



Land and Water British Columbia Inc.



SHELLFISH MANAGEMENT PLAN

Ministry of Agriculture
Food and Fisheries

GENERAL INFORMATION:

| | |
|--|---|
| Name of Company: <i>BC Pacific Oysters</i> | Home Telephone Number: <i>(604) 732-4622</i> |
| Name in Full of Applicant: <i>Don McDermid</i> | Business Telephone Number: <i>(604) 687-7773</i> |
| Contact Name (if different from above): | Fax Number: <i>(604) 732-4642</i> |
| Mailing Address of Applicant: <i>1525 West 29th Ave.</i> | Cellular Phone: () |
| City, Province, Postal Code: <i>Vancouver, BC V6S 2Z1</i> | Email Address: <i>don@spanofranchise.com</i> |

SPECIES INFORMATION:

Check appropriate Species:

| | |
|--|---|
| <input type="checkbox"/> Pacific Oyster | <input checked="" type="checkbox"/> Blue Mussel |
| <input type="checkbox"/> Manila Clam | <input checked="" type="checkbox"/> Geoduck |
| <input type="checkbox"/> Red Algae | <input type="checkbox"/> Brown Algae |
| <input type="checkbox"/> Other (Please Specify): _____ | |

Approved Management Plan
 Approved by *KJA / J. M. M. R.*
 Date *MAR. 24 2002*
 Replaced by _____
 Date _____

APPLICATION INFORMATION:

This is a: First Time Application Amended Application Replacement

TYPE OF OPERATION:

Land Based Water Based Marine Freshwater

OPERATION IS ON:

Provincial Crown Land Federal Harbour or Port Private Upland or Foreshore
 Native Reserve Provincial Park Federal Park

| | | |
|--|----------------------------------|--|
| MAFF Reference Number <i>000756</i> | Canadian Coast Guard File Number | BC Assets and Land Corporation File Number <i>2402982</i> |
|--|----------------------------------|--|

Land and Water British Columbia Inc. Ministry of Agriculture, Food and Fisheries
 Suite 501 - 345 Wallace Street, Nanaimo BC V9R 5B6
 Tel: (250) 741-5669 Fax: (250) 741-5686

RECEIVED
 NOV 12 2002
 \$53.50 rec'd

SECTION A: DESCRIPTION OF SITE

- Legal Description of Site (Land District and Lot Number): unsurveyed
freshwater or land covered by water being
part of the bed of Jervis Inlet (GP1 NWD
(file 2402982)
- Geographical Description of Site: Hardy Island, Jervis Inlet (as per the attached
map)
- Geographic Coordinates of the centre of the proposed site:
N. Latitude: 49° 45.5" N
W. Longitude: 124° 11.8" W
Canadian Hydrographic Services Marine Chart No. 3514
- Total area of site 12.71 hectares.



SECTION B: SCALE OF OPERATIONS

- Assuming the site is in full production, provide the following information.
 - Total production hectares (grow-out) 5-6 hectares.
 - Total non-production hectares (seed holding, conditioning area, etc.) 0 hectares.
 - Total unusable hectares (soft substrate, rocky substrate, too shallow, etc., as well as the area taken up by anchors and anchor lines) 16.71 hectares.
 - Grow-out system: Bottom Near Bottom _____ Deep Water
 - Total length of longline (for deep water) _____ metres and/or, total number of structures (rafts, racks, stakes, etc.) 12 RAFT CLUSTERS (total of 36-10m x 10m rafts)
 - Number of grow-out units (string, trays, socks, etc.) _____ per metre of longline and/or 480 per structure. (mussek)
(per 10m x 10m raft)
 - Oyster beach culture - Seed type: singles
vexar:
 - Expected no. of gallons/singles per vexar _____ gal/singles
 - Expected grow-out period _____ years
 - Oyster string culture - Length of individual strings _____ meters
 - Number of shell pieces /string _____
 - Number of gallons produced per string _____ gal.
 - Expected grow-out period _____ months
 - Oyster tray culture - Tray type - _____
 - Tray dimensions _____ cm x _____ cm x _____ cm
 - Number of trays per stack _____

