

# Halifax Harbour Water Quality Monitoring Project

## Weekly Summary #108

**Survey Date:** 18 July 2006  
**Nature of Survey:** Complete Survey  
**Report File (this document):** HHWQMP\_report108\_060718.doc  
**Data File:** HHWQMP\_data108\_060718.xls

**Data Return:**  
 Profile: 94%  
 Bacteria: 91%  
 Chemical: 87%  
**Overall: 92%**

### Sample Notes:

This week marks the first week of bi-weekly sampling.

Sites B2 and HC were not sampled due to weather.

The Dartmouth Cove site was sampled at 1 m (DC-1m) for all parameters this week

### QA/QC samples:

Chemical Analysis		F2 - 1m		E2- 10m	
Detectable Parameter	units	reference sample	QA/QC	reference sample	Dup
Ammonia (as N)	mg/L	< 0.05	< 0.05	0.14	< 0.05
Total Suspended Solids	mg/L	3	5	3	n/a

### Fecal Coliform (CFU/100ml)

Site	DYC-10m	H1-10m	PC-1m	F2-1m
Reference	39	26	4	>10000
QA/QC	34	33	8	>10000

### Comments:

A large rainfall (57.6 mm) five days before the survey has contributed to continued relatively strong near surface stratification in the Basin. The CTD data at site E3 is truncated at 4.5 m, perhaps due to station keeping problems. The marked cross sectional difference in the near surface structure at the E section may be due to the shift in tide between the time of sampling stations E1 and 2, and sampling E3. However, the strong horizontal gradients plotted below 4.5 m are spurious, a result of the contouring routine used. Overall the near surface density stratification is similar to two weeks ago, particularly in the Basin. The key difference is the lack of the very dense bottom layer in both the Inner and Outer Harbour.

The near surface fecal coliform (fc) values are very high in the northern (EE and north) inner harbour and southern Basin. There are very unusually high, "out of range", fc values at stations F1, F2, E1, and E2. Also, fecal coliform values are higher in the 1m samples at nearly all sites. These observations are all consistent with sewage diversion to the Fairview Cove CSO and moderate south (up-harbour) wind.

The values observed in the DC-1m water sample are as follows:

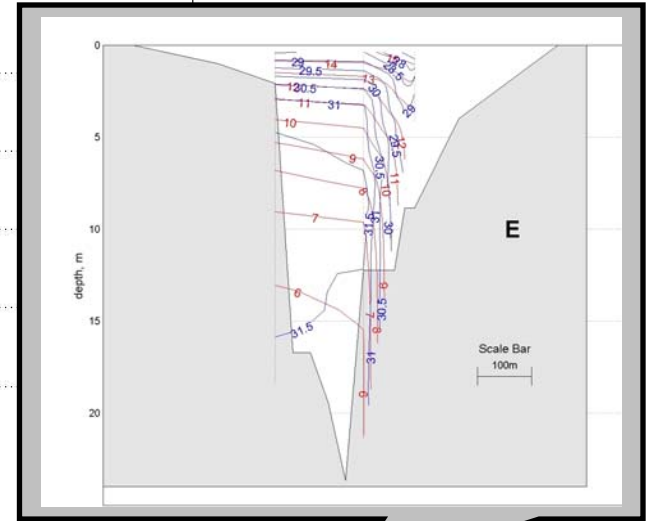
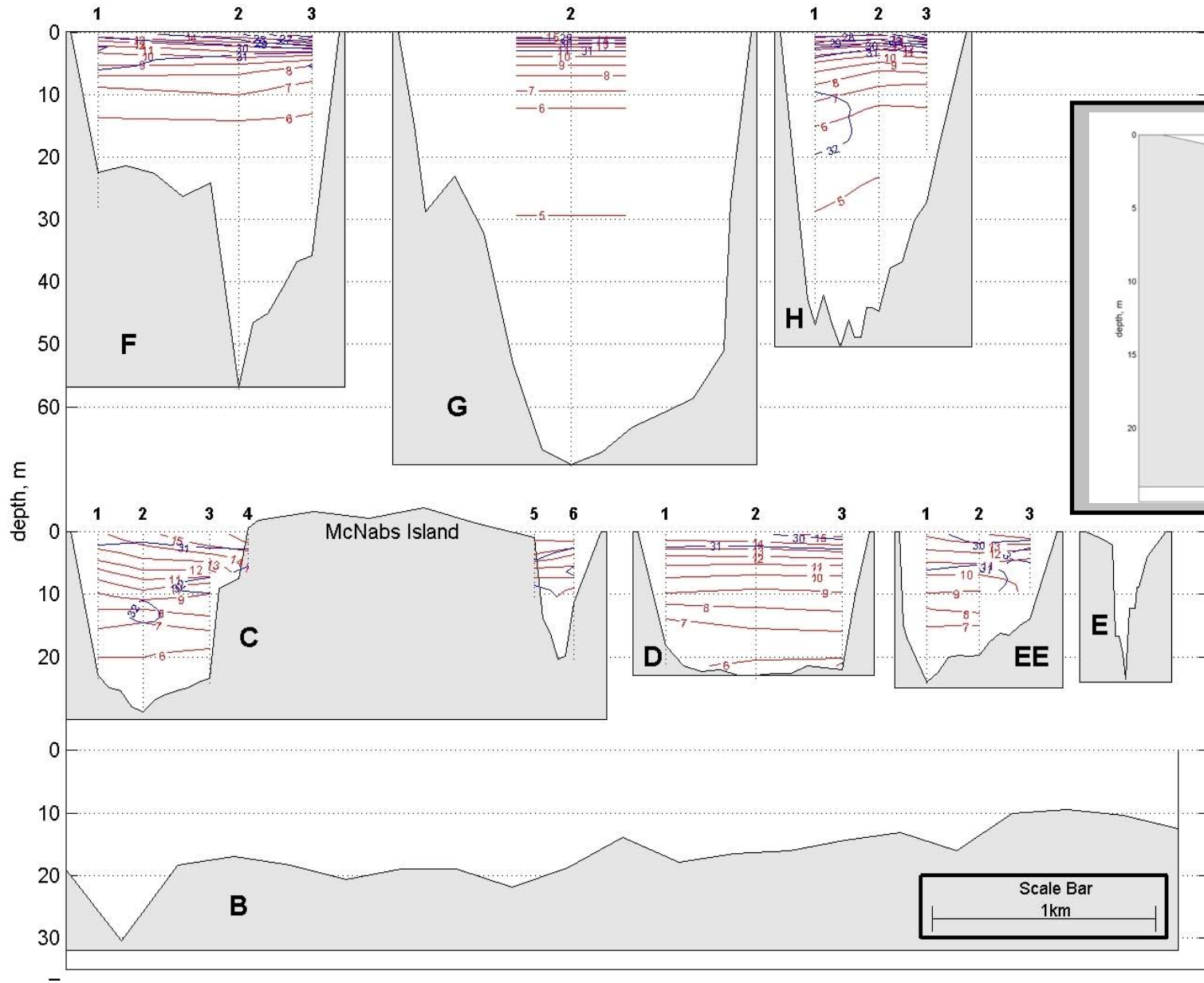
DC-1m	Fecal Coliform	TSS	NH <sup>3</sup>
	6600 cfu/100 mL	5 mg/L	<0.05 mg/L

