

Halifax Harbour Water Quality Monitoring Project

Weekly Summary #121

Survey Date: 18 January 2007
Nature of Survey: Complete Survey
Report File (this document): HHWQMP_report121_070118.doc
Data File: HHWQMP_data121_070118.xls

Data Return:

Profile: 97%
 Bacteria: 100%
 Chemical: 100%
Overall: 99%

Sample Notes:

Samples at BYC and DYC were taken at alternate sites due to ice.
 DYC: 44° 41.991' N, 63° 37.142' W
 BYC: 44° 43.085' N, 63° 39.895' W

The CTD exhibited unusual behaviour at site C4. The profile data for this site are included in the plots but have been deleted from the data file.

The DO data at site PC are anomalous, apparently due to the DO “alignment” procedure. The data are plotted here but are deleted from the data file. The other profile data at this site are unaffected.

QA/QC samples:

Chemical Analysis

Detectable Parameter	Units	B2 - 10m	
		reference sample	QA/QC
Ammonia (as N)	mg/L	0.05	<0.05
Total Suspended Solids	mg/L	0.9	1.3
Copper	ug/L	0.3	0.3
Iron	ug/L	2	2
Zinc	ug/L	<1	2

Fecal Coliform (CFU/100ml)

Site	C6-10m	F2-10m	DYC-10m	B2-10m
Reference	2100	66	28	0
QA/QC	410	100	840	0

Comments:

General: There has been moderate precipitation, with generally below freezing air temperatures. The harbour remains relatively weakly stratified. The only real freshwater signature is near freshwater sources at the ice edge in Bedford Yacht Club and Dartmouth Cove. The fecal coliform (FC) levels are high in the Inner Harbour out to section C, generally similar to the previous survey. The FC pattern in the Basin is more vertically uniform than usual. There is a very high value (39,000 cfu/100 mL) in the EE3-1m sample. This value, in combination with low secchi depth, falling tide at sampling time, and detritus visible in the water, suggest that the sample was taken directly in the surface plume from the Peace Pavilion Park outfall. There are also high values in Herring Cove and the 1m sample at HP1 suggesting input from the Tribune Head outfall.

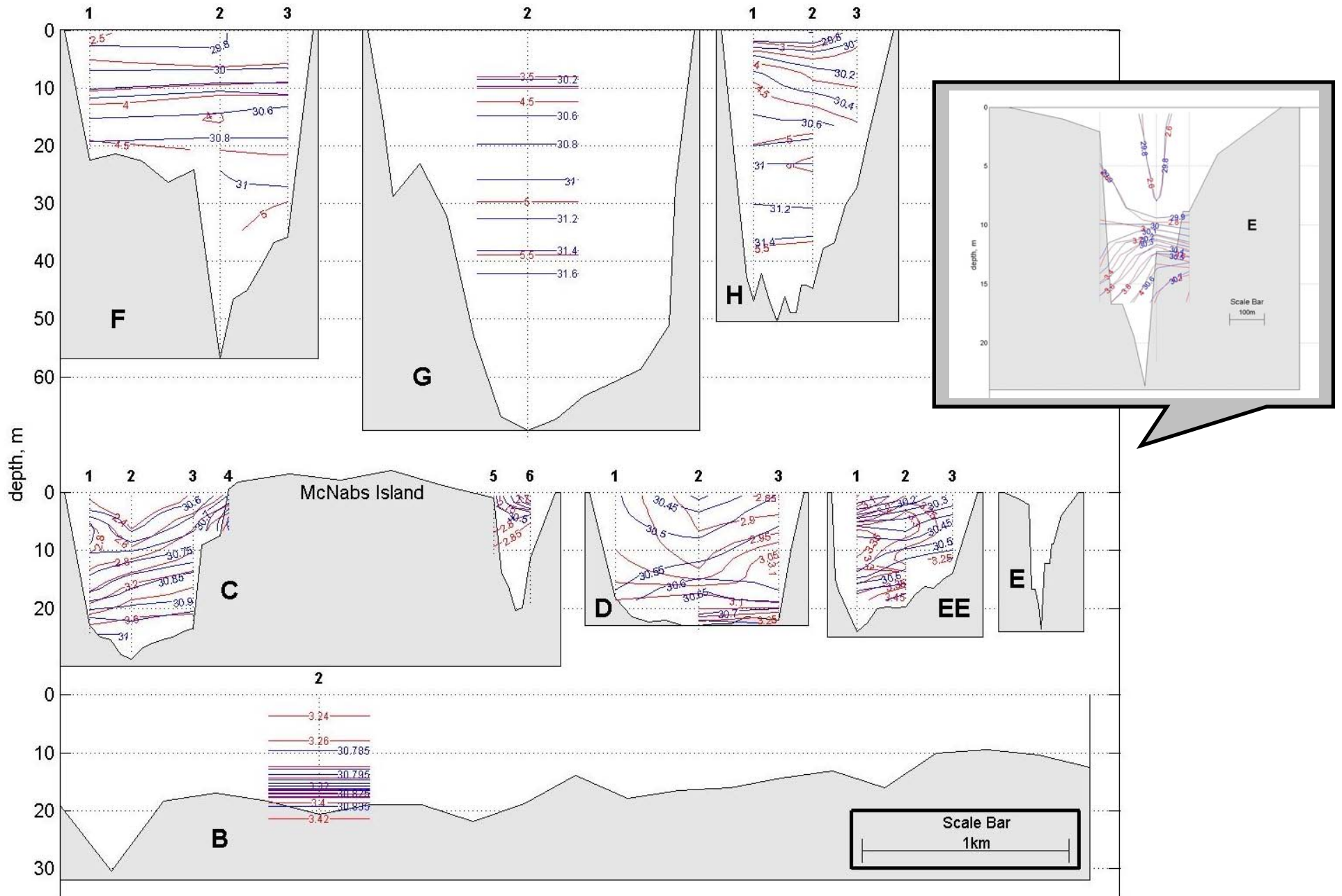
Fluorescence: Fluorescence values are low everywhere, with profile maximums at near “background” levels of about 1 mg/L.

