

PACIFIC REGION

INTEGRATED FISHERIES MANAGEMENT PLAN

SEA CUCUMBER BY DIVE

OCTOBER 1, 2007 TO
SEPTEMBER 30, 2008



Sea Cucumber: *Parastichopus californicus*



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 Fisheries Act and Regulations, the Act and Regulations are the final authority. A description of Areas and Subareas referenced in this Plan can be found in the Pacific Fishery Management Area Regulations.

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1. CONTACTS

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Invertebrate Internet Page www.pac.dfo-mpo.gc.ca/ops/fm/shellfish/default_e.htm

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Premium International Food Sales Ltd.	Paddy Wong	(604) 821-0133
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2. GLOSSARY

Area and Subarea	Defined in Section 2 of the <i>Pacific Fishery Management Area Regulations</i> . A map of Pacific Fishery Management Areas is available on the Department's Internet site at: www.pac.dfo-mpo.gc.ca/ops/fm/Areas/areamap_e.htm
aquaculture	The process of spawning animals and rearing the progeny to marketable size, involving some level of intervention (e.g. feeder, predator protection), by the aquaculturist.
catch verification program	A program designed to monitor, record and verify catch.
communal commercial licence	Issued to Aboriginal organizations pursuant to the <i>Aboriginal Communal Fishing Licences Regulations</i> for participation in the general commercial fishery. Licences issued are equivalent to the capacity of licences that have been retired under the Aboriginal Fisheries Strategy (AFS) Allocation Transfer Program.
communal licence	Issued to Aboriginal organizations pursuant to the <i>Aboriginal Communal Fishing Licences Regulations</i> , to carry on fishing and related activities.
container	A mesh pick bag, a mesh transport bag, a plastic or wooden tote or a cage used for the gathering, handling or transportation of sea cucumber.

harvested	Sea cucumbers removed from the substrate of the ocean floor, by any means.
IQ	Individual quota, for the commercial sea cucumber fishery equivalent to 1/85 th of the total allowable catch (TAC).
invertebrate	An animal without a backbone.
landed, landing, or offloaded	The transfer of sea cucumber from the vessel licensed to harvest to either land or a vessel (“packer”) transporting product to land.
Observer	An individual who has been designated as an observer by the Regional Director General for Pacific Region pursuant to Section 39 of the <i>Fishery (General) Regulations</i> .
PSARC	Pacific Scientific Advice Review Committee
PSCHA	Pacific Sea Cucumber Harvesters Association
Quota Management Area	A defined portion of Pacific Fisheries waters. Areas and Subareas, as described in the <i>Pacific Fishery Management Area Regulations</i> , are referenced in describing Quota Management Areas.
sectoral committee	Forum for the exchange of information and views, between sectors and Fisheries and Oceans Canada, on issues important to the management of all fisheries for sea cucumber.
service provider	An agency contracted by fishers or their harvesters association to coordinate notification, catch validation, fishery monitoring, biological sampling and data submission requirements. The service provider may train and recommend candidates for certification by Fisheries and Oceans Canada as observers.
stakeholder	All people and groups with an interest in the fisheries resources, such as recreational and commercial harvesters, processors, and non-consumptive users.
stock assessment	Results of analyses of fisheries and research data used to evaluate the effects of fishing on a stock or population and to predict the reaction of populations to alternative management choices.
TAC	Total allowable catch.
tranship	The transfer of sea cucumber from one vessel to another vessel.
validated	Sea cucumbers that have been weighed by an observer and the weight

entered into the Sea Cucumber Validation and Harvest Logbook, or an alternative log approved by Fisheries and Oceans Canada.

3. INTRODUCTION

The 2007/2008 Pacific Region Sea Cucumber Integrated Fisheries Management Plan (IFMP) encompasses the period of October 1, 2007 to September 30, 2008, and provides a focus on the 2007-2008 sea cucumber fisheries, particularly the commercial fishery scheduled from October 1 to November 30, 2007.

The 2007/2008 Sea Cucumber Commercial Harvest Plan is attached as Appendix 1 to this IFMP.

Additional information on sea cucumbers may be accessed through the Department's shellfish Internet site at:

www.pac.dfo-mpo.gc.ca/ops/fm/shellfish/default_e.htm

This information is also available in hard copy in the Invertebrate Post-season Review - Sea Cucumber. Reviews are available from the Resource Management staff listed in Section 1 of this plan.

Research Documents and Stock Status Reports for sea cucumber are available at the Pacific Scientific Advice Review Committee (PSARC) Internet Site:

www.pac.dfo-mpo.gc.ca/sci/advice_e.htm

4. OVERVIEW OF THE FISHERY

Sea cucumbers are harvested commercially under authority of a limited "ZD" licence. Harvesting is performed by divers who remove the animals from the substrate by hand. Marketable products from commercially harvested sea cucumbers include frozen muscle strips and dried skins. Markets for sea cucumber products include Hong Kong, Taiwan, Mainland China and Korea, as well as some locations in Canada and the United States.

To address the data limited nature of this fishery and the continued commitment of the Department to move towards biologically-based management, an adaptive management plan was developed and implemented for the sea cucumber fishery in 1997. Under this management approach, the Department restricted the commercial fishery to approximately 25 percent of the total coastline in non-contiguous areas. A further 25 percent of the coastline is reserved for research purposes, and the remaining 50 percent of the coastline will not be harvested until information on the biological characteristics of the sea cucumber is collected and a biologically-based management plan can be developed.

Sea cucumbers are of continuing importance to First Nations groups, who harvest them for food, social and ceremonial purposes.

A small recreational fishery occurs for sea cucumbers in most coastal areas.

5. SEA CUCUMBER SECTORAL COMMITTEE AND RESEARCH SUBCOMMITTEE

A consultative process was initiated for the sea cucumber fishery in 1989 and is a major part of the planning for the commercial fishery. The primary consultative body for sea cucumbers in British Columbia is the Sea Cucumber Sectoral Committee. This committee includes representatives from Fisheries and Oceans Canada, commercial licence holders, processors, First Nations, recreational harvesters, and the British Columbia Ministry of Environment. The Sectoral Committee meets annually in the spring to review research programs and in the summer to provide advice to the Department regarding management issues pertaining to the fishery and on the proposed management plan.

The Sectoral Committee and Research Subcommittee terms of reference and meeting calendar are available from the Resource Managers listed in Contacts or from the Sea Cucumber consultation Internet site:

www-ops2.pac.dfo-mpo.gc.ca/xnet/content/consultations/shellfishInvertebrates/sea_cucumber/default_e.htm

6. ANNUAL POST-SEASON REVIEW RESULTS FOR FISHING SEASON 2005/2006

Overall, the 2006/2007 fishing season was successful. In the commercial fishery, all 85 licences were active in the fishery and were designated to 41 vessels. The fishery was scheduled for eight weeks and approximately 85% of the TAC was completed in the first three weeks. All individual quotas were achieved by fishery closure on November 30. No major issues were documented and, in general, compliance with the catch validation program was good.

The 2006/2007 Invertebrate Post-Season Review is available from Resource Managers (see Contacts) or on the Internet at:

www-ops2.pac.dfo-mpo.gc.ca/xnet/content/shellfish/sea_cucumber/default.htm

7. STOCK STATUS

The Stock Status Report for sea cucumber is updated and published by PSARC with each sea cucumber assessment paper. Contact the Science Branch or see the series of documents on the Internet at:

www.pac.dfo-mpo.gc.ca/sci/psarc/SSRs/invert_ssrs_e.htm

7.1. Prospects for the Fishery

The sea cucumber fishery is managed conservatively through an adaptive management regime begun in 1997. The long-term goal of the Department is to develop a

biologically-based management regime for a sustainable fishery through a better understanding of stock dynamics of the resource. The Department, in collaboration with First Nations and the Pacific Sea Cucumber Harvesters Association (PSCHA), conducts on-going research that will lead to an improved understanding of the resource. The results of this precautionary approach to management, which ensures the Department is meeting its conservation goals and ensures sustainable harvests by all user groups, is scheduled to be reviewed by in the fall of 2007.

There is no indication of concern for sea cucumber stocks at this time. Barring poor weather conditions, it is anticipated that the coast-wide TAC and individual quotas will be easily attained in the 2007/2008 fishing season.

Density data from approximately 1,025 transects has been collected in six survey areas of the British Columbia coast. Estimates from these surveys have consistently shown that densities are higher than the initial conservative assumption of 2.5 sea cucumbers per metre of shoreline, thus providing some confirmation of the precautionary approach to the fishery. With this information, a review of all British Columbia survey data was conducted in November 2002 and has resulted in a doubling of the baseline density estimate used to calculate the TAC in open fishery areas, from 2.5 to 5.08 sea cucumbers per metre of shoreline (Campagna and Hand, 2002). These results have been incorporated into this IFMP.

7.2. Research

To date, transect surveys in open fishery areas have been conducted in the mainland inlets of Johnstone Strait, four areas in the central coast region of British Columbia, and one area on the west coast of Vancouver Island. Experimental harvesting projects are nearing completion in Jervis Inlet, Tolmie Channel, Laredo Inlet and Tahsis/Zeballos Inlets (*Hand and Rogers, 1999*). More detailed information about ongoing research projects may be obtained by contacting Science Branch personnel (see Section 1).

In 2007, the Department and the PSCHA completed a repeat transect survey in commercial fishery areas in Areas 7 and 8. The preliminary results of the surveys have been incorporated into the coast-wide TAC and IQ for 2007/2008. A partial review of research and survey data, plus results from simulation modeling of recovery times for intensively harvested areas, was presented to the Invertebrate Subcommittee of the Pacific Science Advice Review Committee in April 2005. This PSARC paper recommended a move towards a rotational strategy for the sea cucumber fishery. Experimental fisheries were designed and implemented in the 25% of the British Columbia coast that is reserved for research, in order to evaluate the response of populations to rotational fishing. This is also scheduled to be reviewed by PSARC in fall 2007.

8. MANAGEMENT ISSUES

The following sections highlight the ongoing or longer-term management issues that are being addressed in this fishery. There are few immediate or annual management issues that need addressing, however as and when short-term issues arise, they will be detailed in this section. Specific management measures designed to mitigate these issues are detailed in Section 9.

8.1. Collection of Biological Information

8.1.1. Further work is required to collect biological data with which to fully assess the fishery and to develop sound management plans. Collaborative research programs continue with commercial industry, First Nations and other stakeholders to improve the understanding of the resource.

8.2. Issues Related to the Commercial Fishery

8.2.1. Some packer vessels in the north and central coast licence areas are not abiding by the Conditions of Licence that require a certified scale on board, tagging of containers, and hauling weights from the grounds. The Pacific Fishery Licensing Unit will remind all applicants for transport licences of the specific conditions, and a reference to the Conditions of Licence has been included in the IFMP since 2005.

8.2.2. Hail notification infractions create difficulties both in anticipating individual boat quotas when a Quota Management Area is near completion and in appropriate notification for the dockside observers. Notification procedures are important to the proper management of the fishery. Since 2000, on-grounds communication through voluntary industry representatives facilitates the transmission of information and will continue for 2007/2008.

8.2.3. Incorrect reporting of commercial harvest information is attributed to lack of diver knowledge of Quota Management Area boundaries. To aid fishers, maps of Quota Management Areas are in Appendix 7 and have been refined to provide more detail.

8.2.4. The Validation and Harvest Logbooks and harvest charts show a concentration of effort into some fishing locations. This has created some concern for the effects of localized over-fishing. Changes are made to Quota Management Areas annually, to fine-tune boundaries and break up the concentration of effort in areas of concern.

8.2.5. The requirements for the submission of harvest charts are difficult to achieve for this fishery, as divers move often and quickly. Large numbers of charts must be supplied to each vessel at the beginning of the season to ensure that all licence holders have access to the few charts that they need. The service provider, in collaboration with the Department's Shellfish Data Unit, is exploring other

options to improve the distribution and collection of harvest charts in a timely manner.

- 8.2.6. Conservation and Protection (C&P) staff pursue opportunities to monitor and enforce the issues and problems associated with this fishery in conjunction with other monitoring and enforcement activities. Enforcement issues are relatively minor in this fishery; however communication of harvest and effort information in a timely manner is an important aspect of the management program. The commercial industry continues to note that on-grounds enforcement support within the first ten days of the fishery will provide significant benefit to fishery managers.

8.3. Issues Related to the First Nations Fishery

- 8.3.1. First Nation groups have concerns related to their commercial fishing opportunities and their current and future access to sea cucumber for food, social and ceremonial purposes. Consultations continue with Aboriginal groups to ensure that access is appropriate.

- 8.3.2. Catch reporting structures for First Nation fisheries are limited.

8.4. Issues Related to the Recreational Fishery

- 8.4.1. Catch reporting structures for the recreational fisheries are limited.

9. SPECIFIC MANAGEMENT OBJECTIVES

9.1. Collection of Biological Information

Stock Assessment and Fisheries Management aim to:

- 9.1.1. Collect fishery data in a way that will test current assumptions of population abundance and productivity.

- 9.1.2. Harvest static areas to enable the collection of a time series of fishery-dependent information, which can be examined to determine harvest impacts within these areas.
- 9.1.3. Develop research and fishing protocols that will enable the Department and the commercial industry to acquire the needed information for the wild fishery and potential aquaculture initiatives.
- 9.1.4. Collaborate with the commercial industry and First Nations to conduct abundance surveys and test harvest rates.

9.2. Commercial Fishery

Fisheries and Oceans Canada will continue to work collaboratively with the commercial industry, First Nations organizations and other stakeholders to ensure conservation and sustainability of the sea cucumber resource and fishery. Management of the sea cucumber resource will progress from a precautionary regime to one based on biological information, through assessment and application of data collected from harvest logs, population surveys and experimental fisheries.

The Department will continue to work collaboratively with the PSCHA and the Sea Cucumber Sectoral Committee to ensure sustainable fisheries through partnership and co-management arrangements to share in decision making, responsibilities, costs and benefits.

9.3. First Nations Fishery

Fisheries and Oceans Canada provides opportunities for First Nations access to the fishery for food, social and ceremonial purposes. The Department will 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 *Sparrow*, and subsequent decisions. See the Internet for more information at:

www.pac.dfo-mpo.gc.ca/tapd/default_e.htm

Under the commercial IQ program, two percent of the coast-wide TAC for sea cucumber is reserved, for planning purposes, for First Nations fisheries for food, social and ceremonial purposes. Additional allocations of sea cucumber will be provided to First Nations who demonstrate that their food, social and ceremonial needs are not being met. The Department is confident that with the precautionary approach to this fishery, the reserved allocation of TAC, and the provision of additional allocations, where necessary, First Nations in all areas will have sufficient opportunities to harvest sea cucumbers for food, social and ceremonial purposes.

The Department is consulting with First Nations throughout the coast of British Columbia on a more comprehensive approach to gathering catch data by negotiating agreed-upon protocols outlined in the Fisheries Agreements and/or communal licences.

9.4. Recreational Fishery

The Department will continue to provide opportunities for a recreational fishery for sea cucumber.

The Department is consulting with the Sport Fishing Advisory Board (SFAB) at the local, regional and provincial levels throughout British Columbia on a more comprehensive approach to gathering catch data.

9.5. Other Considerations

9.5.1. Aquaculture

Recognizing both the potential for aquaculture to benefit Canadians and the need to ensure the sustainable use of aquatic resources, Cabinet endorsed the Federal Aquaculture Development Strategy (FADS) in 1995. Building on FADS and more recent opportunities and challenges associated with aquaculture development, Fisheries and Oceans Canada released the “Aquaculture Policy Framework”. The policy framework recognizes aquaculture as a legitimate use of land, water, and aquatic resources and the importance of providing aquaculturists with predictable, equitable, and timely access to the aquatic resource base, including access to biological materials such as broodstock and seedstock.

In May 2004 Fisheries and Oceans Canada released the ‘National Policy on Access to Wild Aquatic Resources as it Applies to Aquaculture’ to facilitate access to wild fish and aquatic plant resources for aquaculture purposes to support sustainable development of the industry. The policy is available from the following internet site:

http://www.dfo-mpo.gc.ca/aquaculture/ref/AWAR_e.htm

Requests to access the wild sea cucumber resource must be addressed to Fisheries and Oceans Canada and supported by a project proposal. For more information on aquaculture or access to broodstock, please call the Aquaculture contact (see Section 1 of this IFMP).

9.5.2. The *Oceans Act* and Canada’s Oceans Strategy

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. The principles behind the legislation are an ecosystem approach, sustainable development, and a precautionary approach. In 2002, Canada’s Oceans Strategy was released providing the policy framework and strategic approach for modern oceans management in estuarine, coastal, and marine ecosystems.

As part of Canada’s Oceans Strategy, Fisheries and Oceans Canada is in the initial stages of integrated management planning for the Queen Charlotte Basin

through the Pacific North Coast Integrated Management Area (PNCIMA) initiative building on past and present coastal planning efforts by the Province of British Columbia. Work underway includes the identification and engagement of regulators, stakeholders and First Nations organizations, the development of an Ecosystem Overview and Assessment Report and a human use analysis of the area. This planning will guide our identification of areas requiring protection or requiring other conservation measures.

In March 2003, the Minister announced the establishment of the first MPA, the Endeavour Hydrothermal Vents Area, off the southwest coast of Vancouver Island, British Columbia. Work to establish other Marine Protected Areas is ongoing. Where feasible, future MPAs will be identified through integrated coastal planning processes. More information on MPAs can be found at:

www.pac.dfo-mpo.gc.ca/oceans/default_e.htm

9.5.3. Species at Risk Act

The *Species at Risk Act* (SARA) came into force in 2003. The purposes of the *Act* are “to prevent wildlife species from being extirpated or becoming extinct, and to provide for the recovery of a wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened”.

Endangered and Threatened marine species in Pacific region currently protected under Schedule I of SARA are:

- (a) Blue whale - Endangered
- (b) Killer whale southern resident population - Endangered
- (c) Leatherback turtle - Endangered
- (d) North Pacific right whale - Endangered
- (e) Sei whale - Endangered
- (f) Abalone - Threatened
- (g) Fin whale - Threatened
- (h) Humpback whale - Threatened
- (i) Killer whale northern resident population - Threatened
- (j) Killer whale transient population - Threatened
- (k) Sea otter - Threatened

Endangered and Threatened marine species in Pacific region currently under consideration for listing under Schedule I of SARA are:

- (a) Basking shark - Endangered
- (b) Bocaccio - Threatened
- (c) Northern fur seal - Threatened

In addition to the existing prohibitions under the *Fisheries Act*, it is illegal to kill, harm, harass, capture, take, possess, collect, buy, sell or trade any listed animals or any part or derivative of an individual. It is also illegal to damage or destroy a listed species residence. These prohibitions apply unless a person is authorized, by a permit, licence or other similar document issued in accordance with SARA, to engage in an activity affecting the listed species or the residences of its individuals.

Current management measures in sea cucumber fisheries are being carefully examined to ensure that all reasonable alternatives to the fishery that would reduce the impact on a species at risk have been considered and the best solution has been adopted, all feasible measures will be taken to minimize the impact of the fishery on a species at risk or the residences of its individuals and the fishery will not jeopardize the survival or recovery of the species at risk. For management measures in place in the sea cucumber fishery see Appendix 1.

In 2007, COSEWIC also assessed several marine species in addition to those mentioned above. For a full list of these assessment results, please visit http://www.cosewic.gc.ca/rpts/Detailed_Species_Assessments_e.html. In 2008, COSEWIC will be assessing the status of additional marine species, including species of rockfish and shark. The assessments produced by COSEWIC help inform the Minister of Environment's decision on whether to list species under Schedule I of SARA.

For more information:

More information on COSEWIC, SARA, and the listing process can be found at:

www.cosewic.gc.ca/
www.dfo-mpo.gc.ca/species-especes/home_e.asp
www.sararegistry.gc.ca/

9.5.4. Abalone Recovery Strategy

All fisheries (recreational, commercial and aboriginal) for northern abalone were closed in 1990. Abalone was listed as threatened in 1999, and as of June 2004, it also received protection under *SARA*. Illegal harvest is an ongoing concern, continuing to threaten any recovery of abalone. The most recent estimates from the index sites in the central coast (2006) and Queen Charlotte Islands (2002) indicate that the abalone population continues to decline.

