

Halifax Harbour Water Quality Monitoring Project

Weekly Summary #91

Survey Date: 14 March 2006
Nature of Survey: Complete Survey
Report File (this document): HHWQMP_report091_060314.doc
Data File: HHWQMP_data091_060314.xls

Data Return:

Profile: 94%
 Bacteria: 93%
 Chemical: 100%
Overall: 96%

Sample Notes:

Sites BRB and PC were not sampled due to rough conditions

The CTD air bleed hole appears to have been plugged or partially plugged at sites H1 and G2. This was detected and cleared at Site F1. The data, particularly the near surface data, is questionable at these sites. The flow seems to have established itself about half way down on each cast. The data has been left in the data file but should be used advisedly.

QA/QC samples:

Chemical Analysis		H2-1m		F2-1m	
Detectable Parameter	units	Reference	Dup	Reference	QA/QC
Ammonia (as N)	mg/L	< 0.05	n/a	< 0.05	< 0.05
Total Suspended Solids	mg/L	13	12	14	13

Fecal Coliform (CFU/100ml)

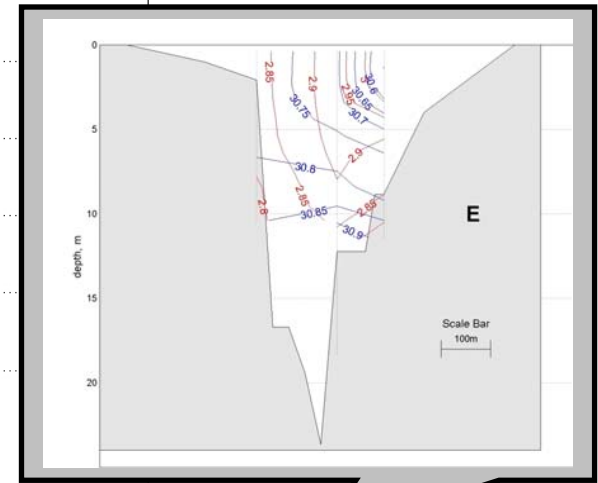
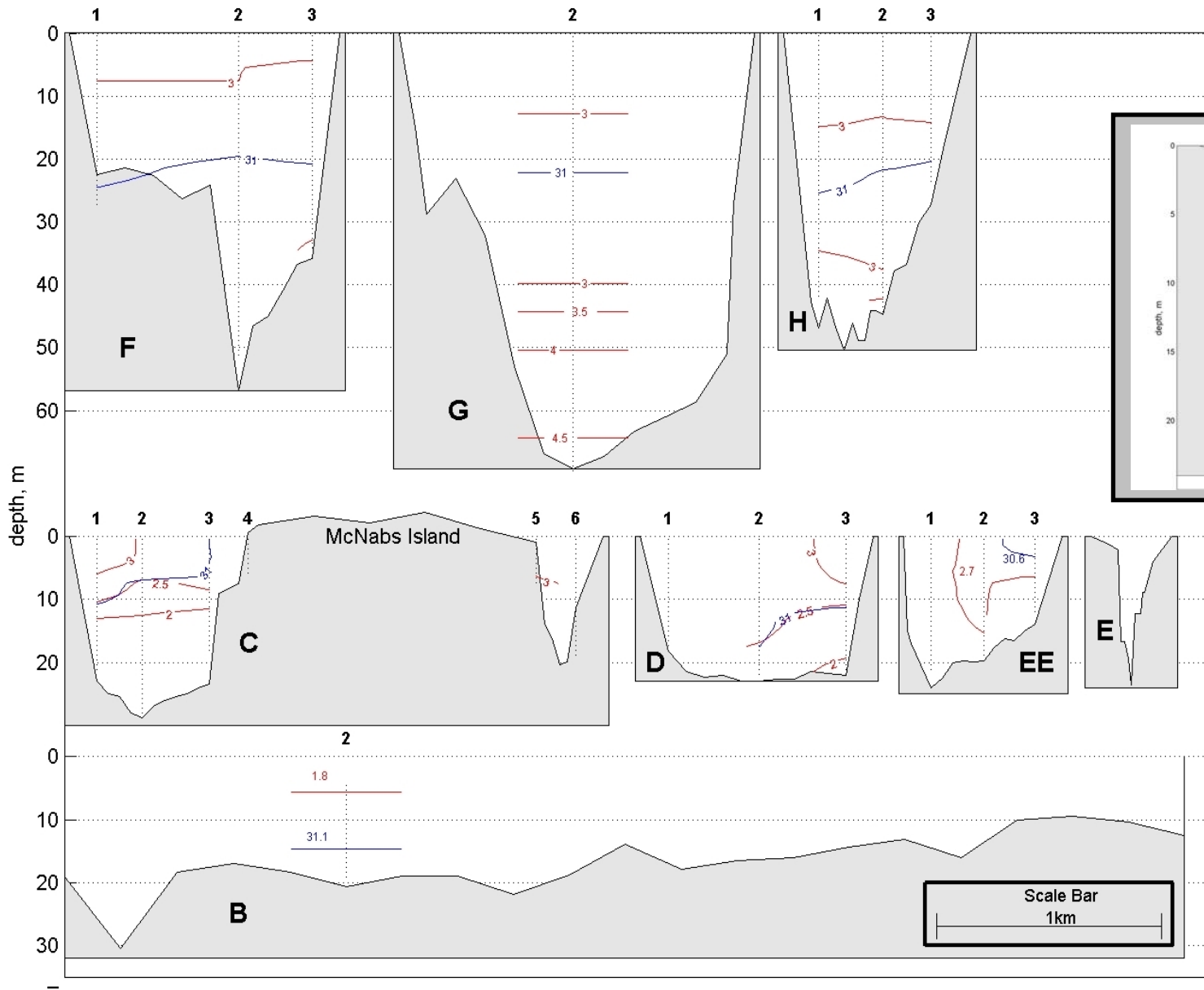
Site	H1-1m	D1-10m	RNSYS-1m	F2-1m
Reference	1	110	7500	77
QA/QC	7	96	5700	120

