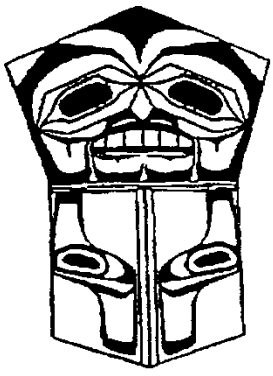
PACIFIC REGION

HEILTSUK TRIBAL COUNCIL / FISHERIES AND OCEANS CANADA

INTERTIDAL CLAM

JOINT MANAGEMENT PLAN

DECEMBER 20, 2023 TO NOVEMBER 14, 2025



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1. OVERVIEW

1.1 Introduction

The Pacific Region Heiltsuk Tribal Council/Fisheries and Oceans Canada Intertidal Clam Joint Management Plan (JMP) encompasses the period of December 20, 2023 to November 14, 2025. The Heiltsuk Intertidal Clam Commercial Harvest Plan is attached as Appendix 1 to this JMP. Commercial harvesters are advised to review the attachments for harvest information. Annually the appendices to this plan will be updated in consultation with the Heiltsuk Tribal Council.

1.2 Goals and Objectives

1.2.1 To ensure conservation and protection of invertebrate stocks and their habitat through the application of management principles applied in a risk averse and precautionary manner based on the best scientific advice and Indigenous knowledge available.

1.2.2 To meet the federal Crown's obligations regarding First Nations fisheries for food, social and ceremonial purposes.

1.2.3 To develop sustainable fisheries through partnership and co-management arrangements with client groups and stakeholders to share in decision making, responsibilities, costs, and benefits.

1.2.4 To develop fishing plans and co-operative research programs which will contribute to improving the knowledge base and understanding of the resource.

1.2.5 To consider the goals of stakeholders with respect to social, cultural and economic value of the fishery.

1.2.6 To consider health and safety in the development and implementation of Integrated Fisheries Management Plans, fishery openings and closures.

1.3 History

Commercial clam fishing began in BC before 1900. Initially, the intertidal clam fishery focused largely on butter clams which were harvested for canning at various processing facilities along the coast. A major portion of this fishery occurred in the North Coast areas where butter clams were abundant.

In response to changing market demands, steamer clams (predominantly manila clams) have largely replaced butter clams in the fishery as they are more acceptable on the market as fresh product. Further, manila and littleneck clams retain paralytic shellfish toxins (PSP) for a much shorter period than butter clams, adding to their appeal as a fresh product. From 1963, the North and Central Coast butter clam fisheries declined and most manila and littleneck clam harvests occurred in the south. With this decline, biotoxin monitoring and water quality assessment programs

were discontinued in the North and Central Coasts, resulting in a closure of the fishery in all areas which continues to the present day. The closure is to ensure public health and safety in the absence of monitoring programs as high levels of PSP can occur in clams in many North and Central Coast locations.

Manila clams, which now comprise the majority of clam landings in the BC fishery, were unintentionally introduced into BC with imported Japanese oyster seed in the early 1930s. Their distribution spread rapidly in the Strait of Georgia and along the West Coast of Vancouver Island and found quick acceptance in commercial and recreational fisheries. Manila clam distribution is limited to areas of suitable habitat and temperature regimes. In the Central Coast limited stocks occur in select areas and are the northern limit of distribution of manila clams along the BC coast.

The Heiltsuk Tribal Council first requested that a manila clam fishery be considered in their territorial area in 1988, and a proposal for conducting biotoxin monitoring and water quality assessments to classify growing water areas was subsequently developed by the Heiltsuk Tribal Council. In 1993, an agreement was reached between Fisheries and Oceans Canada (DFO) and the Heiltsuk Tribal Council that established a three-year pilot fishery under a joint management plan. At that time, the clam agreement was a sub-agreement to the Heiltsuk's main DFO Agreement under the Aboriginal Fisheries Strategy (AFS Program)**.** The clam agreement laid out the licensing, harvest allocation, size and quota restrictions, area restrictions, enforcement, and monitoring protocols and catch validation requirements for the fishery. The agreement limited the number of participants to 75 with 50 designated for Manila harvesting only and 25 for littleneck harvesting. This pilot fishery ran for six years before becoming a permanent fishery managed under a yearly Heiltsuk/DFO Joint Management Plan. Since 2001, a yearly amendment is made to the main Heiltsuk/DFO AFS agreement to include the clam fishery, and lays out the requirements for the fishery as described above.

The Heiltsuk Tribal Council has since created the Heiltsuk Integrated Resource Management Department (HIRMD) to be the agency responsible for management of the resources of the Heiltsuk Nation. The HIRMD structure is made up of the Lands, Aquatics, Culture and Heritage Divisions. The Aquatics division has replaced the Heiltsuk Fisheries Program in name and responsibilities.

Unlike the commercial clam fishery in South Coast areas, which is managed by time and area closures and minimum size limits, the management approach for the Heiltsuk clam fishery is to set an annual total allowable catch (TAC) and minimum size limits for each species. The initial TAC was based on surveys undertaken in these areas in 1990 and 1992 (Bourne and Cawdell, 1992, Bourne et al. 1994) and was set to ensure sustainable harvests due to concerns regarding recruitment and distribution of Manila clams in North Coast areas.

In order to manage the fishery under a TAC, a dockside validation program for the Heiltsuk clam fishery was started for the 2000/2001 fishery and continues to be a requirement for the management program. This program requires that all clams harvested must be weighed and validated by a DFO certified observer with a certified scale.

Landings from the Heiltsuk clam fishery have been reported for each year since 1993 in which there was a fishery. Annual landings have varied from a low of 25.4 tonnes in 1997/98 to a high of 114.1

tonnes in 1994/95 and annual landed values have varied between $111,000 (1997/98) and $385,000 (2001/2002).

2. STOCK STATUS

In 1993 the annual TAC for manila, littleneck, and butter clams was set at 113 tonnes (250,000 lbs.) for each species. Based on assessment work and a review of the fishery through Pacific Science Advice Research Committee (PSARC) (Gillespie et al. 1999), and a decline in commercial interest for littleneck and butter clams, the TAC for 1999 and 2000 was set at 68 tonnes (150,000 lbs.) for Manila clams only.

A working paper, which reviewed the Area 7 manila clam fishery was presented and accepted during the June 2001 PSARC Shellfish Sub-committee meeting (Gillespie et al. 2001). The working paper recommended that index beaches be established in all areas in which harvesting takes place and that harvest threshold levels, based on biomass estimates from the index beaches, be set for each Subarea to minimise the risk of local stock depletions. Based on the recommendations of the working paper, Subarea thresholds are now based on estimated changes in biomass on index beaches. Thresholds may be set for Subareas: 7-9, 7-12, 7-15, 7-17, 7-21, 7-22, 7-23, and 7-24. Subareas that lack data to set thresholds may be assigned a conservative threshold of 1,000 kg (2,205 lbs) to allow for some harvest and identify beaches to be used as index beaches in future years.

The stock assessment program for the commercial manila clam fishery has been developed jointly by the Heiltsuk Integrated Resource Management Department (HIRMD)-Aquatics Division and DFO Stock Assessment Division. The program requires assessment surveys of index beaches in the main Subareas fished. Survey protocols and reporting requirements are outlined in "A Manual for Intertidal Clam Surveys" (Gillespie and Kronlund 1999). The purpose of these surveys is to monitor stock abundance and population characteristics, primarily age structure, growth and recruitment. Survey analyses and reports will be completed by HIRMD, and submitted to DFO Stock Assessment for review and consideration in the development of the next season's management plan.

Native littleneck clams were added to the commercial fishing plan in the 2002/2003 season as a result of renewed interest by the harvesters. Specific littleneck licences will be designated, upon request, in an attempt to harvest the littleneck TAC. These licences are valid for the harvesting of littleneck clams only and will be issued only if there is interest expressed.). It is hoped that the diggers will be able to find and identify beaches that will be added to the annual survey to better determine Littleneck distribution and abundance.

In 2003 and 2004 one beach in Subarea 8-4 was surveyed specifically to assess the littleneck biomass for a potential fishery in area 8. The legal biomass was 7,074 kg in 2003 and 6,243 kg in 2004 which were substantially higher than the biomass found in the other 15 beaches surveyed in other subareas in those years combined. Despite the high commercial potential in 8-04, the distance to the area, the hard digging (beach hadn't been turned over/dug since the 1960s) and

market conditions proved to be a deterrent to the fishermen and little to no harvest has occurred in this area.

In 2010 there was renewed interest expressed from harvesters in exploring options for butter clams as a commercially-viable species. In 2011 with information from community elders, a primary survey of the Heiltsuk Territory was done to determine the number and location of potential butter clam harvest sites that could support a commercial harvest and would not conflict with food, social and ceremonial (FSC) harvest locations. From this survey, four beaches were initially identified as potential sites and more intensive stock assessment surveys were completed. For the 2011-12 season, butter clams were added back into the Joint Management Plan as a commercially-harvestable species and a TAC by beach was assigned using a precautionary harvest rate. Additional surveys were undertaken during the summer of 2012 in an effort to expand the available harvest area and as a result the TAC was increased for this species using the same harvest rate. In 2013, the TAC used a precautionary harvest rate and a conservative estimate of the total harvestable area. DFO and the Heiltsuk First Nation, through HIRMD and the Heiltsuk Economic Development Corporation, will continue to work together to further develop both the management program and stock assessment framework for this species if there is any interest. Methods for TAC determination for the butter clam fishery will need to be reviewed by the Canadian Science Advice Secretariat.

As a result of a diesel spill in the vicinity of Gale Passage in Seaforth Channel in the fall of 2016, the Pacific Region Interdepartmental Shellfish Committee (PRISC) placed a precautionary chemical contamination closure within portions of Pacific Fishery Management Area 7. In response to May 2017 Health Canada advice, DFO lifted the emergency chemical contamination closure in January 2018. No commercial harvest had been conducted from 2016 until 2019.

JMP was renewed in 2019-20 with TAC set for harvest in 7-13, 7-14, 7-15, and 7-17; however, only Subarea 7-17 was harvested . Similarly only Subarea 7-15 and 7-17 were harvested from 2020 through 2022/23 at the discretion of the Heiltsuk due to Heiltsuk knowledge-based assessments and the application of principles of Heiltsuk Ğviḷás. .

