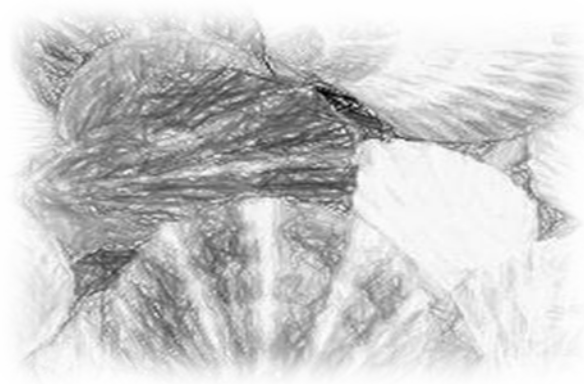


PACIFIC REGION

**INTEGRATED FISHERIES
MANAGEMENT PLAN**

SCALLOP BY TRAWL

**MAY 1, 2016 TO
APRIL 30, 2017**



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.

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 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 Integrated Fisheries Management Plan (IFMP) for Scallop by Trawl covers the period May 1, 2016 to April 30, 2017.

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

The Commercial Harvest Plan for Scallop by Trawl is attached to this IFMP as Appendix 1. General information related to First Nations harvest food, social and ceremonial (FSC) purposes, and recreational harvest is provided in Section 7 of the main 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 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 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. More detailed information can be found on the Internet at:

<http://www.dfo-mpo.gc.ca/fm-gp/policies-politiques/efp-pnp-eng.htm>

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 some preliminary biological reference points as well as recommendations for the continued assessment and management of the fisheries (Lauzier et al. 2005). More recently, a report by Surry et al (2012) provided updated information on natural mortality and growth rates of Pink and Spiny Scallops in British Columbia. Finally, the Scallop by Trawl assessment plan was reviewed in 2014 (DFO 2015). These reports are available from the CSAS internet site:

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

Since August 2007 the Department has licensed the Scallop by Trawl harvest using a non-transferable exploratory fishing licence. Beginning in early 2009, the Department started consultations with all harvesters to discuss the possibility of moving to an IFMP-managed fishery using regular commercial licences.

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).

1.3. Fishery 2016/17

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

DFO has reviewed the exploratory fishery and determined that the 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. For 2016/17, 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. Permanent licence eligibility is not yet established.

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 the Department

for a biomass survey or harvest opportunities, a habitat assessment of the area will be required. A new habitat assessment protocol is being developed by the Department and will require harvesters to conduct a video survey of the proposed harvest location. Fisheries Management and Fisheries Protection staff from DFO will evaluate the video to determine if trawl activity poses a risk to the benthic community.

This “adaptive management plan process” will evolve in future seasons to meet the principles of the Sustainable Fisheries Framework (SFF). Additional information is available on the Internet at:

<http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/overview-cadre-eng.htm>

In addition, as part of an IFMP-managed scallop trawl fishery, DFO requires biologically-based quotas, assessment against the *Strategic Framework for Fishery Monitoring and Catch Reporting in the Pacific Fisheries* (http://www.pac.dfo-mpo.gc.ca/fm-gp/docs/framework_monitoring-cadre_surveillance/page-1-eng.html), a licence limitation process, an enforcement framework, and a public consultation and advisory process.

1.4. Type of Fishery and Participants

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

Two species of scallop, Pink Scallop (*Chlamys rubida*) and Spiny Scallop (*Chlamys hastata*) are harvested from in-shore waters in the commercial trawl fishery. Up to and including the 2014/15 season, the Department licensed the commercial scallop by trawl fishery with a non-transferable exploratory licence. Seven participants have been eligible for the exploratory fishery opportunity and less than five have been active in recent years. For the 2016/17 season, commercial licences will be issued for this fishery. For more information please refer to the Commercial Harvest Plan in Appendix 1.

First Nations’ harvest for Food Social and Ceremonial purposes may occur coast-wide where authorized by an aboriginal communal licence or, under treaty, a harvest document. Areas must be open for harvest under the Canadian Shellfish Sanitation Program (CSSP, see Section 5.5). Three different treaty-related harvest documents may be issued annually in the Pacific Region and they may include provisions for harvest of a number of shellfish species. There is limited historical or current information regarding First Nations’ harvest of scallop. The Department recognizes that information regarding use of scallop for food, social and ceremonial purposes may be incomplete. First Nations are invited to provide additional information.

In addition to fishing opportunities for FSC purposes (or domestic purposes for treaty First Nations), Fisheries & Oceans Canada (DFO) acknowledges that in *Ahousaht et al. v. Canada and British Columbia*, the courts have found that five Nuuchah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehatesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht (the T’aaq-wiihak Nations) - have “aboriginal rights to fish for any species of fish within their Fishing Territories and to sell that fish, with the exception of geoduck”. DFO is working with the T’aaq-wiihak Nations pursuant to the direction from the courts, to find “the manner in which the plaintiffs’ rights can be accommodated and exercised without jeopardizing Canada’s legislative objectives and societal interests in regulating the fishery.” The outcome of these discussions could lead to in-season management changes. DFO will make every effort to advise stakeholders of any such changes in advance of changes being implemented. The T’aaq-

wiihak First Nations' Fishing Territories are described by the courts (found on the West Coast of Vancouver Island, within Pacific Fishery Management Areas 24/124, 25/125, and portions of 26/126).

A British Columbia Tidal Waters Sport Fishing Licence is required for the recreational harvest of all species of fish, including shellfish. More than 245,000 anglers participated in the recreational fishery in 2010. Crabs, prawns and shrimp, clams and oysters are the main species of shellfish harvested. A recreational scallop fishery may occur coast-wide where areas are open for harvest under the Canadian Shellfish Sanitation Program (CSSP, see Section 5.5). Recreational harvest is by hand picking only. There is limited historical or current information regarding recreational harvest of scallop, but effort is thought to be low and mainly in south coast waters.

The Department licenses aquaculture activities for scallop. In response to the February 9, 2009 British Columbia Supreme Court (BCSC) decision regarding *Morton vs. British Columbia (Agriculture and Lands)*, Fisheries & Oceans Canada (DFO) developed the *Pacific Aquaculture Regulations* under the *Fisheries Act* to facilitate the management of aquaculture activities in British Columbia beginning on December 19, 2010. The regulations are published under the Canada Gazette Part II and provide the legislative framework for the management of the aquaculture sector in BC. For more information please refer to the internet at: <http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/shell-coq-eng.html>.

1.5. 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. For the 2016/17 season, the fishery will continue in these areas, subject to biotoxin and sewage contamination closures under the CSSP. As the adaptive management strategy progresses, the Department will establish the criteria for expansion of the commercial fishing opportunity into other areas.

First Nations' communal licences and harvest documents identify the location where First Nations may fish for food, social and ceremonial harvest. Scallop harvesting is subject to biotoxin and sewage contamination closures under the CSSP.

Recreational licences identify the location where sport harvesters may fish for scallop. Harvesting is subject to biotoxin and sewage contamination closures under the CSSP.

Permanent area closures are listed in Appendix 1 for the commercial fishery. Permanent area closures for the recreational fishery are listed in the British Columbia Tidal Waters Sport Fishing Guide available on the Internet at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.html>. Permanent area closures in the First Nations FSC fishery are listed in communal licences or, under Treaty, harvest documents.

1.6. Fishery Characteristics

1.6.1. Commercial

The commercial fishery operates under the licensing term "priority-access" (as opposed to limited entry) meaning permanent licence eligibility is not currently established (see Section 1.3). It 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.

1.6.2. First Nations

Pre-season, DFO engages in a variety of consultation and collaborative harvest planning processes with First Nations at the community level, or at broader tribal or watershed (for salmon) levels. Fisheries are then authorized via a communal licence issued by DFO under the *Aboriginal Communal Fishing Licences Regulations*. These licences are typically issued to individual bands or tribal groupings, and describe the details of authorized fisheries including date, times, methods and locations of fishing. Communal licences, or harvest documents under treaty, and Aboriginal Fisheries Strategy (AFS) agreements (where applicable) include provisions that allow First Nations' designation of individuals to fish for the group and, in some cases, vessels that will participate in fisheries.

First Nations' fishing for food, social and ceremonial (FSC) purposes is the first priority after conservation and is open coast-wide throughout the year in areas that are not closed to contamination. First Nations fishing effort for FSC purposes has not been limited by catch quantity, except in those First Nations where the Council or fisheries program has established their own catch limits for band members, or where allocated under treaty. There is no size limit for scallops harvested for FSC purposes.

1.6.3. Recreational

The recreational fishery is an open entry fishery with a daily bag limit and two-day possession limit. The recreational fishery occurs only by hand-picking and diving. The daily sport catch limit for Pink and Spiny Scallops is 75 pieces and the maximum possession limit is 150 pieces. The daily sport catch limit for Rock Scallop and Weathervane Scallop is 6 pieces in southern BC areas. BC Tidal Waters Sport Fishing Licences can be purchased at many tackle stores and marinas or online by using the internet at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/index-eng.htm>

1.6.4. Aquaculture

During 2013, 68 of the 442 aquaculture sites in British Columbia were 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*).

1.7. Governance

The Minister of Fisheries and Oceans has ultimate and final responsibility for the management of fisheries in Canadian waters, and for the conduct of Canadian vessels operating in international waters. Ministerial functions are assisted and administered by the Department of Fisheries and Oceans at the national level in Ottawa, and by the regional structure in the following regions: Newfoundland-Labrador, Central and Arctic, Gulf, Maritimes, Quebec, and Pacific.

Pacific Region 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* (1996), 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 conservation areas may be established under the *Canada National Marine Conservation Areas Act* (2002, c. 18).

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 on the internet at:

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

More information on the SARA is available at:

<https://www.registrelep-sararegistry.gc.ca>

In addition, 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. It provides planning and operational tools that allow these goals to be achieved in a clear, predictable, transparent, inclusive manner, and provides the foundation for new conservation policies to implement the ecosystem and precautionary approaches to fisheries management. These policies include: A Fishery Decision-Making Framework Incorporating the Precautionary Approach, Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas, Ecological Risk Assessment Framework for Coldwater Corals and Sponge Dominated Communities, Policy on New Fisheries for Forage Species, Policy on Managing Bycatch, Guidance on Implementation of the Policy on Managing Bycatch, and Guidance for the Development of Rebuilding Plans under the Precautionary Approach Framework: Growing Stocks out of the Critical Zone. Along with existing economic and shared stewardship policies, these policies help Fisheries & Oceans Canada (DFO) meet objectives for long-term sustainability, economic prosperity, and improved governance. See the internet at:

<http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/overview-cadre-eng.htm>

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

1.8. Consultation

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 Fisheries & Oceans Canada on issues important to the management of the fishery. Fisheries & Oceans Canada, however, remains the decision making authority for the management of the fishery.

1.9. Approval Process

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

2. STOCK ASSESSMENT, SCIENCE AND TRADITIONAL KNOWLEDGE

2.1. Biological Synopsis

Pink and Spiny Scallops are distributed discontinuously throughout BC in small discrete beds with some aggregations within close proximity of each other (within 10 km) and others 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 80 mm. 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 believed 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 5 years; while for Pink scallops annual gamete production reaches an asymptotic maximum after 4 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. Predators of adult Pink and Spiny Scallops are known to include sea stars, as well as octopus (Gillespie et al. 1998b) 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. Aboriginal Traditional Knowledge/Traditional Ecological Knowledge

Both Aboriginal Traditional Knowledge (ATK) and Traditional Ecological Knowledge (TEK) are cumulative knowledge gathered over generations and encompass regional, local and spiritual connections to ecosystems and all forms of plant and animal life. ATK is knowledge held by Aboriginal peoples and communities, while TEK is local knowledge held by non-Aboriginal communities, including industry, academia, and public sectors. While qualitatively different,

both are cumulative knowledge that may be gathered over generations and are regionally and locally specific and can often be utilized to improve the management process. The growing awareness of the value of ATK and TEK is reflected in the increasing requirements for them to be included in environmental assessments, co-management arrangements, species at risk recovery plans, and coastal management decision-making processes. Government and the scientific community acknowledge the need to access and consider ATK and TEK in meaningful and respectful ways. However, the challenge for resource managers is how to engage knowledge holders and how to ensure that the information can be accessed and considered in a mutually acceptable manner, by both knowledge holders, and the broader community of First Nations, stakeholders, resource managers, and policy makers involved in fisheries.

2.4. 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. 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:

Location	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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.

2.5. 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.

2.6. Precautionary Approach

The Department has implemented the Sustainable Fisheries Framework (SFF), as part of the management of its Canadian fisheries, in order to maintain ecosystem integrity and support sustainable fisheries. The SFF includes a decision-making framework incorporating a precautionary approach to commercial, recreational, and food-social-ceremonial fishing.

In general, the precautionary approach in fisheries management is about being cautious when scientific knowledge is uncertain, and not using the absence of adequate scientific information as a reason to postpone or fail to take action to avoid serious harm to fish stocks or their ecosystem. To date, this approach is widely accepted as an essential part of sustainable fisheries management.

The development of a harvest strategy compliant with the PA is required for Pink and Spiny Scallops. The minimum elements of the harvest strategy component of the DFO PA include a removal reference for three stock status zones delineated by a Limit Reference Point (LRP) and an Upper Stock Reference (USR) (DFO 2006).

Unfortunately, for British Columbia 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.