Comments:

General: There has been moderate precipitation in the form of rain in the week before this survey. The Harbour is on average somewhat fresher than last week, however it remains quite vertically uniform in density. This is remarkable particularly in the Basin. There is no appreciable fresh water signal except at BYC and HC, sites near fresh water sources. Relatively strong winds and low stratification last week may have resulted in a situation of enhanced vertical mixing – causing the freshwater input to be well mixed. The fecal coliform values are quite low everywhere. The only values greater than 200 fc/100 mL are in the EE section and at the 10 m sample at E2. The reason for these relatively low values is uncertain, but they may be due to enhanced mixing. The values are also high at RNSYS, likely due to advection of the plume from the chain rock outfall due to the ESE wind.

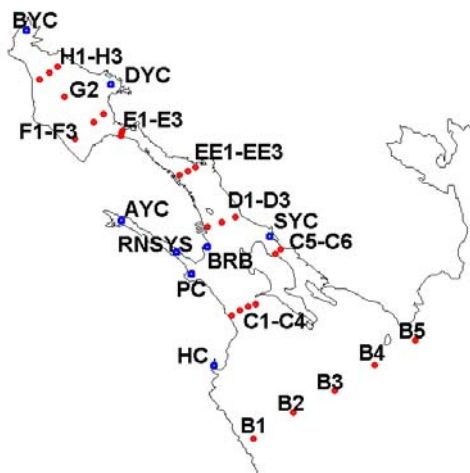
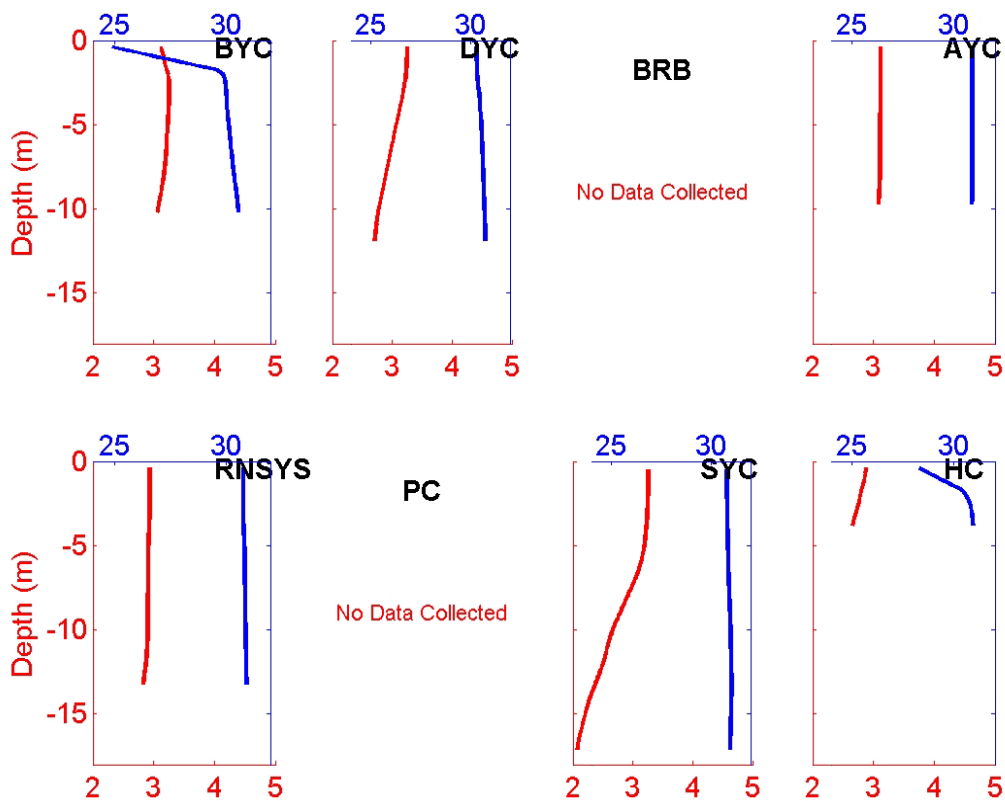
Chlorophyll: The spring bloom continues. There is a maximum fluorescence of about 20 mg/m³ throughout most of the harbour at a depth of 4 to 10m. There are indications that there may be higher values in the Basin but these occur at H1 and G2 where there were instrument problems so these values are unreliable. The depths associated with these values are even more unreliable than the values themselves. There is a slight trend for decreasing values proceeding out of the harbour. Values in the Basin are max at 26 mg/m³ while at B2 the max is 14 mg/m³.

Dissolved Oxygen: The dissolved oxygen levels are similar to, but perhaps slightly higher than last week. The data indicate that the surface values everywhere in the Harbour are between 9 and 10 mg/L. The DO values in the bottom water in the Basin are relatively unchanged from last week at just over 3.5 mg/L. The Basin deep water 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).