- Number of seed per tray _____
 - Number of harvestable oysters per tray _____
 - Expected grow-out period _____ months
- Mussel Culture**
- Length of individual socks 7 meters
 - Number of seed per metre of sock 495
 - Number of ^{lbs} kgs produced per sock = 45 ^{lb} kg.
 - Expected grow-out period 12 months
- Clams Culture**
- Number of seed planted per m² _____
 - Number of kgs produced per m² _____ kgs.
 - Expected grow-out period _____ years
- Scallop Culture**
- Grow-out system _____ ear-hanging
_____ tray/nets
 - Tray or net type _____
 - # of trays or nets per stack _____
 - # of seed per tray/net _____
 - # of harvestable scallops per tray/net _____
 - Expected grow-out period _____ months
- Geoduck Culture**
- ~~Intertidal~~ Subtidal
 - # of tubes/m² _____
 - # of seed/tube 25
 - grow-out period 5-7 years
 - # geoduck harvested/m² 5-8
 - # kg harvested/m² _____

420 strings (socks)
per 10.1 x 10.1 m MAF
(1440/cluster)

(@ 116/animal = 5-8 lb/m²)

Purge of existing stock:

[Handwritten signature]



2. Schedule of Improvements

| Description of Improvements | Total Area Covered | Date of Completion |
|-----------------------------|---|---|
| 12 MUSSEL RAFT CLUSTERS | 1.5 HA. as per attached diagram | 2 clusters - 2004 4 clusters - 2005 4 clusters - 2006 2 clusters - 2007 |
| Geoducks | Approx 5-6 ha seeded as per attached diagram (No protective netting will be used at this time) | One RAFT of the area will be seeded each year. Depending on growth period the total area will be seeded by 2008-2010. |

3. Planned Seeding

| Species | Year 1 = 2004 | Year 2 = 2005 | Year 3 = 2006 | Year 4 = 2007 | Year 5 = 2008 | Seed Units |
|-----------------------|---------------|-------------------------------|-------------------------------|-------------------------------|---------------|-----------------------|
| M. edulis | 960 lines | ¹⁹³⁰ 2880 lines | ²⁸⁸⁰ 4800 lines | ²⁸⁸⁰ 5760 lines | 5760 lines | 2465 SEED PER STRINGS |
| M. galloprovinc. | 960 lines | 2880 lines | 4800 lines | 5760 lines | 5760 lines | " |
| M. crossulus | 960 lines | 2880 lines | 4800 lines | 5760 lines | 5760 lines | " |
| Geoducks (P. abrupta) | 100,000 | 250,000 | 250,000 | 250,000 | 250,000 | SINGLES |
| | (2 clusters) | (4 clusters) + | (4 clusters) + | (2 clusters) + | | |

