

Diver Observations in Port Mouton Bay,
August, 2007
- a comparison of seabed conditions at
existing and proposed aquaculture sites

Friends of Port Mouton Bay
Contribution #13, August 29, 2007



- To complement previous documentation of ecological knowledge, Friends of Port Mouton Bay initiated a divers' survey to examine the seabed, photographing and sampling the bottom sediments at the active and proposed aquaculture sites in Port Mouton Bay. The state of the sea floor near the present site is a reasonable predictor of what could happen at the proposed site since the two sites are similar hydrodynamically.
- In August, 2007, divers discovered accumulated fluidized waste on the seabed from 30-90 cm thick, outside the boundaries of the Spectacle Island salmon aquaculture site. The divers report that this waste on the seabed supports little or no marine animal life, and that gas bubbles rise from the thickest layers. Holes from gas venting are common. A body of waste 60 cm in thickness lies within 100 m of Carter's Beach.
- Connecting the perimeter points identified by the divers suggests that the contaminated area can be an estimated 80 hectares of the seabed. This area of the waste footprint on the seabed is approximately 10 times greater than the area of the aquaculture site. In order to refine this estimate, diver surveys will continue. Contiguous areas beyond this footprint show marine life coated with a thin layer of waste.

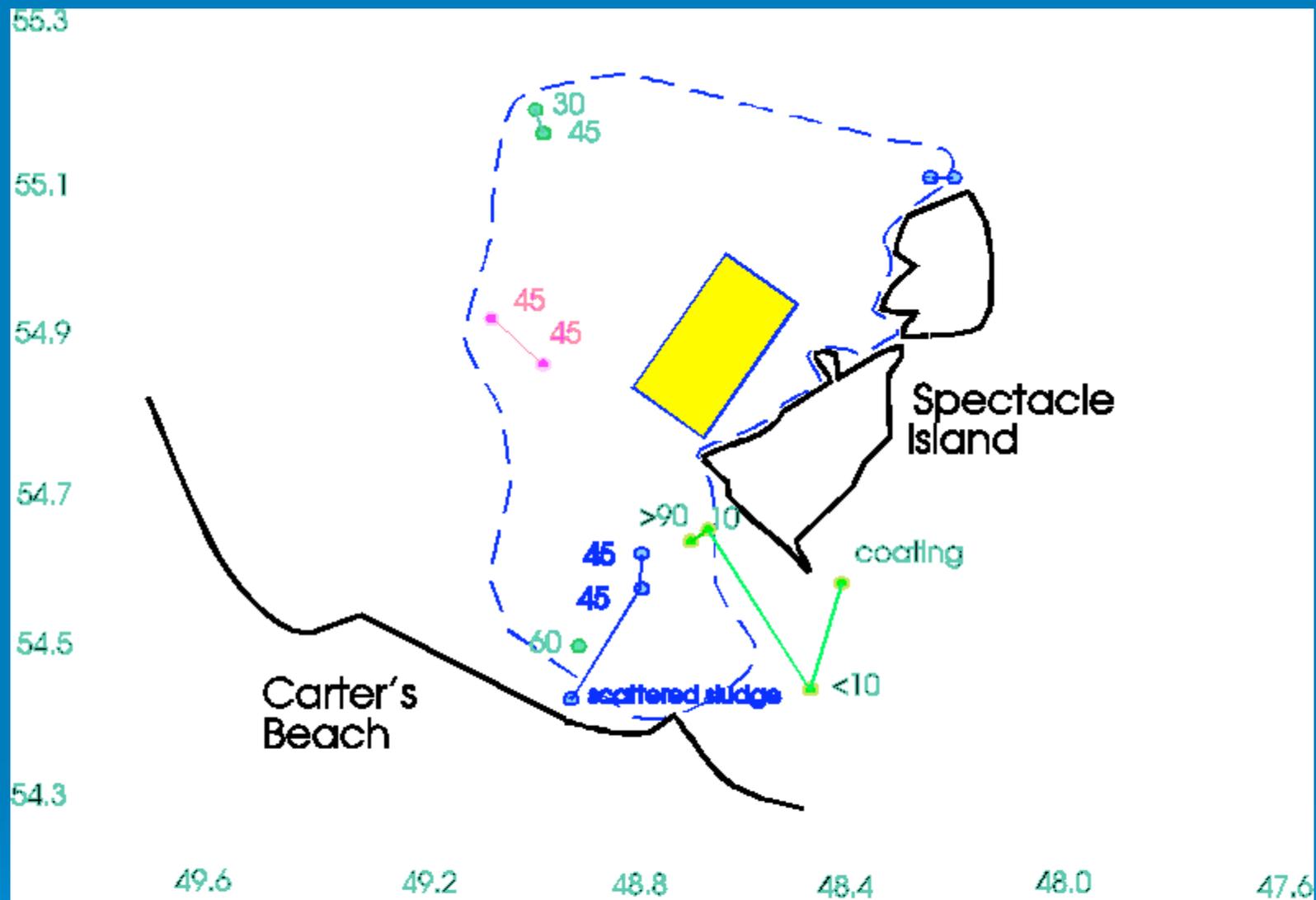
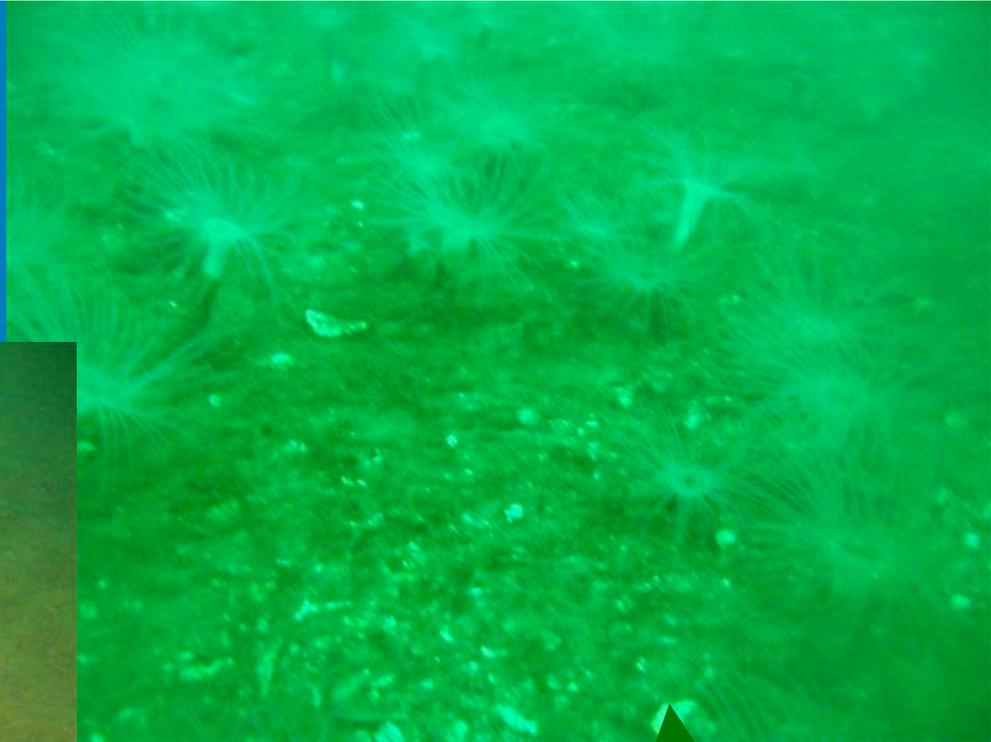