Fisheries and Oceans Canada urges fishers to assist in Abalone Coast Watch programs and to report suspicious harvesting activities to **Observe, Record, Report 1-800-465-4336**. The British Columbia Seafood Alliance and other fishing organizations continue to support abalone recovery initiatives and are working with Fisheries and Oceans Canada and community groups towards

abalone research and recovery efforts. Further information about abalone recovery efforts is available on the Internet:

http://www.pac.dfo-mpo.gc.ca/ops/fm/shellfish/Abalone/default_e.htm

9.5.5. Sea Otter Recovery Strategy

Formerly extirpated from British Columbia, sea otters have been recovering. The population has since grown to 3,185 sea otters (2004) and occupies about 25-33% of their historic range in British Columbia. COSEWIC recently reassessed the status of sea otters in April, 2007, and have designated the population as a species of special concern. A consideration for a change to the SARA legal listing based on the reassessment by COSEWIC will follow the regular SARA legal listing process.

The Sea Otter Recovery Strategy adopts a non-interventionist approach to recovery that recognizes the sea otter's ability to recover without the need for translocation or other similar efforts to enhance population growth and distribution. At the same time, the approach considers threats that could limit or reverse population growth if not addressed.

The British Columbia Seafood Alliance have offered their assistance in sea otter research, including reporting extra-limital (rafts of sea otters outside their continuous range), or winter sightings of sea otters, sea otter surveys, recovering drift or beached carcasses for pathological examination, and local oil spill response. To report rafts of sea otters observed outside their "continuous" range (the continuous range is on the west coast of Vancouver Island from Ahous Bay north and then east to Hope Island and on the central coast from the Goose Group north to the edge of Milbanke Sound), contact Linda Nichol at the Pacific Biological Station at 250-729-8374 or e-mail NicholL@pac.dfo-mpo.gc.ca with the following information:

- a) Name and contact number.
- b) Location of sighting.
- c) Date of sighting.
- d) Number or approximate number of otters observed.

Further information about sea otter recovery efforts is available on the Internet:

http://www.dfo-mpo.gc.ca/species-especes/species/species_seaOtter_e.asp

10. ENFORCEMENT MEASURES

10.1. Overview

The enforcement policy and activities of the Department are the responsibility of the C&P program within Fisheries Management. Fishery officers and marine enforcement officers working throughout Pacific Region carry out enforcement activities for the C&P program. First Nations fishery guardians assist the Department's fishery officers in a number of locations where joint enforcement protocols are in place. Observers, designated by the Department, complement enforcement staff by performing a monitoring, verification and sampling function.

Since the introduction of IQs and a stable TAC, enforcement effort has focussed on ensuring compliance with registration and fishers' licence requirements, logbook completion and closed time/area patrols. There is no size limit, and because divers handpick the sea cucumbers, by-catch is not an issue. However, as with other dive fisheries, the incentive to harvest illegal but lucrative species (e.g. abalone) remains an issue of concern.

Inspections of vessels participating in this fishery will focus on priority issues of hails, landing records, and harvest log requirements. Patrols will be conducted in both open and closed areas as priorities allow by Canadian Coast Guard (CCG) patrol vessels, program vessels, or by air in conjunction with other priority fishery patrols. Investigations may also occur on an opportunistic basis after notification from Resource Management that a violation has occurred.

All at-sea patrols will be conducted using program vessels (mostly 7.3 meter and 9.2 meter rigid hull inflatables) and CCG vessels. They are staffed and operated by fishery officers, First Nations fishery guardians, and marine enforcement officers. At sea patrols will be conducted on a planned and ad hoc priority basis. CCG patrol vessels as well as C&P program vessels, in conjunction with fishery officers and marine enforcement officers, will conduct boardings in the harvest areas.

Some First Nations groups employ First Nations Fishery Officers/Guardians to monitor the First Nations food, social and ceremonial fisheries of that group. Many of the First Nations Fishery Officers/Guardians are designated as "fishery guardian" under the *Fisheries Act* and carry out activities including stock assessment and catch monitoring, joint and coordinated patrols, reporting activities harmful to fish habitat, and consult and work cooperatively with the Department. Monitoring and Enforcement Protocols are negotiated between C&P staff and some First Nation groups and are generally outlined in Fisheries Agreements. The First Nations Guardian Program is currently under review by the Department.

10.2. Enforcement Issues and Strategies

In the following table:

PFR: *Pacific Fisheries Regulations*, 1993

F(G)R: *Fisheries (General) Regulations*

Issues	Sections	Strategy
Licensing verification: a) Vessel licensed. b) No fishers registration card (FRC). c) Fail to produce FRC.	PFR 22 PFR 25 P(G)R 11	At-sea and dockside inspections will occur when opportunities exist. These inspections may include checks of all licensing documents on board the vessel to ensure compliance with the Regulations.
Fish during close time/area.	PFR 63	Patrols utilizing patrol vessels will be pursued when opportunities exist. Possibilities may exist to use the regional enforcement charter aircraft in co-ordination with other scheduled patrols of priority fisheries.
Fail to maintain harvest logbook and chart data.	F(G)R 22(7)	At-sea and dockside inspections will occur when opportunities exist. Investigation will occur on an opportunistic basis after C&P has been notified that a violation has occurred. The investigation will be pursued as priorities permit.
a) Use suction device for harvesting sea cucumbers. b) Fail to land sea cucumbers at a designated landing port. c) Fail to validate all sea cucumbers harvested.	F(G)R22(7)	At-sea and dockside inspections will occur when opportunities exist. Investigation will occur on an opportunistic basis after C&P has been notified that a violation has occurred. The investigation will be pursued as priorities permit.
a) Fail to provide proper landing and hail information. b) Lack of notification for change of area, cancellation of trip.	F(G)R22(7)	At-sea and dockside inspections will occur when opportunities exist. Investigation will occur on an opportunistic basis after C&P has been notified that a violation has occurred. The investigation will be pursued as

Issues	Sections	Strategy
c) Incorrect reporting of area fished.		priorities permit. Aircraft or vessels may be used on an opportunistic basis to track vessels in the fishery.

11. FINANCIAL RESPONSIBILITIES

11.1. Industry and/or Other Harvesters

A joint project agreement between the Department and the PSCHA ensures delivery of in-season catch validation and biological sampling programs. The PSCHA funds the catch validation program and participates in the stock assessment and biological research surveys.

11.2. Fisheries and Oceans Canada

One Stock Assessment and four Resource Management personnel are directly involved in this fishery. Contributions to the IFMP are provided by the Fisheries Management Directorate, the Science Branch, the Shellfish Data Unit, the Conservation and Protection Directorate, the Pacific Fishery Licence Unit, the Treaty and Aboriginal Policy Directorate, the Oceans Directorate and numerous administrative personnel. Generally, all personnel are multi-tasked, i.e. sea cucumber fishery managers work on all dive fisheries. Therefore, costs incurred by the Department to manage this fishery are difficult to assess.

12. PERFORMANCE REVIEW

12.1. Management Plan Evaluation Criteria for the 2007/2008 Fishing Season

12.1.1. What progress was made in the collection of biological information?

12.1.2. Assess any changes made to the commercial harvest plan with respect to First Nations access to sea cucumbers for food, social and ceremonial purposes.

12.1.3. Was the TAC achieved? How closely were area quotas met? Was the distribution of effort properly addressed by the redesign of some area openings?

12.1.4. Continue to assess the length of the commercial fishing season on an annual basis.

12.1.5. Review the licence stacking limitation policy for the IQ program.

12.1.6. Review the accuracy and timeliness of hail notifications and catch reporting, including the submission of harvest charts.

- 12.1.7. Assess the modifications made to the harvest chart provision and submission process.
- 12.1.8. What progress was made toward establishing catch reporting programs for First Nation and recreational fisheries?

12.2. Conservation and Protection Plan Evaluation Criteria

- 12.2.1. What are the results of enforcement activities directed toward this fishery? Provide annual report of enforcement effort and problems. For example:
- a) Annual and on-going interactions with stakeholders, First Nations and the public.
 - b) Ongoing review of the information submitted by fishery officers on complaints from fishers and the public.
 - c) Compliance with individual quotas.
 - d) In-season and annual review of dockside validation incidence reports.
 - e) Annual audits of Validation and Harvest Log Entries.
 - f) Annual review of both the FEAT and DVS systems is used to measure compliance and complaints.
 - g) Successful apprehension and prosecution of individual(s) involved in breaches of the *Fisheries Act* and associated regulations.
 - h) Demonstrate success (changes in compliance rates) as a result of “targeted” enforcement effort related to illegal activity.
- 12.2.2. Summarize in-season and post-season review with Fisheries Management and contract staff to assess whether the IFMP objectives were met.
- 12.2.3. Summarize in season meetings with First Nations to review enforcement concerns and impact of fisheries near local villages.

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Front cover drawing is from Royal B.C. Handbook on Sea Cucumbers by Philip Lambert.

14. ATTACHMENTS

- Appendix 1: 2007/2008 Sea Cucumber Commercial Harvest Plan
- Appendix 2: 2007/2008 Sea Cucumber First Nations Harvest Plan
- Appendix 3: 2007/2008 Sea Cucumber Recreational Harvest Plan
- Appendix 4: Information on Estimating Total Allowable Catch by Subarea
- Appendix 5: Example of Sea Cucumber Validation and Harvest Logbook
- Appendix 6: Example of Sea Cucumber Quota Transfer Form
- Appendix 7: Maps of Fishery Areas and 2007/2008 Sea Cucumber Quota Management Areas
- Appendix 8: Example of Sea Cucumber Conditions of Licence
- Appendix 9: Fishing Vessel Safety

Appendix 1: Sea Cucumber by Dive Commercial Harvest Plan

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1. MANAGEMENT SUMMARY FOR 2007/2008

Fishers are advised to carefully review all information in the Commercial Harvest Plan.

- 1.1. **2007/2008 Fishing Season:** The commercial fishery will take place from October 1 through November 30 subject to scheduled area openings and in-season closures. See Section 5.
- 1.2. **Area Licensing (unchanged from 2006/2007):** North Coast, 34 licences; Central Coast, 37 licences; East Coast Vancouver Island, 11 licences and west coast of Vancouver Island, 3 licences. See Section 3.4 and 5.
- 1.3. **Licence Stacking:** Maximum of five active licences per vessel. See Section 3.3.
- 1.4. **Total Allowable Catch (unchanged from 2006/07):** 563.5 tonnes (1,242,307 pounds) split weight. See Section 2.3 and 5.
- 1.5. **Individual Quota (unchanged from 2006/07):** 6.6 tonnes (14,615 pounds) split weight per licence. A maximum of 200 pounds of sea cucumbers that exceeds the individual quota may be transferred to another vessel's sea cucumber licence. See Section 2.4 and 4.1.
- 1.6. **Stock Assessment Information:** An appendix with annual and commercial total allowable catch (TAC) by Quota Management Area is attached to the Integrated Fisheries Management Plan (IFMP). See Appendix 4.
- 1.7. **Opening Schedules:** The fishery will not open before October 1, and Quota Management Areas will open in a sequence recommended by the Pacific Sea Cucumber Harvesters Association. See Section 5.
- 1.8. **Transshipment:** Transshipment of sea cucumber is permitted but there are requirements for both the catcher vessel and licensed transport vessel. In particular, "packer weights" need to be entered in the Validation and Harvest Log and transport vessel needs to hail at least 24 hours prior to landing. See Section 3.9 and 4.4.
- 1.9. **Closures to Commercial Fishery:** There are no new closures to the commercial fishery for this season. See Section 6 for a complete list of closures.

2. MANAGEMENT MEASURES FOR THE COMMERCIAL FISHERY

2.1. Adaptive Management Plan

An adaptive management plan was developed and implemented for the sea cucumber fishery in 1997. This approach was based on advice from PSARC (*Boutillier et al 1998*, Scientific Advice for the Management of the Sea Cucumber Fishery in British

Columbia). This approach limits the commercial fishery to approximately 25 percent of the coast from which the fishable biomass is calculated.

2.2. Limited Entry Licensing

Sea cucumbers are commercially harvested under the authority of a commercial (ZD) licence. Licence limitation was implemented in 1991 with, after licence appeals, 85 licence eligibilities established.

2.3. Sea Cucumber Biomass

Historically, the coast-wide biomass was calculated by using baseline density estimates for sea cucumbers of 2.5 sea cucumbers per metre of shoreline, unless measured otherwise by survey. Following on advice presented in *Campagna and Hand 2002*, the coast-wide biomass is now calculated using the following estimates of density:

- a) If area is surveyed: use lower 90 percent confidence limit of estimated density.
- b) If area is not surveyed: use new baseline density estimate of 5.08 sea cucumbers per metre of shoreline.
- c) If area is exposed or of some concern: continue to use original baseline density estimate of 2.5 sea cucumbers per metre of shoreline.

Appendix 4 shows the most recent stock assessment figures used to calculate the annual and commercial TAC for 2007/2008.

2.4. Precautionary Fixed Exploitation Rate

Under the adaptive management plan, Stock Assessment biologists and fishery managers use the full set of survey data to establish conservative mean density estimates, as described above. A conservative exploitation rate (based on information from Alaska and Washington) of 4.2 percent is applied to the estimated biomass in each harvest area to determine the annual and commercial TAC. The commercial TAC, whether calculated from the precautionary estimated density, or the measured densities from surveys, is considered conservative and sustainable.

Experimental fisheries are undertaken collaboratively by the Pacific Sea Cucumber Harvesters Association (PSCHA), First Nations and Fisheries and Oceans Canada in experimental harvest areas. These are designed to evaluate the effect of different exploitation rates on sea cucumber populations.

2.5. Total Allowable Catch and Area Quotas

Since 1987, area quotas and time and area openings have formed the basis for managing the commercial sea cucumber fishery. The adaptive management plan, while it incorporates these management tools, allows for a significantly more precautionary approach to the fishery while information pertaining to the resource is accumulated.

In conjunction with area licensing, the coast-wide commercial TAC is divided into harvest area quotas. The annual and commercial TAC for each Quota Management Area

is calculated using the precautionary or measured density estimates, the shoreline length, a 4.2 percent exploitation rate, and an average split weight of sea cucumbers. Sea cucumber Quota Management Areas are comprised of Pacific Fishery Management Areas, Subareas, or a combination of portions of Subareas (see Section 5 and Appendix 4).

2.6. Individual Quota Program

IQs were implemented as a pilot for the sea cucumber fishery in November 1995. To ensure proper management and control of the IQ program, third party validation of catch at the first point of landing is required. To achieve this, an industry-funded catch monitoring and validation program has been developed collaboratively between PSCHA, Fisheries and Oceans Canada and D&D Pacific Fisheries Ltd. Since implementation, the IQ program has resulted in a more orderly, safer fishery, has afforded the industry more flexibility in opening times and locations, and has allowed the Department to better meet conservation goals.

Under the IQ program for the sea cucumber fishery, two percent of the coast-wide TAC is reserved, for planning purposes, for First Nations fisheries for food, social and ceremonial purposes. Additional allocations of sea cucumbers will be provided to First Nations who demonstrate that their food, social and ceremonial needs are not being met.

The commercial TAC is calculated after subtracting the First Nations allocation.

2.7. Area Licensing

The commercial sea cucumber fishery is licensed over four geographic areas: West Coast of Vancouver Island (Area 24), East Coast Vancouver Island (Areas 12 and 13), Central Coast (Areas 7, 8 and 9), and North Coast (Areas 4, 5 and 6). The fishery is prosecuted in those Subareas within the four geographic areas whose combined shoreline length totals approximately 25 percent of the total British Columbia shoreline (see Section 5).

The number of licences assigned to each licence area equals the area quota for the licence area divided by the IQ.

The PSCHA advises Fisheries and Oceans Canada regarding annual licence area selections by providing a list of licence holders and assigned licence area selections. If the PSCHA is unable to provide advice regarding the licence area selections, the Department will determine area designation through a process of voluntary placement and lottery out of over-subscribed areas.

2.8. Sea Cucumber Weights

Beginning in the 1995 fishery, dockside monitors began to conduct product-weight surveys to estimate the average weight of sea cucumbers by geographical area. This information is required for the calculation of population biomass estimates from density estimates and for stock assessment purposes. Initial results were used to calculate the baseline precautionary TAC established in 1997. Product weight surveys continue to be

conducted every year, with the objective of sampling at least one container per landing. The overall average weight per animal landed has fluctuated between 0.168 kilograms (0.370 pounds) and 0.489 kilograms (1.078 pounds) over the period 1995 to 2002, with no apparent trend.

The following information may be useful for licence holders nearing completion of their IQ:

- a) The average weight of a single split and eviscerated sea cucumber is approximately 0.692 pounds.
- b) A standard geoduck cage (with a maximum empty weight of 5 pounds) filled with split and eviscerated sea cucumbers, to the bottom of the handle grips, weighs approximately 65 pounds.

3. LICENSING REQUIREMENTS FOR THE COMMERCIAL FISHERY

3.1. Licence Category

A commercial sea cucumber (ZD) licence is required to commercially harvest sea cucumbers by dive.

3.2. Application Fees

The annual licence application fee for a ZD licence is \$100.

3.3. Licence Application and Issuance

Applications must be completed and submitted to a Pacific Fishery Licence Unit (PFLU) by September 30 of each fishery year with the required licence fee in order to maintain the licence eligibility whether or not it is fished.

The licence eligibility holder must sign the application form. If the licence eligibility holder is a company or First Nation group, only an authorized signing authority may sign the application. The PFLU must have on record a copy of either a Confirmation of Signing Authorities or an Amendment to Confirmation of Signing Authorities form listing the authorised signing authorities.

Prior to annual licence issue, the licence eligibility holder(s) must:

- a) Ensure any Ministerial conditions placed on the licence eligibility are met.
- b) Ensure any conditions of the previous year's licence such as completion and submission of harvest logbooks or fish slips are met and accepted.
- c) Designate a registered commercial fishing vessel eligible for one of the following licences: salmon, schedule II species, geoduck, groundfish trawl, sablefish, halibut, crab, shrimp by trawl, or shrimp and prawn by trap. A vessel may be designated for a maximum of five active licences (i.e. those with quota remaining) at a time.

Sea cucumber licence eligibilities have a maximum vessel length (MVL); the MVL restriction has been temporarily waived while the IQ program is in effect. 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.

3.4. Individual Quotas

The holder of licence eligibility to commercial harvest of sea cucumbers is provided the opportunity to harvest up to 6.6 tonnes (14,615 pounds) split weight of sea cucumbers.

All diving and 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 sea cucumbers must conform to Canadian Food Inspection Agency inspection regulations for holding or transporting fish and have appropriate licences.

3.5. Area Licensing

The commercial sea cucumber fishery is licensed over four geographic areas. Licence eligibilities will be assigned to either north coast, central coast, east coast of Vancouver Island or west coast of Vancouver Island. To ensure equal quotas, the coast-wide distribution of licences will be as follows:

Licence Area	Number of Licences
North Coast (Area 4, 5 and 6)	34
Central Coast (Area 7, 8 and 9)	37
East Coast Vancouver Island (Area 12 and 13)	11
West Coast Vancouver Island (Area 24)	3
Total	85

3.6. Licence Documents

Sea cucumber licence documents are valid from the date of issue to September 30 of each calendar year.

Replacements for lost or destroyed licence documents may be obtained by completing a Declaration Concerning Licence Documents form. Please contact a Pacific Fishery Licence Unit for further details.

3.7. Vessel Redesignation

Redesignation of sea cucumber licences 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.

A completed Application for Category Z Vessel Re-designation form must be completed by the licence eligibility holder and submitted to a Pacific Fishery Licence Unit. Valid current year licence documents and validation tabs must be returned.

3.8. Licence Eligibility Nominations

Commercial sea cucumber licence eligibilities may be nominated from one party to another. A Nomination for Category Z Licence Eligibility form must be completed by the licence eligibility holder.

The following requirements must be met:

- a) Any Condition of Licence such as the completion of harvest logbooks with confirmation of receipt issued by the Shellfish Data Unit.
- b) Valid current year licence documents and validation tabs must be returned.
- c) Nominations are only accepted prior to licence issuance or after the IQ have been reached for that licence for that year.

3.9. Licence to Transport Sea Cucumbers

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 sea cucumbers 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. Fishers should contact the Ministry of Agriculture and Lands (MAL), Courtenay Access Centre (250-897-7541) for additional information.

3.10. Processing

Effective June 1998, any processing beyond that permitted in Section 14 of the *Fish Inspection Regulations* must be done in a registered fish processing facility and in full compliance with a Quality Management Program (QMP).

