

## Far-field effects from Aquaculture Site 0835 Spectacle Island

### 1. Carter's and Wobamkek Beaches

Carter's Beach is a Protected Beach, protected under the Beaches Act, an Act to Preserve and Protect the Beaches of Nova Scotia. Carter's Beach and its several neighbouring beaches are well known for the whiteness of sand and the clarity of water allowing view of the white sand bottom. This beach has been ranked very highly as a tourist destination both provincially and internationally.

Local residents report numerous incidents of fouling of the water and the beach whenever northeast winds prevail. North to northeast winds produce a drift directly from the Spectacle Island area to Carter's and its neighbouring Wobamkek Beach. The existing salmon aquaculture site at Spectacle Island is 0.75 km from Carter's Beach and approximately 4 km from Kejimikujik National Park; therefore this existing site does not meet the requirement of a greater than 5 km buffer zone from protected areas.

#### 1.1 Algae on Beaches

During the week ending March 31, 2007, large amounts of green algae washed up on Carter's Beach. (Figures 1 and 2). Lobster traps set in the immediate area of Carter's Beach were also heavily fouled with this algae. The algae appears to be *Enteromorpha*, a type associated with "nutrient enrichment" and eutrophication and was not observed on Carter's Beach prior to the existence of the aquaculture site at Spectacle Island.

On March 31 the winds on Carter's Beach were from the north to north east, from the direction of the existing fish farm at Spectacle Island. Inspection showed that there were no algae in the water around the Blue Wave fish plant (Figure 3) and that there were no algae in the water flowing out of Carter's River (Figure 4). Green algae residue was still evident on rocks at Carter's Beach in April (Figure 5).

Commercial divers specializing in aquaculture services were in this area earlier in week.

Given the circumstantial evidence, there is a likelihood that the algae on Carter's Beach originated from activities at the aquaculture site near Spectacle Island.

It appears that cleaning of nets takes place at the Spectacle Island site and this is contrary to the standards which Aqua Fish states in the EI statement for the proposed aquaculture site at Port Mouton Island:

General Waste Management

"Cleaning of nets will be conducted on land at a facility approved by regulatory authorities".



Figure 1. Green algae washed up on Carter's Beach at low tide March 31, 2007.  
(Photo by Brian Fisher)



Figure 2. Green algae on Carter's Beach at low tide, March 31, 2007  
(Photo by Brian Fisher)



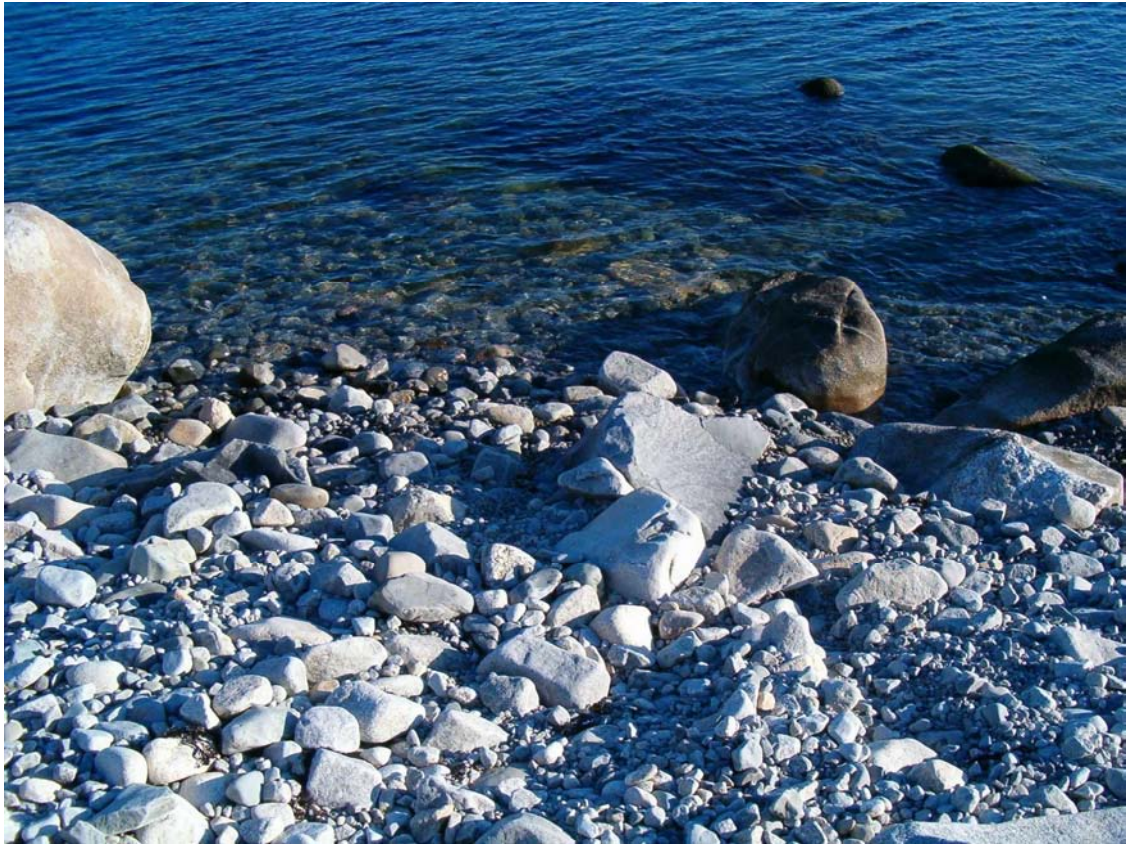


Figure 3. Clear water around Blue Wave Fish Plant on March 31, 2007.  
(Photo by Brian Fisher)



