel or fishing gear involved in accidental contact with a marine mammal must notify DFO of the incident, as per section 39 of the *Marine Mammal Regulations*. Incident reporting includes:

- Reporting an injured, stranded, entangled or dead marine mammal to the [BC Marine Mammal Response Network \(Observe, Record, Report\)](#) 1-800-465-4336.
- Reporting as bycatch in a log book
- [Reporting accidental contact through the marine mammal interaction form](#)
- Depredation reporting to DFO by email at [MarineMammals@pac.dfo-mpo.gc.ca](mailto:MarineMammals@pac.dfo-mpo.gc.ca) or by calling 1-800-465-4336.

Please note, incidents involving abuse or harassment of a marine mammal should be reported as a [fisheries violation](#), while injured, stranded, entangled or dead marine mammals should be reported to the [BC Marine Mammal Response Network](#) to enable a response if appropriate.

Further information regarding the *Marine Mammal Regulations* can be obtained by contacting the DFO Marine Mammal Unit (MMU) ([MarineMammals@pac.dfo-mpo.gc.ca](mailto:MarineMammals@pac.dfo-mpo.gc.ca))

#### **5.4.7. Whale, Turtle and Basking Shark Incident and Sight Reports**

The Department appreciates your assistance in tracking the sightings of live cetaceans (whales, dolphins and porpoises), sea turtles and Basking Sharks. While there are many whale species found in Pacific Canadian waters, sightings of Basking Shark and Leatherback Sea Turtles are infrequent. The collection of sighting data is useful to scientists in determining population size and species distribution and aids in recovery efforts under the SARA.

### *Marine Mammal Incident Reporting Hotline:*

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

1-800-465-4336 OR VHF CHANNEL 16

What to report:

- Your name and contact information
- Date and time of incident
- Location: Latitude/Longitude coordinates, landmarks
- Species
- Animal alive/dead (animal condition)
- Nature of injury and supporting details (if possible)
- Pictures/Video taken



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

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

Email: [sightings@ocean.org](mailto:sightings@ocean.org)

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

App: WhaleReport

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

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

Email: [BaskingShark@dfo-mpo.gc.ca](mailto:BaskingShark@dfo-mpo.gc.ca)

Internet: [www.pac.dfo-mpo.gc.ca/SharkSightings](http://www.pac.dfo-mpo.gc.ca/SharkSightings)

## **6. OBJECTIVES**

Sections 6.1 and 6.2 outline the “longer term” objectives for this and other invertebrate fisheries in the Pacific Region. Section 6.3 describes the species-specific “shorter-term” objectives for the Pink and Spiny Scallop trawl fisheries.

### **6.1. National**

DFO aims to:

- Meet conservation objectives and ensure healthy and productive fisheries and ecosystems;
- Manage fisheries to provide opportunities for economic prosperity;
- Provide stability, transparency, and predictability in fisheries management and improved governance.

## 6.2. Pacific Region

In 1994, the Biological Objective Working Group of the Pacific Scientific Advice Review Committee (PSARC, now CSAS) identified three biological objectives for management of Pacific Region fish and invertebrate stocks (Rice et al. 1995). The objectives remain relevant today, particularly in light of development of the national objectives around sustainable fisheries.

- Ensure that subpopulations over as broad a geographical and ecological range as possible do not become biologically threatened (in the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) sense of “threatened”);
- Operationally, the above objective requires at least that management allow enough spawners to survive, after accounting for all sources of mortality (including all fisheries and natural mortality), to ensure production of enough progeny that they will, themselves, be able to replace themselves when mature;
- Fisheries may have collateral effects on other species, mediated by the ecological relationships of the target species. Fisheries should be managed in ways that do not violate the above objectives for ecologically related species, as well as target species.

## 6.3. Scallop by Trawl

### 6.3.1. Conservation and Sustainability

Objectives developed during the exploratory fishery remain relevant:

- To develop an understanding of the stock distribution and abundance of Pink and Spiny Scallops and to establish scallop management and assessment units.
- To collect biological information, including age, growth and mortality data, for use in the development of biologically based assessment and management frameworks for Pink and Spiny Scallops.
- To develop and establish PA compliant reference points and harvest control rules for Pink and Spiny Scallops under the SFF.

### 6.3.2. Social, Cultural and Economic

DFO’s objective is to continue to work collaboratively with the Scallop by Trawl Advisory Board to ensure sustainable fisheries and to collect input from all fishing sectors and First Nations in the annual development of the IFMP.

**First Nations Fishery:** DFO’s objective is to continue to provide opportunities for First Nations to harvest fish for FSC purposes, in a manner consistent with the decision of the Supreme Court of Canada in *R. vs. Sparrow* and subsequent court decisions.

Collaborative management strategies are also being developed through the Aboriginal Aquatic Resource Oceans Management Program, (AAROM).

First Nations involvement in the commercial fishery is a shared goal between DFO and Indigenous peoples. First Nation participation in the commercial fisheries is being addressed through DFO Aboriginal fisheries programs. For more information on the Aboriginal Fisheries Strategy Allocation Transfer Program, contact a resource manager listed in Section 15 or visit <https://www.dfo-mpo.gc.ca/fisheries-peches/aboriginal-autochtones/afs-srapa-eng.html>

Information about Indigenous fisheries and reconciliation is available at:

<http://www.pac.dfo-mpo.gc.ca/abor-autoc/index-eng.html>

More information on the Pacific Integrated Commercial Fishery Initiative is available at:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/picfi-ipcip/index-eng.html>

DFO will continue to develop catch monitoring programs and standards in collaboration with First Nations organizations:

- To discuss conservation, proper management and control, reasonable FSC needs, and options to meet shared interests;
- To encourage First Nation representatives to share any issues or needs pertaining to FSC fishing in their communal areas;
- To create an environment within the advisory process in which First Nation representatives can express their concerns and opinions at the table and to establish working mechanisms in conjunction with the other fishing sectors to reduce conflict and mitigate issues.

**Commercial Fishery:** DFO's objective is to continue to work collaboratively with the commercial industry on sustainable resource use and long-term economic viability of the scallop seafood industry recognizing that commercial fisheries play a vital role in Canada's economy. This will include adapting to changing resource and market conditions and extracting optimal value from world markets.

Vessel safety is an objective shared between DFO, Transport Canada, Transportation Safety Board, and WorkSafeBC (Appendix 4). All parties acknowledge the role of vessel masters and crew in responsibility for their own decisions regarding fishing vessel operations. DFO's objective, in conjunction with other responsible agencies, is to adopt an affirmative action profile in respect of vessel safety considerations.

First Nations involvement in the commercial fishery is a shared goal between DFO and Indigenous peoples. First Nation participation in the commercial fisheries is being addressed through DFO Aboriginal fisheries programs (above).

**Recreational Fishery:** DFO's objective is to provide sustainable recreational harvesting opportunities as part of integrated management plans consistent with DFO's policies, and to establish working mechanisms in conjunction with the other fishing sectors to reduce conflict and mitigate issues.

### **6.3.3. Compliance and Food Safety**

DFO's objective is to pursue opportunities to monitor and enforce these fisheries, in conjunction with the monitoring and enforcement priorities in the Pacific Region. Dedicated patrols by fishery officers are the main enforcement tool for this fishery. In addition, fishery officers respond to reports about suspicious and illegal activities from the general public. The general public are encouraged to call the DFO reporting line at 1-800-465-4336.

The safety of consumers is a top priority for the Government of Canada. The reputation of Canada's food supply is a responsibility shared by all parties, including industry and federal and provincial governments.

As partners for delivery of the Canadian Shellfish Sanitation Program (CSSP), DFO and the Canadian Food Inspection Agency (CFIA) collaborate to prevent illegal harvesting and selling of bivalve shellfish, including laundering of illegal products.

#### **6.3.4. Ecosystem**

DFO's objective is to use the Ecological Risk Assessment Framework for Coldwater Corals and Sponge Dominated Communities, guided by the Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas (Section 1.6), to determine the level of risk in these fisheries and whether mitigation measures are required in any areas.

DFO's objective is to support, in conjunction with Environment and Climate Change Canada and Parks Canada, the Government of Canada's strategy for reaching its domestic and international marine conservation targets.

## **7. ACCESS AND ALLOCATION**

The Minister can, for reasons of conservation or for any other valid reasons, modify access, allocations, and sharing arrangements outlined in this IFMP in accordance with the powers granted pursuant to the *Fisheries Act*.

### **7.1. First Nations**

To date, few limits have been placed on First Nations' harvest for FSC purposes. Scallops harvested by hand-picking may be allocated under treaty, but were unallocated under the Maa-nulth, Tsawwassen, Tla'amin (Sliammon) and Nisga'a Treaties.

Information on Treaties and status updates on current treaty negotiations can be found at:

<http://www.bctreaty.ca/>

### **7.2. Commercial**

A commercial Scallop by Trawl (ZR) licence is required to commercially harvest Scallop by Trawl. Scallop by Trawl licence eligibilities are limited entry and party-based. The commercial scallop fishery is a competitive fishery managed by area closures, gear and fishing depth limitations, minimum size limits, and requirements to conduct fishery-independent surveys of biomass in all fished areas to determine area quotas.

### **7.3. Recreational**

The recreational daily limit for Pink and Spiny Scallops combined by hand-picking is 75 per day. The possession limit is two-times the daily limit.

### **7.4. Aquaculture**

Consideration is given for aquaculturist access to relatively low numbers of wild juvenile or adult scallops (e.g. for broodstock development) for limited time periods where populations would face insignificant to low risk from the additional harvest pressure (DFO 2004).

For information on aquaculture or access to broodstock, contact the Aquaculture Management Division (Section 15 Contacts).

## **7.5. Experimental, Scientific, Educational or Public Display**

DFO supports and facilitates scientific investigations related to scallops. Scientific licence requests received from scientific, educational, and public display institutions, including biological collecting firms, are considered. Existing policies with respect to scientific licences and new policies on the use-of-fish apply.

## **7.6. Requests for Access**

Through the Aboriginal Fisheries Strategy Program, DFO provides FSC fishery access to aggregate groups or individual First Nations through fisheries agreements and communal licences or harvest documents under treaty. From time to time, DFO receives requests from First Nations to improve access to shellfish for FSC purposes. First Nations interested in bilateral discussion with DFO regarding FSC access issues should contact the resource manager for their area (Section 15 Contacts).

Discussions about recreational access are directed to DFO through the SFAB process and the representatives to the Scallop by Trawl Advisory Board (Section 16). The SFAB usually meets twice a year (in the late spring and mid-winter) to discuss and advise DFO on recreational fishing plans, recreational fishery regulations, and any areas of concern to the recreational fishing community.

Information about the SFAB is available at:

<http://www.pac.dfo-mpo.gc.ca/consultation/smon/sfab-ccps/index-eng.html>

## **8. MANAGEMENT MEASURES FOR THE DURATION OF THE PLAN**

See the Commercial Harvest Plan, Appendix 1, for detail on the following:

- Fishing Seasons/Areas;
- Control and Monitoring of Removals;
- Decision Rules;
- Licensing.