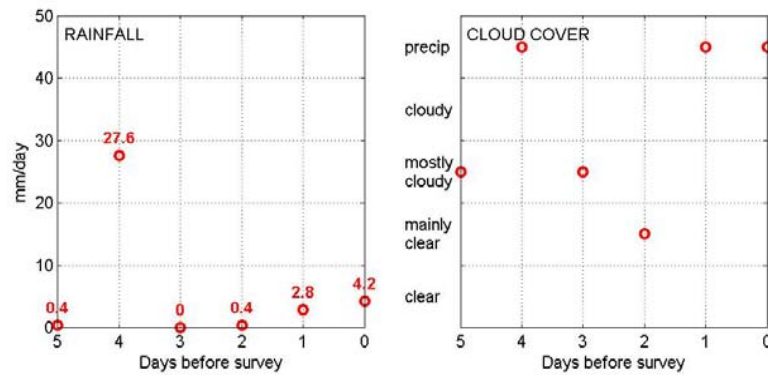
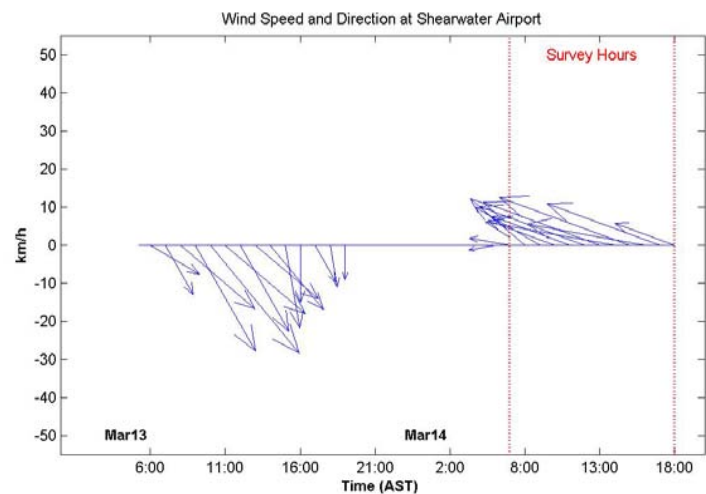
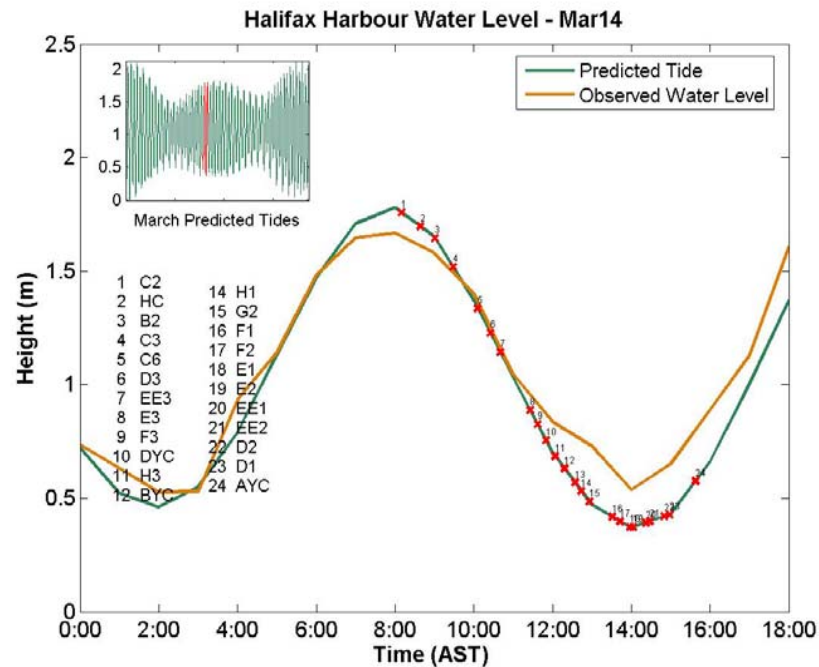
Unless otherwise labeled:
 - salinity contour interval is 1 PSU
 - temperature contour interval is 1°C.

