

# Halifax Harbour Water Quality Monitoring Project

## Weekly Summary #100

**Survey Date:** 16 May 2006  
**Nature of Survey:** Coliform Survey  
**Report File (this document):** HHWQMP\_report100\_060516.doc  
**Data File:** HHWQMP\_data100\_060516.xls

**Data Return:**

Profile: 97%  
 Bacteria: 96%  
 Chemical: na  
**Overall: 97%**

**Sample Notes:**

Site B2 was missed due to heavy fog.  
 Two samples were taken for Winkler titration at DYC 1 and 10m.

**QA/QC samples:**

**Fecal Coliform (CFU/100ml)**

Site	E3-1m	H2-10m	PC-1m	RNSYS-10m
Reference	740	47	52	6
QA/QC	750	55	44	5

**Comments:**

**General:** The Harbour continues to warm. The surface temperature in the Basin has increased by 2°C or more to about 12 °C. There are strong vertical temperature gradients in the top 10m of the Basin. The deeper water is warming but more slowly. In the Inner Harbour the surface temperatures have also increased by about 2°C while the bottom water has increased by about 0.5°C.

Overall, the surface salinity is somewhat lower than last week (by 1 PSU or less), most notably in the Basin. The bottom salinity is relatively unchanged, except there is more saline water at the bottom in the Outer Harbour (section C). As a result of the temperature and salinity changes, the Harbour is more stratified than last week.

The fecal coliform (fc) levels are relatively high in the surface water of the Inner Harbour. This could partially be a result of storm flows due to high rainfall on

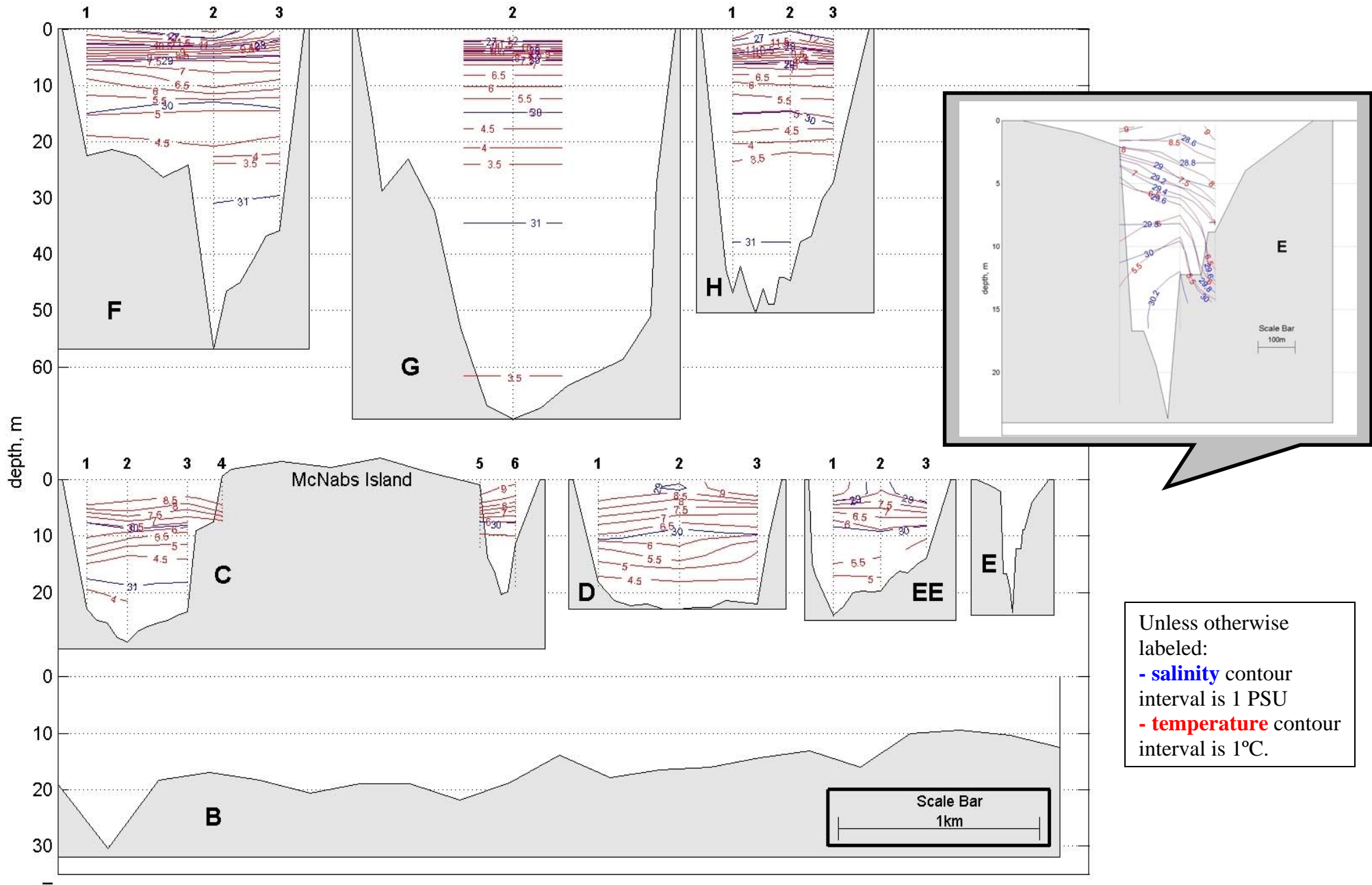
sampling day. The timing of the rain with respect to sampling has not been determined, however. The fc distribution is generally displaced up-harbour, probably due at least in part to the up-harbour winds. The fc in Bedford Basin has returned to the common pattern of higher values in the 10m sample. The potential density of the highly contaminated water at the surface of the Narrows is  $> 22 \sigma$  (1022 kg/m<sup>3</sup>), a density which exists below 5 m in the Basin. The fresher surface water of the Basin has quite low values. The highest value (78,000 cfu/100 mL) occurs, not unusually, at EE3, due to the proximity to the Peace Pavilion outfall. There are no field notes on unusual water clarity at this site but the sample was taken on a falling tide which would tend to put the sample site “downstream” from the outfall.