4. CONTROL AND MONITORING OF COMMERCIAL FISHING ACTIVITIES

To accompany the IQ program, an industry-funded catch monitoring and validation program was developed collaboratively between PSCHA and Fisheries and Oceans Canada.

A Joint Project Agreement between the Department and the PSCHA provides for in-season catch validation at designated landing ports, collection and compilation of harvest log data, collection of biological samples, and a year-end summary report of the fishery.

Fishers are required to report harvest time and location information to a designated service provider prior to fishing, following fishing, and prior to landing sea cucumbers. In order to track daily harvests and ensure that Quota Management Area quotas are not exceeded, all catch must be weighed and validated at the first point of landing by a Fisheries and Oceans Canada certified observer.

The agency (service provider) contracted by the PSCHA to provide notification, validation, biological sampling, and data services for the 2007/2008 sea cucumber fishery is:

D&D Pacific Fisheries Ltd.
Box 1445, Gibsons, BC V0N 1V0
Tel. (604) 886-4819
Fax (604) 886-8288
Hail-in Line: (800) 775-5505

The following sections supplement those in the Conditions of Licence (issued with each commercial licence) that outline the requirements for fishery control and monitoring. See Appendix 8 for an example of the Conditions of Licence.

4.1. Quantities Permitted to be Taken (Condition #3)

The sea cucumber IQ equals 1/85 of the coast-wide commercial TAC or 6.6 tonnes (14,615 pound split weight). Harvest of sea cucumbers over the IQ after the permitted quota overage adjustments (see Section 4.7.5) may be subject to prosecution and seizure of the overage.

4.2. Fishing Multiple Quota Areas (Condition #6)

All sea cucumbers caught in a Quota Management Area must be landed or transhipped prior to the commencement of fishing in a new Quota Management Area. In this way, area quotas and individual quotas are closely monitored in order to avoid over-harvesting of either.

4.3. Containers used to Hold or Transport Sea Cucumbers (Condition #7)

There are several requirements for:

- a) The type, size and marking of containers used to hold or transport sea cucumbers.
- b) The condition of containers for food inspection purposes.

Any containers used in the transport of “fish” (including sea cucumbers) for export must meet the requirements of Schedule V of the *Fish Inspection Regulations*. This states that the contact surfaces of fish storage areas in vehicles and of containers used for transporting fish shall be smooth, free from cracks and crevices and made of non-corrodible metal. There is also a requirement for containers to be covered. Acceptable materials include plastic, aluminium and fibreglass, however, an exemption has been

granted for the use of well-painted wooden totes to transport fish to processing plants (contact Liliana Rodriguez-Maynez at (604) 666-3578 for further information).

4.4. Transhipment (Condition #8)

All product harvested under a sea cucumber licence must be harvested from and retrieved by the vessel designated on the licence. If that product is to be retrieved at a later time by the licensed vessel, it must be appropriately tagged. If that product is going to be transferred to another vessel (i.e. for landing purposes), the vessel to which it is transferred must be appropriately licensed for packing purposes (see Section 3.9). At no time should unlicensed vessels be used to harvest, retrieve, store or tranship product.

Sea cucumbers may be transhipped from the licensed vessel to a packer vessel provided that the vessel master complies with the following conditions:

- a) All sea cucumbers are in tagged containers.
- b) The numbers of containers are recorded on the Validation and Harvest Log.
- c) The “packer weight” (determined by adding the weight of the sea cucumbers and the weight of the container), is recorded on the Log.
- d) The product is landed at a designated port and validated by an observer.

All sea cucumbers delivered to packers shall be in tagged containers. The container tags must provide the following information:

- a) Name of the harvesting vessel.
- b) “ZD” tab number.
- c) Vessel registration number (VRN).
- d) Harvest date.
- e) Fishery management Area and Subarea of harvest.

Transport vessel masters are reminded that there are Conditions of Licence that apply to the transhipment of sea cucumbers. There are several requirements, including:

- a) Hail at least 24 hours prior to landing.
- b) Transport in the tagged container received from the catcher vessel.
- c) Carry copies of the validation and harvest log received from the master of the licensed catcher vessel.

4.5. Locations Permitted for the Landing of Sea Cucumbers (Condition #9)

All sea cucumbers must be landed at one of the designated landing ports listed in the Conditions of Licence. The specific landing ports have been established as part of the IQ validation program; Fisheries and Oceans Canada certified observers are available at these ports to oversee offloading and validation of sea cucumber catch. This condition applies to both the licensed vessel and the packer vessel, if one is used.

4.6. Oral Reports (Condition #11)

Fishing notification requirements that are described in the Conditions of Licence must be followed by each licensed vessel in order for the service provider and the Department to track effort and harvest on a daily basis.

When vessels do not hail into a harvest area, there is a risk of exceeding the quota. In order to maintain a sustainable fishery, it is extremely important that effort and landings in a particular harvest area be reported and recorded accurately.

Observer phone numbers are available from D&D Pacific Fisheries Ltd. If weather results in a change in arrival time the vessel master must immediately advise the observer via radio telephone of these changes.

4.7. Validation of Catch (Condition #10)

All sea cucumbers harvested or removed from the sea bed floor must be validated by a Fisheries and Oceans Canada certified observer at the point and time the fish are landed to track daily harvests and ensure that area quotas are not exceeded.

The vessel master must be in possession of a Fisheries and Oceans Canada approved catch Validation and Harvest logbook assigned to the sea cucumber licence. The Validation and Harvest logbook must be on board the licensed vessel while fishing for sea cucumbers or while sea cucumbers are on board. Validation and Harvest logbooks that meet the Department's approval are available from the service provider or from the Pacific Sea Cucumber Harvesters Association.

At the first point of offloading, all sea cucumbers will be weighed with a government certified scale by a Fisheries and Oceans Canada certified observer, and the weight entered on the Validation and Harvest Log. Weights will be recorded as split and eviscerated weights. If whole product is landed then a conversion factor of 2.73 will be used to convert to split weight. The Validation and Harvest logs must remain with the licensed vessel, with copies of the validation accompanying the product to its destination.

4.7.1. Validation and Harvest Log Entries

The vessel master is responsible for completing Sections A and C of the Validation and Harvest Log. The vessel master shall also ensure that chart entries are completed showing all locations fished for that validation. The observer shall complete Section B of the Validation and Harvest Log, and confirm that Sections A and C have been completed. The service provider will collect all harvest charts and ensure that they also have been completed. The original white copy of the Validation and Harvest Log handed to the observer, along with the harvest charts must be received by the Fisheries and Oceans Shellfish Data Unit within 28 days following the end of the month in which fishing occurred. In order to meet the 28 day requirement for submission of data, fishers are recommended to forward their information to the service provider well in advance of this time limit.

When a vessel has been assigned more than one “ZD” licence, care must be taken to complete and submit the logbook that corresponds to the licence quota being harvested. The correct “ZD” licence number is printed on the cover of the logbook. One logbook is intended to be used for all sea cucumber landings for a single “ZD” licence, even though the logbook may have more pages than required. Fishers must provide the observer with two Validation and Harvest Logs when one licence quota is being completed and another licence quota on that vessel is to be started.

4.7.2. Examination of Logbooks

The vessel master must produce the Validation and Harvest log on the request of a fishery officer, fishery guardian or an observer.

4.7.3. Biological Sampling

Fishers will, from time to time, be required to assist Fisheries and Oceans Canada personnel and Fisheries and Oceans Canada certified observers in the sampling of sea cucumbers for fishery management and stock assessment purposes.

4.7.4. Quota Confirmation

Prior to fishing, the vessel master must confirm the remaining vessel quota from the Validation and Harvest Log.

4.7.5. Quota Overages

4.7.5.1. Quota Area TAC Overages

Any Quota Area TAC overages may be deducted from the next year’s Quota Area TAC.

4.7.5.2. IQ Overages

Small quantities of sea cucumbers which exceed the licence’s annual IQ (up to 200 pounds) may be transferred to another sea cucumber licence provided the following conditions are fulfilled. If all of these conditions are not met, observers will not transfer the overage to another licence. In the following descriptions, the sea cucumber licence which has exceeded its IQ is called Licence “A” and the licence to which quota is transferred is called Licence “B”.

Harvest of sea cucumbers over the IQ after the permitted quota overages adjustments may be subject to prosecution and seizure of the overage.

- a) **Transfer of Quota to a Second Licence on the Same Vessel** - If two or more licences are assigned to the same vessel then a quota overage from one licence may be transferred to another sea cucumber licence on that vessel which has quota remaining. Overage of the last sea cucumber licence quota on the same vessel may be transferred to another vessel’s sea cucumber licence in accordance with procedure described below.
- b) **Maximum Allowable Transfer of Quotas between Licences on Different Vessels** - In the event of a quota overage on sea cucumber Licence “A”, a

maximum of 200 pounds of sea cucumber may be transferred to another vessel's sea cucumber licence (Licence "B"). Only one transfer of quota overage is allowed per licence. The quota overage cannot be divided between a number of licences.

- c) Remaining Quota on Second Licence - The amount of quota transferred from licence "A" cannot exceed the remaining quota of sea cucumber Licence "B".
- d) Sea Cucumber Licence Area - Both vessels involved in a transfer of quota must be licensed to fish in the same area and have active licences for that licence year.
- e) Documentation - The sea cucumber Validation and Harvest Log for each of the licences involved in the transfer must be present at the time of the validation. Both vessel masters must make their intention to transfer or receive quota overage clear to the Observer prior to unloading. In the event of a packer landing, a note signed by both vessel masters should accompany the product to advise the observer that there is a mutual agreement to transfer.

4.8. Catch and Fishing Data (Condition #12)

It is a Condition of Licence and the responsibility of the licence holder to ensure that harvest and chart information is received by Fisheries and Oceans Canada Shellfish Data Unit and meets the conditions outlined below. Fishers who have validation services completed by D&D Pacific Fisheries Ltd. will receive these services as part of that contract. For fishers who wish to have validation completed by an observer other than the service provider under contract to the Pacific Sea Cucumber Harvesters Association, it will remain the licence holder's responsibility to ensure the requirements outlined below are fully completed. Those interested in obtaining validation services other than those contracted by the Association should contact Pauline Ridings at (250) 627-3014 to receive a copy of the Fisheries and Oceans Canada requirements for third party validation.

Validation and Harvest Logbooks meeting Fisheries and Oceans Canada requirements (see example in Appendix 5) are available from service providers. The service provider will, for a fee, provide the Validation and Harvest Log coding and keypunch service, including the electronic capture of harvest chart location information into Geographic Information System (GIS), (as well as fishing notification and catch validation). Thus, the service providers provide compliance with the licence requirements for a hard (paper) and electronic copies, including fishing location information, for harvest log data.

Fishers are required to have their portions of both the validation and harvest sections completed before validation, or by midnight of the day on which fishing occurred, whichever comes first. An accurate chart record must be completed for each Validation and Harvest log entry.

4.8.1. Harvest Data

The vessel master is responsible for the provision and maintenance of an accurate record, a "log", of daily harvest operations. Catch information must be recorded in the harvest log by midnight of the day of fishing. The logbook must be kept

aboard the licensed vessel. This log must be completed and a copy submitted in both hard copy (paper) and electronic form in an approved format as defined by Fisheries and Oceans Canada Marine Ecosystem and Aquaculture Division's Shellfish Data Unit.

The vessel master is also responsible for the provision of a daily harvest chart record of each location fished by each diver. This harvest chart must have marked directly on it the VRN, the licence tab number and validation ID numbers.

The harvest site must be clearly marked on the chart with dive or record numbers pertaining to each harvest log catch record and dates that fishing activity occurred at each site. The vessel master is also responsible for the electronic capture of harvest location data into GIS. This chart must be completed and a copy submitted in both hard copy (paper) and electronic form in an approved format as defined by Fisheries and Oceans Canada Marine Ecosystem and Aquaculture Division's Shellfish Data Unit.

The original white page copy of the log, the accompanying chart record and the electronic copies must be forwarded within 28 days following the end of the month in which fishing occurred. Fishers who have validation services completed by D&D Pacific Fisheries Ltd. will receive this service as part of that contract. The information must be sent to:

Fisheries and Oceans Canada
Shellfish Data Unit
Pacific Biological Station
3190 Hammond Bay Road
Nanaimo, BC, V9T 6N7
Tel: (250) 756-7022 or (250) 756-7306

For alternatives to harvest data provision through a service provider contact the Shellfish Data Unit at the above address to obtain the requirements and acceptable data formats for supplying harvest log, chart and electronic data in a format which meets the Conditions of Licence. Electronic data capture of harvest location information must be performed at the Shellfish Data Unit by a bonded, third party service provider.

4.8.2. Submission and Release of Harvest Log Data

The licence holder of record with the Pacific Fishery Licensing Unit is responsible to ensure that the vessel master has completed and submitted a copy of the harvest data. Fisheries and Oceans Canada can only release harvest data to the licence holder of record and only upon written request.

4.8.3. Nil Report for Harvest Log - Licence Issued But Not Fished

In the event that a licence is issued but not fished, the licence holder is responsible for submitting a nil report for the season. The nil report must be submitted prior to the issuing 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 licence holder constitutes a nil report.

Fisheries and Oceans Canada wishes to remind fishers that harvest logs must be completed accurately during fishing operations and submitted to Fisheries and Oceans Canada in accordance with the timing set out in Conditions of Licence. Delay of completion or submission of logs is a violation of a Condition of Licence.

4.8.4. Confidentiality of Harvest Data

Harvest data, including fishing location data supplied through latitude/longitude co-ordinates, loran or chart records, collected under the Validation and Harvest Logbooks for Shellfish Fisheries programs, are collected for use by Fisheries and Oceans Canada in the proper assessment, management and control of the fisheries. Upon receipt by Fisheries and Oceans Canada of harvest log data and/or fishing location information supplied by the fisher in accordance with Conditions of Licence, Section 20(1)(b) of the *Access to Information Act* prevents Fisheries and Oceans Canada from disclosing to a third party, records containing financial, commercial, scientific or technical information that is confidential. Further, Section 20(1)(c) of the *Act* prevents Fisheries and Oceans Canada from giving out information, the disclosure of which could reasonably be expected to result in material financial loss or could reasonably be expected to prejudice the competitive position of the fisher.

4.9. Fish Slip Data (Condition #13)

It is a Condition of Licence that an accurate written report shall be furnished on a fish slip of all fish and shellfish caught under the authority of this licence. A report must be made even if the fish and shellfish landed are used for bait, personal consumption, or otherwise disposed.

4.10. Export Requirements

Prior to the export of sea cucumbers which have not gone through a federally registered processing plant, to any other province, territory or country from British Columbia, an oral report of the following information must be made by telephoning (604) 666-2438 or (604) 666-2459 (Canadian Food Inspection Agency, Vancouver):

- a) Total weight of the sea cucumbers to be exported.
- b) Area of catch.
- c) Export destination.
- d) Location and expected time of export.

The Dive Harvest Log and fish slip Conditions of Licence must be complied with, even for sea cucumbers exported from British Columbia, which have not gone through a federally registered processing plant.

5. OPEN TIMES, QUOTA MANAGEMENT AREAS AND TOTAL ALLOWABLE CATCHES

The 2007/2008 fishery will be conducted from October 1 through November 30, 2007.

Under the current management regime, the fishery generally lasts three weeks and occurs during October when product quality is higher and weather conditions are still conducive to fishing. In recent years, the fishery has commenced on the first Monday of October to allow North Coast boats to travel over the weekend. Weather and other unforeseeable circumstances have resulted in several requests for season extension so the PSCHA has recommended that the fishery be scheduled for eight weeks. The IQ program allows fishers to select optimum times in which to harvest without having to compete with other licence holders. While some areas may be more desirable to fish in and those area quotas harvested early, fishing in most areas has typically spanned the entire opening period.

For proper management of the fishery in the North Coast Licence Area (Prince Rupert area), Quota Management Areas will be opened and fished in the sequence shown below. For example, Quota Management Areas 6A and 6B will not open until the TAC in 6C is completed. The North Coast licence area will close one week prior to other licence areas, on November 23, 2007. Harvesters are advised to maintain good contact with the fishery manager, the service provider or the On-Grounds Co-ordinators, in order to avoid fishing in a closed area.

The other Licence Areas will open no earlier than October 8, 2007.

Opening	QMA	Name	Description	Quota (t)	Quota (lb.)
North Coast (34 licences)					
Oct1/07	6C	Caamano Sound/Laredo Channel	6-9 to 6-12, 6-14 to 6-16	62.2	137,138
TBA	6A	Gil Island	6-5, 6-26 to 6-28	36.1	79,600
TBA	6B	Gribbell Island	6-2, 6-3, 6-6 to 6-8	40.5	89,307
TBA	5B	Principe Channel/Grenville Channel	5-14 to 5-19, portion of 5-23, 5-24	48.0	105,882
TBA	5A	Porcher Island/Banks Island	4-3, 5-1, 5-2, 5-4, 5-5, 5-7, 5-11 to 5-13, 5-20 to 5-22	38.6	84,996
North Coast Total				225.4	496,923
Central Coast (37 licences)					
Oct8/07	7A	Seaforth Channel/Spiller Channel	7-12 to 7-16	45.9	101,117
Oct8/07	7B	Milbanke Sound	7-2, 7-3, 7-18 to 7-25, 7-31, 7-32	52.1	114,953

Opening	QMA	Name	Description	Quota (t)	Quota (lb.)
Oct8/07	7C	Denny Island	7-17, 7-30, 8-5 to 8-7	58.5	128,983
Oct8/07	8A	Queens Sound/Fitz Hugh Sound	7-26 to 7-28, 8-2 to 8-4, 8-13, 8-14, 8-16, 9-1, 9-2, 9-12	88.8	195,716
Central Coast Total				245.3	540,769
East Coast Vancouver Island (11 licences)					
Oct8/07	12A	N. Queen Charlotte Strait	12-9 to 12-11, 12-13, 12-16	30.0	66,188
Oct8/07	12B	S. Queen Charlotte Strait	12-7, 12-8, 12-17, 12-40, 12-41	30.8	67,862
Oct8/07	13A	Quadra/Cortes	13-12 to 13-16	6.6	14,549
Oct8/07	13B	N. Area 13	13-17 to 13-20, 13-23	5.5	12,170
ECVI Total				72.9	160,769
West Coast Vancouver Island (3 licences)					
Oct8/07	24A	N. Clayoquot	24-4 to 24-6, 24-14	12.8	28,279
Oct8/07	24B	S. Clayoquot	24-7 and 24-10	7.1	15,567
WCVI Total				19.9	43,846
Coastwide Total Allowable Catch				563.5	1,242,307

Note:

- The portion of Subarea 5-23 open in North Coast Quota Management Area 5B is described as: That portion of Subarea 5-23 **excluding** Kumealon Inlet, Baker Inlet, Kxngeal Inlet, and Klewnuggit Inlet.
- Vessel masters must ensure there is quota remaining in a Quota Management Area prior to, and during, fishing in that area. This is particularly important on the final days of fishing when it may be necessary for a vessel to change Quota Management Areas mid-day once the area quota is attained. When fishing in different Quota Management Areas, vessel masters must ensure that each area's catch is kept separate and that it is recorded on a separate log page.
- Any area quota overruns may be deducted from the next year's Quota Management Area quota.

5.1. On-grounds Communication

The following PSCHA members have been designated as "On-Grounds Co-ordinators" for the 2007/2008 fishing season. Information on open areas, remaining quotas and upcoming closures can be obtained by contacting the service provider, fishery managers or the following:

Area	Name	Vessel	Phone
North Coast	Al Shanks	G-Star	(250) 703-7860
Central Coast	John Parkin	Aquastar	(250) 703-7817
Central Coast	Gary Grant	Pugwis, Jagis, Mr.	(250) 923-4565 or

Area	Name	Vessel	Phone
		Muskkrat or RJ Kalub	Autotel (250) 286-2090
East Coast of Vancouver Island	Ken Ridgway	Gin	(250) 755-9591
West Coast of Vancouver Island	Terry Keith	Full Nelson	(250) 286-2245

6. CLOSURES

It is the fisher's responsibility to ensure that an area is open to harvesting.

6.1. Notification of Closures

Additional closures may be announced in-season by Fishery Notice. Prior to fishing in an area, fishers are advised to contact the local Fisheries and Oceans Canada office or to contact a resource manager listed in the Contacts section of the IFMP.