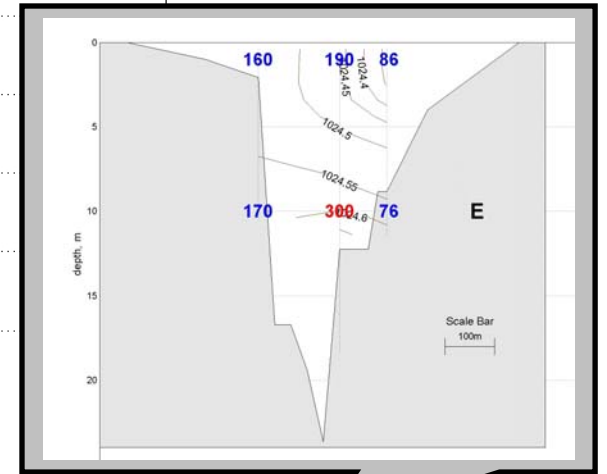
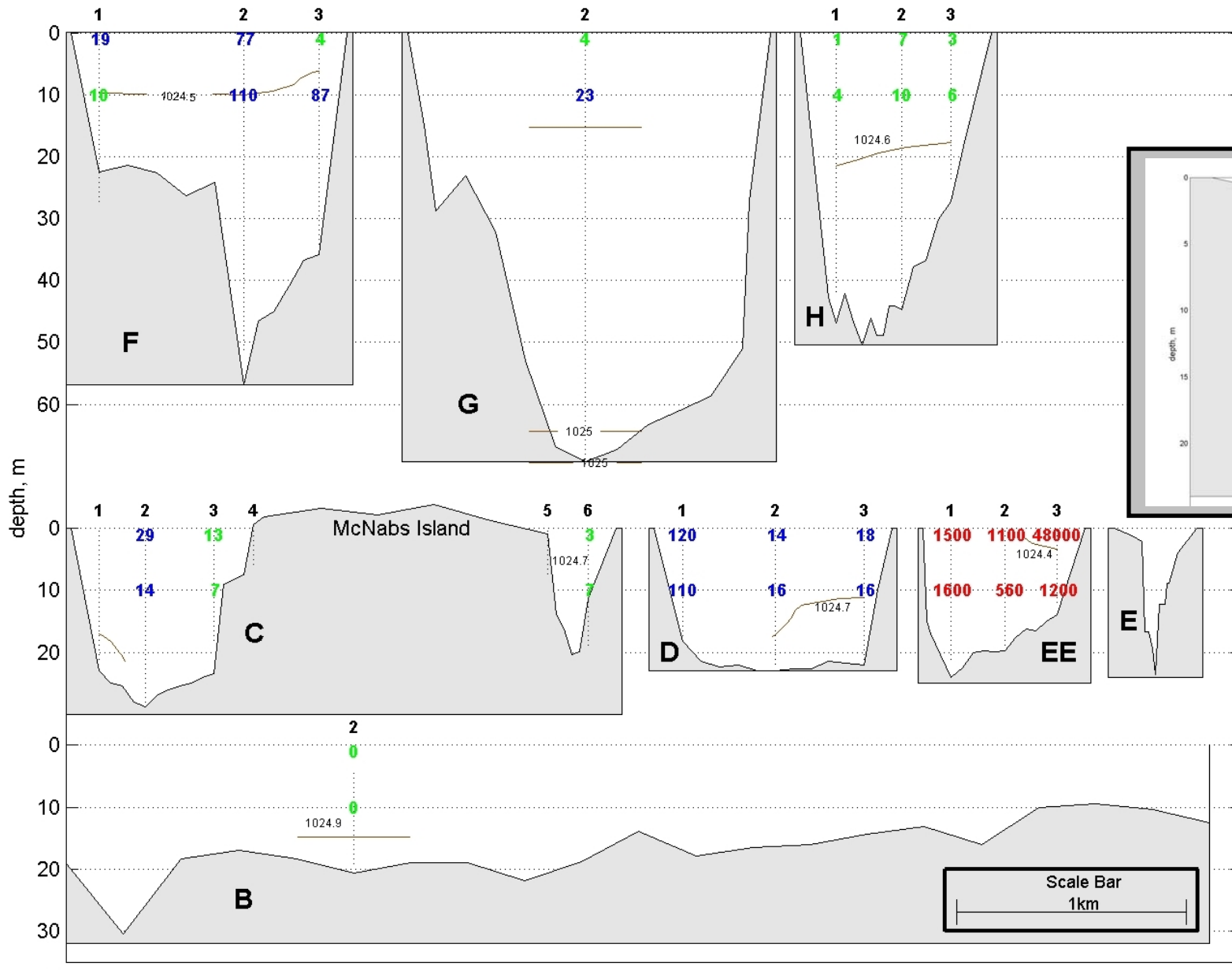
Yacht Clubs



Salinity in PSU Temperature in °C

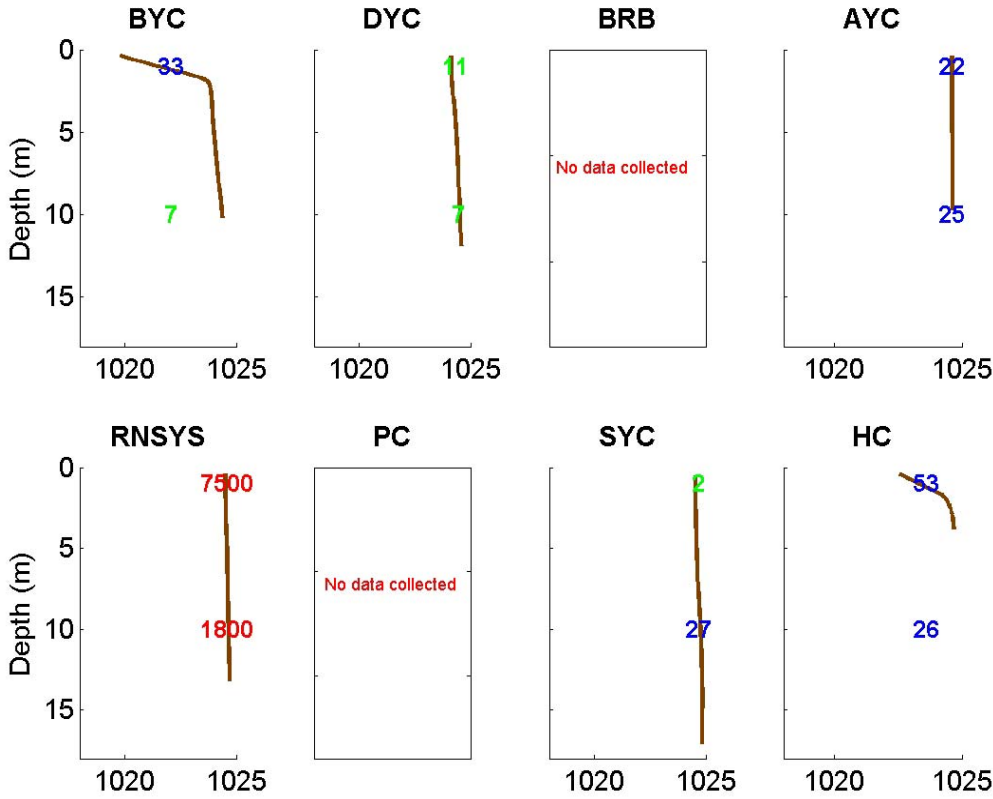
Weather data collected at the Shearwater Airport