A description of the PA policy is available on the internet at: http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/precautionary-precaution-eng.htm#toc_1

2.7. 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 Fisheries and Oceans Canada, Canadian Science Advisory Secretariat website: <http://www.isdm-gdsi.gc.ca/csas-sccs/applications/Publications/index-eng.asp>

See references in Section 11.

The Department 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. 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. Overviews of commercial, recreational, and Aboriginal sectors of the fishery are included.

3.1. Commercial

In recent years up to seven 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.

3.2. First Nations

First Nations harvest scallop for food, social and ceremonial purposes. First Nations involvement in commercial fisheries is a shared goal between the Department and Aboriginal people. It is a means to stimulate First Nation economic development opportunities and develop fisheries expertise in First Nation communities, while serving as the basis for more co-operation between First Nation communities and the commercial fishery sectors.

The Allocation Transfer Program (ATP) retires existing commercial licence eligibilities from harvesters on a voluntary basis and re-issues these to eligible First Nation organizations as communal commercial licences (category “F” licences).

The Pacific Integrated Commercial Fisheries Initiative (PICFI), announced in 2007, is 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. PICFI builds on fisheries reform work begun in response to the 2004 reports of the First Nations Panel on Fisheries and the Joint Task Group on Post-treaty Fisheries, as well as subsequent discussions in a wide variety of forums that have confirmed the need for PICFI. The Government of Canada committed \$175 million over the first five years (2007-2012) to implement the initiative. The PICFI program was extended with two consecutive one-year extensions until March 31, 2014 and a further extension of two years to March 2016.

To date, experimental scallop licences have not been available through these programs.

For more information on the ATP or PICFI program, please contact a resource manager listed in Section 14 or see the internet at:

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

3.3. Recreational

Recreational fishing may occur to provide food for personal use, as a leisure activity, or as a combination of the two. The recreational community includes local residents, multi-species

charter operators and lodges, and visiting anglers and boaters. Of the roughly one quarter of a million anglers fishing in BC's tidal waters, the vast majority (74%) are BC residents, with the remainder divided between Canadians from outside BC (12%) and visitors to Canada (14%) (Fisheries & Oceans Canada 2012). These activities provide a range of social, cultural, and health benefits to the participants as well as contribute directly and indirectly to economic activity.

The Tidal Waters licence includes access to numerous species, so the number of recreational harvesters taking advantage of the bag limit for scallops is unknown. In 2010, 677,253 angler days (33% of the total angler days) were spent harvesting shellfish, most (96%) by BC residents. Crabs, prawns and shrimp, clams and oysters are the main species of shellfish harvested (Fisheries & Oceans Canada 2012; surveys are conducted every 5 years).

National and provincial summary information from the Survey of Recreational Fishing in Canada 2010 is available on the Internet at:

www.dfo-mpo.gc.ca/stats/rec/canada-rec-eng.htm

4. MANAGEMENT ISSUES

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

4.1. Conservation and Sustainability

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 the Department'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 British Columbia 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 Policy.

4.2. Social, Cultural and Economic

4.2.1. 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. The Department 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.

4.2.2. First Nations

The Department is aware of some First Nations' concerns over the potential impact of commercial harvest on their ability to harvest for food, social and ceremonial (FSC) purposes.

Opportunity for scallop harvest is typically provided coincident with Canadian Shellfish Sanitation Program (CSSP) sampling for commercial purposes, and the CSSP is not

implemented in all areas. The Department is working with some First Nation groups to develop community harvest plans subject to water quality and biotoxin monitoring programs.

Some First Nations report shellfish catch to DFO. The Department is consulting with First Nations throughout coastal BC on a more comprehensive approach to gathering catch data by negotiating agreed-upon protocols outlined in the Fisheries Agreement and/or communal licences.

4.2.3. Recreational

Opportunity for scallop harvest is typically provided coincident with CSSP sampling for commercial purposes, and the CSSP is not implemented in all areas.

DFO continues to work with the Sport Fishing Advisory Board to educate recreational harvesters about the new requirements to report catch and fishing activity information. Although there is limited information on recreational shellfish harvest, including scallops, some harvest information is gathered annually in dockside creel surveys. These surveys were designed primarily to gather salmon and finfish catch information. Annual estimates by the national survey of recreational fishing are only made every five years. To improve recreational fishery monitoring and catch reporting, the Internet recreational catch and effort survey (iREC) was made mandatory in April of 2013. In 2016, iREC will continue to randomly request, (via email) licence holder activity and catch information.

A Survey of Recreational Fishing in Canada is conducted every 5 years and shows trends over the survey period but is not considered to provide official annual catch figures due to one year memory recall.

4.3. Compliance

The CSSP requires the Department 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. MANAGEMENT OBJECTIVES

Sections 5.1 to 5.3, 5.5 and 5.6 outline the “longer term” objectives for this and other invertebrate fisheries in the Pacific Region. Section 5.4 describes the species-specific “shorter-term” objectives for the Pink and Spiny Scallop trawl fisheries.

5.1. 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.

5.2. 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.

5.3. Invertebrate Resource Management

Management goals and objectives have been defined for invertebrate fisheries in annual management plans produced by DFO since 1990. The management goals and objectives, as written by Invertebrate Fisheries Management and revised in 1997, are:

- To ensure conservation and protection of invertebrate stocks and their habitat through the application of scientific management principles applied in a risk averse and precautionary manner based on the best scientific advice available;
- To meet the federal Crown’s obligations regarding aboriginal fisheries for food, social and ceremonial purposes;
- To develop sustainable fisheries through partnership and co-management arrangements with client groups and stakeholders to share in decision making, responsibilities, costs, and benefits;
- To develop fishing plans and co-operative research programs which will contribute to improving the knowledge base and understanding of the resource;
- To consider the goals of stakeholders with respect to social, cultural and economic value of the fishery;
- To consider health and safety in the development and implementation of management plans, fishery openings and closures;
- To consider opportunity for the development of the aquaculture industry;
- To provide opportunities for a recreational fishery.

5.4. Scallop by Trawl

5.4.1. 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 Precautionary Approach compliant reference points and harvest control rules for Pink and Spiny Scallops under the Sustainable Fisheries Framework Policy.

5.4.2. 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.

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 Aboriginal people. First Nation participation in the commercial fisheries is being addressed through DFO Aboriginal fisheries programs (Section 3.2).

First Nations Fishery: DFO's objective is to continue to provide opportunities for First Nations to harvest fish for food, social and ceremonial purposes, in a manner consistent with the decision of the Supreme Court of Canada in *R. vs. Sparrow* and subsequent court decisions. For more information, see the internet at:

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

Collaborative management strategies are also being developed through the Aboriginal Aquatic Resource Oceans Management Program, (AAROM), see internet at: <http://www.dfo-mpo.gc.ca/fm-gp/aboriginal-autochtones/aarom-pagrao/index-eng.htm>

First Nations involvement in the commercial fishery is a shared goal between DFO and Aboriginal people. First Nation participation in the commercial fisheries is being addressed through DFO Aboriginal fisheries programs (Section 3.2).

The Department 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.

Recreational Fishery: DFO's objective is to affirm the social and economic importance of the recreational fishery, 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.

The document "*Recreational Fisheries in Canada, An Operational Policy Framework*" may be requested from any fishery manager listed in this plan or is available on the internet at:

<http://www.dfo-mpo.gc.ca/fm-gp/policies-politiques/op-pc-eng.htm>

Recreational fisheries in the Pacific Region are also guided by "*A Vision for Recreational Fisheries in British Columbia 2009-2013*" developed cooperatively by DFO, the Province of BC and the Sport Fishing Advisory Board (SFAB). The recreational fisheries Vision is available at:

<http://www.pac.dfo-mpo.gc.ca/consultation/smon/sfab-ccps/docs/rec-vision-eng.pdf>

To improve recreational fishery monitoring and catch reporting, the Internet recreational catch and effort survey (iREC) was made mandatory in April of 2013. In 2016, iREC will continue to randomly request, (via email) licence holder activity and catch information.

5.5. 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 complaints from the general public. The general public are encouraged to call the DFO reporting line at 1-800-495-4336.

The Canadian Shellfish Sanitation Program (CSSP) was established to co-ordinate the efforts of federal government agencies concerning the standards for sanitary shellfish practices. The purpose of the CSSP is to ensure that bivalve molluscs are safe for human consumption. To achieve this, the CSSP:

- sets standards for the harvest and handling of all bivalves within Canadian tidal waters;
- commits, by Agreement, to improve sanitary practices within the shellfish industry;
- designates the responsibilities of DFO, Environment Canada and the Canadian Food Inspection Agency to properly facilitate the mandate of the CSSP to Canadians and foreign governments; and
- strives to increase the efficiency and effectiveness of the CSSP by co-operation, communication, and participation.

More information is available on the Internet at:

<http://www.inspection.gc.ca/food/fish-and-seafood/shellfish-sanitation/eng/1299826806807/1299826912745>

5.6. Ecosystem

DFO's objective is to use the Ecological Risk Assessment Framework guided by the Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas to determine the level of risk in these fisheries and whether mitigation measures are required in any areas. Ecosystem objectives may also arise with initiatives under the *Oceans Act*. In the interim, it is a shared objective with the commercial fishery to avoid sponge reefs and cloud sponges in areas identified in the Commercial Harvest Plan (Appendix 1).

DFO's objectives with respect to managing bycatch is to ensure that all Canadian fisheries are managed in a manner that supports the sustainable harvesting of aquatic species, that minimizes the risk of fisheries causing serious or irreversible harm to bycatch species and to account for total catch, including retained and non-retained bycatch.

5.6.1. Oceans Act

In 1997, the Government of Canada enacted the *Oceans Act*. This legislation provides a foundation for an integrated and balanced national oceans policy framework supported by regional management and implementation strategies. In 2002, Canada's Oceans Strategy was released to provide the policy framework and strategic approach for modern oceans management in estuarine, coastal, and marine ecosystems. As set out in the *Oceans Act*, the strategy is based on three principles: sustainable development, integrated management, and the precautionary approach. The *Oceans Act*, the *Canada Wildlife Act*, and the *National Marine Conservation Areas Act* have given rise to several initiatives on the BC coast, which are listed below. As goals, objectives, and management plans are finalized for these initiatives, the Department's management of fisheries will be adapted as appropriate, in consultation with interested parties through Integrated Fisheries Management processes.

<http://www.pac.dfo-mpo.gc.ca/oceans/index-eng.htm>

5.6.2. Marine Protected Area Network Planning

The *Oceans Act* mandates the Minister of Fisheries and Oceans with leading and coordinating the development and implementation of a national system (or network) of marine protected areas. The National Framework for Canada's Network of Marine Protected Areas (National Framework) provides strategic direction for the design of a national network of marine protected areas (MPAs) that will be composed of a number of bioregional networks. This is an important step towards meeting Canada's domestic and international commitments to establish a national network of marine protected areas. Regionally, the draft *Canada-British Columbia Marine Protected Area Network Strategy* has been developed jointly by federal and provincial agencies and reflects the need for governments to work together to achieve common marine protection and conservation goals. Bioregional marine protected area network planning will identify new areas of interest for protection by DFO, Parks Canada, Environment Canada, the Province of BC, and any other agencies with a mandate for protecting marine spaces. Future network MPAs may overlap and/or include fishing areas, depending on the type and nature of the MPA.

DFO has designated two MPAs in the Pacific Region, the Bowie Seamount and the Endeavour Hydrothermal Vents. Both areas are offshore and do not include scallop fishing areas.

Work is ongoing to consider MPA designations for other areas along the Pacific Coast, including the Race Rocks area off Rocky Point south of Victoria (currently designated as a Provincial Ecological Reserve), where scallop fishing does not occur, and the Hecate Strait / Queen Charlotte Sound Glass Sponge Reefs, an offshore area where scallop fishing does not occur.

More information on MPA Network Planning can be found at:

<http://www.dfo-mpo.gc.ca/oceans/management-gestion/marineprotection-protectionmarine/index-eng.htm#network>

5.6.3. National Marine Conservation Areas (NMCAs)

The Canada *National Marine Conservation Areas Act* provides for the establishment of National Marine Conservation Areas (NMCAs).

5.6.3.1. Gwaii Haanas

Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site (hereafter Gwaii Haanas) is a 5,000 km² land-and-sea protected area in the southern portion of Haida Gwaii (formerly the Queen Charlotte Islands), approximately 100 kilometres off the north coast of British Columbia. The Haida Nation declared the area a Haida Heritage Site in 1985. The terrestrial part of Gwaii Haanas was designated a National Park Reserve by the Government of Canada soon after, and the two parties have been managing the area cooperatively since 1993. In 2010, following an extensive public consultation process, the marine area of Gwaii Haanas was given the designation of National Marine Conservation Area Reserve.

Gwaii Haanas is managed by the Archipelago Management Board (AMB), a cooperative body made up of equal representation from the Government of Canada (represented by Fisheries and Oceans Canada and Parks Canada) and the Council of the Haida Nation. The Gwaii Haanas marine area is currently managed under the Interim Management Plan and Zoning Plan, which includes “balancing protection and ecologically sustainable use” in its guiding principles. The Zoning Plan identifies six areas, described below, that are closed to commercial and recreational fishing.

Users of the Gwaii Haanas marine area should be aware that adjacent land is managed under the authority of the *Canada National Parks Act* and its regulations and, as specified in the Gwaii Haanas Agreement (1993), there is “no extraction or harvesting by anyone of the resources of the lands and non-tidal waters of the Archipelago for or in support of commercial enterprise” (s3.3). There are specific requirements for visiting the terrestrial portion of Gwaii Haanas, and advanced planning is necessary. Please contact the Gwaii Haanas administration office at 1-877-559-8818 for further information.

