

# Halifax Harbour Water Quality Monitoring Project

## Weekly Summary #76

**Survey Date:** 29 November 2005  
**Nature of Survey:** Coliform Survey  
**Report File (this document):** HHWQMP\_report076\_051129.doc  
**Data File:** HHWQMP\_data076\_051129.xls

**Data Return:**

Profile: 86%  
 Bacteria: 100%  
 Chemical: na  
**Overall: 91%**

**Sample Notes:**

There were problems with the CTD which showed up in the QA/QC procedures. The DO sensor failed to reach proper equilibrium during the "soaking" period, at many sites. The reason for this is unclear, but may have been a partial blockage of the flow in the sensor circuit. A blockage affects the DO sensor the most as it consumes oxygen and can give erroneously low values. The other measurements would not be affected in magnitude, but a reduction in flow would tend to lag the observations with respect to the pressure sensor, causing the values to appear to be shifted deeper in the water column. The DO data for sites BYC, DYC, E1, E2, E3, EE1, F1, F2, F3, G2, H1, and H2 has been plotted in this report but has been deleted from the data file, the remainder of the data for these sites should be used with caution.

The CTD flow outlet was raised out of the water at the start of the cast at C2, causing a brief flow interruption. This contaminated the start of the DO data, but had little effect on the other values. The DO data for this site has been deleted from the data file, the remaining data should be used with caution.

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

Site	PC-1m	EE2-10m	SYC-1m	C3-1m
Reference	1700	240	160	140
QA/QC	1700	780	8100	790

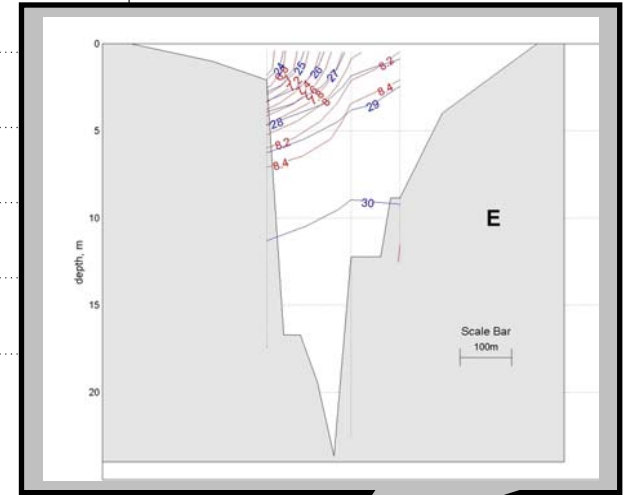
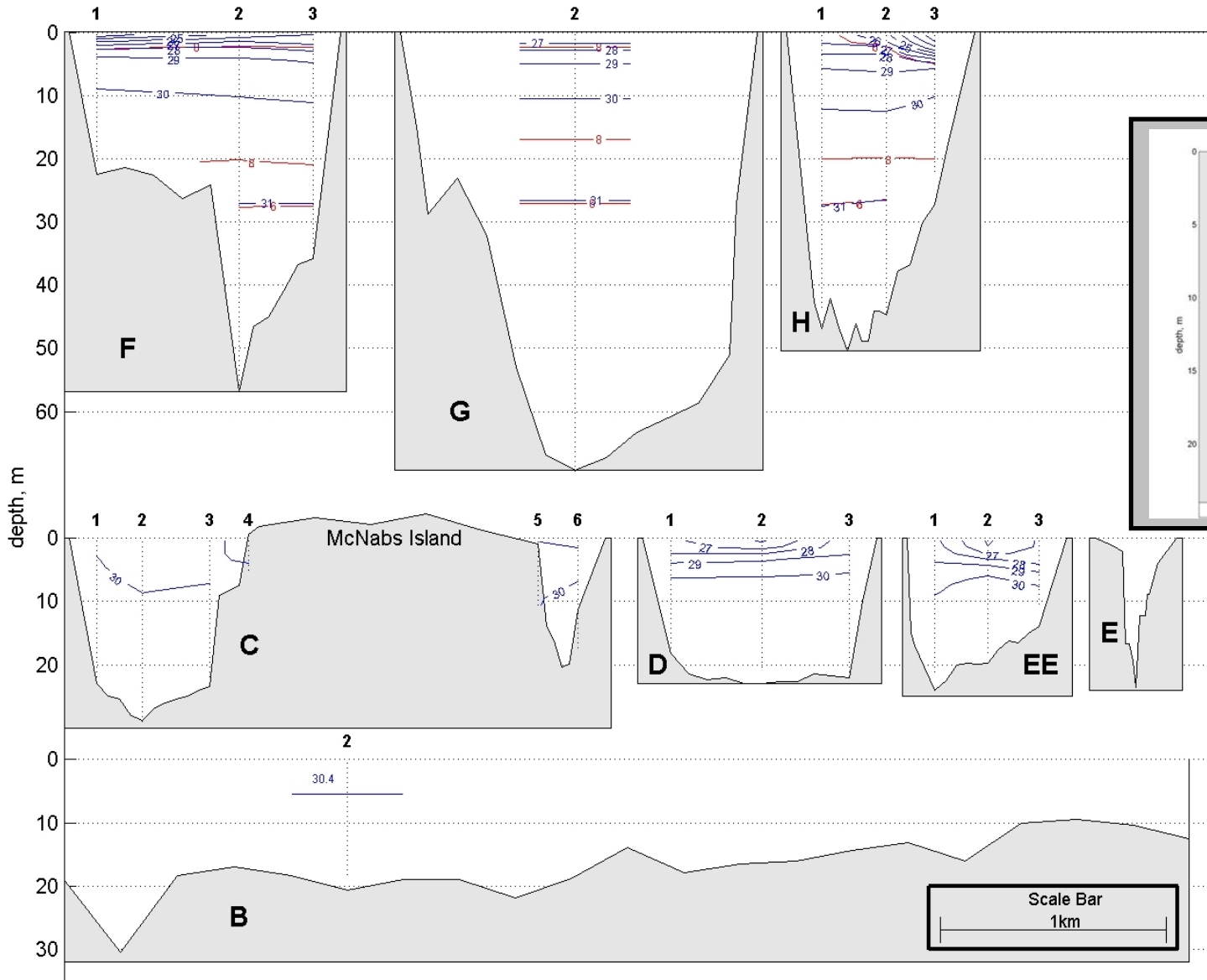
**Comments:**