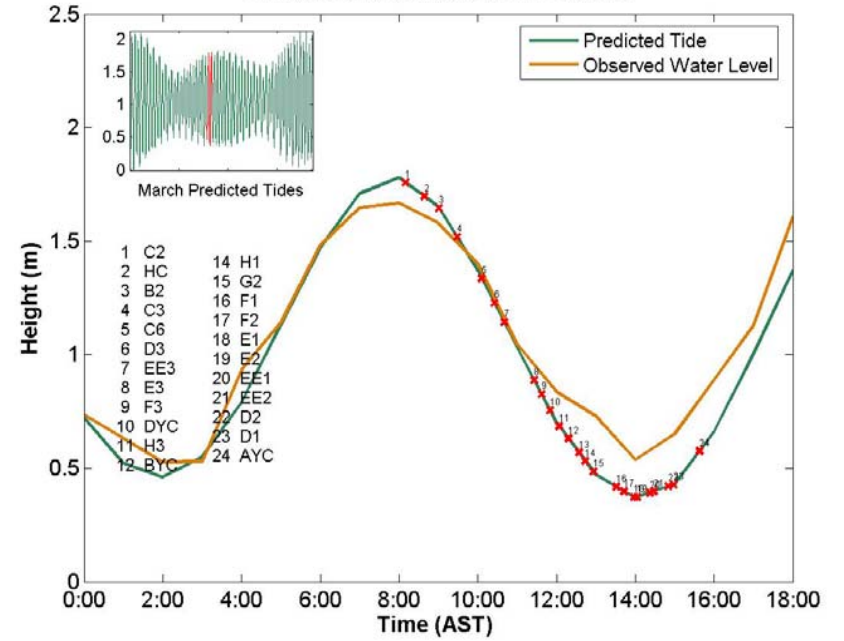


Unless otherwise labeled:
 - **density** contour interval is 0.5 kg/m³

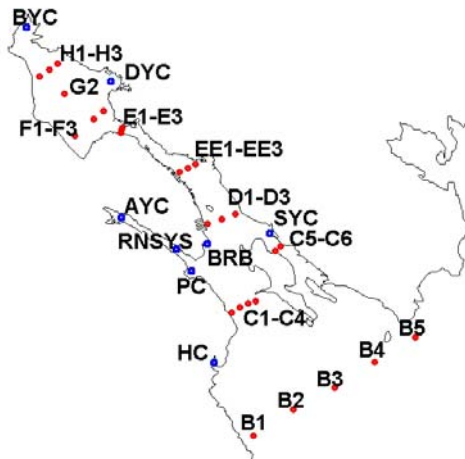
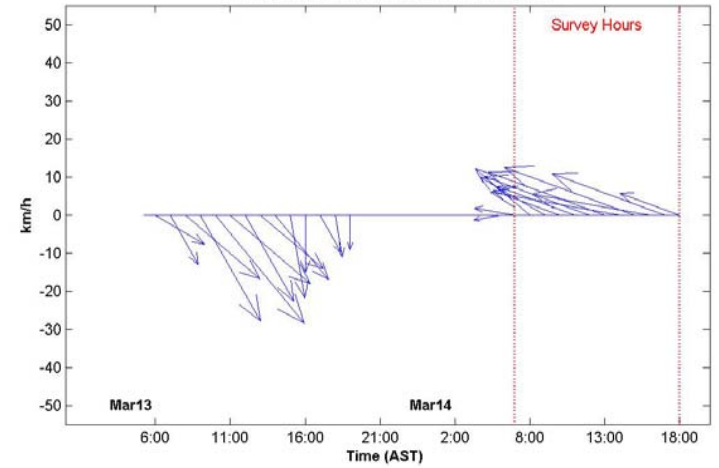
Yacht Clubs



Halifax Harbour Water Level - Mar14



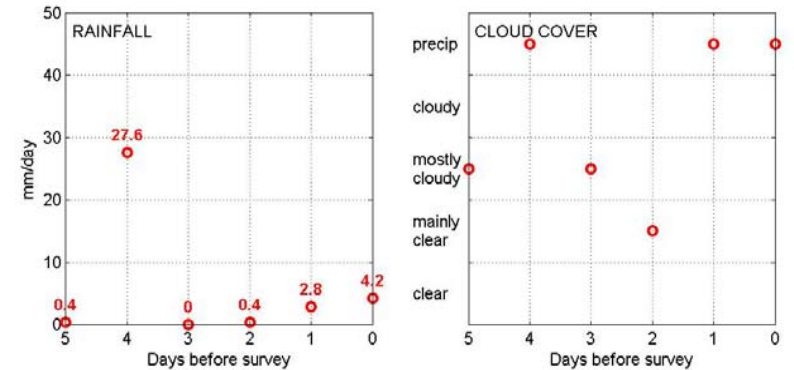
Wind Speed and Direction at Shearwater Airport