**Fluorescence:** Fluorescence levels are down from last week with profile maximums in the teens extending from the Basin to section EE. Further south the profile maximums drop to 4-5 mg/m<sup>3</sup>.

**Dissolved Oxygen:** The data indicate that the bottom water in the Basin and at the head of the NW Arm (AYC and RNSYS), as well as the very bottom of section C are below the applicable class SB guideline (7.0 mg/L). The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1).

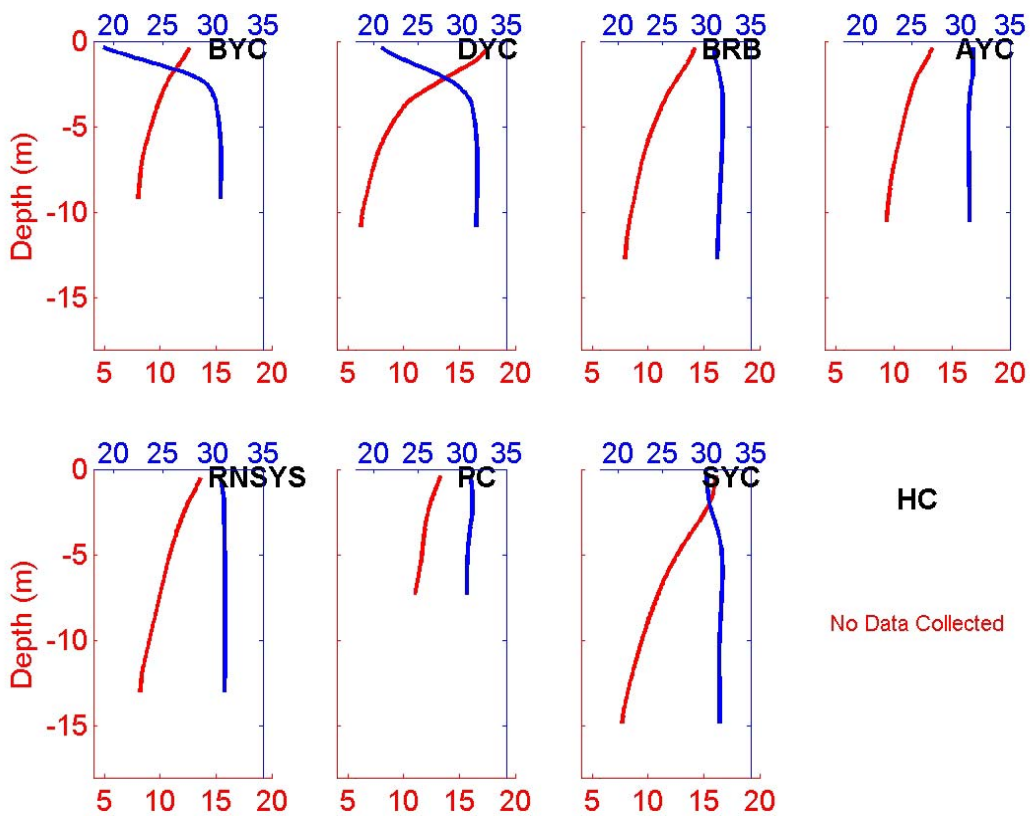
**TSS:** The TSS values vary from 2-6 mg/L which are relatively typical.