6.2. Research Closures

Under the adaptive management plan, 25 percent of non-contiguous coastal areas have been closed to the commercial fishery and reserved for surveys, assessments and experimental harvests. Experimental harvests will be determined annually by the Stock Assessment unit, based on the objectives of the adaptive management plan (*Boutillier et al* 1996), and will be in addition to the TAC established for the open fishery commercial areas. See Section 7.2 of the IFMP for more details.

6.3. Permanent Closures

The following areas will be closed for commercial fishing activity from October 1, 2007 to September 30, 2008.

6.3.1. Area 2E

6.3.1.1. Burnaby Narrows: Subarea 2-16 and a portion of Subarea 2-13 west of a line running 328 degrees true through the northwest tip of Section Island (Section Cove). (Park)

6.3.2. Area 5

6.3.2.1. Kitkatla Inlet and adjacent waters: Subarea 5-3 and that portion of Subarea 5-10 excluding the area of Beaver Passage and Schooner Passage inside of a line commencing at a fishing boundary sign at the northwest point of Spicer Island to the northwest point of McCauley Island, then following the shoreline of McCauley Island to Baird Point, then to Sentinel Islet, then to Boys Point, then to a boundary sign on the east side of Spicer Island. (First Nations access for food, social and ceremonial purposes)

6.3.3. Area 6

6.3.3.1. Hartley Bay: Those portions of Subareas 6-2, 6-6 and 6-28 in the vicinity of Hartley Bay, Promise Island and Coghlin Anchorage, inside the 20 fathom depth contour running from Halsey Point at the entrance to Hartley Bay, around Cape Farewell on Promise Island, then to Sainty Point on the mainland coast as shown on Charts No. 3711 and 3742 published by the Canadian Hydrographic Service. (Established 2005: First Nations access for food, social and ceremonial purposes)

6.3.3.2. Kitkiata Inlet: That portion of Subarea 6-2 that is Kitkiata Inlet west of a line from Gertrude Point to Helen Point. (Established 2006: First Nations access for food, social and ceremonial purposes)

6.3.3.3. Kishkosh Inlet: That portion of Subarea 6-2 that is Kishkosh Inlet west of a line running across the entrance of the inlet. (Established 2006: First Nations access for food, social and ceremonial purposes)

6.3.3.4. Bishop Bay: That portion of Subarea 6-3 that is Bishop Bay east of a line from Riordan Point to Tomkinson Point. (Established 2006: First Nations access for food, social and ceremonial purposes)

6.3.3.5. Cornwall and Drake Inlets: Subarea 6-8. (Established 2006: First Nations access for food, social and ceremonial purposes)

6.3.4. Area 12

6.3.4.1. Port Neville: Subarea 12-25. (Marine Reserve Area and Research Area)

6.3.5. Area 13

6.3.5.1. 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)

6.3.5.2. Mitlenatch Nature Park: (As described in Area 15 Closures).

6.3.6. Area 14

6.3.6.1. 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 degrees true for 0.5 nautical miles, thence 126 degrees true for 3.5 nautical miles, thence 64 degrees true for 4.9 nautical miles, thence 304

degrees true for 2.9 nautical miles, thence 213 degrees true for 0.5 nautical miles to Cape Gurney on Hornby Island. (Marine Reserve)

6.3.6.2. Mitlenatch Nature Park: (As described in Area 15 Closures).

6.3.7. Area 15

6.3.7.1. All waters within 0.5 nautical miles of Vivian Island located approximately 5.0 nautical miles west of Powell River in Subarea 15-2. (Marine Reserve)

6.3.7.2. All waters within 0.25 nautical miles of Rebecca Rock, located 2.5 nautical miles west of Powell River in Subarea 15-2. (Marine Reserve)

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

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

6.3.7.5. All waters within 1.0 nautical mile of Mitlenatch Island, located in the upper Strait of Georgia intersected by the Subareas 15-2, 13-1, 13-3 and 14-13. (Marine Reserve)

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

6.3.8. Area 16

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

6.3.8.2. 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 degrees true to a point on the foreshore on the mainland; and the east by a line from Raland Point on Sechelt Peninsula, thence 50 degrees true to a point on the foreshore on the mainland. (Park)

6.3.9. Area 18

6.3.9.1. Subareas 18-7 (Sansum Narrows, Burgoyne Bay and Maple Bay) and 18-8 (Cowichan Bay). (Conservation Closure)

6.3.10. Area 19

6.3.10.1. 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 Brothie Ledge Light, thence to Holland Point on Vancouver Island. (Marine Reserve)

6.3.10.2. 10 Mile Point: Those waters of Subareas 19-4 and 19-5 within 0.4 nautical miles of Cadboro Point navigation light. (Marine Reserve)

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

6.3.11. Area 20

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

6.3.11.2. 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)

6.3.11.3. 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)

6.3.12. Area 23

6.3.12.1. 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)

6.3.12.2. 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)

6.3.13. Area 24

6.3.13.1. 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)

6.3.14. Area 26

6.3.14.1. 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 degrees 59 minutes to 50 degrees 6.3 minutes north and 127 degrees 26 minutes to 127 degrees 39 minutes west. (Ecological Reserve)

6.3.14.2. 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 available from the Resource Management staff listed in Section 1 of this plan. (Research Closure)

6.3.14.3. Entrance to Crowther Channel: A portion of 26-6 on the west side of Union Island commencing at position 50 degrees 0.4 minutes north, 127 degrees 19.3 minutes west. (Research Closure)

6.3.15. Area 28

6.3.15.1. 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)

6.3.15.2. 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 100 metres east of the most southeasterly point of Whyte It.; thence following the southern shoreline of Whyte It. at a distance of 100 metres to a point lying 100 metres from the most southwesterly point of Whyte It.; thence in a straight line to a point lying 100 metres west of White Cliff Point; thence following the shoreline at a distance of 100 metres in a northerly direction to a point 100 metres north of Lookout Point; thence following the shoreline at a distance of 100 metres in an easterly direction to a point 100 metres perpendicular to the most northerly point of Whytecliff Park; thence to the most northerly point of Whytecliff Park on the mainland. (Marine Reserve)

6.3.15.3. 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)

7. WORKSAFE BC

Jurisdiction over health and safety on commercial fishing vessels in Canada is the mandate of the provinces. In British Columbia, jurisdiction over health and safety issues on commercial fishing vessels defaults to WorkSafeBC (previously Workers' Compensation Board of British Columbia). Health and safety issues on fishing vessels include the health and safety of the crew and design, construction and use of fishing equipment on the vessel. Matters of transportation and shipping fall to the federal government and are administered by Transport Canada, Marine Safety (TCMS). WorkSafeBC and TCMS have entered into a Memorandum of Understanding on fishing vessel safety that addresses, as much as possible, jurisdiction. The document also contemplates that each party will work co-operatively to ensure that vessels and their crew remain healthy and safe.

The sea cucumber fishery, and other dive fisheries, is legislated by the requirements for occupational divers, found in Part 24 of the Occupational Health and Safety Regulation (OHSR) and as commercial fishing ventures, also found in Part 24 of the OHSR. Many of the general sections of the Regulation also apply, for example: Part 8 - Personal Protective Equipment, addresses issues related to safety head gear, safety foot ware and personal floatation devices. Part 17 addresses issues on rigging and Part 5 addresses issues of exposure to chemical and biological substances. The entire regulation can be acquired from the Provincial Crown Printers or by visiting the WorkSafeBC Internet Site at:

www.worksafebc.com

For further information, contact an Occupational Safety Officer:

Shane Neifer, Terrace	(250) 615-6640
Mike Ross, Victoria	(250) 881-3419
Pat Olsen, Richmond	(604) 244-6477
Mark Lunny, Courtney	(250) 334-8732

or the Focus Sector Manager for fishing Bruce Clarke, Prince George, (250) 612-3708)

Appendix 2: 2007/2008 Sea Cucumber by Dive First Nations Harvest Plan

1. OVERVIEW OF THE FISHERY

Sea cucumbers are of continuing importance to First Nations, who harvest them for food, social and ceremonial purposes.

The Department's policy on the management of First Nations fishing identifies harvests for food, social and ceremonial purposes as the first priority after conservation.

The Department seeks to provide for the effective management and regulation of the First Nations 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 food, social and ceremonial 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, catch monitoring and enforcement, fish management and community research.

The First Nations harvest of sea cucumbers for food, social and ceremonial purposes is regulated through the *Aboriginal Communal Fishing Licences Regulations* made under the *Fisheries Act*. Communal licences are issued annually to First Nations under the authority of these regulations and include a mechanism for designating individuals and vessels to fish under the authority of that licence, outline the harvest area, any harvest or gear limitations, as well as the harvest reporting requirements. Even where an agreement cannot be concluded Fisheries and Oceans Canada issues communal fishing licences to First Nations organizations.

First Nations involvement in the fishery is a shared goal between the Department and First Nations people. It is a means to stimulate First Nations economic development opportunities and develop fisheries expertise in First Nations communities, while serving as the basis for more co-operation between First Nations communities and the commercial fishery sectors. First Nations participation in the commercial fisheries is being accommodated through the Allocation Transfer Program. The program retires existing commercial licence eligibilities from fishers on a voluntary basis and issues licences representing the same capacity to eligible First Nations organizations as communal commercial licences.

2. PARTICIPANTS

The Department negotiates AFS Agreements annually with over 70 Aboriginal Organizations that represent 164 of the 200 First Nations in British Columbia and the Yukon. Several of these agreements include provisions for the harvest of sea cucumbers for food, social and ceremonial purposes. Each First Nation's access to fish for food, social and ceremonial purposes is managed through a communal licence. Opportunities for First Nations participation in the commercial sea cucumber fishery are provided through the Allocation Transfer Program.

3. LOCATION OF THE FISHERY

Communal Licences specify the locations permitted for use by First Nations for food, social and ceremonial harvests. Harvesting generally takes place in areas fronting or adjacent to reserves.

4. TIME FRAME OF THE FISHERY

First Nations fisheries occur year-round in all areas. First Nations harvesting of sea cucumbers is generally opportunistic associated with extreme low tides.

5. MANAGEMENT MEASURES FOR THE FISHERY

Under the Individual Quota Program (IQ) for the sea cucumber fishery, two percent of the coast-wide Total Allowable Catch (TAC) for sea cucumber is reserved, for planning purposes, for First Nations fisheries for food, social and ceremonial purposes. Additional allocations of sea cucumber will be provided to First Nations who demonstrate that their food, social and ceremonial needs are not being met. Fisheries and Oceans Canada is confident that with the precautionary approach to this fishery, the reserved allocation of TAC, and the provision of additional allocations, where necessary, First Nations in all areas will have sufficient opportunities to harvest sea cucumber for food, social and ceremonial purposes.

Appendix 4 shows the most recent stock assessment figures used to calculate the annual and commercial TAC. The coast-wide TAC is calculated by using baseline density estimates for sea cucumbers of:

- a) 90 percent lower confidence limit of surveyed estimated density.
- b) 5.08 sea cucumbers per metre of shoreline for unsurveyed areas.
- c) 2.5 sea cucumbers per metre of shoreline for exposed areas or those of concern.

There is no size limit for the First Nations sea cucumber fishery.

6. LICENSING

First Nations access to fish for food, social and ceremonial purposes is managed through a communal licence. Catch monitoring and reporting requirements are outlined in the fisheries agreement and/or communal licence. Communal licences can be amended in-season for resource conservation purposes.

7. CONTROL AND MONITORING OF FISHING ACTIVITIES

Communal licences and fisheries agreements may contain provisions for the designation of individuals by the First Nation, or First Nations organizations, to access the allocation provided under the communal licence, as well as provisions for monitoring and reporting by the group of the First Nations fishery in co-operation with the Department.

Appendix 3: 2007/2008 Sea Cucumber by Dive Recreational Harvest Plan

1. LOCATION OF THE FISHERY

Recreational harvest of sea cucumbers occurs coast-wide.

2. TIME FRAME OF THE FISHERY

Recreational fisheries are open year-round in all areas or as described in the British Columbia Tidal Waters Sport Fishing Guide for the recreational fishery.

3. MANAGEMENT MEASURES

Sea cucumbers can be harvested by handpicking, with a daily limit of 12 sea cucumbers and a possession limit of 24 sea cucumbers. There is no size limit for the recreational sea cucumber fishery.

4. LICENSING

A British Columbia Tidal Waters Sport Fishing Licence is required for the recreational harvest of all species of fish.

5. CONTROL AND MONITORING OF RECREATIONAL FISHING ACTIVITIES

The recreational harvest of shellfish is regulated via the *British Columbia Sport Fishing Regulations, 1996* made under the *Fisheries Act*. The regulations are summarized annually in the British Columbia Tidal Waters Sport Fishing Guide which lists closed times, bag limits, size limits (where applicable) and closed areas. If necessary, public notices are posted to document closures or changes from the Columbia Tidal Waters Sport Fishing Guide. Closures may be implemented in order to conserve vulnerable stocks, or to protect the public from consumption of contaminated shellfish or to meet First Nations food, social and ceremonial needs. For some species, areas have been closed to commercial harvest or commercial harvest openings have been delayed to provide an opportunity for the recreational community.

The British Columbia Tidal Waters Sport Fishing Guide is available on the Internet at:

www.pac.dfo-mpo.gc.ca/recfish/default_e.htm

Appendix 4: Information on Estimating Total Allowable Catch by Subarea

Transect surveys are conducted, following the sea cucumber density survey protocol, to estimate the density and biomass of sea cucumber populations. Survey results are used in the design of experimental fisheries, which are closed to the commercial fishery, and to calculate annual commercial Total Allowable Catch (TAC) (*Hand and Rogers, 1999*). TAC is calculated for each Subarea as follows:

$$\text{TAC} = \text{ER} * \text{PDE} * \text{SL} * \text{ASW}$$

Where:

- a) **ER** = exploitation rate = 4.2 percent.
- b) **PDE** = precautionary density estimate = 2.5 or 5.08 sea cucumbers per metre shoreline unless surveyed.
- c) **SL** = shoreline length = digitized length of Subarea shoreline in metres.
- d) **ASW** = average split weight = estimated average weight of sea cucumbers in each Subarea from biological samples or market samples, as available.

Following on advice presented in *Campagna and Hand 2002*, the precautionary density estimate is selected based on the following conventions:

- a) If area is surveyed: use lower 90 percent confidence limit of estimated density.
- b) If area is not surveyed: use new baseline density estimate of 5.08 sea cucumbers per metre of shoreline.
- c) If area is not surveyed and is of exposed habitat or of some concern: continue to use original baseline density estimate of 2.5 sea cucumbers per metre of shoreline.

The lower 90 percent confidence interval of density estimates from all surveys to date are shown in the table below.

Survey Year	Subareas	Density Estimate (Sea Cucumbers per Metre of Shoreline)
1998	7-15, 7-17, 7-30	6.6, 13.4, 11.94 respectively
1999	6-3, 6-5, 6-6, 6-7, 6-27, 6-28	17.0 overall
2000	12-40, 12-41	6.43 and 5.08 respectively
2001	6-9	5.76
2001	24-4 to 24-10, 24-14	5.45 overall
2002	7-15, 7-17, 7-30	8.84, 11.66, 10.25 respectively
2002	8-3 & 8-4, 8-5, 8-6, 8-16	14.25, 12.29, 21.46, 10.54 respectively, adjusted in 2005: 14.25, 12.29, 21.46, 10.54 respectively
2003	6-3, 6-5, 6-6, 6-7, 6-27, 6-28	17.85 overall; separated in 2005: 11.68, 16.01, 16.55, 13.53, 16.01, 9.75 respectively
2004	12-40, 12-41	5.44 overall; adjusted in 2005: 4.04 and 7.54 respectively

Survey Year	Subareas	Density Estimate (Sea Cucumbers per Metre of Shoreline)
2005	6-9	5.76
2005	24-4 to 24-10, 24-14	5.45 overall; adjusted in 2006: 8.46, 5.12, 2.27, 3.55, 1.90, 2.90 respectively (excluding 24-8 & 24-9)
2006	8-3 & 8-4, 8-5, 8-6, 8-16 7-15, 7-17, 7-30	9.67, 8.98, 27.4, 7.71 respectively 6.23, 12.41, 8.94 respectively
2007	6-3, 6-5, 6-6, 6.7, 6-27, 6-28	12.38, 14.51, 15.56, 14.28, 10.22, 10.25 NOTE: These are preliminary values

Two percent of the coast-wide TAC is reserved for First Nations use for food, social and ceremonial purposes. This two percent is removed from the coast-wide TAC prior to calculating the commercial TAC. The commercial fishery TAC by Quota Management Area (QMA) is determined through consultation with the PSCHA. Resource managers and PSCHA reviewed the range of options available under the new stock assessment information and calculate the commercial TAC.

QMA	Name	Description	TAC (lb)	2%
North Coast (34 licences)				
6C	Caamano Sound/Laredo Channel	6-9 to 6-12, 6-14 to 6-16	139,937	2,798.7
6A	Gil Island	6-5, 6-26 to 6-28	81,225	1,624.5
6B	Gribbell Island	6-2, 6-3, 6-6 to 6-8	97,259	1,945.2
5B	Principe Channel/Grenville Channel	5-14 to 5-19, portion of 5-23, 5-24	108,043	2,160.9
5A	Porcher Island/Banks Island	4-3, 5-1, 5-2, 5-4, 5-5, 5-7, 5-11 to 5-13, 5-20 to 5-22	86,731	1,734.6
North Coast Total			513,194	10,264
Central Coast (37 licences)				
7A	Seaforth Channel/Spiller Channel	7-12 to 7-16	100,374	2,007.5
7B	Milbanke Sound	7-2, 7-3, 7-18 to 7-25, 7-31, 7-32	117,299	2,346.0
7C	Denny Island	7-17, 7-30, 8-5 to 8-7	128,575	2,571.5
8A	Queens Sound/Fitz Hugh Sound	7-26 to 7-28, 8-2 to 8-4, 8-13, 8-14, 8-16, 9-1, 9-2, 9-12	199,710	3,994.2
Central Coast Total			545,958	10,919
East Coast Vancouver Island (11 licences)				
12A	N. Queen Charlotte Strait	12-9 to 12-11, 12-13, 12-16	69,621	1,392.4

QMA	Name	Description	TAC (lb)	2%
12B	S. Queen Charlotte Strait	12-7, 12-8, 12-17, 12-40, 12-41	69,247	1,384.9
13A	Quadra/Cortes	13-12 to 13-16	16,887	337.7
13B	N. Area 13	13-17 to 13-20, 13-23	14,460	289.2
ECVI Total			170,214	3,404
West Coast Vancouver Island (3 licences)				
24A	N. Clayoquot	24-4 to 24-6, 24-14	25,642	512.8
24B	S. Clayoquot	24-7 and 24-10	12,653	253.1
WCVI Total			38,295	766
Coastwide Total Allowable Catch			1,267,661	25,353

Appendix 5: Example of Sea Cucumber Validation and Harvest Logbook

	SEA CUCUMBER VALIDATION & HARVEST LOGBOOK	VALIDATION ID # : _____
--	--	-------------------------

PLEASE PRINT - USE PEN SECTION 'A' - TO BE COMPLETED BY VESSEL MASTER PLEASE PRINT - USE PEN

S E C T I O N 'A'	VESSEL MASTER NAME		VESSEL NAME			CFV #	ZD TAB #	SPLIT LOAD ?	# OF LOADS	VALIDATION ID #s OF OTHER LOADS
								YES		
								NO		
QUOTA AREA		DAYS FISHED	No. of CONTAINERS BAGS CAGES TOTES OTHER		PACKER NAME (if applicable)		GROSS PACKER WT. (lb.)		BUYER NAME	

PLEASE PRINT - USE PEN SECTION 'B' - TO BE COMPLETED BY PORT OBSERVER PLEASE PRINT - USE PEN

S E C T I O N 'B'	OBSERVER NAME		No. of CONTAINERS BAGS CAGES TOTES OTHER			GROSS DOCK WT. (lb.)	CONTAINER WT. (lb.)	CONVERSION FACTOR	PREVIOUS R.Q. (lb.)	
								2.73	NET DOCK WT. (lb.)	
									SPLIT FORM	
									NEW R.Q. (lb.)	
PRODUCT FORM		OVERAGE lb.		TRANSFER: TO / FROM		RELINQUISHMENT lb.		SITUATION REPORT #		
Split <input type="checkbox"/>										
Round <input type="checkbox"/>				ZD # : _____						
LANDING PORT		START TIME		OFFLOAD SEQUENCE		CHECK LIST :		HARVEST INFO. COMPLETE		
						FISH HOLD CHECK <input type="checkbox"/> Y <input type="checkbox"/> N		MATH CHECK <input type="checkbox"/> Y <input type="checkbox"/> N		
						BAG ID TAGS <input type="checkbox"/> Y <input type="checkbox"/> N		TOTE ID LABELS <input type="checkbox"/> Y <input type="checkbox"/> N		
						TOTE COUNT <input type="checkbox"/> Y <input type="checkbox"/> N		No. of TRANSPORT CONTAINERS		
LANDING DATE <small>mm / dd / yy</small>		FINISH TIME		SAMPLING : (one cage per offload)		NET SAMPLE WT. (nearest 10th of a lb.)		PIECE COUNT		
								TOTAL NET DOCK WT. OF ALL LOADS (lb.)		
COMMENTS :										

PLEASE PRINT - USE PEN SECTION 'C' - TO BE COMPLETED BY VESSEL MASTER PLEASE PRINT - USE PEN

HARVEST INFORMATION - COMPLETE A SEPARATE LINE FOR EACH DIVE - USE NEXT PAGE IF MORE SPACE REQUIRED									
DIVE No.	DIVE SITE	HARVEST DATE <small>(mm / dd / yy)</small>	MGMT AREA	SUB AREA	HARVEST LOCATION <small>(DESCRIPTION, TOP / LAT. & LONG., BOTTOM)</small>	DIVER NAME <small>(FIRST NAME, TOP / LAST NAME, BTM)</small>	DIVE TIME <small>(minutes)</small>	DEPTH (ft) <small>min. max.</small>	No. of PIECES
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

PLEASE ENSURE YOUR HARVEST CHART IS MARKED ~ PIECE COUNTS ARE : (check one) ACTUAL ESTIMATED

WHITE COPY - Observer YELLOW COPY - Buyer via trucking PINK COPY - Vessel via packer GOLD COPY - REMAINS IN LOGBOOK

PREPARED BY D&D PACIFIC FISHERIES LTD.