DFO's policy on the management of First Nations fishing identifies First Nations harvests for FSC purposes as the first priority after conservation. DFO seeks to provide for the effective management and regulation of the First Nation fishery through negotiation of mutually acceptable and time-limited agreements which outline provisions pertaining to the fisheries and co-management activities. The agreements include provisions by which First Nations manage fishing by their members for FSC purposes, in addition to outlining First Nation involvement in a range of co-management activities and economic development opportunities which may include, but not be limited to, habitat enhancement, FSC catch monitoring and enforcement, fish management and community research.

First Nations' may fish for scallop by hand-picking in areas that are not closed due to contamination. There are currently no communal licences or harvest documents (under treaty) issued to First Nations for the use of trawl gear to harvest scallops.

For recreational harvesters, a Tidal Waters Sport Fishing Licence is required to fish and retain shellfish, including scallop. Hand-picking is permitted but the use of trawl gear is not permitted for recreational fishing.

## **9. SHARED STEWARDSHIP ARRANGEMENTS**

### **9.1. Commercial Fishery**

Industry members and/or their association are responsible for coordinating all biomass surveys, while following DFO's methodology and data transfer protocols. Vessel owners/licence eligibility holders are required to make arrangements with an industry-funded service provider for the delivery of in-season information to DFO as required by conditions of licence regarding monitoring, biosampling, and catch reporting.

### **9.2. Fisheries & Oceans Canada**

Contributions to the IFMP are provided by Fisheries Management in the areas and regional headquarters, Science Branch, the Shellfish Data Unit, Conservation and Enforcement, the Policy Analysis and Treaty Support Unit, the Pacific Fishery Licence Unit, the Recreational Fisheries Division, the Oceans Directorate and numerous administrative personnel.

## **10. COMPLIANCE PLAN**

General information about the Fisheries Enforcement program is available at:

<https://www.dfo-mpo.gc.ca/fisheries-peches/enf-loi/index-eng.html>

Enforcement staff will pursue opportunities to monitor and enforce this fishery, in conjunction with the monitoring and enforcement priorities directed by senior managers in the Pacific Region.

Users of the resource have a responsibility to report violations. Any suspected or actual fisheries, wildlife, or pollution violations can be quickly and discretely reported to the appropriate enforcement officer by using the toll free Observe, Record, and Report hotline. This toll free number is available 24 hours a day.

**OBSERVE, RECORD AND REPORT - 1-800-465-4336  
Or 604 607-4186 (Lower Mainland)**

Enforcement enquiries can also be directed to the local field offices during regular office hours.

## **11. PERFORMANCE REVIEW**

Performance indicators are reported in the Post-season Review (Section 17).

### **11.1. Stock Assessment**

The number of biomass surveys will be compared to previous years.

### **11.2. Commercial Fishery**

The delivery of the commercial fishery will be assessed by performance measures including the number of days fished, landed value compared to previous years, input from representatives at Scallop by Trawl Advisory Board meetings and other DFO program measures and assessments.

### **11.3. First Nations Fishery**

The review will include the numbers and outcomes of meetings with First Nations on specific issues.

### **11.4. Recreational Fishery**

The evaluation will include input from SFAB representatives at Scallop by Trawl Advisory Board meetings.

### **11.5. Compliance**

Evaluation will include time spent attending to enforcement of the fishery, counts of infractions by type, and counts of prosecutions initiated. It should be noted that low numbers of violations may be indicative of a successful proactive program, establishing a visible presence of enforcement authority as a deterrent to non-compliance.

### **11.6. Ecosystem**

Changes arising as a result of initiatives under the *Oceans Act* or the Ecological Risk Assessment Framework for Coldwater Coral and Sponge Dominated Communities under the Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas will be described where appropriate.

## **12. REFERENCES AND RESOURCES**

- Bernard, F.R. 1983. Catalogue of living Bivalvia of the eastern Pacific Ocean: Bering Strait to Cape Horn. Can. Spec. Publ. Fish. Aquat. Sci. 61: 102 p.
- Bloom, S.A. 1975. The motile escape response of a sessile prey: a sponge-scallop mutualism. *Journal of Experimental Marine Biology and Ecology*. 17(3):311-321.
- Bourne, N.F. and R. Harbo. 1987. Size limits for Pink and Spiny Scallops *In* Status of invertebrate fisheries off the Pacific Coast of Canada. Can. Tech. Rep. Fish. Aquat. Sci. No. 1576. p113-122.
- Burns, D.O. and Bingham, B.L. 2002. Epibiotic sponges on the scallops *Chlamys hastata* and *Chlamys rubida*: increased survival in a high-sediment environment. *Journal of the Marine Biological Association of the United Kingdom*. 82(6):961.
- DFO. 2004. National Policy on Access to Wild Aquatic Resources As it Applies to Aquaculture ([http://www.dfo-mpo.gc.ca/Aquaculture/ref/AWAR\\_e.pdf](http://www.dfo-mpo.gc.ca/Aquaculture/ref/AWAR_e.pdf)).
- DFO. 2015. Summary of pink and spiny scallop survey results, 2000-2013 and moving towards precautionary approach reference points. DFO Can. Sci. Advis. Sec. Sci. Resp. 2015/001.
- Farren, H.M. and Donovan, D.A. 2007. Effects of sponge and barnacle encrustation on survival of the scallop *Chlamys hastata*. *Hydrobiologia*. 592(1):225-234.

- Gillespie, G.E., Parker, G. and Morrison, J. 1998. A Review of Octopus Fisheries Biology and British Columbia Octopus Fisheries. Canadian Stock Assessment Secretariat Research Document 98/87. 63 pp.
- Bourne, N.F. 1987. Scallops *in* Status of invertebrate fisheries off the Pacific Coast of Canada (1985/86). Can. Tech. Rep. Fish. Aquat. Sci. No. 1576. P. 107-112.
- Harbo, R.M. and E.S. Wylie. 2006. Pacific Commercial Fishery Updates for Invertebrate Resources (2000). Can. Man. Rpt. Fish. and Aquat. Sci. 2735. pp. 235-273.
- Lauzier, R., S. Campagna, and R. Hinder. 2000. Framework for Pink (*Chlamys rubida*) and Spiny (*C. hastata*) Scallop fisheries in waters off the west coast of Canada. Canadian Stock Assessment Secretariat Research Document 2000/123.
- Lauzier, R.B. Walther, L.C., Hajas, W., Lessard, J., and Wylie E.S. 2005. Progressing to a scientifically-based assessment and management system for renewed commercial Pink and Spiny Scallop fisheries off the British Columbia coast. Canadian Stock Assessment Secretariat Research Document 2005/087.
- MacDonald, B.A., Thompson, R.J., and Bourne, N.F. 1991. Growth and reproductive energetics of three scallop species from British Columbia (*Chlamys hastata*, *Chlamys rubida*, and *Crassodoma gigantea*). Can. J. Fish. Aquat. Sci. 48:215 – 221.
- Rice, J., R.D. Humphreys, L. Richards, R. Kadowaki, D. Welch, M. Stocker, B. Turris, G.A. McFarlane, F. Dickson and D. Ware (eds). 1995. Pacific Stock Assessment Review Committee (PSARC) Annual Report for 1994. Canadian Manuscript Report of Fisheries and Aquatic Sciences 2318.
- Surry, A.M., Fong, K.H., Rutherford, D.T., and Nguyen, H. 2012. Update to the assessment framework for the Pink and Spiny scallop (*Chlamys rubida* and *C. hastata*) dive fishery in waters off the west coast of Canada. DFO Can. Sci. Advis. Sec. Res. Doc. 2011/123. 65 p.

### 13. INTERNET SITES

Fisheries & Oceans Canada Pacific Region Scallop page:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/shellfish-mollusques/scallop-petonce/index-eng.html>

Federal Science Library, including collection of Integrated Fisheries Management Plans:

<https://science-libraries.canada.ca/eng/home/>

Pacific Region Fishery Management Area and Subarea maps:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/areas-secteurs/index-eng.html>

Pacific Region, Fisheries Management, Fishery Openings and Closures:

<http://www.dfo-mpo.gc.ca/fisheries-peches/commercial-commerciale/pac-yukon-eng.html>

BC Sport Fishing Guide:

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

Centre for Scientific Advice, Pacific, research documents, proceedings and Invertebrate stock status reports, including scallop:

#### 14. GLOSSARY

AAROM	Aboriginal Aquatic Resources and Oceans Management (AAROM) program - DFO's AAROM funds aggregations of First Nation groups to build the capacity required to coordinate fishery planning and program initiatives and is focused on developing affiliations between First Nations to work together at a broad watershed or ecosystem level where there are common interests and where decisions and solutions can be based on integrated knowledge of several Aboriginal communities.
aquaculture	As defined by the United Nations Food and Agriculture Organization (FAO), aquaculture is the culture of aquatic organisms, including fish, molluscs, crustaceans and aquatic plants. Aquaculture implies some form of intervention in the rearing process to increase production, such as regular stocking, feeding, protection from predators, etc. It also implies individual or corporate ownership of the cultivated stock.
Area and Subarea	Defined in Section 2 of the Pacific Fishery Management Area Regulations. A map of Pacific Fishery Management Areas is available on the DFO internet site at: <a href="http://www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/areas-secteurs/index-eng.htm">www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/areas-secteurs/index-eng.htm</a>
ASP	Amnesiac Shellfish Poisoning: a toxic plankton bloom (biotoxin).
Bivalve mollusc	Shellfish with two valves that are hinged (clams, oysters, scallops, mussels).
C&P	Fisheries & Oceans Canada, Conservation and Protection Branch.
CFIA	Canadian Food Inspection Agency.
Centre for Scientific Advice - Pacific (CSAP)	Centre for Scientific Advice - Pacific (formerly, Pacific Scientific Advice Review Committee), chaired by DFO and including other federal and provincial government agency representatives and external participants.
CSSP	Canadian Shellfish Sanitation Program.
communal licence	Issued to First Nation's organizations pursuant to the Aboriginal Communal Fishing Licences Regulations to carry on fishing and related activities for food, social and ceremonial (FSC) purposes.
DFO	Fisheries & Oceans Canada. On behalf of the Government of Canada, DFO is responsible for developing and implementing policies and programs in support of Canada's scientific, ecological, social and economic interests in oceans and fresh waters.
Food, Social and Ceremonial (FSC)	A fishery conducted by First Nations for food, social and ceremonial purposes.
Indigenous knowledge	There is no universal definition of Indigenous knowledge, and the composition of Indigenous knowledge should be determined by

	Indigenous peoples themselves. Indigenous knowledge is intricately tied to Indigenous worldviews and ways of life, rather than knowledge in a western sense. The term Indigenous knowledge may not be universally used, and other terms such as Indigenous Knowledge Systems, Traditional Knowledge, Traditional Ecological Knowledge, or Aboriginal Traditional Knowledge, which all convey similar concepts, may be used instead. When working with Inuit, the term Inuit Qaujimagatuqangit (IQ) is more likely to be used than Indigenous knowledge. Similarly, when working with Métis knowledge holders, the term Métis Traditional Knowledge is more likely to be used than Indigenous knowledge. The term Indigenous knowledge is used throughout this document in line with the terminology in the <i>Fisheries Act</i> .
Invertebrate	An animal without a backbone.
PICFI	Pacific Integrated Commercial Fisheries Initiative - DFO's PICFI is an initiative aimed at achieving environmentally sustainable and economically viable commercial fisheries, where conservation is the first priority and First Nations' aspirations to be more involved are supported.
Precautionary Approach (PA)	In resource management, the precautionary approach is, in general, about being cautious when scientific information is uncertain, unreliable or inadequate and not using the absence of adequate scientific information as a reason to postpone or fail to take action to avoid serious harm to the resource. Information on the adoption of a PA framework for fisheries management in Canada is available at: <a href="http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/precaution-eng.htm">http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/precaution-eng.htm</a>
PSHA	Pacific Scallop Harvesters Association.
PSP	Paralytic Shellfish Poisoning. A toxic plankton that is ingested and concentrated by bivalve molluscs, commonly known as "red tide".
Quota	Total allowable catch. The amount of catch which may be taken from a stock, determined by analytical procedures, to achieve management objectives.
SFAB	Sport Fishing Advisory Board, which provides advice to DFO on matters of recreational (sport) fishing.
Stakeholder	People with an interest in the fisheries resources, such as recreational and commercial harvesters, processors, and non-consumptive users.
Stock Assessment	Analyses of fisheries and research data used to estimate stock abundance and health, or evaluate the effects of fishing on a stock or population and predict the reactions of populations to alternative management choices.
Subarea	A subdivision of an Area, as described in the Pacific Fishery Management Area Regulations. (See maps at Area or Subarea internet link above).