Ammonia: The ammonia values vary only from <0.05 to 0.09 mg/L, but the variation appears systematic. The highest values in the 1 m samples (0.08 mg/L) occur in the Basin and Narrows and decrease going out of the Harbour. The maximum in the 10 m samples (0.09 mg/L) occurs at EE2, with values generally decreasing in both directions from there.

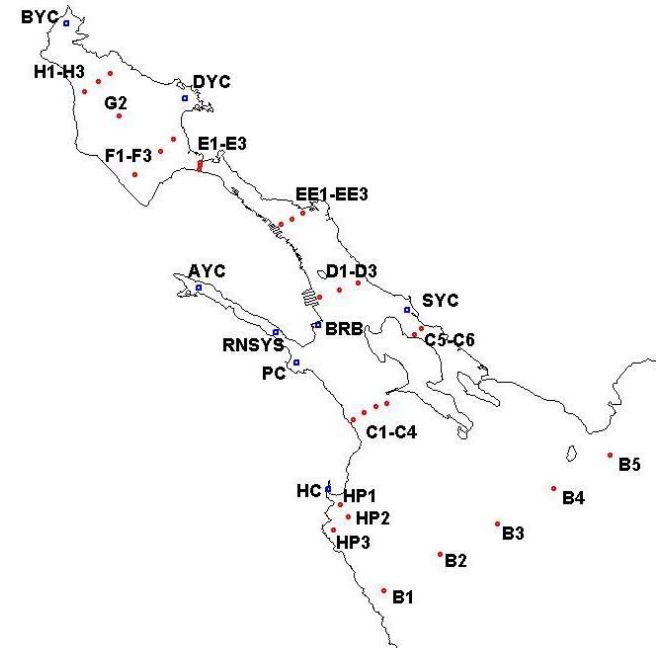
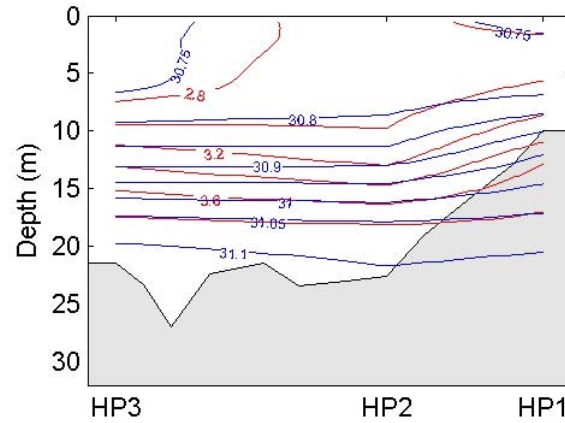
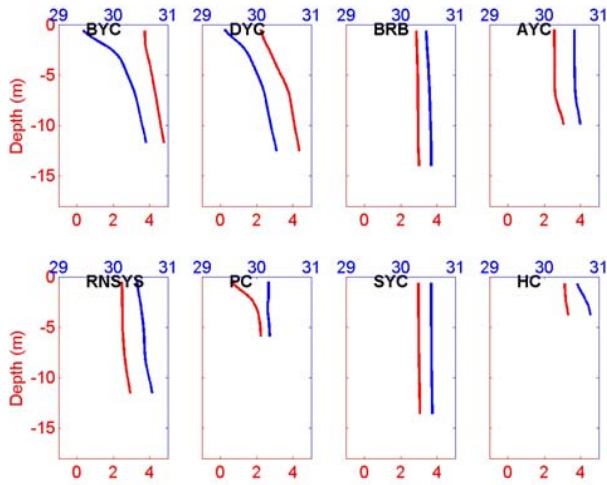
TSS: The TSS values are all relatively low (0.7-3.2 mg/L) with the highest values in the Narrows and the lowest at B2 in the Outer Harbour. Aside from this, the variation does not appear systematic.