- 2/3 OF LINES OF PROTECTIVE NETTING
- V3 CONSTRUCTION

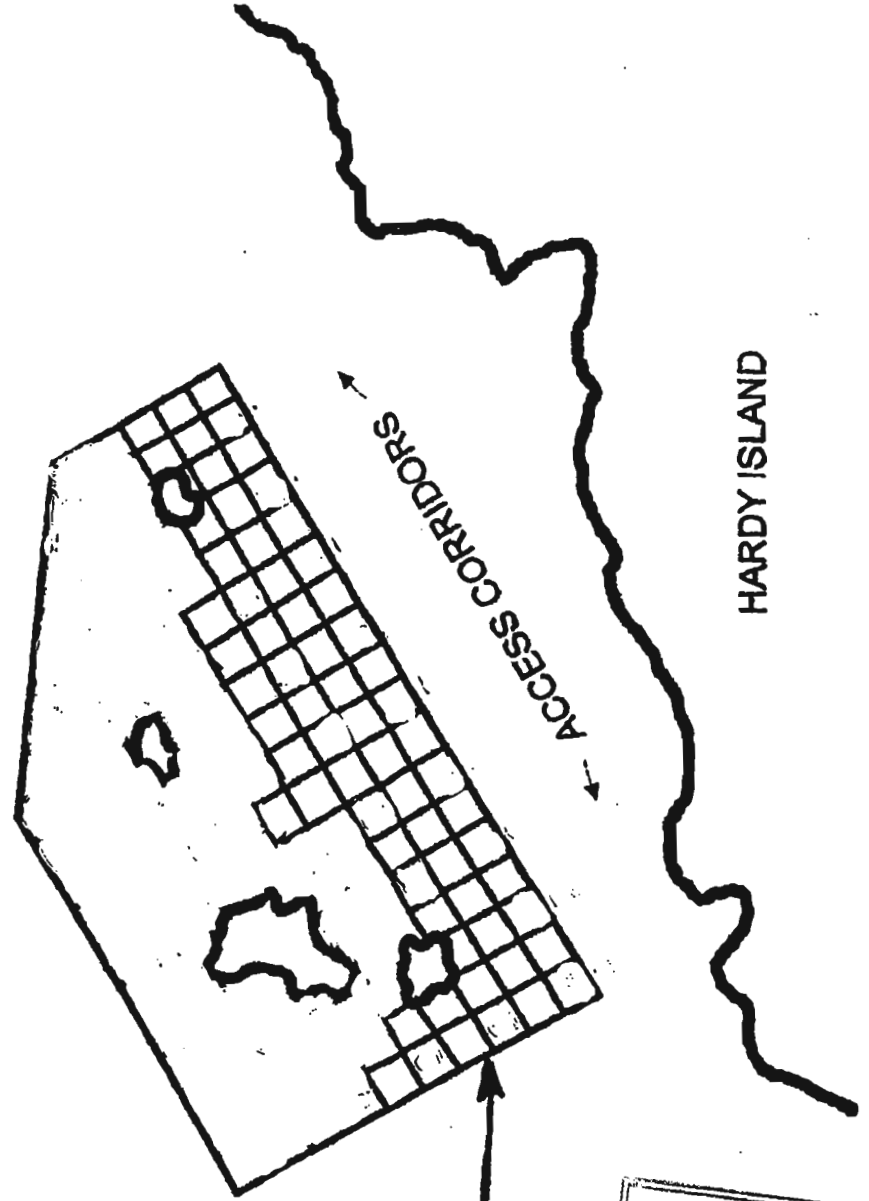
Approved Management Plan
Approved by: [Signature]
Date: MAR 24/04
Replaced by:

4: Planned Production:

| Species | Class | Year 1 = 2005 | | Year 2 = 2006 | | Year 3 = 2007 | | Year 4 = 2008 | | Year 5 = 2009 | | Units (not \$) |
|---------------------------|-------------|---------------|--------|---------------|---------|---------------|---------|---------------|---------|---------------|---------|----------------|
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | |
| M. edulis | Market Size | 34,000 | 52,000 | 49,000 | 104,000 | 115,000 | 172,000 | 138,000 | 208,000 | 138,000 | 208,000 | 165 |
| | Seed | | | | | | | | | | | |
| M. galloprovinc. | Market Size | 34,000 | 52,000 | 70,000 | 104,000 | 115,000 | 172,000 | 138,000 | 208,000 | 138,000 | 208,000 | 165 |
| | Seed | | | | | | | | | | | |
| M. trassulus | Market Size | 34,000 | 52,000 | 70,000 | 104,000 | 115,000 | 172,000 | 138,000 | 208,000 | 138,000 | 208,000 | 165 |
| | Seed | | | | | | | | | | | |
| Geoducks (P. abruptus) | YEAR | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 165 |
| | MARKET SIZE | 32,000 | 48,000 | 80,000 | 124,000 | 80,000 | 124,000 | 80,000 | 124,000 | 80,000 | 124,000 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Approved Management Plan
 Approved by *RJA for MARE*
 Date *MAY 24/07*
 Replaced by _____
 Date _____