**Ammonia:** The ammonia nitrogen values are low. All values, but one, are below detection (0.05 µg/L). The remaining value is relatively high at 0.14 mg/L in the 10m sample in the Narrows.



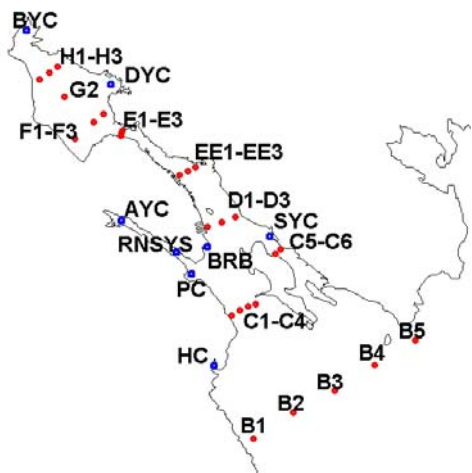
Unless otherwise labeled:  
 - salinity contour interval is 1 PSU  
 - temperature contour interval is 1°C.

# Yacht Clubs



HC

No Data Collected

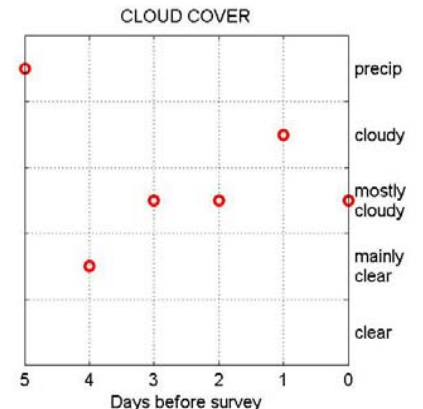
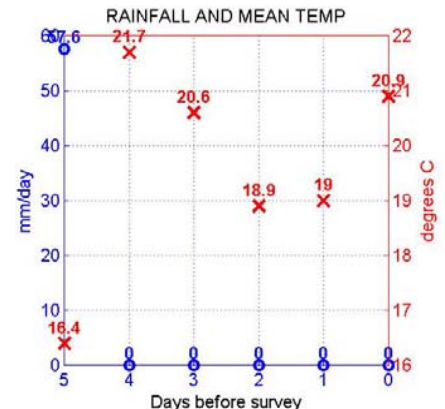
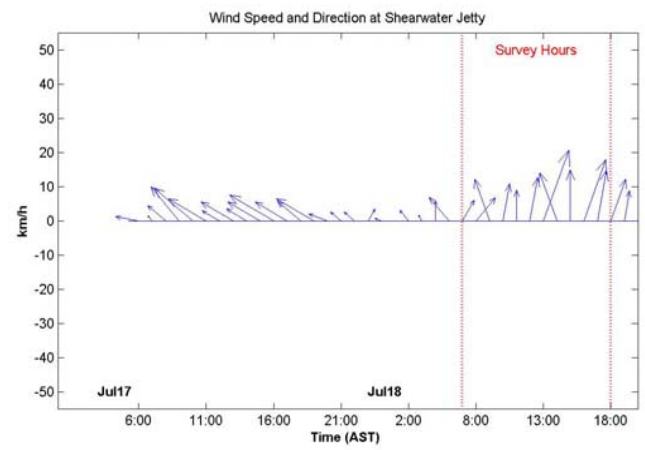
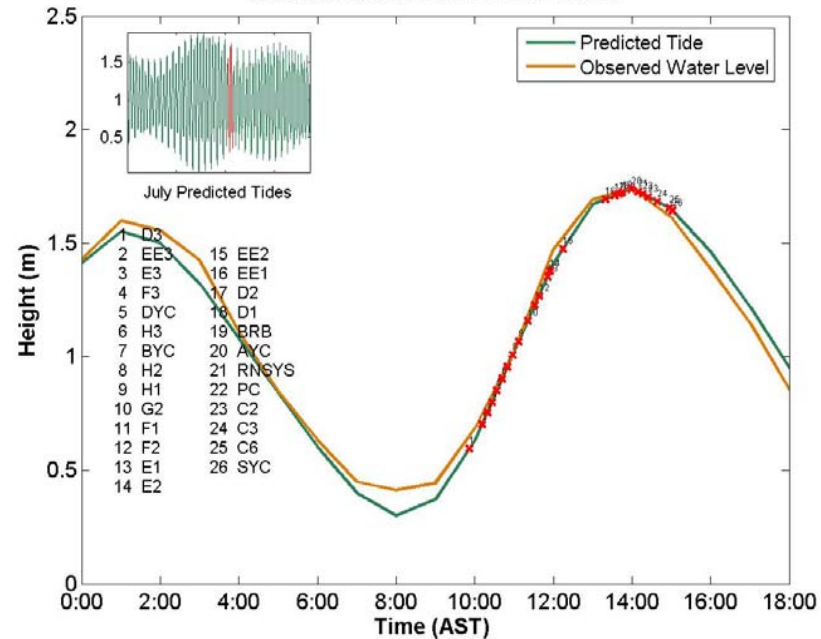


