

# **CEAA Screening Report**

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## **Proposed Shellfish Aquaculture Facility at Hardy Island, Jervis Inlet, British Columbia**

**Prepared by:**

**Department of Fisheries and Oceans  
Oceans, Habitat and Enhancement Branch  
Aquaculture Division  
Vancouver, BC**

**Transport Canada - NWPD: 8200-03-8189  
Provincial (LWBC): 2402982  
HRTS Reference: 03-HPAC-PA1-000-000118  
FEAI: 40906**

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# FISHERIES AND OCEANS CANADA

## Habitat and Enhancement Branch

### 1.0 PROJECT IDENTIFICATION

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#### 1.1 File Numbers:

DFO (NWP)	8200-03-8189
Provincial (LWBC)	2402982
HRTS Reference	03-HPAC-PA1-000-000118
FEAI	40906

1.2 Proponent[s]: BC Pacific Oysters Ltd., Vancouver, BC

1.3 CEEA Trigger(s): Section 5(1) of the *Navigable Waters Protection Act* (NWP)

1.4 Lead Responsible Authority (RA): Transport Canada

#### 1.5 Other FA's:

Environment Canada, Indian and Northern Affairs Canada, Fisheries and Oceans

#### 1.6 Other Provincial/Regional/Municipal Governments Contacted:

BC Ministry of Agriculture, Fisheries and Food, Land and Water BC

1.7 Referral Received by DFO: June 13, 2003. Revised Provincial Shellfish Management Plan received March 29, 2004.

### 2.0 LOCATION DETAILS

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Unsurveyed foreshore being part of Jarvis Inlet, Group 1, New Westminster District, British Columbia

Latitude: 49° 45'05"N      Longitude: 124° 11'08"W      Maps: Chart 3514

### 3.0 PROJECT DESCRIPTION

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The proponent, BC Pacific Oysters Ltd., proposes to install / operate a mussel and geoduck clam shellfish aquaculture facility at the north-central coast of Hardy Island in Jarvis Inlet, BC. The total area of the site is 12.71ha with 6.0ha being used for actual production. The project involves the following:

**Mussels:** as a maximum, installation of 36 rafts (12 clusters of 3 measuring 10m x 10m) with drop lines (7m in length) with associated lines and anchors. Mussels will be grown in areas identified in the Shellfish Management Plan, approved Mar 24, 2004 by Provincial staff. The grow-out period is approximately 12 months.

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Geoduck clams: seeding of geoduck clams in a 6.0ha subtidal area. Geoduck seed, once planted will not need protection by any netting or mesh (confirmed in Shellfish Management Plan). The boundaries for the proposed geoduck seeded area will be marked by 25lb cement blocks spaced out every 50 feet attached together by a line. The grow out period for geoducks is 5-7yrs. Wild geoducks already present on site will be removed from the site in accordance with a scientific licence and associated federal / provincial conditions.

Mussel and geoduck production numbers have been submitted to DFO for this application from the proponent for consideration as part of the review under CEAA. These production numbers however are not specifically included in this CEAA screening report as they are protected under section 55(7) of CEAA.<sup>1</sup> More information can be found on this application in the report provided to DFO by Accurate Harvesting and Research Ltd.

## **4.0 SCOPE OF THE ENVIRONMENTAL ASSESSMENT**

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The scope of the project and environmental assessment defines the components of a proposed development and the environmental effects that should be included in the environmental assessment (EA).

### **4.1 Scope of Project**

Scoping the project (as per Section 16 of the *Canadian Environmental Assessment Act - CEAA*) involves determining which components of the proposed development should be considered part of the project for the purposes of the EA.

The principle project for which a power, duty or function is being exercised (approval under section 5(1) of the *Navigable Waters Protection Act - NWPA*) is the proposed construction, installation, operation, and maintenance phases of the aquaculture application. This includes the following physical works: rafts, drop lines, boundary lines, and associated lines and anchors. Physical works or activities accessory to the principle project include removal of the existing geoduck clams on site before granting of provincial license, transport of stock to and from the site, harvesting, equipment cleaning, and disposal of all wastes. As per CEAA Section 15(3), the decommissioning and abandonment of the project will also be considered as part of the Environmental Assessment.

### **4.2 Scope of Environmental Assessment**

This is a Screening level EA and hence requires consideration of the factors stated in Section 16(1) of CEAA which are listed below, as well as 16.1 of CEAA which states that community knowledge and aboriginal traditional knowledge may be considered in conducting an environmental assessment.

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<sup>1</sup> Section 55(7) of CEAA states that in order to facilitate public access to records relating to environmental assessments, a public registry shall be established and operated in a manner to ensure convenient public access to the registry. It also states that the public registry shall contain records available to the public, except a record or part, containing third party information. Third party information includes:

- trade secrets of a third party;
- financial, commercial, scientific or technical information that is confidential and supplied to a government institution by a third party and is treated consistently in a confidential manner by the third party;
- information the disclosure of which could reasonably be expected to result in material financial loss or gain to, or could reasonably be expected to prejudice the competitive position of, a third party; and,
- information the disclosure of which could reasonably be expected to interfere with contractual or other negotiations of a third party.

- (a) the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- (b) the significance of the effects referred to in paragraph (a);
- (c) comments from the public that are received in accordance with this Act and the regulations;
- (d) measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project: and
- (e) any other matter relevant to the screening, such as the need for the project and alternatives to the project, that the responsible authority or, except in the case of a screening, the Minister after consulting with the responsible authority, may require to be considered.

The scope of the environmental effects examined in the EA are included in the following sections entitled Environmental Effects & Significance and Cumulative Environmental Effects (Sections 7.0 and 8.0). The potential environmental effects of the proposed project are considered within spatial and temporal boundaries that encompass the periods and areas during and within which the project may potentially interact with, and have an effect on, components of the environment. These boundaries may vary with each environmental component, and reflect factors such as:

- the construction, operation, and maintenance phases of the project;
- the natural cycles of a population or ecological component;
- the timing of sensitive life cycle phases in relation to the scheduling of proposed activities;
- the time required for an effect to become evident;
- the time required for a population or ecological component to recover from an effect and return to a pre-effect condition;
- the area directly affected by the proposed project; and
- the area within which a population or ecological component functions and within which a project effect may be felt.

## 5.0 CONTACT RESPONSES

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### 5.1 Expert Federal Authorities

Federal Departments were requested to provide specialist advice in accordance with Section 12(3) of CEAA. Details of this correspondence are listed below:

Environment Canada

June 24, 2003.