**Fluorescence:** The fluorescence profile max values (ca 10 mg/kg) in the Basin are similar to, though slightly lower than last week. Elsewhere, the values are also similar to last week except that they are slightly higher in the Outer Harbour (section C).

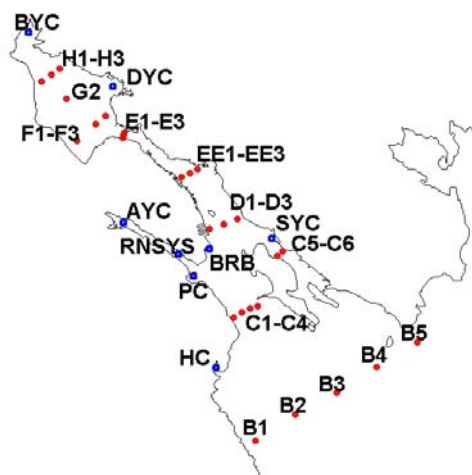
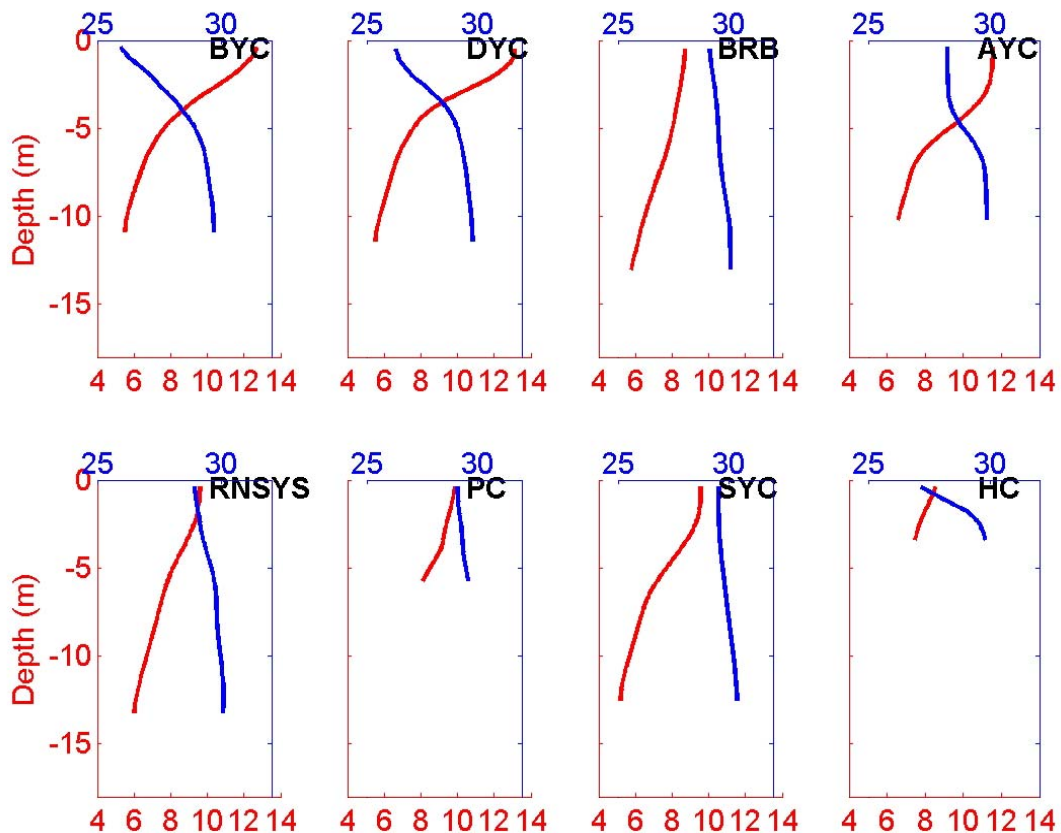
**Dissolved Oxygen:** The data indicate that the DO values in the Basin surface water have dropped by about 1.5 mg/L, to just over 8 mg/L. South of the Narrows, the levels are quite uniform at levels around 8 mg/L, a slight decrease from last week. The levels are a little higher at the C section. Site B2 was not sampled this week. Once again, the deep water of the Basin represents the only values below the applicable use-specific guidelines this week. The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1).