TAC	Total allowable catch or Quota. The amount of catch which may be taken from a stock, determined by analytical procedures, to achieve management objectives.
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## 15. CONTACTS

Observe, Record, and Report	1-800-465-4336
Fisheries Information and Shellfish Contamination Closure Update (24 Hours):	
Toll free	1-866-431-3474
Lower Mainland	(604) 666-2828
Marine Mammal Incident Reporting Hotline	1-800-465-4336 or VHF Channel 16

### Fisheries Management

Regional Coordinator - Invertebrates	Lisa Mijacika	(604) 666-3869
Lead Fishery Manager, Scallop	Jenny Smith	(236) 330-2963
A/Regional Recreational Co-ordinator	Greg Hornby	(250) 286-5886
North Coast (Areas 1 through 10) 417 2nd Avenue West, Prince Rupert, BC V8J 1G8	General inquiries Fax	(250) 627-3499 (250) 627-3427
A/Shellfish Program Coordinator Aboriginal Affairs Advisor	Coral Cargill Melanie Anthony	(250) 627-3021 <a href="mailto:DFO.NCAP-PACN.MPO@dfo-mpo.gc.ca">DFO.NCAP-PACN.MPO@dfo-mpo.gc.ca</a>
South Coast (Areas 11 through 27 & 29-5) 3225 Stephenson Point Road, Nanaimo, BC V9T 1K3	General Inquiries Fax	(250) 756-7270 (250) 756-7162
A/Resource Manager, Scallops Resource Manager - First Nations Fisheries (NEVI)	Jenny Smith Kent Spencer	(236) 330-2963 (250) 286 5885
Lower Fraser Area Unit 3, 100 Annacis Parkway, Delta, BC V3M 6A2	General Inquiries Fax	(604) 666-7575 (604) 666-7112
A/Resource Manager – Shellfish Fisheries	Hong Tjhie	(236) 330-3240

### Science

Stock Assessment & Research Division  
Pacific Biological Station  
Hammond Bay Road, Nanaimo, BC V9T 6N7

Mollusc Program Head	Dominique	(250) 756-7144
Scallop Biologist	Bureau	
Program Head, Shellfish Data Unit	Erin Porszt	
	Rob Flemming	<a href="mailto:PACSDU@dfo-mpo.gc.ca">PACSDU@dfo-mpo.gc.ca</a>

**Conservation and Enforcement**

Chief, South Coast Area	James McEachern	(250) 363-0225
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**Licensing**

Pacific Fishery Licence Unit	Phone	1-877-535-7307
401 Burrard Street, Vancouver, BC V6C 3S4	E-Mail:	<a href="mailto:fishing-peche@dfo-mpo.gc.ca">fishing-peche@dfo-mpo.gc.ca</a>

**Aquaculture**

Aquaculture Division General Shellfish Inbox	E-Mail:	<a href="mailto:shellfish.aquaculture@dfo-mpo.gc.ca">shellfish.aquaculture@dfo-mpo.gc.ca</a>
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**Canadian Food Inspection Agency (CFIA)**

Pacific Shellfish Operations	(604) 666-3737
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**Environment and Climate Change Canada**

Growing Water Quality Classification and Surveys	(604) 903-4475
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**BC Ministry of Environment**

Industry Specialist, Marine Fisheries & Seafood	Darah Gibson	(250) 893 0260
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**WorkSafe BC**

Occupational Safety Officer, Courtenay	Mark Lunny	(250) 334 8732
Occupational Safety Officer, Courtenay	Cody King	(250) 334 8733
Occupational Safety Officer, Courtenay	Greg Matthews	(250) 334 8734
Occupational Safety Officer, Courtenay	Paul Matthews	(250) 334 8741
Occupational Safety Officer, Victoria	Jessie Kunce	(250) 881 3461
Occupational Safety Officer, Lower Mainland	Bruce Logan	(604) 244 6477
Manager of Interest for Marine and Fishing	Pat Olsen	(250) 334 8777

Projects related to commercial fishing health and safety		
OHS Consultation and Education Services	Tom Pawlowski	(604) 233 4062
OHS Consultant	Tim Pryde	(604) 802-2954

**Sighting Networks**

BC Cetacean and Sea Turtle Sighting Network	(866) 472-9663
Email: <a href="mailto:sightings@ocean.org">sightings@ocean.org</a>	
On the internet at: <a href="http://wildwhales.org/">http://wildwhales.org/</a>	

Basking Shark Sighting Network  
Email: [BaskingShark@dfo-mpo.gc.ca](mailto:BaskingShark@dfo-mpo.gc.ca)

1 (877) 50 SHARK

On the internet at: <http://www.dfo-mpo.gc.ca/species-especes/sharks/report-eng.html>

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

## **16. CONSULTATION**

DFO undertakes consultations in order to improve decision-making processes, promote understanding of fisheries, oceans and marine transport issues, and strengthen relationships. Policy guidance and strategic direction for DFO's consultation activities is provided by the DFO Consultation Secretariat in the Policy Branch.

The Scallop by Trawl Advisory Board is the primary consultative body that provides a forum for the exchange of information and views between First Nation, commercial and recreational representatives, other stakeholders and DFO on issues important to the management of the fishery. DFO, however, remains the decision-making authority for the management of the fishery.

The advisory board meets once annually to provide advice to DFO, usually in January.

Additional information is available from DFO Resource Managers (Section 15 Contacts) or from DFO's consultation secretariat at:

<http://www.pac.dfo-mpo.gc.ca/consultation/index-eng.html>

## **17. POST-SEASON REVIEW**

Five biomass surveys were conducted in 2021 resulting in harvestable commercial quota opportunities for SW Quadra, Willow Point, Elk Point, Granite Point and Okisollo.

## Appendix 1: 2022/23 Scallop by Trawl Commercial Harvest Plan

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## **1. MANAGEMENT CHANGES AND HIGHLIGHTS 2022/23**

- 1.1. The IFMP and licence will be in effect from May 1, 2022 to April 30, 2023.
- 1.2. The collection of data required for stock assessment will be obtained through industry-funded trawl surveys. As surveys may occur at any time, quotas set within this plan are subject to in-season adjustment based on new survey results. See Section 2.
- 1.3. Biomass surveys are required in order to establish biologically-based harvest quotas by fishing area. New quotas need to be established for all designated fishing areas. Overages to harvest quotas that occur in one year will be deducted from the following year's quotas. Harvest of scallops over the quota is subject to prosecution and seizure of the overage. See Section 2.
- 1.4. Commercial quotas calculated for each fishing location will be allocated and available to all harvesters with a valid commercial licence. See Section 2.
- 1.5. A "ZR" party-based licence is required, and must be designated to a vessel. Vessel designations will be issued on a "semi-permanent" basis to simplify the annual licence renewal. Vessels may still be re-designated in-season where necessary. See Section 5.
- 1.6. All persons onboard the fishing vessel during harvesting activities must carry photo identification. See Section 5.
- 1.7. As of the 2022/23 season, Scallop by Trawl (ZR) licence eligibilities may be nominated from one party to another. Licence eligibility holders may indicate their intention to no longer apply for a Scallop by Trawl 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. See Section 5.
- 1.8. To monitor and track quotas, all licence eligibility holders must make arrangements to participate in an industry-funded catch monitoring and hail program. See Section 6.
- 1.9. Fish harvesters are reminded to verify licensing requirements under the *Safe Food for Canadians Act* and *Safe Food for Canadians Regulations*. For those interested in freezing whole scallops on board the vessel please contact the Canadian Food Inspection Agency. See Section 6.2.
- 1.10. All vessel masters are required to have a DFO certified at-sea observer onboard their vessel when requested to do so by the Regional Director General for the Pacific Region. See Section 6.3.
- 1.11. Information regarding all interactions with marine mammals must be reported. Interactions refer to cases of incidental mortality and serious injury to marine mammals. This includes accidental drowning, bycatch, entanglements, collisions, and fatalities. See Section 6.4.2.
- 1.12. Reporting of any lost fishing gear and the retrieval of any of your own lost gear is required within 24 hours of landing in port. See Section 6.4.3.

## 2. OPEN TIMES AND AREAS

The commercial season will run from May 1, 2022 to April 30, 2023. Research and permanent area closures are listed in Section 3. Based on sampling conducted through the Canadian Shellfish Sanitation Program (CSSP), Pacific Fishery Management Subareas will be opened by Variation Order and announced by Fishery Notice on the internet at:

<https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm>

Harvesters are permitted to fish only in locations authorized by their commercial licence and attached conditions. Areas will be monitored and closed upon completion of the harvest quota. It is the responsibility of the licence holder and the vessel master to ensure that fishing is permitted at a location prior to commencement of fishing activity and that an area is not closed for biotoxin or sanitary contamination prior to each day's fishing (see Section 3.1).

Surveys will continue to be required for each fishing location. Surveys provide the only means of estimating scallop biomass upon which a biologically-based harvest quota can be based. A continuous time series of biomass surveys at harvest locations is desirable and will provide a means to study the effects of harvest and to further refine our survey protocols. Biological information will also continue to be collected to provide information on whether harvest rates are sustainable and to refine biological parameters.

Quotas will only be allocated for the survey areas (Scallop Management Areas) identified below. All surveys should be coordinated through the industry association. Quota not completed in a previous year may be carried over for one season. Harvest of scallops over the quota is subject to prosecution and seizure of the overage.

Harvest opportunities may be added in-season if surveys are completed and data can be analyzed by DFO in time to set harvest quotas for the season.

Each Scallop Management Area is a defined portion of Pacific fisheries waters. Areas and Subareas, as described in the *Pacific Fishery Management Area Regulations*, are referenced for the purpose of locating the defined Scallop Management Area. Each Scallop Management Area has a name (e.g. 14A, Cape Lazo), and is assigned a quota. Complete descriptions of Scallop Management Areas are provided in Appendix 2.