Environment Canada

July 10, 2003. Mitigation measures were given and these are included in Section 11.4.

DFO-Fisheries Management Branch	August 25, 2003. Response given to proponent on current application.
DFO-Fisheries Management Branch	September 10, 2003.
Indian and Northern Affairs Canada	September 17, 2003.
Coast Guard – Marine Aids	September 17, 2003.
DFO-Habitat & Enhancement Branch	October 30, 2003. Clarification and additional information requested from proponent.
DFO-Habitat & Enhancement Branch	November 18, 2003. Clarification and additional information requested from proponent.
DFO-Habitat & Enhancement Branch	December 24, 2003. Clarification and additional information requested from proponent.
DFO-Fisheries Management Branch	April 1, 2004. Approval given with conditions as addressed in Sections 7.0 and 11.3.
DFO-Habitat & Enhancement Branch	April 8, 2004 and May 19, 2004.

## 5.2 Provincial Agencies

All proposed aquaculture facilities are reviewed by the BC Ministries of Agriculture, Fisheries and Food (BCMAFF), and LWBC, with regard to their agency mandates and legal responsibilities.

## 5.3 First Nations

A letter was sent to the Sechelt Indian Band and Sliammon First Nations on August 27 and October 16, 2003 informing them of the proposed project. The Sliammon First Nation responded on January 23, 2003 stating that they will defer responsibility of responding on this application, to the Sechelt Indian Band. Correspondence is listed below:

Sechelt Indian Band	November 17, 2003. DFO responded to the Sechelt on January 21, 2004.
Sechelt Indian Band	March 10, 2003. DFO responded to the Sechelt on March 30, 2004.
DFO staff met with the Sechelt Indian Band on May 4, 2004. Additional information as requested at this meeting was provided to the Sechelt on May 7, 2004.	
Sechelt Indian Band	May 14, 2004. DFO responded to the Sechelt on May 19, 2004.

Consideration was given to concerns expressed by the First Nations in the above responses and more details can be found in Section 7.0 – Environmental Effects and Significance.

## 5.4 Special Interest Groups

The project description was referred for comment on September 11, 2003 to several interest groups to evaluate local navigation concerns. These include the Council of BC Yacht Clubs (CBCYC), The Council of Marine Carriers (CMC), the United Fishermen's & Allied Workers Union (UFAWU) and the Pacific Pilotage Authority Canada (PPAC). Correspondence is listed below:

CBCYC:	September 18, 2003.
CMC:	September 25, 2003.
PPAC:	October 1, 2003.
UFAWU:	Did not respond.

Consideration was given to comments expressed by these Marine Interest Groups and were addressed in Section 11.0 by Transport Canada staff.

## 5.5 General Public

Public consultation was considered but not invoked under section 18(3) of CEAA. Public Notification was, however conducted in the form of advertising as per section 9(1) of NWPAA.

As required under the *Navigable Waters Protection Act (NWPAA)*, plans for the project were deposited in the Office of the District Registrar of the Land Registry District of Vancouver in the Province of British Columbia and notices requesting comments on the project's effect on navigation, were published in the following publications:

- *Canada Gazette* (July 5, 2003)
- *Powell River Peak* (June 25, 2003)
- *Coast Reporter* (June 28, 2003)

Comments or objections regarding navigation effects were not received within the 30 days of publication of the above notices.

# 6.0 ENVIRONMENTAL DESCRIPTION

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## General Description of the Environment

The proposed shellfish farm would be located near the north-central coast of Hardy Island, in Jervis Inlet. Jervis Inlet is a fjord like body of water that runs in an east/west direction from Scotch Fir Point at Malaspina Strait to the mouth of Prince of Wales Reach opposite Foley Head. The Inlet is steep sided with water depths to 669 metres.

Geoducks range from the low intertidal zone to at least 360ft of water depth. Geoduck distribution is patchy which is partly due to substrate type. Geoducks are found in a variety of substrates, but are most abundant and largest when growing in sand or mixtures of sand and silt. Geoduck density is directly related to water depth between 0 and 25m. Geoducks spawn from April to June, when increased water temperatures and plankton blooms trigger release. The microscopic larvae drift with the currents for a period of up to 47 days, then they settle on the bottom. The young may therefore be carried by water currents many miles from their parents before settlement.

## Shoreline Habitat

Shoreline habitat was not surveyed as this site is proposed for deepwater, approximately 100m north of Hardy Island.

## Benthic Habitat

The proponent's consultant conducted a marine survey in March/April 2003. The survey consisted of a reconnaissance swim to detect the presence/absence of geoducks on the tenure and, if geoducks were found, a more detailed transect-based survey was warranted. Three out of five sandy areas were found to hold sufficient numbers of geoducks to warrant a more detailed survey. A number of different species were noted during this survey including: sea cucumbers, green sea urchins, ling cod, horse clams and geoduck clams.

According to the consultant's report, the area is predominately bedrock, with five small areas of sand. Some areas of cobble appeared around and into the sandy areas. More specifically, the following outlines the substrate conditions:

- the north side of the tenure dropped off quite quickly sometimes to 33m. It was all bedrock except for a small wedge of sand.
- the east side included shallow bedrock that dropped off to 16m at the SE corner.
- the south side included mostly bedrock dropping off to 15m. A sliver of sand runs along the bottom of this rock. It stretches for  $\frac{3}{4}$  of the length of this side.
- the west side included rock that dropped off to cobble at 15m for  $\frac{1}{2}$  the length of this side. The other  $\frac{1}{2}$  of this edge contains a patch of sand and finishes on the northeast corner with a rock visible at lower water.

## Marine Vegetation

During the initial survey, the tenure was found to have *laminaria* species.

## Freshwater Habitat

Freshwater habitat was not surveyed as part of the biological assessment on this file.

## Fisheries Resources

DFO-FMB stated that they have no concerns from the perspective of current other fishery user conflicts at the site. Sub area 16-11 is an important commercial prawn fishing area however the site is largely shallower than regularly used by prawn fishers (deeper than 50m). Geoduck harvest is also reported in several pockets along the shore of Hardy Island however the commercial geoduck fishery submitted no reports of harvest activity at this site. According to the DFO clam atlas, an intertidal shellfish bed is identified ~600m to the southwest of the proposed site.

## Wildlife Usage (including Marine Mammals)

According to the proponent, no significant shoreline wildlife habitats are used for breeding, foraging or staging of wildlife near the site.

