Halifax Harbour Water Quality Monitoring Project
Weekly Summary #97

Survey Date: 25 April 2006
Nature of Survey: Complete Survey
Report File (this document): HHWQMP_report097_060425.doc
Data File: HHWQMP_data097_060425.xls

Data Return:

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

Sample Notes:

N/A

QA/QC samples:

Chemical Analysis

		H2- 1m		
Detectable Parameter	**units**	**reference sample**	**QA/QC**	**Dup**
Ammonia (as N)	mg/L	0.11	0.2	0.2
Total Suspended Solids	mg/L	5	6	

Fecal Coliform (CFU/100ml)

Site	HC-1m	DYC-10m	D1-1m	H2-1m
Reference	120	47	320	8
QA/QC	150	32	100	13

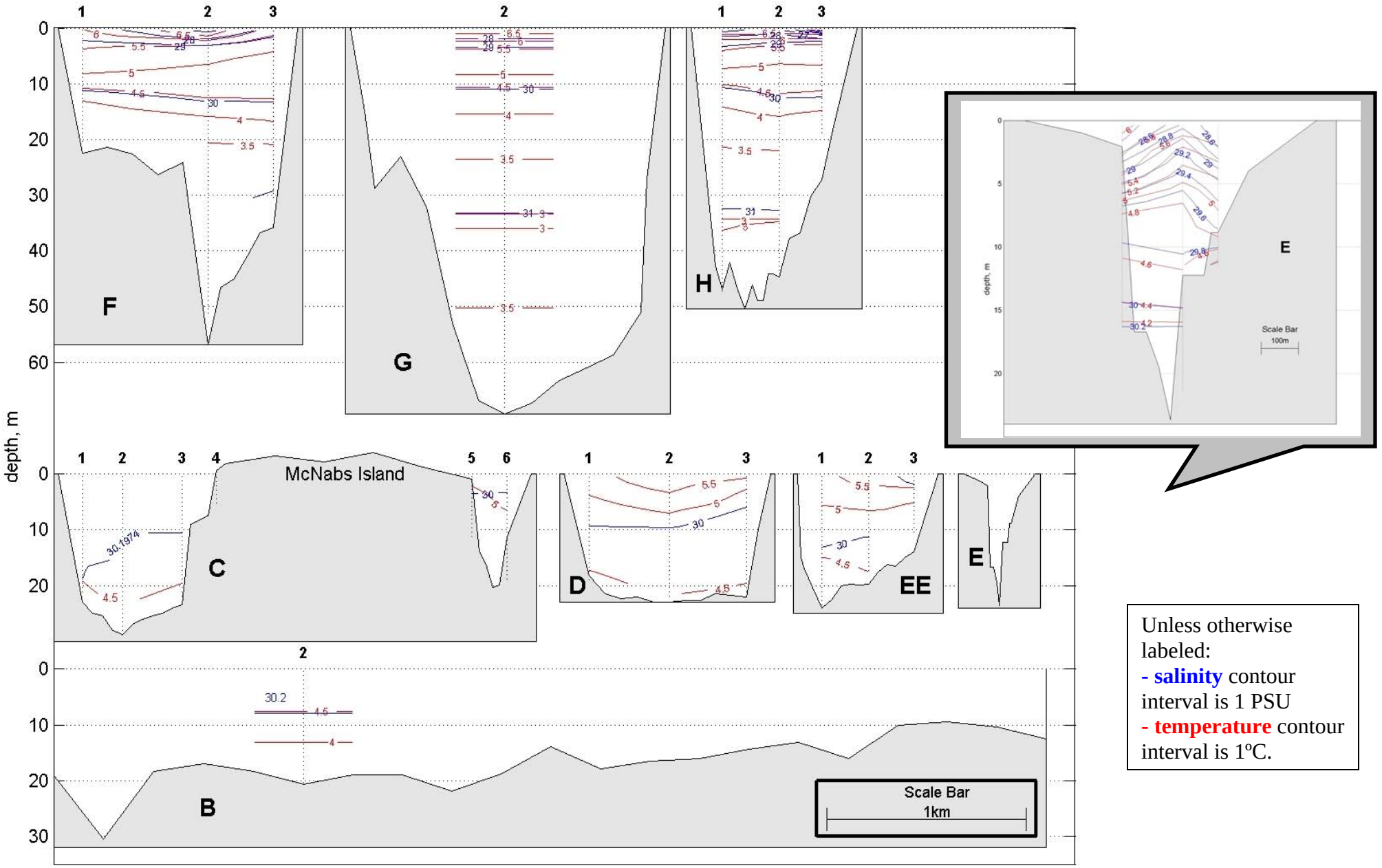
Comments:

General: Other than the moderate rainfall (13.9 mm) the day before the survey, the weather has been dry. The day of the survey was calm and dry. The Basin exhibits significant stratification and the field notes document visible brown (tannin) colour in the water likely associated with the fresh water from the Sackville River. Environment Canada data indicate that Sackville River levels continue to be high in response to the wet weather in previous weeks. In contrast, there is no sign of last weeks' freshwater lens associated with input in the Narrows. This is likely due to the difference in time response between the slower/protracted response of the Sackville river watershed vs. the much faster/briefer response of the urban watershed emptying into the Narrows. Overall, there is more fresh water in the harbour than last week, although south of the Narrows, the salinity stratification is less. Here, the density stratification remains similar to last week due to surface warming. In the Basin, the layer of colder water present in recent weeks is nearly gone.