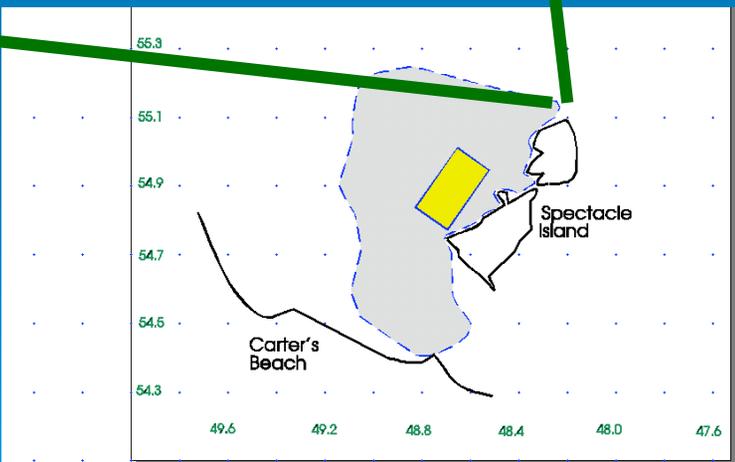
Chart of approximate footprint of waste on seabed showing depth (cm)
 Aug 1, Aug 3, Aug 10, Aug 15, 2007. Horizontal axis is minutes of longitude