General: There has been significant rainfall during the previous week and moderate rainfall five days before the survey, but no precipitation since. Sampling occurred on a day with moderate up-harbour winds, and was preceded by a day of very light wind. There appears to be a lens of fresher water in the southern Basin and Inner Harbour out to section D, see caveats in Sample Notes section. There are very high fecal coliform concentrations associated with this fresher water. There are three "out of range values" (>10,000 CFU/100mL) in the 1m samples at D2, D3 and E3. These are the first out-of-range values at these sites since the beginning of sampling. The high values are similar in magnitude to those observed last week, but are not as widespread, being limited to the Inner Harbour. The conditions are quite different from the stormy conditions of last week. This fresher water lens may be the result of relatively low mixing combined with normal sewage input in the Inner Harbour, possibly enhanced by continuing runoff from the wet weather ending five days previous. The high bacteria counts centered in the Inner Harbour are consistent with a time of low mixing and recent cloudy and mostly cloudy weather.

Chlorophyll: Fluorescence levels are relatively low, with profile maximums generally <2 mg/m<sup>3</sup> (a few up to 3-4 mg/m<sup>3</sup>).

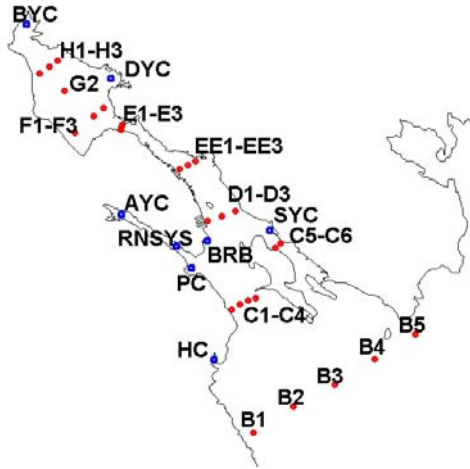
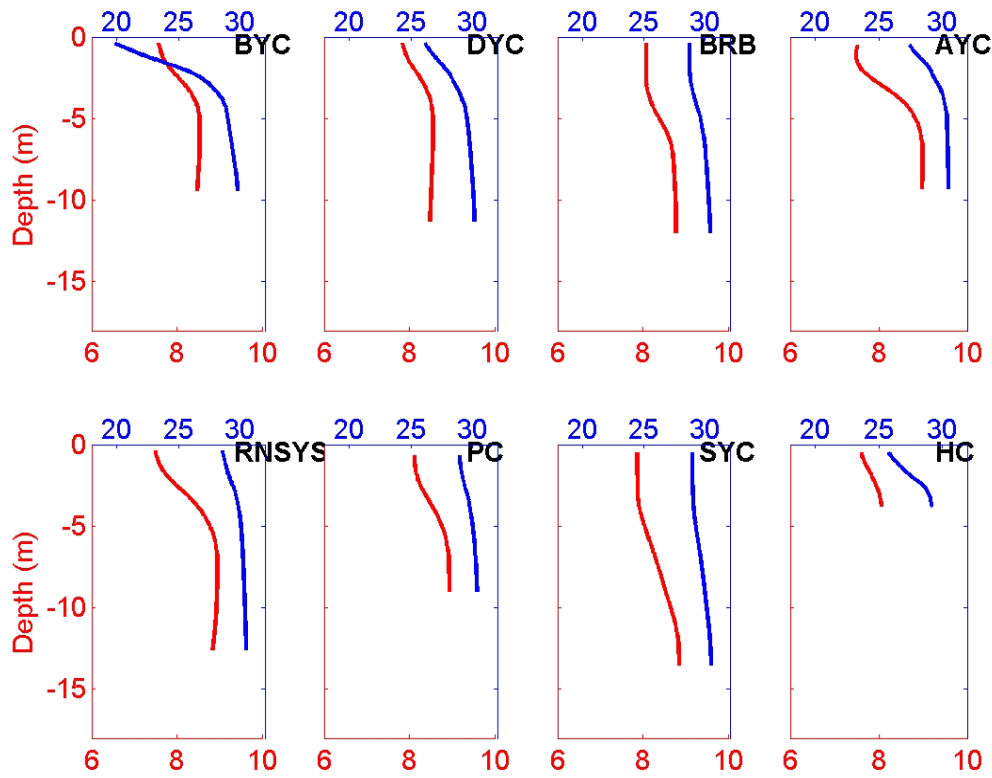
Dissolved Oxygen: The dissolved oxygen data in the Basin are unreliable, particularly in the surface water (see "Sample Notes"). In the Inner Harbour, the data indicate all values above the applicable class SC guideline of 6.0 mg/L. In the class SB waters of the NW Arm and Eastern Passage, almost all values are somewhat below the 7.0 mg/m<sup>3</sup> guideline. In the Outer Harbour (B2) the data indicate that the water column is uniform at a value just below the 8.0 mg/m<sup>3</sup> guideline. The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1).