Given the light winds and apparent lack of water level anomalies, the circulation appears to be dominated by the tides in the Inner Harbour and the estuarine circulation in the Basin. The fecal coliform concentrations support the strong estuarine signal in the Basin with 10 m samples being much higher than in the 1 m samples. The highest coliform levels, not unusually, occur in the 1 m sample at the EE3 site. In this case the site was sampled at low tide, which, given the light winds, puts the site downstream of the Peace Pavilion outfall. It appears that the freshwater signal from this outfall may be evident in the top few meters at this site. The estuarine circulation does not appear to extend far down harbour as the coliform values in the outer harbour; sections B and C are low and vertically uniform.

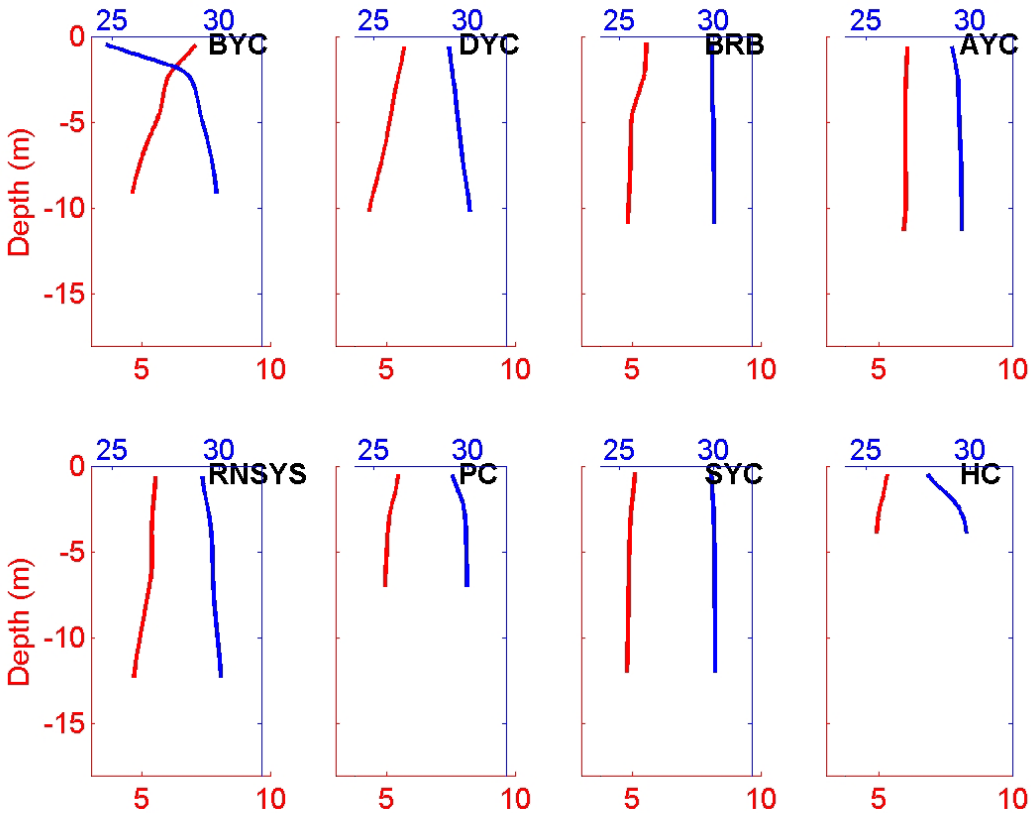
Fluorescence: The fluorescence levels are generally similar to those of last week. The highest values (about 10 mg/m^3) occur in the Basin and are a few mg/m^3 higher than last week.

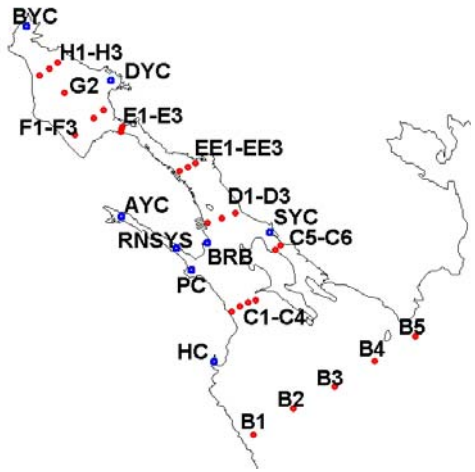
Dissolved Oxygen: The data indicate that, the DO values are mostly slightly lower than last week, the exception being in the surface waters of the Basin which are slightly higher. Outside the Basin the values are quite uniform, particularly further out of the Basin and are generally over 8 mg/L. The 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 1ºC.