Area	Name	Short Description (see Appendix 2 for full descriptions)	Quota*
14A	Cape Lazo	A portion of Subarea 14-9 and 14-12	Survey required
13A	Elk Point	A portion of Subarea 13-9	6,500 kg
13B	Granite Point	A portion of Subareas 13-9 and 13-10	4,300 kg
13C	Hole in the Wall	A portion of Subarea 13-18	Survey required
13D	Moriarty Point	A portion of Subareas 13-8 and 13-9	Survey required
13E	Okisollo	A portion of Subarea 13-10	1,500 kg
13F	Octopus Islands	A portion of Subarea 13-12	Survey required
13G	SW Quadra	A portion of Subarea 13-1	4,000 kg
13H	Wilby Shoal	A portion of Subarea 13-1	Survey required
13I	Willow Point	A portion of Subarea 13-1, 13-2, 14-13	3,600 kg

\* See up-to-date landings reports to confirm quota remaining since time of publication

### 3. CLOSURES

Closures to the commercial fishery may be in place for a variety of reasons including First Nations and recreational access, Parks, Marine Reserves, research, navigation, protected areas, or sanitary and marine biotoxin contamination.

#### 3.1. Canadian Shellfish Sanitation Program

Closures may be implemented on short notice in the event of changes to contamination status, including sanitary and biotoxin events. Licence holders, vessel masters, and harvesters are reminded that:

- It remains the responsibility of the licence holders and harvesters to ensure that an area is not closed for harvest due to sanitary or biotoxin contamination. Fishing in a closed area is an offence under the *Fisheries Act*. Consumption of product harvested from within a closed area poses a serious health risk.
- Prior to commencement of each day's fishing, the licence holder must take care to confirm that an area is open for harvesting either through the DFO website at:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/contamination/index-eng.html>

or the toll-free information line at 1-866-431-3474, or by contacting a local DFO office directly. Contact information is available in Section 15 of the Integrated Fisheries Management Plan.

##### 3.1.1. Sanitary Contamination Closures

Shellfish may not be harvested from closed contaminated areas except by special permit licence under the *Management of Contaminated Fisheries Regulations* (MCFR). Currently there is not an approved depuration process for scallops. There are both seasonal and permanent sanitary contamination closures. Descriptions and maps of contaminated closures may be found at the following DFO website:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/contamination/index-eng.html>

- Additional sanitary closure information can be found on the national Canadian Shellfish Sanitation Program mapping application, SHELLI (<https://dfo-mpo.gc.ca/shellfish-mollusques/cssp-map-eng.htm>).

A copy of this list may also be obtained from the resource managers (see Contacts, Section 15 of the Integrated Fisheries Management Plan). Sanitary closures are amended annually in May and November, and may also be amended in-season. Consequently, harvesters are advised to check the internet, prior to harvesting in an area, to ensure that they have the most recent contamination closure information.

Permanent bivalve harvesting closures are in place for Canadian fisheries waters of the Pacific Ocean within:

1. 300 m radius around industrial, municipal and sewage treatment plant outfall discharges;

2. 125 m radius of any marina, ferry wharf, any floating living accommodation facility (other than a floating living accommodation described in subsection (3)) or finfish net pen described in subsection (4);
3. 25 m radius of any floating living accommodation facility located within a shellfish aquaculture tenure where a zero-discharge waste management plan is a condition of the aquaculture licence and is approved by the Regional Interdepartmental Shellfish Committee.
4. Zero (0) metres of any finfish net pen within an aquaculture tenure where an Integrated Multi-trophic Aquaculture Management Plan approved by the Regional Interdepartmental Committee is in operation.

### **3.1.2. Biotoxin Contamination Closures**

Shellfish may not be harvested from closed areas except by special permit licence issued under the *Management of Contaminated Fisheries Regulations* (MCFR). Shellfish may not be harvested for consumption from any area closed due to biotoxin contamination. Descriptions of biotoxin closures may be found at the following DFO internet site:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/contamination/index-eng.html>

- Additional biotoxin closure information can be found on the national Canadian Shellfish Sanitation Program mapping application, SHELLI (<https://dfo-mpo.gc.ca/shellfish-mollusques/cssp-map-eng.htm>).

Areas will be opened and fished according to protocols required by the Biotoxin Monitoring Program, approved by the Canadian Food Inspection Agency (CFIA).

Three consecutive weekly samples containing acceptable levels of biotoxin must be received in order to lift a harvest restriction in an area. CFIA will make recommendations to lift the biotoxin (Paralytic Shellfish Poison (PSP)/red tide, Domoic Acid Poisoning) (ASP) or Diarrhetic Shellfish Poisoning (DSP) prohibition and a harvest site can then be considered by DFO for Aboriginal, commercial or recreational harvesting. The resource manager will prepare the documentation necessary for an area opening for approval by the Regional Director General. For further details on the Canadian Shellfish Sanitation Program (CSSP), see the internet at:

<https://www.inspection.gc.ca/food/food-specific-requirements-and-guidance/fish/canadian-shellfish-sanitation-program/eng/1527251566006/1527251566942?chap=0>

### **3.1.3. Harvesting Bivalves in the Vicinity of Wastewater Treatment Plants**

Concerns have been raised regarding bivalve shellfish harvested in the vicinity of wastewater treatment plants. Increased controls were implemented in 2009 to prevent shellfish harvest in areas where a trigger event at a wastewater treatment plant may potentially cause contamination.

Conditional Management Plans have been developed at some of the priority wastewater treatment plants to manage harvest activities in the vicinity of the wastewater treatment plants.

DFO will consult with shellfish harvesters in areas where Conditional Management Plans must be developed.

For further information, contact [DFO.PAC.CSSP-PCAM.PAC.MPO@dfo-mpo.gc.ca](mailto:DFO.PAC.CSSP-PCAM.PAC.MPO@dfo-mpo.gc.ca).

#### **3.1.4. Requirements for Legal Sourcing and Harvest of Bivalve Shellfish**

The safety of consumers is a top priority for the Government of Canada. The reputation of Canada's food supply is a responsibility shared by all parties, including industry and federal and provincial governments.

As partners for delivery of the Canadian Shellfish Sanitation Program (CSSP), DFO and the Canadian Food Inspection Agency (CFIA) collaborate to prevent illegal harvesting and selling of bivalve shellfish, including suspected laundering of illegal products through legitimate aquaculture businesses. DFO also remains committed to meeting conservation objectives for bivalves as well as supporting priority for food, social and ceremonial (FSC) fisheries. Any harvest occurring in conflict with established management measures and controls has the potential of negatively impacting the conservation of bivalve populations.

DFO will investigate reports of illegal harvesting violations and will take appropriate enforcement actions, including prosecution. Furthermore, DFO may consider more restrictive management approaches if needed to protect public health. Commercial growers and harvesters are reminded that they are required, by law, to follow specific record-keeping and tagging requirements. Records of shellfish movement through the growing cycle and to the point of distribution provide evidence to support public health, regulatory decisions and closure recommendations.

Commercial harvesters and aquaculture operators are required to:

- Understand and abide by the conditions of licence;
- Keep complete, clear and legible records and be able to produce them to a DFO fishery officer when requested;
- Ensure bivalve product destined for market sale is appropriately tagged with complete and accurate harvest information and is processed by an operator licenced by the Canadian Food Inspection Agency to process shellfish;
- Harvest only from open and approved areas and check our website before heading out for the latest information ([www.dfo-mpo.gc.ca/CheckBeforeYouHarvest](http://www.dfo-mpo.gc.ca/CheckBeforeYouHarvest)).

If you are aware of illegal bivalve harvest activities and/or are aware of violations, please call the DFO Observe, Record and Report (ORR) phone line at 1-800-465-4336.

More information on the policies and criteria for harvesting shellfish can be found in the CSSP manual. See also Fishery Notice FN1142 (2019):

[https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view\\_notice&DOC\\_ID=227228&ID=all](https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=227228&ID=all)

#### **3.1.5. 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 of the *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>

### **3.2. Permanent Area Closures**

Closures to the commercial fishery may be in place for a variety of reasons: First Nations and recreational access, parks, marine reserves, research, navigation, or sanitary and marine biotoxin contamination (see Section 3.1).

#### **3.2.1. Area 13**

Discovery Passage: Subareas 13-3, 13-4, 13-5 and a portion of 13-6. Those waters of Discovery Passage bounded on the north by a straight line drawn true west from North Bluff on Quadra Island, across Seymour Narrows to a fishing boundary sign on Vancouver Island, and on the south by a line from the Cape Mudge light true west to Vancouver Island. (Marine Reserve and Research Closure)

Deep Water Bay: A portion of Subarea 13-7 inside a line from a fishing boundary sign at Separation Head to a fishing boundary sign at the north-westerly entrance to Deepwater Bay. (Salmon Holding Area)

Kelsey Bay: Subarea 13-34. (Navigational Closure)

Mitlenatch Island: As described in Area 15 Closures.

#### **3.2.2. Area 14**

Parksville: Those portions of Subareas 14-2 and 14-3 that lie inside a line that begins at 49°21.680'N and 124°19.762'W, then southeasterly to 49°21.514'N and 124°18.893'W, then to 49°21.191'N and 124°17.723'W, then to 49°21.064'N and 124°17.724'W, then to 49°20.725'N and 124°18.380'W, then to 49°21.432'N and 124°19.811'W, then to the beginning point. (Glass Sponge Reef Conservation Area)

East of Hornby Island: That portion of Subarea 14-6 that lies inside a line that begins at 49°33.490'N and 124°29.230'W, then southerly to 49°32.701'N and 124°28.760'W, then to 49°31.657'N and 124°29.434'W, then to 49°31.663'N and 124°29.896'W, then to 49°32.651'N and 124°29.752'W, then to 49°33.340'N and 124°29.935'W, then to 49°33.498'N and 124°29.773'W, then to the beginning point. (Glass Sponge Reef Conservation Area)

Hornby Island: Those waters of Lambert Channel and the Strait of Georgia, Subarea 14-7, inside a line commencing at Shingle Spit on Hornby Island, thence 239° true for 0.5 nautical miles, thence 126° true for 3.5 nautical miles, thence 64° true for 4.9 nautical miles, thence 304° true for 2.9 nautical miles, thence 213° true for 0.5 nautical miles to Cape Gurney on Hornby Island. (Marine Reserve)

Mitlenatch Island: As described in Area 15 Closures.