Marine mammals utilising the area include Harbour seals throughout most of the year and Stellar sealions on rare occasions. Marine mammals travel through Jervis inlet passing by the proposed farm site. No haul-out or breeding areas are known in the vicinity of the farm site. The nearest known sea lion haul-out site is located at Scotch Fir Point located 3.2nm from the proposed site. The nearest known breeding grounds for Harbour seals is Texada Island.



## Marine Traffic

Navigable Waters Protection Division staff have determined that the site waterway receives medium use by coastal tug and tow, ferry, commercial fishery vessel, recreational craft and naval vessels. The proposed farm tenure boundary is 1.8nm from the Saltery Bay ferry terminal (almost directly north of the proposed farm, across Jervis Inlet) and 1.5nm from the charted ferry track.

## Weather and Climate

The following information was provided for a finfish aquaculture facility located across Jervis Inlet, from the proposed shellfish farm.

The area is subject to southeast storms with winds up to 111 km/hr or 60 knots (reported by local citizens and workers in the area). Katabatic type outflow winds can flow out of the interior and off the glaciated mountains, particularly from adjacent Hotham Sound with wind velocities to 86 knots.

Local geographic conditions of narrow steep valleys and glaciated mountains in proximity creates very localised conditions. Southeasterly winds seldom penetrate into the westerly ends of Jervis Inlet with wind velocities over 112 km/hr or 60 knots. The site is not protected from easterly fetches. Cold temperatures during winter months and outflow periods could generate icing from freezing rain and / or snow. Precautions must be taken in the form of regular inspections and removal of the build-up of ice and snow on the raft systems should any conditions prevail.

## Physical and Oceanographic Information

Eight out of twelve raft clusters will be placed in 10-20m water depth, leaving the four remaining clusters to be placed in 5-10m water depth. Offshore depths outside of the lease area reach 250m. Current velocity and tidal water circulation studies for the proposed site were not conducted.

# **7.0 ENVIRONMENTAL EFFECTS AND SIGNIFICANCE**

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Tables 1, 2, and 3 consist of information summarising the potential adverse effects of the proposed project on key Valued Ecosystem Components (VECs), effects of the environment on the project, and the effects of project-related changes in the environment on Valued Social Components (VSCs). The tables also contain information on proposed avoidance and mitigation measures, and identify the significance of the residual environmental effects that are likely to exist after mitigation.

A residual effect is any measurable or demonstrable environmental effect remaining after mitigation. Each project activity or component and its associated mitigation is scored based on different attributes (intensity, geographical extent, duration, frequency and reversibility). Residual effects have been assigned a value of Negligible, Low, Intermediate, High, or Unknown. A value of Negligible is assigned where the environmental effects are not anticipated to be measurable or demonstrable after mitigation. Those VECs/VSCs with a residual effect other than Negligible are further assessed to determine whether any cumulative effects might arise through interaction between such project-specific effects and similar effects from other past, present or reasonably foreseeable activities/projects (see Section 8.0). Those components that result in no residual effects need not be considered further in the cumulative effects assessment.

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**Table 1 – Potential changes in the environment caused by the project (Significance of potential adverse effect: Negligible, Low, Intermediate, High)**

Project Component / Activity	Potential Direct Effects	Valued Ecosystem Components	Discussion of Issues and Mitigation Measures	Significance
Removal of existing geoduck clams on site and ongoing harvesting operations	Subtidal fish habitat may be disrupted during harvesting activities and/or ongoing operations (i.e. marking of seabed, dragging of hoses/bags of clams)	Fish habitat: Subtidal Habitat	<p>The placement of line and anchoring materials must not impact sensitive marine habitat.</p> <p>Removal of wild geoduck clams or harvest of cultured geoduck clams will not be allowed in areas of sensitive marine habitat (eelgrass beds, kelp beds) or areas not inventoried during the habitat assessment exercise.</p> <p>Divers use hand-held water jets with nozzles to dig the clams one at a time from the substrate. This method of harvest is the most environmentally benign method of harvest currently available.</p>	Low
	Release of sediment during harvesting and ongoing operations (suspension of fine particles)	Water quality	<p>Harvesting of geoducks will be done by divers with water-hoses managed from a platform vessel.</p> <p>Frequency of first harvest will commence in 5yrs after seeding.</p> <p>Transportation of product will be shipped off site using the same vessel to a loading dock across the bay, then transported by truck to a processing plant. Mussels will be pulled up to the vessel by a davit, and shipped to an offloading dock across the bay every 12-16months, then transported by truck to a processing plant.</p> <p>Dive equipment will be cleaned by fresh water off site.</p> <p>The proponent should adhere to the established mitigation methods for the geoduck fishery.</p>	Negligible
	Recruitment and sustainability of local geoduck populations	Local geoduck populations	<p>The harvesting of local geoducks prior to tenure occupation will result in retention of small juveniles, not 'showing' at the time of harvest. This will result in retention of a portion of the local geoduck population.</p> <p>The wild geoduck clams to be removed from the site will be accounted for within the annual wild fishery Total Allowable Catch (TAC) and individual wild fishery vessel quotas and therefore the overall management of the stock will lie with DFO Fisheries staff. All conditions outlined by DFO-Fisheries Management staff will be followed.</p> <p>The proponent will re-seed the areas that will be removed of wild geoduck clams with seed. This transfer has been approved by the Introductions and Transplant Committee which accounts for genetics and disease transfer issues.</p> <p>Mobile animals may be temporarily attracted to the harvest site. Epifauna animals</p>	Intermediate
	Effects on existing	Marine resources		Negligible

Project Component / Activity	Potential Direct Effects	Valued Ecosystem Components	Discussion of Issues and Mitigation Measures	Significance
	marine populations		<p>(crabs, fish, shrimp, molluscs, echinoderms etc.), being mobile are not affected by geoduck harvest in the same way as infauna. They are less likely to be carried away with currents and can move to undisturbed, adjacent areas. Geoduck harvest has not been observed to have demonstrable long-lasting impacts on the epifauna of the harvested tracts.</p> <p>DFO-Fish Management staff have reviewed this application with respect to effects on herring populations. Any measures outlined by DFO-FMB will be followed. Specifically, herring spawn on in-water structures must be left until eggs hatch and larvae emerge.</p> <p>Damage to the ling cod eggs or direct harm to ling cod from geoduck harvesting is unlikely due to the geographic separation of ling cod spawning areas and geoduck harvest areas. However, to prevent impacts to lingcod spawning, if spawning is observed, no harvest of geoducks shall occur within 25m of this area.</p> <p>Fish that may inhabit rocky areas of the tenure (rockfish, lingcod) adjacent to the sandy areas, should not be disturbed by harvest activities.</p>	Negligible
	Effects on marine mammals populations	Existing marine mammal populations	Geoduck harvest will have negligible effects on marine mammal populations.	Negligible
	Effects on marine vegetation	Marine vegetation	No harvest will occur in areas that sustain kelp.	Negligible
<b>Construction, Installation and/or Decommissioning of facility</b>	Intertidal fish habitat may be disrupted during the construction, installation, and/or decommissioning of the facility  (e.g. creation of berms, addition / removal of substrate, compaction of substrates, smothering of	Fish habitat: Intertidal Habitat	<p>This is a deepwater site therefore no activities will occur in the intertidal area. Beach clearing activities or substrate modifications will not be pursued. DFO will be contacted in the event of decommissioning to ensure that the area is responsibly restored to its natural condition. No eelgrass is present within the tenure.</p> <p>Any structures required on-site will be built off-site or upland and will not impact intertidal fish habitat.</p> <p>Equipment and materials will not be stored in intertidal areas.</p> <p>Fuels, lubricants and hydraulic fluids are not to be stored on the foreshore. Equipment and materials are not to be stored in intertidal areas.</p>	Negligible