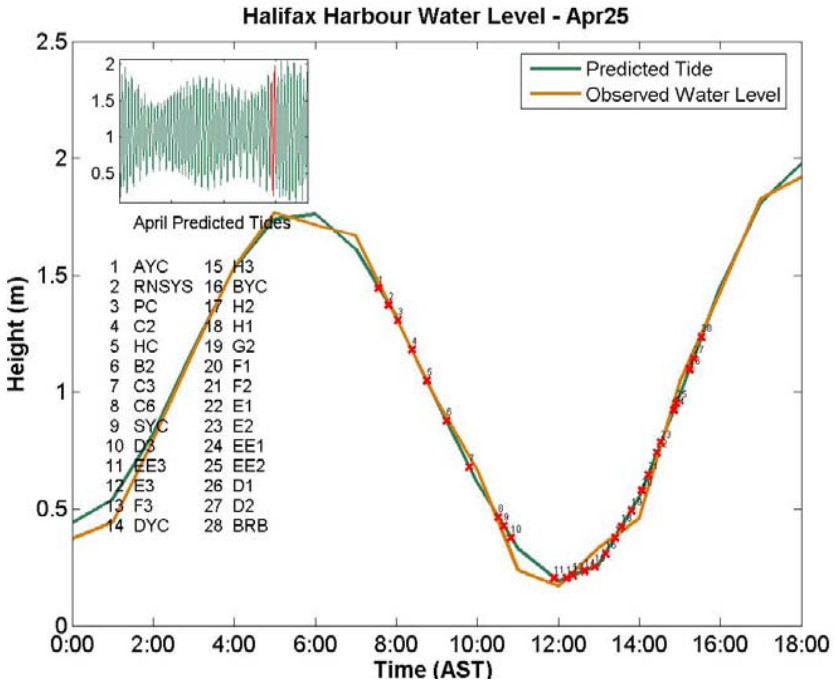
Yacht Clubs

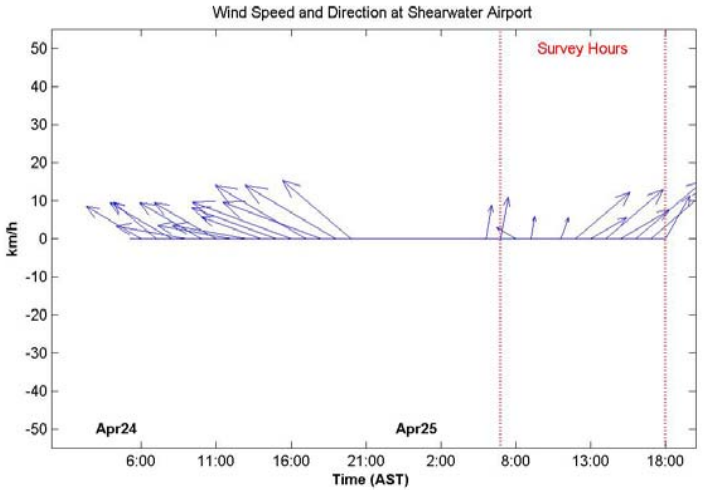


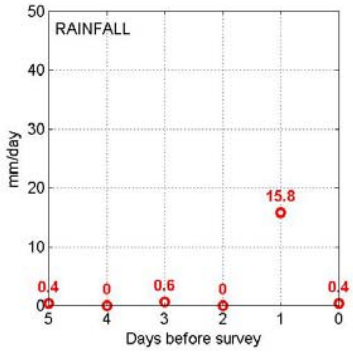


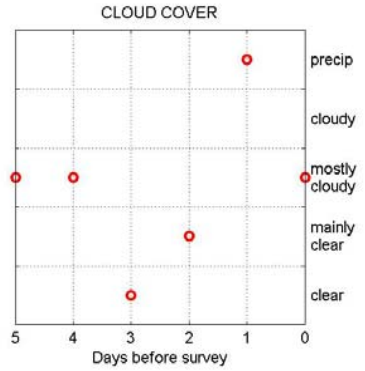
Weather data collected at the Shearwater Airport