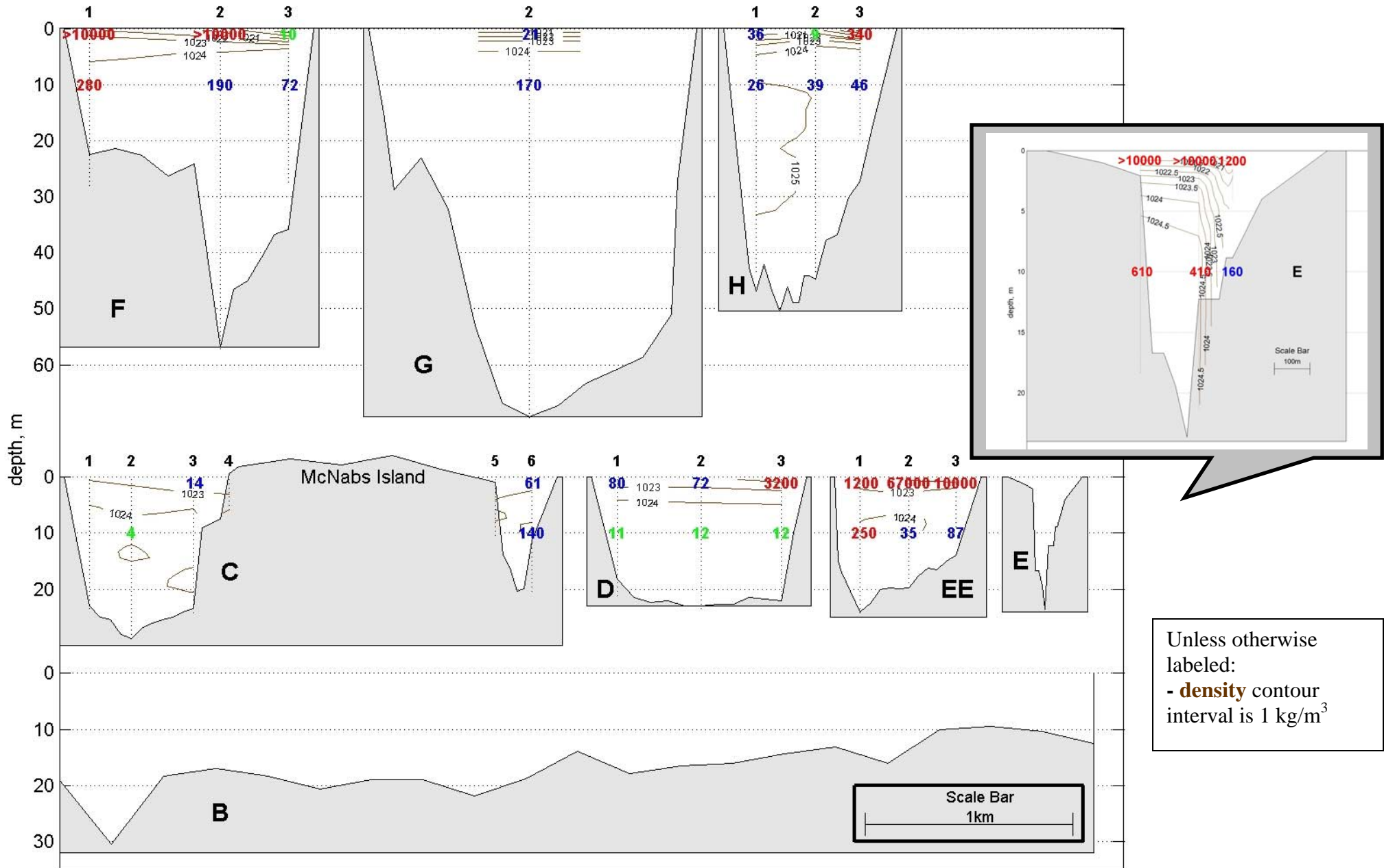
Salinity in PSU

Temperature in °C

Weather data collected at Shearwater Airport.

