

# Halifax Harbour Water Quality Monitoring Project

## Weekly Summary #102

**Survey Date:** 30 May 2006  
**Nature of Survey:** Coliform Survey  
**Report File (this document):** HHWQMP\_report102\_060530.doc  
**Data File:** HHWQMP\_data102\_060530.xls

**Data Return:**

Profile: 100%  
 Bacteria: 100%  
 Chemical: na  
**Overall: 100%**

**Sample Notes:**

Five Winkler titration samples were taken at F2 (1 & 10m), HC (1 & 10m), and SYC (1m).

**QA/QC samples:**

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

Site	E2-10m	G2-1m	C3-10m	C2-1m
Reference	200	0	2	13
QA/QC	210	1	8	9

**Comments:**

**General:** The intrusion observed last week continued, extending all the way to Bedford Basin. This has left the Harbour with a significantly increased salinity. Last week, the 31 PSU contour was at about 10m throughout the Inner Harbour and about 35 m in the Basin. This week, the 31 PSU contour is within 1-2 m of the surface throughout the Harbour including the Basin. The exception is the Narrows where the 31m contour is at about 4 m. The data files indicate that there is a thin layer of fresher water (1-3 PSU lower salinity) within the top 1 m in the Basin. This is not completely resolved in the contour plots. Wind is moderate from the south, generally up-harbour.

The magnitude of the fecal coliform (fc) levels is not unusual and the distribution is generally centered near the outfalls in the Inner Harbour. The fc values in the Basin and Outer Harbour are generally very low everywhere except in the 10m samples at section F in the Basin. The pattern in the Basin is quite usual, with higher values in

the 10m samples, and lower values in the 1m samples. Overall this distribution indicates that the intrusion is no longer occurring.