PROPOSED AMENDMENT TO EXISTING
 AQUACULTURE TENURE #2402982
 FOR CONVERSION TO SUBTIDAL ~~Geoduck~~ CULTURE
 JERVIS INLET, UF, GROUP 1
 NEW WESTMINSTER DISTRICT



Location of Proposed subtidal
 Geoduck is indicated as
 Squares on map.

100 M

| | |
|--------------------------|--------------------|
| Approved Management Plan | |
| Approved by | <i>[Signature]</i> |
| Date | <i>MAR 27/14</i> |
| Replaced by | |
| Date | |

SHELLFISH MANAGEMENT PLAN

(Amendment)

MAFF Reference Number: 000756

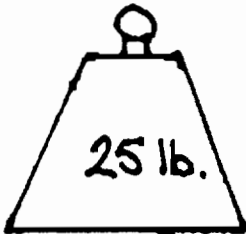
BC Assets & Land Corporation File Number: 2402982

The boundaries for the proposed geoduck seeded area will be marked by cement blocks spaced out every 50 feet attached together by a rope.

Dimensions

Cement Block:

Rope:



— 5mm Polypropylene Rope

Dan Mc Dermid
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Fax : 604-723-4642

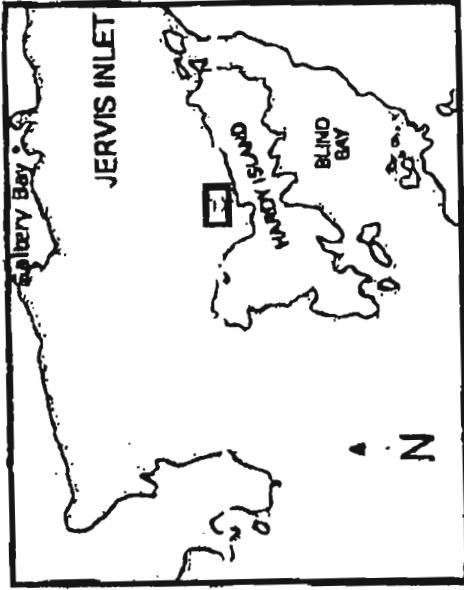
| |
|-----------------------------------|
| Approved Management Plan |
| Approved by <i>EA for MAFF</i> |
| Date <i>MAR 24/04</i> |
| Replaced by |
| Date |

**PROPOSED AMENDMENT TO EXISTING
OYSTER AQUACULTURE TENURE #2402982
FOR CONVERSION TO MUSSEL CULTURE
JERVIS INLET, UF, GROUP 1
NEW WESTMINSTER DISTRICT**