Appendix 6: Example of Sea Cucumber Quota Transfer Form

SEA CUCUMBER QUOTA TRANSFER FORM

Landing Date: _____

Landing Port: _____

OVERAGE FROM LICENCE (A):

Vessel Master Name: _____

Validation ID #: _____

Vessel: _____

CFV #: _____

ZD Tab #: _____

OVERAGE AMOUNT (lb.)

OVERAGE FROM LICENCE (B):

Vessel Master Name: _____

Validation ID #: _____

Vessel: _____

CFV #: _____

ZD Tab #: _____

Small quantities of sea cucumbers which exceed the licence's annual quota (up to 200 lb) can be transferred to another sea cucumber licence provided certain conditions are fulfilled. If all of these conditions are not met, DFO Certified observers will not transfer the overage to another licence. Both vessels involved in the transfer must be licenced to fish in the same licence area and have active licences for that year. In the following explanation, the sea cucumber licence which has exceeded its quota is called Licence "A" and the licence to which quota is transferred is called Licence "B".

SAME VESSEL TRANSFER (SVT) transfer of quota to a second licence on the same vessel:

If two or more licences are assigned to the same vessel then a quota overage of any amount from one licence may be transferred to the sea cucumber licence which has quota remaining more than the overage about to be transferred. Overage of the last sea cucumber licence quota on the same vessel may be transferred to another vessel's sea cucumber licence in accordance with policy described below.

DIFFERENT VESSEL TRANSFER (DVT) maximum allowable transfer of quota between licences on different vessels:

In the event of a quota overage on sea cucumber Licence "A", a maximum of 200 lb of sea cucumber may be transferred to another vessel's sea cucumber licence (Licence "B"). If the overage is more than 200 lb., the option to transfer quota will be lost. Only one transfer of quota overage is allowed. The quota overage cannot be divided between a number of licences.

Remaining quota on second licence:

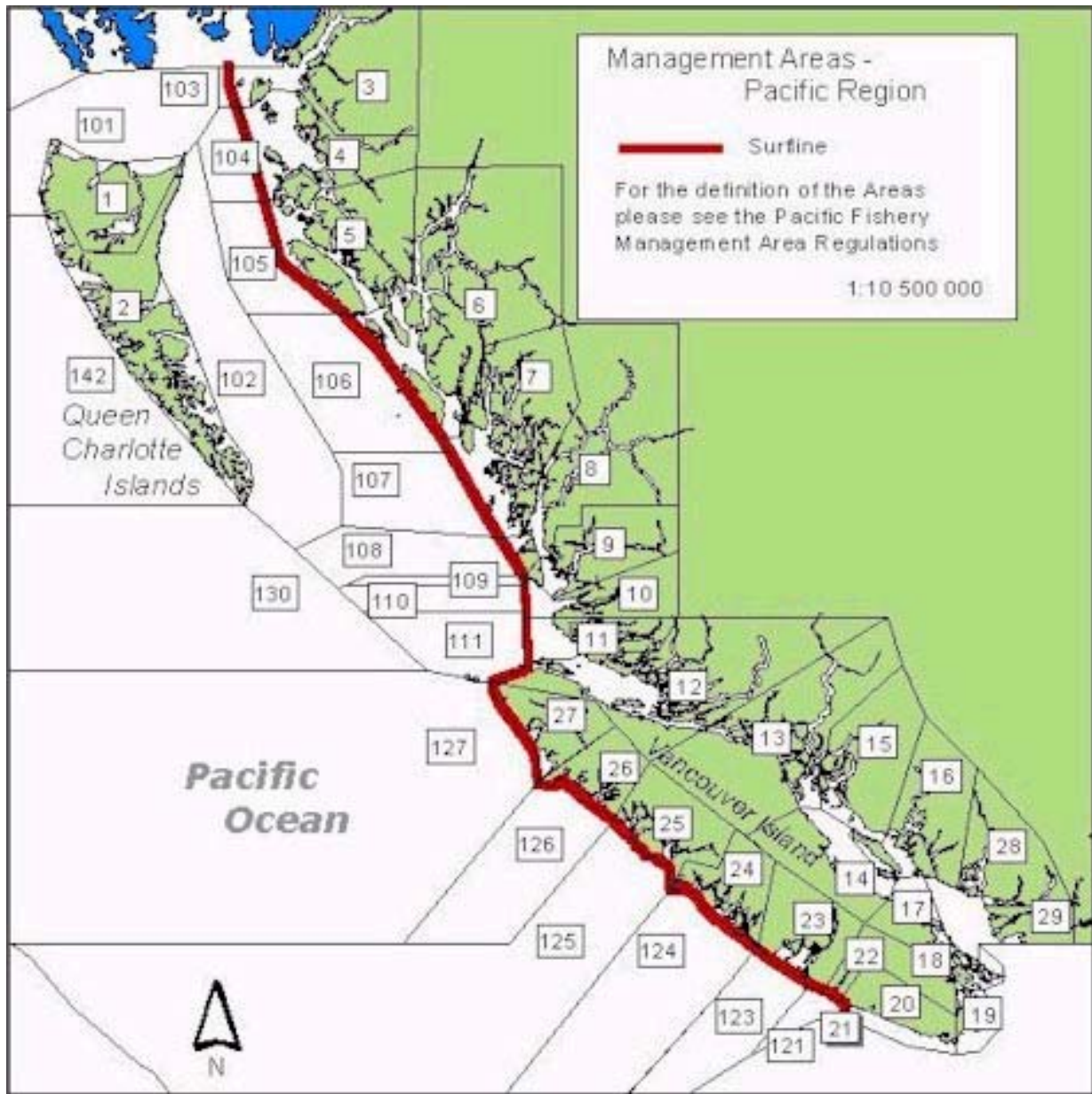
The amount transferred cannot exceed the remaining quota of sea cucumber Licence "B". Any quantity not transferred to Licence "B" must be relinquished by Licence "A".

Observer signature

Captain (A) signature

Captain (B) signature *(if different)*

Appendix 7: Pacific Fishery Management Areas and Sea Cucumber Quota Management Area Maps



Harvesters are reminded that these maps and the area descriptions in Appendix 1 are to be used for reference only. The final authority of these descriptions of 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/ops/fm/Areas/areamap_e.htm

www.dfo-mpo.gc.ca/communic/policy/dnload_e.htm

Please note permanent area closures listed in Appendix 1, Section 6. **Permanent area closures are not illustrated on these maps.**

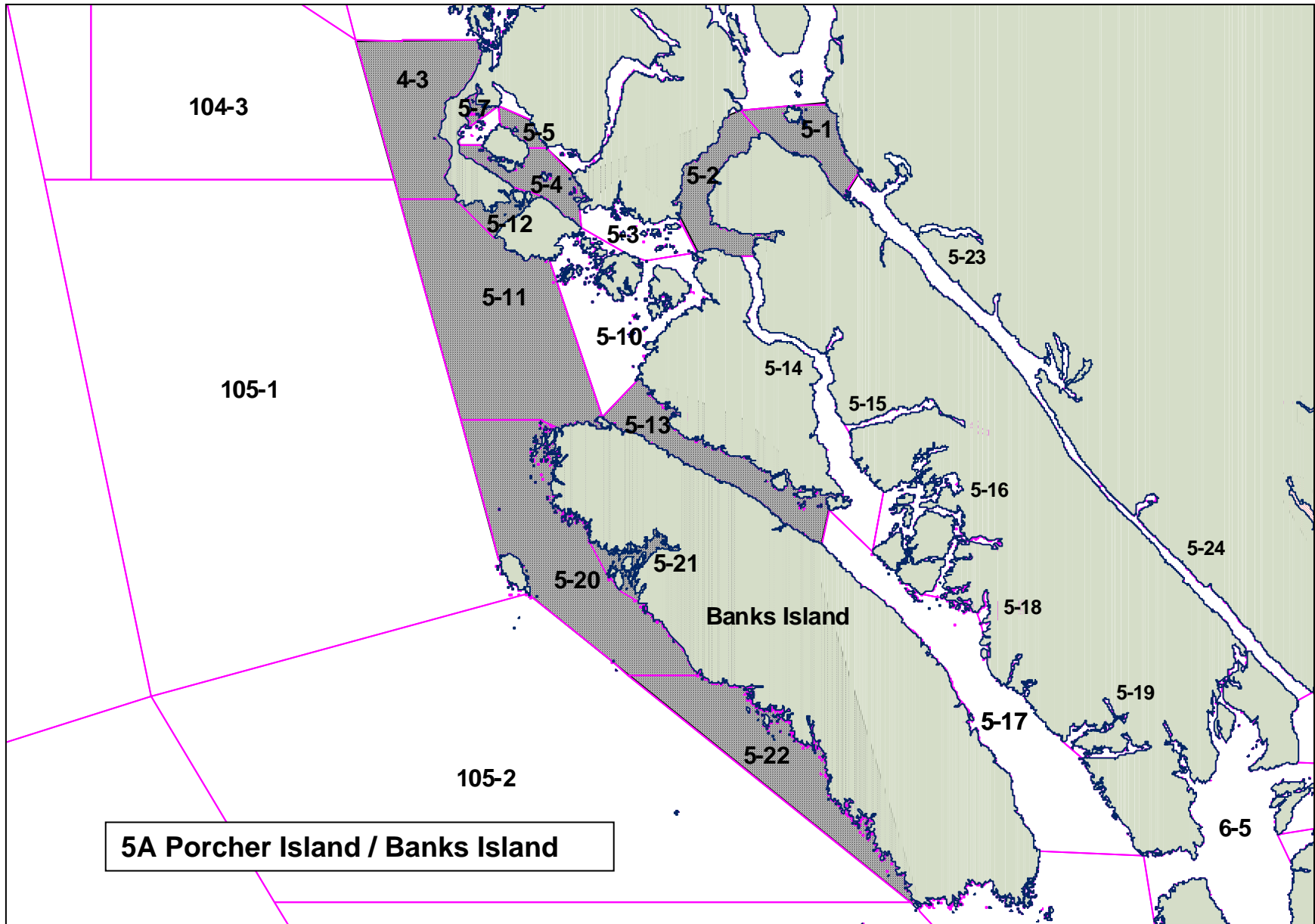


Figure 1: Commercial Sea Cucumber Quota Management Area 5A: Porcher Island/Banks Island (Subareas 4-3, 5-1, 5-2, 5-4, 5-5, 5-7, 5-11 to 5-13, 5-20 to 5-22).

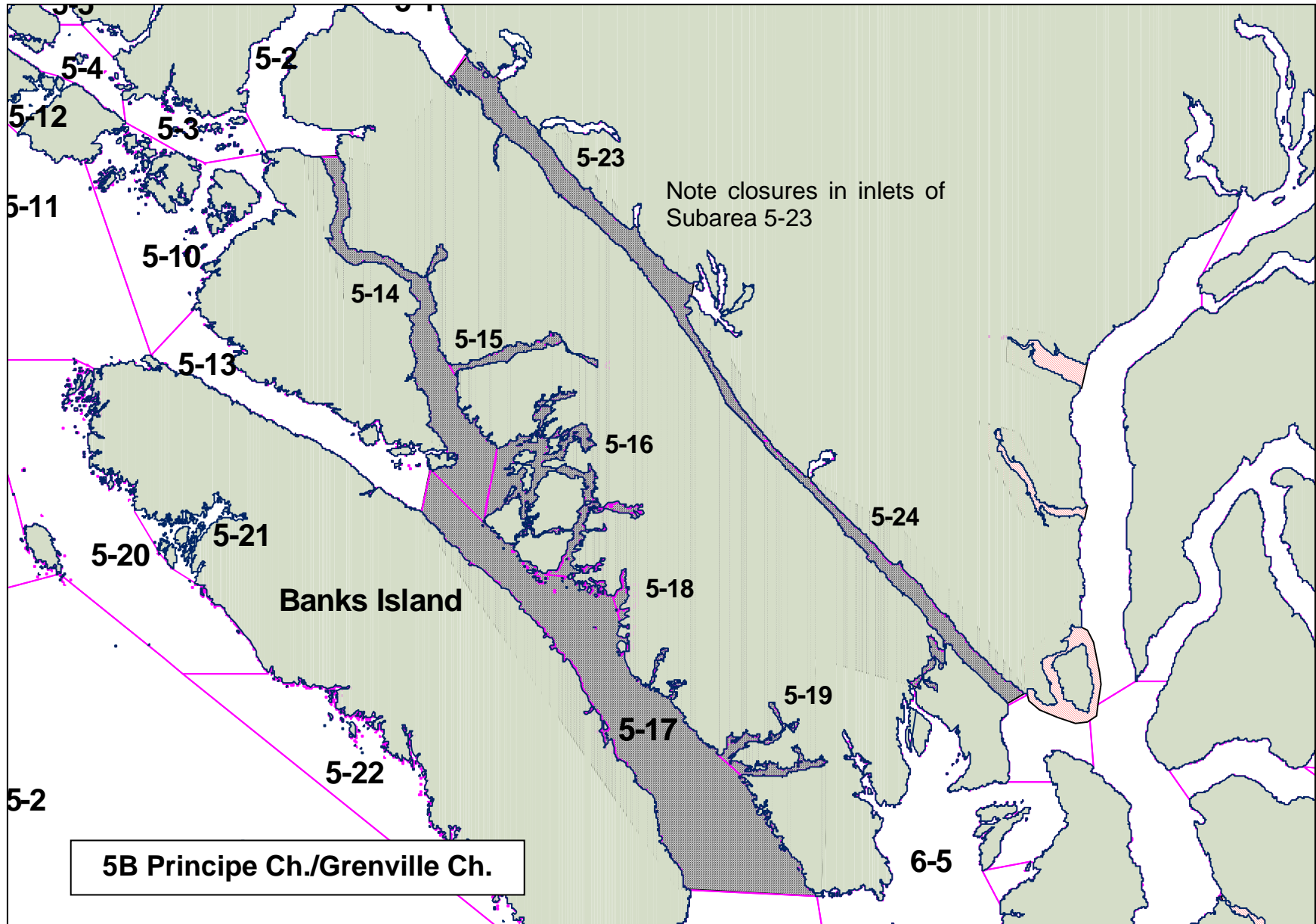


Figure 2: Commercial Sea Cucumber Quota Management Area 5B: Principe Channel/Grenville Channel (Subarea 5-14 to 5-19, ptn. 5-23, 5-24).

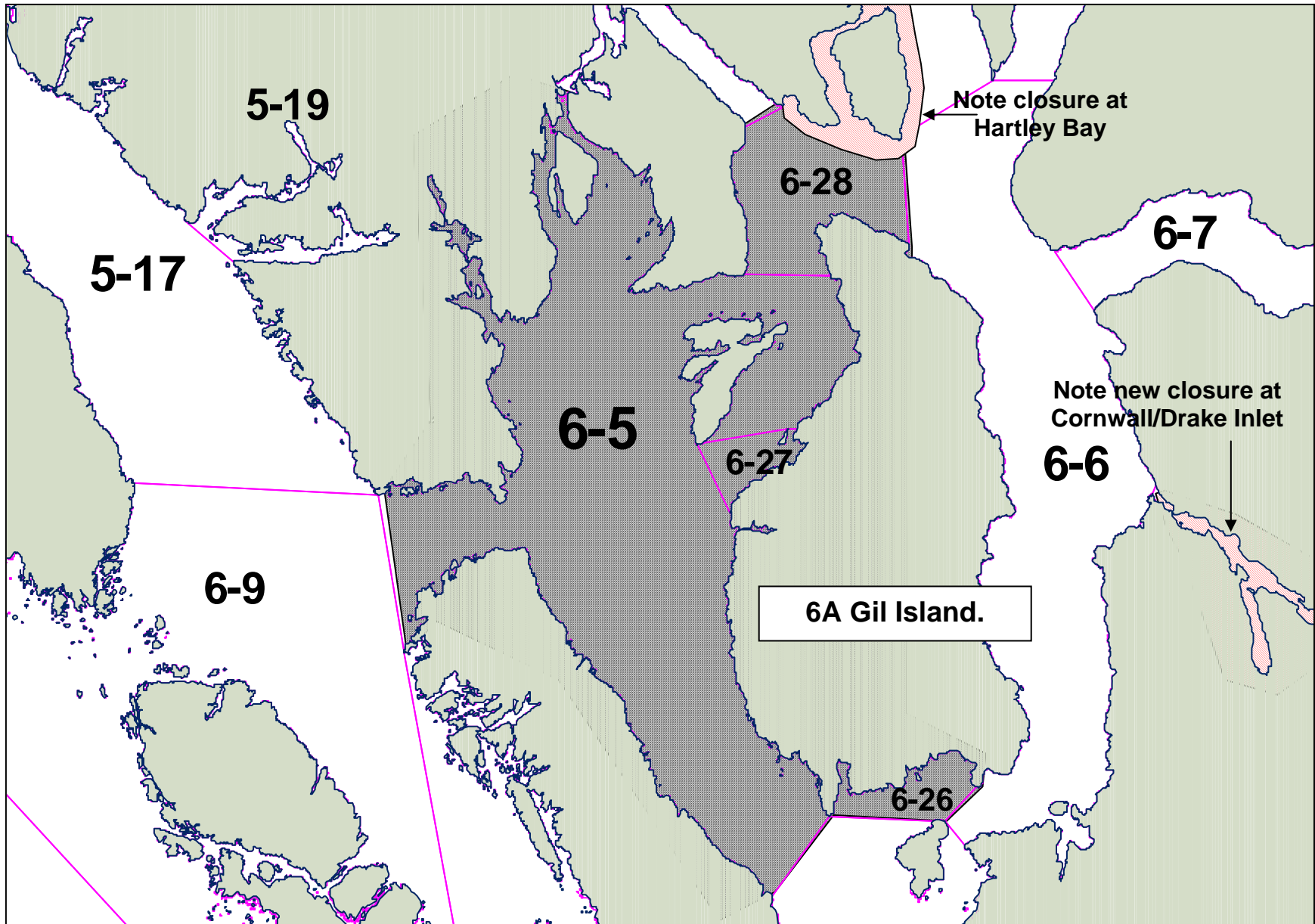


Figure 3: Commercial Sea Cucumber Quota Management Area 6A: Gil Island (Subarea 6-5, 6-26 to 6-28).