For the 2023-24 season the Heiltsuk First Nation has proposed openings in 7-9, 7-12, , 7-15, 7-17, 7-22, 7-23, and 7-24. As a result a TAC has been set.

3. MANAGEMENT ISSUES

As a result of some diggers harvesting clams from closed areas during the 2001/2002 fishery and contaminated product being found by Canadian Food Inspection Agency (CFIA) inspectors, the Heiltsuk Fisheries Program made recommended changes for 2002/2003 to more effectively monitor and enforce the fishery. These changes were endorsed by DFO Resource Management and continue to be included in the fishery management program. Most of the changes were to the Heiltsuk internal clam policy that the diggers must adhere to or risk licence suspension/termination by the Heiltsuk First Nation. The main management change was limiting the opening of Subareas to no more than two Subareas open at a time to harvesting; the goal of this is to increase the efficiency of enforcement personnel (DFO and Heiltsuk) and improve catch information.

The opening of Subareas is to be decided jointly by the North Coast Shellfish Manager and the HIRMD-Aquatics Manager or alternate.

Portions of two Subareas were added to the areas open to harvesting in 2003/2004; these include 8-4, above (north of) the Koeye River and 7-9, below (South of) Moss Pass. These areas were included in the fishery after discussions with the Kitasoo/XaiXais and Wui'kinuxv First Nations. Both of these areas have been surveyed during the annual survey since 2003.

Recruitment rates for butter clams in the North and Central Coasts appears to be quite variable. While information on recruitment rates and response to harvest by this species is documented for fisheries in other parts of the Pacific Coast, there is little information available on these topics for harvest areas in the North and Central Coasts. As such, caution has been exercised in determining harvest rates and TAC for this species in this area. Traditional Ecological Knowledge (TEK) from the Heiltsuk First Nation regarding the response of butter clams to intensive harvest was taken into consideration when establishing the harvest level for this fishery. A full stock assessment framework and subsequent management framework for this species will continue to be developed through a cooperative effort of DFO and the Heiltsuk First Nation should there be any interest in this path.

4. MANAGEMENT MEASURES FOR THE DURATION OF THE PLAN

See the Commercial, First Nations and Recreational Harvest Plans, Appendices 1 to 3 for detail on the following:

- Total Allowable Catch (TAC), Subarea Thresholds;
- Fishing Season/Areas;
- Control and Monitoring of Removals
- Licensing

5. ENFORCEMENT PLAN

DFO has the responsibility to enforce the *Fisheries Act* and associated regulations, to address conservation, health and safety issues and to maintain proper management and control of the various fisheries.

Any suspected or actual fisheries, wildlife or pollution violations can be quickly and discretely reported to the appropriate Enforcement Officer by using the toll free Observe, Record and Report hotline. This toll free number is available 24 hours a day. Confidentiality is assured.

OBSERVE, RECORD AND REPORT - 1-800-465-4DFO (1-800-465-4336)

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

The Aboriginal Fisheries Strategy (AFS) Agreement signed by DFO and the Heiltsuk Tribal Council includes an enforcement protocol. The Heiltsuk provide First Nations guardians to ensure that the clam fishery is carried out according to the Joint Management Plan. The guardians monitor the harvesting of manila clams by the participants both at the harvest locations as well as at offloads.

Enforcement of the fishery is also carried out by the Fishery Officers stationed in Bella Bella. DFO Officers conduct independent and joint patrols with the Heiltsuk guardians on the grounds and at offloads.

The main enforcement concerns in this fishery are: pre-digging and stockpiling before the fishery, harvesting in closed areas, and harvesting in contaminated areas.

6. PERFORMANCE REVIEW

All aspects of the fishery, including pre-season planning, quota and threshold establishment, and post-season review, are discussed at AFS Joint Technical Committee meetings held annually. The AFS Joint Technical Committee is comprised of DFO representatives and Heiltsuk Tribal Council representatives as set out in the Heiltsuk AFS Agreement.

Performance indicators are reported in the Post-Season Review (Appendix 4).

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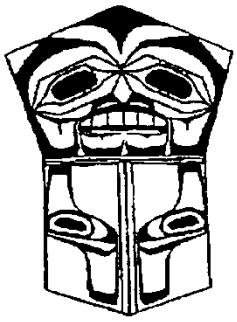
Several research documents are available at the PSARC Internet site: http://www.isdm-gdsi.gc.ca/csas-sccs/applications/Publications/index-eng.asp#RES

Stock Status Report for Manila clams in Area 7 (2001): http://www.isdm-gdsi.gc.ca/csas-sccs/applications/Publications/result-eng.asp?params=0&series=5&year=2001

Science Advisory Report (2010): http://www.dfo-mpo.gc.ca/CSAS/Csas/publications/sar-as/2010/2010_077_e.pdf

INTERTIDAL CLAM
JOINT
MANAGEMENT PLAN
APPENDICES

DECEMBER 20, 2023 TO
NOVEMBER 14, 2025



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APPENDIX 1: 2023-2024 HEILTSUK INTERTIDAL CLAM COMMERCIAL HARVEST PLAN

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1. MANAGEMENT SUMMARY FOR 2023-24

1.1 These Appendices are generally updated annually as part of the Joint Management Plan (JMP). The last JMP expired November 14, 2023.

1.2 The JMP is valid for a 2 year period generally from November 15 to November 14. The commercial harvest plan (Appendix 1 of the JMP) encompasses the period of December 20th, 2023 to November 14, 2024.

1.3 Only the core areas of interest for the 2023/24 JMP were surveyed this year, with the exception of sub-area 7-09, due to tide and time limitations. No depuration beaches were surveyed in 2023.

1.4 For the past 7 years, subareas 7-09, 7-12, 7-21, 7-22, 7-23, and 7-24 have undergone biomass surveys but were not included in the commercial plan due to a self limited harvest by the Heiltsuk following a temporary precautionary chemical contamination closure in place from fall of 2016 to spring of 2018. While the contamination closure was lifted on advice from Health Canada received in 2017, this is the first year the HTC has suggested resuming harvest in the area. The decision to resume fishing in these areas this year is based on Heiltsuk knowledge-based assessment and the application of principles of Ğviḷás. For 2023-24, Heiltsuk have requested to reopen areas 7-9, 7-12, 7-22, 7-23, and 7-24 in addition to 7-15 and 7-17 to the commercial fishery.

1.5 A previous years harvest number informs the model used to set the TAC for the current year. Given the lack of harvest for the part 7 years in 6 of the Subareas, two options were examined, one (Option A) included the last harvest made in in 2015 and the second (Option B) used an average of harvest data from a five year time frame leading up to and including 2015.

1.6 A decision was made between DFO and the Heiltuk to set the TAC for 2023/24 using the Option A

1.7 The TAC for littleneck and butter clams has not been determined. Any commercial harvest of butter clams will be dependent upon the interest of the commercial harvesters, available markets for the product, and on-going discussions with DFO Resource Management and Science staff to determine appropriate harvest levels.

1.8 It is not anticipated that there will be a depuration fishery this year.

2. MANAGEMENT MEASURES FOR THE COMMERCIAL FISHERY

An inter-tidal clam fishery will be supported with management measures in effect.

2.1. Minimum Size Limit

No person shall take clams that measure less than the following, as measured in a straight line through the greatest breadth of the shell (see Appendix 6):

Manila: 38 mm

Butter: 63 mm

Littleneck: 38 mm

All harvesters must have some form of an accurate measuring device to ensure that all clams harvested are not less than the minimum size limit.

2.2. Area Quotas

Only those portions of fisheries management Area 7 listed below will be open to commercial clam harvesting pending acceptable PSP levels and only to authorized harvesters.

No more than two Subareas will be open to harvesting at one time. The opening of Subareas will be decided jointly by the North Coast Shellfish Manager and the HIRMD-Aquatics Manager or alternate.

The TAC for **Manila clams** is set at 29,674 pounds (13,460 kg) with the following harvest threshold levels by Subarea:

Subarea	**2023/2024 Threshold**	
	Pounds	**Kilos**
7-09	1,327	602
7-12	3,419	1,551
7-15	10,307	4,675
7-17	6,457	2,929
7-22 & 23	3,938	1,786

7-24	4,227	1,917
Total:	**29,674**	**13,460**

Manila Clams

The opening of Subareas is dependent on successful adherence to the requirements defined under the Canadian Sanitary Shellfish Program (CSSP). . No more than two Subareas will be opened at a time to harvesting; the goal of this is to increase the efficiency of enforcement personnel (DFO and Heiltsuk) and improve catch information. Subarea openings are to be decided jointly by the North Coast Shellfish Manager and the HIRMD-Aquatics Manager or alternate.

Subareas will close for harvesting, when the threshold level for Manila clams has been reached. The fishery will close when the TAC for Manila clams is attained for each Subarea listed in the above table, or if elevated PSP levels are detected in on-going testing. The fishery may close at any time if markets for harvested product are not available.

Littleneck Clams

The commercial Littleneck clam fishery is closed this season.

Butter Clams

Any commercial harvest opportunities for butter clams is dependent upon the interest of the commercial harvesters, available markets for the product, and on-going discussions with DFO Resource Management and Science staff to determine appropriate harvest levels. The commercial butter clam fishery is closed this season.

2.3. Dockside Validation

The dockside validation program will be discussed in further detail in section 5 of the Commercial Harvest Plan.

2.4. Opening Times

This harvest plan covers the period from December 15, 2023 to November 14, 2024 for the commercial harvest of manila clams. The opening shall commence at 00:01 hours on a date

agreed upon by DFO and the Heiltsuk Tribal Council in the areas set out in this management plan. Proposed openings may vary subject to contamination, conservation, or other reasons in accordance with applicable fisheries regulations. No more than two Subareas will be open to harvesting at one time. Fishers are reminded to check with the HIRMD-Aquatic Division and/or the local DFO office to confirm opening times.

3. CANADIAN SHELLFISH SANITATION PROGRAM

Intertidal bivalve fisheries are limited by programs for monitoring marine biotoxins (PSP, ASP and DSP), sanitary growing water surveys, and DFO capability to enforce closures. These requirements are defined under the Canadian Sanitary Shellfish Program (CSSP) which has been put in place to ensure public health and safety.