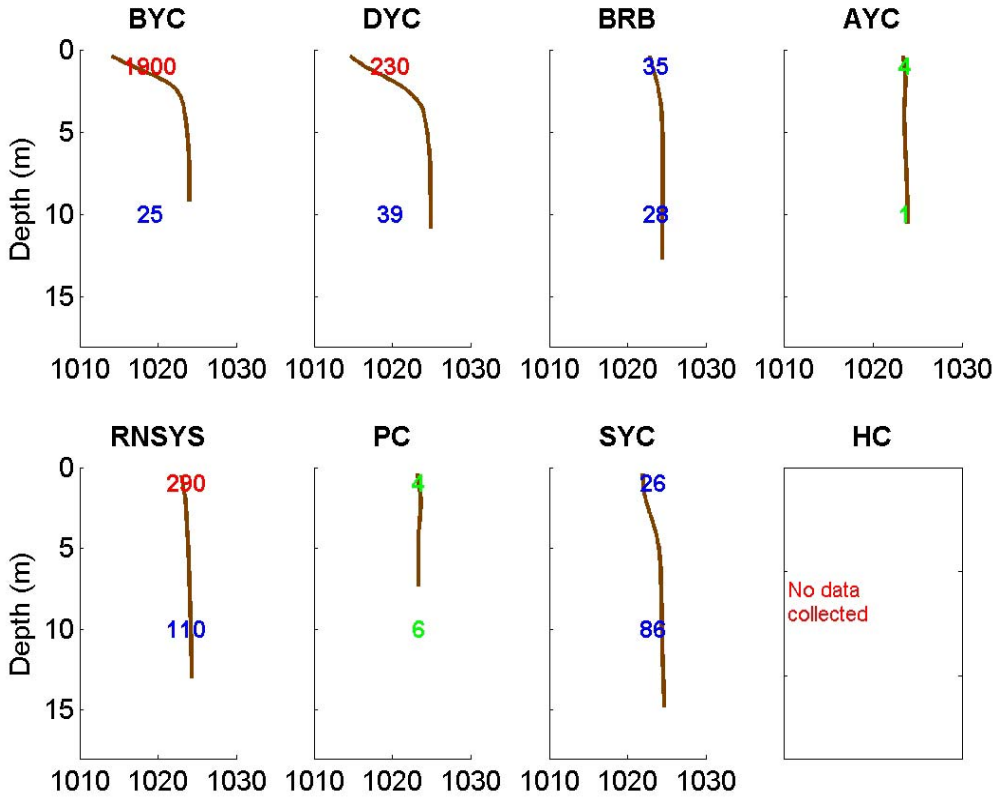
# Halifax Harbour Water Level - Jul18





Unless otherwise labeled:  
 - **density** contour interval is 1 kg/m<sup>3</sup>

# Yacht Clubs

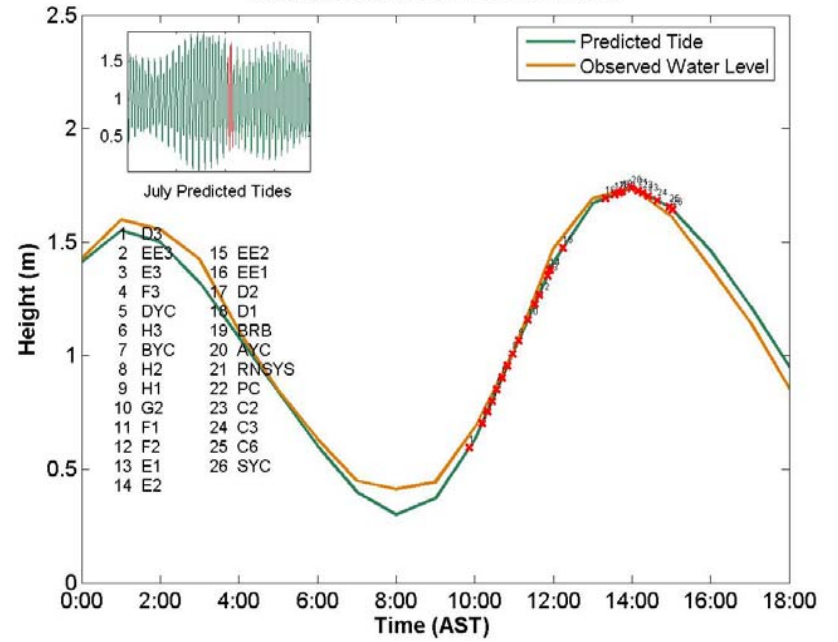


Weather data collected at Shearwater Airport.

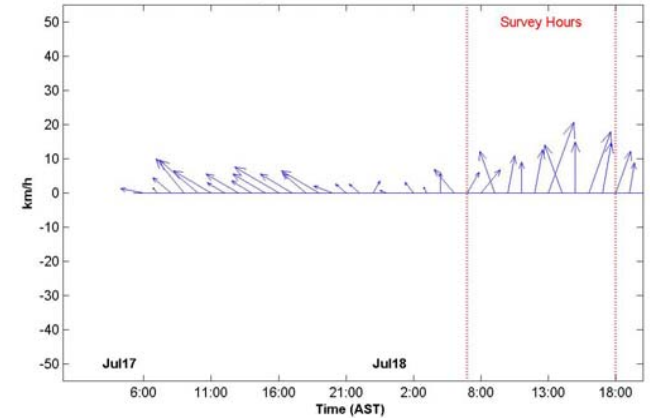
Potential Density in  $\text{kg/m}^3$

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

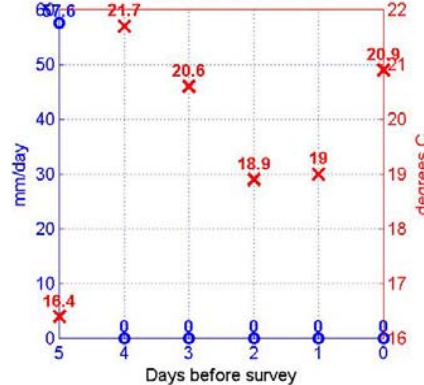
## Halifax Harbour Water Level - Jul18



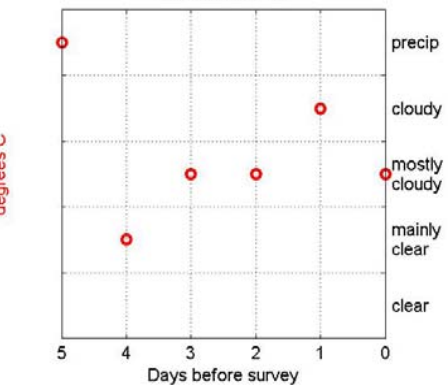
## Wind Speed and Direction at Shearwater Jetty