Dissolved Oxygen: The dissolved oxygen (DO) data indicates that the surface values are generally > 7.0 mg/L in the Basin and increase to nearly 8.0 mg/L in the Outer Harbour. This is slightly higher than last survey. There are anomalously high values (8.5 – 10.5 mg/L) in the Eastern end of section D and the Eastern Passage portion of section C. Everywhere, except in the Basin, the values are quite vertically uniform. The Basin bottom has dropped to just under 2.0 mg/L. Above 5m the Basin the Basin water meets the applicable class SB (7.0 mg/L) guideline. All other class SB and Class SC (6.0 mg/L) areas meet their respective guidelines. In the Outer Harbour (B2 and HP sites) the DO is 7.5-7.9 mg/L or just below the applicable SA guideline of 8.0 mg/L.

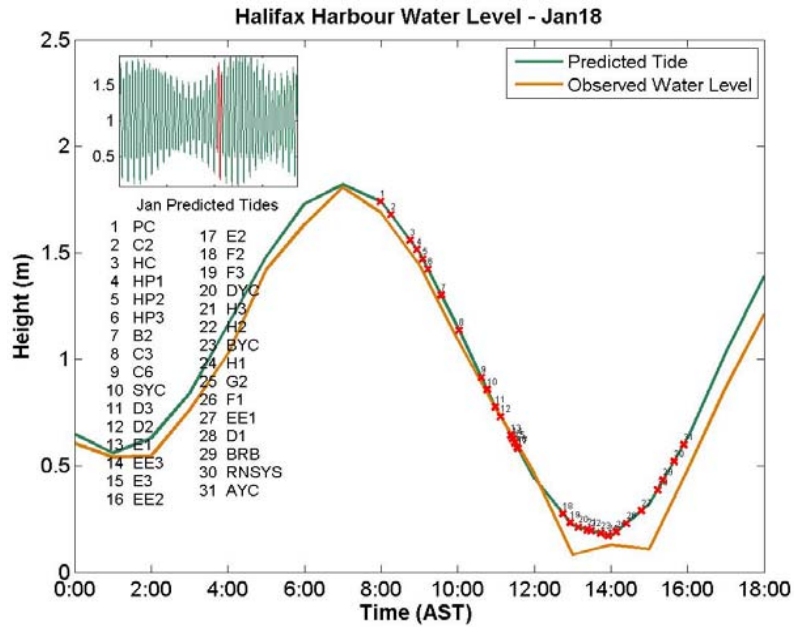
Mercury: There is a single value of mercury (0.030 µg/L) at D2-10m which is greater than the guideline of 0.025 µg/L.



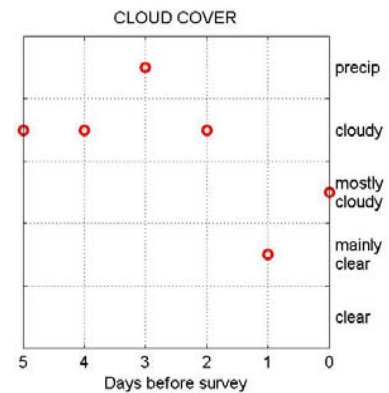
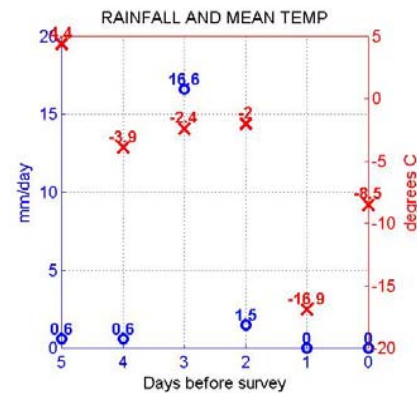
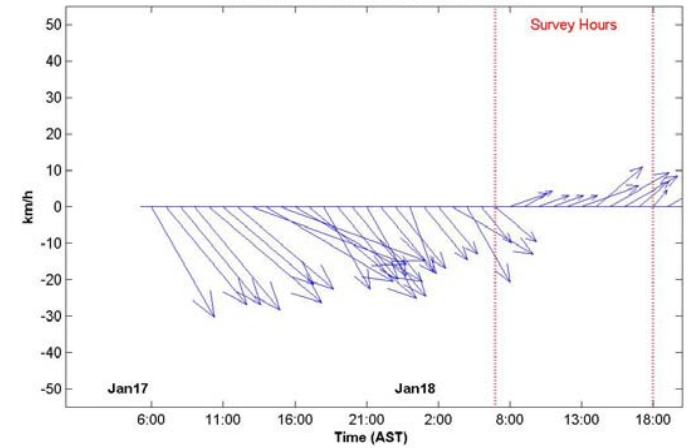
Yacht Clubs



