

## Report on Seabed Drifters found June 10 , 2007 on Carter's Beach and July 7, 2007, on Summerville Beach

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### 1 Background

The seabed drifter trials conducted by the Friends of Port Mouton Bay (FPMB) are intended to provide information about possible pathways for salmon farm wastes – wasted food pellets, fish manure – from the proposed expansion farm site off Port Mouton Island to nearby shores. These trials have been described in FPMB #04, 2007, and involved fishermen releasing seabed drifters from the proposed expansion site and community volunteers walking the beaches and shores over a period of many weeks to retrieve and report any drifters that washed up.

Although all three of our previously reported retrieved seabed drifters were found within a few days of the significant northeasterly storm of mid-April, 2007, we did anticipate that more drifters might be found, either newly arriving on shore or having arrived earlier and been buried under storm-tossed seaweed.



Figure 1. A seabed drifter of the type found on Carter's Beach – though this drifter is shown as found at Kejimikujik National Park Seaside Adjunct.

### 2 Results

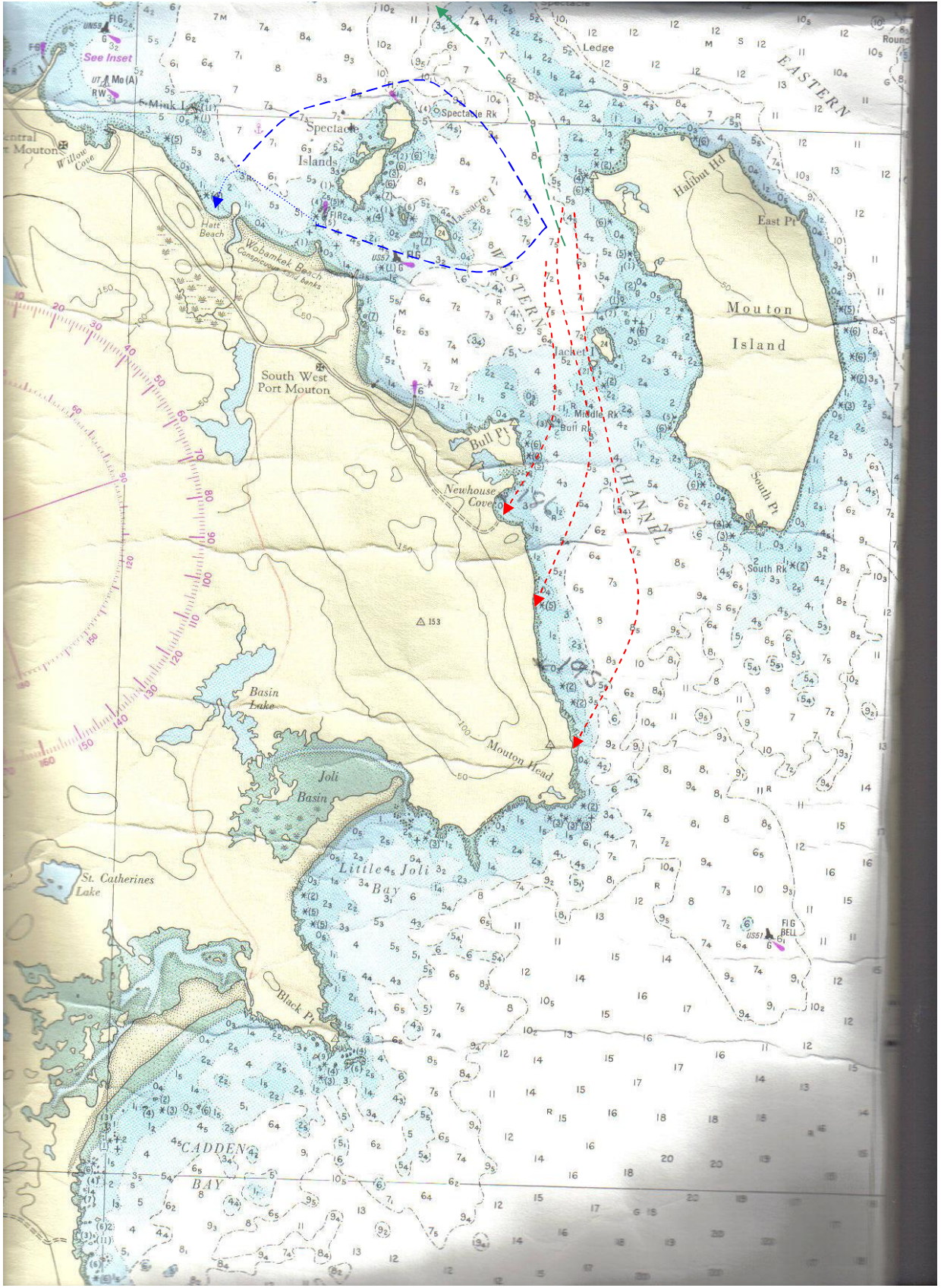
On June 10<sup>th</sup>, 2007, a community member, Bob Swain, noticed a red seabed drifter washed up on Carter's Beach. Our records showed that this drifter had been released at the proposed expansion site near Port Mouton Island some 150 days earlier on January 8<sup>th</sup>, 2007. On July 7<sup>th</sup>, 2007, another

community resident, Ann Hupman, found a seabed drifter on Summerville Beach, in the Provincial Park there. This drifter had been released around January 29<sup>th</sup>, 2007, at the same site near Port Mouton Island.