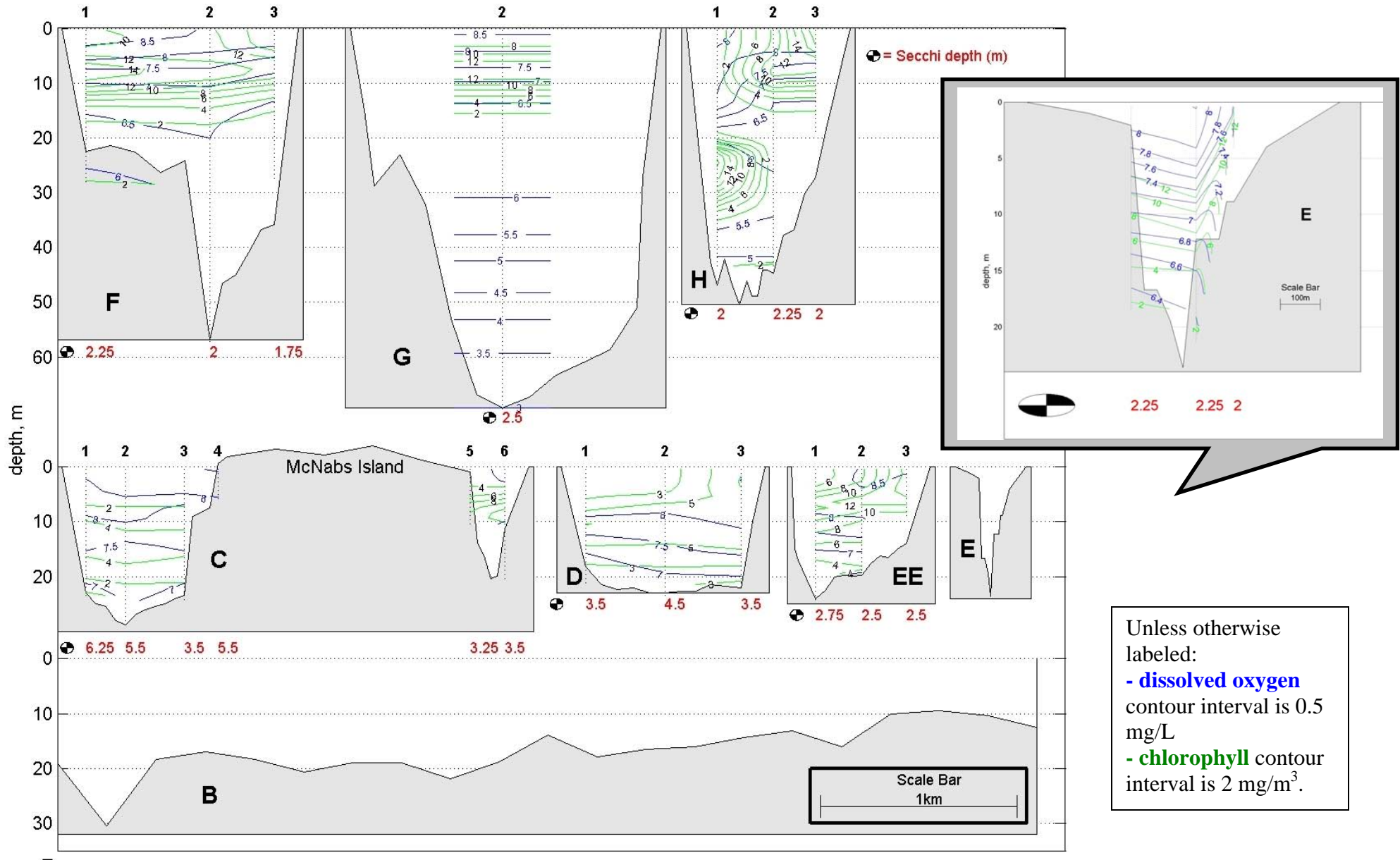


## RAINFALL AND MEAN TEMP



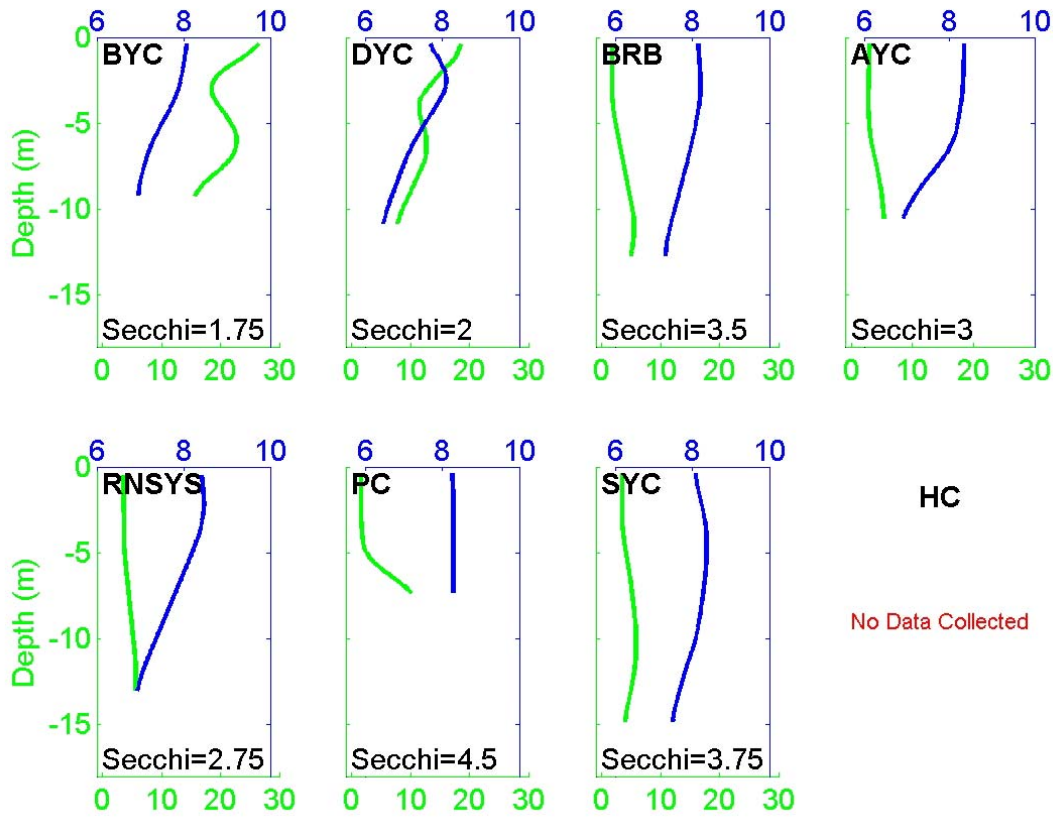
## CLOUD COVER





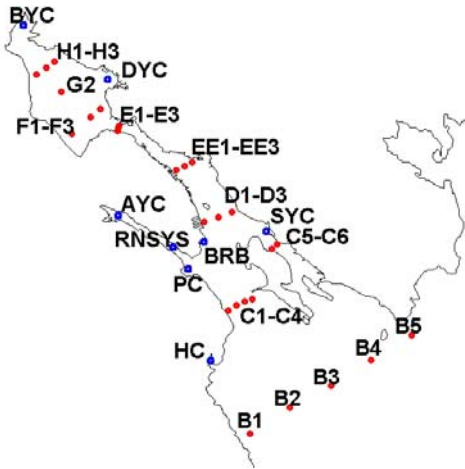
Unless otherwise labeled:  
 - **dissolved oxygen** contour interval is 0.5 mg/L  