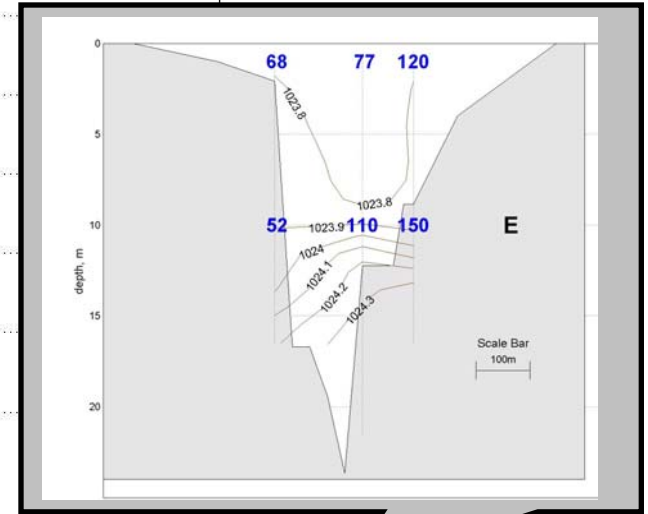
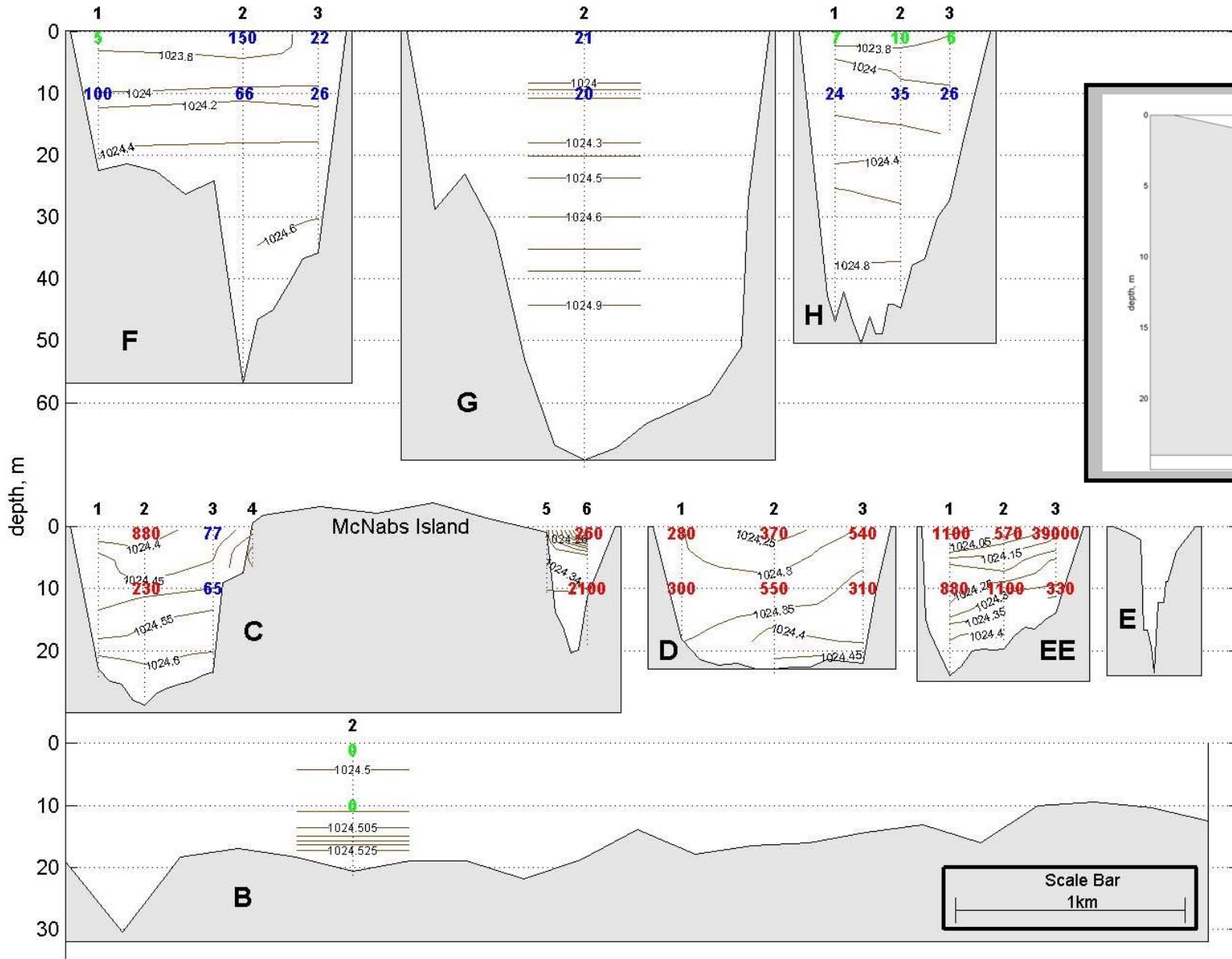
Rainfall and temperature data collected at Shearwater Autoport.
Cloud cover data collected at Shearwater Airport