Development of a long-term management plan for the Gwaii Haanas marine area is underway and is expected to be completed in 2016. This process will take place in consultation with the commercial and recreational fishing sectors through Fisheries and Ocean’s established integrated fisheries planning and advisory processes. Annual fishing plans will be developed in consultation with stakeholders.

5.6.3.2. Southern Strait of Georgia

Parks Canada, in partnership with the Government of British Columbia, launched a feasibility assessment for an NMCA reserve in the southern Strait of Georgia in 2004. Since then, consultations with First Nations, key stakeholders, communities and the public have occurred. Informed by those discussions, a proposed boundary for consultation was announced by the provincial and federal Ministers of Environment in 2011. Since 2011, the two governments have been consulting with First Nations, local governments and industry. A preliminary concept is currently being developed to help advance consultations on the feasibility assessment. If the results of the feasibility assessment indicate that establishment of an 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 Aboriginal 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. More information on the proposed National Marine Conservation Area Reserve in the Southern Strait of Georgia is available on the internet at: www.pc.gc.ca/eng/progs/amnc-nmca/dgs-ssg/index.aspx

5.6.3.3. Marine National Wildlife Areas

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

<http://www.ec.gc.ca/ap-pa/default.asp?lang=En&n=2BD71B33-1>

5.6.4. Strait of Georgia Glass Sponge Reef Closures

In accordance with the Sensitive Benthic Areas Policy and its Ecological Risk Assessment Framework (ERAF) for Cold-water Corals and Sponge Dominated Communities, DFO has conducted a risk assessment regarding the potential impacts of bottom-contact fisheries on nine glass sponge reef areas in the Strait of Georgia. The Department consulted with First Nations, commercial and recreational fishers and other interested groups on proposed protection measures for the reefs. Formal closure of bottom contact fishing activities in these areas were put in place in-season in 2015.

Coordinates and a figure describing the nine glass sponge reef areas can be found in Appendix 2 and on the following web site:

http://www.pac.dfo-mpo.gc.ca/oceans/protection/sponge_reef-recif_eponge-eng.html

5.6.5. 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).

6. 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*.

6.1. Commercial

The commercial fishery operates under the licensing term “priority-access” (as opposed to limited entry) meaning permanent licence eligibility is not currently established (see Section 1.3). In addition there are area closures, gear and fishing depth limitations, minimum size limits, and requirements to conduct fishery-independent surveys of biomass in all fished areas.

6.2. First Nations

To date, few limits have been placed on First Nations’ harvest for food, social and ceremonial purposes. Scallops may be allocated under treaty, but were unallocated under the Maa-nulth, Tsawwassen, Tla’amin (Sliammon) and Nisga’a Treaties.

6.3. Recreational

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

6.4. 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 14 Contacts).

6.5. 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.

6.6. Requests for Access

Through the Aboriginal Fisheries Strategy (AFS) Program, DFO provides FSC fishery access to aggregate groups or individual First Nations through fisheries agreements and communal licences (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 14 Contacts).

Requests for improved recreational access are directed to DFO through the Sport Fishing Advisory Board (SFAB) process and the representatives to the Scallop Advisory Board (Section 15). 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 on the SFAB is available at:

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

7. 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.

Fisheries & Oceans Canada's policy on the management of First Nations fishing identifies First Nations harvests for food, social and ceremonial (FSC) purposes as the first priority after conservation. Fisheries & Oceans Canada 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.

Communal licences and harvest documents (under treaty) are issued annually to First Nations under the authority of the *Aboriginal Communal Fishing Licences Regulations* made under the *Fisheries Act*. Communal licences and harvest documents can be amended in-season for resource conservation purposes. Even where an agreement cannot be concluded, Fisheries & Oceans Canada issues communal fishing licences to First Nations organizations.

A Tidal Waters Sport Fishing Licence is required to fish and retain shellfish, including scallop. These may be purchased for a 1, 3, 5 day, or annual period. Fees depend on licence duration, age (senior, adult, juvenile) and residency status. Fees are published in the British Columbia Tidal Waters Sport Fishing Guide. Tidal Waters Sport Fishing Licences can be purchased at many tackle stores and marinas or online at: www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/index-eng.htm

The Sport Fishing Advisory Board and the recreational fishing sector strongly support effective fishery monitoring and catch reporting programs in recreational fisheries. The SFAB has been working with DFO on initiatives to strengthen fishing monitoring and catch reporting in the recreational fishery for a number of years.

As of 2013, recreational harvesters are legally required as a condition of the Tidal Waters Sport Fishing Licence to report information on their recreational fishing activity and catch to DFO representatives when requested. Commonly, recreational harvesters may be requested by a Fishery Officer or designated DFO representative at the dock or through a creel survey to provide important catch and effort information. A recreational phone survey is also conducted nationally by DFO every 5 years.

In 2012, a new internet survey was initiated to provide monthly estimates of effort for all methods of recreational fishing, including angling, trapping, beach collecting, and diving and to provide monthly estimates of catch for all sport caught species.

The Internet recreational catch and effort survey (iREC) was made mandatory in April of 2013. In 2016, iREC will continue to randomly request, (via email) licence holder activity and catch information. The internet survey contacts participants by email in advance of the survey period and allows for the selected participants to record their information periodically or to complete the survey on a single visit to the website after the month ends. Participants who do not fish during the month are also surveyed as well, as an important component of the catch and effort estimation. Since participants in the survey are selected randomly, some licence holders will be selected to participate for more than one month during a licensing year (April to March).

More information on the internet recreational survey is available at: www.pac.dfo-mpo.gc.ca/fm-gp/rec/irec/index-eng.html

8. SHARED STEWARDSHIP ARRANGEMENTS

8.1. Commercial Fishery

Industry members and/or their association are responsible for coordinating all biomass surveys, while following Departmental 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.

8.2. 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 Protection, the Treaty and Aboriginal Policy Directorate, the Pacific Fishery Licence Unit, the Recreational Fisheries Division, the Oceans Directorate and numerous administrative personnel.

9. COMPLIANCE PLAN

General information about the Conservation and Protection (C&P) program is available at: www.dfo-mpo.gc.ca/fm-gp/enf-loi/index-eng.htm

C&P 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. Confidentiality is assured.

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.

10. PERFORMANCE REVIEW

Performance indicators are reported in the Post-season Review (Section 16).

10.1. Stock Assessment

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

10.2. 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 Advisory Board meetings and other DFO program measures and assessments.

10.3. First Nations Fishery

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

10.4. Recreational Fishery

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

10.5. 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.

10.6. 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.

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- 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.
- 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. x + 65 p.

12. 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>

Fisheries & Oceans Canada WAVES Library of Integrated Fisheries Management Plans:

www.dfo-mpo.gc.ca/libraries-bibliotheques/index-eng.htm

Pacific Region Fishery Management Area and Subarea maps:

www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/areas-secteurs/index-eng.htm

Pacific Region, Fisheries Management, Fishery Openings and Closures:

www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/comm/oc-of-eng.htm

Pacific Region, Recreational Fisheries information web site:

www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.htm

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

www.isdm-gdsi.gc.ca/csas-sccs/applications/publications/index-eng.asp

13. 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.
Aboriginal Traditional Knowledge (ATK)	Knowledge that is held by, and unique to Aboriginal peoples. It is a living body of knowledge that is cumulative and dynamic and adapted over time to reflect changes in the social, economic, environmental, spiritual, and political spheres of the Aboriginal knowledge holders. It often includes knowledge about the land and its resources, spiritual beliefs, language, mythology, culture, laws, customs and medicines.
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: www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/areas-secteurs/index-eng.htm
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
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 PA 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: www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/precaution-eng.htm
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
Traditional Ecological Knowledge (TEK)	A cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment

14. 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 and Sea Turtle Incident Reporting Hotline	1-800-465-4336

Fisheries Management

Regional Coordinator - Invertebrates	Jeff Johansen	(604) 666-3869
Regional Recreational Co-ordinator	Devona Adams	(604) 666-3271
North Coast (Areas 1 through 10)	General inquiries	(250) 627-3499
417 2nd Avenue West, Prince Rupert, B.C. V8J 1G8	Fax	(250) 627-3427
Resource Management Biologist	Steven Groves	(250) 627-3455
Resource Manager - First Nations Fisheries		(250) 627-3499
Resource Manager - Recreational Fisheries		(250) 627-3409
South Coast (Areas 11 through 27 & 29-5)	General Inquiries	(250) 756-7270
3225 Stephenson Point Road, Nanaimo, B.C. V9T 1K3	Fax	(250) 756-7162
Resource Management Biologist	Juanita Rogers	(250) 756-7268
Resource Manager - Comox	David Fogtmann	(250) 339-3799
Resource Manager - First Nations Fisheries (North Is.)	Kevin Conley	(250) 756-7196
Resource Manager - First Nations Fisheries (G. Basin)	Jonathan Joe	(250) 756-7243
Resource Manager - First Nations Fisheries (WCVI)	Paul Preston	(250) 720-4452
Resource Manager - Recreational Fisheries	Brad Beaith	(250) 756-7190
Lower Fraser Area	General Inquiries	(604) 666-8266
Unit 3, 100 Annacis Parkway, Delta, B.C. V3M 6A2	Fax	(604) 666-7112
Resource Management Biologist - Shellfish	Anna Magera	(604) 916-6743
Resource Manager - First Nations Fisheries	Terri Bonnet	(604) 666-8426
Resource Manager - Recreational Fisheries	Barb Mueller	(604) 666-2370

Science

Marine Ecosystems and Aquaculture Division	Ken Fong	(250) 756-7368
Pacific Biological Station	Leslie Barton	(250) 756-7306
Hammond Bay Road, Nanaimo, B.C. V9T 6N7		

Conservation and Protection

Linda Higgins (250) 754-0221

Licensing

Pacific Fishery Licence Unit	Phone	1-877-535-7307
401 Burrard Street, Vancouver, B.C. V6C 3S4	Fax	(604) 666-5855
E-Mail: fishing-peche@dfo-mpo.gc.ca		

Oceans

Oceans, Habitat, and Enhancement (604) 666-1089

Aquaculture

Shellfish Advisor, Aquaculture Division	Gabrielle Kosmider	(250) 754-0404
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Canadian Food Inspection Agency (CFIA)

Molluscan Shellfish Program Specialist	Carolyn Bateman	(604) 292-5636
Fish Inspection Directorate		
2250 Boundary Road, Burnaby, B.C. V5M 4L9		

Environment Canada

Growing Water Quality Classification and Surveys	Walter Hajen	(604) 903-4475
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B.C. Ministry of Environment

Oceans and Marine Fisheries Branch	Dennis Chalmers	(250) 953-3423
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WorkSafe BC

Regional Prevention Manager, Courtenay	Pat Olsen	(250) 334 8777
Occupational Safety Officer, Courtenay	Mark Lunny	(250) 334 8732
Occupational Safety Officer, Victoria	Jessie Kunce	(250) 881 3461
Occupational Safety Officer, Lower Mainland	Bruce Logan	(604) 244 6477

Manager of Interest for Marine	Pat Olsen	(250) 334 8777
	toll free	1 888 621 7233 (ext. 8777)

Projects related to commercial fishing	Lisa Houle	(604) 214 6922
	toll free	1 888 621 7233 (ext. 6922)

Sighting Networks

BC Cetacean and Sea Turtle Sighting Network (866) 472-9663
Email: sightings@vanaqua.org or turtles@vanaqua.org
On the internet at:
www.wildwhales.org/sightings/ or www.bcreptiles.ca/reportsightings.htm#1

Basking Shark Sighting Network	1 (877) 50 SHARK
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Email: BaskingShark@dfo-mpo.gc.ca

On the internet at:

www.pac.dfo-mpo.gc.ca/science/species-especes/elasmobranch/sightings-signaliez-eng.htm

15. 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.

A consultation process is being built for the scallop by trawl fisheries and will be a major part of the planning for these fisheries. The primary consultation body will be the Scallop Advisory Board. This committee will include representatives from DFO, elected representatives of commercial licence eligibility holders, processors, Sport Fishing Advisory Board (SFAB) representatives for recreational fishing interests, First Nations, and the Province of BC. The advisory will meet once annually to provide advice to DFO, usually in January.

Additional information is available from DFO Resource Managers (Section 14 Contacts) or from DFO's consultation internet site at:

www.pac.dfo-mpo.gc.ca/consultation/index-eng.html

16. POST-SEASON REVIEW

The first IFMP post-season review will be published in 2017.