 - **chlorophyll** contour interval is 2 mg/m<sup>3</sup>.

# Yacht Clubs



HC

No Data Collected

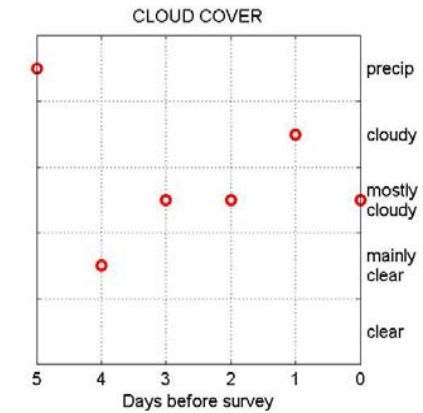
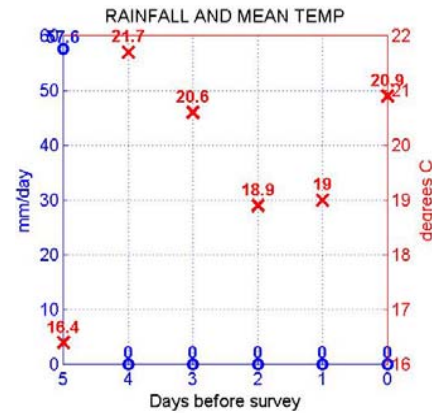
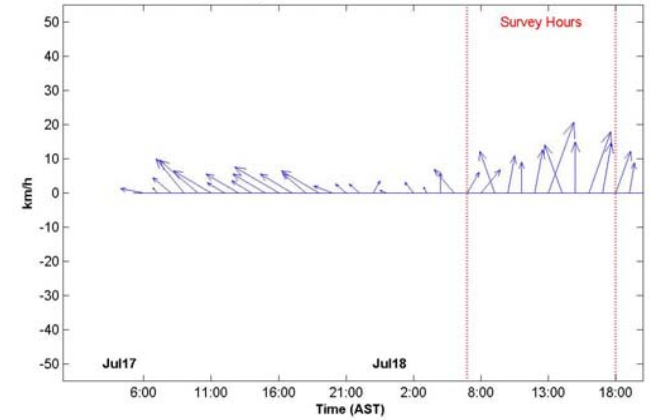
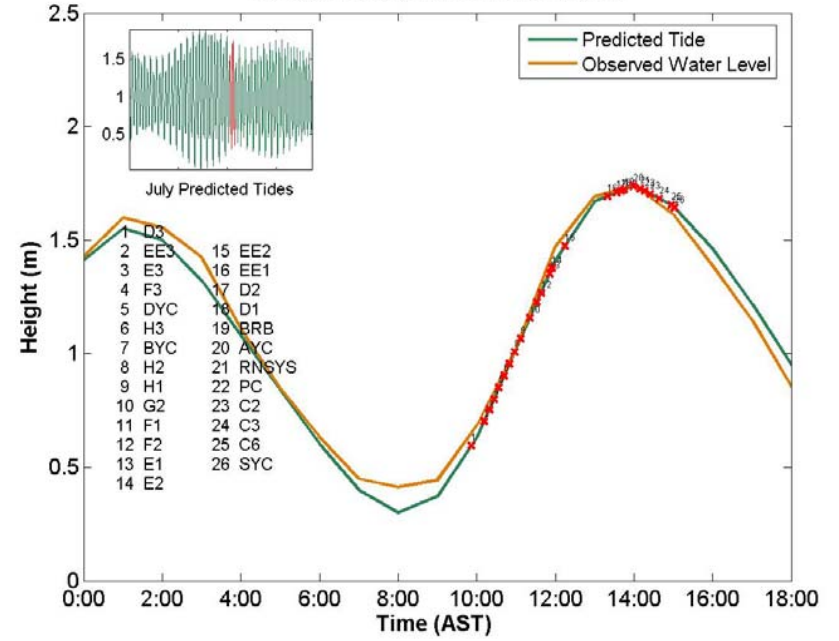


