

# Halifax Harbour Water Quality Monitoring Project

## Weekly Summary #75

**Survey Date:** 23 November 2005  
**Nature of Survey:** Complete Survey  
**Report File (this document):** HHWQMP\_report075\_051123.doc  
**Data File:** HHWQMP\_data075\_051123.xls

**Data Return:**  
 Profile: 87%  
 Bacteria: 89%  
 Chemical: 86%  
**Overall: 87%**

### Sample Notes:

Based on recommendations made in QR#4, regular metals sampling has been discontinued, due to lack of detection at the available resolution. An alternate procedure to obtain higher resolution metals analysis is being investigated.

Stations C3, C4, HC and B2 were not sampled due to rough seas in the Outer Harbour.

Fecal Coliform QA/QC samples 3 and 4 were not taken.

Site PC was moved slightly due to swell and proximity to rocks. Alternate site: 44° 36.697' N, 63° 34.009' W.

### Fecal Coliform QA/QC (CFU/100ml)

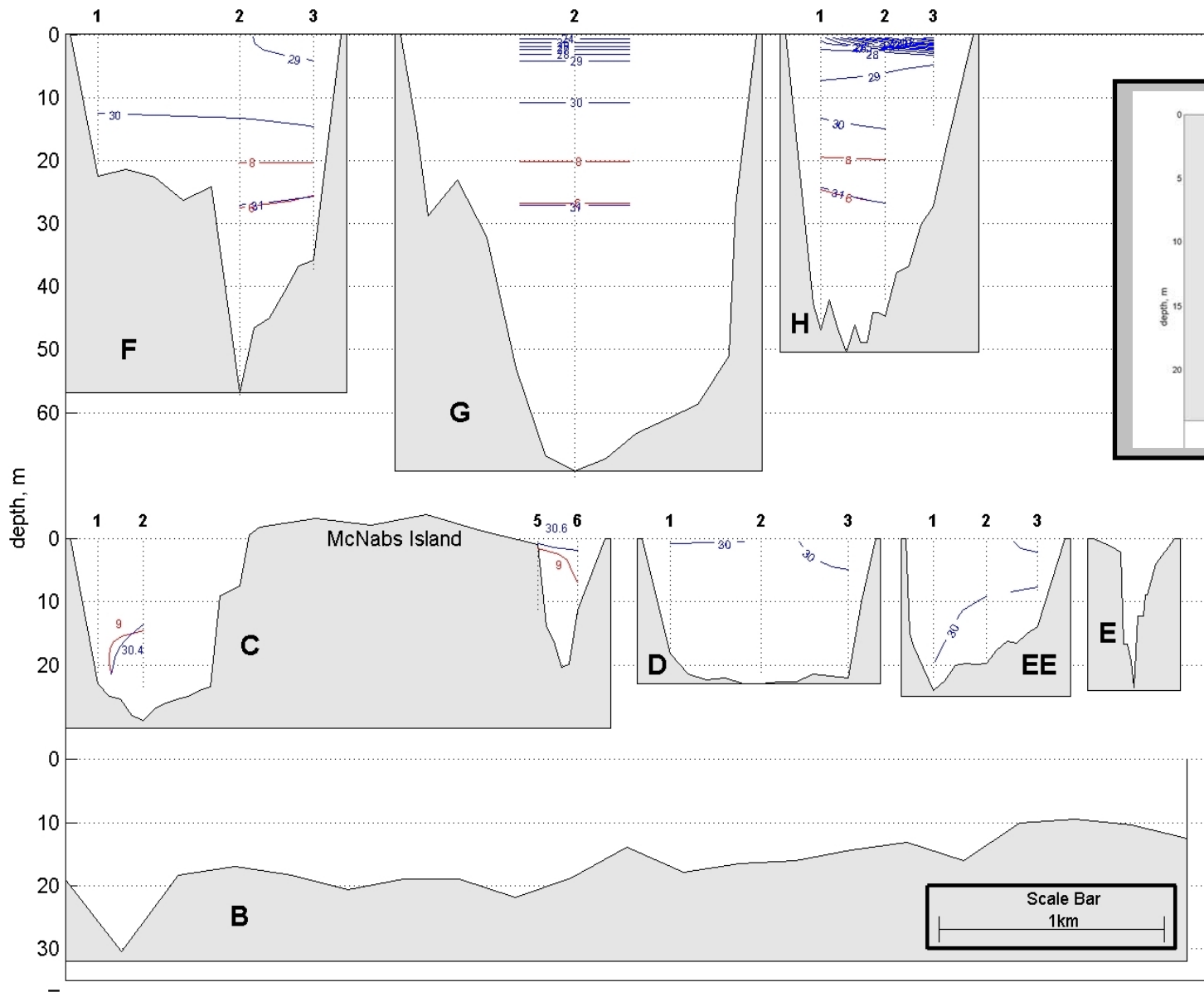
Site	AYC-1m	AYC-10m
Reference	1900	1300
QA/QC	1600	1200