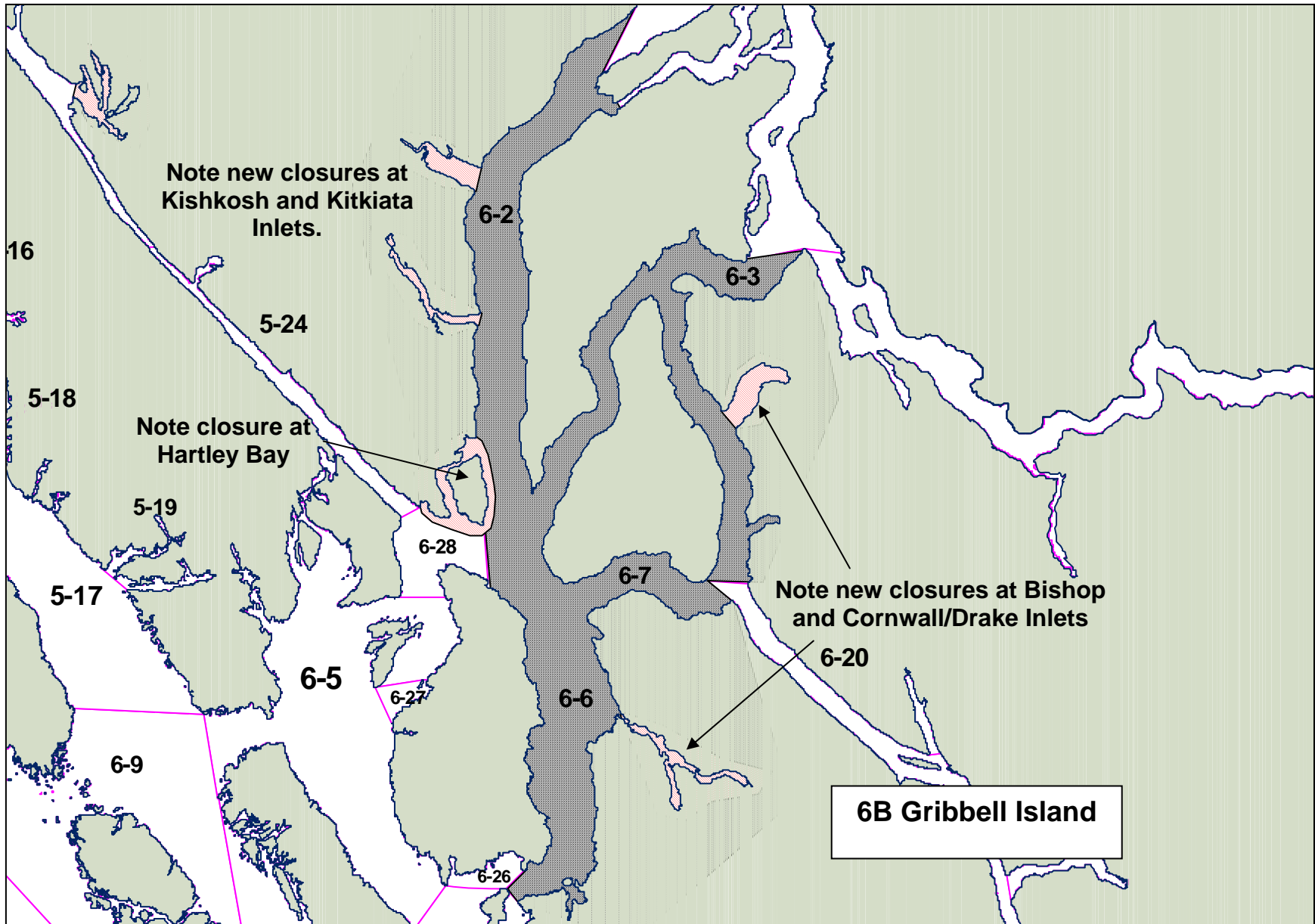


Figure 4: Commercial Sea Cucumber Quota Management Area 6B: Gribbell Island (Subarea 6-2, 6-3, 6-6 to 6-8).

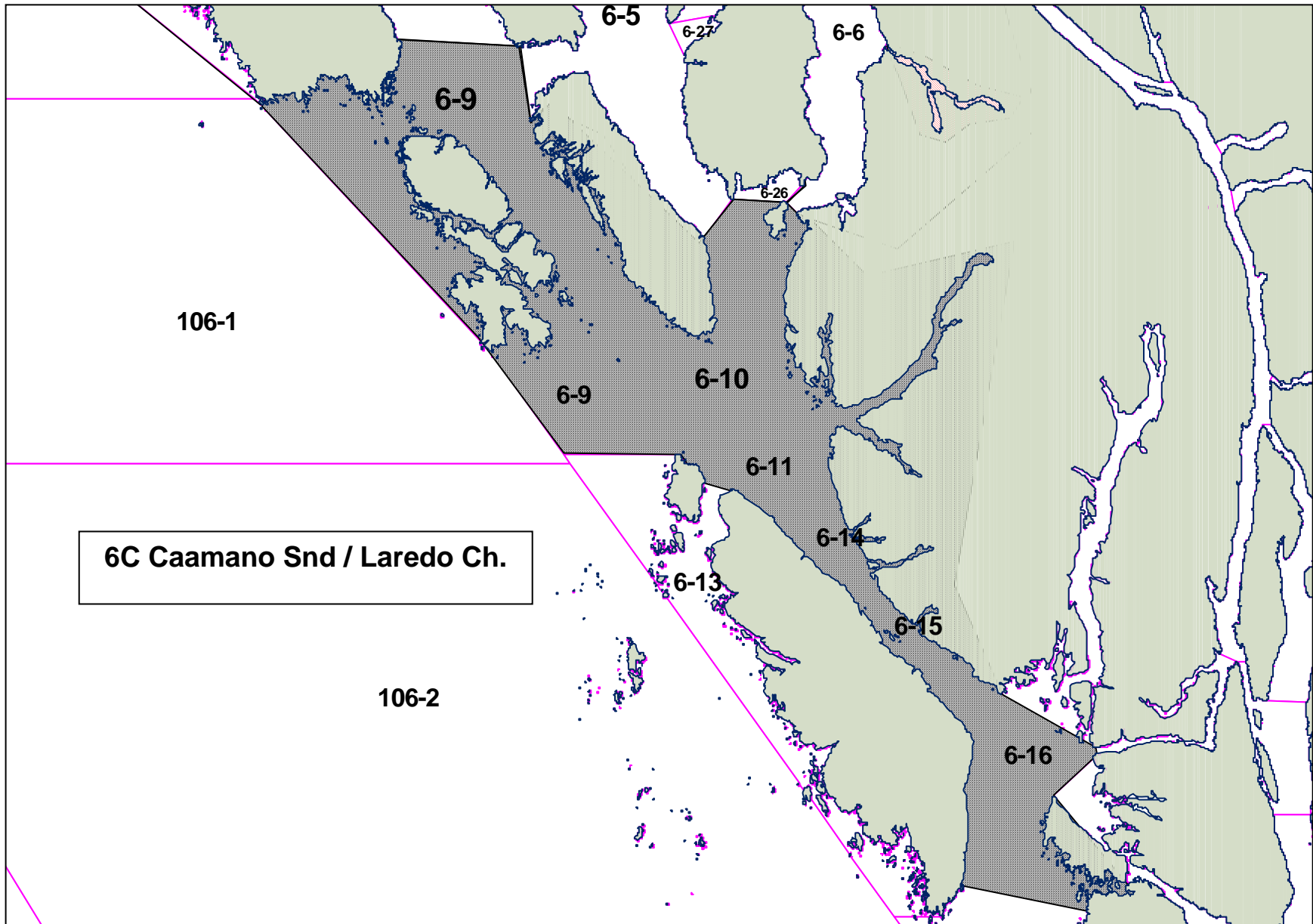


Figure 5: Commercial Sea Cucumber Quota Management Area 6C: Caamano Sound/Laredo Channel (Subarea 6-9 to 6-12, 6-14 to 6-16).

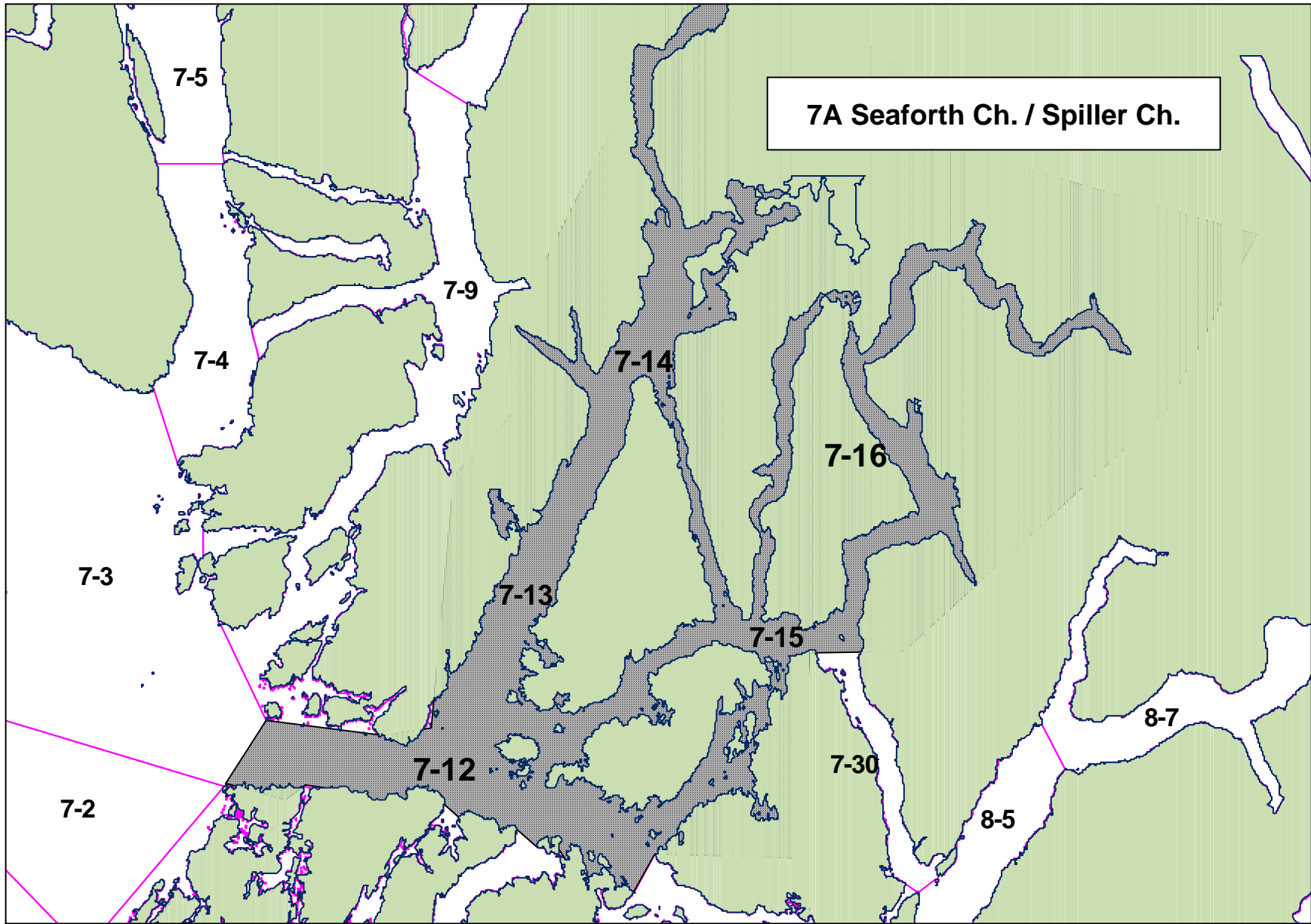


Figure 6: Commercial Sea Cucumber Quota Management Area 7A: Seaforth Channel/Spiller Channel (Subarea 7-12 to 7-16).

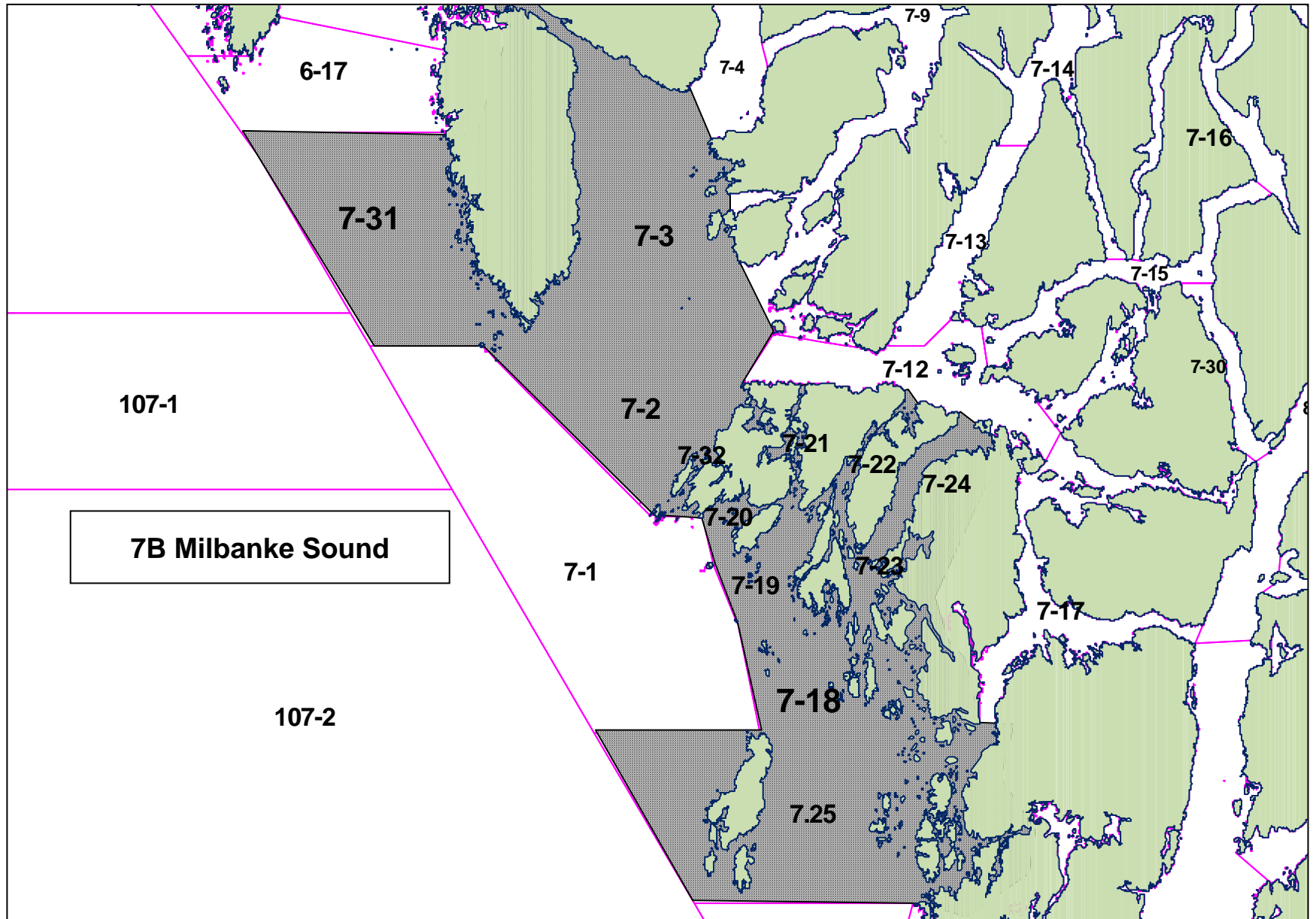


Figure 7: Commercial Sea Cucumber Quota Management Area 7B: Milbanke Sound (Subarea 7-2, 7-3, 7-18 to 7-25, 7-31, 7-32).

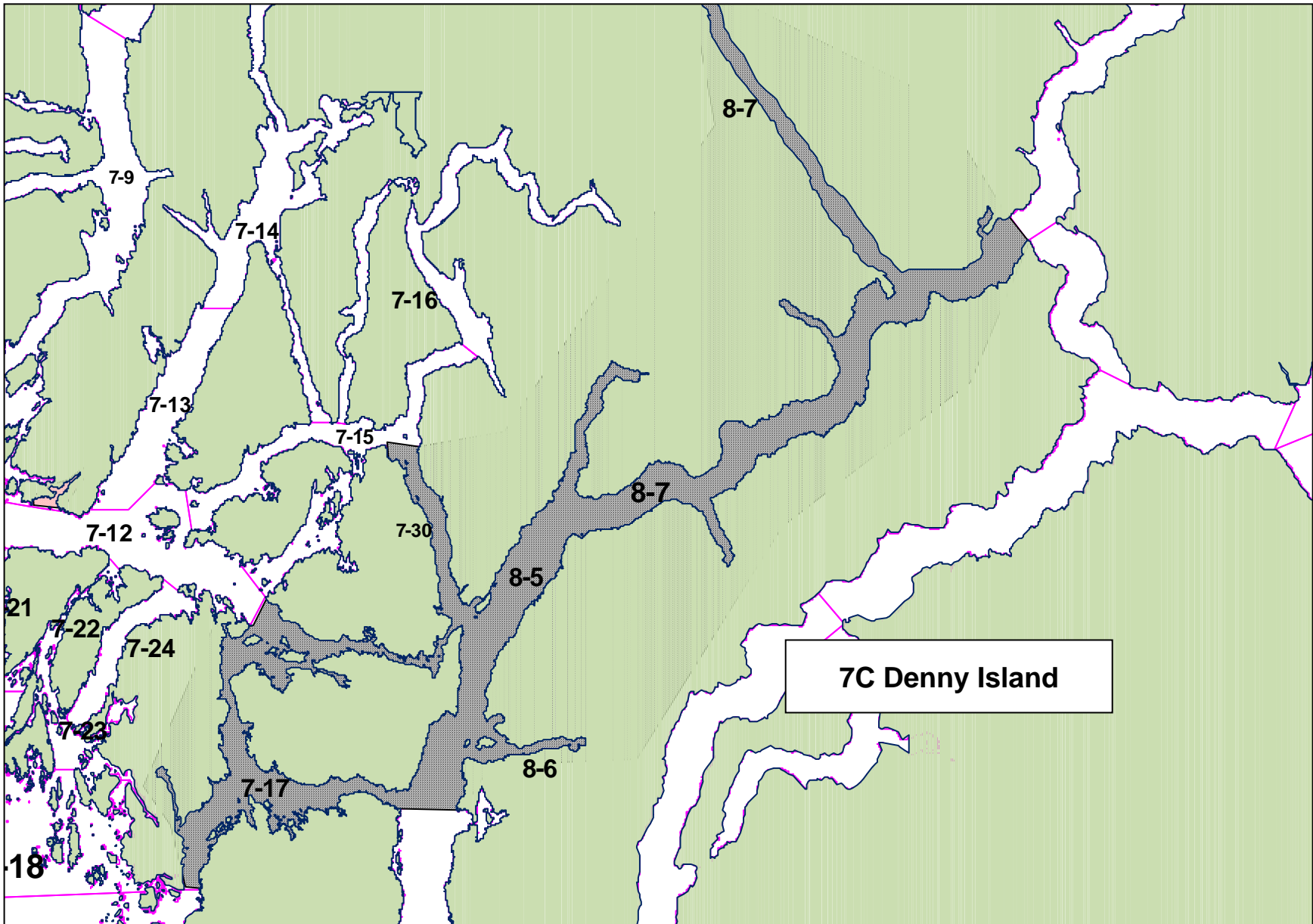


Figure 8: Commercial Sea Cucumber Quota Management Area 7C: Denny Island (Subarea 7-17, 7-30, 8-5 to 8-7).