TEMPERATURE-SALINITY CONTOURS



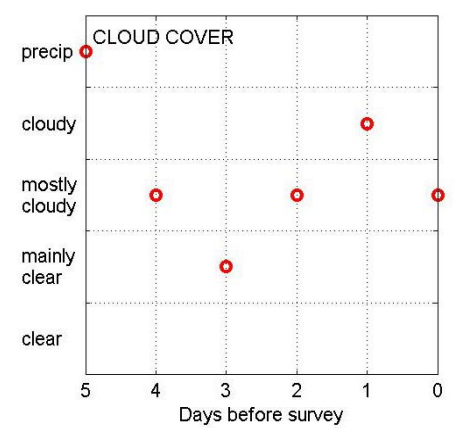
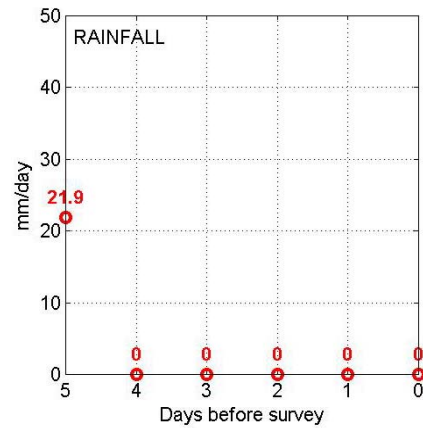
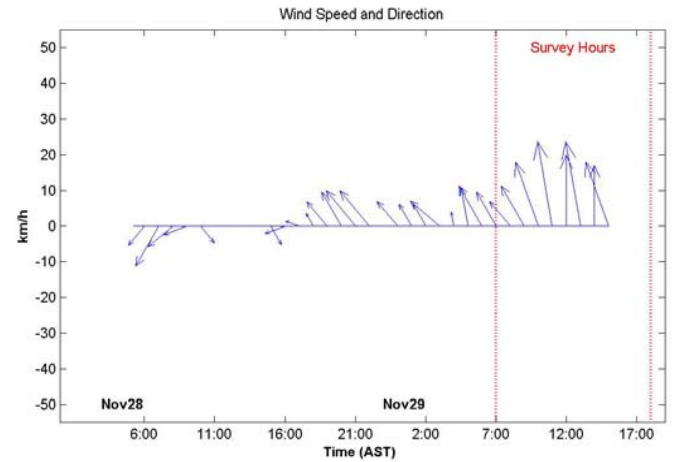
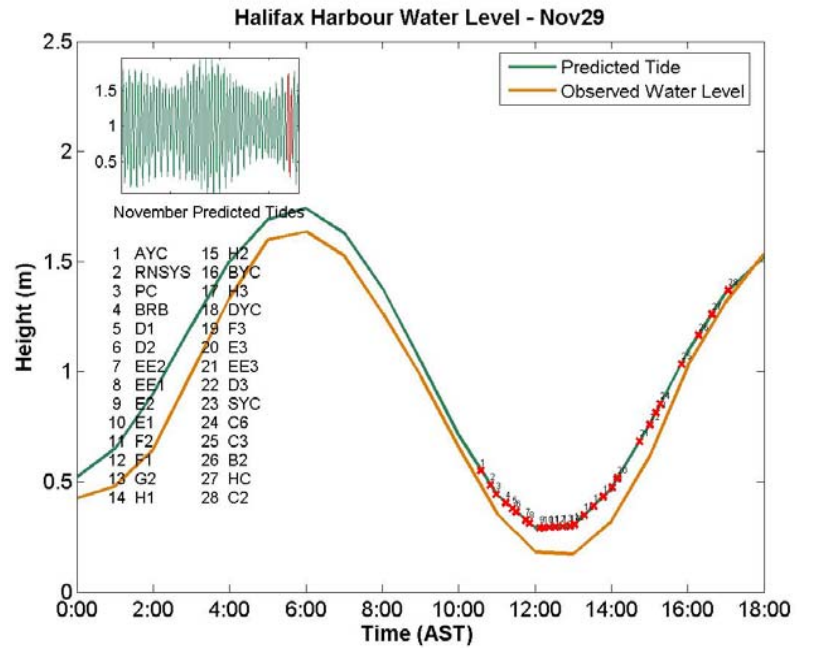
Unless otherwise labeled:  
- salinity contour interval is 1 PSU  
- temperature contour interval is 1°C.