3.1. Marine Biotoxin Monitoring Program

Area openings are dependent upon regular submission and analysis of samples for PSP, ASP and DSP analysis, as set out in a biotoxin monitoring protocol administered by the Canadian Food Inspection Agency (CFIA). The HIRMD-Aquatics Division, with funding through DFO's Aboriginal Fisheries Strategy (AFS), conducts the biotoxin monitoring program for its commercial fishery areas and submits regular samples to CFIA.

For 2023-24, the following monitoring sites are being used to test for biotoxin levels:

	Charted Name	Local Name	Area	Sub-area	Latitude	Longitude
1	Reid Passage		7	09	52 17.888N	128 21.942W
2	Ardmillan Bay		7	12	52 11.345N	128 07.351W
4	Troup Passage	Pear Island	7	15	52 13.712N	128 05.482W
5	Lama Passage		7	17	52 05.848 N	128 08.409W
6	Dundavin Inlet		7	22	52 12.627N	128 15.703W
7	Boddy Narrows		7	23	52 08.419N	128 19.159W
8	Raymond Passage		7	24	52 11.532N	128 12.538W

Three consecutive mussel samples (*Mytilus californianus* or *Mytilus edulis*) along with a sample of the targeted species containing acceptable levels of biotoxins must be received in order for CFIA to lift a harvest restriction in an area. CFIA will recommend lifting the biotoxin prohibition and a harvest site can then be considered by DFO for fisheries

openings. Once an area is open, on-going submission of mussel samples is required to maintain the opening. CFIA will recommend closure of the harvest area to DFO if there is a lapse in sample submissions or if unacceptable levels of PSP, ASP or DSP are detected (>80 ug/100 g PSP; >20 ppm domoic acid (ASP); >0.2 ug/g Okadaic Acid/DTX Toxin or Pectenotoxin (DSP)).

3.2. General Information on Closures under the Canadian Shellfish Sanitation Program

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

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

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

  or the toll-free information line at 1-866-431-3474, or by contacting a local DFO office directly. Contact information is available in Appendix 7.

3.2.1. Sanitary Contamination Closures

Shellfish may not be harvested from closed contaminated areas except by special permit licence under the *Management of Contaminated Fisheries Regulations* (MCFR). Currently there is not an approved depuration process for oysters. There are both seasonal and permanent sanitary contamination closures. Descriptions and maps of contaminated closures may be found at the following DFO website: http://www.pac.dfo-mpo.gc.ca/fm-gp/contamination/index-eng.html

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

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

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

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

3.2.2. Biotoxin Contamination Closures

Shellfish may not be harvested from closed areas except by special permit licence issued under the MCFR. Shellfish may not be harvested for consumption from any area closed due to biotoxin contamination. Descriptions of biotoxin closures may be found at the following DFO internet site: http://www.pac.dfo-mpo.gc.ca/fm-gp/contamination/index-eng.html

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

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

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

3.3. Reminder of Requirements for Legal Sourcing and Harvest of Bivalve Shellfish

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

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

of illegal products through legitimate aquaculture businesses. DFO also remains committed to meeting conservation objectives for bivalves as well as supporting priority for Food, Social and Ceremonial fisheries. Any harvest occurring in conflict with established management measures and controls has the potential of negatively impacting the conservation of bivalve populations.

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

Commercial harvesters and aquaculture operators are required to:

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

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

More information on the policies and criteria for harvesting shellfish can be found in the CSSP manual. See also Fishery Notice FN1142 (2019): https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=227228&ID=all

3.4. Human Waste Containment Regulations

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

Transport Canada's Regulations for *Vessel Pollution and Dangerous Chemicals Regulations* under the *Canada Shipping Act*):

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

Information on human waste containment receptacle requirements can be found at the following CFIA internet site:

https://www.inspection.gc.ca/preventive-controls/fish/cssp/questions-and-answers/eng/1563470479199/1563470589053

3.5. Harvesting Bivalves in the Vicinity of Wastewater Treatment Plants

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

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

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

For further information, contact DFO.PACCSSP-PCAMPAC.MPO@dfo-mpo.gc.ca.

3.6. Closures

Closures to the commercial fishery may be in place for a variety of reasons: indigenous and recreational access, parks, marine reserves, research, navigation, or sanitary and marine biotoxin contamination.

- Closure 7.2: Subarea 7-17 Bella Bella: The waters and foreshore of Bella Bella, lying south of a line drawn from the western headland of Cavin Cove to the northern tip of Spirit Island thence to Robins Point, and north of a line drawn from the northern headland of McLoughlin Bay due east to the shore of Denny Island.
- Closure 7.6: Subarea 7-13 Spiller Channel: The waters and intertidal foreshore of Spiller Channel, at the southeast end of Don Peninsula, lying inside a line drawn from a point on land at 52º17.50' north latitude and 128º15.60' west longitude, thence northeasterly to a point on the opposite shore at 52º17.60' north latitude and 128º15.49' west longitude.
- Closure 7.9: Subarea 7-27 Spider Island (Queen's Sound): The waters and intertidal foreshore of the unnamed bay at the south end of Spider Island, on the east side of Queens Sound, lying inside a line drawn from a point on land at 51º50.20' north latitude and 128º15.10' west longitude, thence northwesterly to a point on the opposite shore at 51º50.35' north latitude and 128º15.20' west longitude.
- Closure 7.16: Subarea 7-25 Goose Group: The waters and intertidal foreshore lying inside a line drawn from the southwestern most point of Goose Island to the northernmost tip of Duck Island, thence along the eastern foreshore to the southernmost point of the Island, thence southeasterly to the westernmost point on Gosling Island and continuing north along the western foreshore to the northernmost tip of Gosling Island, thence northwesterly to the 51º55.98' north latitude and 128º26.72' west longitude on Goose Island.
- Closure 7.19: Subarea 7-17 The waters and intertidal foreshore of the unnamed lagoon in Gunboat Passage at the south end of Cunningham Island, lying inside a line drawn from a point on land at 52□° 10.49' north latitude and 127° 58.90' west longitude, thence easterly to a point on land at 52°□ 10.47' north latitude and 127°□ 58.79' west longitude.
- Closure 7.22: Subarea 7-17 Fancy Cove: The waters and intertidal foreshore of the middle arm of Fancy Cove, on Hunter Island, lying inside a line drawn from a point on land located at 52° 3.66' north latitude and 128° 0.84' west longitude on the tip of the headland in the cove, thence easterly to a point on land located at 52° 3.71' north latitude and 128° 0.67' west longitude on the opposite shore.
- Closure 7.B: Subarea 7-15 Wigham Cove (Yeo Island): The waters and intertidal foreshore of Wigham Cove, Yeo Island, inside a line drawn from the headland at the eastern end of the cove entrance at 52º16.64' north latitude and 128º10.40' west

longitude, thence west to the opposite shore at 52º16.64' north latitude and 128º10.51' west longitude. Closed May 31 to September 30.

4. LICENCING

4.1. Species

Manila clams (*Venerupis philippinarum*),

4.2. Gear

Hand picking or hand digging.

4.3. Licence Issue

The fishery is conducted in accordance with the Department's Policy for the Management of First Nations Fishing and is authorized under a license issued under the *Aboriginal Communal Fishing Licences Regulation*s. This licence ("**First Nations Communal Fishing Licence for the Heiltsuk Tribal Council for Clam Harvesting, CC-CL14-042-Heiltsuk**"), is issued to the Heiltsuk Tribal Council and, subject to the *Fisheries Act* and regulations there under, confer the authority to fish under the conditions as outlined in this licence. The Heiltsuk Tribal Council will designate up to a maximum of 60 people who are authorized to harvest clams under the authority of this license.

All persons commercially harvesting intertidal clams are required to have proof of designation from the Heiltsuk Tribal Council and photo identification. The licensee (the Heiltsuk Tribal Council) will supply a list of participants to the Fishery Officer in Bella Bella (fax: 250-927-2767), 24 hours prior to fishing. Any changes to the participants will be submitted to the fishery officer and the fishery manager 24 hours in advance of the change being in effect.

Proof of designation and photo ID must be carried at all times by the participants named in the communal licence when harvesting clams, and must be produced upon demand by a Fishery Officer or Heiltsuk guardian.

5. CONTROL AND MONITORING OF COMMERCIAL FISHING ACTIVITIES

DFO in conjunction with the HIRMD-Aquatics Division will monitor the fishery throughout the season. The HIRMD-Aquatics Division will monitor the quota and provide a weekly summary as to remaining quota to the Fishery Manager in Prince Rupert.

HIRMD office is in daily contact with the harvesters, who report their catch (number of bags) daily to the office. Using a predetermined number of sacks per harvester and an estimated average weight of 40 lbs per sack HIRMD to manage to the TAC. The Heiltsuk acknowledge that when the biomass is good at a beach, bags could be heavier than 40 lb and recognize that this may have allowed for overages to happen in the past. For 2023/2024, HIRMD will use 45 lb as an average weight for a clam bag for the first opening. Number from the validation of the first opening will be used to assess the average weight of bag for the 2nd opening and adjusted to be a minimum of 40 lb based on how well the digging happened during the first opening.

Additionally guardian watchmen are on grounds to monitor the harvest every night.

Harvesters also share information with HIRMD staff with respect to the beach productivity and digging conditions.

Daily and on-going communication between diggers and HIRMD is key and is successful as ensuring a sustainable harvest is conducted.

5.1. Dockside Validation

As per the Aboriginal Communal Licence Regulations, Section 5(1) (e) and the Fishery (General) Regulations, Section 22(n), all clams harvested must be weighed and validated by a DFO certified observer and/or a Heiltsuk Integrated Resource Management Department (HIRMD) Aquatics representative with a government certified scale and the weight entered onto the validation sheet. The validation sheet is to be sent to DFO at completion of the offloading by the observer. A copy of the validation sheet is to be retained by the HIRMD-Aquatics Division, and a copy **must accompany the shipped product**. Completed sheets must be shared with the DFO Fishery Manager at the following address:

Coral Cargill

Coral.Cargill@dfo-mpo.gc.ca

417-2nd Avenue West.