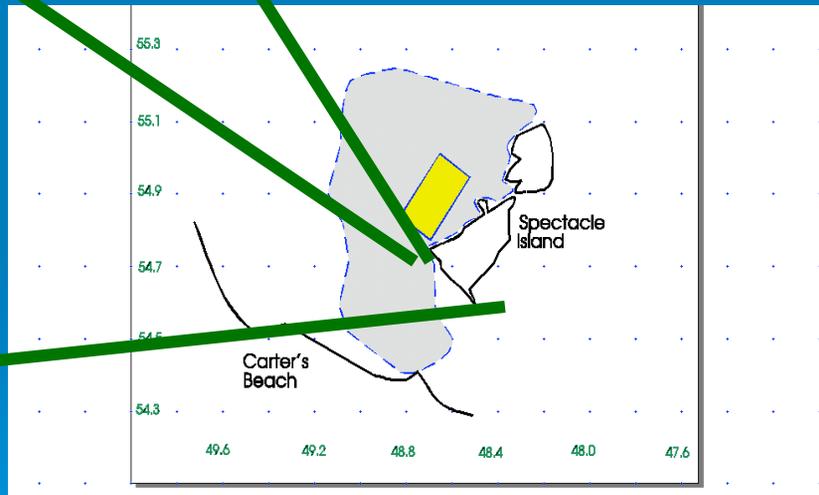
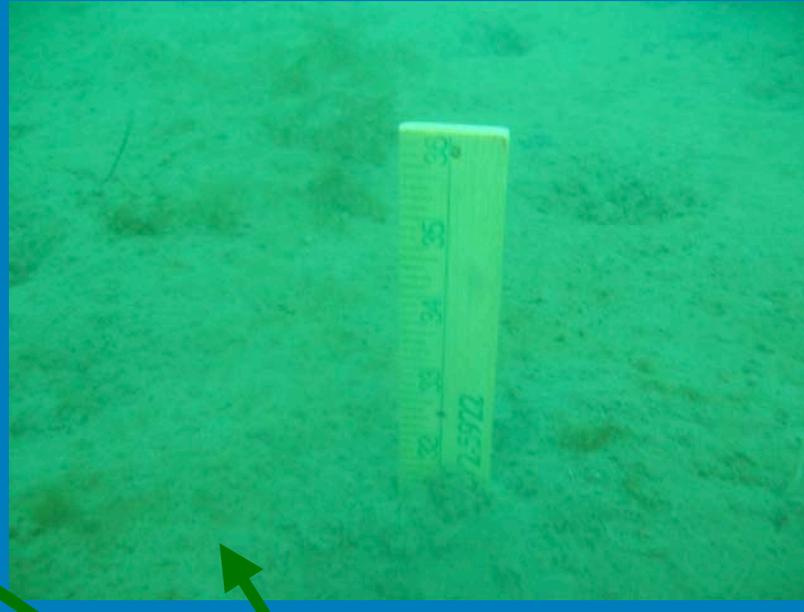
west of 64 degrees W. Vertical axis is minutes of latitude north of 43 degrees N.
 Divers' swim tracks are indicated by solid lines. Updated to August 17, 2007.



Photographs just within and 30 m outside the perimeter of accumulated waste.

Top photograph shows marine life on a gravel, rocky bottom (top)
Bottom photograph shows no visible life.