## 2.1 Positions

Figure 1 below shows the positions of release and retrieval of the seabed drifters which have been retrieved to date. The blue curve represents the seabed drifter retrieved on June 10, 2007 at Carter's Beach. We have no information about whether its path around Spectacle Island was to the north or to the south. What we do know is that it was deposited on the beach some 150 days after being released.

The green curve represents a possible path for the seabed drifter which was released in Late January from near Port Mouton Island and retrieved on Summerville Beach on July 7<sup>th</sup>, 2007.



### 3 Interpretation

These seabed drifters appear to have been influenced by currents with a westerly component. The fact that they did not wash ashore for 150 days suggests that, somewhere along their paths westward from the vicinity of Port Mouton Island, a depositional area or areas was encountered where they lay practically dormant for some time. The westerly drift at the seabed could arise because of the prevalence in summer of southwest winds which transport surface waters offshore to the southeast (Coriolis effect), and induce northwest drift in the lower layer.

The situation at the proposed Port Mouton Island salmon aquaculture site and at the existing Spectacle Island site appears to be this: periods of deposition - of salmon aquaculture wastes - interrupted sporadically by wind-drift events which transport material to nearby shores. The deposition model DEPOMOD typically predicts drifts of one to three kilometres for materials resuspended (e.g., by storm waves) from salmon farms (B. Hargrave, pers. comm.). In this case such materials could reach shores, as these seabed drifters did (Figure 1).

### 4 Conclusion

Based on the pattern observed by fishermen over long experience, on our analysis of the 2002 moored current meter data as well as on our March 2007 near-surface tidal-cycle drogue observations, and now the January 2007 to April 2007 seabed drifter results to date, it is concluded that fish farm wastes would be deposited in the area inside and outside these farm sites during much of the time and that the potential is there for this settled waste material and nutrients to be re-suspended and transported at least a few kilometres from the site to nearby shores, parks and protected areas.

### References

Current Measurements in Port Mouton Bay, March 23, 2007. Friends of Port Mouton Bay.

**Appendix. Table of Release Dates and Locations, and Retrieval Dates and Locations  
For Those Seabed Drifters Found By July 23, 2007.**

<b>Seabed Drifter #</b>	<b>Release Point, Latitude</b>	<b>Longitude</b>	<b>Date and Location of Retrieval</b>
Release on January 8 <sup>th</sup> , 2007 near Port Mouton Island site			
169	43° 54.417'	64° 47.348'	
168	43° 54.446'	64° 47.321'	
162	43° 54.480'	64° 47.294'	June 10 <sup>th</sup> , NW end of Carter's beach
165	43° 54.500'	64° 47.239'	
176	43° 54.371'	64° 47.200'	
166	43° 54.366'	64° 47.238'	
164	43° 54.352'	64° 47.289'	
163	43° 54.358'	64° 47.335'	
190	43° 54.245'	64° 47.278'	
161	43° 54.262'	64° 47.256'	
184	43° 54.292'	64° 47.218'	
186	43° 54.317'	64° 47.184'	April 19 <sup>th</sup> , New House Cove, just south of Bull Point.
Release around January 29 <sup>th</sup>			
191	43° 54.647'	64° 47.192'	
200	43° 54.610'	64° 47.178'	
194	43° 54.580'	64° 47.165'	
195	43° 54.555'	64° 47.162'	April 20 <sup>th</sup> , 1 km north of Mouton Head in Kejimikujik National Park
196	43° 54.502'	64° 47.188'	
189	43° 54.484'	64° 47.173'	April 23 <sup>rd</sup> , Mouton Head in Kejimikujik National Park

198	43° 54.465'	64° 47.162'	July 7 <sup>th</sup> , centre of Summerville Beach
192 Spectacle	43° 54.888'	64° 48.837'	
197 Spectacle	43° 54.908'	64° 48.791'	
193 Spectacle	43° 54.959'	64° 48.723'	
Release on March 13 <sup>th</sup> , 2007 near Spectacle Island site			
199	43° 54.747'	64° 49.071'	
168	43° 54.738'	64° 49.025'	
185	43° 54.711'	64° 48.995'	
181	43° 54.684'	64° 48.960'	
182	43° 54.655'	64° 48.938'	
183	43° 54.637'	64° 48.916'	
187	43° 54.606'	64° 48.889'	