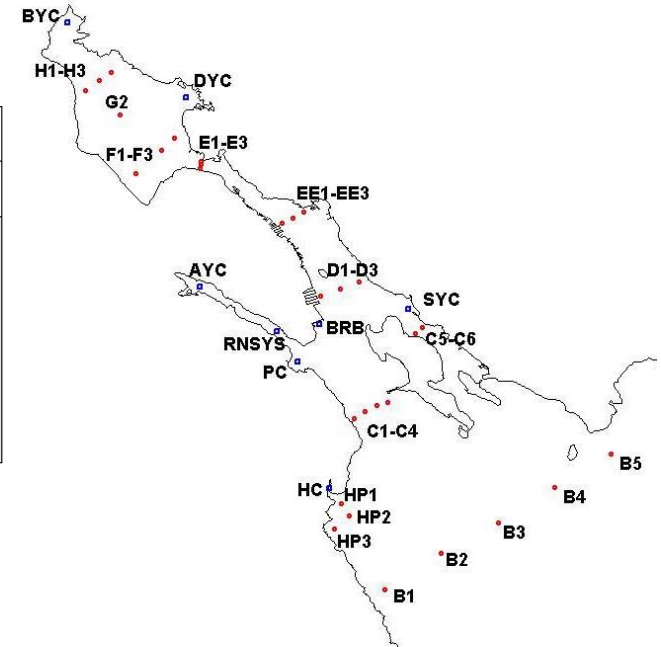
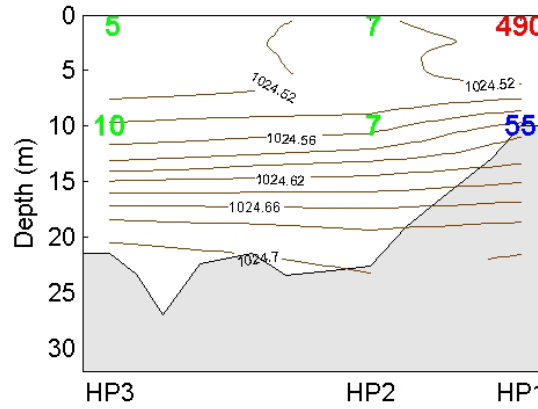
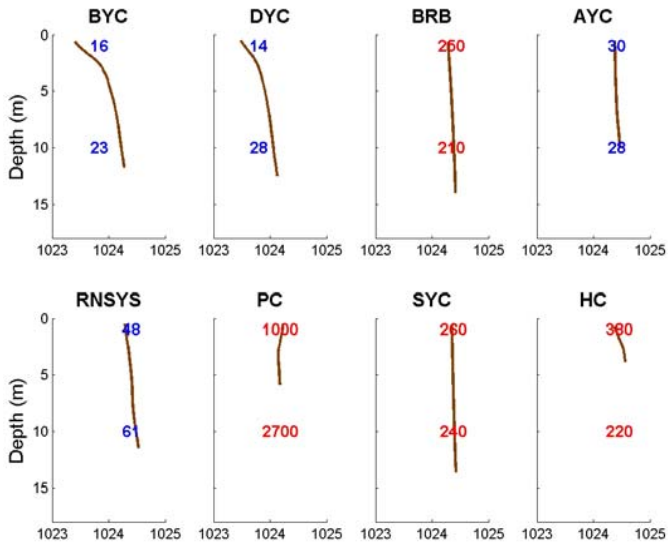
Wind Speed and Direction at Shearwater Jetty