There were two samples taken at DYC, for DO lab analysis (Winkler titration) for the purpose of comparison with the Seabird CTD values. The samples were taken with niskin bottles positioned next to the stationary CTD. The results are tabulated below. The implication of the comparison will continue to be investigated.

	Seabird	Winkler
DYC—1m	8.4 mg/L	9.63 mg/L
DYC-10m	7.9 mg/L	6.54 mg/L



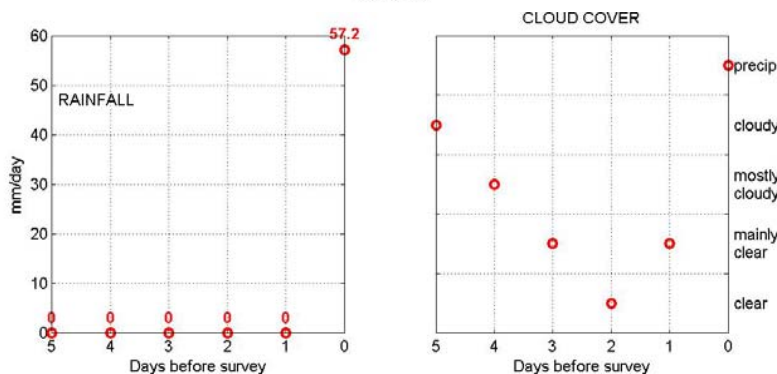
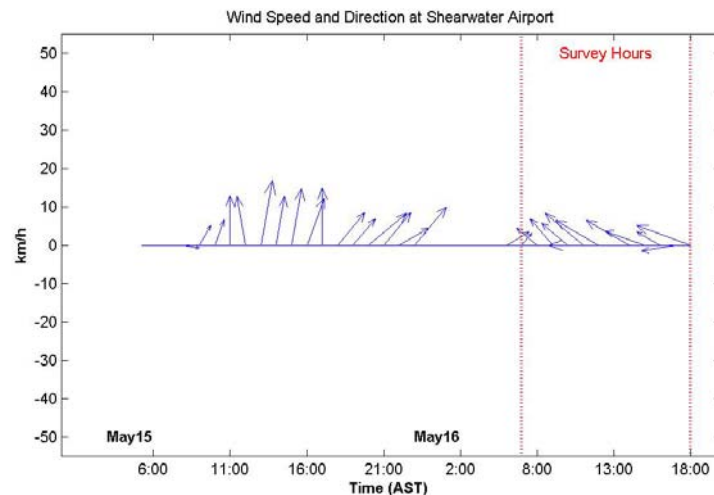
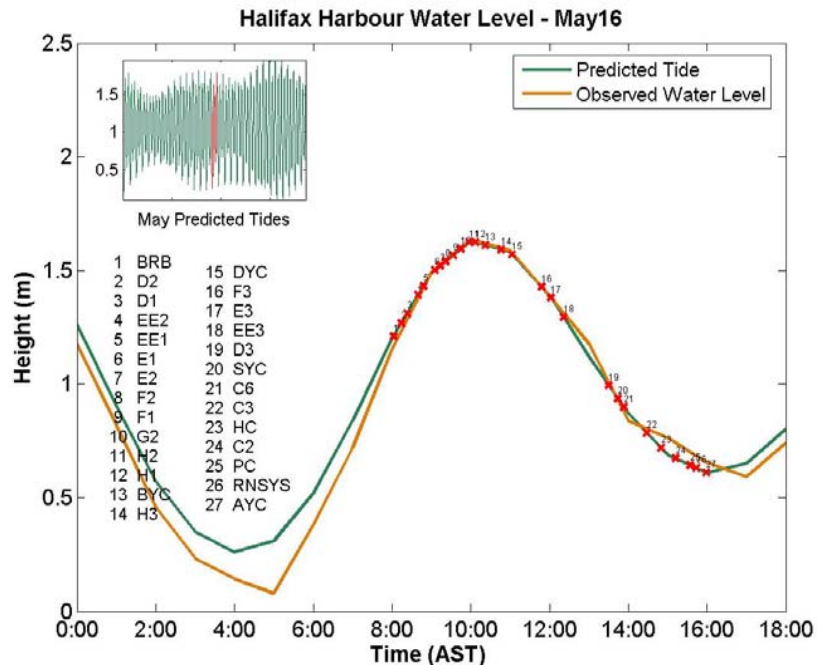
# Yacht Clubs