Figure 4. Clear water at Carter's River, March 31, 2007.  
(Photo by Brian Fisher)



Figure 5. Green algae on rocks at Carter's Beach, April 20, 2007.  
(Photo by Maggie Fortey)

### ***1.2 Algae on Lobster Traps***

Lobster traps set in the immediate area of Carter's Beach were also heavily fouled with green algae during the week of March 31, 2007 and had to be hauled and cleaned before re-setting. (R. Broome, personal communication)

Fishermen report persistent fouling of lobster traps with plant material and slime in the Spectacle Island and Carter's Beach areas. This fouling coats the lobster traps and cannot be physically removed until traps are hauled and left to dry in open air. This fouling was not the experience of lobster fishermen until recent years. Figure 6 shows a lobster trap hauled at the south-western end of Spectacle Island after a period of 21 days. Figures 7 and 8 show lobster traps which had been set only 5 days earlier fouled with algae after hauling from the eastern and western ends of Spectacle Island. Traps hauled behind Spectacle Island (facing Port Mouton Island) did not have any algae accumulation. (Robin Fisher, personal communication).





Figure 6. Lobster trap after 21 days at south end of Spectacle Island, April 15, 2004  
(Photo by Ron Loucks)







Figures 7 and 8. Lobster traps hauled after 5 days at eastern and western ends of Spectacle Island, April 2007. (Photos by Robin Fisher)

### **1.3 Brown Oily Residue**

On April 13 at low tide, photos were taken of a brown residue on Wobamkek Beach just beyond Carter's Beach. (Figure 8) This brown material was also present in the water and there was a brown oily film on the surface of the water. (Oily surface slicks have been observed in the past on ebbing tides coming in a direction from the fish farm.) There was no evidence of this brown or oily material coming from Carter's River and there was no residue on the sand at Carter's River although the fresh water from Carter's River was a typical light brown color after a rainstorm. There were moderate to strong north-east winds on April 13. A water sample was collected at Wobamkek beach and another at South West Port Mouton beach where the water was very clear.





Figure 9. Brown oily residue on Carter's Beach, April 13, 2007 (Photo by Brian Fisher)

#### **1.4 Dead seals**

Seals dead from a bullet wound periodically wash up on Carter's and Wobamkek beaches. It is likely that these seals were shot as predators at the Spectacle Island aquaculture site. (Figures 10, 11, 12)



Figure 10. Seal carcass on Wobamkek Beach, March 2007 (Photo by Brian Fisher)





Figure 11. Dead seal on Wobamkek Beach, March 2007 (Photo by Brian Fisher)



Figure 12. Bullet hole in dead seal on Wombamkek Beach, March 2007  
(Photo by Brian Fisher)



### **1.5 Floating Dock**

A floating dock from the Spectacle Island aquaculture site periodically washes up on Carter's or Wobamkek Beaches after an episode of north-east winds.(Figure 15)



Figure 15. Floating dock from Spectacle Island aquaculture site washed up on Carter's Beach, April 20, 2007 (Photo by Maggie Fortey)

## **2. Summerville Beach**

Summerville Beach on Port Mouton Bay is part of the Provincial Park at Summerville Centre. Photos of waste material on Summerville Beach were taken on October 9 and 10, 2006 after a period of southeast winds, a wind direction which would produce drift from Spectacle Island. (Figures 13,14 and 15). The Spectacle Island aquaculture site is 3.7 km from Summerville Beach.



Figure 13 . Waste material on Summerville Beach in September 2006  
(Photo by Blair Davis)





Figure 14 . Waste material on Summerville Beach in September 2006  
(Photo by Blair Davis)

**Kejimikujik National Park (Seaside Adjunct), South West Port Mouton Beach and Port Mouton Island Beach**

The proposed salmon aquaculture expansion site near Port Mouton Island is approximately 2.6 km from Kejimikujik National Park (Seaside Adjunct), 2.2 km from South West Port Mouton Beach and only 0.4 km from Back Beach at Port Mouton Island. Back Beach along with its associated dunes and wetlands is a candidate for a Provincial Protected Area..

***Conclusion:***

The beaches and the water which surrounds them are a valuable natural asset to the community and to the entire Region of the Municipality of Queens. Aquaculture activity is already degrading the beaches and shorelines at and around Carter's, Wobamkek and Summerville beaches. An expansion of aquaculture activity at Port Mouton Island three times greater than at Spectacle Island will further degrade beaches and shorelines at Port Mouton Island, South West Port Mouton and Kejimkujik Seaside Adjunct National Park. Port Mouton Bay is not a suitable site for finfish aquaculture activity.