Project Component / Activity	Potential Direct Effects	Valued Ecosystem Components	Discussion of Issues and Mitigation Measures	Significance
	intertidal organisms)			
	Benthic fish habitat may be disrupted during the installation, construction and/or decommissioning of the facility	Fish habitat: Benthic habitat (e.g. herring spawning areas, rocky reefs, kelp beds, saltmarsh and/or eelgrass)	Deepwater rafts/lines are not to be sited over habitat that sustains vegetation (algae, kelp and eelgrass) and not come to rest on the seafloor during all tide stages. Herring spawn on in-water structures must be left until eggs hatch and larvae emerge. To prevent impacts to lingcod and herring spawning, no harvest of geoducks shall occur in January through April. Any structures required on-site will be built off-site or upland and will not impact benthic fish habitat. Anchor blocks are not to be sited or placed in areas that sustain sensitive fish habitat including kelp and geoduck beds. When planning the decommissioning of this project the proponent will confer with DFO habitat staff regarding intended approaches, and will comply with all conditions identified in any Letter of Advice or Authorisation issued in this regard.	Negligible
Use of potentially hazardous substances, and use and maintenance of equipment, cleaning of equipment	Discharges and/or accidental spills of harmful substances (e.g. fuel, lubricants, net and line cleaning substances, etc.). Possible toxic effects on wild organisms, and/or accumulation of substances in organisms could pose a food safety risk to humans and wildlife.	Marine Water Quality	All authorized machinery will be in good working condition such that no fuels, lubricants, or construction wastes will enter the marine environment. All works will be completed in a manner that prevents the release of constructions waste, excavation waste, soil, oil, grease or any other substance deleterious to fish or other aquatic life into any water course or water body. Any accumulated grey water will be stored in a 100 gallon tank on board vessel and brought to proper discharge areas. No chemicals of any sort will be used. Any fuel stored or used on the site will be contained and transferred as required in a manner that minimizes risk of accidental spillage of fuel into the aquatic environment and appropriate clean-up materials will be kept on hand to allow clean up of any spillage which may occur. Any spills will be reported to the appropriate authorities. Metals, paints and wood preservatives which may be toxic to fish must not be used on surfaces that come in contact with fish or the water immediately surrounding them. All equipment will be maintained to prevent leakage of hazardous materials to the environment. Areas will be designated for hazardous materials storage, handling and refuelling. Modified canola oil will power hydraulic equipment to ensure no	Negligible

Project Component / Activity	Potential Direct Effects	Valued Ecosystem Components	Discussion of Issues and Mitigation Measures	Significance
Introductions and transfers of fish onto the farm site	Introduction / transmission / spread of disease and/or parasites.	Health of local marine organisms	<p>contamination of product or the environment.</p> <p>Cleaning of the drop line/trays from the rafts will take place on land, using a pressure washer. No disinfecting will be required. Wash water and fouling materials will be collected and disposed of away from the marine environment.</p> <p>A transplant licence was issued (under Section 56 of the Fisheries – General Regulations under the <i>Fisheries Act</i>) to the proponent in March 2003 for the transfer of geoduck clams from Unique Seafoods to the planned site. This ensures among other factors, that risks to the genetic health of wild populations are not significant. Conditions were added to this licence which included:</p> <ul style="list-style-type: none"> <li>all surveys of the planting area must be carried out as described in letters from DFO prior to out-planting</li> <li>geoducks must be added to the current licence prior to out-planting any geoducks.</li> </ul>	Negligible
Disposal of shell and domestic waste	<p>Effects on native shellfish populations and other species (e.g. competition for habitat, intermixing of gene pool, disease transfer)</p> <p>Improper storage and/or disposal of shell or shellfish mortalities and domestic waste (garbage and sewage) may lead to accumulation of refuse and attraction of predators.</p>	Marine Water Quality	<p>Before live shellfish are transferred to or from the aquaculture facility, the requirements of Part VIII of the Fishery (General) Regulations (<i>Fisheries Act</i>) must be met.</p> <p>The shellfish are native species of similar genetics to the wild population.</p> <p>The proponent has stated that no anti-fouling materials will be used and that sewage will be stored in a 100 gallon tank then disposed of in a pump-out facility.</p> <p>Wash water and fouling materials will be collected and disposed of away from the marine environment. De-fouling will occur using non-chemical means such as air-drying.</p> <p>After every day of operation, the proponent will remove garbage (dead mussels, shell debris, and inorganics such as plastics, metal, wood, ropes and anchors). The garbage and the shellfish mortalities will be disposed of according to Provincial legislation and municipal by-laws. Debris will be regularly transported to landfills for proper disposal.</p>	Negligible
	Suspended solids release resulting in benthic deposition leading to: Alteration and degradation of	Fish Habitat – Benthic habitat	<p>Mussel culture will take place a minimum of 20 feet away from the group of rocky islets and reefs protecting fish habitat in this area.</p> <p>Trays will be used to eliminate the fall-off of cultured product.</p> <p>Mussels will be transported from the site to a provincially licensed processing plant for processing.</p>	Negligible