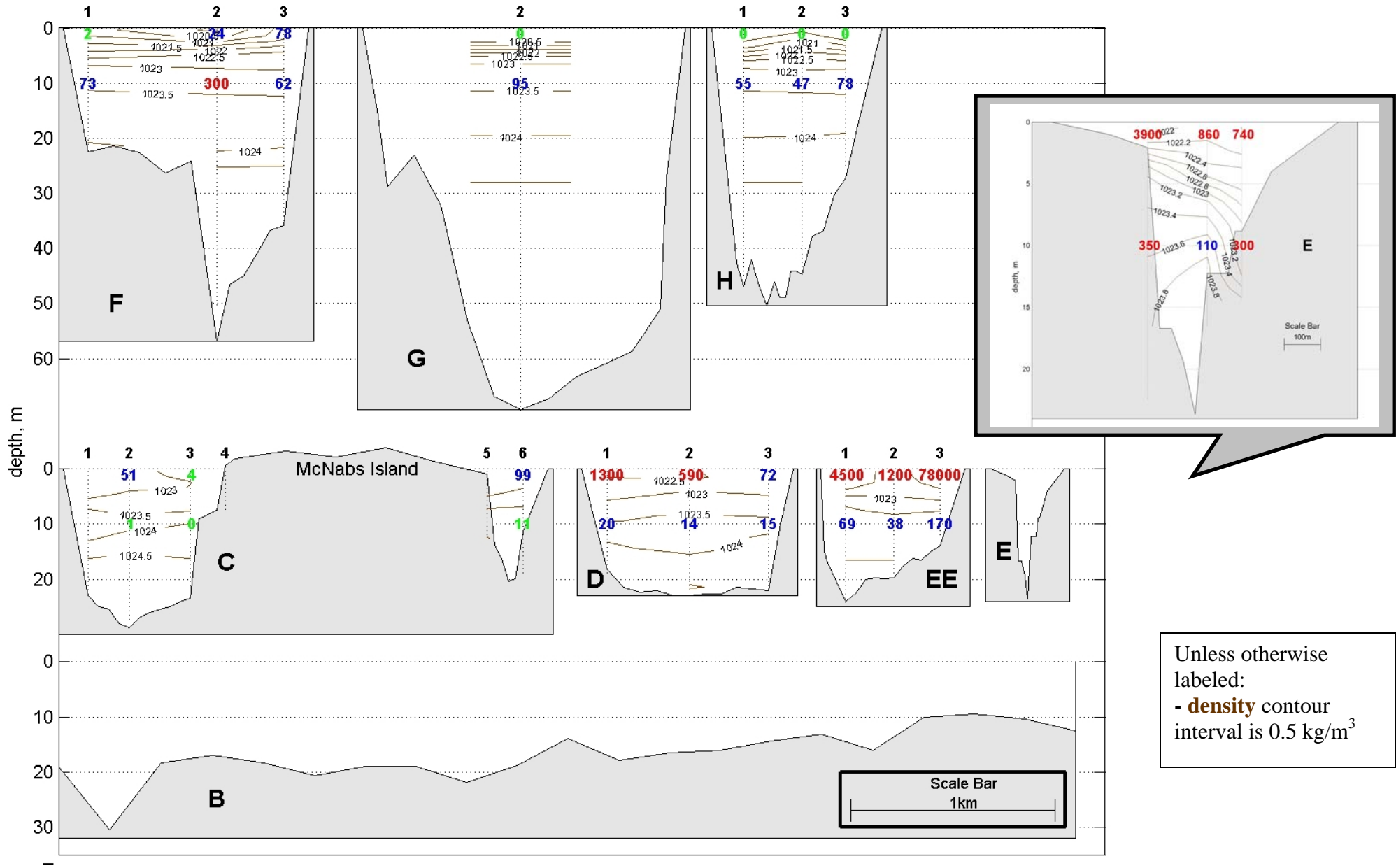


Salinity in PSU