Prince Rupert, BC V8J 1G8

Tel: (250) 627-3021

The list of participants will be emailed to the service provider responsible for validation prior to the offloading occurring. The HIRMD-Aquatics Division will be responsible for ensuring that the service provider and the validator are available.

5.2. Catch Reporting

The HIRMD-Aquatics Division must submit records of catch, effort, date and beach to DFO (similar to the example in appendix 7) regularly during the harvest season. Records are to be emailed to the DFO fishery manager at the completion of harvest in each Subarea and prior to requesting additional Subarea openings. Send to the following:

Coral Cargill

Coral.Cargill@dfo-mpo.gc.ca

417-2nd Avenue West.

Prince Rupert, BC V8J 1G8

Tel: (250) 627-3021

5.3. Confidentiality of harvest data,

(including fishing location data supplied through latitude/longitude co-ordinates or chart records)

Harvest log data and/or fishing location information, supplied by the harvester to DFO in accordance with Conditions of Licence, section 20(1)(b) of the *Access to Information Act,* prevents the department from disclosing to a third party records containing financial, commercial, scientific or technical confidential information. Further, section 20(1)(c) of the Act prevents the department 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.

5.4. Fish Slip Requirements

It is a condition of this plan that an accurate written report shall be furnished on a fish slip of all shellfish caught under the authority of this licence. A report must be made even if the shellfish landed are used for bait, personal consumption, or otherwise disposed. The communal licence number and participant's name must be recorded on all fish slips.

The written report shall be posted not later than seven days after the offloading and sent to:

Fisheries and Oceans Canada

Catch Statistics Unit

200 - 401 Burrard Street

Vancouver, B.C., V6C 3S4

Tel: (604) 666-3784

5.5. Tagging of Clam Product Containers or Sacks

All sacks or containers of clams must have attached to the sack or container, a visible tag, which identifies:

a) the name of the clam digger;

b) the clam harvesting licence number;

c) the beach location, statistical Area and Subarea;

d) the date of harvest; and

e) the type or species harvested (i.e. Manila clams, Butter clams or Littleneck clams).

This tag must be attached to the sack or container at the time of harvest and prior to the sack or container leaving the harvest site, or beach, from which the clams have been harvested.

It is unacceptable to report a generalised location of harvest on the tag, such as Central Coast, Seaforth Channel, Lama Pass, etc. The location of harvest as indicated on the tag must be specific (i.e. Beach 3, Rainbow Island, Subarea 7-17).

6. HARVESTER RESPONSIBILITY

6.1. Sewage, Garbage and Debris Control

Most harvesters keep beaches clean and free from garbage and other pollution. DFO asks that the participants take care and remove all garbage from the harvest site. Violators are subject to prosecution under the *Provincial Litter Act*. Harvesters are encouraged to maintain garbage cans on vessels and to refrain from anchoring vessels for lengthy periods near clam beds in order to prevent sewage contamination of shellfish on these beaches. Clam diggers are also requested to refrain from using the beaches for personal waste, again due to contamination problems.

6.2. Harvest Operations

Harvesters should refrain from harvesting clams on beaches where high numbers of undersized clams are found. The minimum size limit has been set so that clams will spawn

once or twice before reaching legal size. Harvesters are requested to rebury all undersized clams. Harvesters are also required to avoid leaving holes in the beach from digging activities.

6.3. Sales of Commercially Harvested Clams

Under the *BC Fish Inspection Act*, Section 12 (1.1), "No person shall sell or attempt to sell any harvested bivalve molluscs unless the molluscs were, before sale or attempted sale, processed in an establishment that at the time of processing held a valid certificate of registration issued by the CFIA". Clam harvesters may sell their clams only to a duly licensed fish buyer.

Harvesters must ensure their product is verified in order to meet food inspection requirements. Processors can advise on specific verification procedures.

6.4. Regulatory Compliance

Clam harvesters are reminded that as a Condition of Licence they must comply with the following:

a) Harvest only in open areas. Check with the DFO Fishery Manager, the local DFO office or with the HIRMD-Aquatics Division to confirm area openings. Check with a federally registered shellfish processing plant prior to harvesting in order to ensure verification procedures are in place. Processors are required to have a verification program in place in order to comply with Canadian Food Inspection regulations.

b) All harvested clams must be processed by a federally registered processing plant.

c) It is illegal to harvest clams in areas that are closed for reasons of contamination (i.e. sewage), toxicity (i.e. PSP) or conservation.

6.5. Heiltsuk Tribal Council Commercial Clam Policy

Clam harvesters are reminded to consult the Heiltsuk Tribal Council Commercial Clam Policy for regulations and guidelines administered and implemented by the HIRMD-Aquatics Division.

7. PRODUCT HANDLING AND TRANSPORTATION

To ensure product quality, care must be exercised to protect the bivalves from contamination and exposure to sun, weather, dust and other abuses. Clam harvesters are advised of the following:

a) Do not litter at or near the harvest site.

b) Do not bring pets to the harvest site. Defecation at a harvest site may render the beach contaminated.

c) During summer months, harvested product must be kept cool in order to avoid or reduce contamination by the *Vibrio parahaemolyticus* bacteria.

d) During transportation, store clams in a sanitary isolated area with drainage that is away from fuel and oil containers and bilge water.

e) Do not rinse the shell stock at a dockside or any area other than at the harvest site.

f) Do not sort the harvested product (i.e. separate clam by species), at any other location other than the harvest site or at a federally registered shellfish plant.

g) It is permissible to rinse the shell stock at the harvest site only at the time of harvest. This is a recognized part of the harvesting practice to remove excess mud, sand etc.

h) All processing must be carried out at a federally registered shellfish processing plant, and tagged accordingly.

i) Human wastes, sewage or refuse shall not be discharged from harvest vessels while in or adjacent to shellfish harvesting areas.

- Vessels operating at a distance which does not allow for timely access to on-shore washroom facilities are expected to have a designated human waste receptacle on board. Receptacles could include a portable toilet, a fixed toilet, or other containment device as appropriate. Such devices must be made of impervious, cleanable materials and have a tight-fitting lid.

- Portable toilets or other designated human waste receptacles shall be used only for the purpose intended, and shall be so secured and located as to prevent contamination of the shellfish harvest area or any harvested shellfish on board by spillage or leakage.

- The contents of toilets or other designated human waste receptacles shall be emptied only into an approved sewage disposal system, and portable toilets or other designated human waste receptacles shall be cleaned before being returned to the vessel. (Facilities used for cleaning food-processing equipment shall never be used for cleaning portable toilets or designated human waste receptacles.)

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

8. WET STORAGE

Improper storage of shellfish after harvest can expose shellfish to contamination. At present,

Wet storage of product shall occur only on licensed aquaculture facilities that are specifically approved for the activity of wet storage in their Pacific Aquaculture Regulations aquaculture licence. Commercially harvested clams may not be left on non-tenured beaches unattended.

APPENDIX 2: 2023-24 HEILTSUK INTERTIDAL CLAM FOOD, SOCIAL AND CEREMONIAL HARVEST PLAN

OVERVIEW OF THE FISHERY

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

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

MANAGEMENT MEASURES FOR THE HEILTSUK FSC FISHERY

To address the needs of the Heiltsuk First Nation with regards to intertidal bivalves, HIRMD-Aquatics Program managers, together with DFO staff, have created a Community Harvest Plan (CHP) to govern the fishery. The CHP is a community-specific document that details all aspects of the fishery including:

- harvest locations,
- harvestable species and guidelines,
- harvest timing,
- a communication plan,
- a list of participants and permitting requirements,
- reporting requirements for harvesters,
- a fishery monitoring plan, including enforcement and water quality and biotoxin monitoring.

The CHP is a separate document and may be obtained from DFO or the Heiltsuk Aquatics Division.

APPENDIX 3: 2023-24 HEILTSUK INTERTIDAL CLAM RECREATIONAL HARVEST PLAN

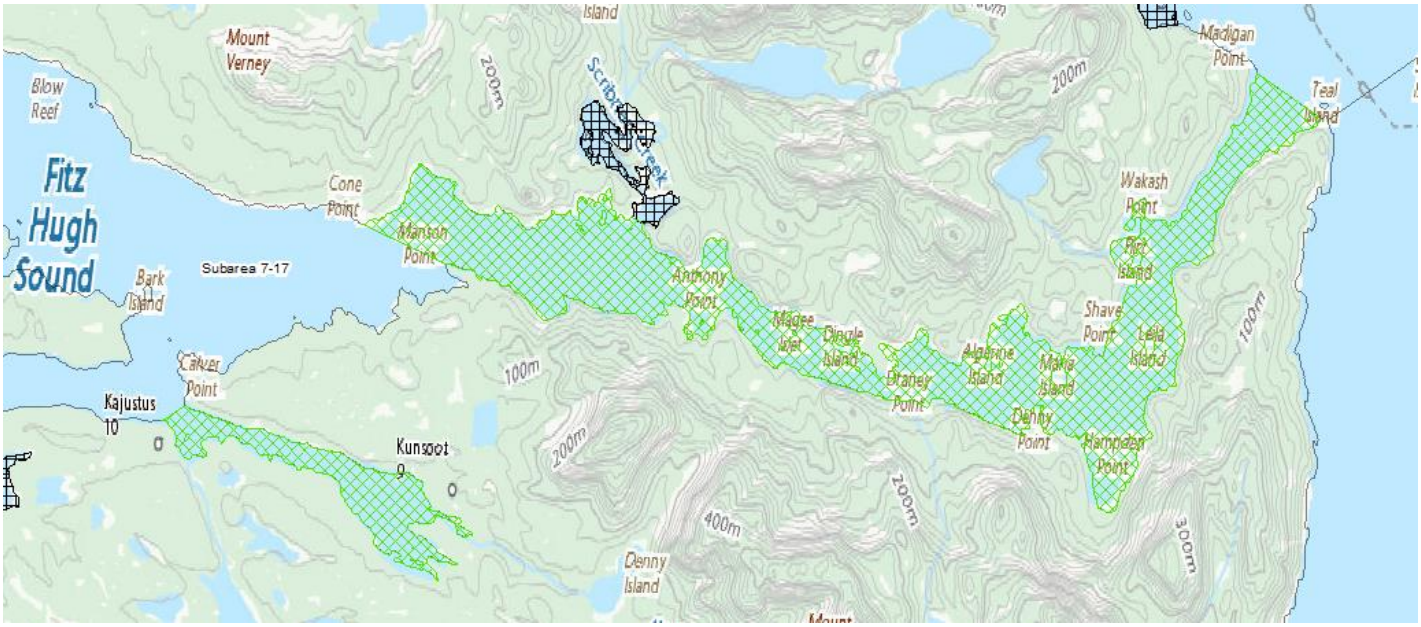
BACKGROUND

The Heiltsuk Tribal Council has provided recreational harvest opportunities within their traditional territory for several years. The Heiltsuk support this opening by providing monitoring coverage for the area for the marine biotoxin monitoring program.