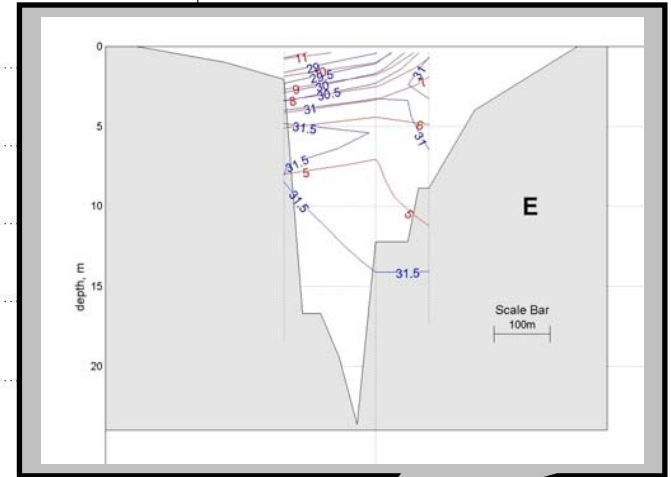
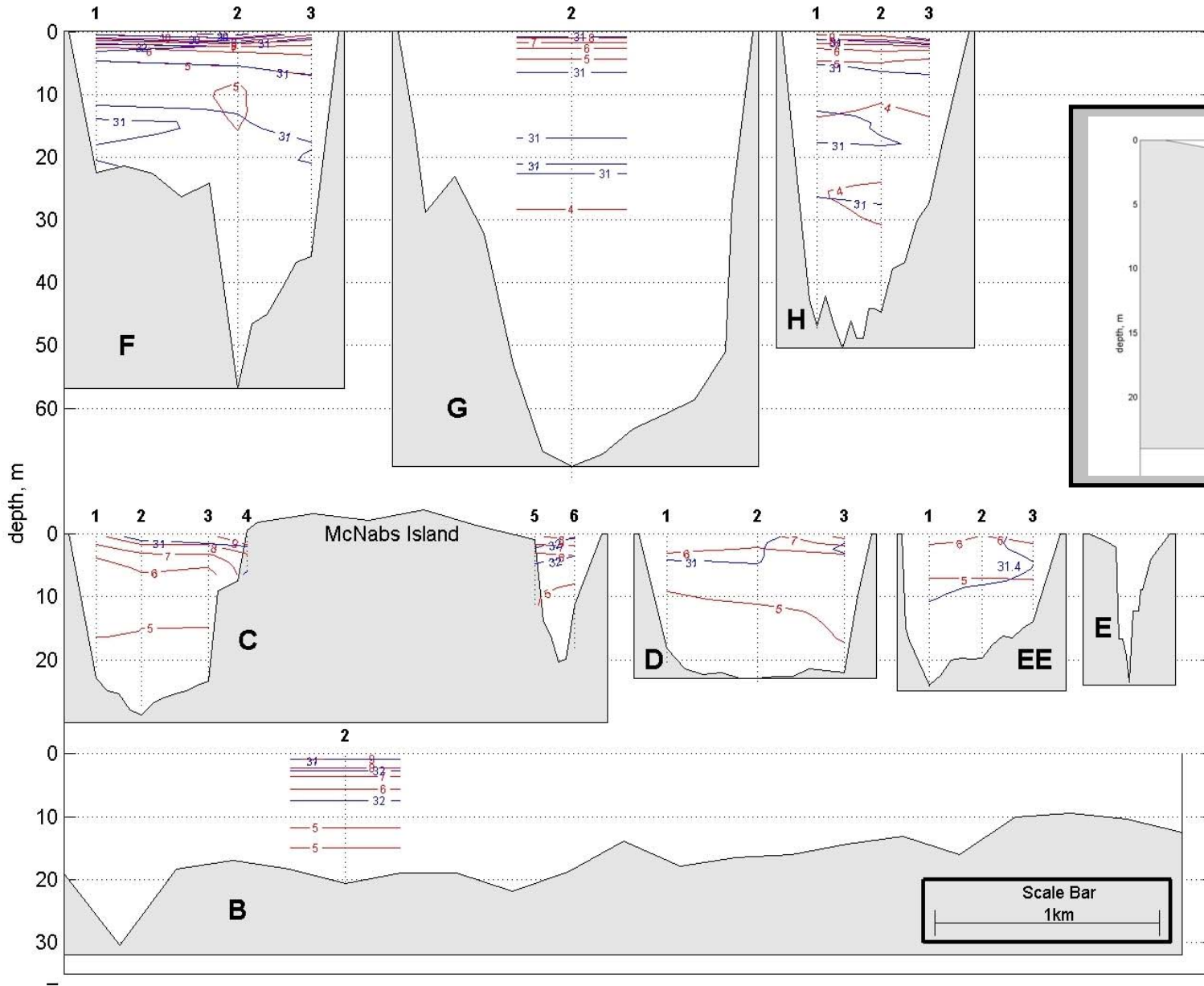
Unusually, the coliform values are high (1200 cfu/100ml) in the bottom sample at HC. This could be due to effluent from the Church Point outfall entering the Cove in denser bottom water.

**Fluorescence:** The maximum fluorescence values are 12-14 mg/m<sup>3</sup> at 8-9 m in the Basin. The values generally drop to 5-9 mg/m<sup>3</sup>, at similar depth, in the Inner Harbour and to 1.3 mg/m<sup>3</sup> at site B2 in the Outer Harbour. Compared to last week these values are slightly higher in the Basin and lower elsewhere.

**Dissolved Oxygen:** The data indicate that, the DO values have generally increased. The surface values are 8-9 mg/L throughout the Harbour. In spite of the mid-water intrusion, the deep bottom water in the Basin continues to drop and now sits at about 2.5 mg/L. The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1).