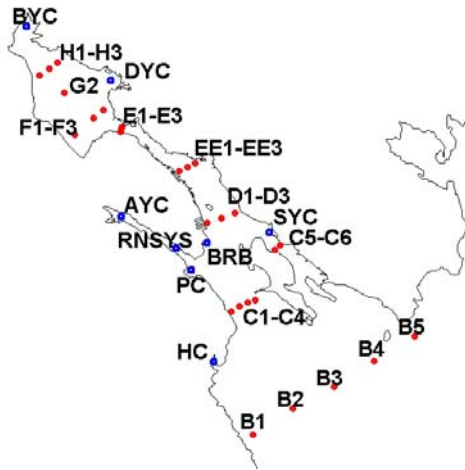
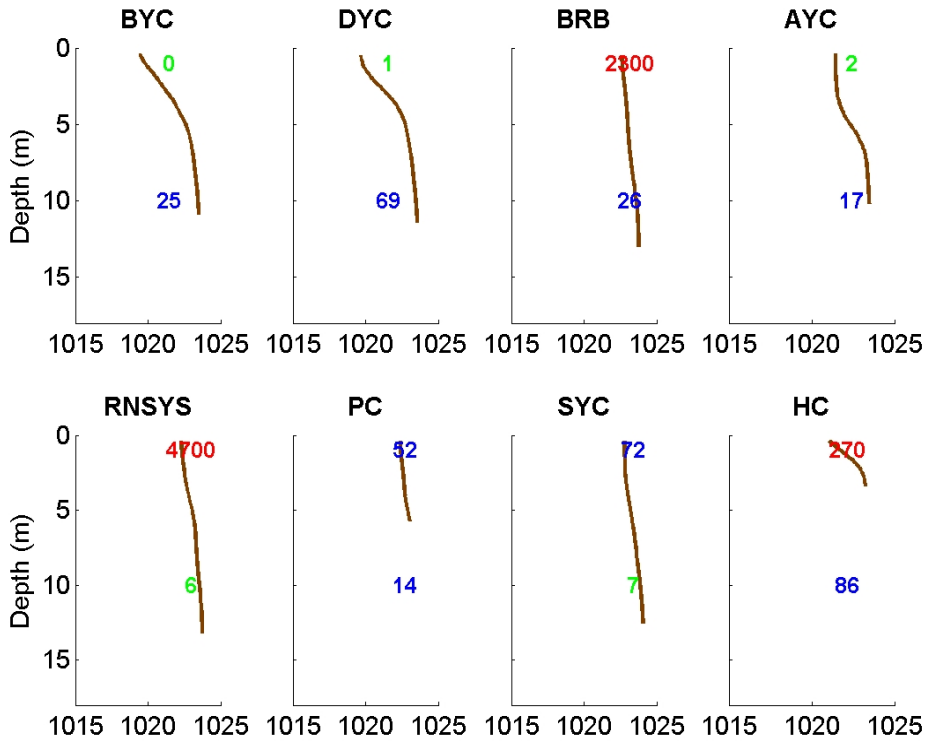
Temperature in °C