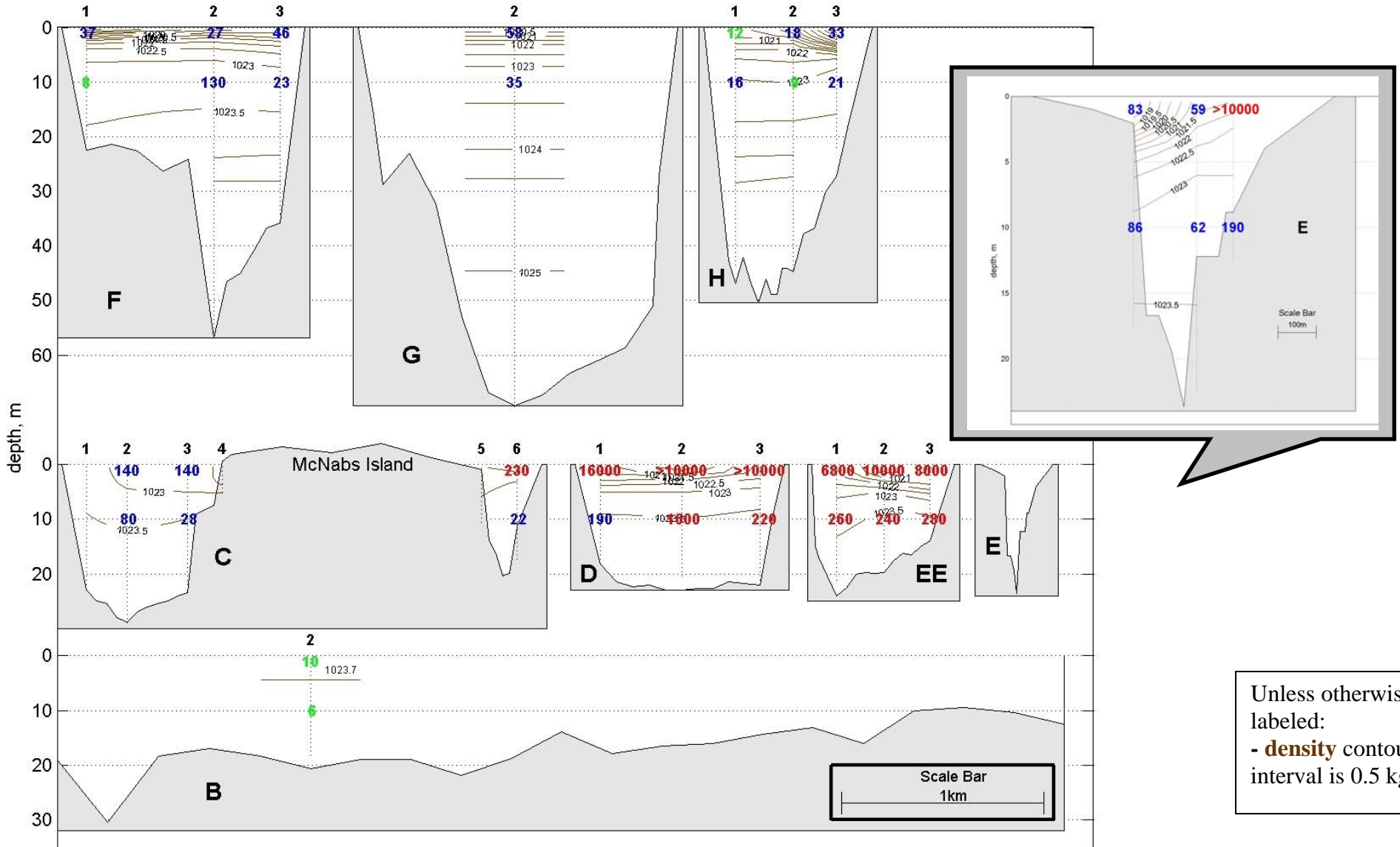
# Yacht Clubs



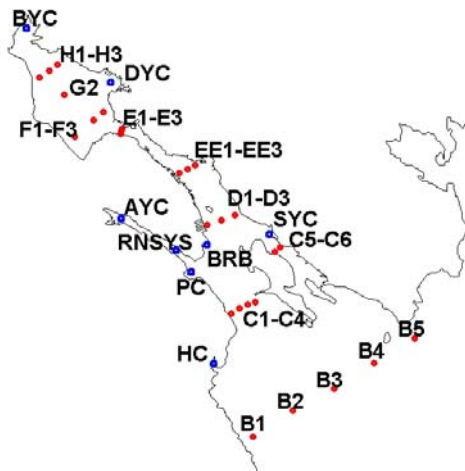