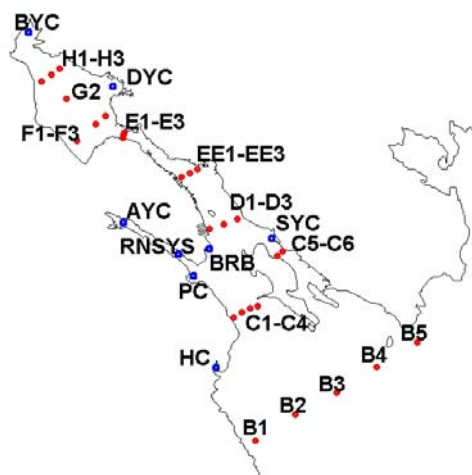
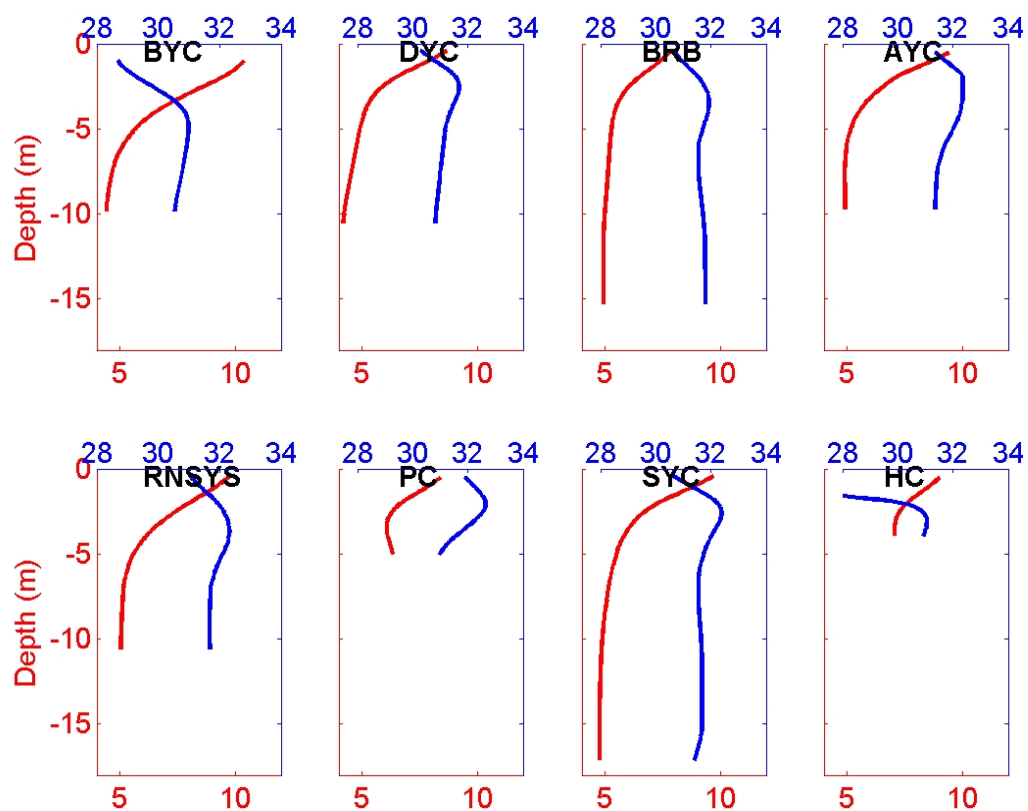
There were five samples taken for DO lab analysis (Winkler titration) for the purpose of comparison with the Seabird CTD values. The samples were taken with niskin bottles positioned next to the stationary CTD. The results are tabulated below. In these measurements the Seabird values are universally low. The implication of the comparison will continue to be investigated.

mg/L	F2-1m	F2-10m	HC-1m	HC-10m	SYC-1m
Seabird	8.73	7.50	8.90	9.00	8.95
Winkler	10.75	8.85	10.75	11.28	11.10



Unless otherwise labeled:  
- salinity contour interval is 1 PSU  
- temperature contour interval is 1°C.