Appendix 1: 2016/17 Scallop by Trawl Commercial Harvest Plan

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1. MANAGEMENT CHANGES AND HIGHLIGHTS FOR 2016/17

- 1.1. The Department has reviewed the status of the Scallop by Trawl exploratory fishery and has determined that it will continue through an Integrated Fisheries Management Plan (IFMP) for 2016/17. See Section 1.3 of the main IFMP for additional information about the potential for fishery expansion.
- 1.2. The 2016/17 IFMP and licence will be in effect from May 1, 2016 to April 30, 2017.
- 1.3. 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.
- 1.4. 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. 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 for 2016/17. Overages to harvest quotas that occur in one year will be deducted from the following year's quotas. See Section 2.
- 1.6. 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.
- 1.7. All persons onboard the fishing vessel during harvesting activities must carry photo identification. 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. By licence condition, 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.
- 1.10. In accordance with the Sensitive Benthic Areas Policy and its Ecological Risk Assessment Framework (ERAF) for Cold-water Corals and Sponge Dominated Communities, DFO has conducted a risk assessment regarding the potential impacts of bottom-contact fisheries on nine glass sponge reef areas in the Strait of Georgia. The Department consulted with First Nations, commercial and recreational fishers and other interested groups on proposed protection measures for the reefs. Formal closures of bottom contact fishing activities in these areas were put in place in-season in 2015. General information on the reefs can be found in Section 7. A figure describing the nine glass sponge reef areas can be found in Appendix 2 and on the following web site:

http://www.pac.dfo-mpo.gc.ca/oceans/protection/sponge_reef-recif_ponge-eng.html

2. OPEN TIMES AND AREAS

The 2016/17 commercial season will run from May 1, 2016 to April 30, 2017. Note the research and permanent area closures 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:

<http://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. There is no remaining quota from surveys conducted in previous years to carry-over.

Harvest opportunities may be added in-season if surveys are completed and data can be analyzed by the Department 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 (i.e. 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 4 for full descriptions)	Quota (lbs.)
14A	Cape Lazo	A portion of Subarea 14- 9 and 14-12	Survey required
13A	Elk Point	A portion of Subarea 13-9	Survey required
13B	Granite Point	A portion of Subareas 13-9 and 13-10	Survey required
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	Survey required
13F	Octopus Islands	A portion of Subarea 13-12	Survey required
13G	SW Quadra	A portion of Subarea 13-1	Survey required
13H	Wilby Shoal	A portion of Subarea 13-1 and 13-2	Survey required
13I	Willow Point	A portion of Subaarea 13-1 and 12-2	Survey required

4. CLOSURES

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

4.1. General Information on Closures: the 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 harvester 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:

www.pac.dfo-mpo.gc.ca/fm-gp/contamination/biotox/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 14 of the main IFMP document.

- Information may also be available through weekly broadcasts over a commercial or marine radio station ("the weather channel"). In the North Coast, this method is only updated weekly on Tuesdays and it is recommended that the sources listed above be the primary avenue for information.

4.2. Sanitary Contamination Closures

Shellfish may not be harvested from closed contaminated areas except by special permit licence under the *Management of Contaminated Fisheries Regulations*. 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/biotox/index-eng.html>

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:
 - (i) marina
 - (ii) ferry wharf

- (iii) any floating living accommodation facility, other than a floating living accommodation described in subsection (3)
 - (iv) any finfish net pen, other than a 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 and appropriate waste management plan is a condition of the Aquaculture Licence and is approved by the Regional Interdepartmental Committee; and
- 4. Zero 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.

4.3. Biotoxin Contamination Closures

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/biotox/index-eng.html>

4.4. 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. The Canadian Food Inspection Agency (CFIA), Environment Canada (EC) and DFO introduced changes to the Canadian Shellfish Sanitation Program (CSSP) shellfish harvesting and handling requirements in 2008.

Human wastes, sewage or refuse shall not be discharged from harvest 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 Transport Canada's *Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals*, entered into force on May 3, 2007 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, and portable toilets or other designated human waste receptacles shall be cleaned before being returned to the vessel. (Facilities used for cleaning food-processing equipment shall never be used for cleaning portable toilets or designated human waste receptacles.)

All persons must clean their hands after using or cleaning the receptacles described above.

4.5. 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 non-permitted sewage overflow at a wastewater treatment plant may potentially cause contamination.

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

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

For further information, contact Elysha Gordon at (250) 756-7192.

4.6. Permanent Area Closures

4.6.1. Strait of Georgia Glass Sponge Reefs

In accordance with the Sensitive Benthic Areas Policy and its Ecological Risk Assessment Framework (ERAF) for Cold-water Corals and Sponge Dominated Communities, DFO has conducted a risk assessment regarding the potential impacts of bottom-contact fisheries on nine glass sponge reef areas in the Strait of Georgia. The Department consulted with First Nations, commercial and recreational fishers and other interested groups on proposed protection measures for the reefs. Formal closures of bottom contact fishing activities in these areas were put in place in-season in 2015.

General information on the reefs can be found in Section 7. Coordinates and a figure describing the nine glass sponge reef areas can be found in Appendix 2 and on the following web site:

http://www.pac.dfo-mpo.gc.ca/oceans/protection/sponge_reef-recif_eponge-eng.html

4.6.2. 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.

4.6.3. Area 14

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)

4.6.4. 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)

4.6.5. 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)

4.6.6. Area 17

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.

4.6.7. 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.

4.6.8. 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)

4.6.9. Area 20

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

Botanical Beach Provincial Park: That portion of Subarea 20-3 between the lowest low water on record and the highest high water on record from San Juan Point thence following the Vancouver Island shoreline easterly to the mouth of Tom Baird Creek. (Marine Reserve)

Pacific Rim National Park, Juan de Fuca: That portion of Subarea 20-1 between the lowest low water on record and the highest high water on record from Bonilla Light thence following the shoreline of Vancouver Island easterly to Owen Point. (Park)

4.6.10. Area 23

Effective April 1, 2011 and in accordance with the Maa-nulth First Nations Final Agreement (Treaty), several beaches in Area 23 and 26 were closed to the harvest of intertidal bivalves between the high water mark and the low water mark. These “Intertidal Bivalve Harvest Areas” are set aside for the use of Maa-nulth First Nations members only.

Toquart River Flats: That portion of Toquart Bay in Subarea 23-10 bounded on the east by a straight line that starts at 49°02.363' N, 125°20.836' W, then straight to 49°02.321' N, 125°20.767' W, then straight to 49°02.250' N 125°20.788' W, then 200° True to the low water mark, then following the low water mark to the southern boundary bounded on the south by a straight line running due east from 49°01.513' N, 125°21.811' W to the low water mark and bounded on the northwest by a line that starts at 49°02.318' N 125°21.438' W, then straight to 49°02.305' N, 125°21.468' W, then straight to 49°02.235' N, 125°21.468' W, then straight to 49°02.199' N, 125°21.553' W (Maa-nulth First Nation for food, social and ceremonial purposes).

Maggie River: That portion of Subarea 23-10 near the mouth of the Maggie River bounded on the east by a line running due south from 49°00.301' N, 125°21.956' W to the low water mark, then following the low water mark to the southern boundary, and bounded on the south by a line running due east from 48°59.305' N, 125°23.155' W to the low water mark (Maa-nulth First Nation for food, social and ceremonial purposes).

Effingham Inlet West: That portion of Effingham Inlet in Subarea 23-6 west of a line that starts at 49°03.043' N, 125°09.768' W, then following the low water mark to 49°02.895' N, 125°09.944' W (Maa-nulth First Nation for food, social and ceremonial purposes).

Coeur d'Alene Creek: That portion of Effingham Inlet in Subarea 23-6 at the mouth of Coeur d'Alene Creek east of a line that starts at 49°02.930' N, 125°08.302' W, then following the low water mark to 49°02.659' N, 125°08.618' W, and west of a straight line from 49°02.758' N, 125°08.272' W, due south to the opposite shoreline (Maa-nulth First Nation for food, social and ceremonial purposes).

Geer Islets: That portion of Subarea 23-5 surrounding the Geer Islets inside a line that starts at 48°55.828' N, 125°06.707' W, then south following the low water mark to 48°55.673' N, 125°06.672' W, then north following the low water mark to the point of commencement, including the intertidal zone between the north and south islets (Maa-nulth First Nation for food, social and ceremonial purposes).

Meade Islets: That portion of Subarea 23-5 surrounding the Meade Islets inside a line that starts at 48°55.650' N, 125°07.290' W, then south following the low water mark to 48°55.423' N, 125°07.507' W, then north following the low water mark to the point of commencement, including the intertidal zone between the east and west islets (Maa-nulth First Nation for food, social and ceremonial purposes).

Northeast Numukamis Bay: That portion of northeast Numukamis Bay in Subarea 23-4 at the mouth of Carnation Creek east of a line that starts at 48°54.920' N, 125°00.423' W, then following the low water mark to 48°54.722' N, 125°00.468' W (Maa-nulth First Nation for food, social and ceremonial purposes).

Kookswiis (Sarita River): That portion of Numukamis Bay in Subarea 23-4 at the mouth

of the Sarita River (Kookswiis) inside a line that starts at 48°54.434' N, 125°00.652' W, then following the low water mark to 48°53.731' N, 125°01.278' W, then following the eastern shoreline of Santa Maria Island to 48°53.529' N, 125°01.565' W, then straight across the channel to 48°53.486' N, 125°01.486' W, and bounded on the east by a line that starts at 48°54.187' N, 125°00.540' W, then straight to 48°54.148' N, 125°00.612' W, then straight to 48°54.086' N, 125°00.632' W, then straight to 48°54.064' N, 125°00.592' W, then straight to 48°54.030' N, 125°00.599' W, then straight to 48°53.786' N, 125°01.034' W (Maa-nulth First Nation for food, social and ceremonial purposes).

(“Santa Maria Island, Numakumis Bay Beaches” closure replaced by “Kookswiis (Sarita River)” in 2013).

Pacific Rim National Park, Broken Group Islands: Those waters of the Broken Group Islands in Barkley Sound within park boundaries as shown, since 1989, on Canadian Hydrographic Service Chart 3671. (Park)

Bamfield Marine Station Research Area Closure: Those waters of Pacific Fishery Management Subareas 23-4, 23-6 and 23-7 bounded by a line commencing at the light at Whittlestone Point and running directly to the southern tip of Haines Island; from the northwestern tip of Haines Island to the southern tip of Seppings Island; from the northwestern tip of Seppings Island to Kirby Point on Diana Island; from Kirby Point directly to the northwest tip of Fry Island; from the northwestern tip of Fry Island to the nearest adjacent point on Tzartus Island; from Foucault Bluff on Tzartus Island to the northwest tip of Nanat Island; from the eastern tip of Nanat Island to the nearest adjacent point on Vancouver Island and thence along the coastline of Vancouver Island to the point of commencement. (Research Area)

Pacific Rim National Park, Grice Bay and McBey Islets: The waters of Tofino Inlet within Pacific Rim National Park including McBey Islets and Dinner Island in Tsapee Narrows, Browning Passage in Subarea 24-9 and Grice Bay west and south of Indian Island in Subarea 24-11. (Park)

4.6.11. Area 26

Amai Inlet: That portion of Amai Inlet in Subarea 26-3 southeast of a straight line from 50°01.469' N, 127°05.021' W to 50°01.524' N, 127°04.899' W (Maa-nulth First Nation for food, social and ceremonial purposes).

Artlish River: That portion of Tahsish Inlet in Subarea 26-4 at the mouth of the Artlish River bounded on the west by a line that starts at 50°07.191' N, 127°05.561' W, then following the low water mark to 50°06.166' N, 127°05.568' W, and bounded on the east by a straight line from 50°06.956' N, 127°05.275' W to 50°06.815' N, 127°05.109' W (Maa-nulth First Nation for food, social and ceremonial purposes).

Kauwinch River: That portion of Kashutl Inlet at the mouth of the Kauwinch River in Subarea 26-5 bounded on the west by a line that starts at 50°08.749' N, 127°16.844' W, then following the low water mark to 50°08.401' N, 127°16.360' W, then straight to 50°08.281' N, 127°16.017' W, then following the low water mark to 50°08.249' N,

127°15.876' W, and bounded on the northeast by a straight line from 50°08.728' N, 127°16.226' W to 50°08.710' N, 127°16.164' W (Maa-nulth First Nation for food, social and ceremonial purposes).

Malksope-Bunsby Islands: That portion of Malksope Inlet–Bunsby Islands in Subarea 26-7 inside a line that starts at 50°06.180' N, 127°30.845' W, then straight to 50°06.252' N, 127°30.837' W, then straight to 50°06.246' N, 127°30.810' W, then straight to 50°06.215' N, 127°30.650' W, then straight to 50°06.184' N, 127°30.602' W, then straight to 50°06.187' N, 127°30.555' W, then straight to 50°06.212' N, 127°30.542' W, then following the shoreline southward then northward to the point of commencement, and that portion of Malksope Inlet–Bunsby Islands in Subarea 26-7 east of a straight line from 50°06.322' N, 127°30.692' W to 50°06.284' N, 127°30.573' W (Maa-nulth First Nation for food, social and ceremonial purposes).

Malksope-Upsowis: That portion of Malksope Inlet-Bunsby Islands in Subarea 26-8 inside a line that starts at 50°06.836' N, 127°30.502' W, then straight to 50°06.865' N, 127°30.505' W, then straight to 50°06.878' N, 127°30.485' W, then straight to 50°06.873' N, 127°30.427' W, then straight to 50°06.877' N, 127°30.381' W, then straight to 50°06.878' N, 127°30.361' W, then following the shoreline southeasterly to 50°06.805' N, 127°30.224' W, then straight to 50°06.783' N, 127°30.137' W, then straight to 50°06.757' N, 127°30.104' W, then straight to 50°06.714' N, 127°30.064' W, then straight to 50°06.675' N, 127°30.058' W, then straight to 50°06.567' N, 127°30.057' W, then straight to 50°06.591' N, 127°30.195' W, then following the shoreline northward to the point of commencement (Maa-nulth First Nation for food, social and ceremonial purposes).