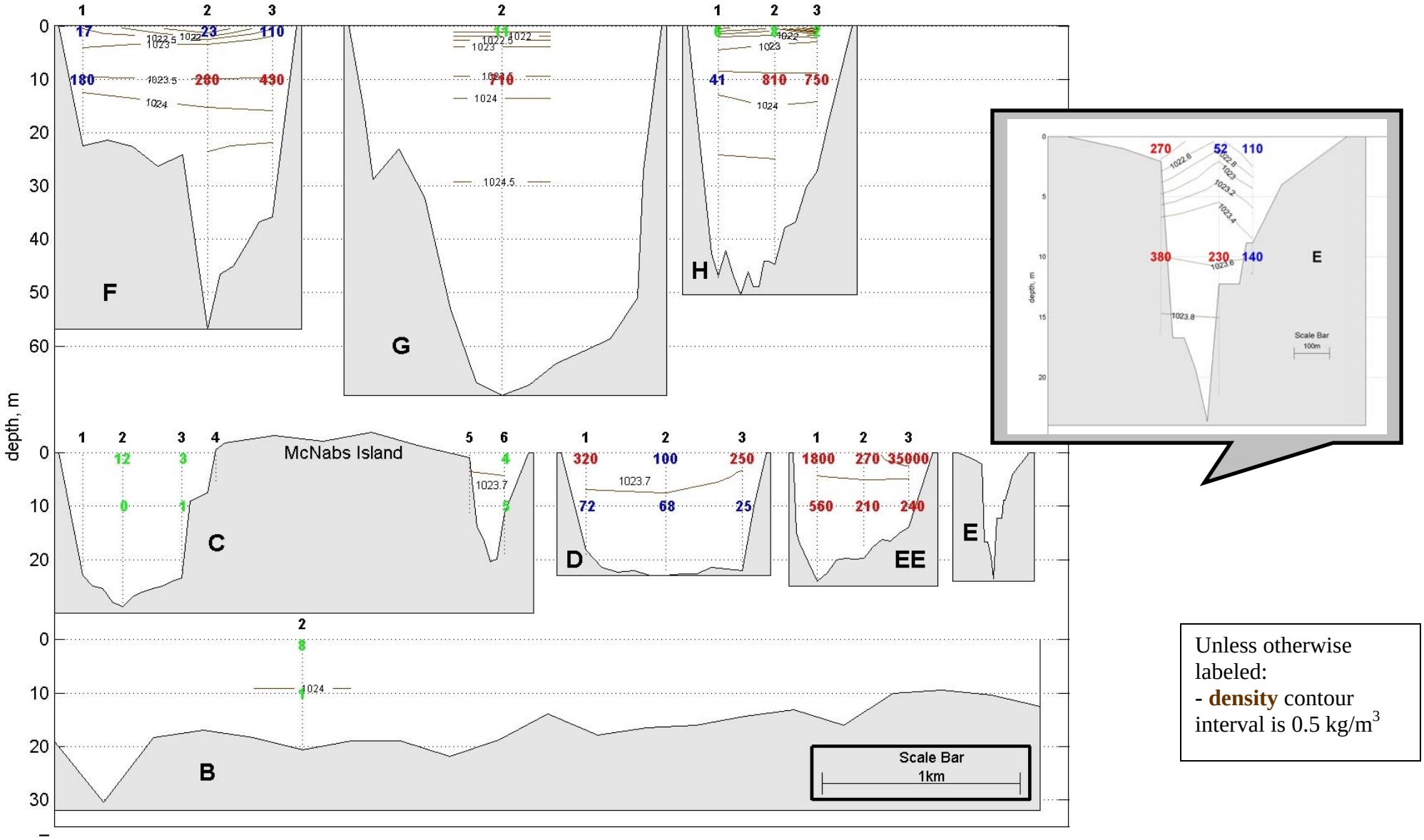
Salinity in PSU **Temperature in ^{o}C**