### Comments:

**General:** The weather system associated with strong southerly winds and heavy rain on the previous day, and on the morning of the sampling day has resulted in a significant storm surge and an apparent up-Harbour transport of surface water. The wind mixing and up-Harbour transport are working against the estuarine circulation normally expected from such a significant rainfall event (43 mm). Given that the rain stopped just prior to the start of the survey, it is likely that the estuarine response is still developing. The freshwater signature can be seen as far south as G2 but is pretty much dissipated by section F. There is a significant storm surge of about 0.4 m, which nearly doubles the height of the predicted high tide on this neap tide. The water level shows a higher frequency oscillation which may be the result of seiching (“sloshing”) caused by the wind forcing. The fecal coliform levels are extremely high everywhere north of section C. In this region, there is only one value less than 200 CFU/100 mL (the 10m sample at PC). There are three samples in the E section with out-of-range values (>10,000 CFU/100mL) for the first time since the start of the program. Uncharacteristically, the fecal coliform values in the 1m samples in the Basin are higher than the 10m samples, supporting the observation of the up-Harbour transport of surface water. Overall the water temperature has increased slightly (about 0.1 °C) since last week.

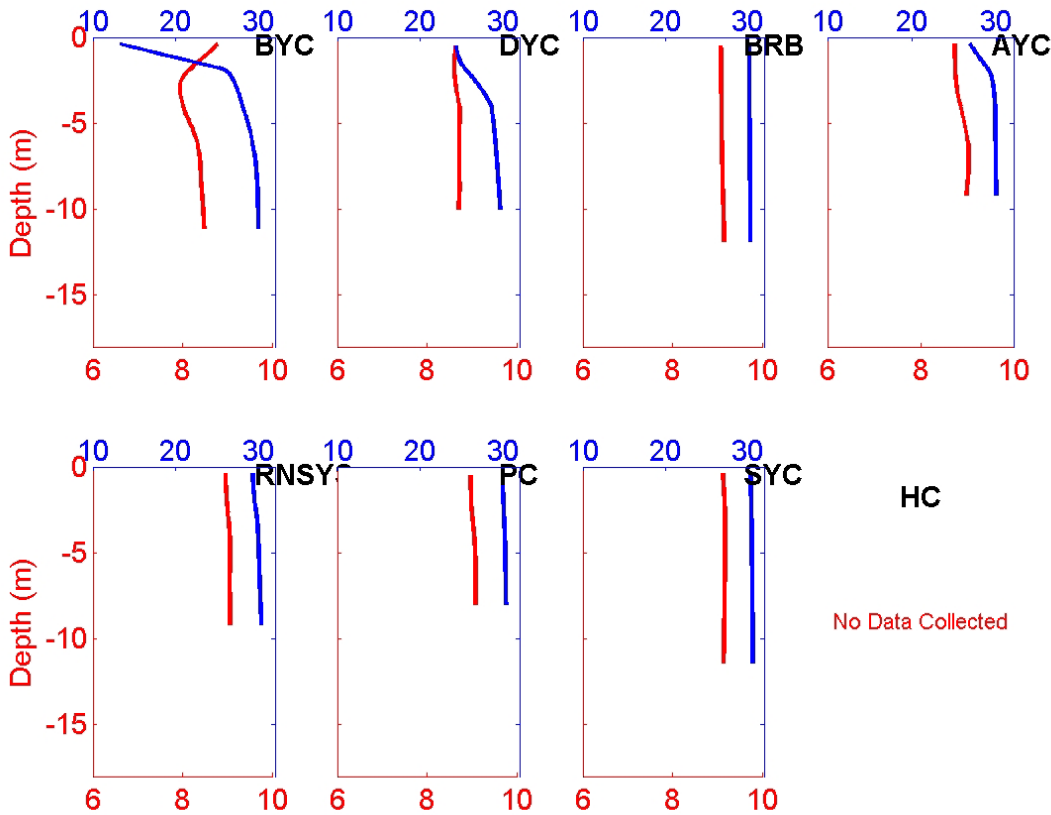
**Chlorophyll:** Fluorescence levels are low (profile maximums of 2-3 mg/m<sup>3</sup>) and relatively uniform everywhere.

**Dissolved Oxygen:** The fresher surface layer at the north end of the Basin has maximum DO concentrations of 7.5-8.0 mg/L. The deepest water in the Basin has dropped to about 4.6 mg/L. Elsewhere, the concentrations are very similar to last week. The DO is relatively uniform vertically and increases slightly from 6.6-7.0 mg/L going from the inner Harbour to section C. Site B2 was not sampled. These values are below the applicable guidelines in the Basin bottom water and marginal in the class SB waters of the Outer Harbour (section C). The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1).

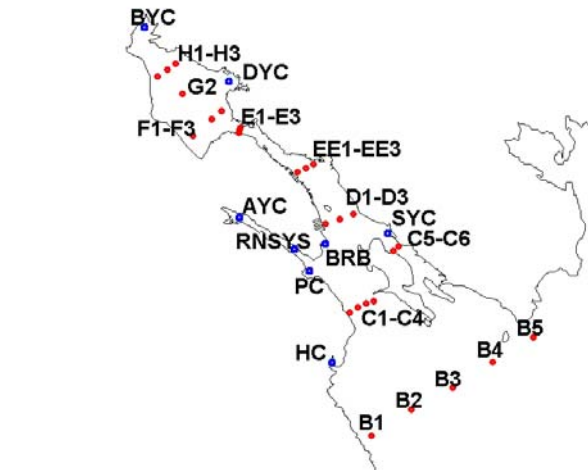


Unless otherwise labeled:  
 - salinity contour interval is 1 PSU  
 - temperature contour interval is 1°C.