Upper Baynes Sound (Subarea 14-11) and Comox Harbour (Subarea 14-14). (Navigational Closure)

### **3.2.3. Area 15**

Vivian Island: Those waters of Subarea 15-2 within 0.5 nautical miles of Vivian Island, located approximately 5.0 nautical miles west of Powell River. (Marine Reserve)

Rebecca Rock: Those waters of Subarea 15-2 within 0.25 nautical miles of Vivian Rock, located 2.5 nautical miles west of Powell River. (Marine Reserve)

Dinner Rock: Those waters of Subarea 15-2 within 0.25 nautical miles of Dinner Rock, located 2.5 nautical miles south of Lund. (Marine Reserve)

Emmonds Beach: Those waters of Subarea 15-2 within 0.5 nautical miles of the unnamed reef off Emmonds Beach, located approximately 4.0 nautical miles south of Lund. (Marine Reserve)

Mitlenatch Island: Those waters of Subarea 15-2, 13-1, 13-3, and 14-13 within 1.0 nautical mile of Mitlenatch Island, located in the upper Strait of Georgia. (Marine Reserve)

Beach Gardens: Those waters of Subarea 15-2 within a 0.25 nautical mile radius of the southerly end of the Beach Gardens breakwater. (Marine Reserve)

### **3.2.4. Area 16**

Skookumchuck Narrows Provincial Park: Those waters of Skookumchuck Narrows and Sechelt Rapids in Subarea 16-9 bounded on the west by a line from a point on the foreshore at the westerly limit of Secret Bay on Sechelt Peninsula thence 50° true to a point on the foreshore on the mainland; and the east by a line from Raland Point on Sechelt Peninsula, thence 50° true to a point on the foreshore on the mainland. (Park)

Bargain Bay (Subarea 16-3), Pender Harbour (Subarea 16-4); and Head of Sechelt Inlet (Subarea 16-5). (Navigational Closure)

### **3.2.5. Area 17**

Gabriola Island: That portion of Subarea 17-11 that lies inside a line that begins at 49°13.672'N and 123°47.577'W, then southerly to 49°13.235'N and 123°47.429'W, then to 49°13.185'N and 123°47.882'W, then to 49°13.391'N and 123°48.119'W, then to 49°13.623'N and 123°48.166'W, then to the beginning point. (Glass Sponge Reef Conservation Area)

Saskatchewan and Cape Breton artificial reefs: Those waters of Subarea 17-12 within 100m of the marker buoys at the artificial reef “Saskatchewan” on the east coast of Snake Island and those waters within 100m of the marker buoys at the artificial reef “Cape Breton”. (Commercial Closure)

Ladysmith Harbour (Subarea 17-7) and Nanaimo Harbour (Subarea 17-14). (Navigational Closure)

Subarea 17-10, the eastern shore of Gabriola Island.

### **3.2.6. Area 18**

Subarea 18-1, north-east shore of Mayne Island.

Sansum Narrows, Burgoyne Bay and Maple Bay (Subareas 18-7) and Cowichan Bay (Subarea 18-8) and Fulford Harbour (Subarea 18-10). (Navigational closure for net fisheries)

Subarea 18-11, north-east shore of Saturna Island.

Outer Gulf Islands #2: That portion of Subarea 18-1 that lies inside the following lines: begins at 48°52.588'N and 123°15.261'W, then easterly to 48°52.520'N and 123°14.537'W, then to 48°51.971'N and 123°13.768'W, then to 48°51.795'N and 123°13.947'W, then to 48°52.150'N and 123°14.444'W, then to 48°52.038'N and 123°14.678'W, then to 48°52.479'N and 123°15.521'W, then to the beginning point. (Glass Sponge Reef Conservation Area)

Outer Gulf Islands #3: That portion of Subarea 18-1 that lies inside the following lines: begins at 48°51.602'N and 123°13.233'W, then southerly to 48°51.309'N and 123°12.751'W, then to 48°50.913'N and 123°12.938'W, then to 48°50.844'N and 123°13.059'W, then to 48°51.163'N and 123°13.662'W, then to 48°51.579'N and 123°13.378'W, then to the beginning point. (Glass Sponge Reef Conservation Area)

Outer Gulf Islands #4: That portion of Subarea 18-1 that lies inside the following lines: begins at 48°50.999'N and 123°12.391'W, then southerly to 48°50.608'N and 123°11.603'W, then to 48°50.097'N and 123°10.956'W, then to 48°49.959'N and 123°11.182'W, then to 48°50.857'N and 123°12.654'W, then to 48°50.959'N and 123°12.566'W, then to the beginning point. (Glass Sponge Reef Conservation Area)

### **3.2.7. Area 19**

Victoria Harbour: Subarea 19-1 and Esquimalt Harbour, Subarea 19-2. (Navigational Closure)

Sidney Spit Marine Park: Subarea 19-6. (Park)

Saanich Inlet: Subareas 19-7 to 19-12. (Commercial Closure)

Mackenzie artificial reef: Those waters of Subarea 19-5 within 100m of the marker buoys at the artificial reef “Mackenzie”, near Rum Island. (Commercial Closure)

Ogden Point: Those waters of Subarea 19-3 inside a line from the navigation light at the western end of the Ogden Point Causeway thence to Brotchie Ledge Light, thence to Holland Point on Vancouver Island. (Marine Reserve)

Race Rocks: Those waters of Subareas 19-3 and 20-5 within 0.5 nautical miles of Great Race Rocks. (Marine Reserve)

10 Mile Point: Those waters of Subareas 19-4 and 19-5 within 0.4 nautical miles of Cadboro Pt. navigation light. (Marine Reserve)

#### **4. MANAGEMENT MEASURES**

##### **4.1. Species**

Spiny scallop (*Chlamys hastata*)

Pink scallop (*Chlamys rubida*)

##### **4.2. Size Limit**

The minimum size limit for scallop by trawl for pink and spiny scallops is 48 mm shell height, measured perpendicular to the hinge.

##### **4.3. Gear**

The butterfly scallop trawl is designed to capture Pink and Spiny Scallops as they are swimming, and to minimize habitat impacts and the bycatch of non-target species as the crossbar and the bottom on the trawl net is usually 20 cm off the bottom. The trawl frame sits on several steel runners that contact the bottom. Most mobile organisms are able to avoid the trawl as the tow speed is approximately 0.5 - 0.7 knots (Lauzier et al. 2005). The size of the trawl net is limited to a maximum width of two metres.

Harvesters are required to have all gear approved by DFO prior to fishing and receiving a licence. Gear will only be approved if it meets standards for eliminating by-catch and habitat impacts set by DFO Science. Testing of new gear will be required at the harvester’s expense.

##### **4.4. Depth**

Scallop trawl harvesters are required to fish at depths greater than 20 m below chart datum.

##### **4.5. Biological Sampling**

Sub-samples of the commercial catch or the collection of biological samples in addition to those required during stock assessment surveys may be required at various times throughout the duration of this plan. Samples will provide DFO with information on size,

age, and sex of scallops stocks being harvested. This biological information is an important component of the stock assessment program.

## **5. LICENSING**

### **5.1. 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. DFO also provides client support and assistance on how to use the system via e-mail at [fishing-peche@dfo-mpo.gc.ca](mailto:fishing-peche@dfo-mpo.gc.ca) or by calling toll-free at 1-877-535-7307 Monday to Friday (excluding holidays) from 07:00 to 19:00 Eastern Time. For more information on how to register and use the system, visit DFO's website at the address above, or contact client support.

### **5.2. Licence Category**

A commercial scallop by trawl, category (ZR) licence is required to commercially harvest scallops by trawl.

Category ZR licence eligibilities are party-based.

### **5.3. 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 Scallop by Trawl (Category ZR) licence renewal fee is available at:

<https://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/index-eng.html#renewal>

### **5.4. Licence Issuance**

Renewal of a category ZR licence and payment of the fee 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 ZR licences not renewed by April 30, 2023 will cease and licence issuance requests will be unable to be considered in future.

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

- a) Meet any Ministerial conditions placed on the licence eligibility;
- b) Ensure any conditions of the previous year's licence such as submission and approval of logbooks, have been met;
- c) Designate a registered commercial fishing vessel eligible for a commercial or communal commercial licence for salmon, schedule II, sablefish, halibut, crab, shrimp, prawn, geoduck or groundfish trawl.

DFO reserves the authority to implement vessel length restrictions at a future date.

Designated vessels must have a vessel survey on record with the Pacific Fishery Licence Unit (PFLU), dated subsequent to May 1989.

### **5.5. Licence Documents**

Scallop by Trawl licence documents are valid from the date of issue to April 30, 2023. Replacements for lost or destroyed licence documents may be obtained by reprinting the licence documents through the NOLS.

### **5.6. Licensed Vessel**

All fishing operations must take place from the licensed vessel. All products must be brought directly onto the licensed vessel following harvest. Vessels used to hold or transport scallops must also meet the *Safe Food for Canadians Act* and *Regulations* and have appropriate licences.

### **5.7. Area Licensing**

Following full review of the New and Emerging Fisheries Policy (NEFP) Stage III fishery, the commercial scallop fishery may be licensed over several geographic areas. For the interim, all licence eligibilities are assigned to the East Coast of Vancouver Island (PFMA 13 to 19).

### **5.8. Licence to Transport Scallops**

Any registered vessel with a commercial or communal commercial salmon, Schedule II, geoduck, sablefish, halibut, crab, shrimp, groundfish trawl or prawn licence; a current year transporting, category D; or a herring seine (HS) licence may transport scallops under conditions of licence which are included with all vessel-based licences. For further information contact the PFLU.

Vessels used to transport scallops must also meet the *Safe Food for Canadians Act* and *Regulations* and have appropriate licences.

Note: When product is transferred from one vessel to another vessel or a vehicle, that vessel or vehicle requires a provincial Fish Receiver licence. This licence is required for all types of vessels and vehicles including aircraft. The licence may also be required for personal vehicles in some instances, when a vehicle is carrying the catch from more than one vessel, even if the licence holder owns both vessels. Fish harvesters should contact the BC Ministry of Agriculture, Courtenay Access Centre (250-897-7540) for additional information.

Provincial seafood licensing information is available at:

<https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/fisheries-and-aquaculture/seafood-industry-licensing>

### **5.9. Vessel Re-designation**

Re-designation of scallop by trawl licences, in-season, is allowed as long as any condition of licence, such as the completion of logbooks, have been met and accepted by the Shellfish

Data Unit.

Re-designation requests are submitted via the NOLS in the same manner as the original designation request was submitted.

### **5.10. Licence Eligibility Nominations**

As of the 2022/23 season, Scallop by Trawl, category ZR licence eligibilities may be nominated from one party to another. Licence eligibility holders may indicate their intention to no longer apply for a Scallop by Trawl 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. Nomination forms are available at a PFLU or on the internet at: <https://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/forms/nom-catz-eng.pdf>

**Prior to the nomination of a commercial Scallop by Trawl licence eligibility, licence eligibility holders are required to:**

- Ensure any conditions of the current or previous year licence such as completion and submission of fishing logbooks are met and accepted by the Shellfish Data Unit (SDU).
- Complete, sign and submit a nomination application. If the licence eligibility holder is a company, the Pacific Fishery Licence Unit must have on record a copy of either a Confirmation of Signing Authorities form or an Amendment to Confirmation of Signing Authorities form listing the signing authorities;
- Only one nominee (i.e. an individual, Indigenous group or company) may be nominated. Multiple nominees will not be accepted

Nomination forms can be submitted to the PFLU via the National Online Licensing System (NOLS) or email: [fishing-peche@dfo-mpo.gc.ca](mailto:fishing-peche@dfo-mpo.gc.ca):

## **6. CONTROL AND MONITORING OF COMMERCIAL FISHING ACTIVITIES**

Harvesters are responsible for making arrangements with a DFO-approved service provider at their own expense for the following reports.