LOCATION OF THE FISHERY

Recreational harvesting opportunities will be provided in the following location, pending acceptable results from the marine biotoxin monitoring program:

- **Gunboat Pass**: The Classified waters of Gunboat Pass, except for sanitary closure 7.19, from a North/South line between Manson Point and Cone Point East to the boundary line between Madigan Point and Georgie Point in Subarea 7-17.



OPEN TIMES

Opening times will be dependent upon adequate sample submission for the marine biotoxin monitoring program and acceptable biotoxin results. All openings will be announced by DFO through the fishery notice system, as well as the SHELLI mapping tool located at:

https://dfo-mpo.gc.ca/CheckBeforeYouHarvest

LICENCING

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

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 in the British Columbia Tidal Waters Sport Fishing Guide which lists closed times, daily and possession limits and some closed areas. A copy of the Sport Fishing Guide is available online at: www.pac.dfo-mpo.gc.ca/recfish/default_e.htm

Species

Harvestable species will be dependent upon samples submitted for biotoxin testing, and may include:

- Manila clams (*Venerupis philippinarum*)
- Littleneck clams (*Protothaca staminea*)
- Mussels (*Mytilus spp*.)

Those species permissible for recreational harvest will be listed in the fishery notice issued for the opening of the fishery.

5.2 Gear

Intertidal bivalves may be harvested by hand picking or hand digging.

5.3 Daily Limits

The daily aggregate recreational limit for Manila and Littleneck clams is 60. The daily aggregate limit for mussels is 75, 25 of which may be California mussels.

5.4 Possession Limits

Possession limits for intertidal bivalves are two times the daily limit.

5.5 Size Limits

There is no size limit for the recreational intertidal bivalve fishery.

APPENDIX 4: POST-SEASON REVIEW FOR 2022-2023

1. Stock Assessment and Research

Staff from the Heiltsuk Integrated Resource Management Department-Aquatics Division have conducted annual biomass surveys of Manila and Littleneck clams for identified index beaches in those Subareas set out for commercial harvest since 2001. The results of these surveys are reviewed with DFO Science staff and Subarea thresholds are determined prior to the commencement of the commercial harvest season. Annual biomass surveys were not conducted in 2021. the annual biomass survey in 2023 was conducted later than normal and only the main commercial harvest areas were surveyed.

With renewed interest in butter clams as a commercially-harvestable species in 2010, a new program for butter clam surveys was begun in 2011 with some initial broad-brush surveys of the Heiltsuk traditional territory where potential beaches suitable to support a commercial butter clam harvest, but not subject to food, social or ceremonial harvest, were identified. From there, more intensive biomass surveys were conducted for the 2011-12 and 2012-13 seasons, and broader mapping of potential butter clam habitat in additional areas was begun. There was a small amount of commercial butter clam harvesting during the 2012-13 season but issues with elevated biotoxin levels, restricted number of harvest beaches, high operating costs, long travel distances in inclement weather, and market access prevented the full TAC from being attained. Further mapping and refinement of butter clam habitat took place during the 2013-14 season..

There has been no commercial harvest of littleneck clams since 2012. Subarea thresholds for this species will continue to be implemented to ensure the sustainability of any future fisheries in accordance with the data collected from annual stock assessment surveys. Any further developments in this fishery will be market-driven and dependent upon community support for a fishery on this species.

DFO and the Heiltsuk are committed to collaborative work to support all fisheries.

2. First Nations Fishery

There was a FSC harvest opportunity from November through March of the 2022-23 season for manila clams, littleneck clams, oysters and mussels. The extent of the First Nations fishery is outlined in the Heiltsuk Tribal Council Community Harvest Plan.

The total amount of intertidal bivalves harvested by the First Nations fishery is unknown.

3. Recreational Fishery

During the 2022/23 year there was a recreational harvest opportunity from November 22nd through December 30th 2022 then January 4, through January 27, 2023, February 2nd through March 6 2023, and finally March 10th to March 18, 2023 for manila clams, littleneck clams, oysters and mussels in the waters of Gunboat Pass (see Appendix 3). No advice or comments were received from the recreational sector last season. The amount of intertidal bivalves harvested by the recreational sector in this area is unknown.

4. Commercial Fishery

For 2022-23 a total threshold for Manila clams of 19,841 pounds was available in and harvested at low tide in December 2022. An overage of 1517 lbs was recorded in Subarea 7-17, this represents 132% of the established threshold while 4% of the TAC remained on the beach in 7-15.

The overage happened during the first opening and resulted from a combination of changes in weather that resulted in changes in beaches previously harvested by the diggers. That particular night diggers who used to harvest in subarea 7-15 worked in beaches located in subarea 7-17. The biomass was good in subarea 7-17 and the diggers filled their bags rapidly that night with a larger number of clams than expected. Heiltsuk diggers care for their resources and work cooperatively with HIRMD office. In the past Heiltsuk diggers have shown many times their commitment to maintaining a sustainable harvest by electing among themselves to not havers the threshold suggested by the model of that year when they assess after the first dig that the biomass was not there to support the threshold recommended at the time. While the model suggests threshold based on the best information available at the time, all the individual beaches cannot be surveyed and hence variability will always be present between the modelized and real biomass. HIRMD and the Heiltsuk diggers have a common goal to maintain a sustainable harvest and as such work together to reach it.

See compliance section below for the way HIRMD is changing it monitoring plan to limit the occurrence of overage in the future.

There were no butter clams or littleneck clams commercially harvested.

5. Compliance

The Heiltsuk diggers and the HIRMD office worked together to ensure real-time monitoring of the harvest. Heiltsuk Guardian Watchmen monitor the Subarea during the harvest tides to ensure that only open beaches are harvested and to keep track of where the diggers are and how much they harvest. Additionally the Heiltsuk diggers make daily reports on number of bags per Subarea harvested the previous tide.

An average clam bag weight of 40 lb is used to estimate the total poundage harvested per Subarea. The Heiltsuk acknowledge that when the biomass is good at a beach, bags could be heavier than 40 lb and recognize that this may have allowed for overages to happen in the past. For 2023/2024, HIRMD will use 45 lb as an average weight for a clam bag for the first opening. Number from the validation of the first opening will be used to assess the average weight of bag for the 2nd opening and adjusted to be a minimum of 40 lb based on how well the digging happened during the first opening.

HIRMD keeps a daily tally of the number of bags recorded per subarea. During the first opening, if the estimated poundage harvested in a subarea is near the threshold for the subarea, HIRMD informs the diggers that this particular subarea is closed. After the first validation, the remaining quota is calculated per subareas and is distributed among diggers to ensure the diggers reach but do not exceed the quota. Some diggers may be directed to harvest a given set of beaches while other diggers would be directed towards another set of beaches. This method has proved to be very efficient in the past. Daily and on-going communication between diggers and HIRMD is key and is successful as ensuring a sustainable harvest is conducted.

APPENDIX 5: INFORMATION ON SUBAREA THRESHOLD DETERMINATION FOR THE COMMERCIAL MANILA CLAM FISHERY

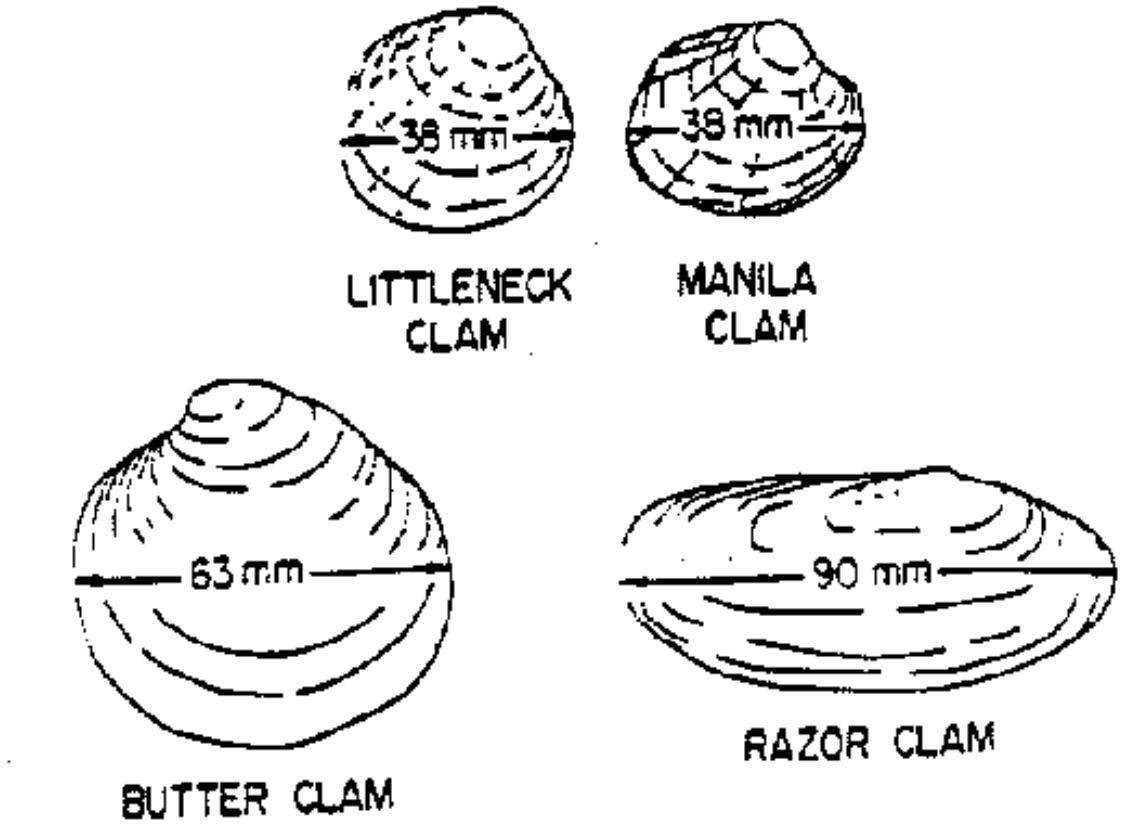
Since 2001 fishery managers have used the Magnussen-Stefansson Feedback Gain Model to set in-season thresholds for each of the monitored Subareas. The Heiltsuk have continued to complete extensive annual surveys , excepting in 2021 when surveys were not completed, using standard protocols (Gillespie and Kronlund 1999) in each of the Subareas and changes in estimated index biomass and the previous year's yield are used to set threshold recommendations for each year.

