

# Halifax Harbour Water Quality Monitoring Project

## Weekly Report #43

**Survey Date:** 12 April 2005  
**Nature of Survey:** Complete Survey  
**Report File (this document):** HHWQMP\_report043\_050412.doc  
**Data File:** HHWQMP\_data043\_050412.xls

### Data Return:

Profile: 77%  
 Bacteria: 100%  
 Chemical: 100%  
**Overall: 90%**

### Sample Notes:

The DO sensor exhibited problems at the start of the survey. The problem resolved itself part way down (40 m) the G2 cast. The data for the remaining sites (F1, F2, E1, E2, EE1, EE2, D1, D2 and BRB) appear normal. The bad DO profiles have been deleted from the data file, but are plotted in this report. The remaining profile data appeared unaffected.

The QA/QC 1 sample was not labeled and can't be linked to its reference sample.

### QA/QC samples:

Chemical Analysis		D2-1m	
Detectable Parameter	units	reference sample	QA/QC
Ammonia (as N)	mg/L	< 0.05	0.05
Total Suspended Solids	mg/L	8.4	11
Boron	ug/L	4100	4200
Lithium	ug/L	180	190
Strontium	ug/L	6300	6300
Titanium	ug/L	58	59
Uranium	ug/L	2.7	2.5

### Fecal Coliform (CFU/100mL)

Site	E3-1m	DYC-10m	BYC-1m	D1-10M	D2-1M
Reference	4	1	15	82	90
QA/QC	5	4	18	120	150

### Regulated parameters with all samples below detection (<EQL)

Parameter	EQL(µg/L)	Parameter	EQL(µg/L)	Parameter	EQL(mg/L)
Cadmium	3	Lead	5	Oil and Grease	5
Chromium	20	Nickel	20		
Copper	20	Zinc	50		

### Detectable non regulated metals

Boron, lithium, strontium, titanium and uranium exhibit very stable background concentrations in the harbour. These levels have been documented in previous reports. Two samples (F2-10m, 23 µg/L and H2-1m, 25 µg/L) had detectable values of Vanadium.

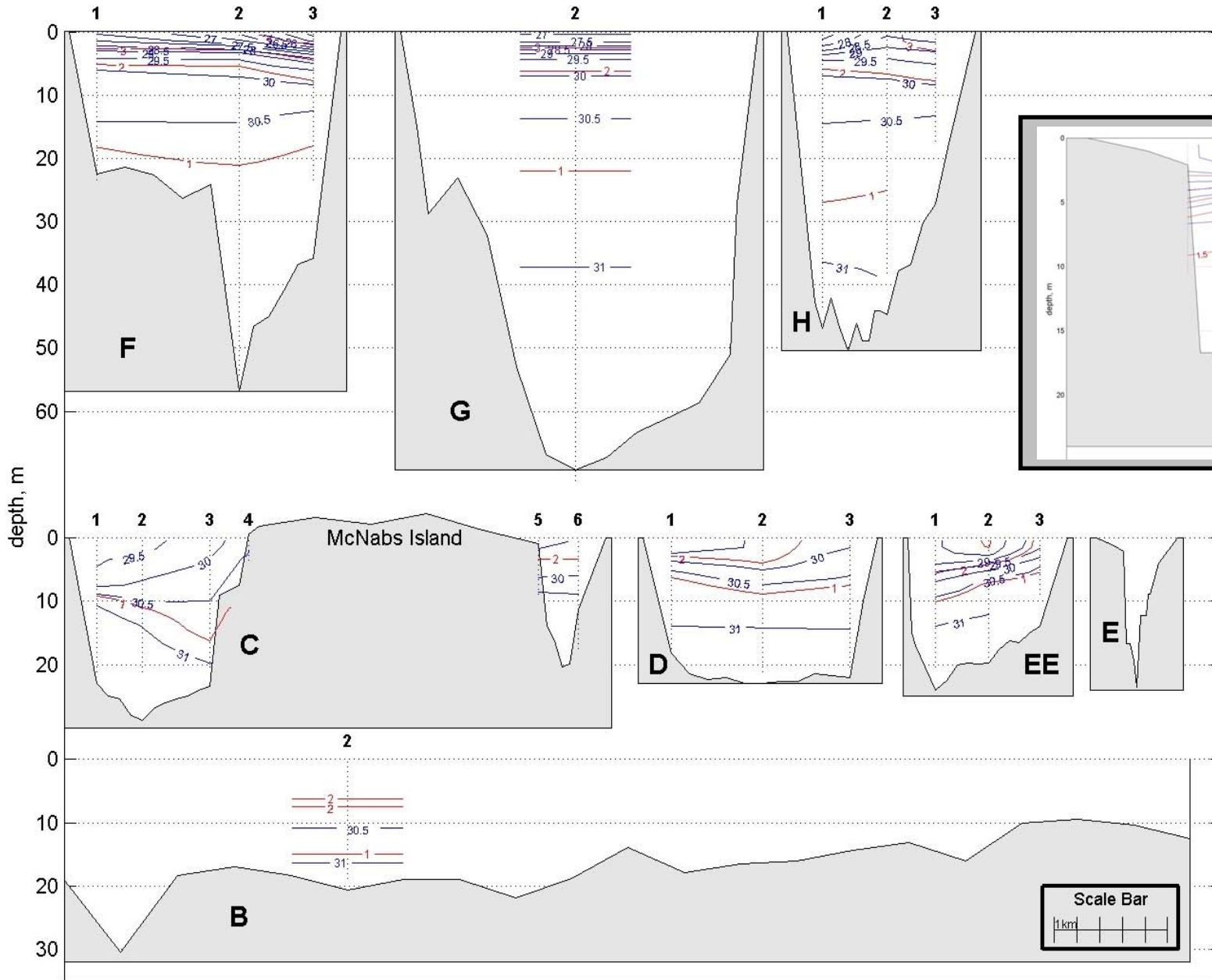
### Comments:

Sample of opportunity: The sample taken at the surface boil at the Peace Pavilion outfall (near site EE3) had a CBOD<sub>5</sub> level of 6.4 mg/L. Ammonia (as nitrogen) was 0.41 mg/L and TSS was 17 mg/L. The fecal coliform count was >10,000 CFU/100mL.

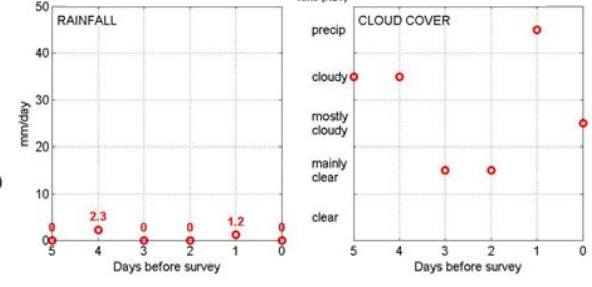
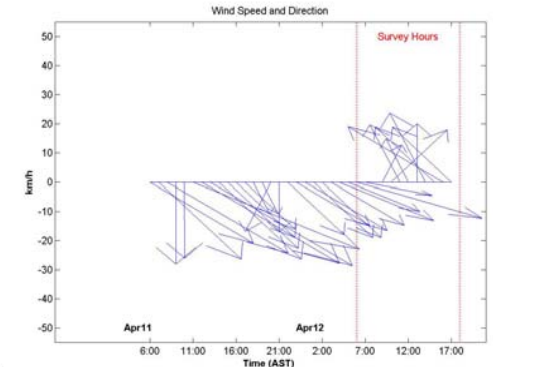
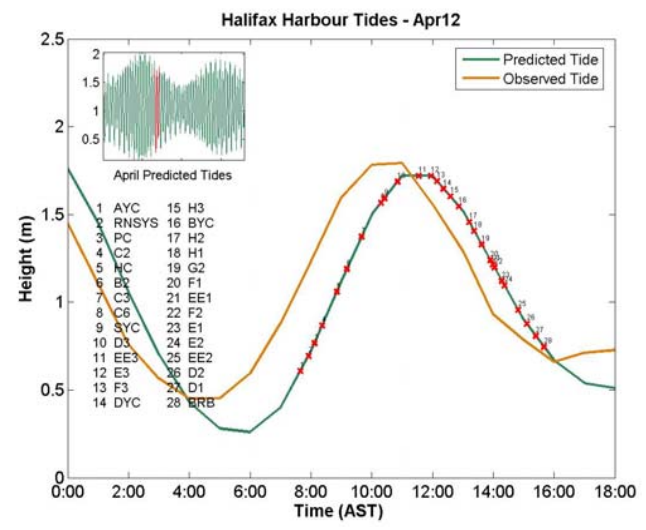
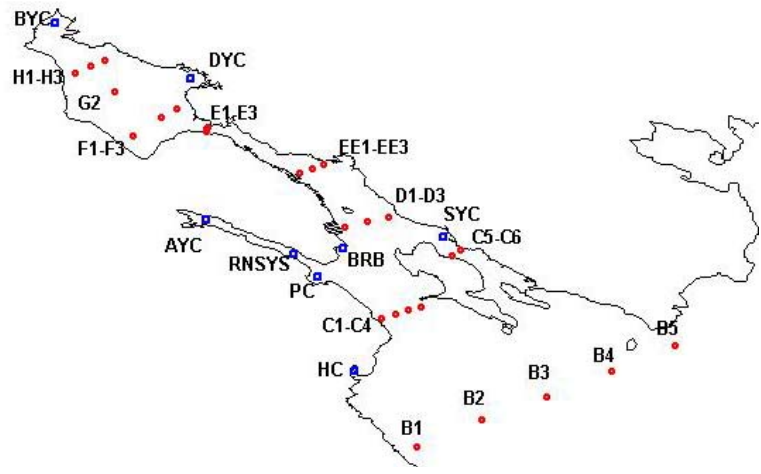
Manganese: Three samples (E2-1m, 29 µg/L; F2-1m, 23 µg/L; G2-1m, 28 µg/L) had detectable levels of manganese. These were all below the guidelines of 100 µg/L.