### **6.1. Notification Procedures**

#### **6.1.1. Before Fishing or Moving to a New Area**

The vessel master shall notify the service provider, at least 24 hours before commencing fishing or before moving to a new fishing area, with the following information:

- a) vessel name;
- b) vessel master's name;
- c) vessel registration number (VRN);
- d) species to be fished (i.e. Pink and Spiny Scallops);
- e) Subareas to be fished;
- f) date and time that fishing will begin or end; and
- g) estimate of the number of days to be fished.

If the vessel is unable to arrive in the declared Scallop Management Area within 24 hours of the stated time, the vessel master shall so notify the service provider:

- a) vessel master's name, vessel name, VRN; and
- b) details of change in fishing plans.

The vessel master shall notify the service provider at least 24 hours prior to moving to a new Scallop Management Area.

#### **6.1.2. Daily While Fishing**

The vessel master shall report to the service provider by the end of each day during a fishing trip:

- a) vessel master's name, vessel name and VRN;
- b) species fished;
- c) number of days fished;
- d) Scallop Management Area(s) fished;
- e) Subareas fished; and
- f) estimated catch in pounds.

#### **6.1.3. Prior to Landing**

Prior to landing Pink and Spiny Scallops, the vessel master shall report to the service provider:

- a) vessel master's name, vessel name and VRN;
- b) species to be landed;
- c) name of the designated port and location therein where the catch shall be landed;
- d) anticipated time of landing;
- e) name of the processor, buyer or other person who will be transporting the catch; and
- f) the method of transporting the catch from the designated landing port and the destination of the product.

#### **6.1.4. Monthly and Scallop Management Area Quota Achieved**

The vessel master shall arrange the service provider to report to DFO monthly and immediately when any Scallop Management Area quota has been achieved:

- a) species fished (i.e. Pink and Spiny Scallops);
- b) Scallop Management Area(s) fished; and
- c) estimated catch in pounds.

#### **6.1.5. When Fishing has Stopped**

After a fishing trip when a vessel will not be fishing again within a period of 24 hours, the vessel master shall report to the service provider:

- a) vessel master's name, vessel name and vessel registration number;
- b) species fished (i.e. Pink or Spiny Scallop); and
- c) date and time that fishing stopped.

### **6.2. Delivery, Handling and Tagging Requirements**

All scallops must be delivered live and whole. The shucking of scallops on board a vessel

is not permitted. Scallops must be delivered whole as a condition of the scallop by trawl licence for compliance enforcement of the size limit.

The direct sale of scallops to the public, restaurants, or retail stores without first having been processed by a person licensed to do so under the *Safe Food for Canadian Act and Regulations* is prohibited by law in the Province of BC.

At harvest, all containers or sacks containing scallops must be **individually tagged** with the following information:

- a) Subarea and location of harvest;
- b) Date of harvest; and
- c) Vessel name and VRN.

Fish harvesters are reminded to verify licensing requirements under the *Safe Food for Canadians Act and Regulations*. See “Food business activities that require a licence under the *Safe Food for Canadians Regulations*” at:

<https://inspection.gc.ca/food/requirements-and-guidance/food-licences/food-business-activities/eng/1524074697160/1524074697425#a511>

If you wish to hold scallops live in seawater or freeze whole scallops on board your vessel, please contact the CFIA to determine if a license is required under the *Safe Food for Canadian Act and Regulations*.

### **6.3. At-Sea Observers**

During past fishing seasons some problems occurred with harvesters failing to properly hail prior to conducting fishing operations. Harvesters who are unable to comply with the hail requirements necessary for the monitoring of area quotas will be required to carry a certified at-sea observer on their vessel at their own expense to ensure proper monitoring of the fishery. All vessel masters are required to have a DFO-certified at-sea observer onboard their vessel when requested to do so by the Regional Director General for the Pacific Region.

### **6.4. Catch Reporting**

#### **6.4.1. Harvest Log Data**

The vessel master/licence holder is responsible for the provision and maintenance of an accurate record, a “log” of daily harvest operations. This log must be completed and a copy submitted in both hard (paper) copy and electronic form in an approved format as defined by Fisheries and Oceans Canada Stock Assessment and Research Division’s Shellfish Data Unit.

To fulfil stock assessment objectives it is imperative that a fine resolution of fishing location be reported in this fishery. The vessel master/licence holder is responsible for reporting latitude/longitude position on harvest logs in the appropriate location for each fishing event.

Logbooks meeting the requirements of DFO are available from the designated service provider who, for a fee, will provide the logbook coding and data entry service, thus

complying with the requirements for a hard (paper) copy and an electronic copy of harvest data.

The original white page copy of the log and the electronic copy must be forwarded within 28 days following the end of each month in which fishing occurred. This information must be sent to:

Fisheries & Oceans Canada  
Shellfish Data Unit  
Pacific Biological Station  
3190 Hammond Bay Road  
Nanaimo, B.C., V9T 6N7  
Email : [PACSDU@dfo-mpo.gc.ca](mailto:PACSDU@dfo-mpo.gc.ca)  
Phone: (250) 756-7022

As an alternative to logbook provision through a service provider, the vessel master/licence holder may provide a hard copy logbook in the same form and providing the same particulars as shown in the logbook sample attached as Appendix 3: Example of Scallop by Trawl Log. The vessel master/licence holder must also provide an electronic copy of the harvest data, which is required to be a true and accurate transcription of the hard copy data, delivered to the Shellfish Data Unit on Shellfish Data Unit approved media. Submissions remain the property of DFO. The electronic copy must be a database table of specific design created by a current version of Microsoft Access.

Contact the Shellfish Data Unit at the above address to obtain the requirements and acceptable data formats for supplying logbook and electronic data in a format that meets the Conditions of Licence. The paper copy of the logbook and the electronic data must be forwarded within 28 days following the end of each month in which fishing occurred. This information must be sent to the above address.

Complete and accurate harvest information must be recorded in the harvest log by 23:59 hours of the day of fishing. The logbook must be kept aboard the licensed vessel. Logbooks must be produced for examination on demand of a fishery officer, guardian, or a fishery observer designated under the *Fisheries Act*.

#### 6.4.1.1. Submission and Release of Harvest Log Data

The licence eligibility holder is responsible to ensure that the vessel master has completed and submitted a copy of the harvest log data. DFO can only release harvest log data to the licence eligibility holder of record reported with the DFO National Online Licencing System, and only upon written request.

#### 6.4.1.2. Nil Report for Harvest Log - License Issued but not Fished

In the event that a licence is issued but not fished, the licence eligibility holder is responsible for submitting a Nil Report for the season. The Nil Report must be submitted prior to the issue of approval for licence renewal. One page from the harvest logbook identifying the vessel, licence tab number, and the year with “Nil” entered in the body of the log and signed by the vessel owner constitutes a Nil Report.

**DFO reminds harvesters that harvest logs must be completed accurately during fishing operations and submitted to DFO in accordance with the timing set out in**

**Conditions of Licence. Delay of completion or submission of logs is a violation of the Conditions of Licence.**

**6.4.1.3. Confidentiality of Harvest Data**

Harvest data, including fishing location data supplied through latitude/longitude coordinates, collected for use under the harvest logbooks for shellfish fisheries programs are used by DFO in the proper assessment, management and control of the fisheries. Upon receipt by DFO of harvest log data and/or fishing location information, supplied by the harvester in accordance with Conditions of Licence, 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 license holder.

**6.4.2. Marine Mammal Interactions Reporting**

The vessel master shall provide information regarding all interactions with marine mammals during fishing trips. Interactions refer to cases of incidental mortality and serious injury to marine mammals. This includes accidental drowning, bycatch, entanglements, collisions, and fatalities.

The Marine Mammal Interaction Form shall be submitted as per the instructions provided on the form. The Marine Mammal Interaction Form is available from the internet at:

<http://www.dfo-mpo.gc.ca/species-especes/mammals-mammiferes/report-rapport/fish-harvester-pecheur-eng.asp>

**6.4.3. Reporting Lost Gear and Retrieval of Lost Gear**

The vessel master shall report any lost fishing gear by completing and submitting a 'Lost Fishing Gear' form within 24 hours of landing in port after determining the gear was lost.

The vessel master shall also report the retrieval of any of their own previously reported lost gear by completing and submitting a 'Retrieval of Previously Reported Fishing Gear' form within 24 hours of landing in port after retrieving gear previously reported as lost.

Lost or retrieved fishing gear can be reported through the online Fishing Gear Reporting System, available at:

<https://www.dfo-mpo.gc.ca/fisheries-peches/commercial-commerciale/reporting-declaration-eng.html>.

Retrieval of gear can only occur under a valid fishing licence and only in relation to the specific type of gear authorized to be used by the fishing licence. Please be reminded that a vessel may not be used to recover another vessel's gear.

**6.4.4. Fish Slips**

An accurate written report shall be furnished on a fish slip of all fish and shellfish caught. A report must be made even if the fish and shellfish landed are used for bait, personal

consumption, or otherwise disposed. The written report shall be posted not later than seven days after the offloading and sent to:

Fisheries and Oceans Canada  
Fisheries Management Branch, Regional Data Unit  
200 - 401 Burrard St.  
Vancouver, B.C. V6C 3S4

Fish slips may be downloaded and printed or may also be ordered from the printer at user cost on the internet at:

<http://dfo-mpo.gc.ca/fisheries-peches/sdc-cps/fishslips-carnets/index-eng.html>

Phone (604) 666-2716 for more information.