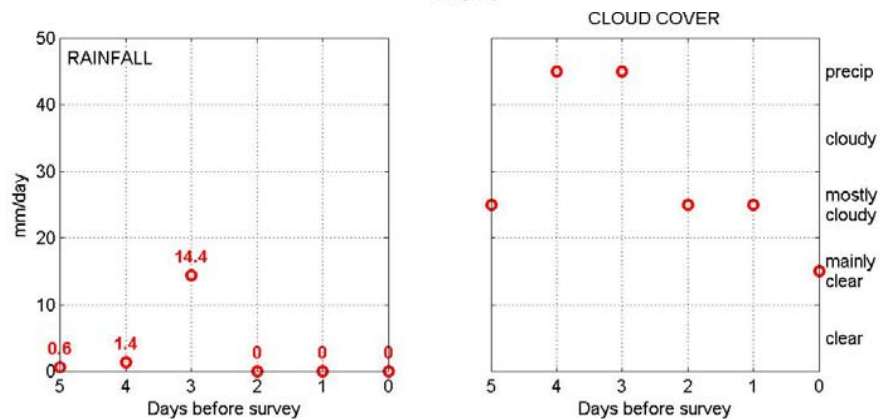
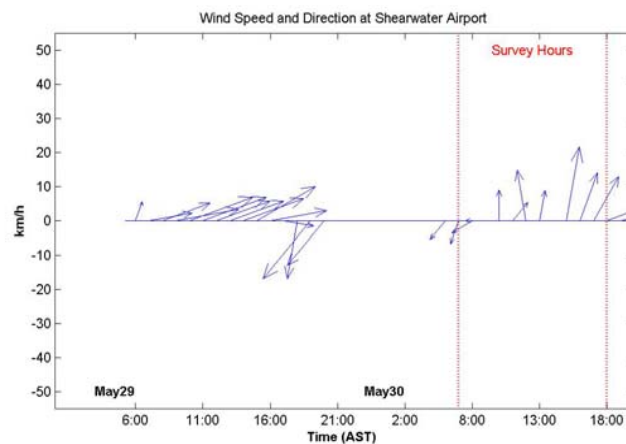
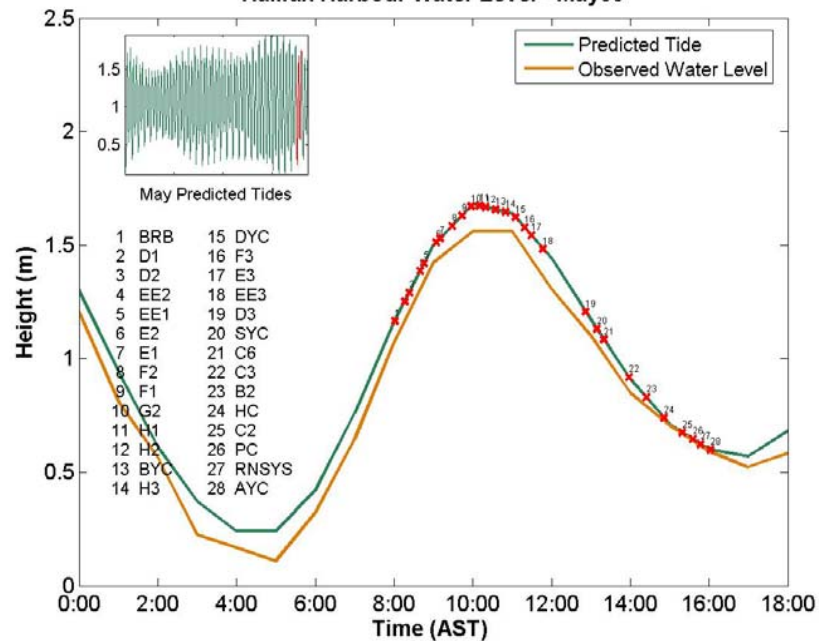
# Yacht Clubs