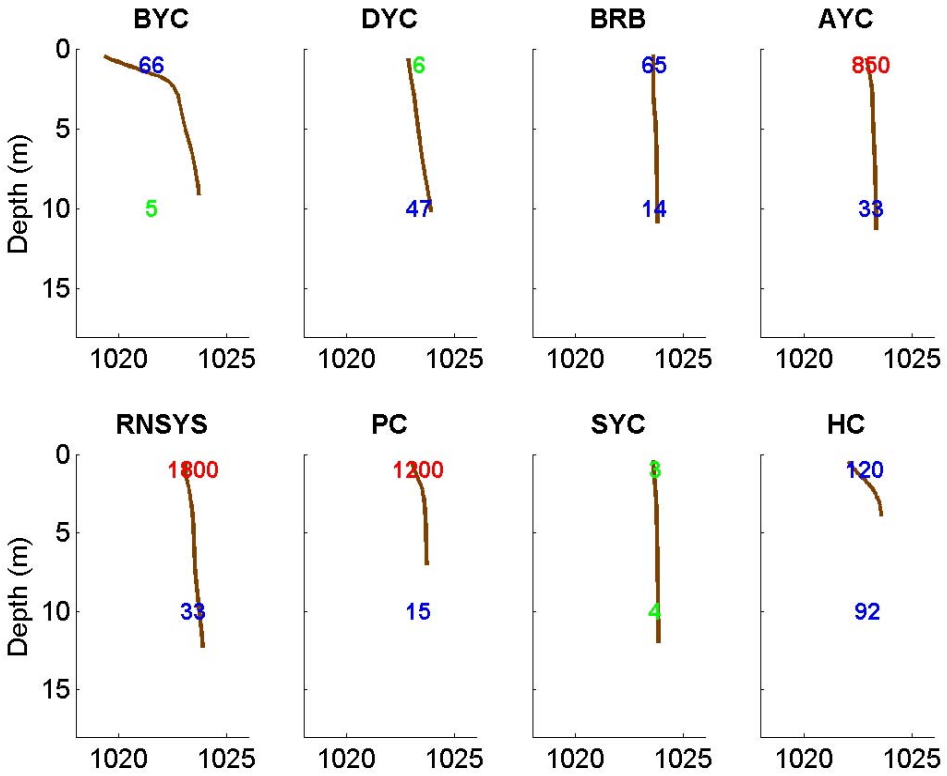


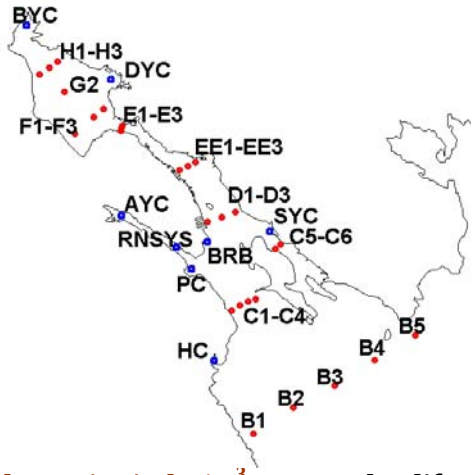




Unless otherwise labeled:
- **density** contour interval is 0.5 kg/m^3

Yacht Clubs

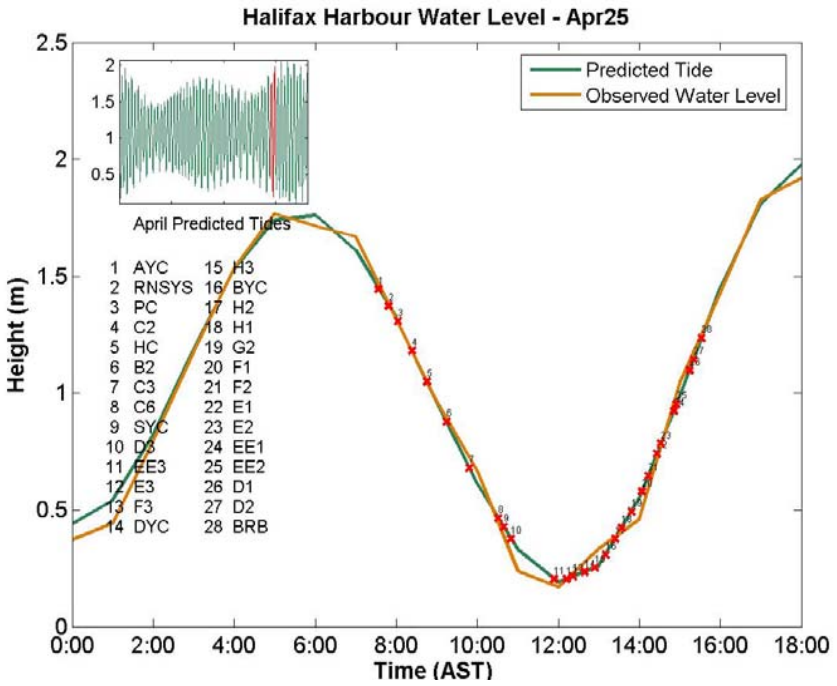


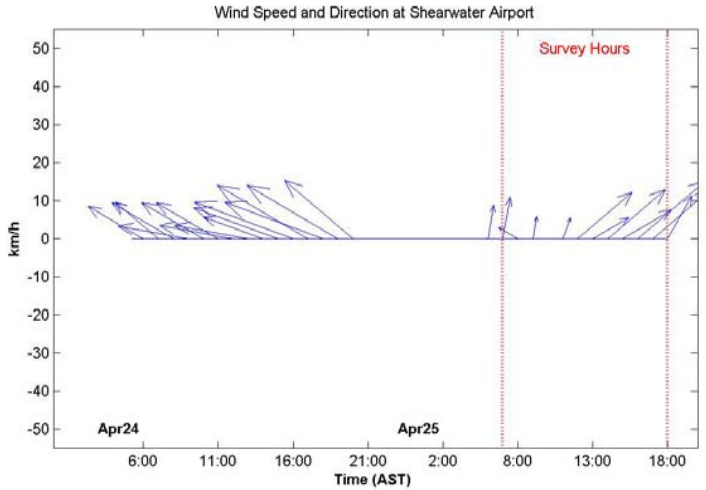


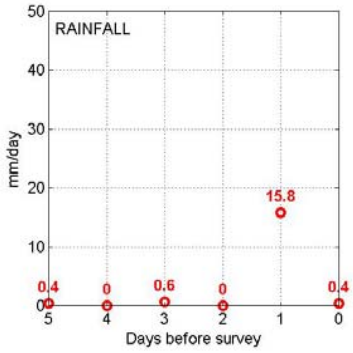
Weather data collected at the Shearwater Airport