## **7. GENERAL INFORMATION**

### **7.1. Sponge Reefs**

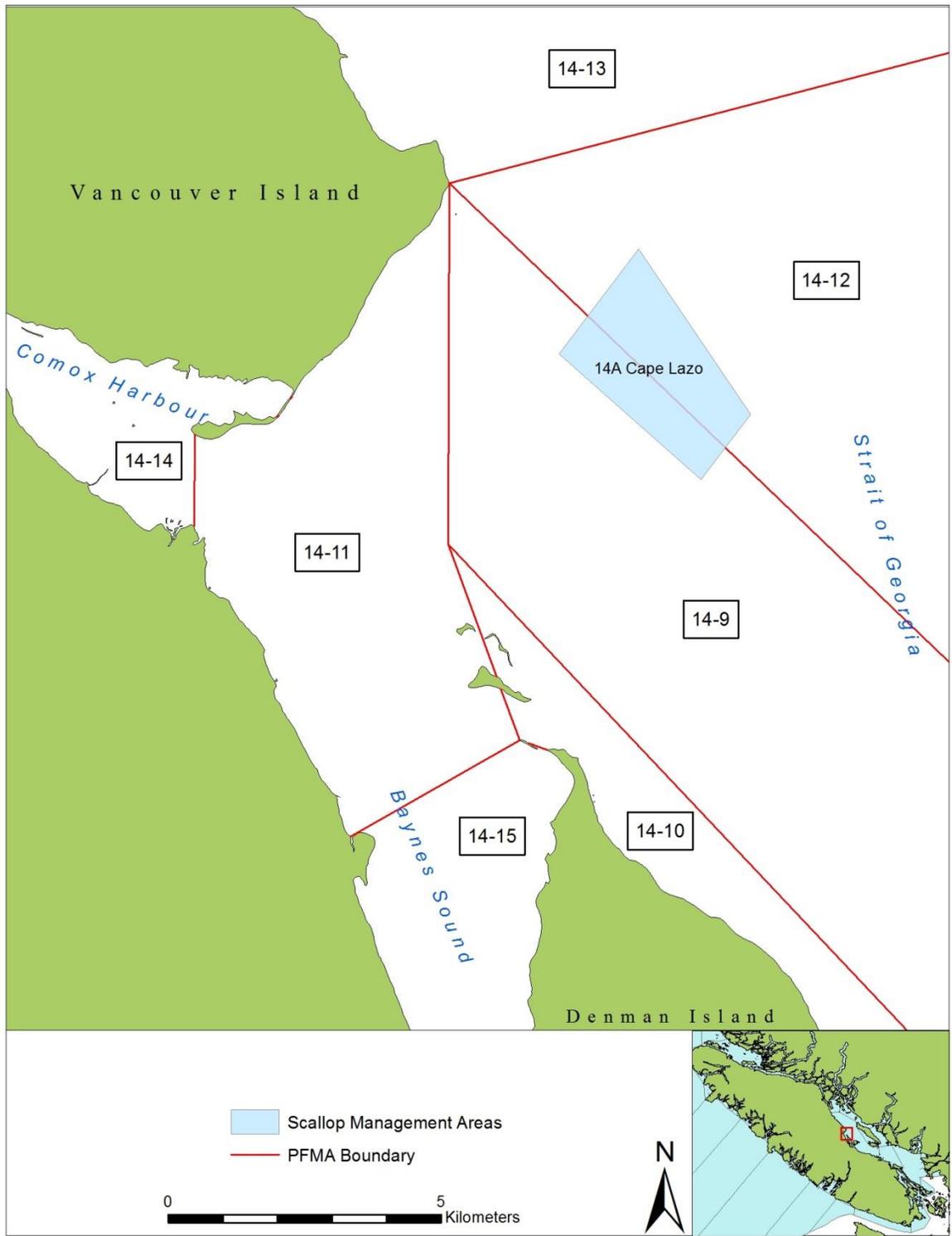
In accordance with the Sensitive Benthic Areas Policy and its Ecological Risk Assessment Framework for Cold-water Corals and Sponge Dominated Communities, DFO has conducted a risk assessment regarding the potential impacts of bottom-contact fisheries on glass sponge reef areas in the Strait of Georgia and Howe Sound. New fishing closures to protect glass sponge reefs in the Strait of Georgia and Howe Sound have been implemented. A description of the closures is provided on the Strait of Georgia and Howe Sound Glass Sponge Reef Conservation Initiative website: <https://www.dfo-mpo.gc.ca/oceans/ceccsr-cerceef/closures-fermetures-eng.html>

## Appendix 2: Scallop Trawl Scallop Management Area Descriptions

Harvesters are reminded that these maps and the area descriptions in Appendix 1 are to be used for reference only. The final authority of these descriptions of Pacific Fishery Management Areas, Subareas and portions thereof is as set out in the *Pacific Fishery Management Area Regulations*. More detailed maps and descriptions of Areas and Subareas are available on the internet at:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/areas-secteurs/index-eng.html>

Please note permanent area closures listed in Appendix 1, Section 3. **Not all permanent area closures are illustrated on these maps.**



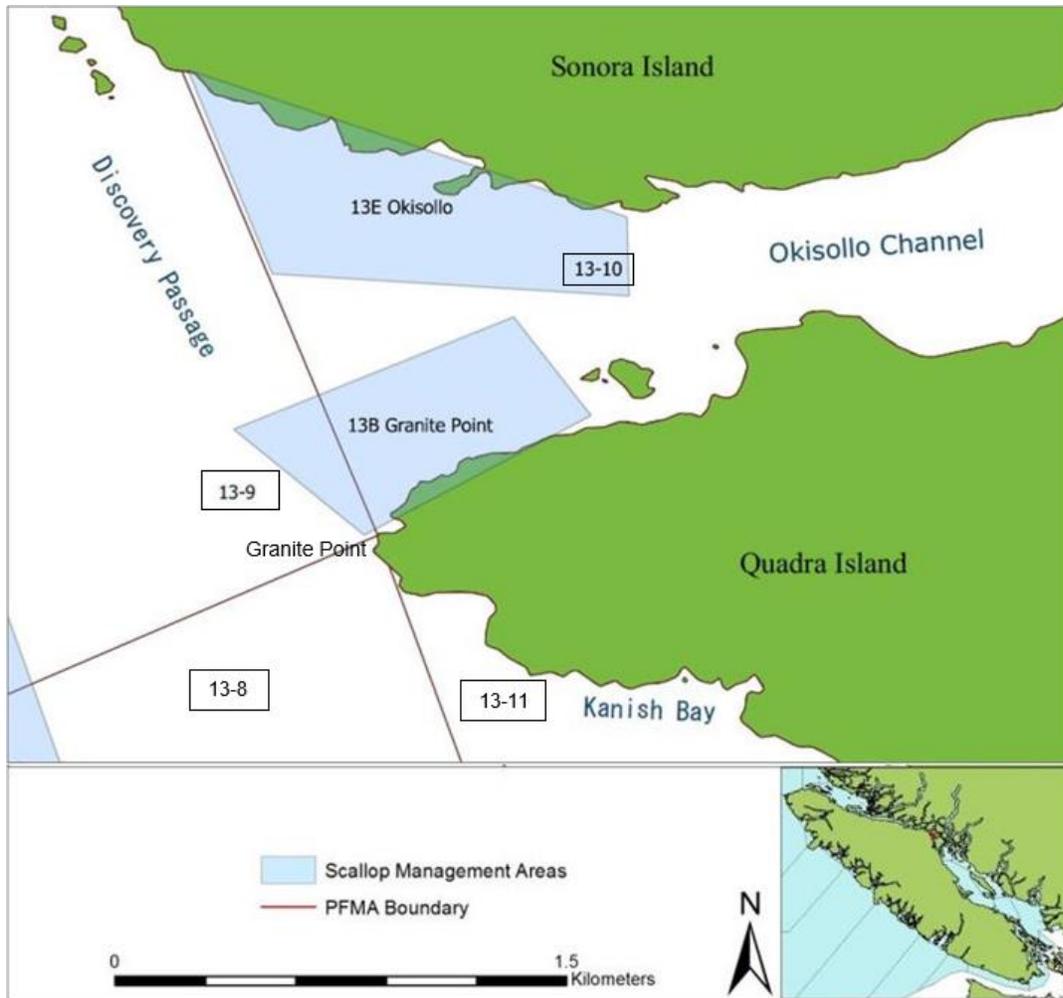
**Figure 1. Scallop Management Area 14A Cape Lazo**

That portion of Subareas 14- 9 and 14-12 starting at 49° 41.379'N and 124° 48.716'W then to 49° 39.723' N and 124° 47.058' W then to 49° 39.088'N and 124° 47.828'W then to 49° 40.352'N and 124° 49.957'W then to the beginning point.



**Figure 2. Scallop Management Area 13A Elk Point**

That portion of Subarea 13-9 starting at a point on land N of Elk Point at 50° 17.807'N and 125° 26.335'W then to 50° 17.850'N and 125° 25.898'W then to 50° 16.894'N and 125° 25.338'W then to 50° 16.831'N and 125° 26.014'W then to 50° 17.215'N and 125° 25.984'W then to the beginning point.



**Figure 3. Scallop Management Areas Granite Point and Okisollo  
13B Granite Point**

Those portions of Subareas 13-9 and 13-10 starting a point at just northwest of Granite Point, at 50° 16.645' N and 125° 23.047' W then to 50° 16.882' N and 125° 23.495' W then to 50° 17.126' N and 125° 22.524' W then to 50° 16.906' N and 125° 22.794' W then to the beginning point.

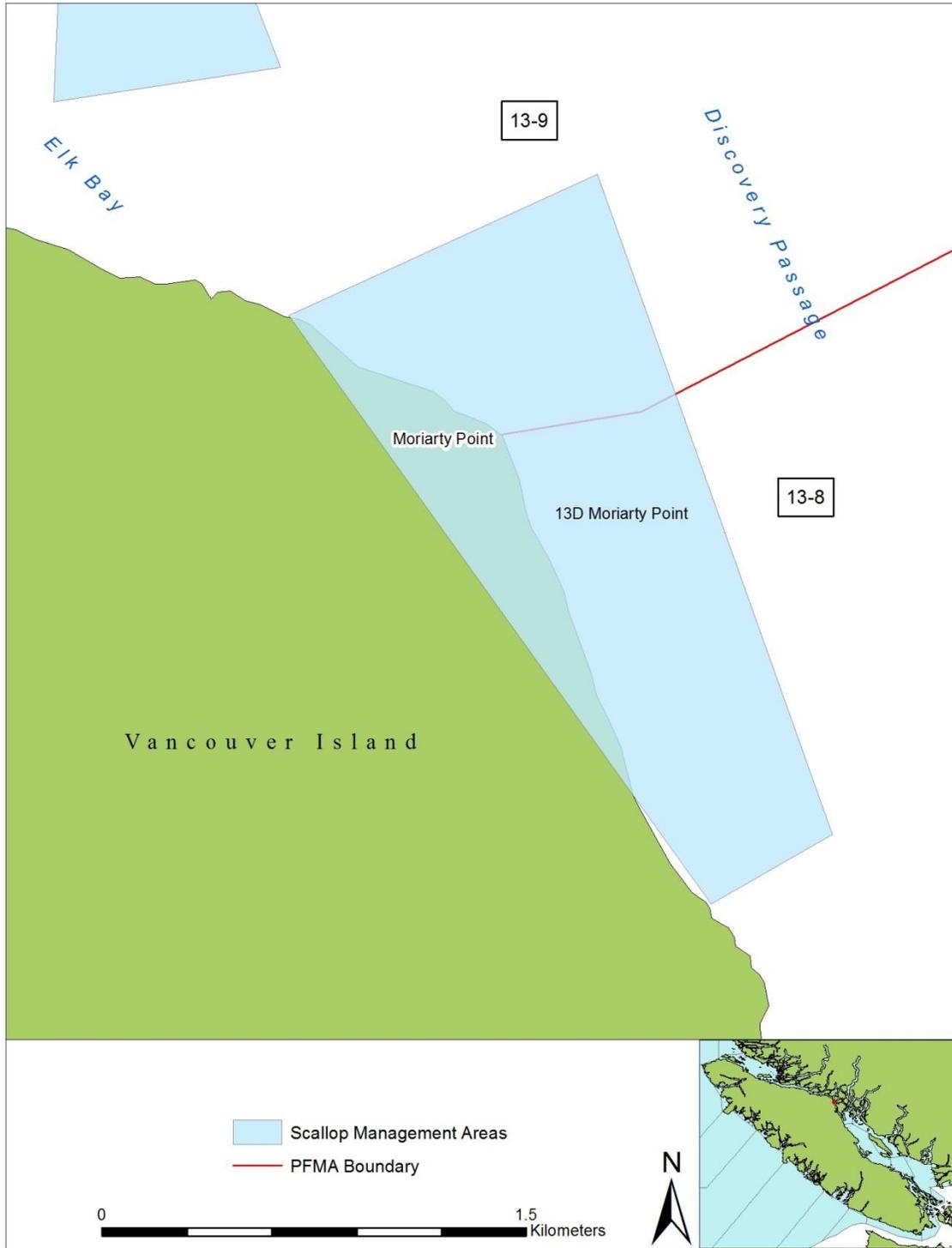
**13E Okisollo**

That portion of Subarea 13-10 near Islet Point at 50° 17.680' N and 125° 23.643' W then to 50° 17.345' N and 125° 22.129' W then to 50° 17.170' N and 125° 22.124' W then to 50° 17.226' N and 125° 23.357' W then to the beginning point.