# Yacht Clubs



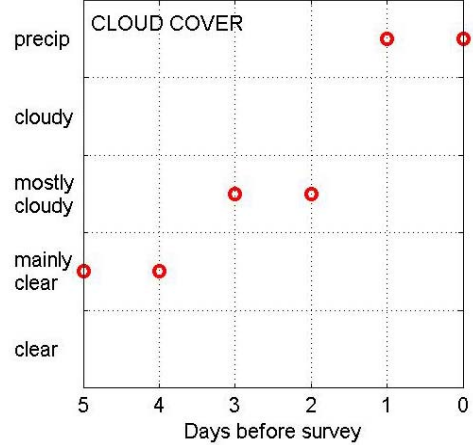
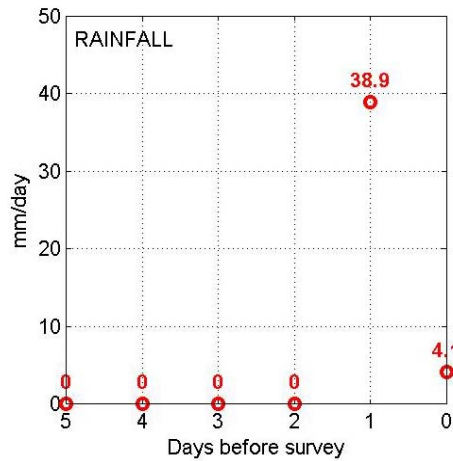
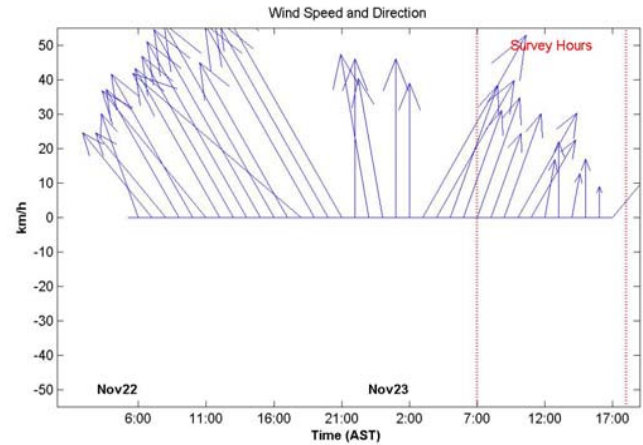
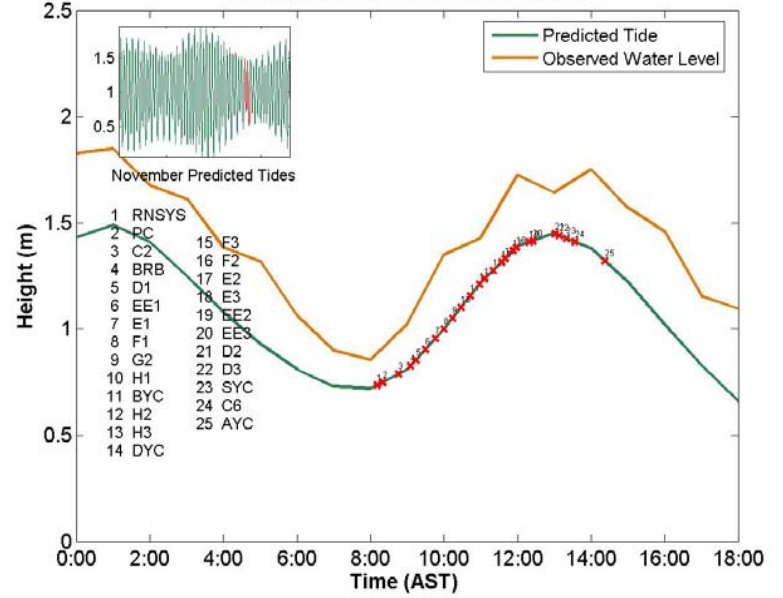
HC  
No Data Collected