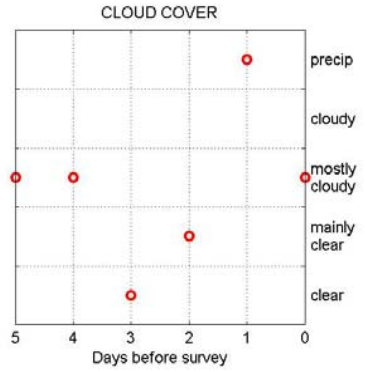
Potential Density in kg/m^3

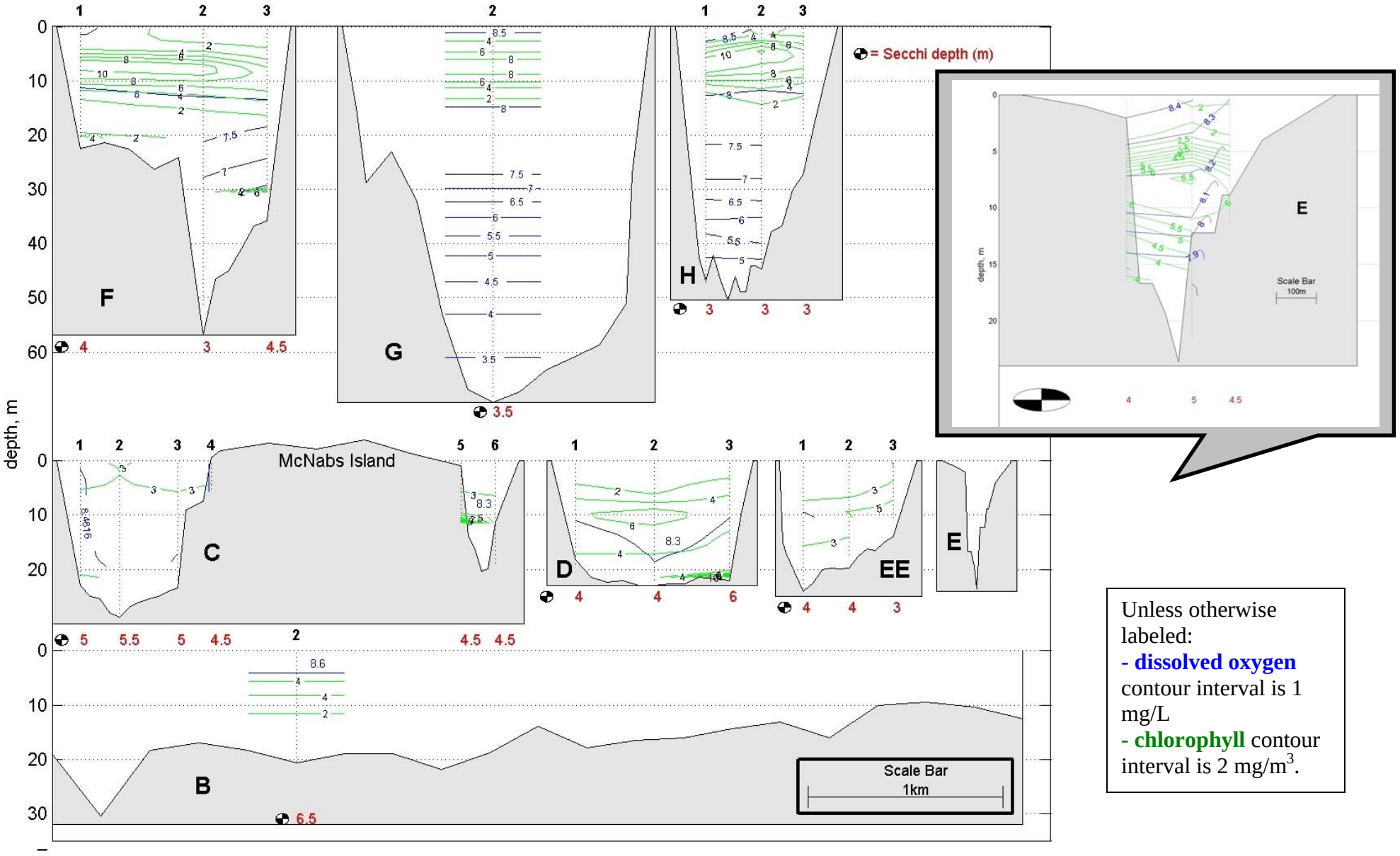
Fecal coliform: above swimming limit (200 cfu/100mL)
above shellfish limit (14 cfu/100mL)
below limits