Dissolved Oxygen: As stated above, much of the dissolved oxygen data for this survey is unreliable. Refer to "Sample Notes" above for interpretation. For the reliable profiles all values were above applicable guidelines.

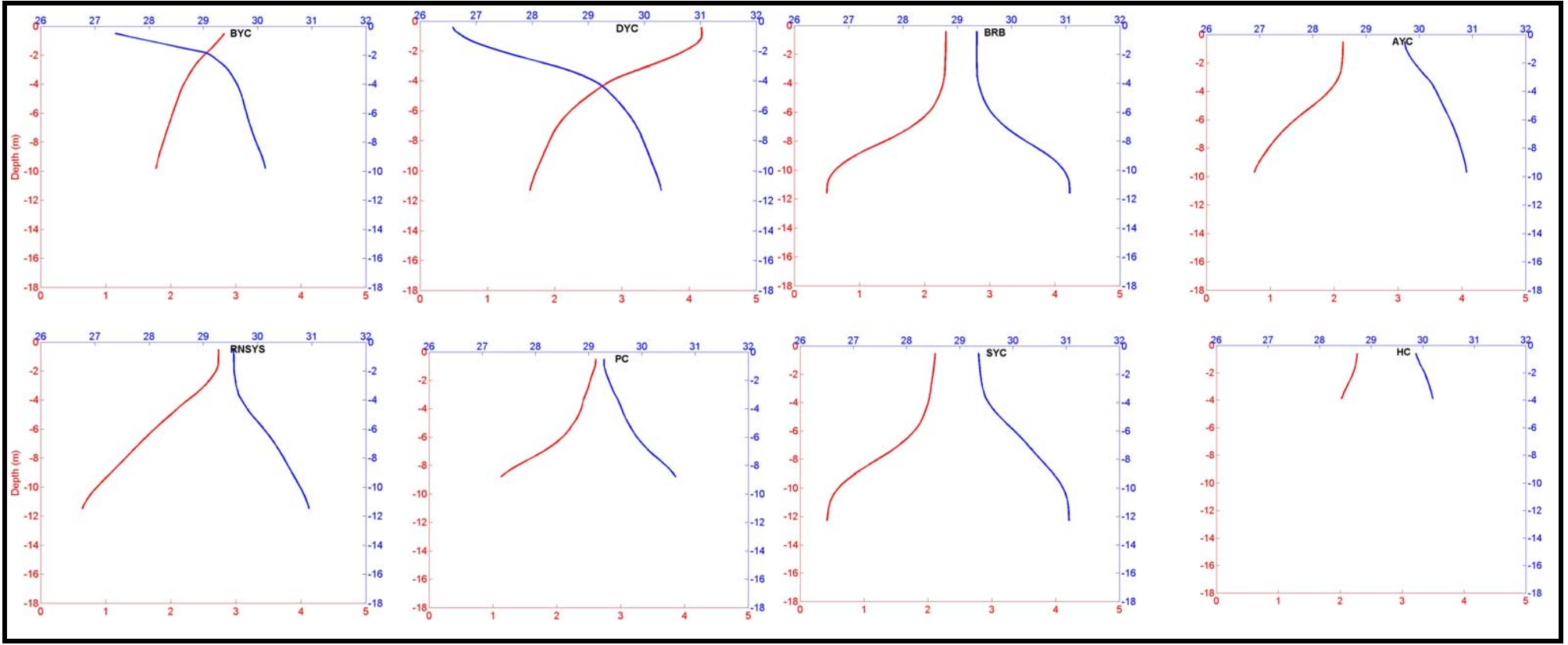
General: Chlorophyll-a remains elevated with the highest values (>20 mg/m<sup>3</sup>) in the Basin. Overall the values are slightly lower than last week, except in the outer sections (B and C). Here, though still lower than Basin values, they are nearly twice last weeks' values. The Harbour remains quite stratified, though less so than last week, except in the outer harbour where there is slightly more stratification. The maximum stratification occurs at sections E and F, where a lens of warmer fresher water occurs along the eastern side of the harbour. The highest TSS observed to date (40 mg/L) occurs at the E2-1m station. The fecal coliform values are relatively low, with the distribution displaced down harbour in the surface and up harbour at 10m. This is generally all consistent with enhanced estuarine circulation.