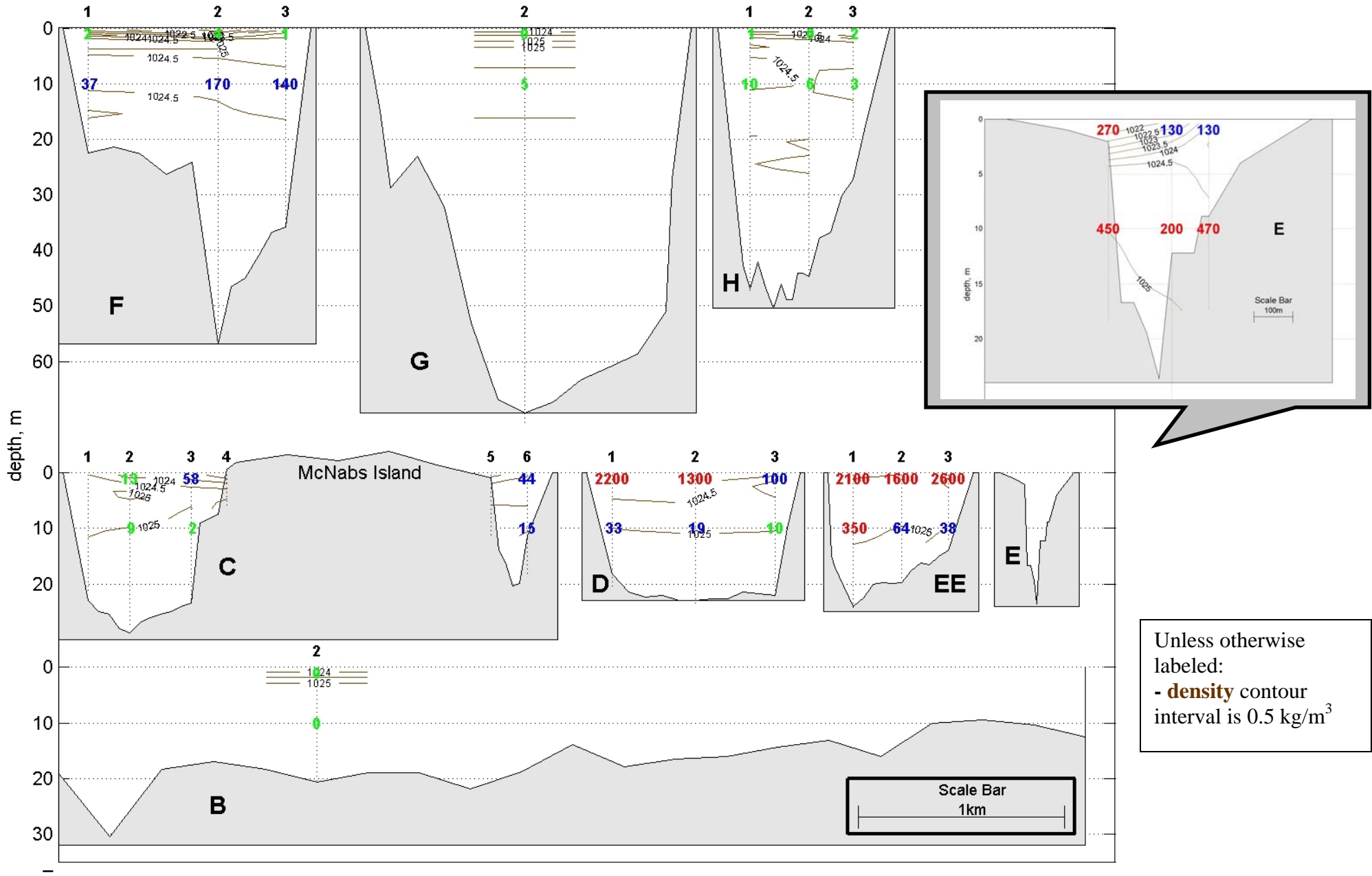


Salinity in PSU      Temperature in °C

Weather data collected at the Shearwater Airport

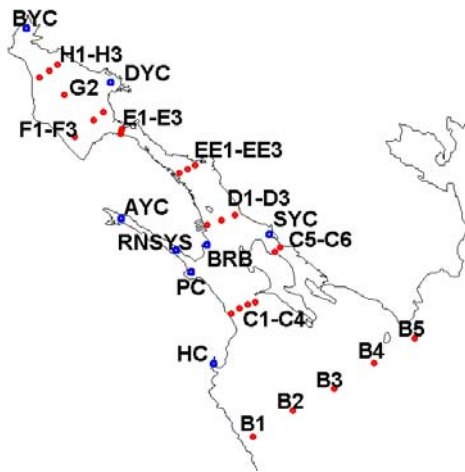
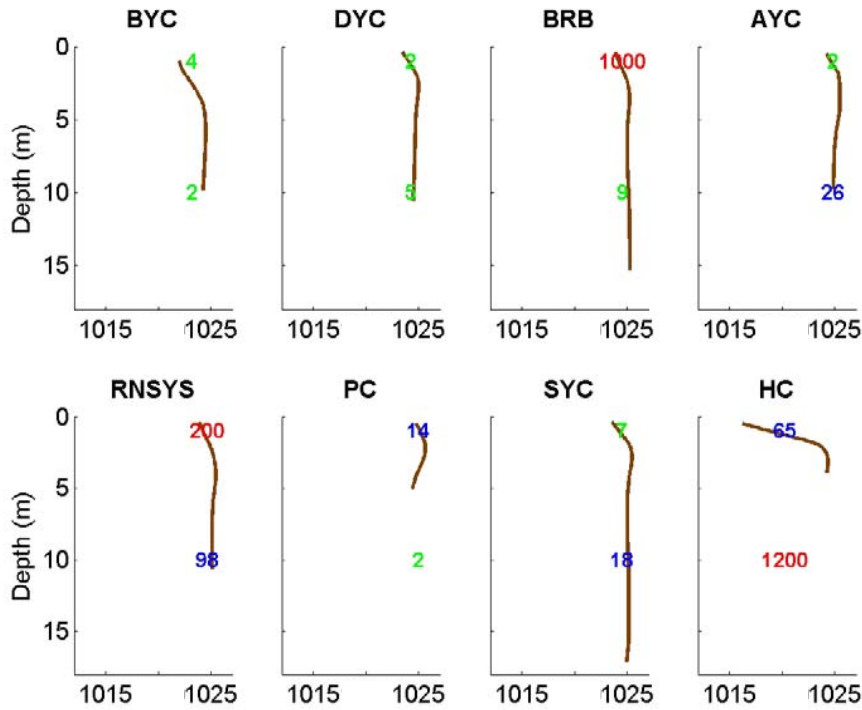
## Halifax Harbour Water Level - May30