Weather data collected at the Shearwater Airport



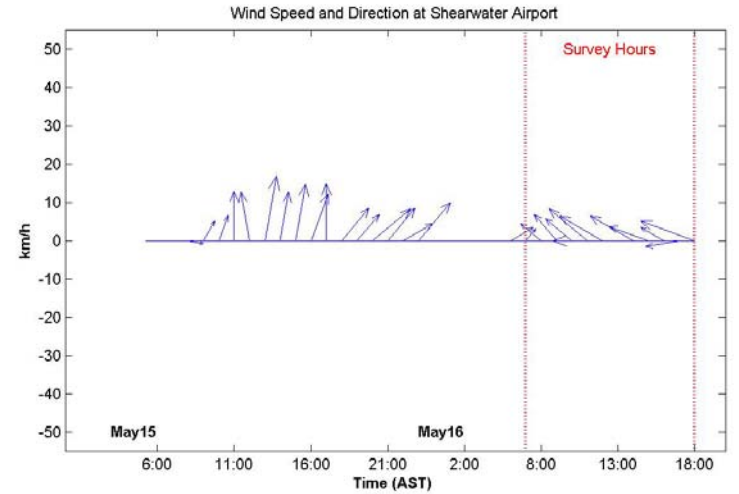
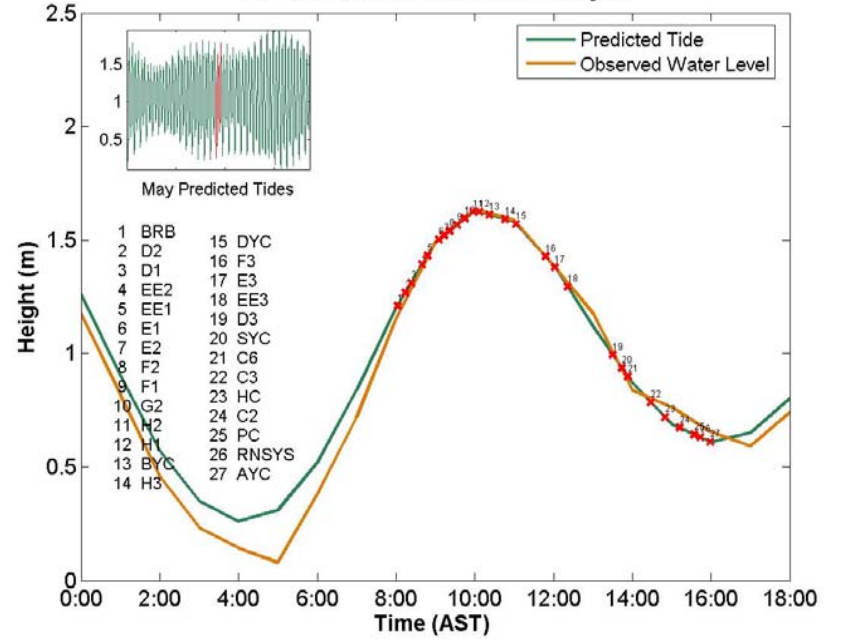


# Yacht Clubs



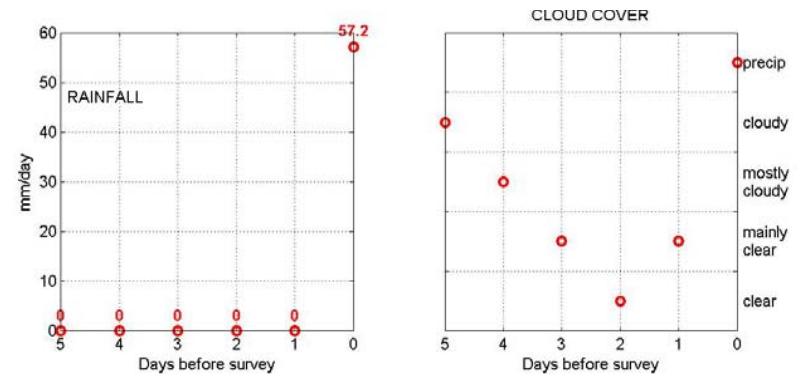
Weather data collected at the Shearwater Airport