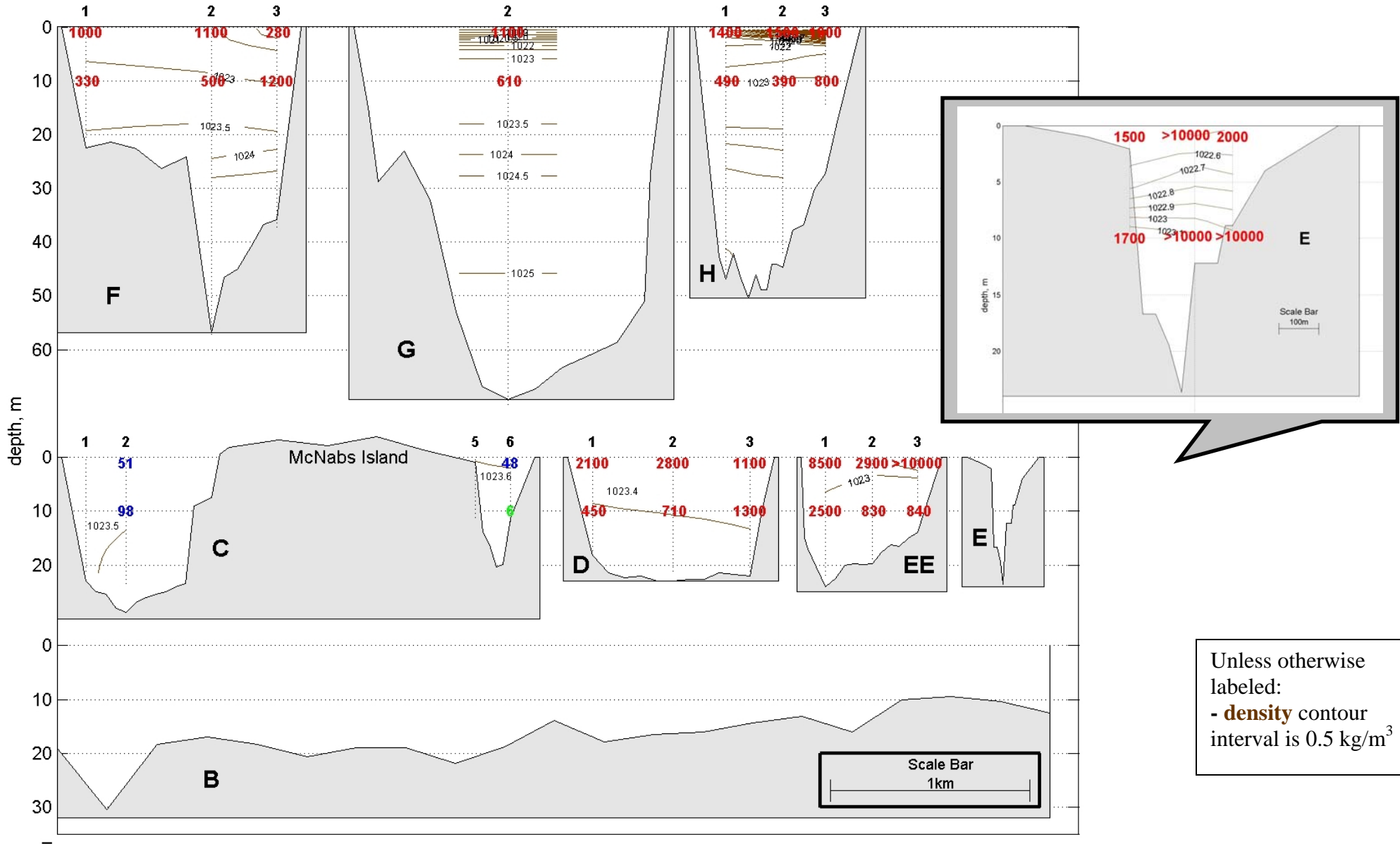


Salinity in PSU    Temperature in °C

Weather data collected at the Halifax International Airport

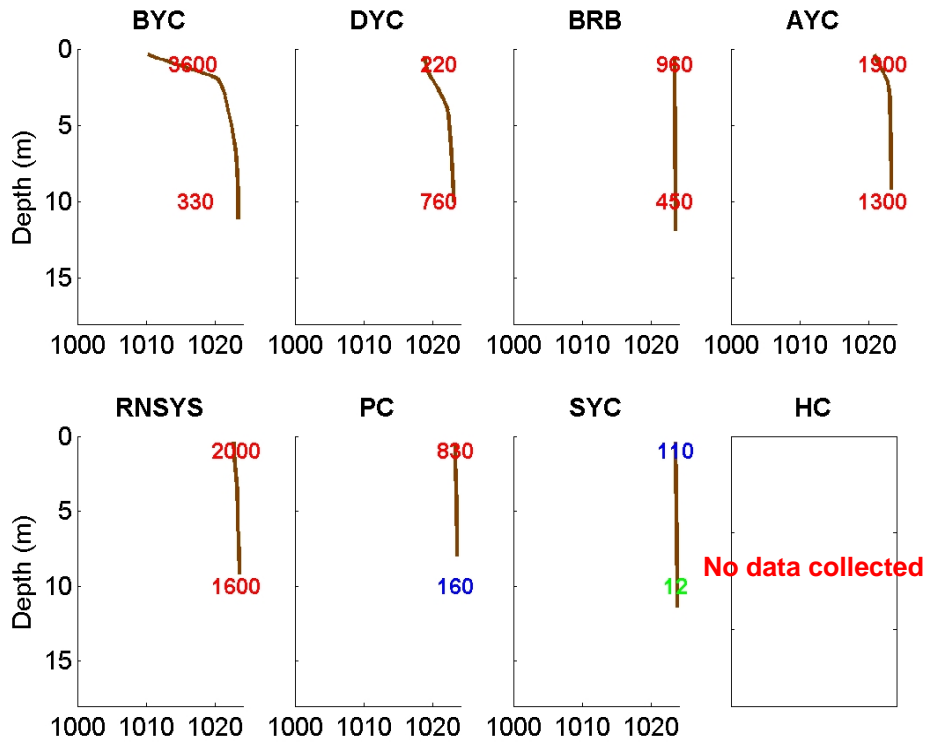
## Halifax Harbour Water Level - Nov23



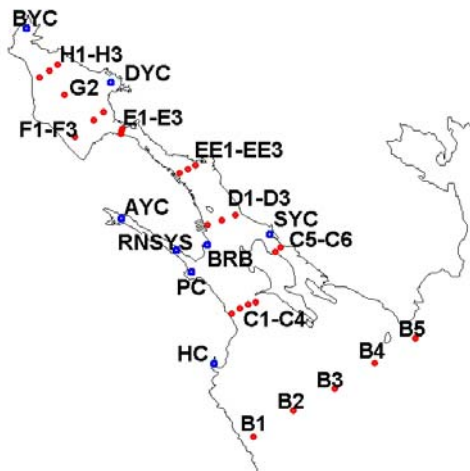