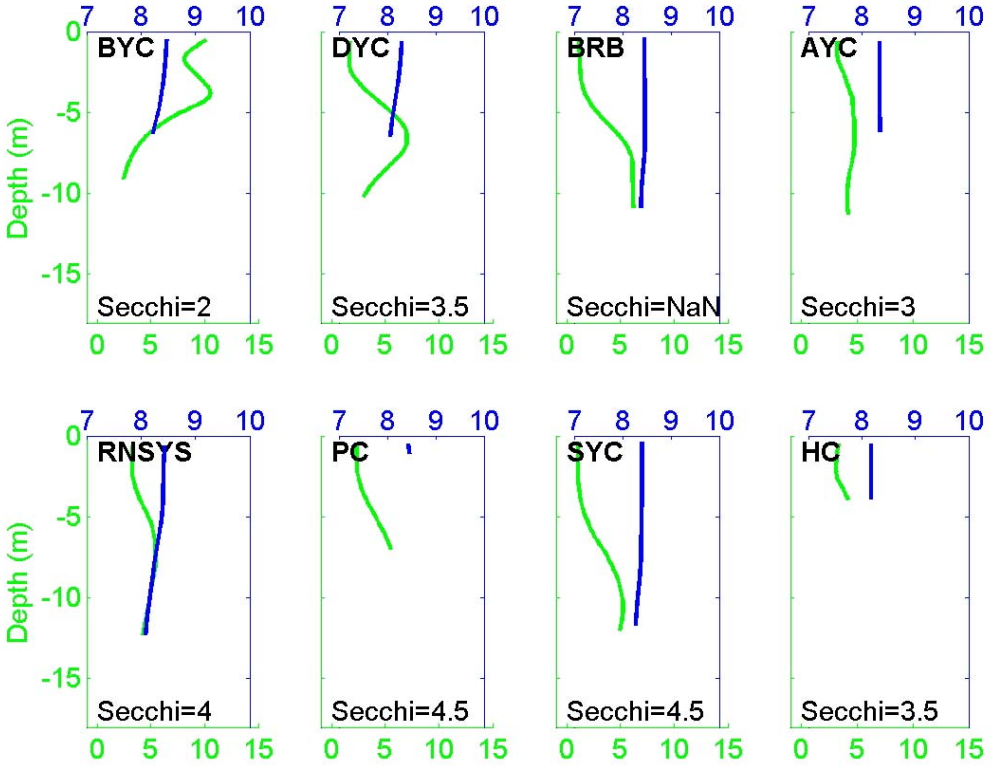


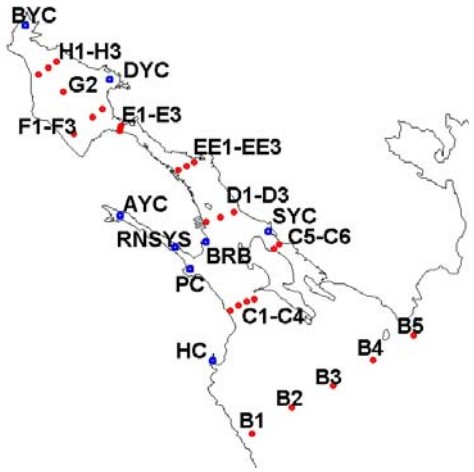




Unless otherwise labeled:
- **dissolved oxygen** contour interval is 1 mg/L
- **chlorophyll** contour interval is 2 mg/m^3.