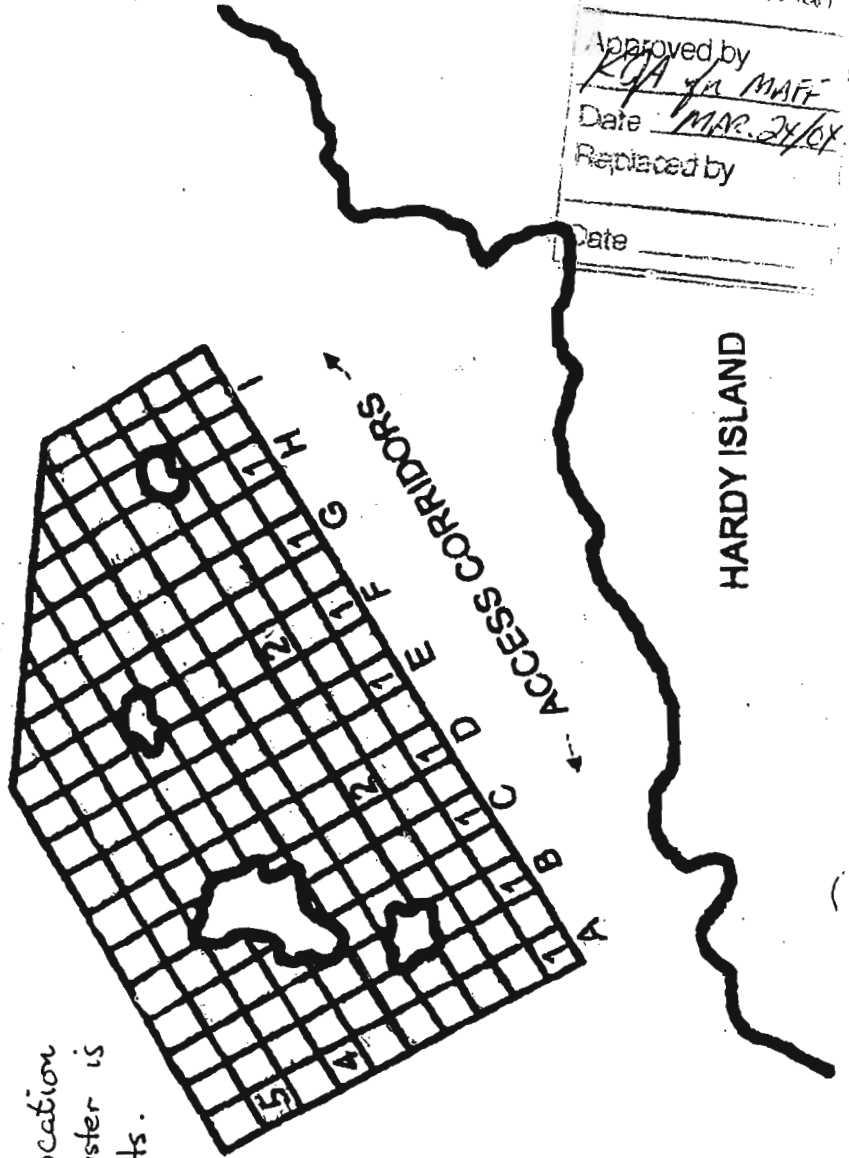
**LETTERS INDICATE PROPOSED RAFT CORRIDORS
NUMBERS INDICATE PROPOSED RAFT CLUSTERS**

* The numbers represent the location of raft clusters only. Each cluster is comprised of 3-10x10m rafts. There are 12 raft clusters for a total of 36 rafts.