Checleset Bay Fishery Closure Area: Those waters of Checleset Bay within Subareas 26-7, 26-8 and 26-10 and 126-1 on the northwest coast of Vancouver Island enclosed by the coordinates 49° 59' to 50° 6.3' N and 127° 26' to 127° 39' W. (Ecological Reserve)

Kyuquot Sound Marine Communities Study Area: Consists of: Kyuquot Bay; a portion of 26-6 inside or northerly of a line from White Cliff Head to Racoon Point and identified on the Kyuquot map attached to this plan, and entrance to Crowther Channel: a portion of 26-6 on the west side of Union Island commencing at position 50° 0.4' N, 127° 19.3' W and identified on the map attached to this plan. (Research Closures)

4.6.12. Area 28

Porteau Cove: That portion of Subarea 28-4, east of a line drawn from a white fishing boundary sign located on the south shore of Porteau Cove to a white fishing boundary sign located on the north shore of Porteau Cove. (Marine Reserve)

Whytecliff Park: That portion of Subarea 28-2 bounded by a line commencing from the most southerly point of Whytecliff Park; thence in a straight line to a point located 100m east of the most southeasterly point of Whyte It.; thence following the southern shoreline of Whyte It. at a distance of 100m to a point lying 100m from the most southwesterly point of Whyte It.; thence in a straight line to a point lying 100m west of White Cliff Point; thence following the shoreline at a distance of 100m in a northerly direction to a point 100m north of Lookout Point; thence following the shoreline at a distance of 100m

in an easterly direction to a point 100m perpendicular to the most northerly point of Whytecliff Park; thence to the most northerly point of Whytecliff Park on the mainland. (Marine Reserve)

Horseshoe Bay: That portion of Subarea 28-2 bounded by a line commencing from Whytecliff Point, thence in a straight line to the most southerly point of Bowyer Island, thence in a straight line 112 degrees true to the mainland. (Navigational Closure)

False Creek: Subarea 28-8. (Navigational Closure)

Burrard Inlet: Subarea 28-10. (Navigational Closure)

4.6.13. Area 29

Subareas 29-4 and 29-5:

5. MANAGEMENT MEASURES

5.1. Species

Spiny scallop (*Chlamys hastata*)

Pink scallop (*Chlamys rubida*)

5.2. 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.

5.3. 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 the Department prior to fishing and receiving a licence. Gear will only be approved if it meets standards for eliminating bycatch and habitat impacts set by DFO Science. Testing of new gear will be required at the harvester's expense.

5.4. Depth

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

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

6. LICENSING

6.1. Licensing Service Information

DFO's licensing services are now provided through the National Online Licensing System located at <https://fishing-peche.dfo-mpo.gc.ca>. The National Online Licensing System enables secure and reliable online service delivery to both commercial and communal commercial users.

Fish harvesters are now able to perform all standard licensing transactions using the system. These transactions include:

- Renewing licences and paying licence fees, as well as renewing vessel registrations
- Submitting licensing requests (such as vessel transfers) and checking the status of requests
- Submitting electronic documents in support of licensing requests
- Printing licences, licence conditions, receipts, and other licensing documents
- Appointing representatives to perform licensing transactions on a user's behalf.

The system provides fish harvesters with the ability to view their account information and manage their licensing requirements online, replacing traditional services previously offered over-the-counter or by regular mail. For instance, licence renewal notices are no longer sent by mail; rather, clients are now notified through the online system when licences are ready for renewal.

Licence renewal and payment of fees are mandatory on an annual basis prior to the expiry date of each fishery in order to maintain eligibility in the future. Licence eligibility will cease if not renewed annually.

Upon DFO receiving the required payment and, for ZR licence holders, the designated vessel and vessel owner information, the licence will be issued and notification will be sent via email to advise licence eligibility holders/vessel owners that a change has been made to their online account. The licence documents, licence conditions and receipts will be available to be printed at that time.

To ensure that you receive email notifications, be sure to update your email address under your profile. Instructions on updating email addresses may be found at: www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/user-manual-utilisateurs-eng.htm - please refer to Section 2.3.1: Profile, Personal Information and click on 'Modify'.

To logon, register and use the system, visit DFO's National Online Licencing System website at:

<https://fishing-peche.dfo-mpo.gc.ca/>, or contact our client support.

6.1.1. Client Support:

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

6.2. Licence Category

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

6.3. Application Fees

The annual licence application fee for a ZR licence is \$30.

6.4. Licence Application and Issuance

Prior to annual licence issuance for a category ZR licence, please ensure:

- a) Any Ministerial conditions placed on the licence eligibility are met.
- b) 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.

Scallop by Trawl licence eligibilities have a maximum vessel length (MVL); the MVL restriction has been temporarily waived. Fisheries and Oceans Canada reserves the right to reinstate vessel length restrictions if necessary.

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

6.5. 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 conform to Canadian Food Inspection Agency inspection regulations for holding or transporting fish and have appropriate licences.

6.6. Area Licensing

Following full review of the 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).

6.7. Licence Documents

Scallop by Trawl licence documents are valid from the date of issue to April 30 of the following calendar year.

6.8. 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 National Online Licensing System in the same manner as the original designation request was submitted.

6.9. Licence Eligibility Nominations

Whereas permanent licence eligibility is not currently established, the priority-access eligibility held by experimental fishery participants can be nominated (transferred) to another party under certain conditions. Any party nominated must understand that there is no commitment to permanent licence eligibility at this time. This will be reviewed at a future date.

A properly completed and duly notarized Nomination for Category Z Licence Eligibility form must be completed by the licence eligibility holder and submitted to a Pacific Fishery Licence Unit through the National Online Licensing System.

The following requirements must be met:

- a) Any Condition of Licence such as the completion of logbooks have been submitted and approved by the Shellfish Data Unit.
- b) Communal commercial licence eligibilities may not be nominated as these are allocated annually, when available, to First Nations groups.

6.10. Licence to Transport Scallops

Any registered vessel with a commercial or communal commercial salmon, Schedule II, geoduck, sablefish, halibut, crab, shrimp, groundfish trawl and 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 Pacific Fishery Licence Unit.

Note: When product is transferred from one vessel to another vessel or a vehicle, that vessel or vehicle requires a provincial Fish Buying Station 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 Ministry of Agriculture, Courtenay Access Centre (250-897-7540) for additional information.

7. CONTROL AND MONITORING OF COMMERCIAL FISHING ACTIVITIES

Harvesters are responsible for making arrangements with a Fisheries and Oceans Canada approved service provider at their own expense for the following reports.

7.1. Notification Procedures

7.1.1. 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.

7.1.2. Daily While Fishing

Before 12:00 hours (noon) each day during a fishing trip, on those days when a vessel is fishing but is not making a landing, the vessel master shall report to the service provider.

- 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.

7.1.3. 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;
- f) name of the processor, buyer or other person who will be transporting the catch; and
- g) the method of transporting the catch from the designated landing port and the destination of the product.

7.2. Delivery, Handling and Tagging Requirements

All scallops must be delivered live and whole to a federally registered shellfish plant. The shucking of scallops on board a vessel is not permitted. The direct sale of scallops to the public, restaurants, or retail stores is prohibited.

For the storage of scallops, all containers must be in clean condition prior to use and the wet storage of scallops on board, or over the side of any vessel, is not permitted. Holding (wet storage) of scallops at the harvest site is an acceptable practice providing that the harvest site is in approved shellfish growing waters.

All containers or sacks containing scallops must be **individually tagged** with the following information:

- a) Pacific Fishery Management Subarea and location of harvest.
- b) Date of harvest.
- c) Name and Vessel Registration Number (VRN) of the vessel.

7.3. 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. By licence condition, 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.

7.4. Catch Reporting

7.4.1. Harvest Log Data

The vessel master 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 DFO Marine Ecosystem and Aquaculture 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 is responsible for reporting latitude/longitude position on harvest logs in the “location” field for fishing event.

Logbooks meeting the requirements of DFO are available from service providers 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
Phone: (250) 756-7022 or (250) 756-7306

As an alternative to harvest log provision through a service provider, the vessel master may provide a hard copy log in the same form and providing the same particulars as shown in the fishing log sample Appendix 3: Example of Scallop by Trawl Harvest Log. The vessel master 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 on a Windows compatible mini CD or other Shellfish Data Unit approved media. Mini CD's will remain the property of DFO. The electronic copy must be either:

- a) An ASCII text file in the data format specified by DFO Shellfish Harvest Log Program.
- b) A database table of specific design created by Microsoft Access XP (or earlier version).

Contact the Shellfish Data Unit at the above address to obtain the full requirements and acceptable data formats that meet the Conditions of License. The hard copy and the electronic copy of the harvest log must be forwarded within 28 days following the end of the month in which fishing occurred. This information must be sent to the above address.

Logbook 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*.

7.4.1.1. 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 Pacific Fishery Licence Unit, and only upon written request.

7.4.1.2. 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.

7.4.1.3. 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 License, 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.

7.4.2. Fish Slip Requirements

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 at:

www.pac.dfo-mpo.gc.ca/stats/fishslips-carnets/index-eng.html

Phone (604) 666-2716 for more information.

8. GENERAL INFORMATION

8.1. Sponge Reefs

Concern has been expressed for the impact of commercial fishing gear on sponge reefs at several locations in southern waters, and these should be avoided. This includes cloud sponge areas in Saanich Inlet in waters less than 40 metres depth at Henderson Point, the mooring buoy northwest of Senanus Island, Willis Point, Repulse Rock, the point south of Misery Bay, Christmas Point, McCurdy Point and adjacent to the Bamberton cement plant, and in Tahsis Narrows around Mozino Point in waters less than 80 metres depth.

Strait of Georgia Sponge Reef Closures

In accordance with the Sensitive Benthic Areas Policy and its Ecological Risk Assessment Framework (ERAF) for Cold-water Corals and Sponge Dominated Communities, DFO has conducted a risk assessment regarding the potential impacts of bottom-contact fisheries on nine glass sponge reef areas in the Strait of Georgia. The Department consulted with First Nations, commercial and recreational fishers and other interested groups on proposed protection measures for the reefs.

Formal closures of bottom contact fishing activities in these areas were put in place in-season in 2015. Coordinates and a figure describing the nine glass sponge reef areas can be found in Appendix 2 and on the following web site:

http://www.pac.dfo-mpo.gc.ca/oceans/protection/sponge_reef-recif_eponge-eng.html

Hecate Strait Sponge Reefs

Four unique sponge reef ecosystems in Hecate Strait (in Subareas 105-2 and 106-1, Subareas 106-2 and 107-1 and Subarea 107-2) and Queen Charlotte Sound (in Area 110) are being considered for establishment of a Marine Protected Area (MPA) under the *Oceans Act*. Designation may be anticipated in 2016, and changes may be announced in-season.

Appendix 2: 2016/17 Scallop Trawl Scallop Management Area Descriptions

Harvesters are reminded that these maps and the area descriptions in Appendices 1 are to be used for reference only. The final authority of these descriptions of 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:

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.**

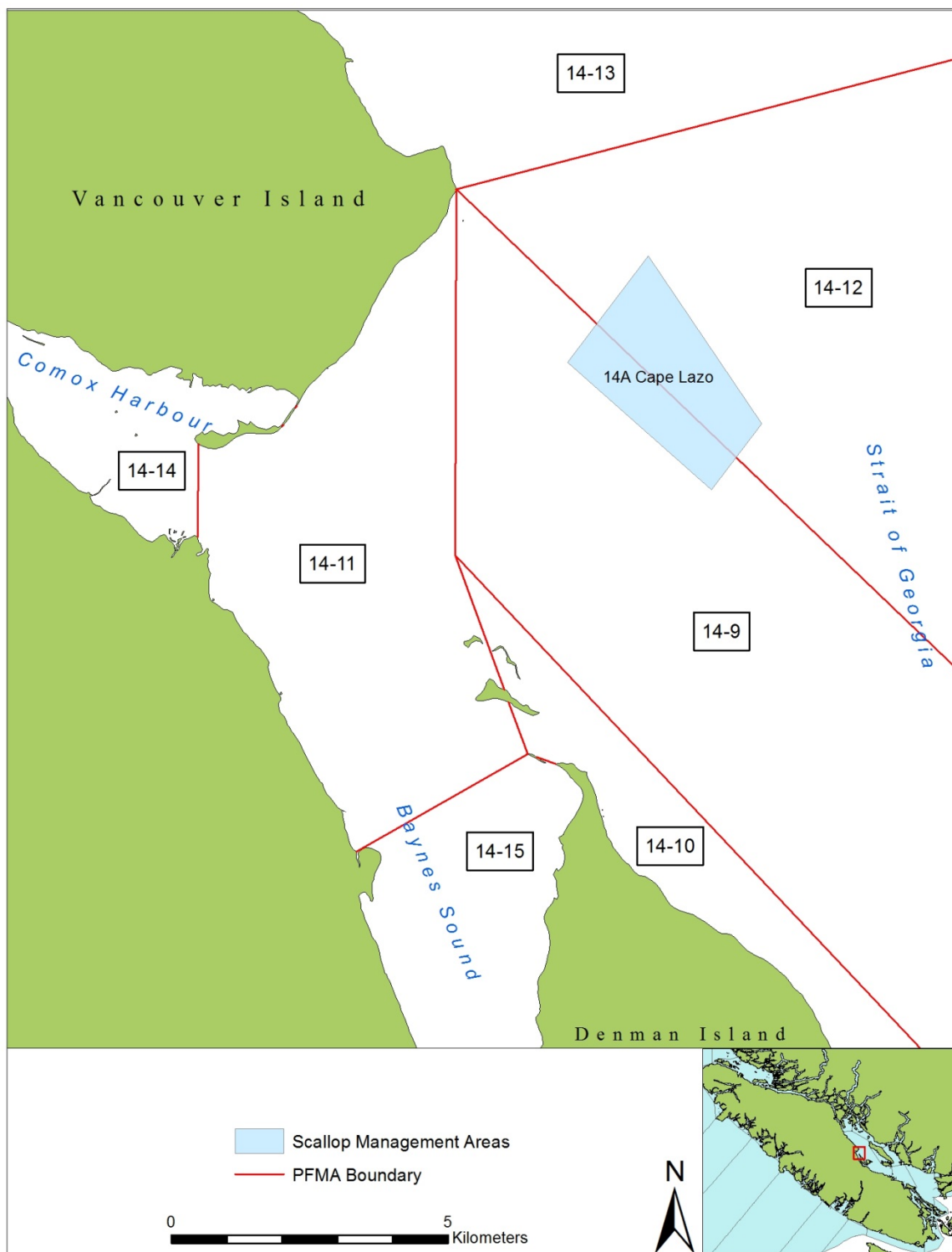


Figure 1. Scallop Management Area 14A Cape Lazo

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 $50^{\circ} 17.807'N$ and $125^{\circ} 26.335'W$ then to $50^{\circ} 17.850'N$ and $125^{\circ} 25.898'W$ then to $50^{\circ} 16.894'N$ and $125^{\circ} 25.338'W$ then to $50^{\circ} 16.831'N$ and $125^{\circ} 26.014'W$ then to $50^{\circ} 17.215'N$ and $125^{\circ} 25.984'W$ then to the beginning point.