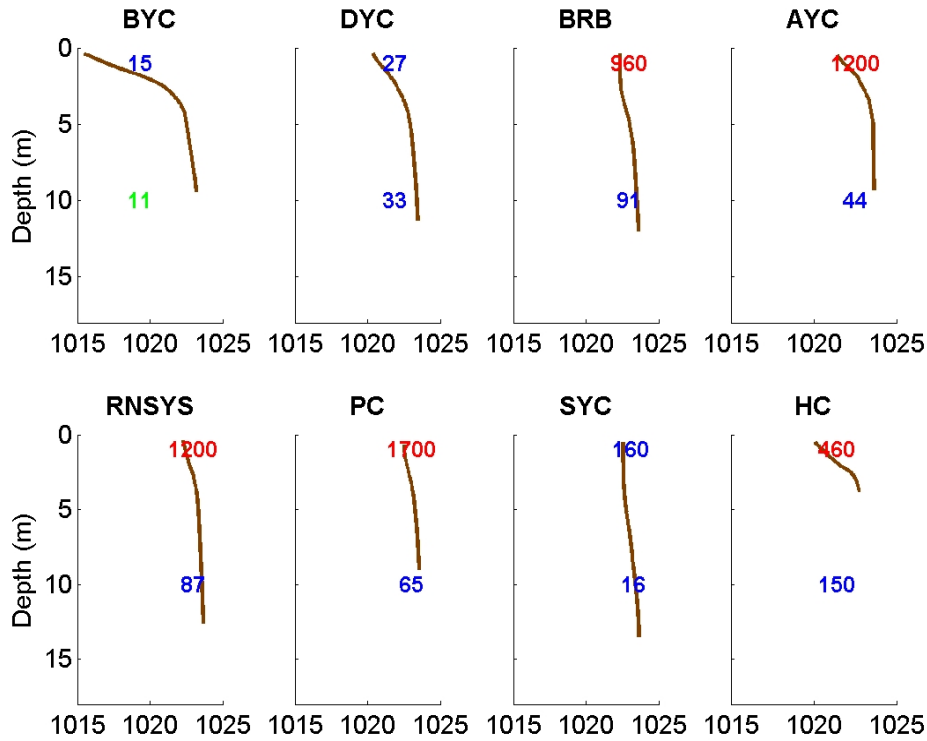
Salinity in PSU      Temperature in °C