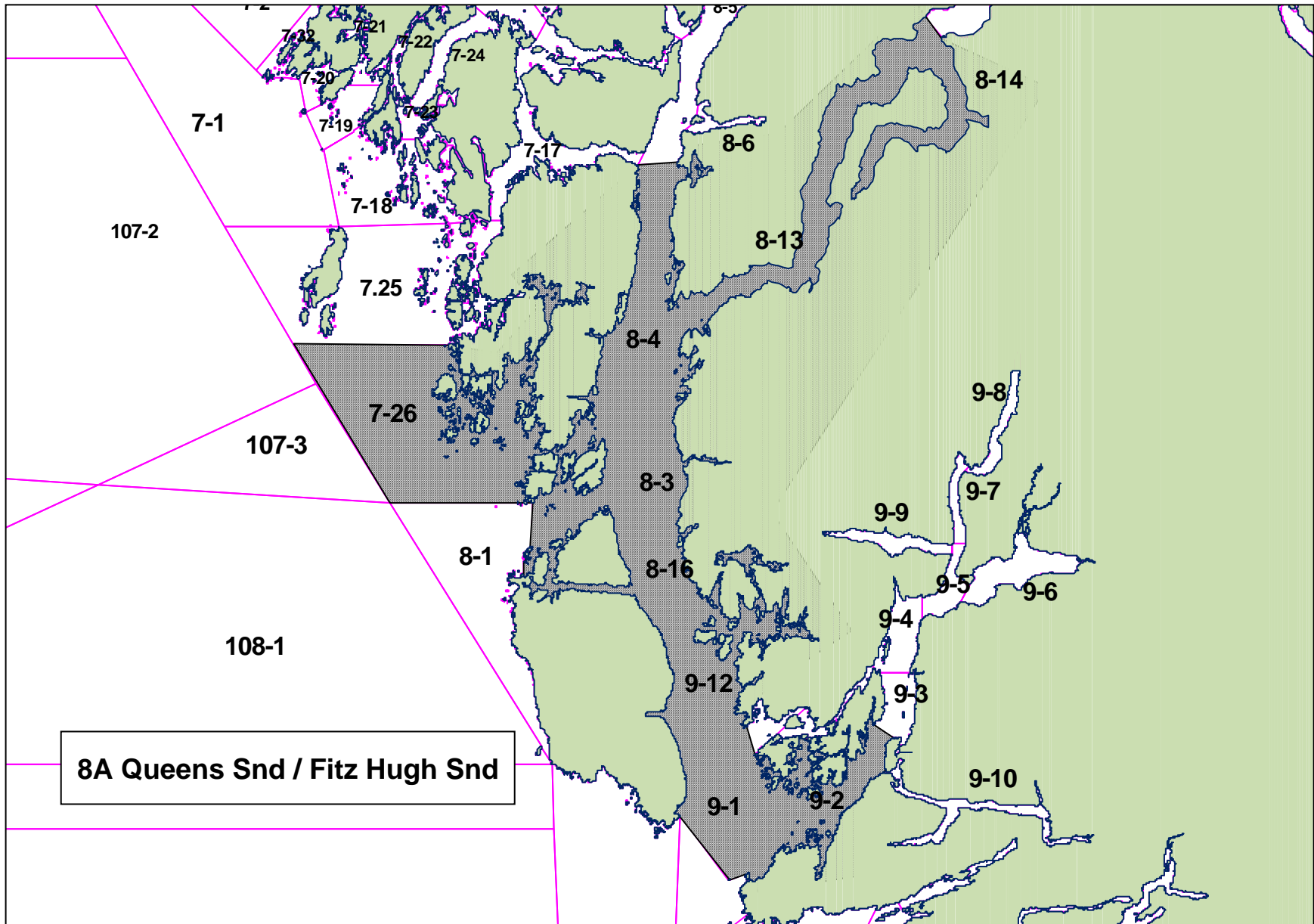


Figure 9: Commercial Sea Cucumber Quota Management Area 8A: Queens Sound/Fitz Hugh Sound (Subareas 7-26 to 7-28, 8-2 to 8-4, 8-13, 8-14, 8-16, 9-1, 9-2, 9-12).

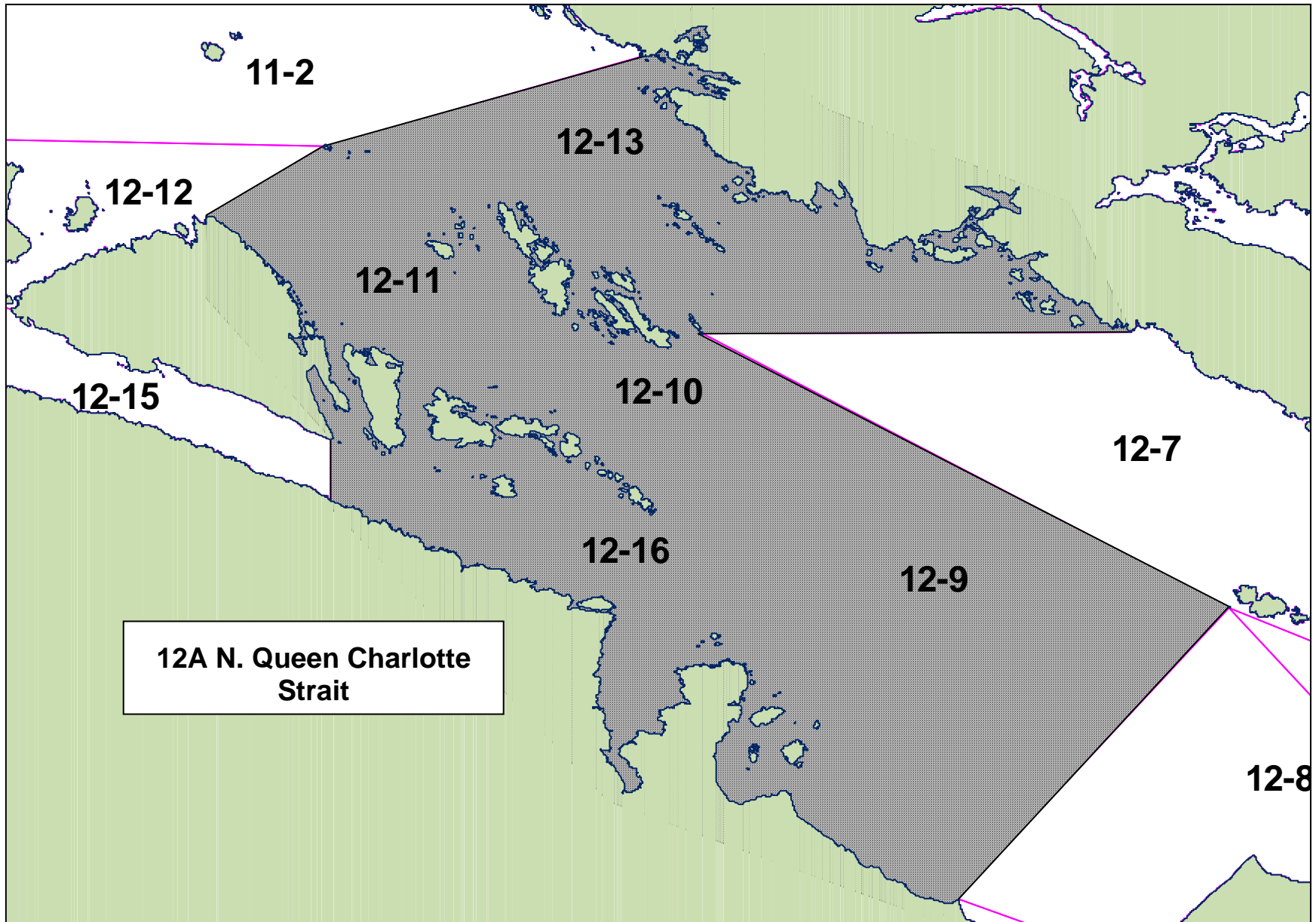


Figure 10: Commercial Sea Cucumber Quota Management Area 12A: N. QC. Strait (Subareas 12-9 to 12-11, 12-13, 12-16).

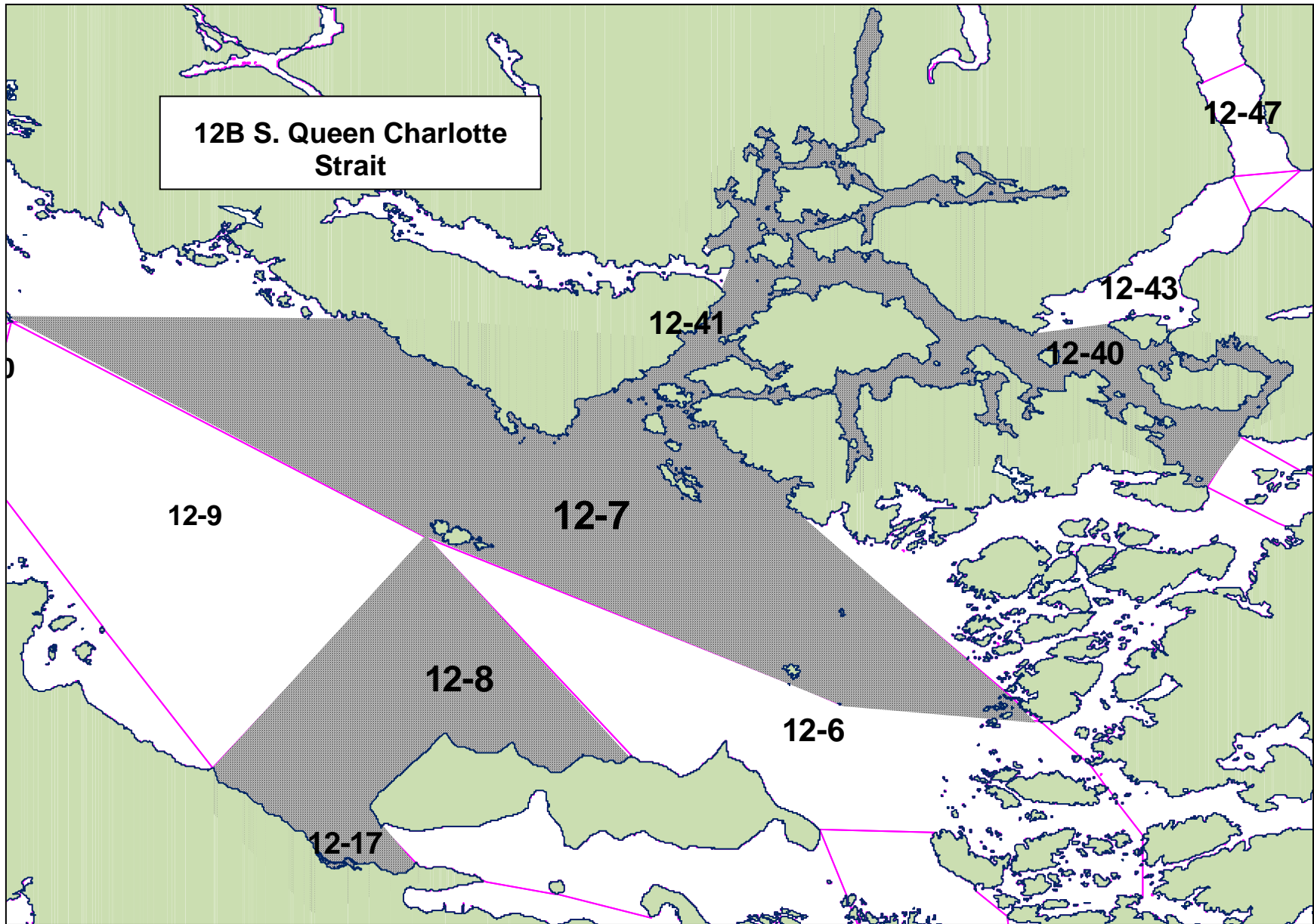


Figure 11: Commercial Sea Cucumber Quota Management Area 12B: S. QC Strait (Subareas 12-7, 12-8, 12-17, 12-40, 12-41).

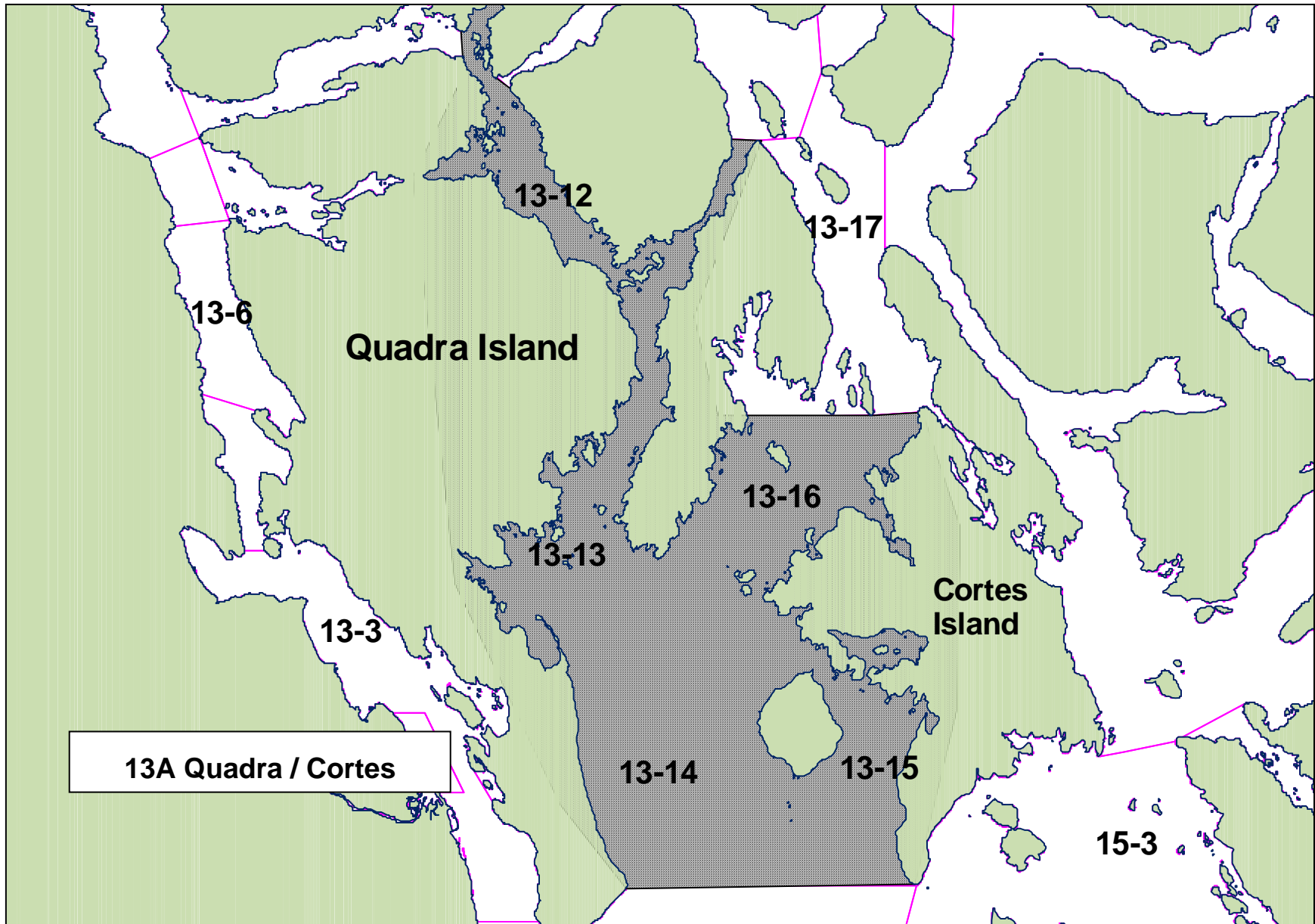


Figure 12: Commercial Sea Cucumber Quota Management Area 13A: Quadra/Cortes (Subareas 13-12 to 13-16).

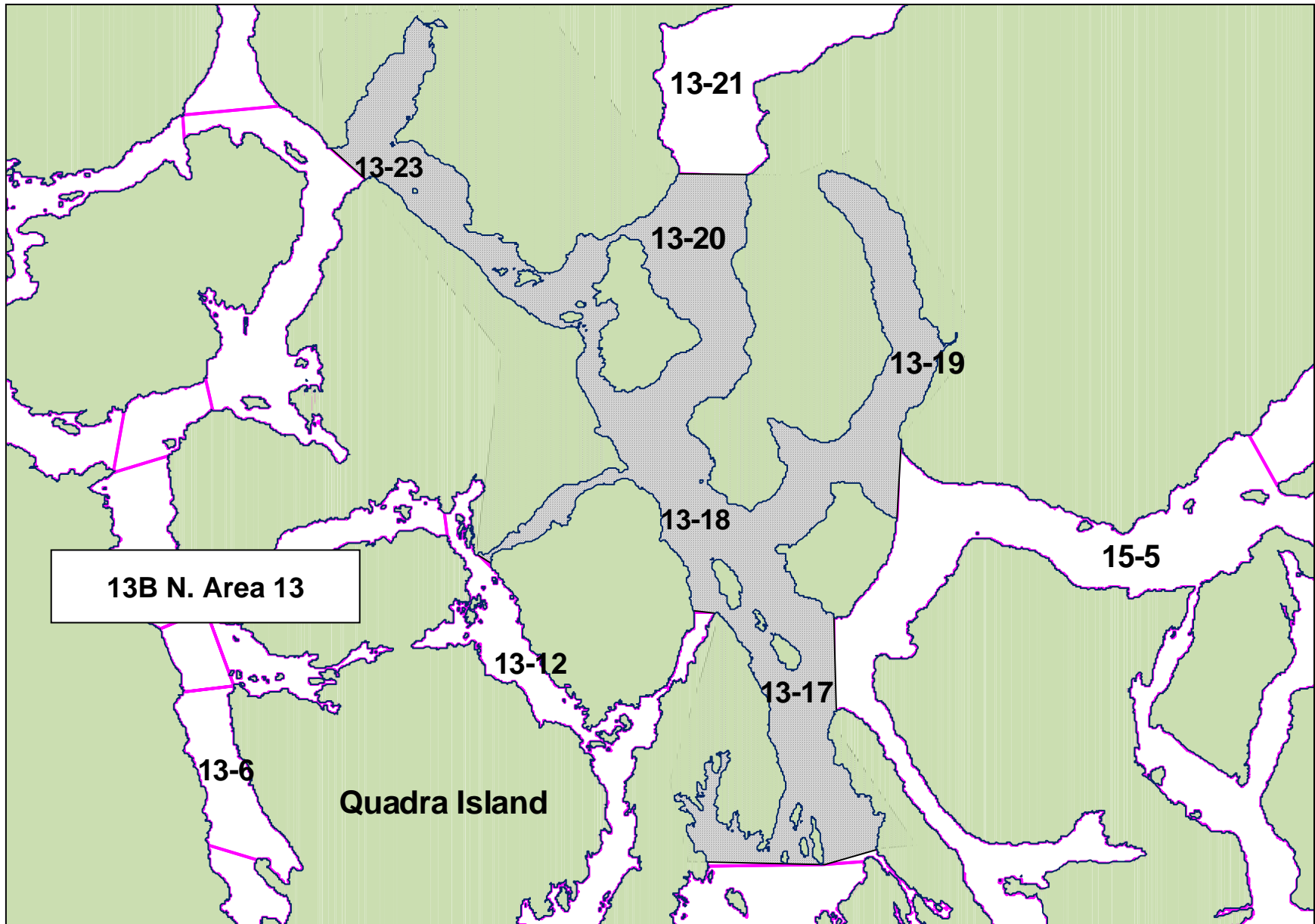


Figure 13: Commercial Sea Cucumber Quota Management Area 13B: N. Area 13 (Subareas 13-17 to 13-20, 13-23).