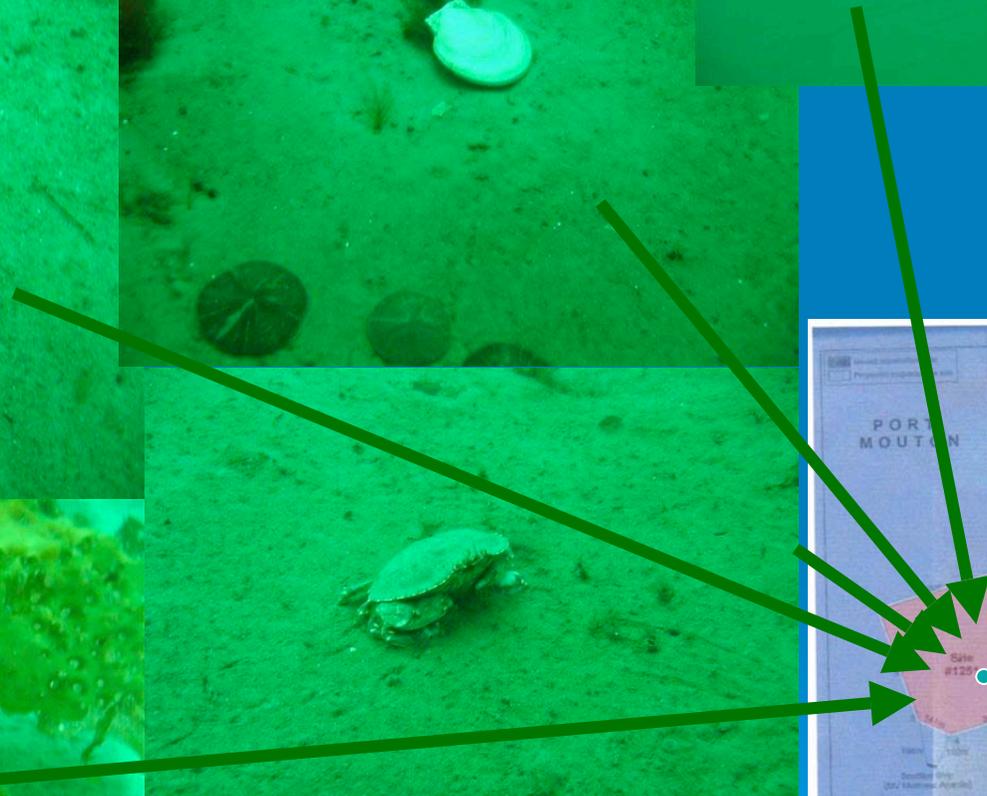
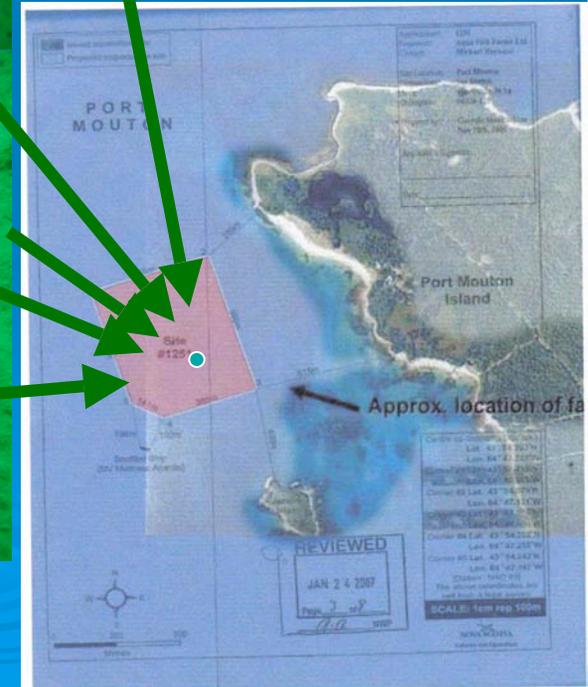
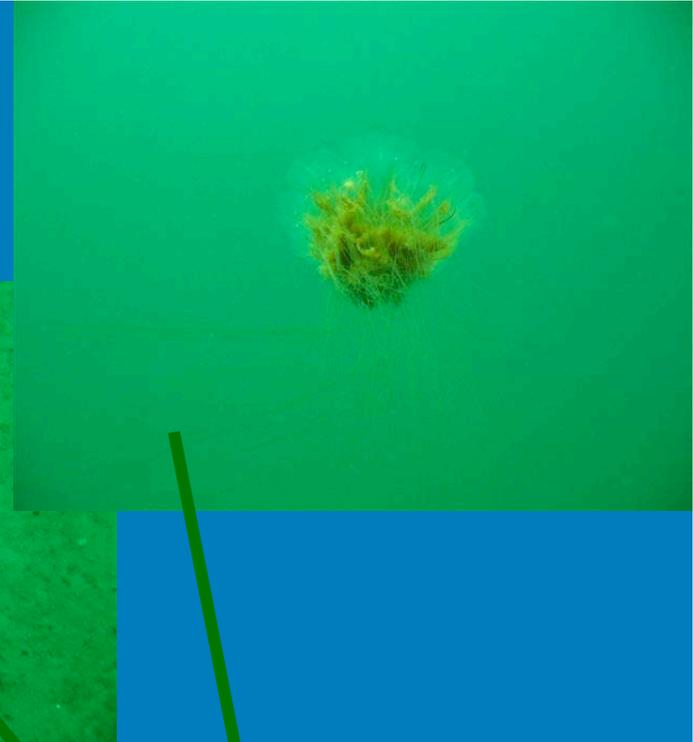
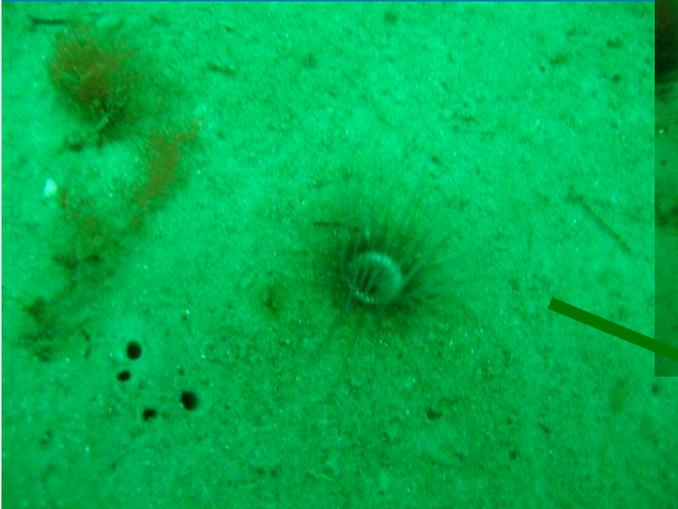