Project Component / Activity	Potential Direct Effects	Valued Ecosystem Components	Discussion of Issues and Mitigation Measures	Significance
	benthic communities			
<b>Physical existence of the facility structures</b>	Removal of phytoplankton and/or primary production due to shading of the water column	Primary production / Algae	Tidal exchange is estimated to be more than adequate to sustain the shellfish stock. The proposed rafts will minimally shade the area of the water column directly beneath the structures. The rafts however will be placed over sandy areas of the tenure and should not affect areas of marine vegetation within the tenure.	Negligible
	Impairment of water circulation	Marine Water Quality	The rafts will be spaced to allow adequate flushing of waste materials. The raft clusters will be aligned to run parallel to the tidal current and spaced 10m apart, minimizing any effect on water flow.	Negligible
	Effects on fish migration in the area due to presence of longlines and other associated equipment	Health of wild populations	Proposed tenure boundaries include an area width of 600m. Any structures placed in the water column will hang 7m deep. Water depths within the tenure range from 5-20m. Any fish swimming in the area can swim through or under the in water structures with little to no effect. The presence of the shellfish structures will not impact fish migration.	Negligible
	Displacement of marine mammals from traditional feeding areas, alteration of habitat and food	Marine mammal populations	There is no information to suggest that the presence of the shellfish farm will result in displacement of marine mammals. There will be a frequent human presence on site, which should scare any sea otters, seals or sea lions away without them being affected. The area of the proposed site is not known to represent limiting or critical habitat for marine mammals. Every attempt will be made to minimize noise and other operational procedures that may divert or otherwise affect marine mammals.	Negligible
	Displacement of birds from traditional feeding areas or nesting sites, entanglement in predator netting, alteration of habitat	Marine bird populations	All conditions listed by Environment Canada and the Canadian Wildlife Service will be followed. No predator control measures (i.e. protective netting barriers, tubing) are proposed.	Negligible

Project Component / Activity	Potential Direct Effects	Valued Ecosystem Components	Discussion of Issues and Mitigation Measures	Significance
<p><b>Predator control measures</b></p>	<p>and food</p> <p>Mortality of starfish, crabs, moonsnails attracted to the shellfish farm and become nuisance predators of farmed shellfish</p>	<p>Local invertebrate / mammal populations</p>	<p>Mussels will be grown on lines/trays suspended from rafts; however some loss of mussels will occur due to predation by waterfowl and invertebrates present in the water column.</p> <p>As presented in an amendment to the Shellfish Development Plan, predator netting (car cover or plastic mesh secured to the seafloor), is not to be used during the operation of this site. Predator control must be non-lethal. Predators will be hand picked and returned to the water column at a different area with suitable habitat.</p> <p>All mobile predators encountered will be collected by hand and relocated alive, and intact into suitable habitat.</p> <p>Human presence at the site will discourage the presence of predators.</p>	<p>Negligible</p>

**Table 2 – Effects of the Environment on the Project**

Project Component	Potential Adverse Effects to the Project Caused by the Environment	Discussion of Issues and Mitigation Measures
Physical structure of the facility	Weather and wave action may result in loss and/or damage of equipment, and consequently loss of product.	Inspection and equipment maintenance will be part of ongoing operations. The in-water equipment utilized on-site will undergo regular maintenance. Installation of the facility will proceed when weather conditions permit.
Product	Algal blooms resulting from environmental conditions (e.g. warm water, etc.) may result in mortality of farmed shellfish.  Loss of stock due to predation	EC and the CFIA have in place a shellfish water quality protection program and shellfish quality control program in the vicinity of the proposed aquaculture site. Shellfish growers can check the status of the growing waters of their site by checking the internet or by contacting DFO or Environment Canada staff.  Mussels will be grown on lines/trays suspended from rafts; thus, some loss of mussels will occur due to predation. No predator protection devices are proposed for the geoduck clams, therefore some loss of geoducks will occur due to predators.

Note: Residual effects are not considered here, as they are effects on the project and not on Valued Ecosystem Components, therefore they do not contribute to Cumulative Environmental Effects.



**Table 3 – Effects of Changes to the Environment on Valued Social Components**

Project Component / Activity	Potential Direct Effects of Changes to the Environment on VSCs	Valued Social Components	Discussion of Issues and Mitigation Measures	Significance
Physical existence of the facility / structures	Introduction / exposure to health hazards, e.g. garbage, hazardous materials	Human Health	Care will be taken to ensure that sewage disposal is adequate to prevent contamination of the marine environment, especially during high rainfall periods. No pesticides or therapeutants will be used. Areas will be designated, by the proponent, for hazardous material storage, handling and refuelling.	Negligible
	Impediment to public navigation	Navigation	CCG-MNS and TC-NWPD requires that NWPA conditions specified in Section 11.1 be implemented to reduce the potential risks to marine navigational safety that could result from the project. CBCYC stated that their interests would be unaffected. CMC determined that the project would not present a navigational hazard for the log towing/tug-barging operations.	Negligible
	Interference or damage to that structure, site, or thing or lands and resources used for traditional purposes.	Structure, site or thing of historical, archaeological, cultural, paleontological or architectural significance; current use of lands and resources for traditional purposes	<p>The Sechelt First Nation identified 7 archaeological sites within 1km of the proposed aquaculture facility. Two shell middens were identified as being the closest to the proposed facility, located approximately 400m and 510m to the east. Proposed operations consist of subtidal harvesting and seeding of geoduck clams and subtidal culture of mussels from deepwater rafts. There is no information to suggest that the presence of the shellfish farm will result in impacts to these shell middens.</p> <p>The Sechelt First Nation identified interference by the proposed aquaculture facility with fishing for salmon, rock fish and lingcod. The farm will be located in an area used by rockfish, lingcod and salmon, but is not expected to significantly impact First Nation access to these resources as DFO data indicates that the proposed location of the farm is not one of the main fishing areas used by the Sechelt First Nation for food, social and ceremonial fishing purposes.</p> <p>The Sechelt First Nation was consulted to identify their concerns and mitigation measures. Their concerns are broader than access and were considered during assessment of effects on other environmental components in this table and cumulative effects.</p> <p>The Provincial Archaeological Branch was contacted on this file and they stated that they did not identify any potential concerns with this application.</p>	Low