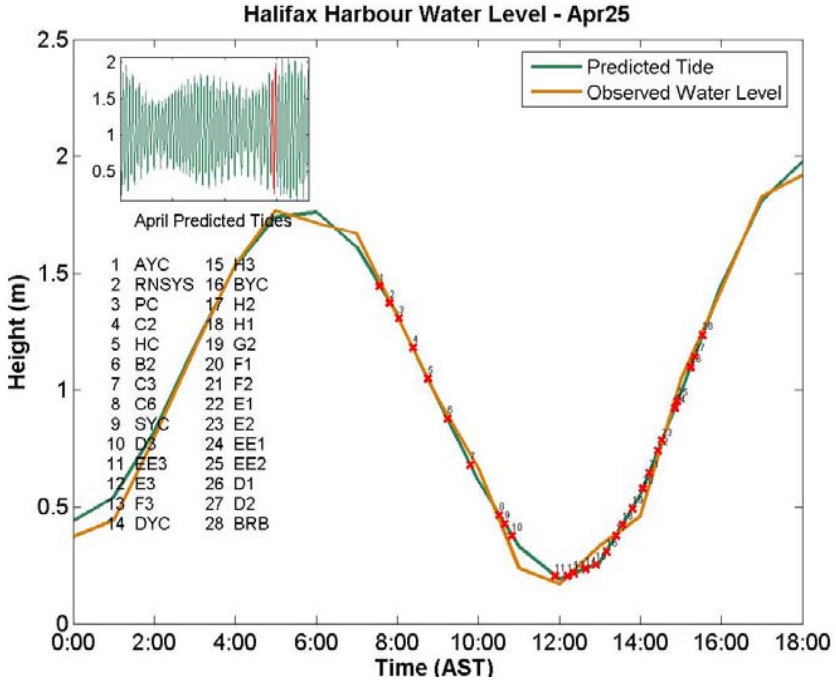
Yacht Clubs

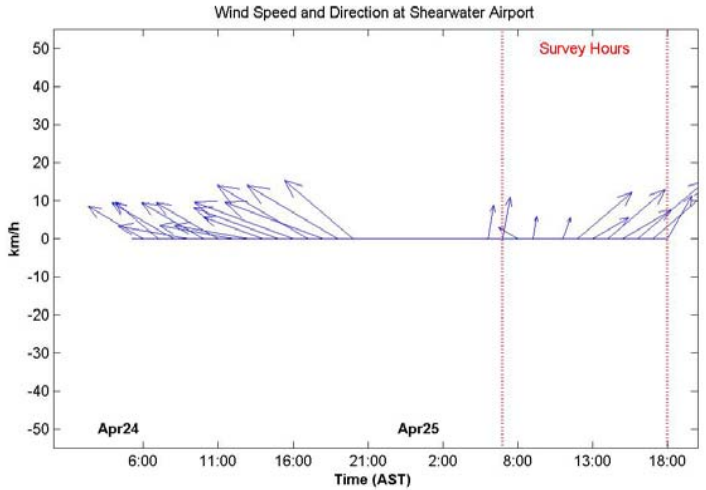


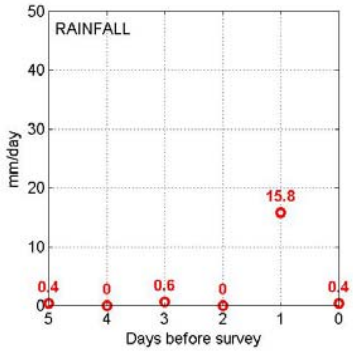


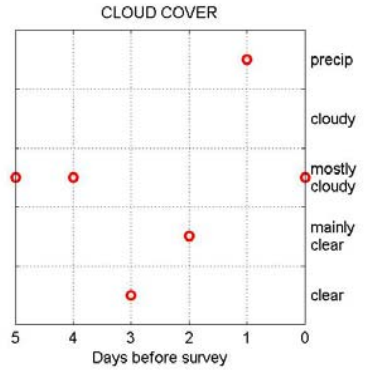
DO in mg/L **Chlorophyll in mg/m^3**

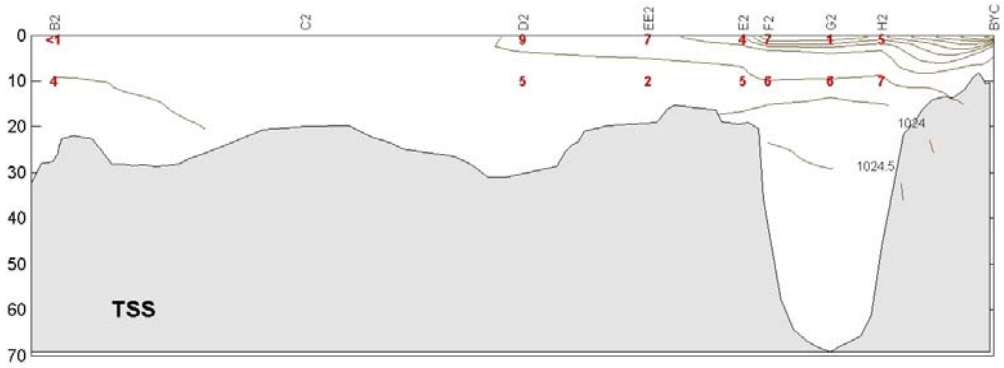
Weather data collected at the Shearwater Airport

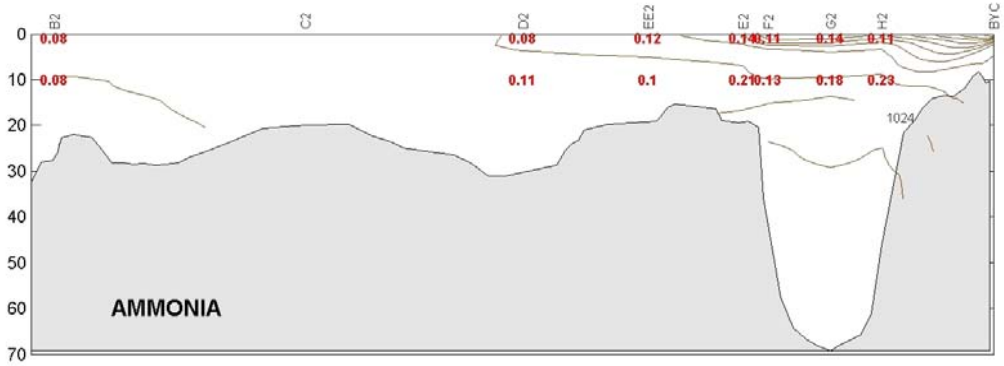


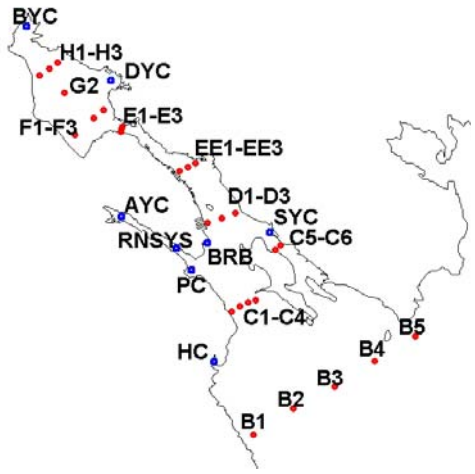












Weather data collected at the Shearwater Airport

Potential Density in kg/m^3 **Ammonia in mg/L** **TSS in mg/L**