Weather data collected at the Halifax International Airport





# Yacht Clubs

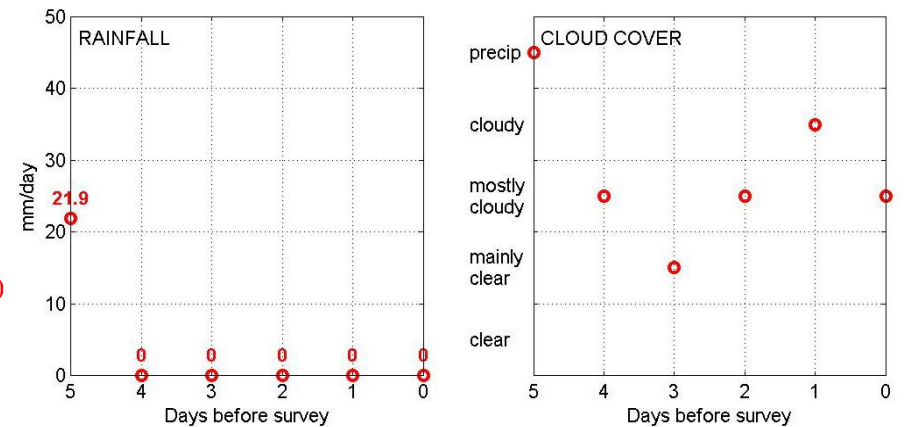
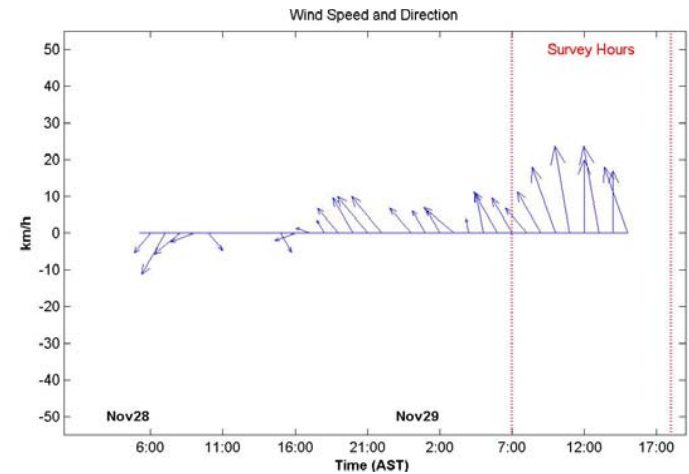
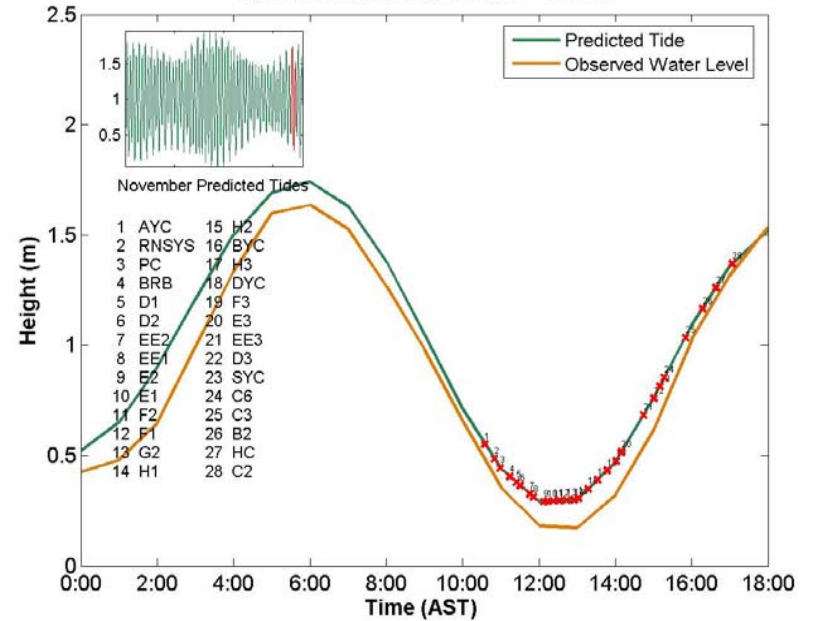