The Magnusson-Stefansson Feedback Gain Model is used as a reference point from past fishery yields in data-poor situations (Caddy 1998) when only commercial or survey indices are available. This model is reported to be particularly useful for restoring a depressed fishery with declining stock size over time. The rule is:

$$Y_t = Y_{t-1}\left(1 + g\left(\frac{B_{t-1} - B_{t-2}}{B_{t-2}}\right)\right)$$

Where Y is catch and B is an index of biomass (from survey or commercial CPUE index) in year t, and g, referred to as the feedback gain, reflects the degree of proportionality between changes in biomass between the last and current year.

APPENDIX 6: SIZE LIMITS FOR INTERTIDAL CLAMS



The minimum size limit for intertidal clams is measured across the greatest breadth of the shell.

APPENDIX 7: EXAMPLE OF THE HARVEST LOG

2023-24

BELLA BELLA CLAM FISHERY HARVEST LOG

DIGGER: _____

DATE	HOURS FISHED	POUNDS LANDED/ SPECIES	NUMBER OF BAGS/ SPECIES	SUBAREA	BEACH LOCATION

APPENDIX 8: DEPURATION FISHERY

Depuration is a controlled operation where bivalves from water classified as moderately contaminated can be cleansed in a strictly controlled environment in a registered depuration plant.

The Department has developed a policy on access and management of contaminated beaches. This policy sets guidelines for the access to clams on contaminated beaches by approved depuration plants.

To obtain a depuration harvest licence, the approved depuration facility or First Nation must identify the beaches they wish to harvest. The area must meet the guidelines for depuration. If the area is approved in principal, a survey must be undertaken by the proponent in order to determine the biomass of clams present in the harvest area. On the basis of this survey, the Department will establish a total allowable catch of legal-sized manila and littleneck clams for the particular area.

The Heiltsuk Tribal Council has identified three marginally-contaminated beaches in Subarea 7-17 as desirable sites for a depuration fishery and several successful fisheries have taken place. These beaches are surveyed during the summer months with other beaches involved in the commercial intertidal clam fishery and quotas are determined through a separate process between DFO managers and science, in consultation with Heiltsuk Aquatics Division staff and the processors involved. For the 2021-2022 season, depuration beach Kliktsoatli 7-17-C1 was not able to be surveyed due to the presence of barges on top of the survey strata among other reasons.

Harvesting in contaminated areas is done by individual harvesters who are designated on the licence and supervised by the depuration plant under the conditions of the licence. Prior to harvesting clams, the licence holder is required to erect a prominent sign on the harvest beach stating the nature of the operation and the depuration licence number. Other conditions of licence include a notification procedure to advice of harvesting activities and a catch-reporting program in addition to fish slips.

1.9 Licence Category:

Licenses to fish for shellfish in contaminated areas are issued under authority of *the Management of Contaminated Fisheries Regulations* for both vacant crown foreshore and aquaculture tenure sites. Shellfish fisheries in contaminated areas have been licensed by Fisheries and Oceans Canada since the 1990's, in accordance with policies set out in the Canadian Shellfish Sanitation Program.

1.10 Licence Fees:

$100.00 for the licence, plus $20.00 for each fisher (Harvest Supervisors and Harvesters) named on the licence. All cheques or money orders are payable to the **Receiver General for Canada.**

1.11 Licence Applications:

Licence applications may be obtained from Fisheries and Oceans Licence Unit offices in Vancouver, and Nanaimo as well as the DFO Parksville Area Office. **All applications to fish for shellfish <u>for food</u> from marginally contaminated areas must include:**

- Submission of a decontamination plan approved by the Canadian Food Inspection Agency (CFIA).
- Submission of the <u>full legal names and dates of birth</u> of all fishers (Harvester Supervisors and Harvesters) involved in fishing on the site.
- Clear detailed maps /charts showing sites of harvest.
- Applicable fees

1.12 Approval Process:

Completed application packages are referred to a number of agencies for approval. This process for complete applications takes a minimum of 10 working days. Licence issue may take up to 20 working days from the date of application receipt.

The agencies involved are:

- Environment Canada for water quality status in the harvest area
- BC Ministry of Agriculture and Lands
- Canadian Food Inspection Agency reviews the decontamination plan or depuration protocols.
- Fisheries and Oceans Canada, Fishery Managers.

1.5 Harvest Area

See figure 3 in Appendix 9.