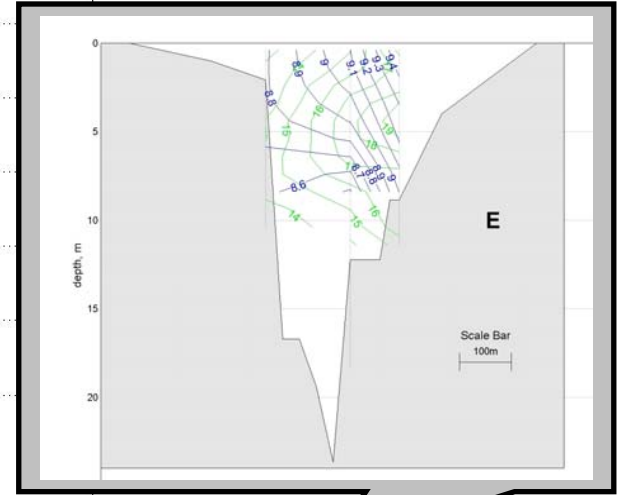
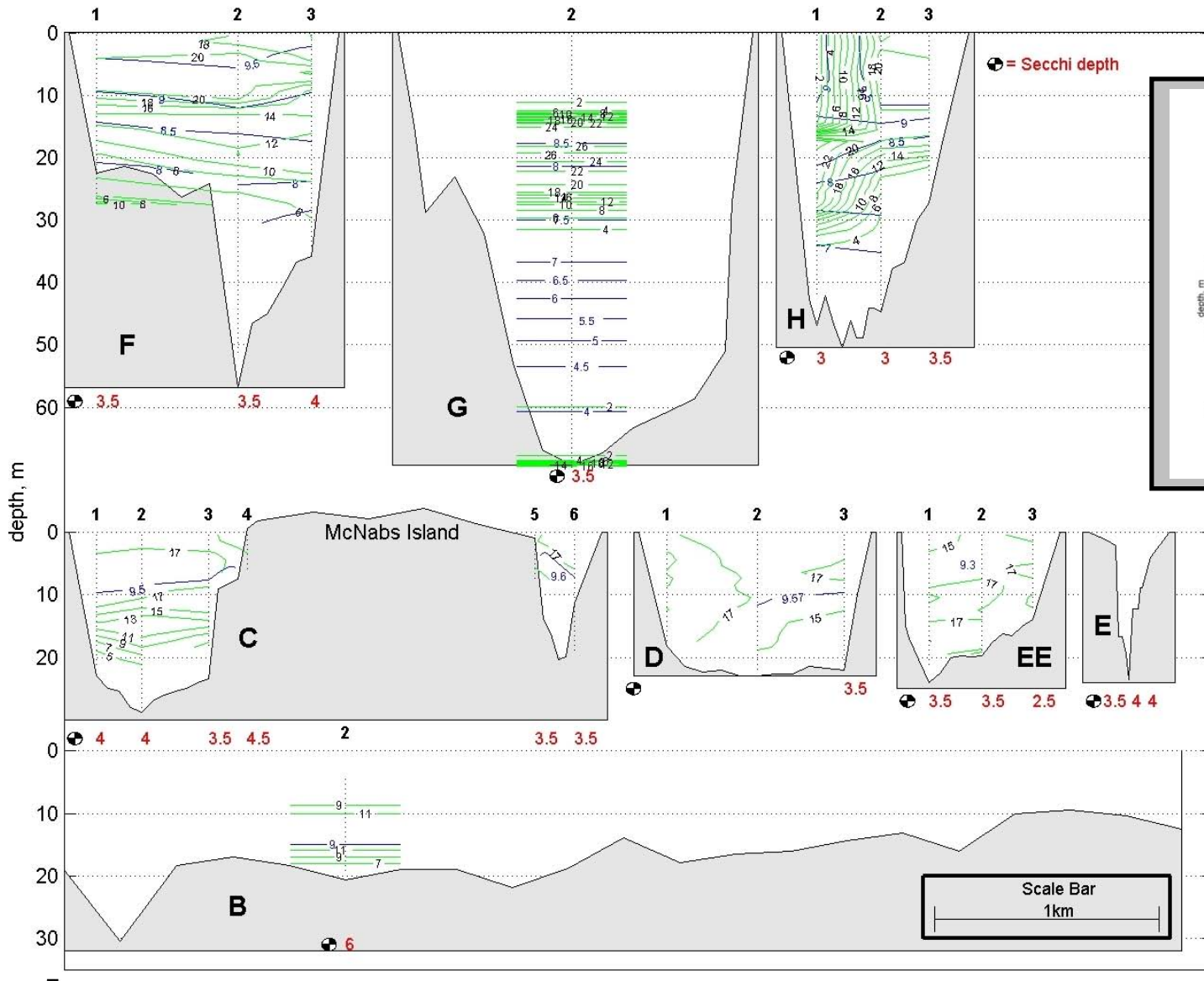