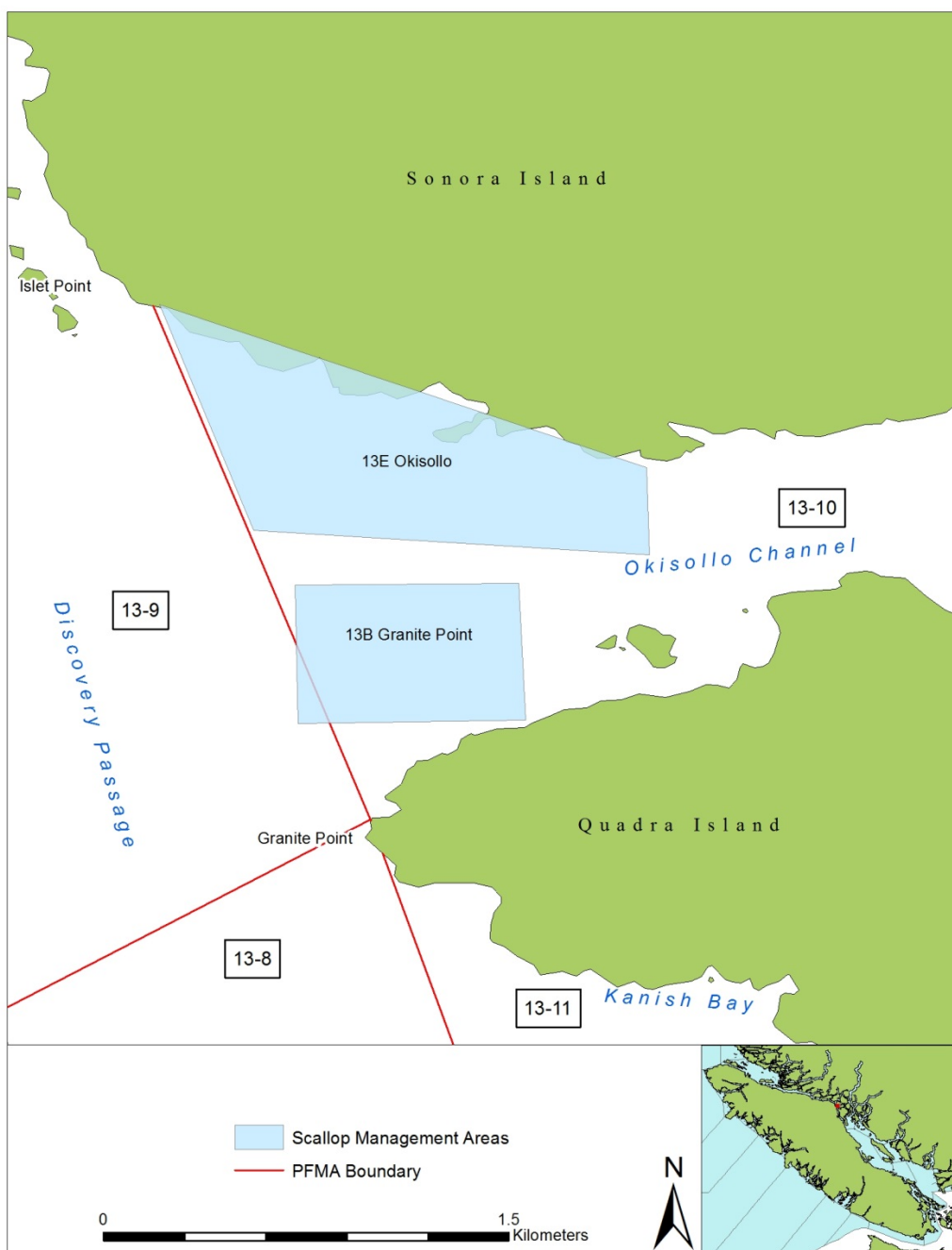


Figure 3. Scallop Management Areas Granite Point and Okisollo
13B Granite Point

Those portions of Subareas 13-9 and 13-10 starting a point at just east of Granite Point, at $50^{\circ} 16.841'N$ and $125^{\circ} 22.514'W$ then to $50^{\circ} 16.838'N$ and $125^{\circ} 23.224'W$ then to $50^{\circ} 17.115'N$ and $125^{\circ} 23.228'W$ then to $50^{\circ} 17.115'N$ and $125^{\circ} 22.531'W$ then to the beginning point.

13E Okisollo

That portion of Subarea 13-10 near Islet Point at $50^{\circ} 17.680'N$ and $125^{\circ} 23.643'W$ then to $50^{\circ} 17.345'N$ and $125^{\circ} 22.129'W$ then to $50^{\circ} 17.170'N$ and $125^{\circ} 22.124'W$ then to $50^{\circ} 17.226'N$ and $125^{\circ} 23.357'W$ 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 $50^{\circ} 18.444'N$ and $125^{\circ} 11.835'W$ then to $50^{\circ} 18.128'N$ and $125^{\circ} 11.761'W$ then to $50^{\circ} 18.453'N$ and $125^{\circ} 10.399'W$ then to $50^{\circ} 19.270'N$ and $125^{\circ} 09.152'W$ then to $50^{\circ} 19.530'N$ and $125^{\circ} 09.480'W$ then to $50^{\circ} 19.475'N$ and $125^{\circ} 10.193'W$ then to the beginning point.

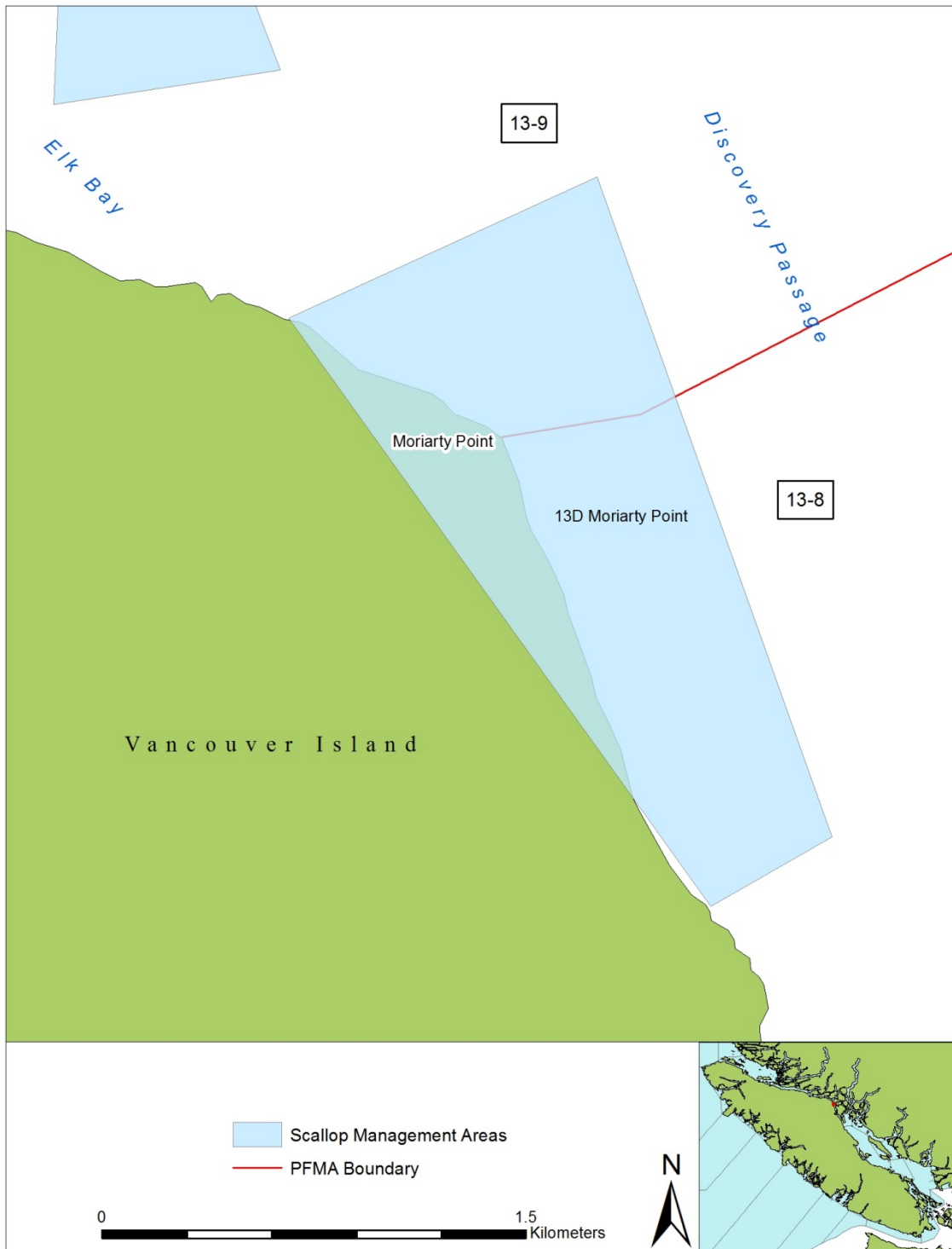


Figure 5. Scallop Management Area 13D Moriarty Point

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.