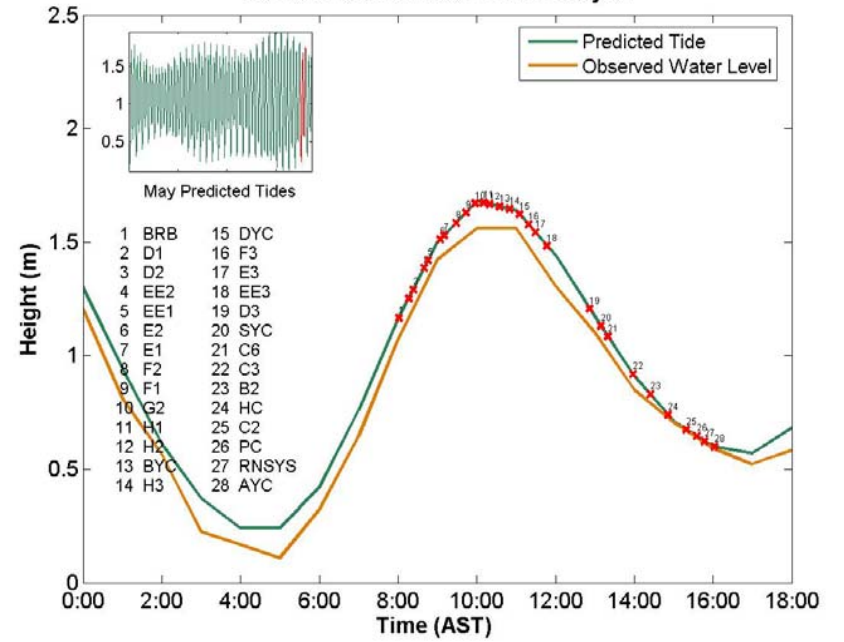
Unless otherwise labeled:  
 - **density** contour interval is 0.5 kg/m<sup>3</sup>