APPENDIX 9: HEILTSUK INTERTIDAL CLAM AREA MAPS

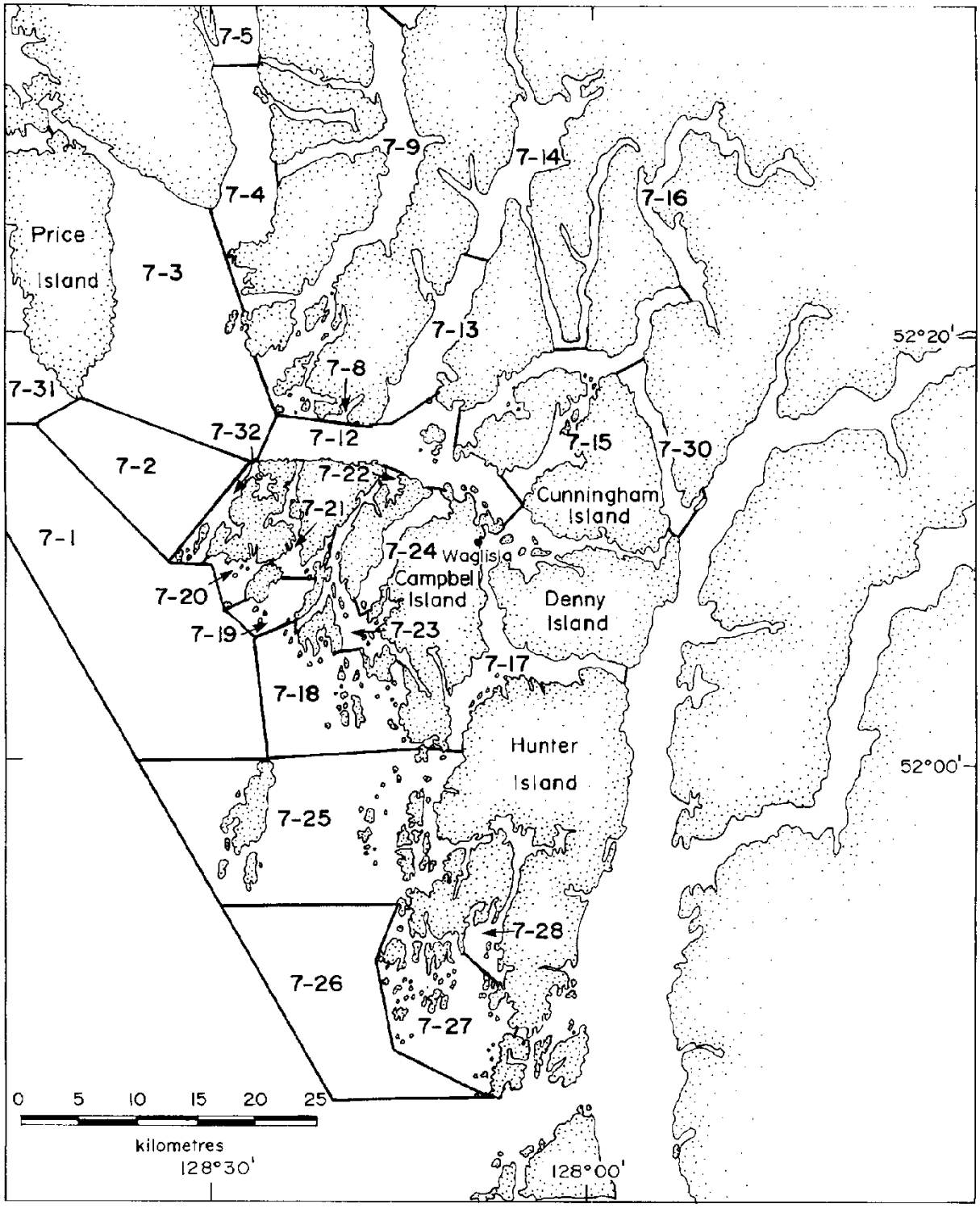


Figure 1: Heiltsuk Intertidal Clam Harvest Area

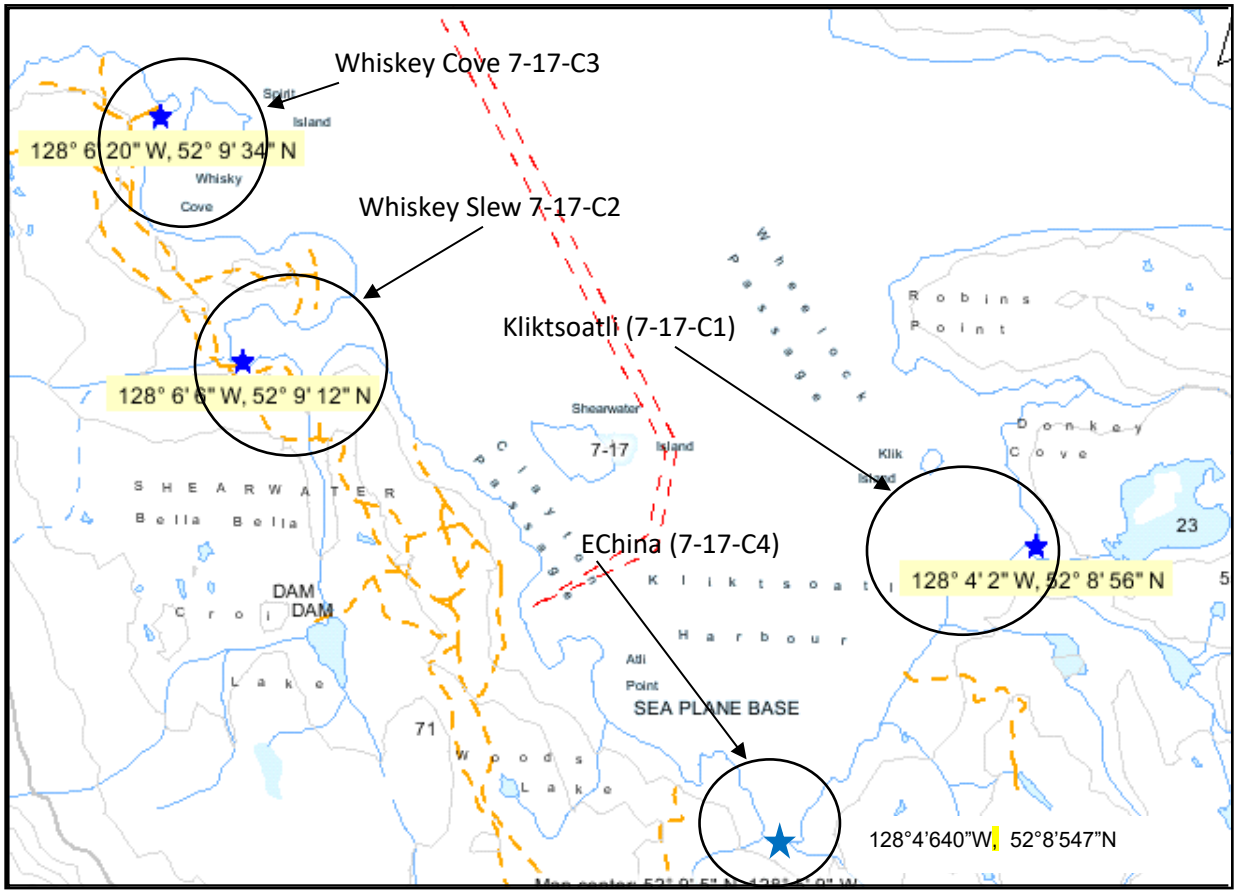


Figure 3: Map of Heiltsuk Depuration Fishery Beaches

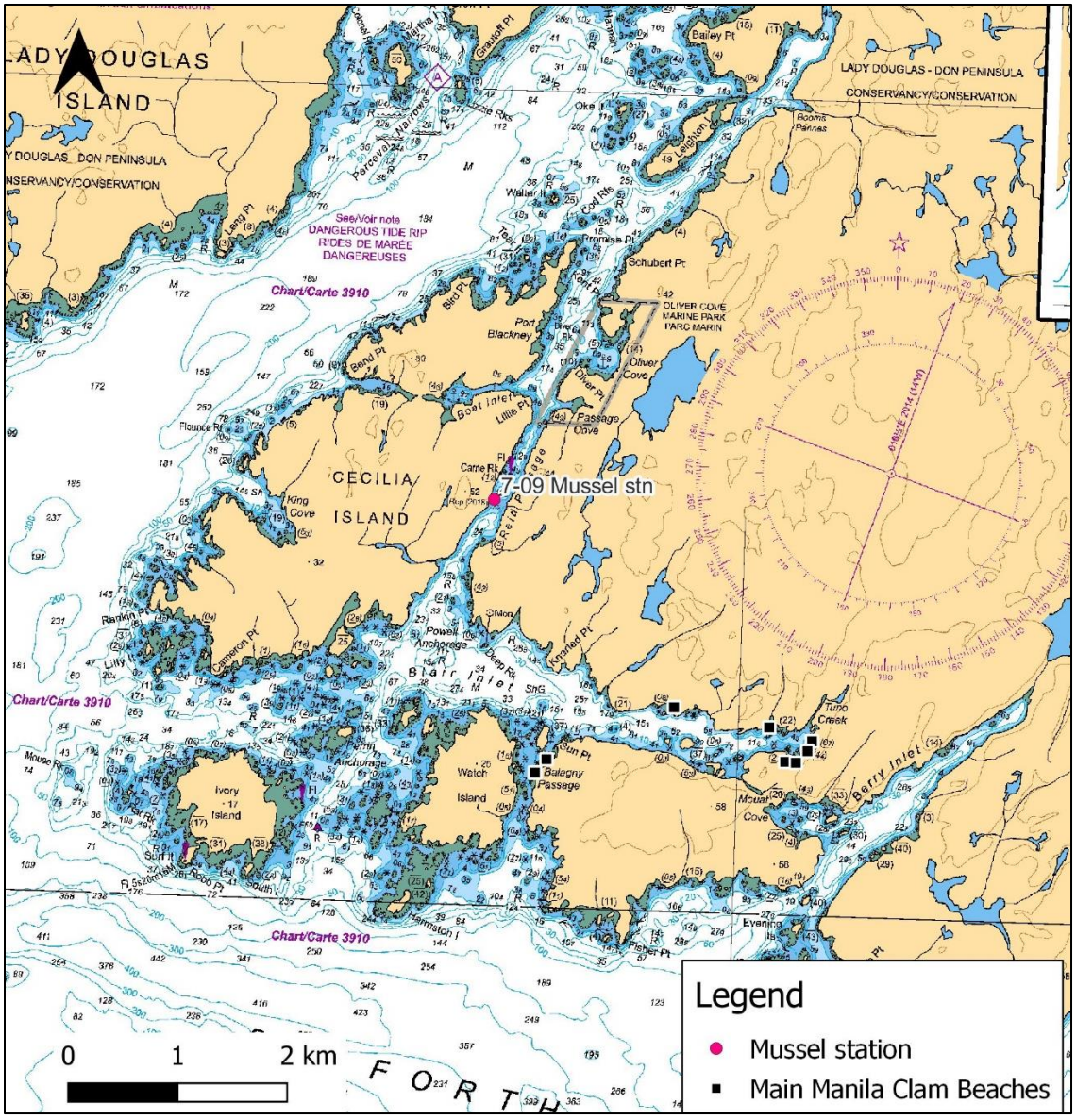


Figure 4: Blair Inlet, Reid Pass area (subarea 7-09) main commercial manila clam beaches and mussel station

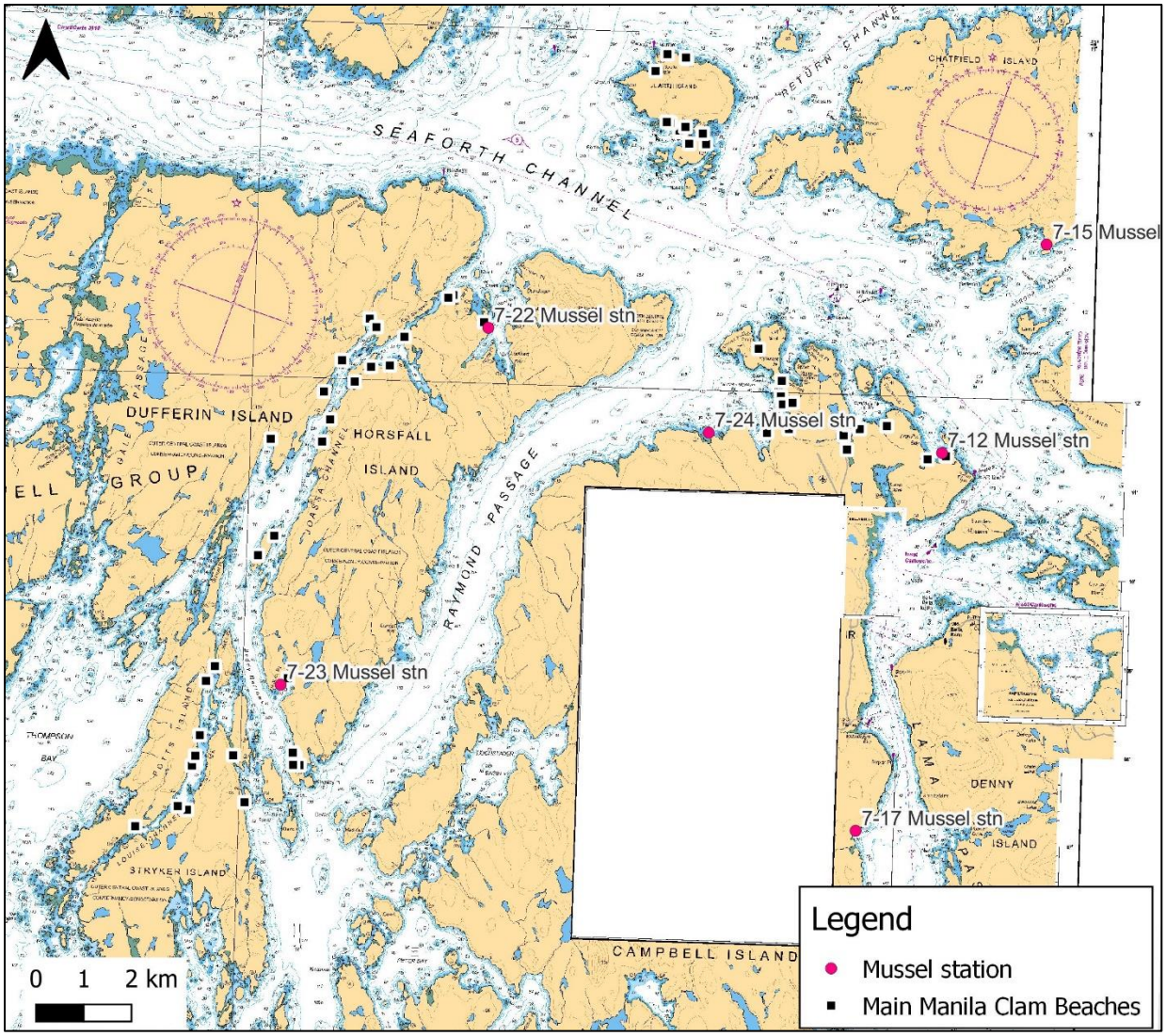


Figure 5: Seaforth Channel (subarea 7-12), Dundivan Inlet (subarea 7-22), Joassa Channel (subarea 7-23) and Raymond Passage (subarea 7-24) main commercial manila clam beaches and mussel stations