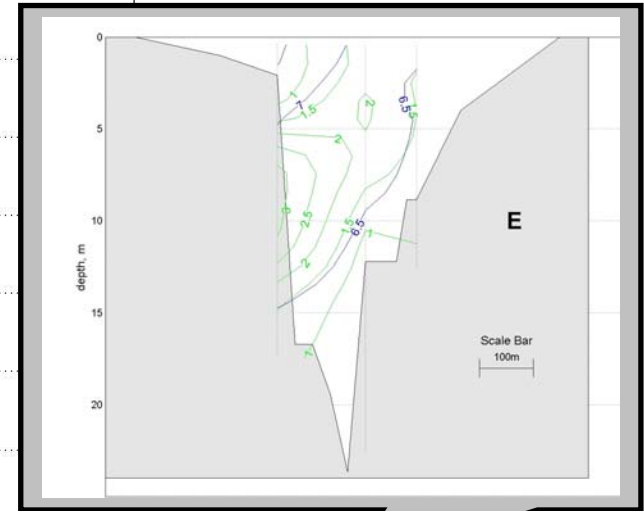
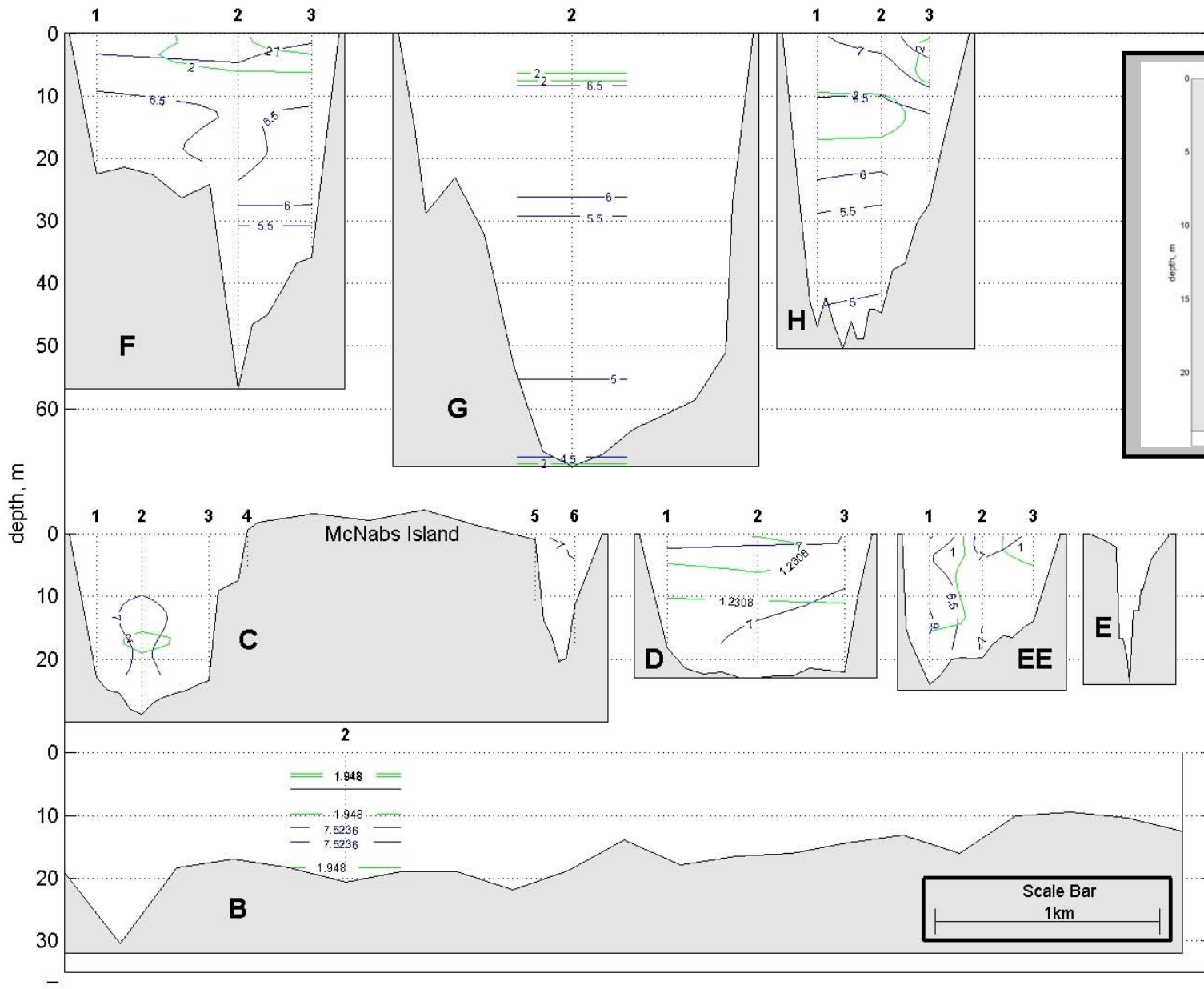
Weather data collected at the Halifax International Airport