# Yacht Clubs

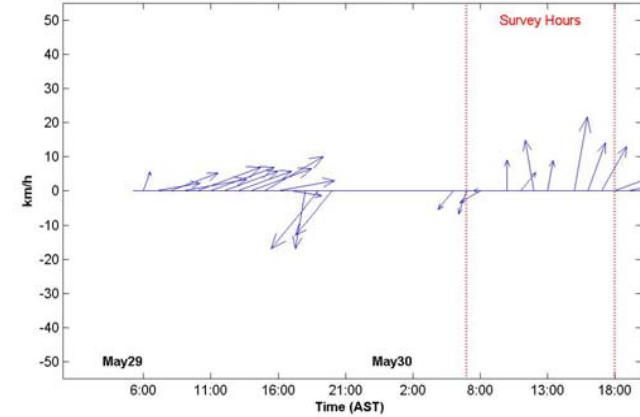


Weather data collected at the Shearwater Airport

## Halifax Harbour Water Level - May30

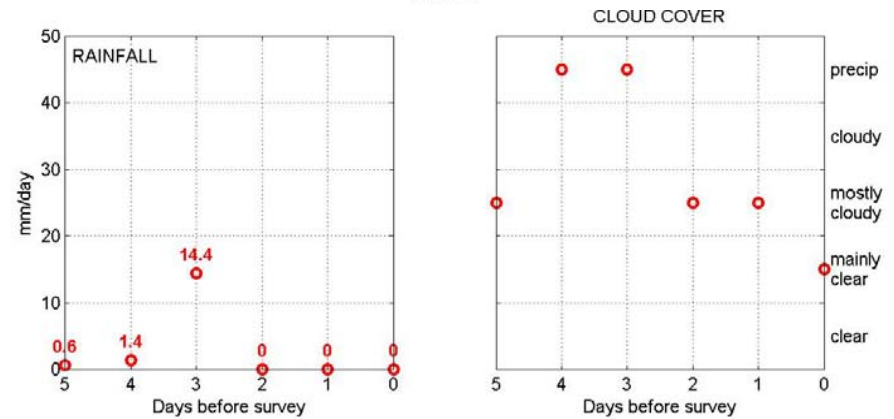


## Wind Speed and Direction at Shearwater Airport

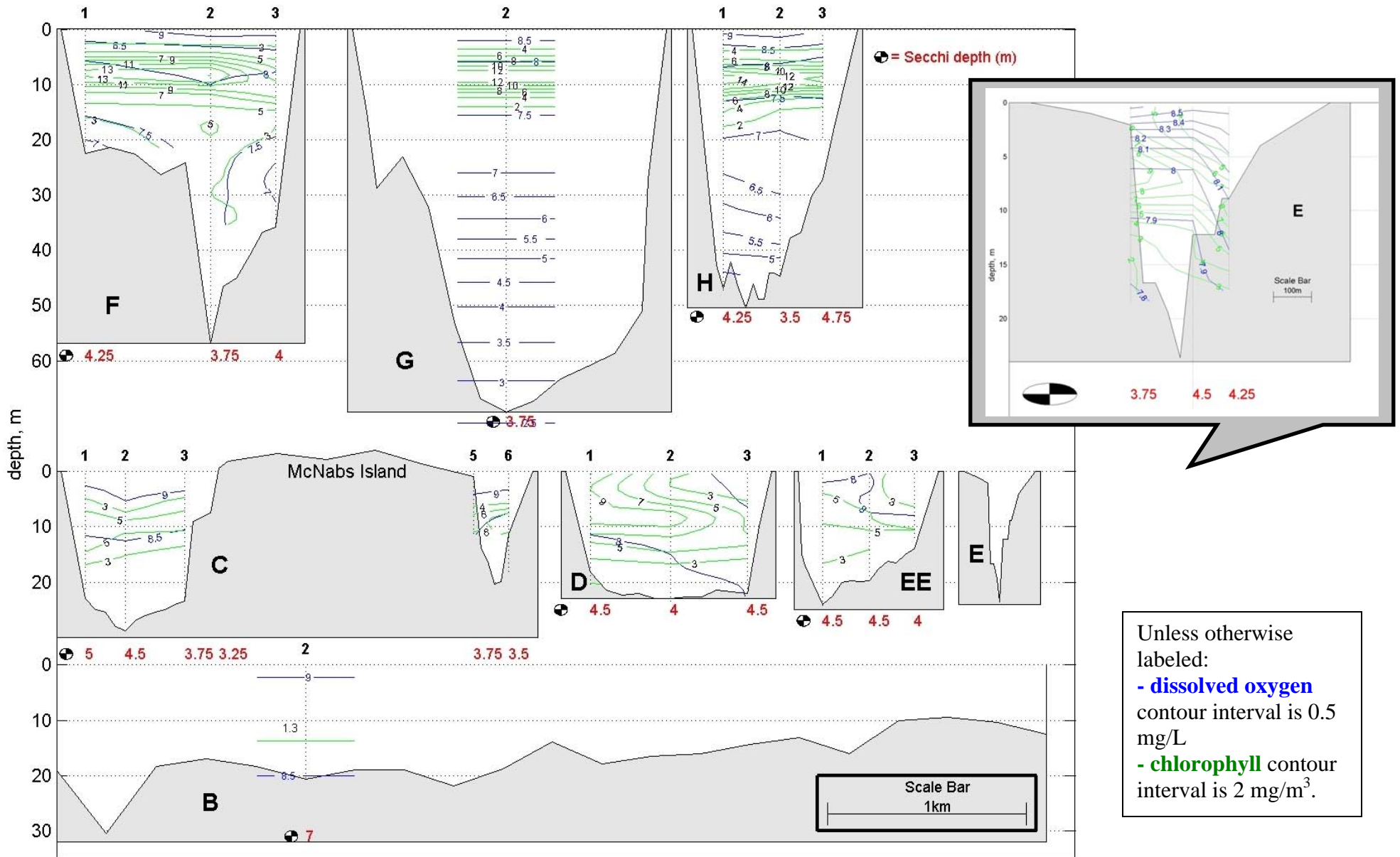


Potential Density in  $\text{kg/m}^3$

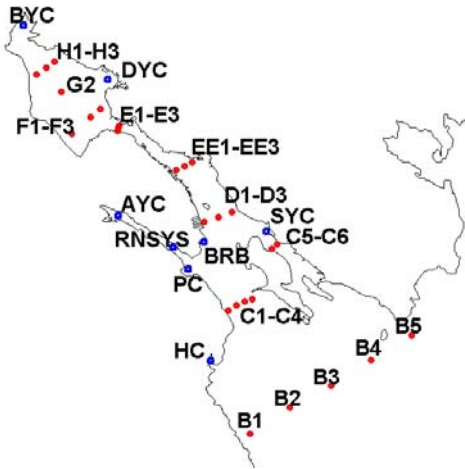