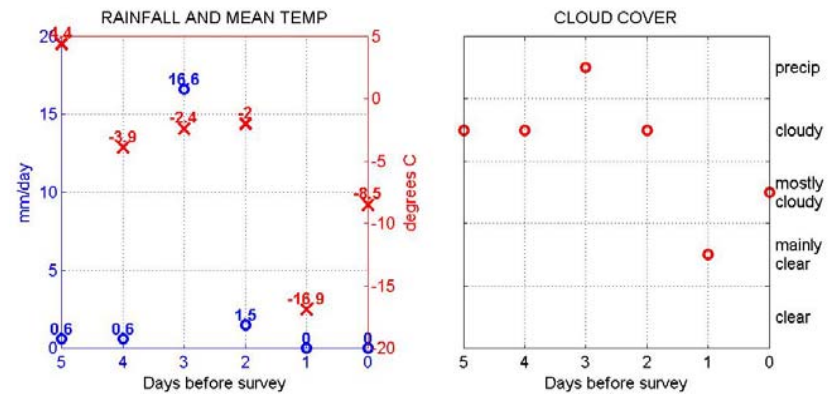
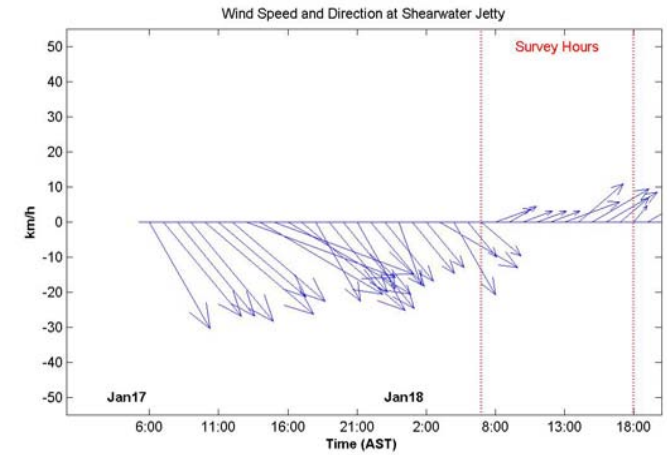
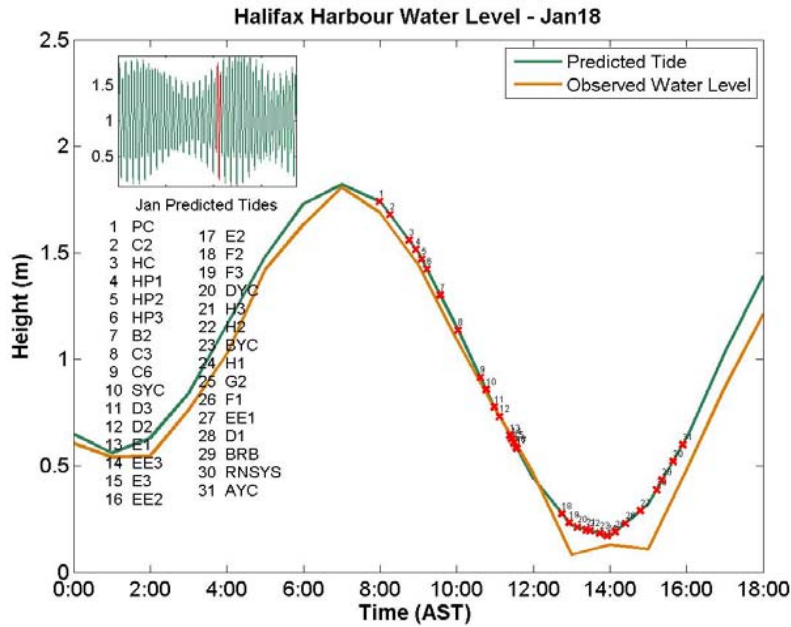
Salinity in PSU Temperature in °C