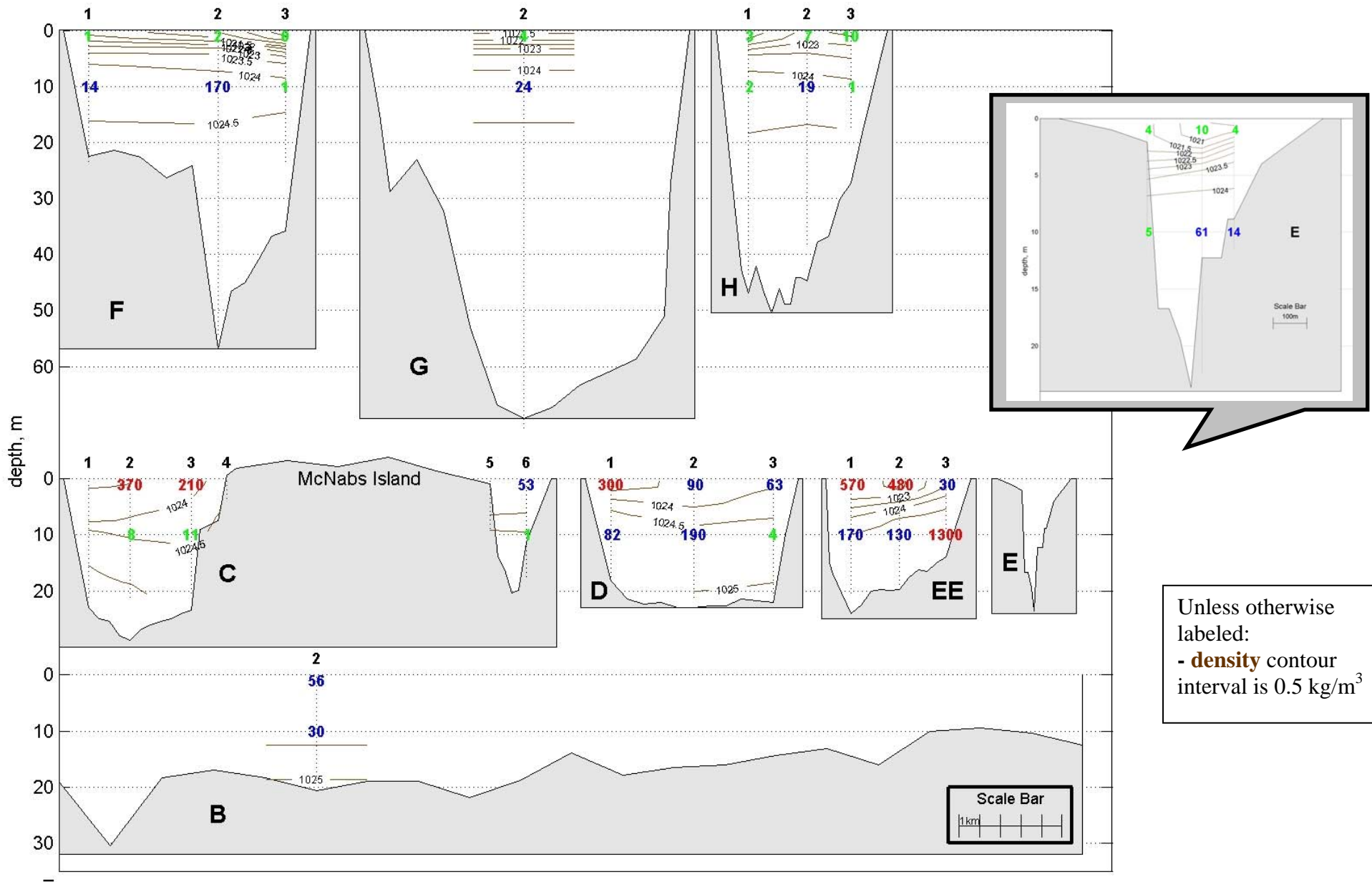
Unless otherwise labeled:  
- salinity contour interval is 0.5 PSU  
- temperature contour interval is 1°C.