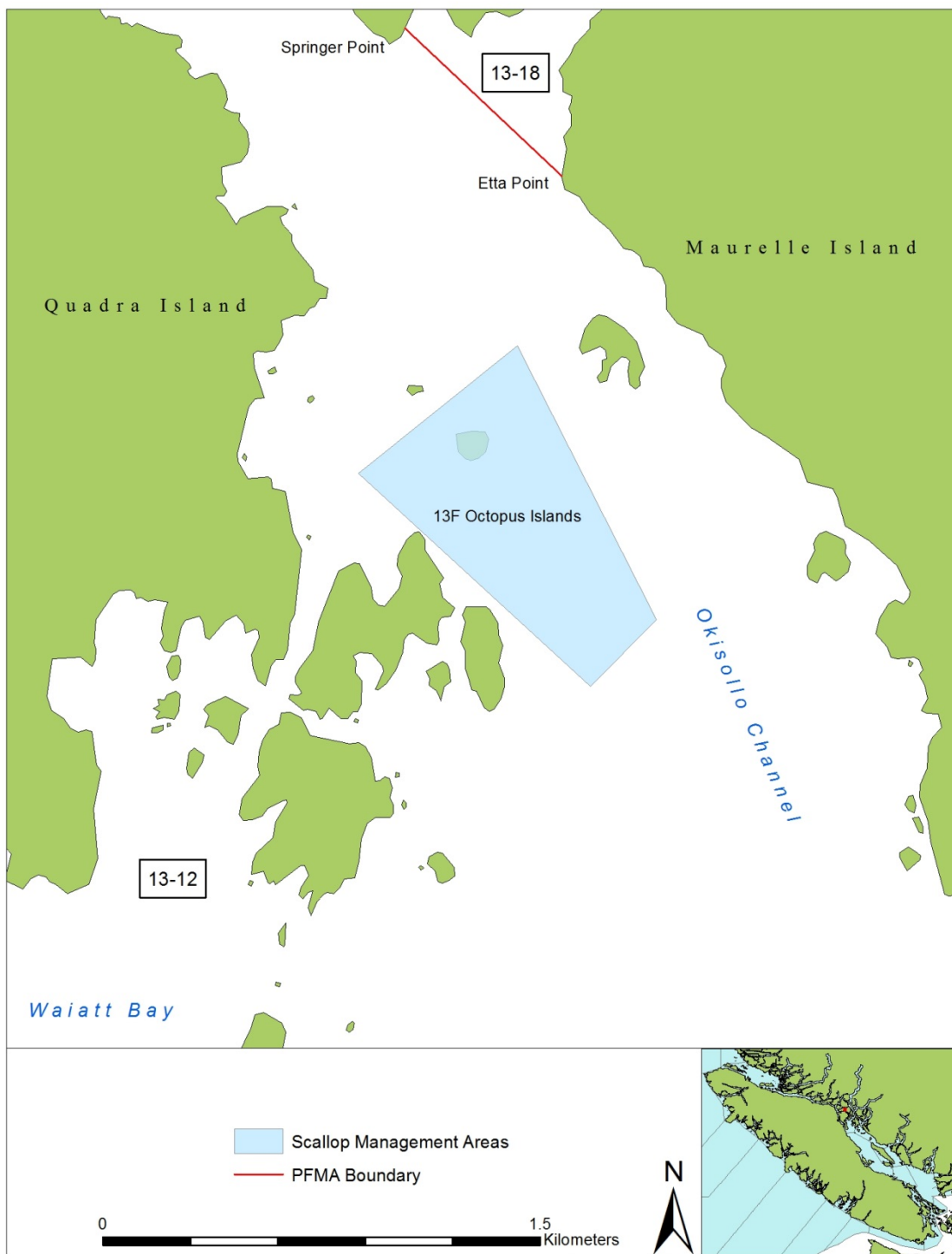
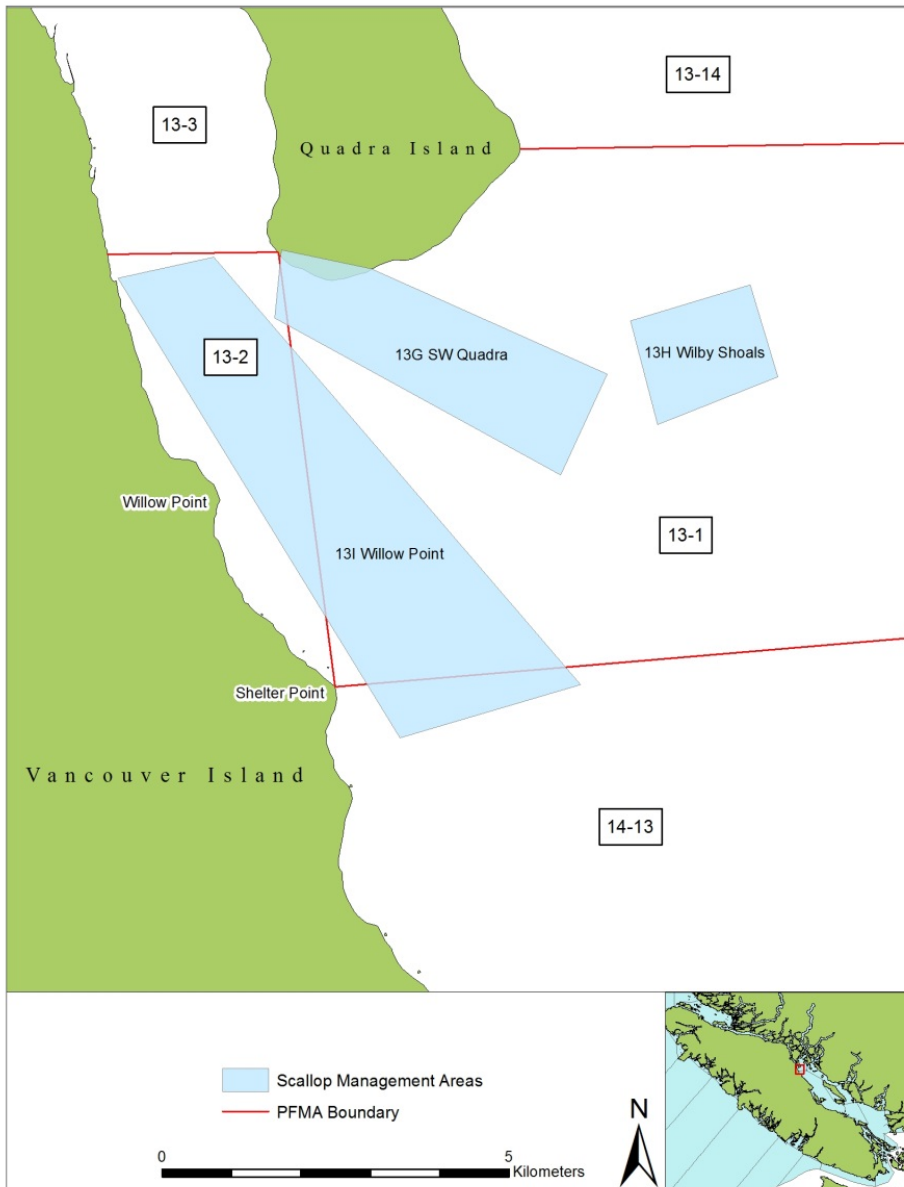


Figure 6. Scallop Management Area 13F Octopus Islands

That portion of Subarea 13-12 starting just south of Francisco Island at a point at 50°17.324'N and 125° 12.818'W then to 50° 16.815'N and 125° 12.424'W then to 50°16.693'N and 125°12.617'W then to 50° 17.091'N and 125° 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 $49^{\circ} 59.778'N$ and $125^{\circ} 10.622'W$ then to $49^{\circ} 58.937'N$ and $125^{\circ} 07.788'W$ then to $49^{\circ} 58.157'N$ and $125^{\circ} 08.365'W$ then to $49^{\circ} 59.403'N$ and $125^{\circ} 11.791'W$ then to $49^{\circ} 59.930'N$ and $125^{\circ} 11.702'W$ then to the beginning point.

13H Wilby Shoals

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

13I Willow Point

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

Strait of Georgia and Howe Sound Glass Sponge Reef Fishing Closures

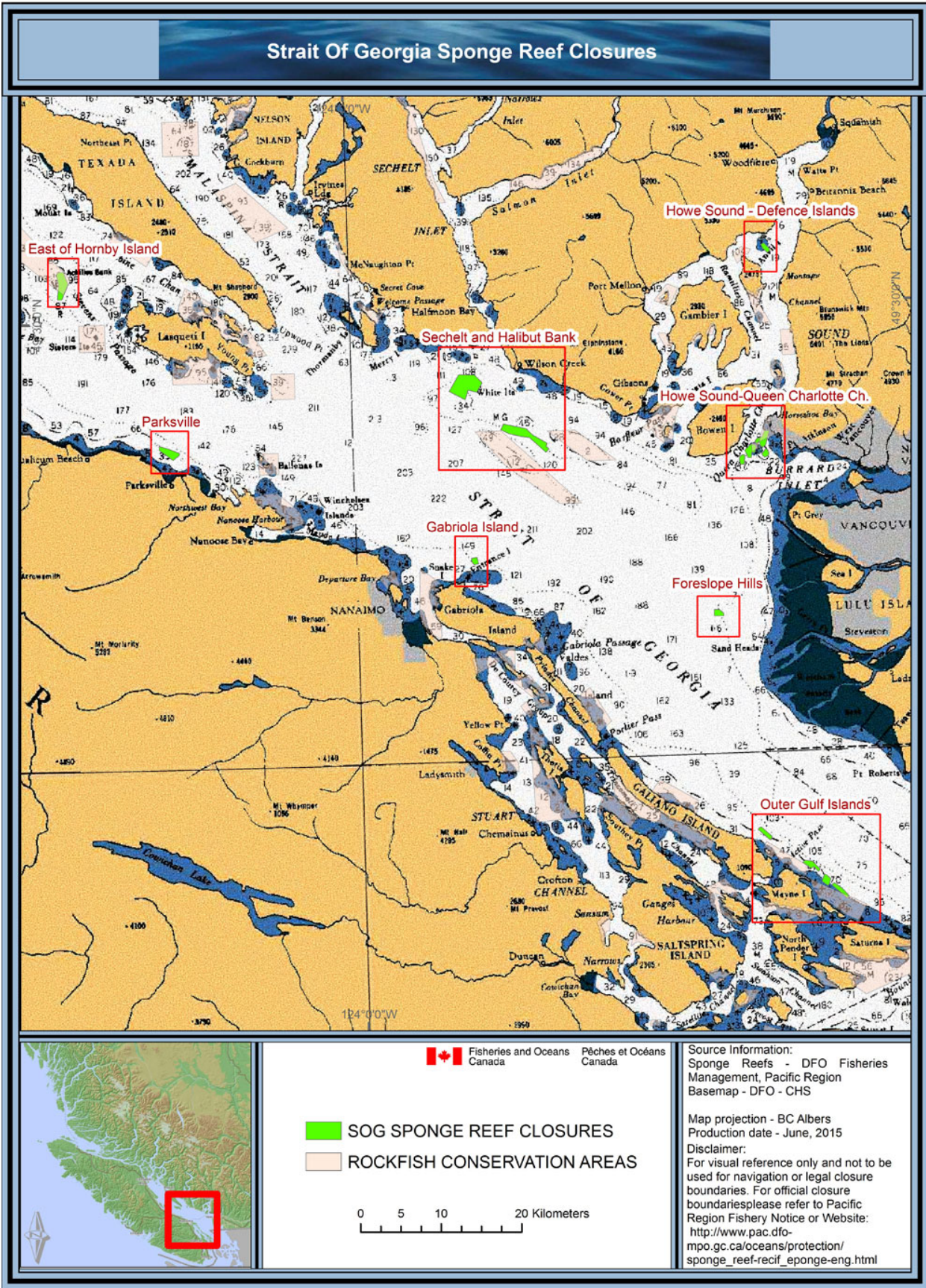
Fisheries and Oceans Canada has implemented fishing closures to protect nine glass sponge reefs in the Strait of Georgia and Howe Sound. Commercial and recreational bottom-contact fishing is prohibited within 150 metres of all nine glass sponge reefs.

Effective June 12, 2015 all commercial and recreational bottom contact fishing activities for prawn, shrimp, crab and groundfish (including halibut) were prohibited within the areas listed below in order to protect the Strait of Georgia and Howe Sound Glass Sponge Reefs. These closures will be in effect until further notice.

First Nation Food, Social and Ceremonial (FSC) fisheries that use bottom contact fishing activities for prawn, shrimp, crab and groundfish are asked to voluntarily avoid these areas until the closures come into effect. Beginning April 1, 2016 these closures will apply to First Nations FSC fisheries.

The protection of coral and sponge reefs is a key component to a number of international commitments made by Canada through the United Nations Convention on Biological Diversity and the United Nations Food and Agriculture Organization (FAO) Code of Conduct for Responsible Fisheries.

See the internet at: http://www.pac.dfo-mpo.gc.ca/oceans/protection/sponge_reef-recif_eponge-eng.html



Appendix 3. Example of "Z" licence fishery harvest log

Vessel _____		Fisher _____		HARVEST LOG - Z LICENCE				FISHERIES		<input type="checkbox"/> FOR OFFICE USE ONLY (v2.1996)					
CFV # 		Year 1 9 		Describe gear used (i.e trawl, gillnet, seine net, jig, hook and line, hand tools, traps, etc.): 				Check species fished: ONE SPECIES/SHEET Euphausiid <input type="checkbox"/> Opal Squid <input type="checkbox"/> Scallop (Net) <input type="checkbox"/> Mussels <input type="checkbox"/> Other (specify) : _____ Goose <input type="checkbox"/> Octopus <input type="checkbox"/> Barnacle <input type="checkbox"/> (Trap or net) <input type="checkbox"/>							
Z LICENCE TAB # 				NETS _____ m wide X _____ m deep mesh size: _____ (mm) TRAPS _____ cm wide X _____ cm deep round <input type="checkbox"/> or rectangle <input type="checkbox"/> number of tunnels: _____ JIGS: number of jig machines: _____ number of jigs: _____											
Are weights in kilograms <input type="checkbox"/> or pounds <input type="checkbox"/>															
Are depths in feet <input type="checkbox"/> fathoms <input type="checkbox"/> meters <input type="checkbox"/>															
Month	Day	Location Name (attach map)	Lat degree.min	Long degree.min	Statistical Area	Sub Area	Bed Code	Depth Max Min	Number Gear Units Tows/sets/traps/jigs	Set Start Time (nearest Hr)	Total Hours Fished	Total Landings	Company Sold To	Company Code	Comments
1															
2		<u>Explanation of Terms</u>													
3		<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Please complete the <u>Header Information</u> on each log page:</p> <p>Record Vessel Name</p> <p>Record Fisher Name</p> <p>CFV - If fishing with a commercial vessel, record CFV number</p> <p>Record Z licence Tab Number</p> <p>Record Year</p> <p>Weights - check either pounds or kilos</p> <p>Depths - check if fishing depths are feet, fathoms or meters</p> <p>Describe gear used to harvest the product</p> <p>Describe dimensions of the nets or traps or jigs, etc. used in metric units as requested</p> <p>Check the Species fished and use a separate logsheet for each species fished</p> </div> <div style="width: 45%;"> <p>Record detailed catch and effort information for each day for each location fished:</p> <p>Record Month and Day fished (i.e., Jan 18 = 01 18)</p> <p>Location Name - the nearest Bay, Point, Sound, Rock, etc.</p> <p>Lat/Long - GPS or Loran readings, if possible</p> <p>Statistical Area, Sub-area - from the Pacific Fishery Area Regulations - copies of reference maps are available at local DFO offices.</p> <p>Record Depths fished - maximum and minimum</p> <p>Record the Number of Gear Units used per location per day - i.e., the number of Tows or Sets made, the number of traps hauled, the number of Jigs fished</p> <p>Record Set Start Time to the nearest hour</p> <p>Record Total Hours Fished in each location on each day</p> <p>Record Landings made for the set, location or day</p> <p>Record the Company Name of the buyer of the catch</p> <p>Comments - record anything unusual, by-catch, gear problems, etc.</p> </div> </div>													
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Mail ALL logs to: Shellfish Data Unit, Pacific Biological Station, Hammond Bay Rd., Nanaimo, BC V9R 5K6															

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 Transport Canada (TC); emergency response with the Canadian Coast Guard (CCG) and DFO has responsibility for management of the fisheries resources. In BC, WorkSafeBC also regulates health and safety issues in commercial fishing. This includes requirements to ensure the health and safety of the crew and safe operation of the vessel. DFO (Fisheries Management and CCG) and TC through an MOU have formalized cooperation to establish, maintain and promote a safety culture within the fishing industry.