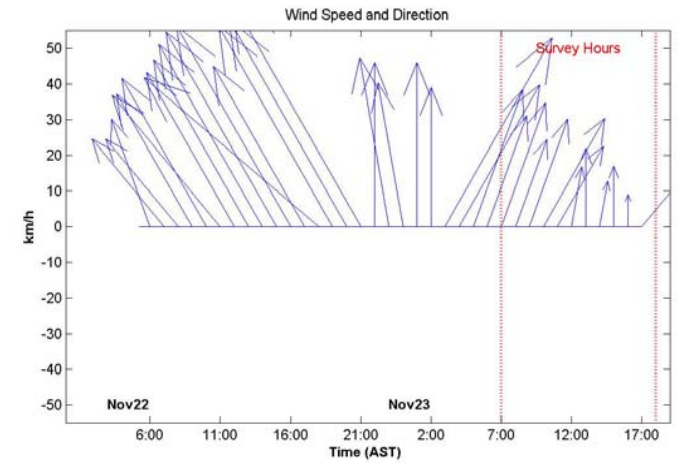
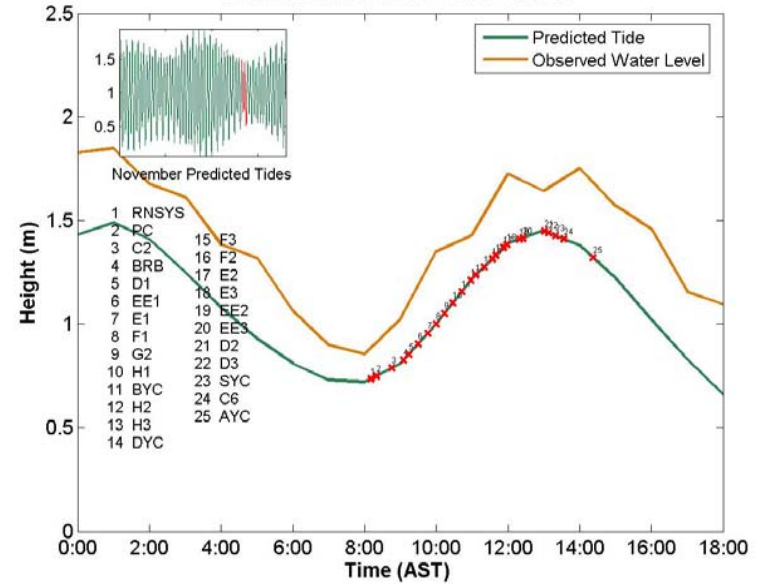


Unless otherwise labeled:  
 - **density** contour interval is 0.5 kg/m<sup>3</sup>

# Yacht Clubs



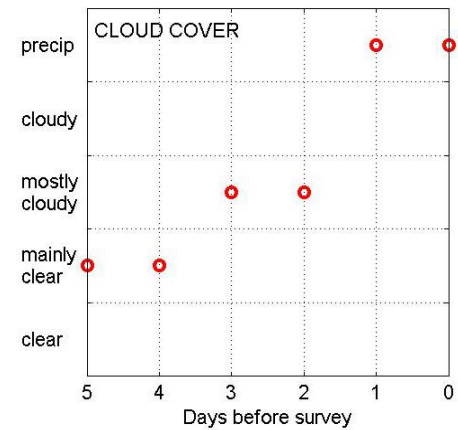
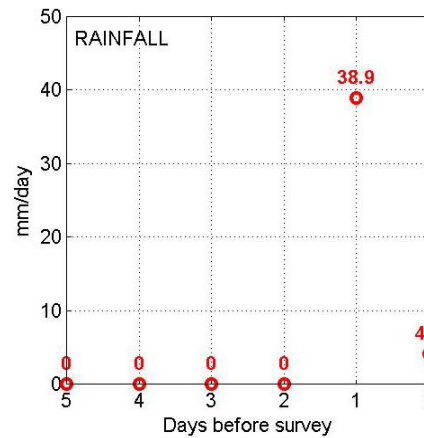
Halifax Harbour Water Level - Nov23