Yacht Clubs



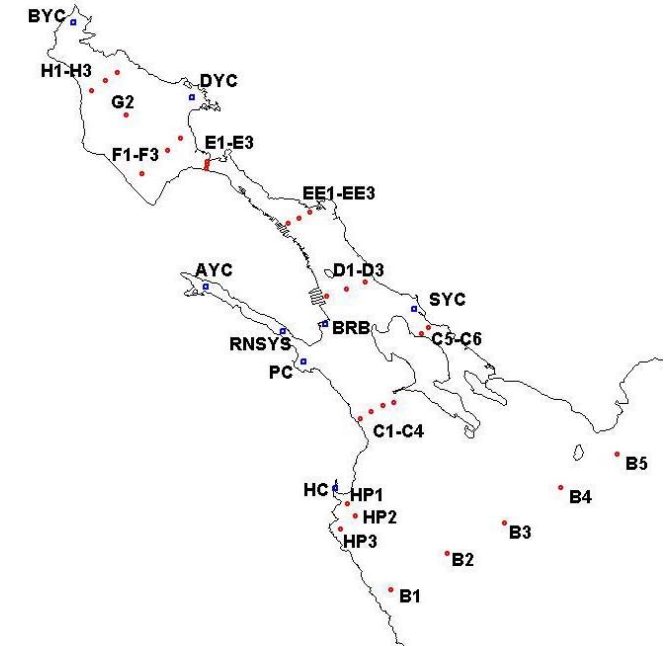
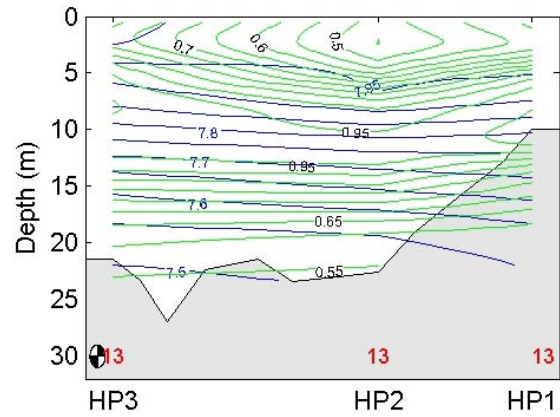
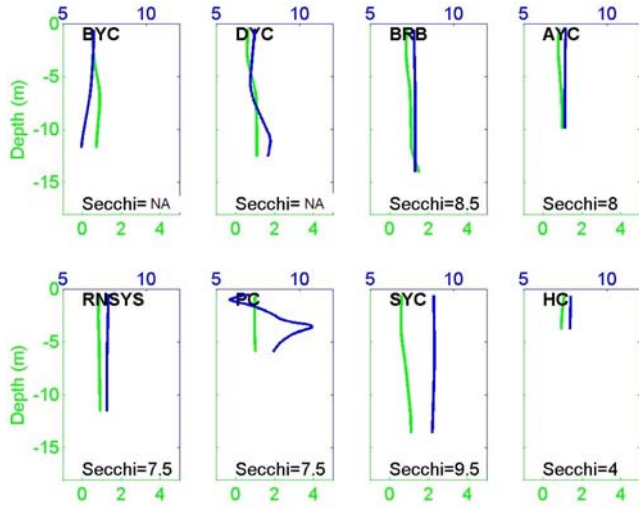
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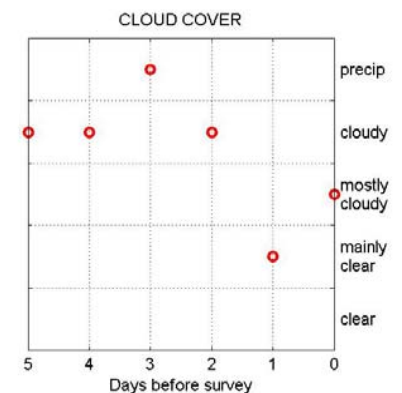
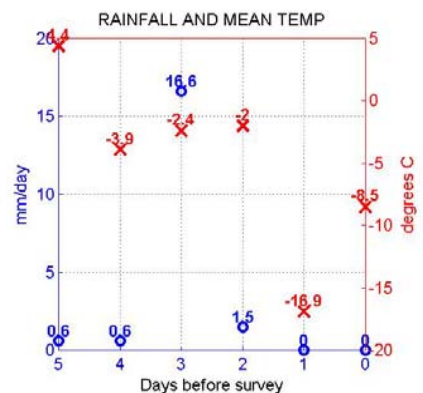
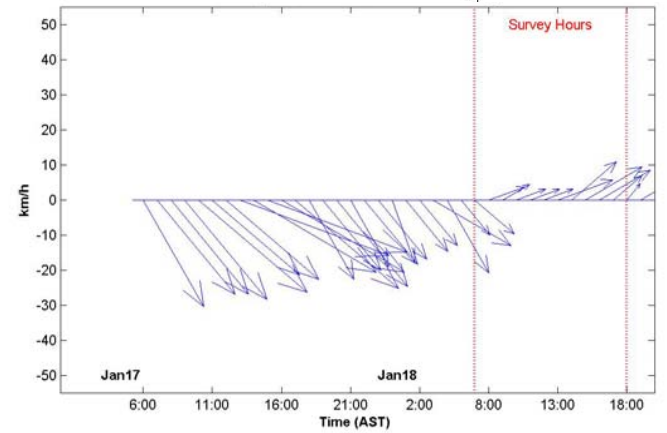
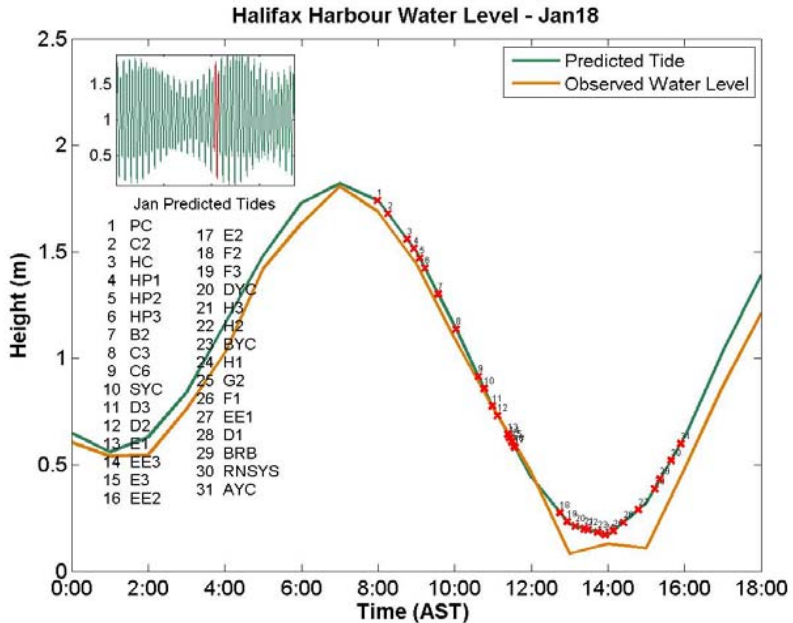
Potential Density in kg/m³