Project Component / Activity	Potential Direct Effects of Changes to the Environment on VSCs	Valued Social Components	Discussion of Issues and Mitigation Measures	Significance
			<p>The potential for the project to impact on archaeological resources is very low given that the project is located entirely in deep water. Nevertheless, the proponent must take all reasonable precautions to avoid disturbing or damaging any archaeological material found on or under the land and upon discovering any archaeological material, the proponent must immediately notify the ministry responsible for administering the Heritage Conservation Act.”</p> <p>There is an extremely limited potential for the project to impact on archaeological resources given that project is located entirely in relatively deep water.</p> <p>The anchor lines for the proposed project are designed to allow shoreline access as well as access corridors through the proposed site to facilitate harvesting opportunities for the Sechelt First Nation.</p> <p>A separation from shore will ensure opportunity for First Nations to access fishing opportunities. In addition, wild fish will not be obstructed by the site and can be captured outside the physical barrier of the structures such that any potential impacts to access are minimized.</p>	Negligible
	Interruption of this use	Recreational Fishery	<p>Direct access to a fishing area is considered a direct socio-economic effect and as such does not represent an environmental effect within the meaning of CEAA.</p> <p>BC Pacific Oysters Ltd. has only been offered a licence of occupation by LWBC and therefore is restricted from impeding access to areas around the farm. BC Pacific Oysters must comply with marine navigation requirements described above.</p> <p>All measures identified by DFO-FMB will be followed.</p>	Negligible
	Interruption of this use.	Commercial Fishery	<p>Direct access to a fishing area is considered a direct socio-economic effect and as such does not represent an environmental effect within the meaning of CEAA.</p> <p>BC Pacific Oysters Ltd. has only been offered a licence of occupation by LWBC and therefore is restricted from impeding access to areas around the farm. BC Pacific Oysters must comply with marine navigation requirements described above.</p> <p>DFO-Fish Management has no concerns from the perspective of current other fishery user conflicts at the site. Sub area 16-11 is an important commercial prawn fishing area however the site is largely shallower than regularly used by prawn fishers.</p> <p>Prior to commencing a pre-seed harvest, a site specific protocol will be established between DFO, the proponent and the Underwater Harvesters Association detailing crew requirements, tenure marking, site set-up, harvest procedures, data records and</p>	Negligible

Project Component / Activity	Potential Direct Effects of Changes to the Environment on VSCs	Valued Social Components	Discussion of Issues and Mitigation Measures	Significance
	<p>Interruption of tourism opportunities in the area.</p>	<p>Tourism</p>	<p>reporting, and other issues deemed appropriate by the parties.</p> <p>A pre-seed harvest of wild geoducks is recommended between May and September, the timeframe during which geoducks are most visible to divers. Pre-seed harvests may be permitted between Oct and April subject to the establishment of "show factor plots".</p> <p>The site facilities may be visible to recreational boaters and ferry passengers en route between Saltery Bay and Earls Cove. LWBC refers shellfish applications to government agencies, including the provincial Tourism Development Branch, and outdoor recreation interests (Outdoor Recreation Council of BC, Council of BC Yacht Clubs, Underwater Archaeological Society of BC and three sea kayak associations).</p> <p>No direct conflicts were identified with tourism opportunities in the vicinity of this proposal.</p> <p>Potential effects of the project on the environment that may affect tourism are addressed in sections of the tables above. BC Pacific Oysters must comply with marine navigation requirements described above.</p>	<p>Negligible</p>

## 7.1 Effects resulting from Accidents and Malfunctions

The proponent has stated that an on-site caretaker will do inspections daily, and maintenance when necessary. The caretaker should be able to respond to any emergency in the event of a small hazardous spill of fuel or oil by placing absorbent pads on the spill. These pads will be kept on the vessels. The caretaker should be able to inspect and attend to any emergency maintenance of the facility in the event of a storm with respect to the mussel rafts and anchoring systems.

Navigable Waters Protection Division and Marine Aids staff have supplied details of the navigational markings required for this site (Section 11.1). The proponent is required to implement these mitigation measures and ensure the continued proper maintenance of all installed navigational aids. These mitigation measures should greatly reduce the chances of collision between vessel traffic and the site infrastructure.

Given the precautions that the proponent will implement at the farm site, it is unlikely that significant impacts to the environment would result from accidents or malfunctions. Risks to the environment associated with accidents or malfunctions do not exceed those associated with many other operations along the coast and does not constitute a reason for rejecting the project.

## 8.0 CUMULATIVE ENVIRONMENTAL EFFECTS

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Under CEEA, all environmental assessments are to include a consideration of 'any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out'. The primary objective of a cumulative effects assessment (CEA) is to determine the potential contribution of the proposed project to existing and reasonably foreseeable cumulative effects.

The potential residual effects that may result from the proposed installation, construction, operation, maintenance and decommissioning of the aquaculture project include:

- effects on subtidal fish habitat that is critical or sensitive (during harvesting activities and/or ongoing operations).
- effects on the recruitment and sustainability of local geoduck populations (during the removal of existing geoduck clams on site).
- effects on interruption of the use of lands and resources for traditional purposes by First Nations.

### 8.1 Past, Present and Reasonably Foreseeable Projects and Activities

In order to assess the potential contribution of the residual effects of the scoped project to a cumulative effect in association with effects from any past, existing, or reasonably foreseeable projects and activities, DFO examined other projects/activities in the general area. These include:

- (i) a finfish aquaculture facility, located ~820m to the west.
- (ii) a finfish aquaculture facility, located ~225m to the east.

## **8.2 Spatial and Temporal Boundaries**

The spatial boundaries for the CEA will vary between different VEC/VSCs but in general include the area between and surrounding the Hardy Island shellfish facility, and the two finfish aquaculture facilities identified above. In determining the study area or spatial boundaries for this CEA, DFO considered the spatial distribution and movement of the shellfish project's residual environmental effects (effects may be both stationary such as impacts on the benthos, or dynamic such as disease transfer). In addition, the spatial distribution and behaviour of VEC/VSCs is taken into account since the movements of a VEC/VSC can result in a residual effect accumulating with others. For example, migratory fish may be exposed to effects in several areas, resulting in a cumulative effect on the population.

For the purposes of this CEA, effects from any past or currently existing projects along with any likely future projects that may be constructed during the operational life of this project will be considered with the assumption that residual effects end when the subject project ends. In this case, however, the operational life of the project may be extended as the proponent can, pending all approvals, renew their NWPA five-year permit. For this reason, DFO has assumed the operational life of the project and its potential residual effects to be approximately 20 years. This decision was made as looking beyond 20 years would not make a substantial difference for CEA purposes, and would add substantial uncertainty to the review. Any substantial changes to the project would require another NWPA assessment and may re-trigger CEAA.

## **8.3 Analysis, Mitigation and Significance of Effects**

The purpose of this section is to analyse whether the residual effects resulting from the aquaculture project under review can become significant when they cumulate or interact with the effects of other projects or activities. Table 4 provides information on the residual effects (including their significance), activities whose effects might combine with the residual effects, mitigation and monitoring measures, and the significance of any combined or cumulative effects.