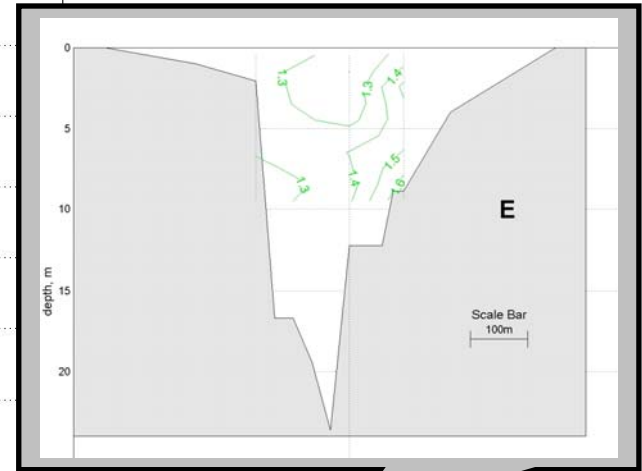
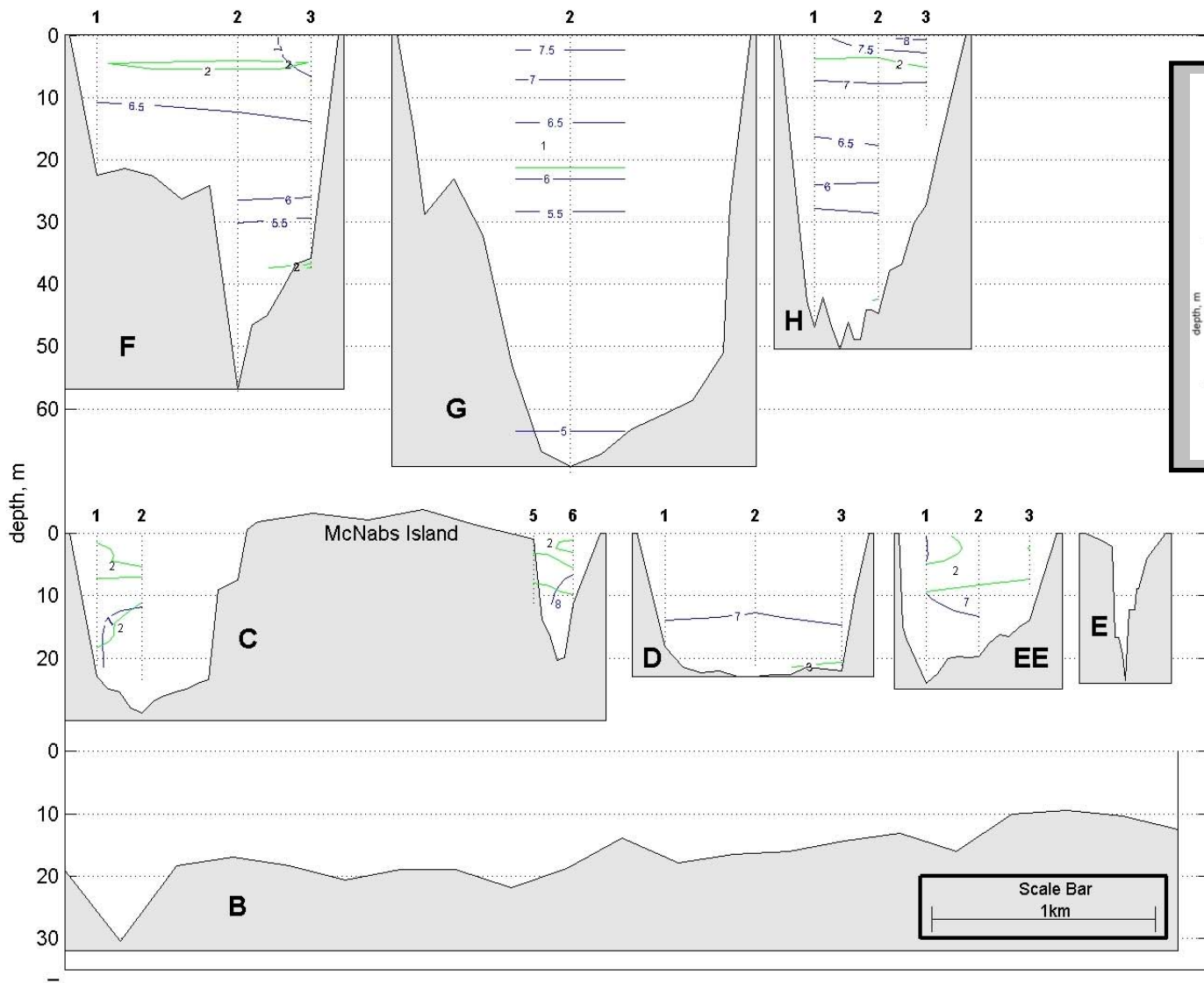