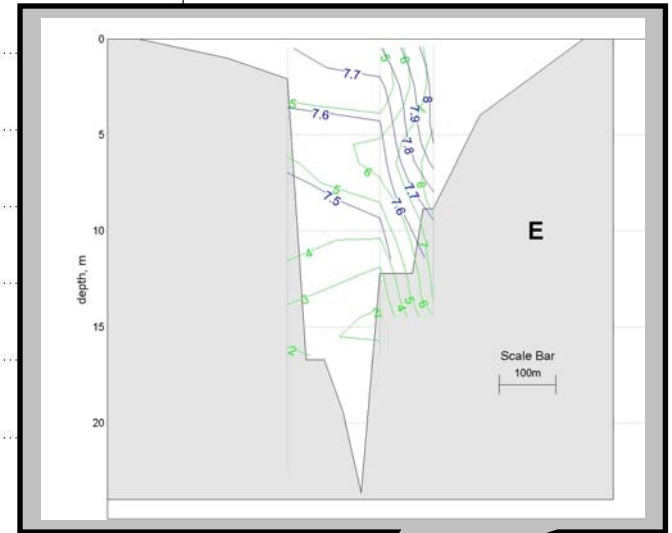
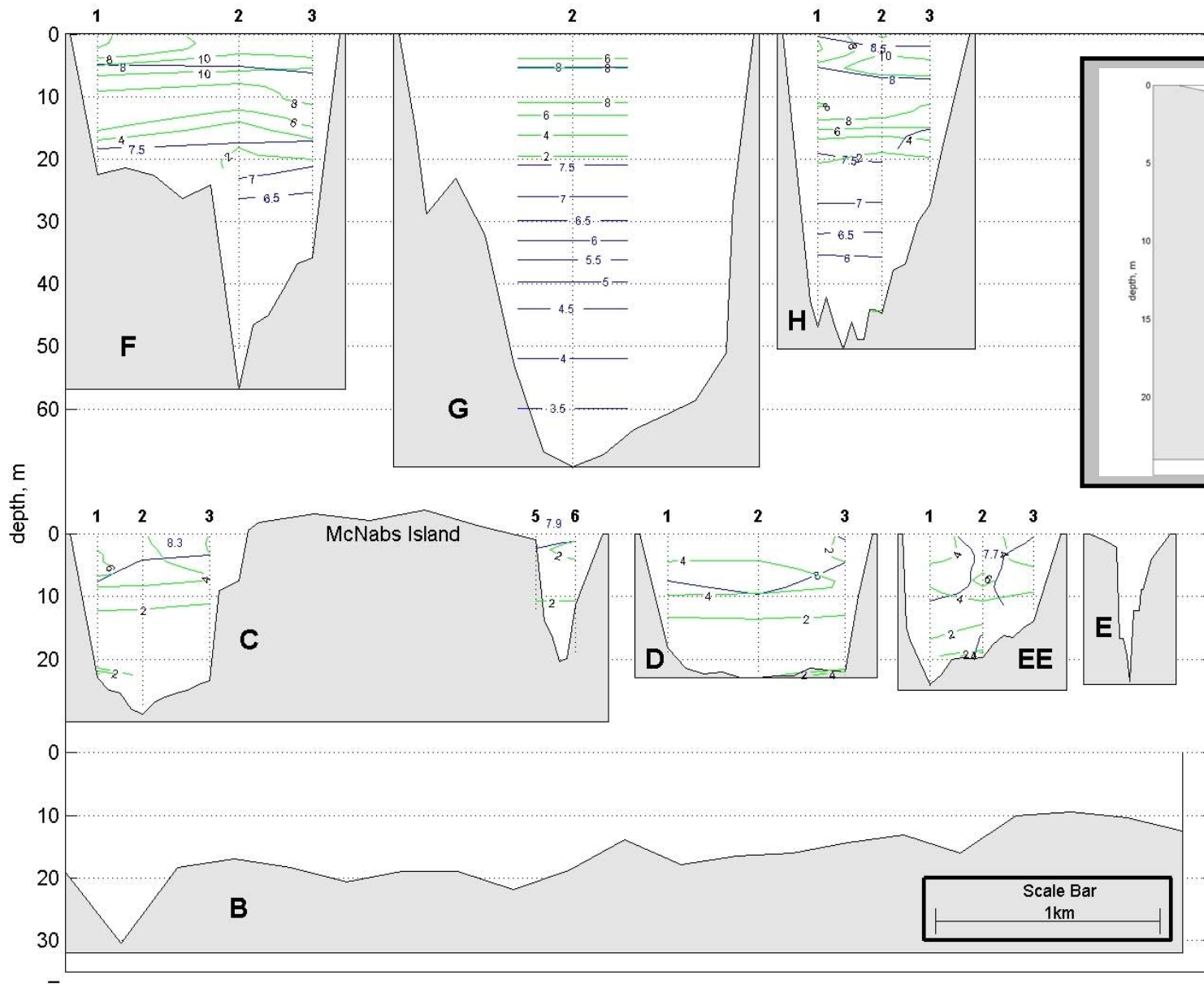
## Halifax Harbour Water Level - May16