**Figure 4. Scallop Management Area 13C Hole in the Wall**

That portion of Subarea 13-18 starting at a point at 50° 18.444'N and 125° 11.835'W then to 50° 18.128'N and 125° 11.761'W then to 50° 18.453'N and 125° 10.399'W then to 50° 19.270'N and 125° 09.152'W then to 50° 19.530'N and 125° 09.480'W then to 50° 19.475'N and 125° 10.193'W then to the beginning point.



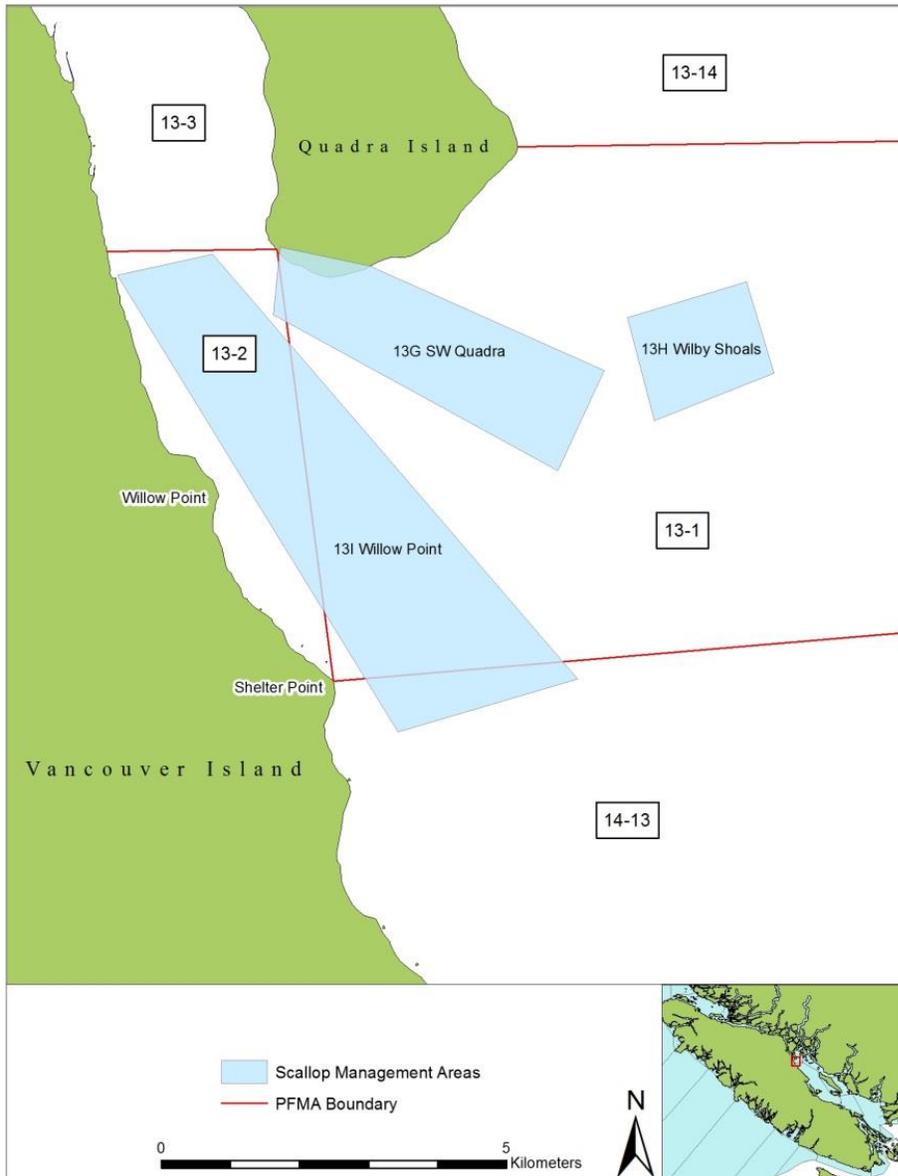
**Figure 5. Scallop Management Area 13D Moriarty Point**

Those portions of Subareas 13-8 and 13-9 from a point of land at  $50^{\circ} 16.421'N$  and  $125^{\circ} 25.319'W$  then to  $50^{\circ} 16.685'N$  and  $125^{\circ} 24.397'W$  then to  $50^{\circ} 15.423'N$  and  $125^{\circ} 23.713'W$  then westerly to a point on land at  $50^{\circ} 15.293'N$  and  $125^{\circ} 24.076'W$  then to the beginning point.



**Figure 6. Scallop Management Area 13F Octopus Islands**

That portion of Subarea 13-12 starting just south of Francisco Island at a point at  $50^{\circ}17.324'N$  and  $125^{\circ}12.818'W$  then to  $50^{\circ}16.815'N$  and  $125^{\circ}12.424'W$  then to  $50^{\circ}16.693'N$  and  $125^{\circ}12.617'W$  then to  $50^{\circ}17.091'N$  and  $125^{\circ}13.282'W$  then to the beginning point.



**Figure 7. Scallop Management Areas SW Quadra, Wilby Shoals and Willow Point  
13G S W Quadra**

That portion of Subarea 13-1 near Cape Mudge at 49° 59.778'N and 125° 10.622'W then to 49° 58.937'N and 125° 07.788'W then to 49° 58.157'N and 125° 08.365'W then to 49° 59.403'N and 125° 11.791'W then to 49° 59.930'N and 125° 11.702'W then to the beginning point.

**13H Wilby Shoals**

That portion of Subarea 13-1 starting at a point at 49° 59.348'N and 125° 07.498'W then to 49° 58.539'N and 125° 07.185'W then to 49° 58.898'N and 125° 05.730'W then to 49° 59.615'N and 125° 06.050'W then to the beginning point.

**13I Willow Point**

Those portions of Subareas 13-1, 13-2 and 14-13 starting at a point at 49° 59.725'N and 125° 13.673'W then to 49° 59.881'N and 125° 12.518'W then to 49° 56.529'N and 125° 08.155'W then to 49° 56.129'N and 125° 10.335'W then to the beginning point.

### Appendix 3: Example of Scallop by Trawl fishery harvest log

#### SCALLOP BY TRAWL HARVEST LOG

Year

page No. \_\_\_\_\_

VRN

Vessel Name \_\_\_\_\_

Vessel Master Name \_\_\_\_\_

Vessel Master FIN

Licence No. \_\_\_\_\_

Weights:

(check one)

Pounds

Kilograms

Depths:

(check one)

Feet

Fathoms

Meters

Gear

mail to: Shellfish Stock Assessment  
Pacific Biological Station  
3190 Hammond Bay Road  
Nanaimo, BC V9T 6N7

**Section A: Fishing Information - make a new entry for each day, where location and depth range are constant**

Fishing Hail Number	Month	Day	Location (chart ref.)	Latitude	Longitude	Stat Area	Sub Area	Start Time (hr)	Hours Fished	Depth		Number of Tows	Landed Weight	Discard Weight	Company
										Min.	Max.				
1 34567	10	12	Hole in the wall	50 18.245	125 11.581	13	18	0800	4	100	180	10	400	100	HappyGuy
2 12345	10	13	Wilby Shoal	49 59.09	125 7.99	13	1	1100	6	90	120	8	200	10	HappyGuy
3 24689	10	15	Hole in the wall	50 18.245	125 11.581	13	18	0900	8	85	150	17	820	240	HappyGuy
4															
5															
6															
7															
8															
9															
10															
11															
12															

Example only

**Section B: Incidental Catch Information - report by species, number and weight**

Line No.*	Species	No. Pieces	Total Weight
1	sponge	3	5
1	sea cucumber	2	2
2	starfish	1	2
2	red urchin	4	1
3	starfish	7	20
3	squat lobster	60	1
3	sponge	5	5

Line No.*	Species	No. Pieces	Total Weight
3	shrimp	4	trace
3	sea cucumber	8	2

Note: one entry in section A may generate several entries in section B

Line No.*	Species	No. Pieces	Total Weight

**Appendix 4: Fishing Vessel Safety**

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## 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 Quiz*
- 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
- <https://tc.canada.ca/en/marine-transportation/marine-safety/tp-15393e-adequate-stability-safety-guidelines-fishing-vessels> TP 15393E - Adequate stability and safety guidelines for fishing vessels
- TP 15392E - Guidelines for fishing vessel major modification or a change in activity. <https://tc.canada.ca/en/marine-transportation/marine-safety/tp-15392e-guidelines-fishing-vessel-major-modification-change-activity>
- 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](http://www.fishsafebc.com)  
[www.worksafebc.com](http://www.worksafebc.com)  
[www.tsb.gc.ca/eng/rapports-reports/marine/index.html](http://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 a stability assessment, 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, [M18A0425](#) – Charlene A and [M18A0454](#) – Atlantic Sapphire.

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) 261261-9700 - Email: [ryan@fishsafebc.com](mailto: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 report's 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](http://www.worksafebc.com)).

Under the recently amended (June 2019) OHSR, 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](http://www.weatheroffice.gc.ca/marine/index_e.html)

### 2.4.2. Emergency Radio Procedures, EPIRB's and AIS

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). All fishing vessels greater than 20m in length must carry a Class A AIS, as well as a float free 406 MHz Emergency Position Indicating Radio Beacon (EPIRB). These beacons must be registered with the Canadian Beacon Registry. 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](#), [M15A0189](#), [M16A0327](#), [M18A0076](#), [M18A0303](#), [M18A0078](#), M18P0184, M19A0082, M19P0242, [M20A0258](#), [M20A0160](#), [M21A0315](#)) which resulted in 26 fatalities. The carriage of both AIS and EPIRB is strongly encouraged for all fishing vessels who do not fall under the mandatory threshold.

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](http://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: <https://www.ccg-gcc.gc.ca/publications/mcts-sctm/ramn-arnm/part3-eng.html>

#### 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 floatation 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 floatation 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 (WCA)* and the 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](http://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](mailto:tom.pawlowski@worksafebc.com) or Tim Pryde, OHS Consultant at (604) 802-2954 or by email: [tim.pryde@worksafebc.com](mailto: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: <a href="mailto:ryan@fishsafebc.com">ryan@fishsafebc.com</a>
#100, 12051 Horseshoe Way	<a href="http://www.fishsafebc.com">www.fishsafebc.com</a>
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](http://www.tsb.gc.ca)  
For information about the TSB's investigation into fishing safety, or to view a brief video, visit:

<http://www.tsb.gc.ca/eng/medias-media/videos/marine/m09z0001/index.asp>

To view information on the TSB's recent safety Watchlist, visit:  
<http://www.tsb.gc.ca/eng/surveillance-watchlist/marine/2020/marine-01.html>

Reporting an Occurrence: [www.tsb.gc.ca/eng/incidents-occurrence/marine/](http://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)

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