**MOT APPROVED
FLOATS & SPACING**



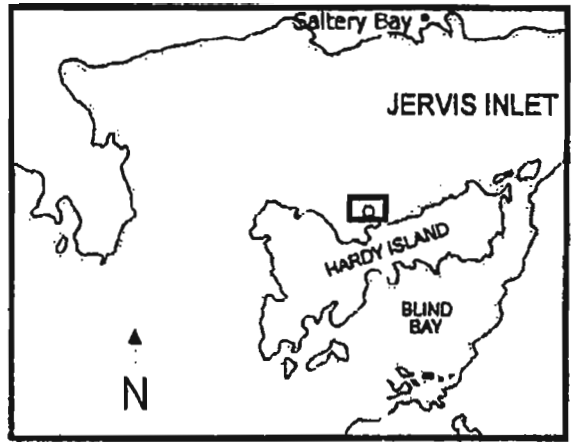
VICINITY MAP



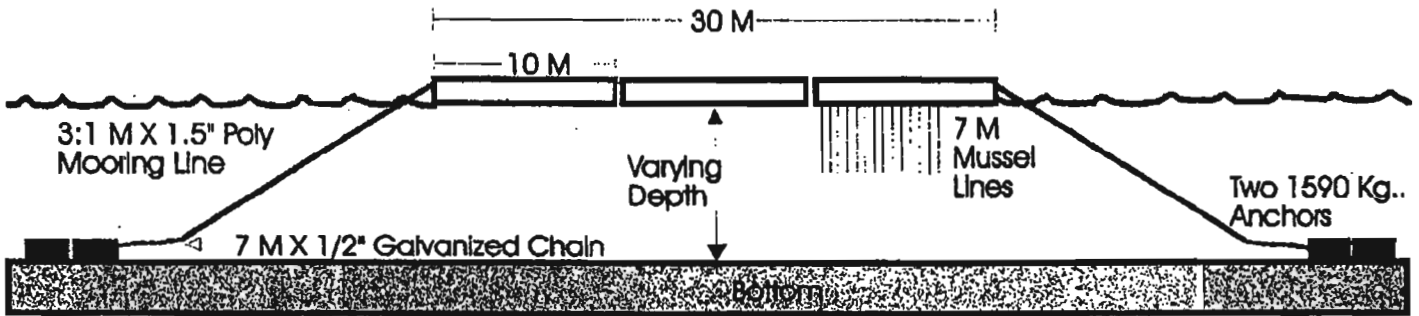
Approved Management Plan
Approved by *RJA for MAFF*
Date *MAR. 24/08*
Replaced by
Date

EXHIBIT 'A'

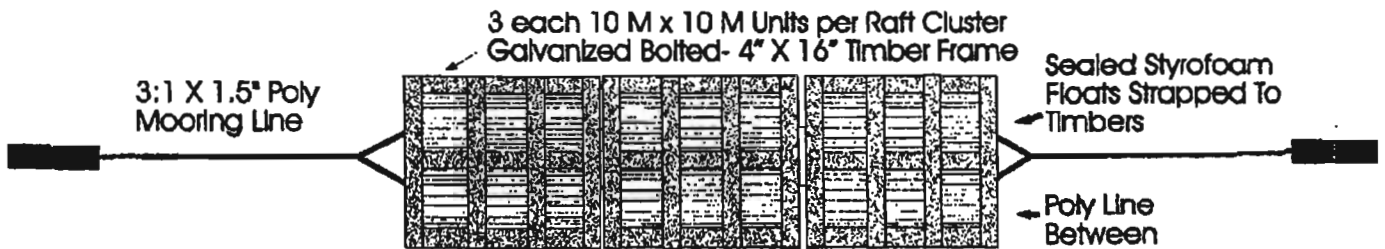
MUSSEL RAFT CLUSTERS (SIDE + TOP VIEWS)



VICINITY MAP



RAFT CROSS SECTIONAL DETAIL



TOP VIEW

DETAIL PLAN FOR MUSSEL RAFTS IN
JERVIS INLET, NEAR HARDY ISLAND

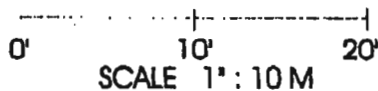


EXHIBIT 'A'

PROPOSED AMENDMENT OF EXISTING
SHELLFISH AQUACULTURE TENURE #2402982

IN: JERVIS INLET, UF, GROUP 1
DISTRICT: NEW WESTMINSTER
BRITISH COLUMBIA

| |
|------------------------------------|
| Approved Management Plan |
| Approved by <i>KJA for MARE</i> |
| Date <i>MAR 21/04</i> |
| Replaced by |
| Date |

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SECTION C: OPERATIONAL FACILITIES AND LAYOUT

Please attach the following maps and diagrams; they should be drawn/drafted in ink, and if stated, to scale and be consistent with the other information in the Management Plan. Consult the Shellfish Management Guide for more detailed information.

LOCATION MAP:

1. A CHS Marine Chart (1:40,000) showing the area under application and any resources or other uses in the area that you are aware of.