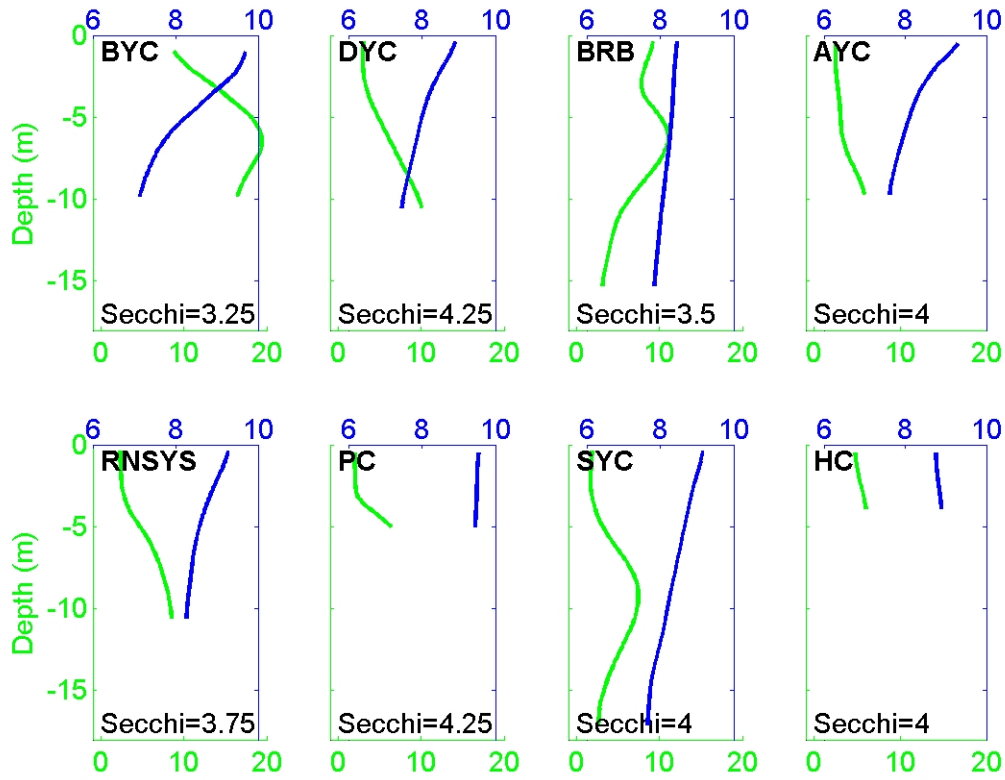
Fecal coliform: above swimming limit (200 cfu/100mL)  
 above shellfish limit (14 cfu/100mL)  
 below limits







# Yacht Clubs



DO in mg/L

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

Weather data collected at the Shearwater Airport

# Halifax Harbour Water Level - May30