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

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

## Halifax Harbour Water Level - Nov29

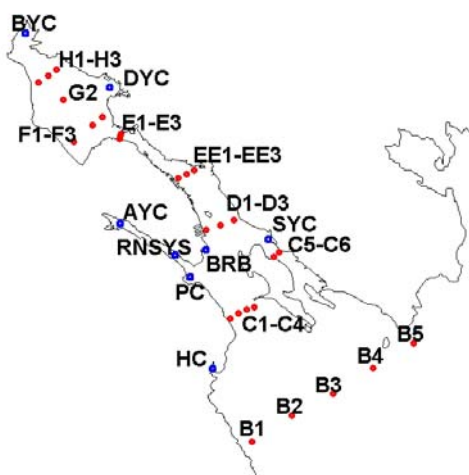
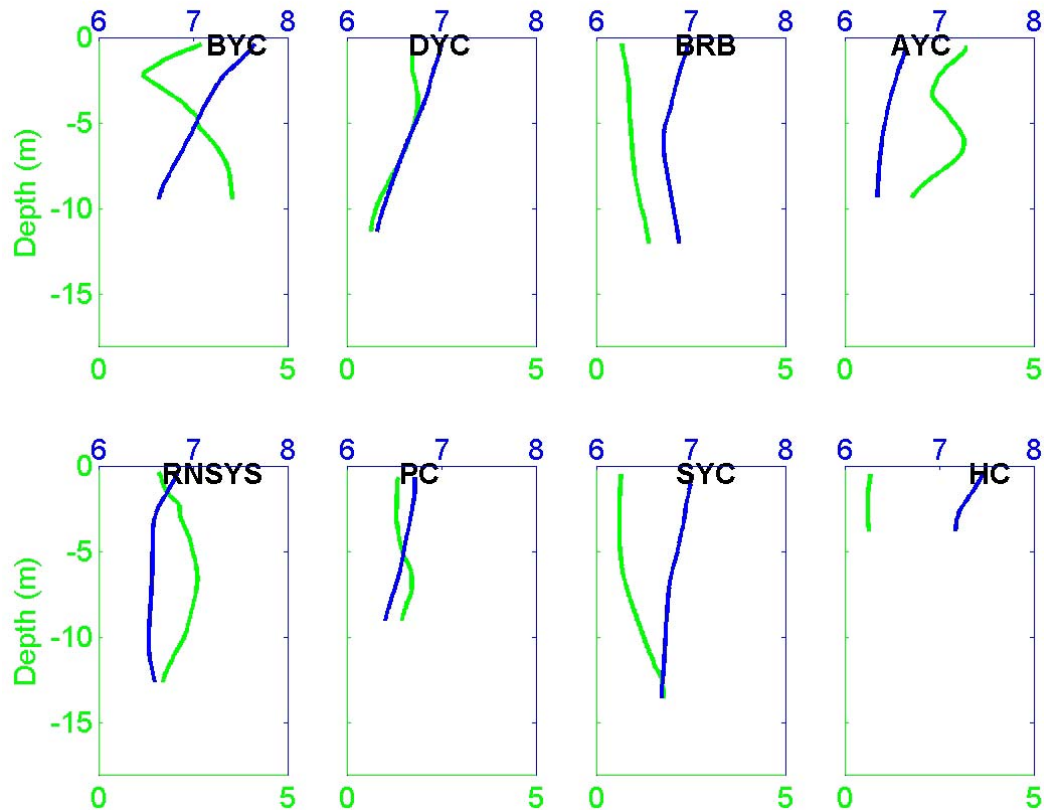




Unless otherwise labeled:  
 - **dissolved oxygen** contour interval is 0.5 mg/L  
 - **chlorophyll** contour interval is 2 mg/m<sup>3</sup>.



# Yacht Clubs



Weather data collected at the Halifax International Airport

DO in mg/L

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

## Halifax Harbour Water Level - Nov29