**Table 4 -Cumulative Effects Analysis (Significance of CE: Negligible, Low, Intermediate, High)**

VEC/NSCs	Residual Effects (After Mitigation) & Significance of these Effects	Other Activities/Projects Contributing to CE	Mitigation & Monitoring	Significance of CE
Benthic fish habitat	Subtidal fish habitat may be disrupted during harvesting activities and/or ongoing operations	Other activities potentially affecting benthic fish habitat in the area include two finfish aquaculture facilities located 820m to the west and 225m to the east.	<p>The finfish facility sited to the west has been approved by DFO to be relocated to a different location (3.9nm to the NE) after the completion of the existing fish production cycle.</p> <p>The finfish facility located to the east does not currently have fish onsite and will also be relocated to a different location (1.8nm to the NE), once the proponent has provided DFO with a habitat compensation plan and the review under CEAA has been completed.</p> <p>Finfish aquaculture facilities are reviewed under the Fisheries Act such that any impact on benthic habitat is avoided or is accounted for through compensation habitat (required as part of a Section 35(2) Fisheries Act Authorization).</p>	Low
Local geoduck populations	Excess removal of local geoduck populations during the purge fishery, altering the ecosystem and productive capacity of the area.	Other activities potentially affecting local geoducks in the area include two finfish aquaculture facilities located 820m to the west and 225m to the east.	<p>The finfish facility sited to the west has been approved by DFO to be relocated to a different location (3.9nm to the NE) after the completion of the existing fish production cycle.</p> <p>The finfish facility located to the east does not currently have fish onsite and will also be relocated to a different location (1.8nm to the NE), once the proponent has provided DFO with a habitat compensation plan and the review under CEAA has been completed.</p> <p>The wild geoduck clams to be removed from the site will be accounted for within the annual wild fishery Total Allowable Catch (TAC) and individual wild fishery vessel quotas.</p>	Intermediate
Current use of lands and resources for traditional purposes by First Nations	Potential loss of access to traditional hunting and fishing areas	Other activities potentially affecting the current use of lands and resources for traditional purposes include two finfish aquaculture facilities located 820m to the west and 225m to the	<p>The finfish facility sited to the west has been approved by DFO to be relocated to a different location (3.9nm to the NE) after the completion of the existing fish production cycle.</p> <p>The finfish facility located to the east does not currently have fish onsite and will also be relocated to a different location (1.8nm to the NE), once the proponent has provided DFO with a habitat compensation plan and the review under CEAA has been</p>	Low

VEC/NSCs	Residual Effects (After Mitigation) & Significance of these Effects	Other Activities/Projects Contributing to CE	Mitigation & Monitoring	Significance of CE
		east.	<p>completed.</p> <p>Several sites have the potential to effect the area for harvesting, however, to minimize potential effects, sites are located to ensure shoreline access for fishing opportunities. Wild fish passage is not obstructed and harvest opportunities can occur outside the rafts which will minimize loss of access to fishing opportunities.</p>	

## 9.0 SUMMARY

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The proponent has provided a Shellfish Development Plan and additional details of the proposed shellfish aquaculture facility at Hardy Island, review of which has allowed DFO to make a determination under Section 20(1)(a) of CEAA. Details of the project, potential effects of the project on VECs/VSCs, and proposed mitigation measures have been outlined in the preceding sections of this report.

## 10.0 REFERENCES

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1. Provincial Shellfish Management Plan. Approved by MAFF on March 24, 2004. 13pp.

## 11.0 MITIGATION MEASURES

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### 11.1 Transport Canada – Navigable Waters Protection Division

**The owners or person(s) in possession is required to ensure that:**

1. Any materials or equipment used in construction or other operations are to be marked in accordance with the Collision Regulations of the Canada Shipping Act if located in or on the waterway.
2. Ensure that equipment used in construction or in other operations does not interfere with navigation, and that all materials, equipment, temporary structures and debris are removed from the waterway upon completion of the work.
3. Construction material, netting, and similar debris are not allowed to become waterborne.
4. Predator netting is to be firmly attached to the substrate to prevent it from floating, or otherwise coming adrift. Should netting come adrift, it is the responsibility of the proponent to ensure that it is recovered in a timely manner.
5. In the event that use of the facility is no longer required, it will be your responsibility to maintain or remove the works and associated equipment in its entirety.
6. Yellow cautionary buoys are to be placed and maintained along the outside perimeter of the works. These buoys are to be no more than 60 meters apart, no less than 0.6 meters in diameter. A horizontal band of yellow reflective tape no less than 4 inches in width should be placed around the circumference of the buoy.
7. A yellow flashing light shall be placed on the rafts occupying positions on the four outside corners of the facility showing 0.5 second flash every 4 seconds, visible on a clear dark night for not less than 2 nautical miles.
8. All shore ties and mooring lines are to be of fabricated non-buoyant material, and counterweighted to prevent them from floating at low water, or otherwise obstructing vessel passage at low water.
9. The proponent shall provide unimpeded access to the Minister or his/her representative.



10. The Navigable Waters Works Regulations apply.
11. The site/work shall be adequately marked/lit during all phases of construction / operation to safeguard marine navigation.

## **11.2 Fisheries and Oceans Canada – Oceans, Habitat and Enhancement Branch**

The proponent has agreed to undertake the following mitigation measures:

1. All work associated with the project (setup and operation) is to comply with the requirements of the *Fisheries Act*, and all other applicable legislation, guidelines, and best management practices.
2. Deepwater rafts/lines are not to be sited over habitat that sustains vegetation (algae, kelp and eelgrass) and not come to rest on the seafloor during all tide stages.
3. Herring spawn on in-water structures must be left until eggs hatch and larvae emerge.
4. To prevent impacts to lingcod spawning, if observed, no harvest of geoducks shall occur within 25m of this area.
5. Anchor blocks are not to be sited or placed in areas that sustain sensitive fish habitat including kelp and geoduck beds.
6. As presented in an amendment to the Shellfish Development Plan, predator netting (car cover or plastic mesh secured to the seafloor), is not to be used during the operation of this site. Predator control must be non-lethal. Predators should be hand picked and returned to the water column at a different area with suitable habitat.
7. The lines and markings for the existing geoduck clams should not impact sensitive marine habitat. Geoducks should not be removed from sensitive areas (areas not inventoried during the habitat survey).
8. The proponent should adhere to the established mitigation methods for the geoduck fishery.
9. No harvesting shall occur in areas sustaining kelp.
10. Fuels, lubricants and hydraulic fluids are not to be stored on the foreshore.
11. Equipment and materials are not to be stored in intertidal areas.