Before departing on a voyage the owner, master or operator must ensure that the fishing vessel is capable of and safe for the intended voyage and fishing operations. Critical factors for a safe voyage include the seaworthiness of the vessel, vessel stability, having the required personal protective and life-saving equipment in good working order, crew training, and knowledge of current and forecasted weather conditions. As safety requirements and guidelines may change, the vessel owner, crew, and other workers must be aware of the latest legislation, policies and guidelines prior to each trip.

There are many useful tools available for ensuring a safe voyage. These include:

- Education and Training Programs
- Marine Emergency Duties
- Fish Safe – Stability Education Course

Fish Safe – Safe on the Wheel Course
Fish Safe – Safest Catch Program
First Aid
Radio Operators Course
Fishing Masters Certificate
Small Vessel Operators Certificate
Publications:

- Transport Canada Publication TP 10038 *Small Fishing Vessel Safety Manual* (can be obtained at Transport Canada Offices from their website at: <http://www.tc.gc.ca/eng/marinesafety/tp-tp10038-menu-548.htm>)
- Gearing Up for Safety – WorkSafeBC
- Safe At Sea DVD Series – Fish Safe
- Stability Handbook – Safe at Sea and Safest Catch – DVD Series
- Safest Catch Log Book
- Safety Quick

For further information see: www.tc.gc.ca/eng/marinesafety/menu.htm
www.fishsafebc.com
www.worksafebc.com

2. IMPORTANT PRIORITIES FOR VESSEL SAFETY

There are three areas of fishing vessel safety that should be considered a priority. These are: vessel stability, emergency drills, and cold water immersion.

2.1. Fishing Vessel Stability

Vessel stability is paramount for safety. Care must be given to the stowage and securing of all cargo, skiffs, equipment, fuel containers and supplies, and also to correct ballasting. Fish harvesters must be familiar with their vessel's centre of gravity, the effect of liquid free surfaces on stability, loose water or fish on deck, loading and unloading operations and the vessel's freeboard. Know the limitations of your vessel; if you are unsure contact a reputable naval architect, marine surveyor or the local Transport Canada Marine Safety Office.

Fishing vessel owners are required to develop detailed instructions addressing the limits of stability for each of their vessels. The instructions need to be based on a formal assessment of the vessel by a qualified naval architect and include detailed safe operation documentation kept on board the vessel. Examples of detailed documentation include engine room procedures, maintenance schedules to ensure watertight integrity, and instructions for regular practice of emergency drills.

The *Small Fishing Vessel Inspection Regulations* currently require, with certain exceptions, a full stability assessment for vessels between 15 and 150 gross tons that do not exceed 24.4 metres in length and are used in the herring or capelin fisheries. Once the proposed new *Fishing Vessel Safety Regulations* take effect, more vessels will be required to have a stability booklet.

In 2006, Transport Canada Marine Safety (TC) issued Ship Safety Bulletin (SSB) 04/2006 ("Safety of Small Fishing Vessels: Information to Owners/Masters About Stability Booklets"), which provides a standard interpretation of the discretionary power available under Section 48 and the interim requirements prior to the implementation of the proposed *Fishing Vessel Safety*

Regulations. The bulletin calls for vessels more than 15 gross tons to have a stability booklet where risk factors that negatively affect stability are present. The bulletin also suggests vessels less than 15 gross tons assess their risk factors. Every fishing vessel above 15 GRT built or converted to herring or capelin after 06 July 1977 and engaged in fishing herring or capelin must have an approved stability book. Additionally, Transport Canada has published a Stability Questionnaire (SSB 04/2006) and Fishing Vessel Modifications Form which enable operators to identify the criteria which will trigger a stability assessment. A stability assessment is achieved by means of an inclining experiment which has to be conducted by a naval architect. Please contact the nearest Transport Canada office if you need to determine whether your vessel requires one.

In 2008, TC issued SSB 01/2008, which sets out a voluntary record of modifications for the benefit of owners/masters of any fishing vessels. For vessels of more than 15 gross tons, the record of modifications was to be reviewed by TC inspectors during regular inspections and entered on the vessel's inspection record. However, information gathered during the Transportation Safety Board's (TSB) Safety Issues Investigation into the fishing industry showed minimal recording of vessel modifications prior to this date.

The TSB has investigated several fishing vessel accidents since 2002 and found that vessel modifications and loading of traps have been identified as contributing factors in vessels capsizing, such as: M02W0102 - *Fritzi-Ann*, M05W0110 - *Morning Sunrise*, M07M0088 - *Big Sisters*, M08W0189 - *Love and Anarchy*, M09L0074 - *Le Marsouin I*, M10M0014 - *Craig and Justin*, M12W0054 - *Jessie G* and M12W0062 - *Pacific Siren*.

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.

In 2013, Fish Safe developed a code of best practices for the food and bait herring fishery and the prawn fishery: 'Food and Bait – Best Practice Reminders'; 'Prawn Industry - Best Industry Recommended Practices.' Please contact Ryan Ford at Fish Safe for a copy of the program materials they developed to address safety and vessel stability in these fisheries.

Ryan Ford – Cell phone: 604-739-0540 - Email: fishsafe@fishsafebc.com

2.2. Emergency Drill Requirements

The Canada Shipping Act 2001 requires that the Authorized Representative of a Canadian Vessel shall develop procedures for the safe operation of the vessel and for dealing with emergencies. The Act also requires that crew and passengers receive safety training. The Marine Personnel Regulations require that all personnel on board required to meet the minimum safe manning levels have received MED (Marine Emergency Duties) training to an A1 or A3 level, depending on the vessel's voyage limits, within 6 months of serving aboard. MED A3 training is 8 hours in duration and is applicable to seafarers on fishing vessels less than 150 GRT that are within 25 miles from shore (NC2). MED A1 training is 19.5 hours duration and is applicable to all other fishing vessels.

MED provides a basic understanding of the hazards associated with the marine environment; the prevention of shipboard incidents; raising and reacting to alarms; fire and abandonment situations; and the skills necessary for survival and rescue.

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. BC waters are usually below 15 degrees. 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 WorkSafe Bulletin *Cold Water Immersion* (available from the WorkSafeBC website at www.worksafebc.com) where the need to don PFD's while working in or near the water during fishing operations is clearly emphasized.

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: [Canada website at: www.weatheroffice.gc.ca/marine/index_e.html](http://www.weatheroffice.gc.ca/marine/index_e.html)

2.4.2. Emergency Radio Procedures

Vessel owners and masters should ensure that all crew are able to activate the Search and Rescue (SAR) system early rather than later by contacting the Canadian Coast Guard (CCG). It is strongly recommended that all fish harvesters carry a registered 406 MHz Emergency Position Indicating Radio Beacon (EPIRB). These beacons should be registered with the National Search and Rescue secretariat. When activated, an EPIRB transmits a distress call that is picked up or relayed by satellites and transmitted via land earth stations to the Joint Rescue Co-ordination Centre (JRCC), which will task and co-ordinate rescue resources.

Fish harvesters should monitor VHF channel 16 or MF 2182 KHz and make themselves and their crews familiar with other radio frequencies. All crew should know how to make a distress call and should obtain their restricted operator certificate from Industry Canada. However, whenever possible, masters should contact the nearest Canadian Coast Guard (CCG) Marine Communications and Traffic Services (MCTS) station (on VHF channel 16 or MF 2182 kHz) prior to a distress situation developing. Correct radio procedures are important for communications in an emergency. Incorrect or misunderstood communications may hinder a rescue response.

Since August 1, 2003 all commercial vessels greater than 20 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: www.ccg-gcc.gc.ca/eng/CCG/Home or go directly to the Industry Canada web page: www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01032.html

A DSC radio that is connected to a GPS unit will also automatically include your vessel's current position in the distress message. More detailed information on MCTS and DSC can be obtained by contacting a local Coast Guard MCTS centre (located in Vancouver, Victoria, Prince Rupert, Comox and Tofino) or from the Coast Guard website: www.ccg-gcc.gc.ca/Pacific

2.4.3. Collision Regulations

Fish harvesters must be knowledgeable of the *Collision Regulations* and the responsibilities between vessels where risk of collision exists. Navigation lights must be kept in good working order and must be displayed from sunset to sunrise and during all times of restricted visibility. To help reduce the potential for collision or close quarters situations which may also result in the loss of fishing gear, fish harvesters are encouraged to monitor the appropriate local Vessel Traffic Services (VTS) VHF channel when travelling or fishing near shipping lanes or other areas frequented by large commercial vessels. Vessels required to participate in VTS include:

- a) every ship twenty metres or more in length,
- b) every ship engaged in towing or pushing any vessel or object, other than fishing gear,
- c) where the combined length of the ship and any vessel or object towed or pushed by the ship is forty five metres or more in length; or
- d) where the length of the vessel or object being towed or pushed by the ship is twenty metres or more in length.

Exceptions include:

- a) a ship towing or pushing inside a log booming ground,
- b) a pleasure yacht *less than* 30 metres in length, and
- c) a fishing vessel that is *less than* 24 metres in length and not *more than* 150 tons gross.

More detailed information on VTS can be obtained by calling (250) 363 8904 or from the Coast Guard website: www.ccg-gcc.gc.ca/eng/CCG/Home

2.4.4. Buddy System

Fish harvesters are encouraged to use the buddy system when transiting, and fishing as this allows for the ability to provide mutual aid. An important trip consideration is the use of a sail 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**

Commercial fishing is legislated by the requirements of the Workers Compensation Act (WCA) and for diving, fishing and other marine operations Part 24 of the Occupational Health and Safety Regulation (OHSR) applies. Many general hazard sections of the OHSR also apply to commercial fishing and other marine operations. For example, Part 8: Personal Protective Clothing and Equipment addresses issues related to safety headgear, safety foot wear and personal floatation devices. Part 15 addresses issues on rigging, Part 5 addresses issues of exposure to chemical and biological substances, and Part 3 addresses training of young and new workers, first aid, and accident investigations. Part 3 of the WCA also defines the roles and responsibilities of owners, employers, supervisors and workers. The OHSR and the WCA are available from the Provincial Crown Printers or by visiting the WorkSafeBC website: www.worksafebc.com

For further information, contact an Occupational Safety Officer:

Bruce Logan	Lower Mainland	(604) 244-6477
Mark Lunny	Courtenay	(250) 334-8732
Jessie Kunce	Victoria	(250) 881-3461

or the Manager of Interest for Marine and Fishing, Pat Olsen (250) 334-8777.

For information on projects related to commercial fishing contact Lisa Houle (604) 214-6922 or Toll Free 1-888-621-6922 or by email: Lisa.Houle@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 fishermen in this goal. The Fish Safe Stability Education Course, is available to all fishermen who want to improve their understanding of stability and find practical application to their vessel's operation. The Safe on the Wheel Course is designed to equip crewmen with the skills they need to safely navigate during their wheel watch. The Safest Catch Program along with fishermen trained Safety Advisors is designed to give fishermen the tools they need to create a vessel specific safety management system.

Fish Safe is managed by Ryan Ford, Program Coordinator John Krgovich, Project Manager Connor Radil, Program Assistant Stephanie Nguyen and fishermen 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). The advisory committee meets quarterly 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	Fax: 604-275-7140
Fish Safe	Email: fishsafe@fishsafebc.com
#100, 12051 Horseshoe Way	www.fishsafebc.com
Richmond, BC V7A 4V4	

5. TRANSPORTATION SAFETY BOARD

The Transportation Safety Board (TSB) is not a regulatory board. The TSB is an independent agency that investigates marine, pipeline, railway and aviation transportation occurrences to determine the underlying risks and contributing factors. Its sole aim is the advancement of transportation safety by reporting publicly through Accident Investigation Reports or Marine Safety Information Letters or Advisors. It is not the function of the Board to assign fault or determine civil or criminal liability. Under the TSB Act all information collected during an investigation is completely confidential.

In 2014 the TSB released three investigation reports:

- the collision between trawl fishing vessel *Viking Storm* and US long line fishing vessel *Maverick* and the subsequent fatality,
- the person over board off the prawn fishing vessel *Diane Louise* and the subsequent fatality, and
- the capsizing of the crab fishing vessel *Five Star* and subsequent fatality.

For more information about the TSB, visit the website at www.tsb.gc.ca. For information about the TSB's investigation into fishing safety, or to view a brief video, visit:

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

To view a brief video about some of the issues on the TSB's recent safety Watchlist, visit: <http://www.tsb.gc.ca/eng/medias-media/photos/index.asp>

Reporting an Occurrence - www.tsb.gc.ca/eng/incidents-occurrence/marine/

After a reportable occurrence happens you can fill out the TSB 1808 form or call the TSB at the contact information below:

Glenn Budden, Investigator, Marine - Fishing Vessels
Transportation Safety Board of Canada
4 - 3071 No. 5 Road
Richmond, BC, V6X 2T4
Telephone: 604-666-2712
Cell: 604-619-6090
Email: glenn.budden@tsb.gc.ca