Photos near and distant from aquaculture site.

Bottom left shows coating of waste on marine life behind Spectacle Island.

Top left shows a gas vent revealing incremental deposits of waste
Top right shows a measure stick which did not reach the bottom of the waste deposit.

Divers' record of marine life at proposed aquaculture site,
Port Mouton Island, on August 1, 2007



SUMMARY

- Connecting perimeter points from divers' surveys indicates an 80 hectare footprint of aquaculture waste. This area was formerly prime lobster fishing ground.
- This far-field effect has been documented during relatively low-energy wind and wave conditions in August. Stronger wind conditions have been shown previously to increase the likelihood of aquaculture waste being transported as far as sensitive shores.
- In addition to this estimated 80 hectare waste footprint on the seabed, more extensive far-field effects include fine particulates degrading lobster habitat, and dissolved nutrients leading to algal blooms.
- Far-field effects from the Spectacle Island site are real, indisputable and evidence that this Bay is unsuitable for salmon aquaculture.
- The community surrounding Port Mouton Bay intends, with its partners, to monitor, document and foster the restoration and rehabilitation of this ecosystem to its former healthy condition.
- We predict that the proposed Port Mouton Island site would also create a scaled up footprint which would extend to more than 10 times its size or 240 affected hectares. The sum of these two waste-laden areas would result in cumulative effects that would further severely degrade the marine environment in the bay.

Appendix

Record of divers' observations



Record of Diver Observations near Spectacle Island

Date	Latitude (min N of 43°N)	Longitude (min W of 64°W)	Thickness of waste (cm)	Description * Indicates sediment grab sample retained
Aug 1	54.871 54.913	48.983 49.069	45 to 50	Visibility, 2-3 m. Clouds of silt and gas bubbles*
Aug 3	55.150	48.290		Beyond waste perimeter
	55.119	48.325		Within waste perimeter*
"	54.641	48.805	45	*
"	54.572	48.809	45	*
"	54.441	48.943		Scattered waste near Carter's Beach*

Record of Diver Observations near Spectacle Island

Date	Latitude (min N of 43°N)	Longitude (min W of 64°W)	Thickness of waste (cm)	Description * Indicates sediment grab sample retained
Aug 14	55.180	48.957	45	Visibility, 7-8m*
“	55.213	49.031	30	Sand fleas and sea anemones*
“	54.500	48.941	60	Visibility, 6m. At float off Carter's Beach; no visible life.*

Record of Diver Observations near Spectacle Island

Date	Latitude (min N of 43°N)	Longitude (min W of 64°W)	Thickness of waste (cm)	Description * Indicates sediment grab sample retained
Aug 10	54.652	48.720	90	Visibility, 3-5m. Holes with gas bubbles*
"	54.656	48.718	10	Visibility, 3-5m. Hard bottom. 1 lobster, 2-3 crabs*
"	54.447	48.493	<10	Visibility, 5-7m. Blackened sand*
"	54.578	48.460	Coating on marine life and seabed	Sandy bottom. Lobster and crabs.
				* Indicates sediment grab sample taken.

Record of Diver Observations at Proposed Aquaculture Site near Port Mouton Island

Date	Latitude (min N of 43°N)	Longitude (min W of 64°W)	Thickness of waste (cm)	Description
Aug 1	54.260	47.289	0	Visibility, 10m. Scallops, sand dollars, anemones, crab, jellyfish.