Fecal coliform: **above swimming limit (200 cfu/100mL)**
above shellfish limit (14 cfu/100mL)
below limits

Yacht Clubs



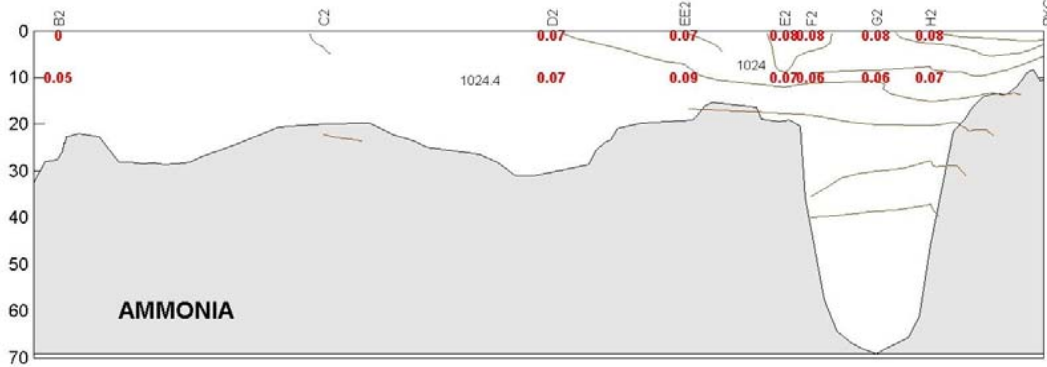
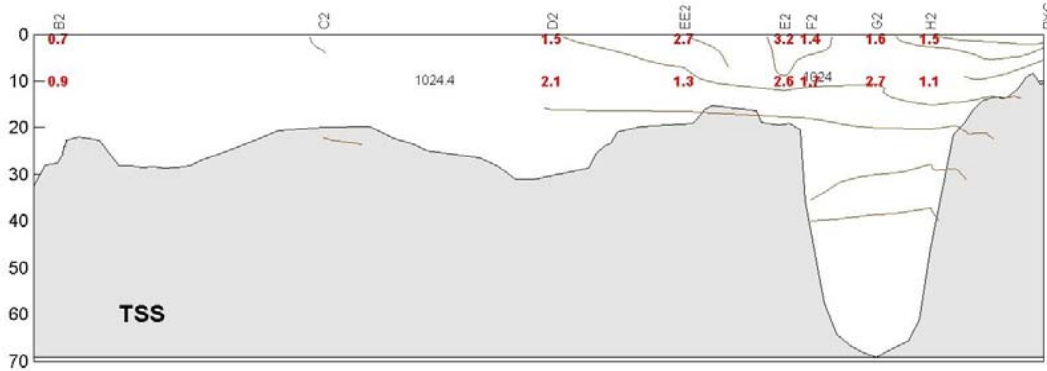
Rainfall and temperature data collected at Shearwater Autoport.
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DO in mg/L

Chlorophyll in mg/m³

CHEMISTRY



Rainfall and temperature data collected at Shearwater Autoport.
Cloud cover data collected at Shearwater Airport

Potential Density in kg/m^3

Ammonia in mg/L

TSS in mg/L

Halifax Harbour Water Level - Jan18