Weather data collected at the Shearwater Airport

Potential Density in kg/m^3

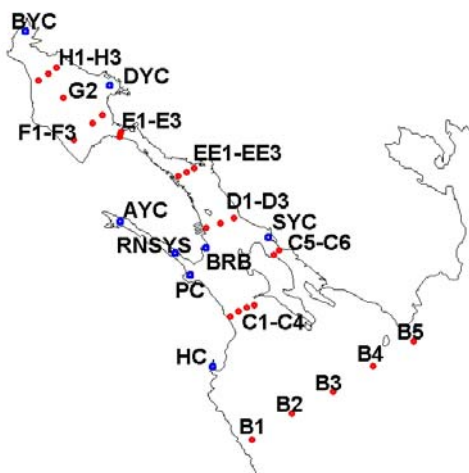
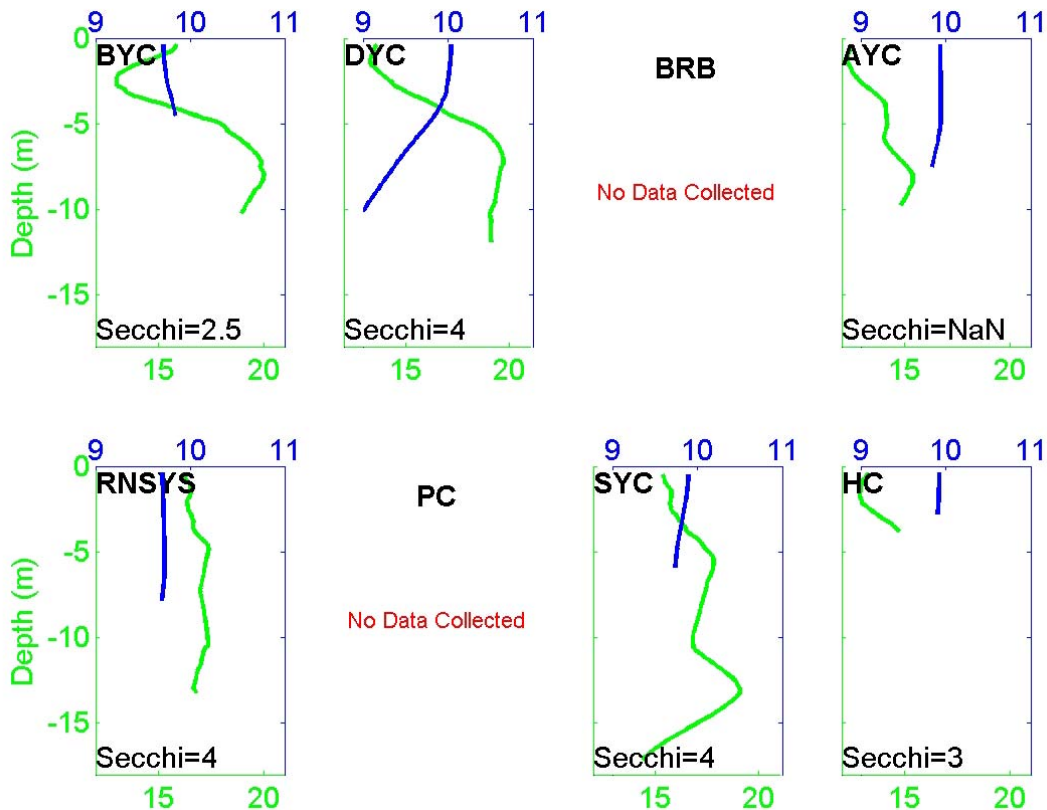
Fecal coliform: above swimming limit (200 cfu/100mL)
 above shellfish limit (14 cfu/100mL)
 below limits





Unless otherwise labeled:
 - **dissolved oxygen** contour interval is 1 mg/L
 - **chlorophyll** contour interval is 2 mg/m³.

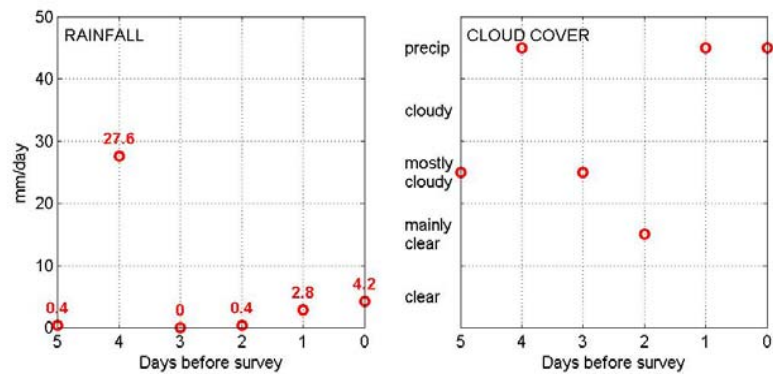
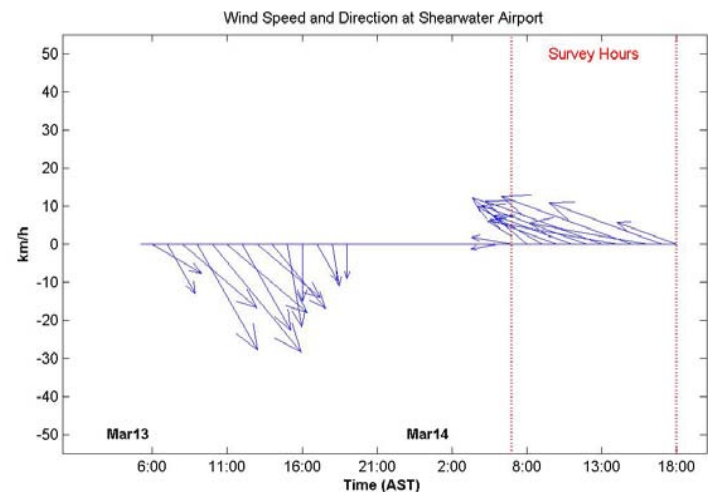
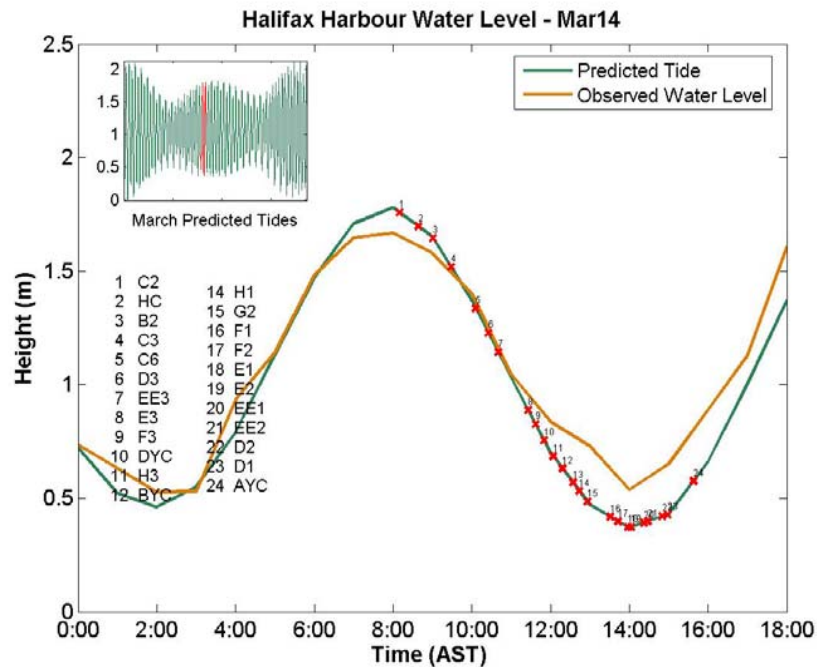
Yacht Clubs