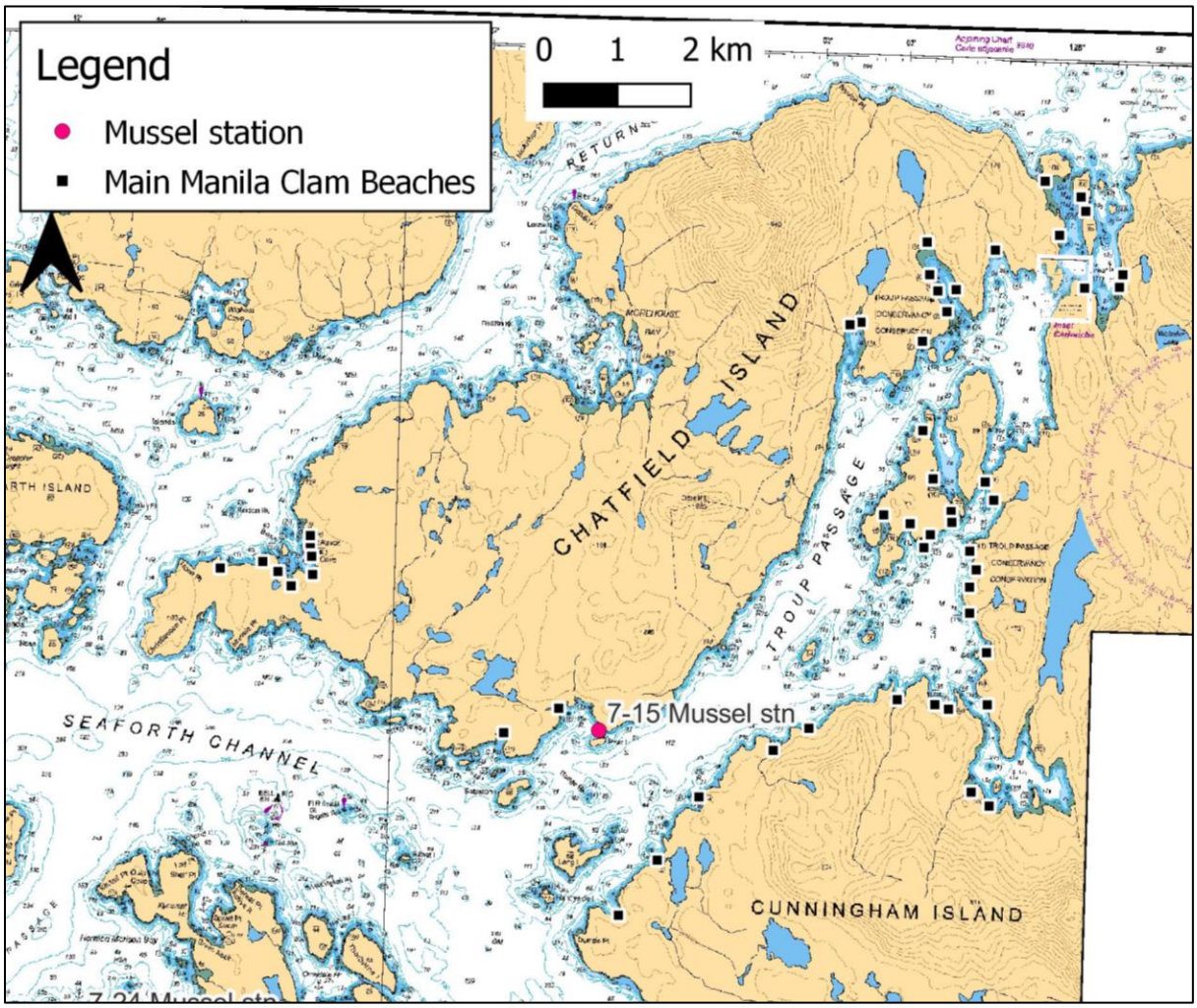


Figure 6: Troup Passage (subarea 7-15), main commercial manila clam beaches and mussel station.

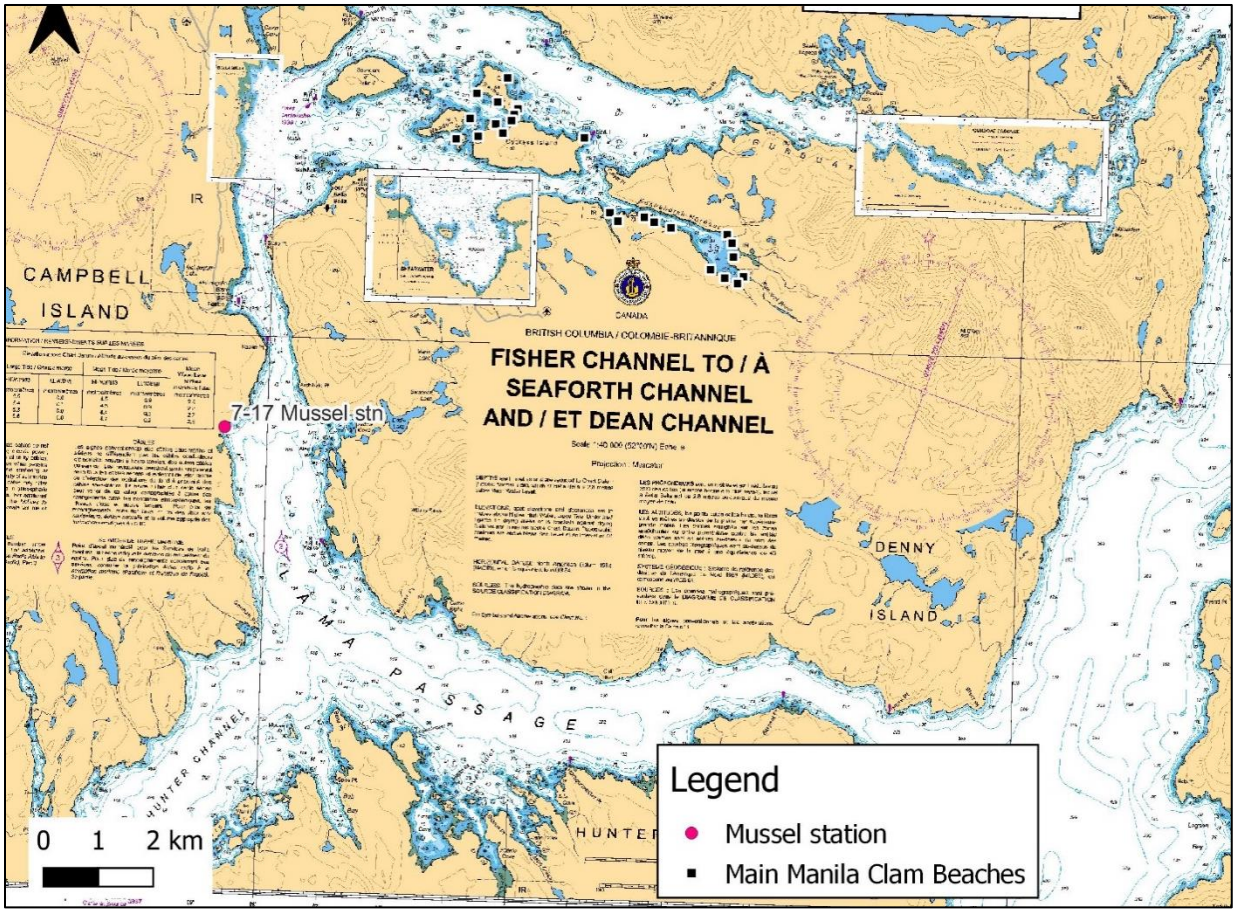


Figure 7: Lama Passage (subarea 7-17) main commercial manila clam beaches and mussel station

APPENDIX 10: CONTACTS

Observe, Record and Report (Enforcement Line)	(800) 465-4336
Fisheries Information and Shellfish Contamination Closure Update (24 Hours)	(866) 431-3474
or (for Greater Vancouver)	(604) 666-2828
Invertebrate Internet Page	http://www.pac.dfo-mpo.gc.ca/ops/fm/shellfish/default_e.htm

Fisheries and Oceans Canada

Fisheries Management

Regional Shellfish Coordinator	Lisa Mijacika	(604) 666-3869
North Coast Shellfish Manager Fisheries and Oceans 417-2nd Avenue West Prince Rupert, BC V8J 1G8	Coral Cargill	(250) 627-3021
Aboriginal Fisheries	Wendy Evans	(250) 627-3425

Science Branch

Pacific Biological Station Hammond Bay Road Nanaimo, BC V9T 6N7	Dominique Bureau	(250) 756-7114

Conservation and Protection

Bella Coola Field Office PO Box 130 Bella Coola, BC V0T 1C0	Lia Badry	(250) 957-2363

Heiltsuk Tribal Council

Haíłzaqv, Chief Councillor — Ḵáwáził Marilyn Slett — (250) 957-2381

Heiltsuk Integrated Resource Management Department-

Aquatics Division — Mike Reid — (250) 957-2303

PO Box 731

Bella Bella, BC V0T 1Z0

Canadian Food Inspection Agency

Fish Inspection Directorate

Inspection Specialist

Molluscan Shellfish Program Specialist — Sabirah Bacchus — (236) 339-5372

PacificShellfish@inspection.gc.ca

Angela Young — (236) 330-2967

PacificShellfish@inspection.gc.ca

Environment and Climate Change Canada

Growing Water Quality Classification and Surveys

Section Head, Marine Water Quality — (604) 666-2947

Monitoring Program

North Coast Area Coordinator — Paul Moccia — (604) 903-4425

Marine Water Quality Monitoring-Pacific

2645 Dollarton Highway

North Vancouver, BC V7H 1B1

BC Ministry of Environment

Oceans and Marine Fisheries Branch — (250) 387-0389