Weather data collected at the Halifax International Airport

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

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

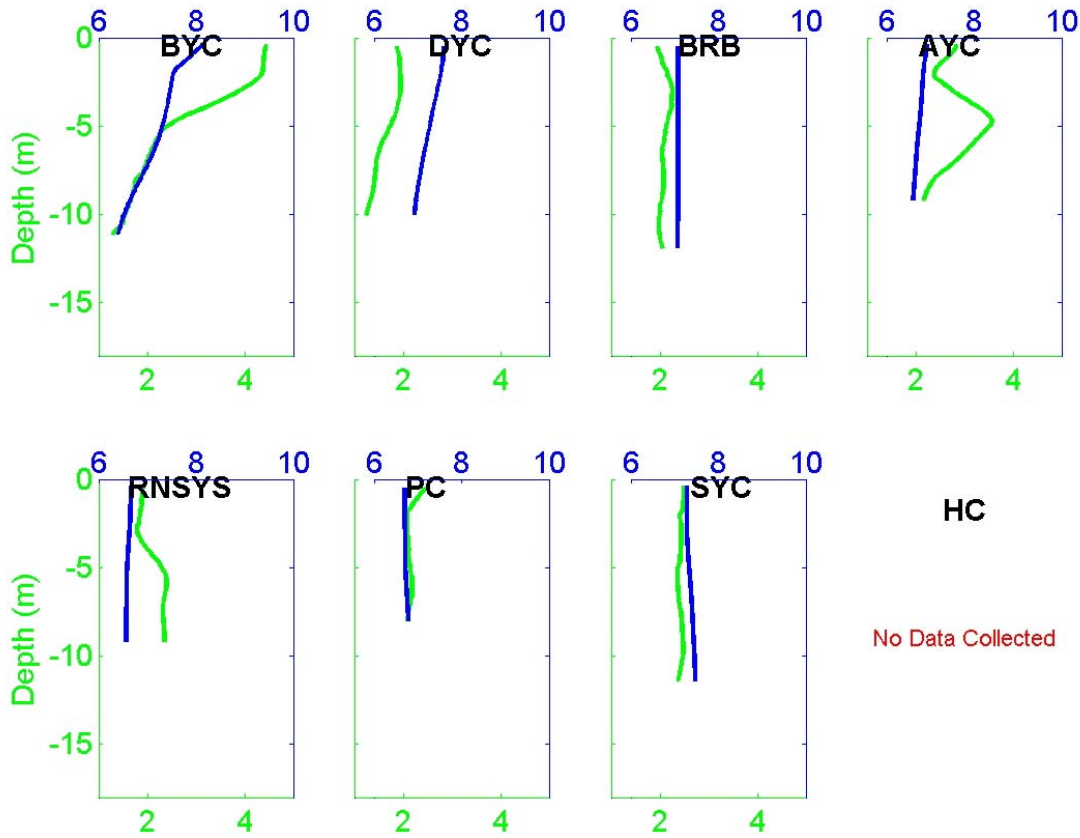




Unless otherwise labeled:  
 - **dissolved oxygen** contour interval is 0.5 mg/L  
 - **chlorophyll** contour interval is 2 mg/m<sup>3</sup>.

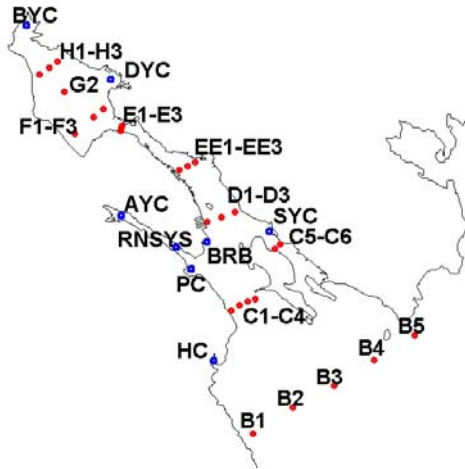


# Yacht Clubs



# HC

No Data Collected

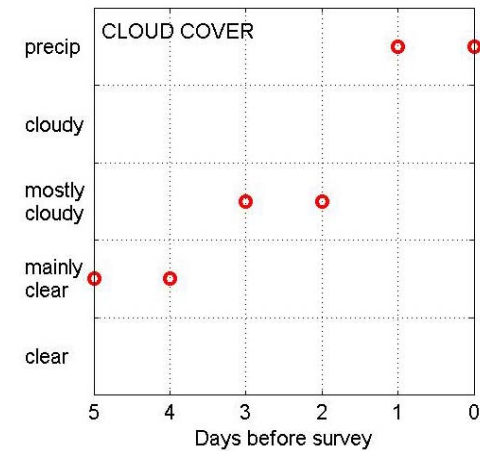
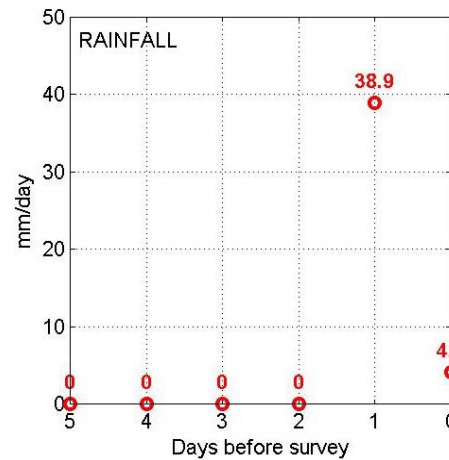
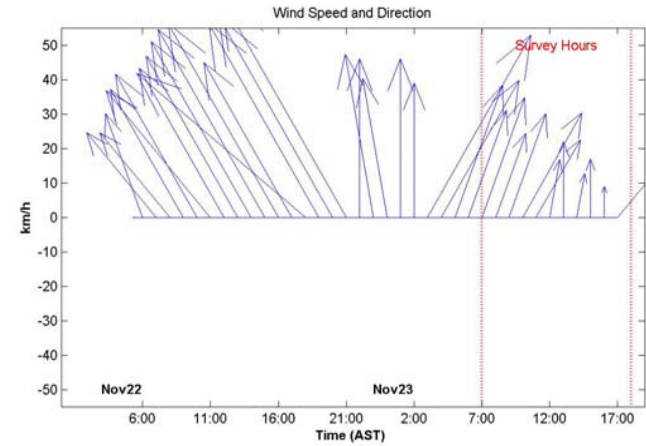
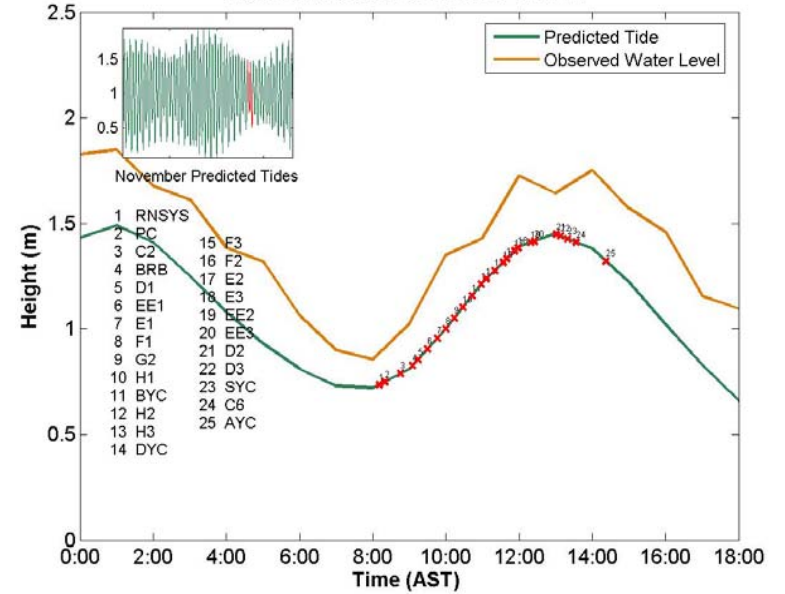