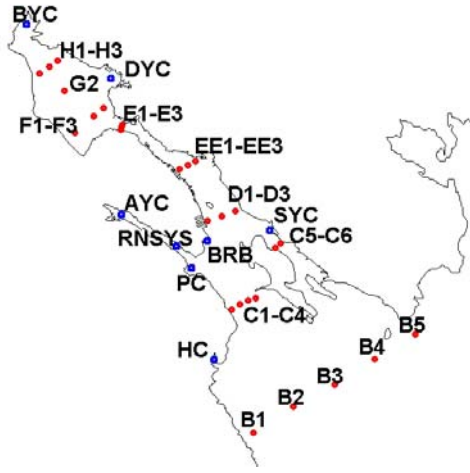
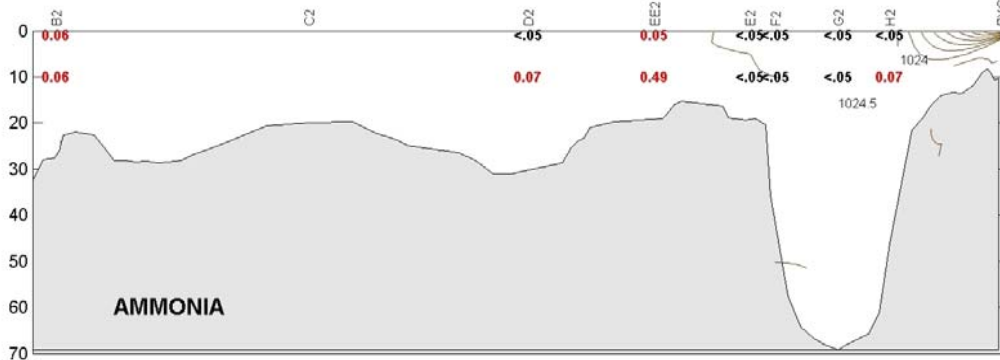
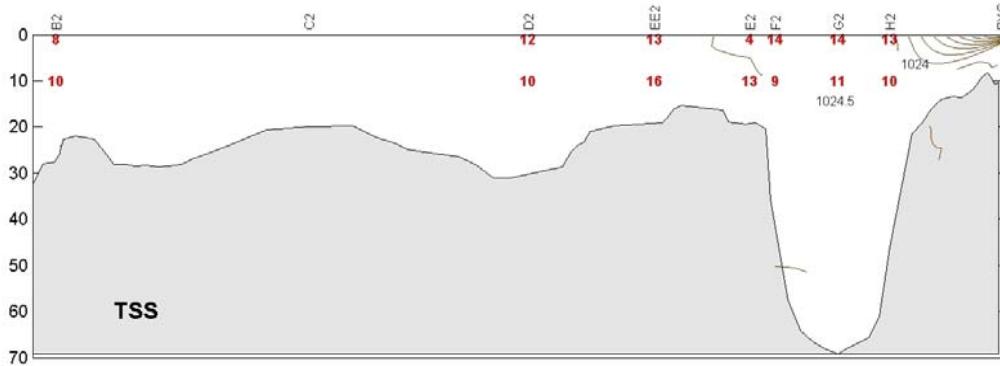


DO in mg/L

Chlorophyll in mg/m^3

Weather data collected at the Shearwater Airport





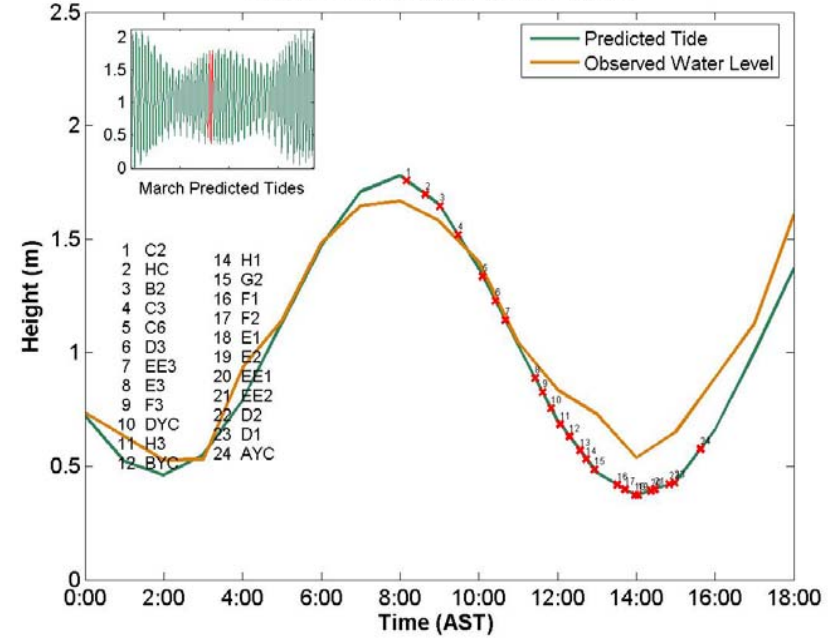
Weather data collected at the Shearwater Airport

Potential Density in kg/m^3

Ammonia in mg/L

TSS in mg/L

Halifax Harbour Water Level - Mar14



Wind Speed and Direction at Shearwater Airport