Potential Density in  $\text{kg/m}^3$

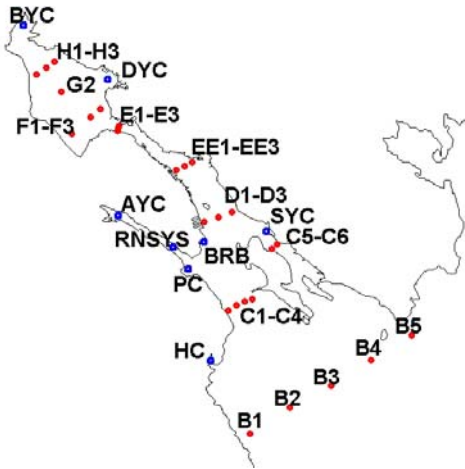
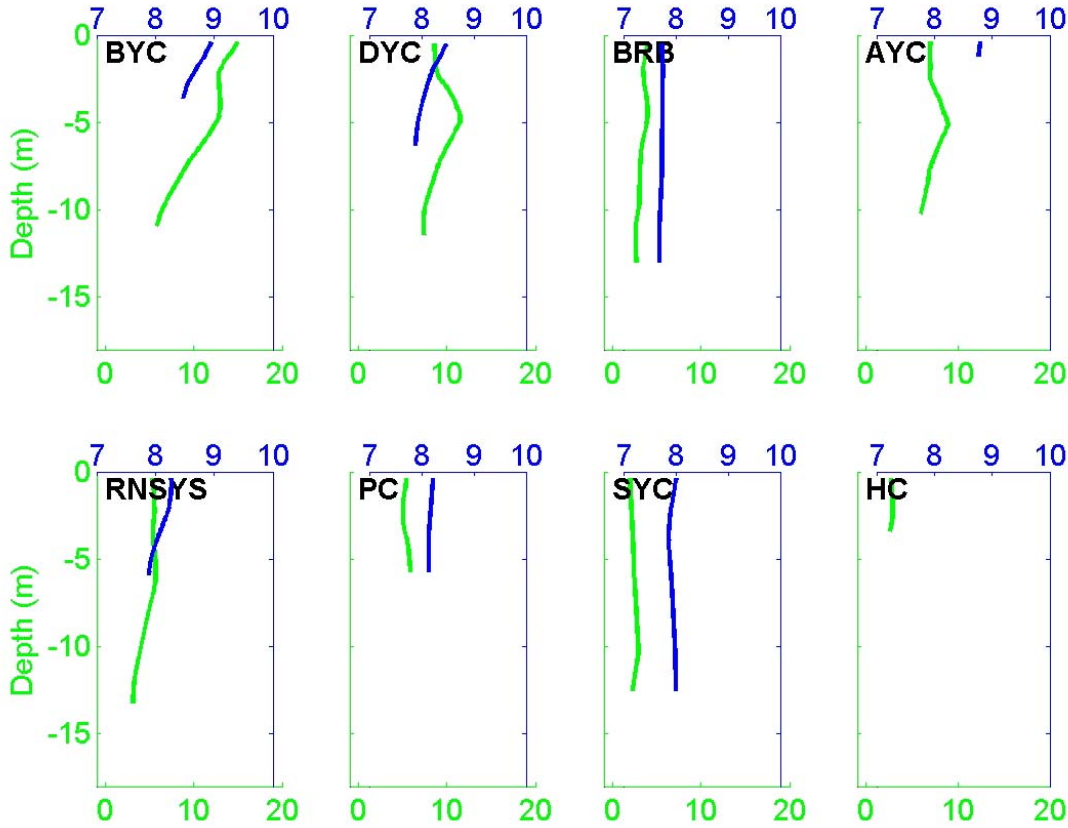
Fecal coliform: above swimming limit (200 cfu/100mL)  
 above shellfish limit (14 cfu/100mL)  
 below limits





Unless otherwise labeled:  
 - **dissolved oxygen** contour interval is 1 mg/L  
 - **chlorophyll** contour interval is 2 mg/m<sup>3</sup>.

# Yacht Clubs



DO in mg/L

Chlorophyll in mg/m<sup>3</sup>

Weather data collected at the Shearwater Airport

# Halifax Harbour Water Level - May16