## **11.3 Fisheries and Oceans Canada – Fisheries Management Branch**

1. Prior to commencing a pre-seed harvest, a site specific protocol must be established between DFO, the proponent and the UHA detailing crew requirements tenure marking and site set-up, harvest procedures, data records and reporting, and other issues deemed appropriate by the parties.
2. Pre-seed harvest of wild geoducks are recommended between May and September, the timeframe during geoducks are most visible to divers. Pre-seed harvests may be permitted between October and April subject to the establishment of “show factor plots”.
3. Fish Management recommends that geoduck be approved for culture at this site as the next step in experimental culture development provided:
  - An updated shellfish development plan is received from the proponent via LWBC;

- The CEAA screening is positive;
- A purge fishery protocol is agreed to with the proponent and the fishing conducted between May and October 2004 according to Scientific Licence and conditions; and
- That aquaculture licence provisos are negotiated with MAFF to accommodate purge fishing, chain of custody and other concerns.

#### 11.4 Environment Canada

1. The Canadian Wildlife Service advises that the operation may attract birds, which prey on small fish or shellfish. If a predation problem develops, the crop should be protected by methods other than destruction of the birds (e.g., no shooting and the mesh of any predator nets should be of such a size and type that predatory birds will not become entangled and drown).
2. Care should be taken to ensure that sewage disposal is adequate to prevent contamination of the marine environment, especially during high rainfall periods which can have an adverse effect on the performance of land based sewage disposal systems. However, Environment Canada strongly advocates Land disposal of sewage as the preferred option. Land disposal methods include chemical/incinerator toilets, pit privies and septic tank and tile field, well removed from the foreshore.
3. Please be advised that under the *Fisheries Act*, Management of Contaminated Fisheries Regulations, the harvesting of bivalve molluscs, (oysters, clams, mussels) is prohibited within 125 metres of any wharf, dock, platform or other structure, including float homes, barges, platforms and vessels.
4. The use of organotin (or tributyltin) anti-foulant paints on salmon farm nets poses a considerable threat to marine life, particularly oysters, due to the occurrence of toxic effects at extremely low concentrations. Present federal legislation prohibits the use of tributyltin based anti-foulants for use in aquaculture operations. Should you have any questions regarding the use of anti-foulant paints please contact Stan Liu at 666-2104 at 201-400 Burrard, Vancouver, BC V6C 3S4.
5. Any timber preservatives are to be applied in a manner consistent with current Best Management Practices (BMP). Documentation regarding BMP is available directly from several member agencies, including Environment Canada.
6. No dredging or filling of the foreshore is to be involved.
7. The facility shall be designed and located so as to preclude tidal grounding of any floating component of the foreshore.
8. Any fuel stored or used on the site is to be contained and transferred as required in a manner that minimizes the risk of accidental spillage of fuel into the aquatic environment and appropriate clean-up materials are to be kept on hand to allow clean-up of any spillage which may occur.
9. All of Fisheries and Oceans Canada concerns are to be fully addressed.

#### Canadian Wildlife Service

10. Avoid use of horizontal surface netting. Diving birds may surface underneath them and become entangled. Alternative approaches to aerial barriers include: brightly coloured net fences, which are least partially effective providing they can be maintained on a regular basis; extending rope, to which are attached brightly coloured strips, at 10-15 cm intervals around the perimeter of rafts; constructing rafts

such that they sit 0.5-1.0 meter above the surface of the water; and use of floatation buoys within pen areas.

11. Vertical predator netting should extend down far enough so that birds are unable to enter up inside them. Appropriate depth will depend on the species. From the few sources I have reviewed, recommended depths range between 10 - 20 metres (minimum). Preferably, bottom nets can be used in conjunction with vertical nets to prevent bird access.
12. Recommended mesh size for vertical and bottom nets should be 10 cm or less to avoid entanglement.

## 12.0 SCREENING DECISION

Pursuant to Section 17 of CEAA, Transport Canada delegated the preparation of the screening report to the Aquaculture Division, Fisheries and Oceans Canada (DFO), Oceans, Habitat and Enhancement Branch (OHEB) for the proposed facility at Hardy Island. DFO-OHEB has completed its review of the environmental impacts involved in the proposed establishment of the shellfish aquaculture facility north of Hardy Island, Jervis Inlet, BC. The Oceans, Habitat and Enhancement Branch has conducted an environmental assessment utilising information provided. All relevant factors required by Section 16 of CEAA were considered including the environmental effects of the project and their significance. Fisheries and Oceans Canada concludes that, the project is not likely to cause significant adverse environmental effects. In accordance with Section 20(1)(a) of CEAA, such a determination allows Transport Canada to proceed, if appropriate from a navigation perspective, with the issuance of an Approval under Section 5(1) of the *Navigable Waters Protection Act*.

### Environmental Screening Report

Prepared by:

P. Doucette

Date: May 19/04

Name:

Paula Doucette

Title:

CEAA Assessor, Aquaculture Division  
Fisheries and Oceans Canada – Oceans, Habitat and Enhancement Branch, Pacific Region

The above has completed the CEAA Screening Report to the best of her/his ability and knowledge. Conclusions of the CEAA Screening Report are based on advice from expert Federal Departments, other Federal Authorities, internal Branches of DFO, and other interested parties as defined under CEAA.

### Environmental Screening Report

Approved by:

Susan Farlinger

Date:

May 19/04

Name:

Susan Farlinger

Title:

Regional Director  
Oceans, Habitat and Enhancement Branch, DFO, Pacific Region

**Confirmation by Proponent**

I, DAN McDERMID, having the authority to commit funds and activities on behalf of (Proponent), have read and understood the above material outlining conditions for the above project. I confirm that (Proponent) will undertake all of the mitigation conditions outlined in Sections 8.1, 8.2 and 8.3 of this environmental screening report and any additional measures necessary to ensure protection of the environment and compliance with environmental regulations during the planning, construction, operation, maintenance and decommissioning of this project.

Signed by: [Signature]  
Title: Aquaculturist

Date: MAY 19, 2004

Environmental Screening Report  
Vetted by: [Signature]

Date: MAY 19, 2004

Name: Bob Gow  
Title: Regional Superintendent, Navigable Waters Protection Division  
Transport Canada, Pacific Region

The above has reviewed this environmental screening report and verifies that it meets the requirements of the CEEA.

Environmental Screening Report  
Approved by: [Signature]

Date: 04.05.19

Name: Robert Sisler  
Title: Regional Manager, Environmental Services  
Transport Canada, Pacific Region

The above has reviewed the environmental screening report and verifies that it meets the requirements of CEEA.