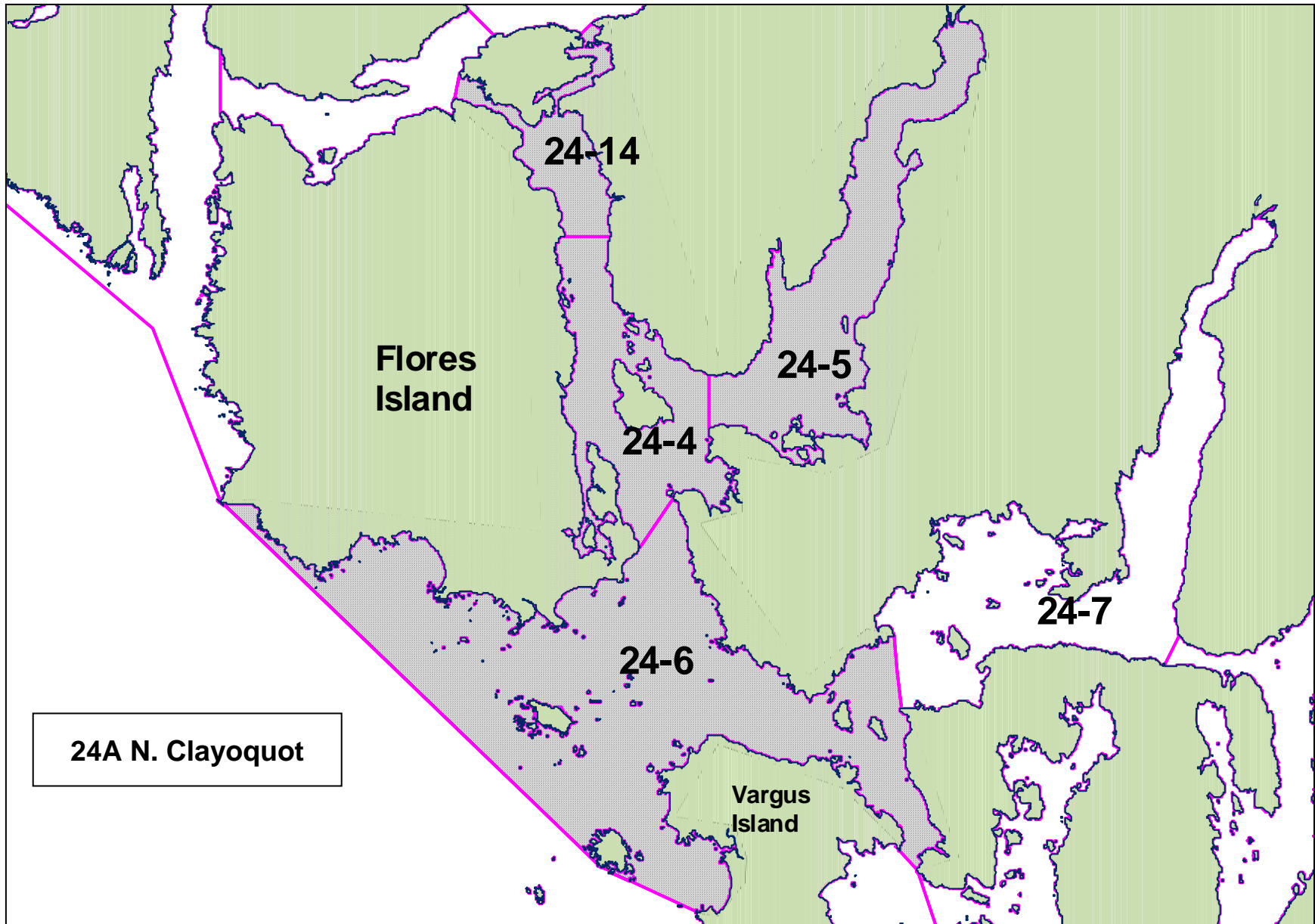


Figure 14: Commercial Sea Cucumber Quota Management Area 24A N. Clayoquot (Subareas 24-4 to 24-6, 24-14).

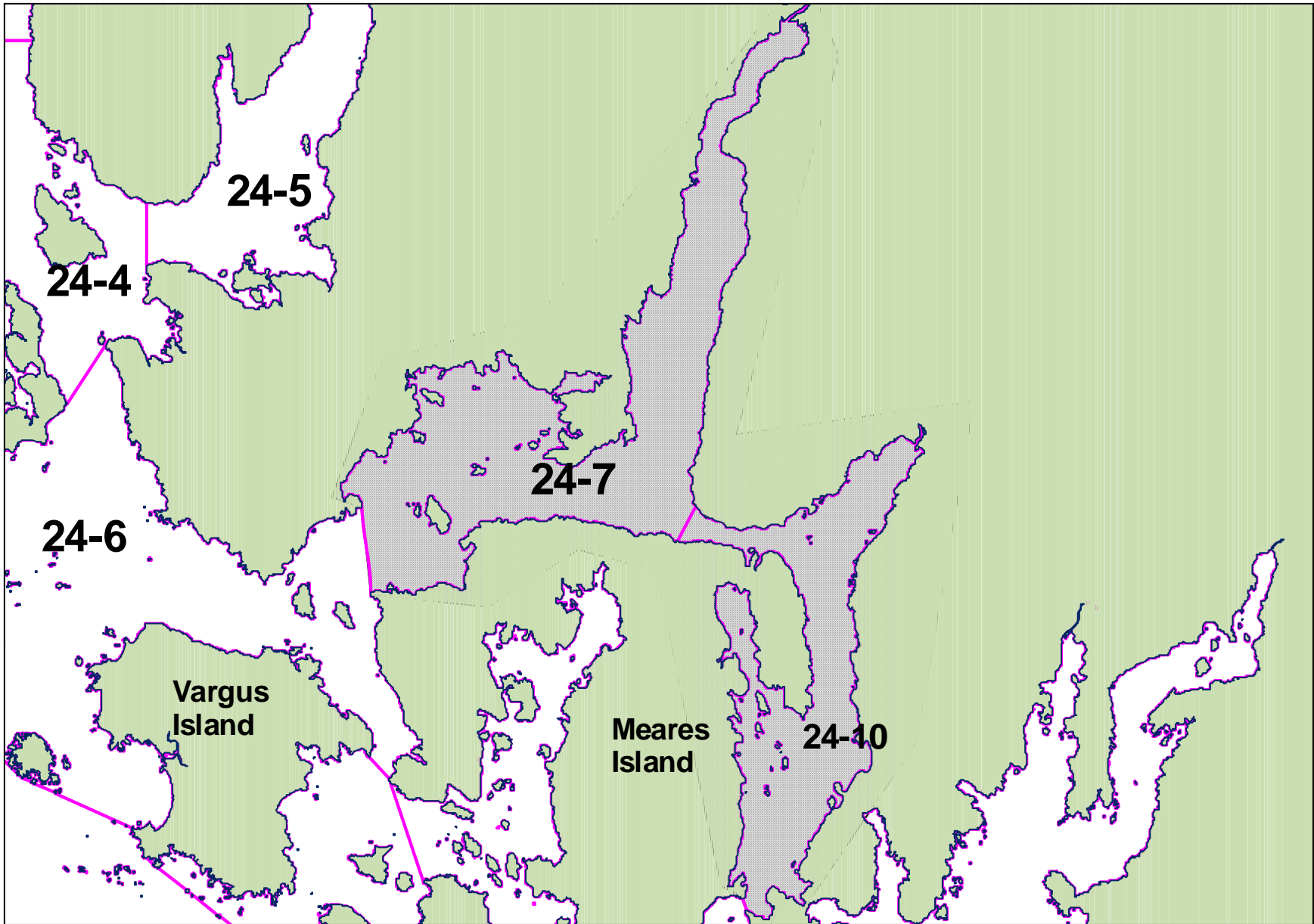


Figure 15: Commercial Sea Cucumber Quota Management Area 24B S. Clayoquot (Subareas 24-7 and 24-10).

Appendix 8: Example of Sea Cucumber Conditions of Licence

This example of conditions of licence is provided for your information only. These conditions of licence are generic and may not be the same as those provided when a licence is issued. The actual conditions of licence will be attached to the licence issued by a Pacific Fishery Licensing Unit.

CONDITIONS OF [YEAR] SEA CUCUMBER LICENCE

Licence Period: October 1, [Year] to September 30, [Year]

Authority

The Department of Fisheries and Oceans has authority to set licensing conditions under subsection 22(1) of the Fishery (General) Regulations for the proper management and control of fisheries and the conservation and protection of fish.

Persons fishing under authority of this licence may only do so in accordance with the Conditions stated below.

Also, it is the responsibility of individual fishers to be informed of, and comply with, the Fisheries Act and the Regulations made thereunder, in addition to these Conditions.

For information on management of the sea cucumber fishery obtain a copy of the [Year] Sea Cucumber - Integrated Fisheries Management Plan from a Pacific Fishery Licensing Unit Office. The Management Plan is intended for general information purposes only. Where there is a discrepancy between the Plan and the Fisheries Act and regulations or these Conditions, the Fisheries Act and regulations and these Conditions prevail.

Definitions:

“Area” and “Subarea” have the same meaning as in the Pacific Fishery Management Area Regulations.

“container” means a mesh pick bag, a mesh transport bag, a plastic tote or cage used for the gathering, handling or transportation of sea cucumber.

“Department” means the Department of Fisheries and Oceans.

“harvested” means removing, by any means, sea cucumber from the substrate of the ocean floor.

“landed” or “landing” means the transfer of sea cucumber from a vessel in the water to land.

“observer” means an individual who has been designated as an observer by the Director-General for Pacific Region pursuant to section 39 of the Fishery (General) Regulations.

“Quota Management Area” means those areas enumerated and described in Appendix 1 of the [Year] Sea Cucumber – Integrated Fisheries Management Plan.

“tranship” means the transfer of sea cucumber from a vessel to another vessel.

“validated” means sea cucumber have been weighed by an observer and the weight entered into the Sea Cucumber Validation & Harvest Logbook (see sections 10 and 12) or an alternative log approved by the Department of Fisheries and Oceans.

“vessel registration number” or “VRN” means the number assigned to a vessel by the Department at the time the vessel is registered as a fishing vessel;

1. Species of fish permitted to be taken:

Sea cucumber (*Parastichopus californicus*)

2. Licence Expiry Date:

This licence expires on September 30, [Year].

3. Quantities permitted to be taken:

The maximum quantity of sea cucumber authorized to be taken under this licence shall not exceed XX tonnes (XX lb.) of split and eviscerated sea cucumber harvested from within the area set out in this licence subject to all applicable regulations.

4. Waters in which fishing is permitted:

Area of fishing is as set out in this licence.

5. Fishing gear permitted to be used:

Hand picking by divers only. Suction devices are not permitted to be used.

6. Fishing multiple Quota Management Areas

All sea cucumber caught in a Quota Management Area must be landed or transhipped prior to the commencement of fishing in a new Quota Management Area.

7. The type and size of containers to hold or transport sea cucumber and the marking of such containers:

(1) All sea cucumber delivered to designated landing ports or transhipped to another vessel shall be placed in containers which are labelled. The label must be waterproof and shall provide the following information written in water resistant ink:

- (a) vessel name and vessel registration number;
- (b) licence tab number;
- (c) harvest date;
- (d) harvest Subarea;
- (e) location of catch; and
- (f) common product name, i.e. sea cucumber.

(2) All harvested sea cucumber that are contained in “pick bags” or any other type of container and left unattended in the water must be labelled. The label must be waterproof and marked with the vessel name and the vessel registration number of the vessel used to harvest that product. Floats attached to containers left unattended in the water must also be marked with the vessel registration number.

8. Transshipment:

Sea cucumber may be transhipped from the licensed vessel to another vessel licensed for the transportation of fish provided the vessel master complies with the following conditions:

- (1) all sea cucumber are in containers and tagged as per section 7;
- (2) the number of containers are recorded in the log;
- (3) the “packer weight”, (determined by adding the weight of the sea cucumber to the weight of the container), is recorded in the log; and
- (4) a copy of the log accompanies the sea cucumber to port; and
- (5) the sea cucumber is landed at one of the locations listed in section 9 and validated by an observer.

9. Locations permitted for the landing of sea cucumber:

Sea cucumber must be landed at one of the following ports:

- (1) For fisheries in waters off the east coast of Vancouver Island: Port Hardy, Port McNeill, Herriot Bay and Campbell River.
- (2) For fisheries in waters off the west coast of Vancouver Island: Tofino.
- (3) For fisheries in waters north of Cape Caution: Prince Rupert, Port Edward, Klemtu, Bella Bella and Port Hardy.

This condition applies to both the licensed vessel and, if the vessel master chooses to tranship his catch to another vessel, to the vessel receiving the sea cucumber.

10. Validation:

(See Explanatory Note after section 14)

- (1) All sea cucumber harvested or removed from the sea bed floor must be validated at the point and time the fish are landed.
- (2) All weights must be determined using a scale approved by Industry Canada.
- (3) Weights will be recorded as split and eviscerated weights. If the whole product is landed then a conversion factor of 2.73 will be used to convert to split weight.
- (4) The vessel master of the licensed vessel or, if the catch is transhipped to another vessel, the vessel master of that vessel shall provide the observer with a hard copy of the Sea Cucumber Validation and Harvest Log and the chart information upon completion of each validation.
- (5) The vessel master of the licensed vessel or, if the catch is transhipped to another vessel, the vessel master of that vessel shall provide to the observer at the point of landing, access to the vessel's fish holds, freezers and other fish storage areas at any time during the landing.

11. Oral Reports:

- (1) The vessel master shall, under the circumstances set out in subsections 11(2) to 11(6), report the information set out therein by notifying in person an observer or by telephoning (800) 775-5505 (available 24 hours per day).
- (2) At least 24 hours before a fishing trip:
 - (a) vessel name, vessel master's name and vessel registration number;
 - (b) species to be fished, (i.e. sea cucumber);
 - (c) Subarea(s) to be fished;
 - (d) anticipated time of arrival at the fishing location; and
 - (e) anticipated time that fishing will begin.
- (3) Upon failure to arrive at fishing location within 24 hours of time stated in subsection 11(2):
 - (a) vessel name and vessel registration number; and
 - (b) details of change in fishing plans.
- (4) At least 24 hours prior to moving to a new Quota Management Area:
 - (a) vessel name, vessel master's name and vessel registration number;

- (b) species to be fished;
- (c) Subarea(s) to be fished;
- (d) anticipated time of arrival at the fishing location; and
- (e) anticipated time that fishing will begin.

(5) After a fishing trip:

- (a) vessel name, vessel master's name and vessel registration number;
- (b) species fished;
- (c) Subarea(s) that were fished; and
- (d) time that fishing stopped.

(6) At least 24 hours before landing sea cucumber:*

- (a) vessel name, vessel master's name and vessel registration number;
- (b) species to be landed;
- (c) name of the designated landing port and location therein where the catch shall be landed;
- (d) anticipated time of landing;
- (e) name of fish processor or buyer that is buying or transporting the catch; and
- (f) if applicable, the method of transporting the catch to a fish processor.

* If weather results in a delay in arrival time or an earlier arrival time the observer must be contacted as soon as possible. Contact numbers for observers are available by calling (800) 775-5505.

12. Harvest Logs and Chart Data:

(See Explanatory Note after section 14)

It is a condition of this licence that the licence holder ensures that harvest log and chart information is received by Fisheries and Oceans Canada Shellfish Data Unit.

- (1) The vessel master must maintain a log of all harvest operations and provide this information in both hard (paper) copy and electronic copy to the Department. The content and format of this log (paper and electronic) must meet the requirements as defined by the Shellfish Data Unit for the 2005/2006 licence year.
- (2) The harvest and fishing location information recorded in the log shall be complete and accurate.
- (3) The information for each day's harvest operations shall be recorded in the log no later than midnight of that day.
- (4) The log must be kept on board the licensed vessel.

(5) The log must be produced for examination on demand of a fishery officer, a fishery guardian or an observer.

(6) The vessel master must provide a chart record of the locations fished to the Department.

- (a) The chart must be marked with:
- (i) the vessel registration number;
 - (ii) the licence tab number; and
 - (iii) the validation I.D. numbers.

The validation I.D. number is the unique page number assigned to each validation page of the Sea Cucumber Validation and Harvest Logbook. If an alternative log is used, the validation I.D. number is the unique page number assigned by the Shellfish Data Unit when the licence holder contacts the Unit to obtain the information necessary to fulfill the log requirements.

(b) Each harvest site must be clearly marked on the chart with dive numbers and dates that fishing activity occurred at each site. The dive numbers on the chart record must correspond to the dive numbers in the log.

(c) The information for each day's harvest operations shall be recorded on the chart record no later than midnight of that day.

(7) The vessel master must make provisions to have the chart information referred to in subsection 12(6) electronically captured into Geographical Information System (GIS) software and forwarded to the Pacific Biological Station, Nanaimo.

(8) The completed log pages (original copy), electronic copies of the log and the chart record of locations fished, must be forwarded within 28 days following the end of each month in which fishing occurred to:

Fisheries and Oceans Canada
Shellfish Data Unit
Pacific Biological Station
Hammond Bay Road
Nanaimo, BC V9R 5K6

Tel: (250) 756-7022 or (250) 756-7306

(9) In the event that a licence holder does not fish the [Year] fishing season, the licence holder is responsible for submitting a nil report. 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 licence holder constitutes a nil report.

13. Fish Slips:

An accurate written report shall be furnished on a fish slip of all fish and shellfish caught and retained under the authority of this licence. A report must be made even if the fish or shellfish landed are used for bait, personal consumption or disposed of otherwise. The report shall be mailed not later than seven days after the offloading and sent to:

Fisheries and Oceans Canada
Regional Data Unit
Suite 200 – 401 Burrard Street
Vancouver, BC V6C 3S4

Fish slip books may be purchased through Departmental offices. Phone (604) 666-2716 for more information.

14. Workers' Compensation Board Requirements:

All sea cucumber divers shall be in possession of a Workers' Compensation Board Seafood Harvesting Diving Certificate.

Explanatory Note - Harvest Log, Chart Data and Validation: The Sea Cucumber Validation & Harvest Logbook issued by the service bureau contracted by the Pacific Sea Cucumber Harvesters' Association is approved for both form and content by the Shellfish Data Unit. This service bureau will provide, for a fee, the logbook and coding, keypunching, electronic chart data capture and validation services.

Fishers who do not use the logbook and coding, keypunching, electronic chart data capture and validation services provided by this service bureau, must contact the Shellfish Data Unit at (250) 756-7306 or (250) 756-7022 in order to obtain the information necessary to fulfil these requirements.

Appendix 9: 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, protect the vessel from 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 B.C., WorkSafeBC has jurisdiction over health and safety issues in commercial fishing, which includes the health and safety of the crew and the design, construction and use of fishing equipment on the vessel. WorkSafeBC and TCMS entered into a Memorandum of Understanding (MOU) on fishing vessel safety that addresses jurisdiction. The MOU states that each party will work co-operatively to ensure vessels and their crews remain healthy and safe. DFO (Fisheries and Aquaculture Management (FAM) and CCG) and TC have an MOU to formalize cooperation and to establish, maintain and promote a safety culture within the fishing industry.

Before leaving on a voyage the owner, master or operator must ensure that the fishing vessel is capable of safely making the passage. Critical factors for a safe voyage include the seaworthiness of the vessel, vessel stability, having the required safety equipment in good working order, crew training, and knowledge of current and forecasted weather conditions.

Useful publications include Transport Canada Publication TP 10038 '*Small Fishing Vessel Safety Manual*' which can be obtained from TC or printed from their website:

www.tc.gc.ca/MarineSafety/Tp/Tp10038/tp10038e.htm.

There are several issues that are important for fishing vessel safety, including three priority areas: vessel stability, emergency drills, and cold water immersion.

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. Fishers 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.

Fish Safe

Vessel masters and crew are encouraged to become more knowledgeable about vessel stability. FishSafe BC developed the Fish Safe Stability Education Course, which is available to all fishermen who want to improve their understanding of stability and find practical application to their vessel's operation.

Fish Safe is coordinated by Gina Johansen and 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 fishermen.

Fish Safe also works closely with WorkSafeBC to improve the fishing claims process.

Gina Johansen, Safety Coordinator
Fish Safe
1100-1200 West 73rd Avenue
Vancouver, BC V6P 6G5
Phone: 604-261-9700
Fax: 604-267-3015
www.fishsafebc.com

Emergency Drill Requirements

The master must establish procedures and assign responsibilities to each crew member for emergencies such as crew member overboard, fire, flooding, abandoning ship and calling for help.

Since July 30, 2003 all crew with more than 6 months at sea are required to have taken minimum Marine Emergency Duties (MED) training or be registered for such training. MED provides a basic understanding of the hazards associated with the marine environment; the prevention of shipboard incidents (including fires); raising and reacting to alarms; fire and abandonment situations; and the skills necessary for survival and rescue.

Cold Water Immersion

Drowning is the number one cause of death in B.C.'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. 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 WorkSafe BC website).

Other Issues

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:

www.weatheroffice.ec.gc.ca/marine/region_03_e.html

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 fishers 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.

Fishers 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.

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.pacific.ccg-gcc.gc.ca

Collision Regulations

Fishers 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, fishers 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 (604) 775-8862 or from Coast Guard website:

www.pacific.ccg-gcc.gc.ca/mcts-sctm/index_e.htm.

Buddy System

Fishers 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 fisher 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.

WorkSafe BC

Commercial fishing is legislated by the requirements for diving, fishing and other marine operations found in Part 24 of the Occupational Health and Safety Regulation (OHSR). Many general hazard sections of the OHSR also apply. 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 investigation issues. Part 3 of the Workers Compensation Act (WCA) 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:

Shane Neifer, Terrace	(250) 615-6640
Pat Olsen, Richmond	(604) 244-6477
Mark Lunny, Courtney	(250) 334-8732

or the Focus Sector Manager for fishing Bruce Clarke, Prince George, (250) 612-3708). For information on projects related to commercial fishing contact Ellen Hanson: (604) 233-4008; toll free 1-888 621-7233 ext. 4008; email Ellen.Hanson@worksafebc.com.