DO in mg/L

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

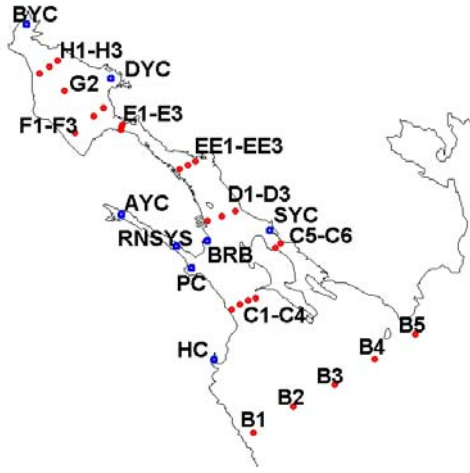
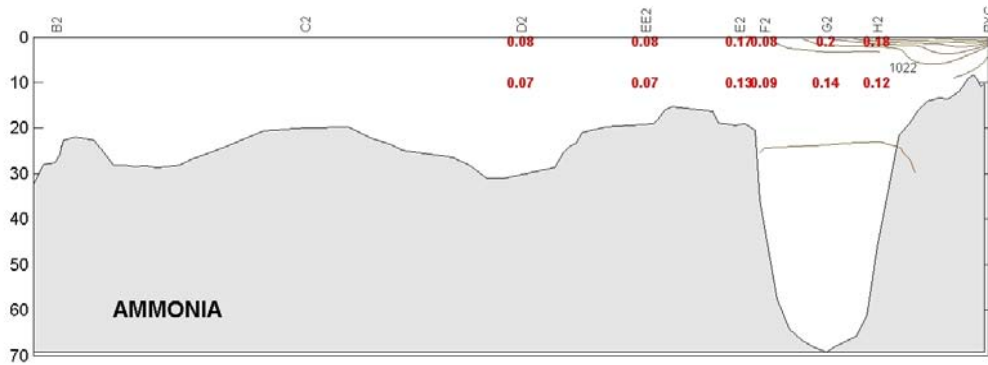
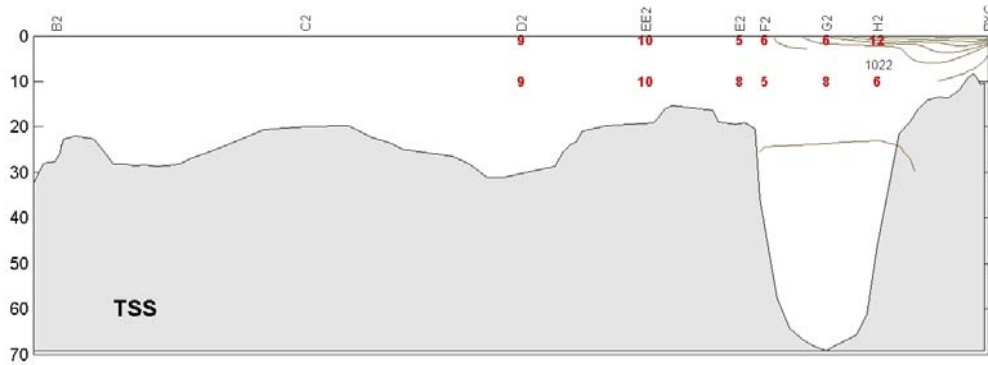
Weather data collected at the Halifax International Airport

# Halifax Harbour Water Level - Nov23



Harbour Water Quality Monitoring Program

CHEMISTRY



Weather data collected at the Halifax International Airport

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

Ammonia in mg/L

TSS in mg/L

Halifax Harbour Water Level - Nov23