OPERATIONAL LAYOUT DIAGRAM (S):

2. Show detail of operations and all intended improvements (as per 5 year Schedule of Improvements) and indicate culture areas and associated uses (e.g. seed holding) in relation to tenure boundaries and tide heights.
3. Indicate the areas to be used for the culture of each species. Include both upland and foreshore uses and facilities *if applicable*. If beach or Crown upland modification is required, show areas to be modified and indicate proposed changes to the beach.
4. If this is an application for the expansion of a site, also provide maps and drawings of existing tenure and infrastructure.
5. Describe and mark the location of other facilities associated with the proposed aquaculture operation, either existing or proposed. These may include wharves, access roads, staff facilities, portable washrooms, etc.

DETAILS OF OPERATIONAL COMPONENTS:

6. Where applicable, provide detailed diagrams of operational components such as stacks, racks, rafts, near bottom and deep water longlines, anchoring and mooring systems, cages, raceways, grow-out tanks, trays, predator netting, perimeter fencing etc. Include profile and top view diagrams, dimensions and construction details of all components described in Schedule of Improvements.

SECTION D: LAND USE OPERATIONS

1. Type Of System (check appropriate description)

Raceways _____

Man-made ponds _____

Grow-out tanks _____

Other (please specify) _____



2. Main Water Source

a) Geographic description of main water source (indicate on Site Layout Map)

b) Volume required _____ l/min. Discharge rate _____ l/min.

c) Depth of intake _____ m. (below M.L.W.)

d) Effluent treatment

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Management Plan

Approved by
EPA for MACE

Date *MAR. 2002*

Replaced by

Date _____

- All works be completed in a manner that prevents the release of construction waste, excavation waste, overburden, soil, silt, sediment, concrete, concrete-laden water, oil, grease or any other substance deleterious to fish or other aquatic life into any water course or water body.
- Fisheries and Oceans authorization be obtained before any machinery is taken onto the beach for the purpose of harvesting or beach alteration.
- Fisheries and Oceans authorization be obtained before any foreshore modification, fill (i.e. addition of sand or gravel), or dredging is undertaken.
- Installation of any structures must not alter or disrupt saltmarsh or eelgrass habitats.
- No shellfish culture activities or structures to occur within 5 metres of any eelgrass habitat.
- No gear and/or floating structures to be established over rocky reef, kelp bed or eelgrass habitats.
- For tenures that include upland, all works along the upland be conducted in such a manner as to minimize the removal of vegetation, such as shrubs and trees. Upon completion of the work, all disturbed areas should be rehabilitated and/or replanted with vegetation indigenous to the local area.
- All operations be restricted to the shellfish lease site. No disturbance to the adjacent upland and surrounding foreshore should occur.
- All landing or grounding vessels, including barges, be restricted to the shellfish tenure to prevent disturbance to adjacent and surrounding intertidal habitat.
- Vehicle driven on the tidal foreshore be restricted to areas of firm substrate and away from inter-tidal vegetation.
- Cleaning of equipment (e.g. oyster traps and predator nets) to remove bio-fouling be done in such a manner that the resulting grey water and fouling organisms do not smother the benthic communities below or deplete oxygen in the water column.
- Shellfish culture not to be conducted within the braided channels of any salmonid creeks.
- Herring spawn on longlines be left until eggs hatch and larvae emerge.
- Inspection and maintenance of all equipment be conducted on a regular basis as required.
- The operator to adhere to all applicable legislation, guidelines, and best management practices.

Approved
Management Plan

Approved by
[Signature]

Date *1/10/02*

Replaced by

Date

I HAVE READ THE ABOVE AND AGREE TO ADHERE TO ALL APPLICABLE LEGISLATION, GUIDELINES AND BEST MANAGEMENT PRACTICES.

[Handwritten Signature]

Signature

Oct 28 / 2002

Date