DO in mg/L

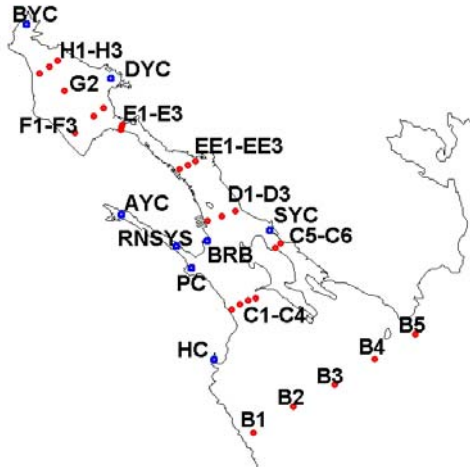
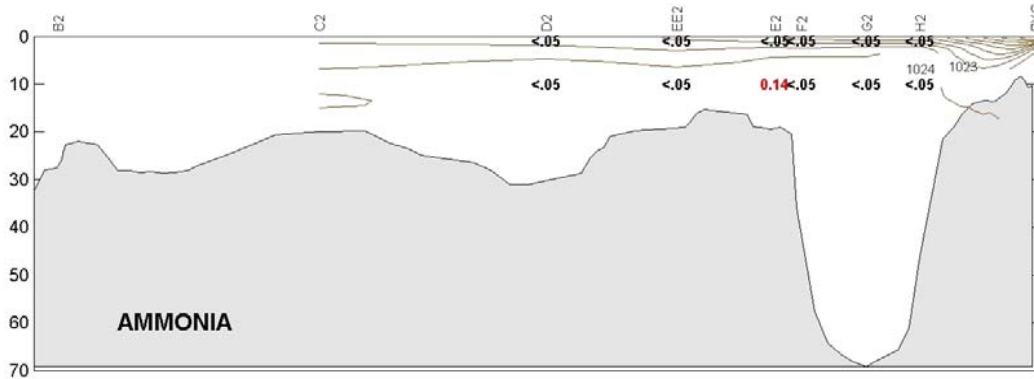
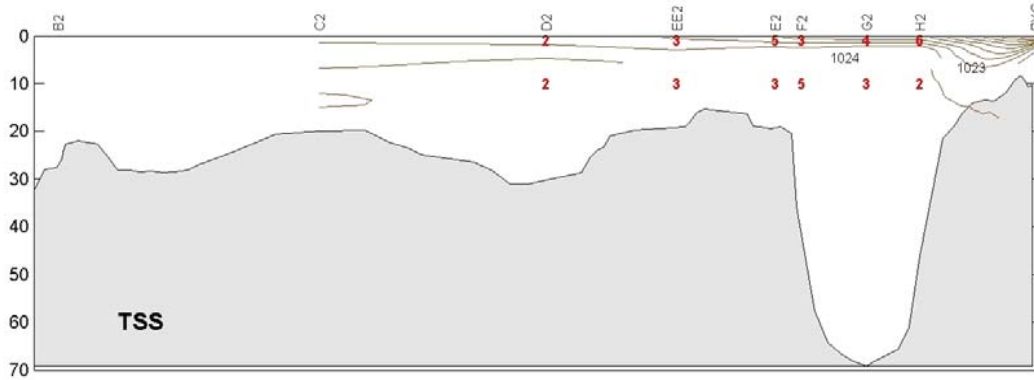
Chlorophyll in mg/m<sup>3</sup>

Weather data collected at Shearwater Airport.

# Halifax Harbour Water Level - Jul18



CHEMISTRY



Weather data collected at Shearwater Airport.

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

Ammonia in  $\text{mg/L}$

TSS in  $\text{mg/L}$

Halifax Harbour Water Level - Jul18