## Yacht Clubs

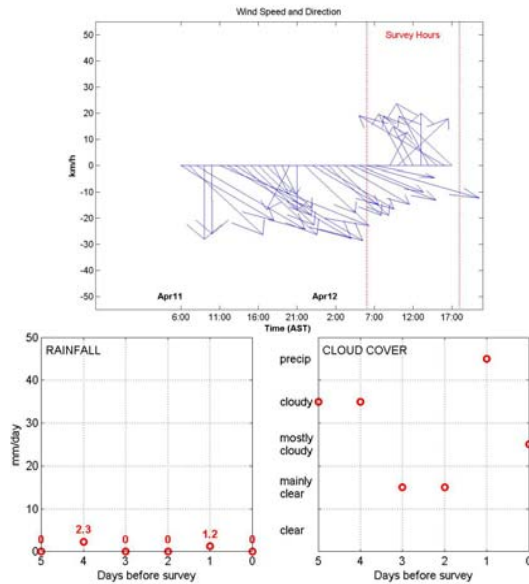
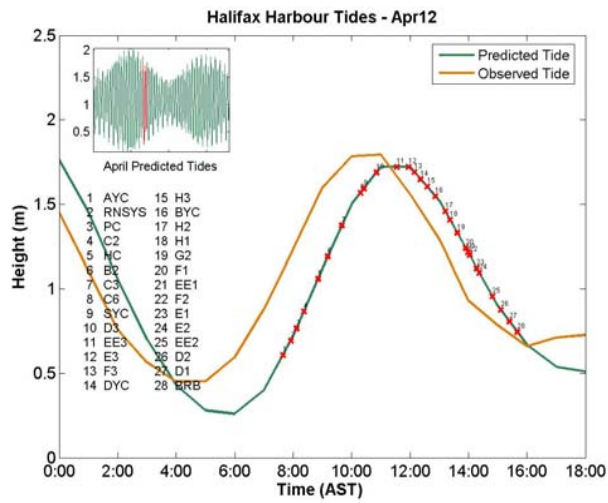
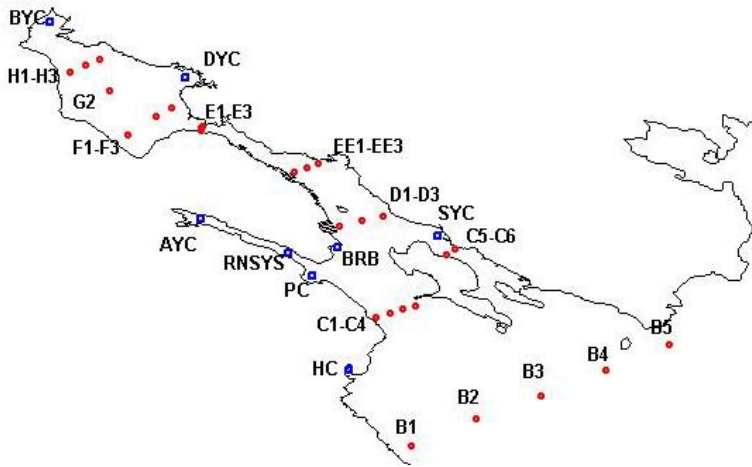


Salinity in PSU      Temperature in °C

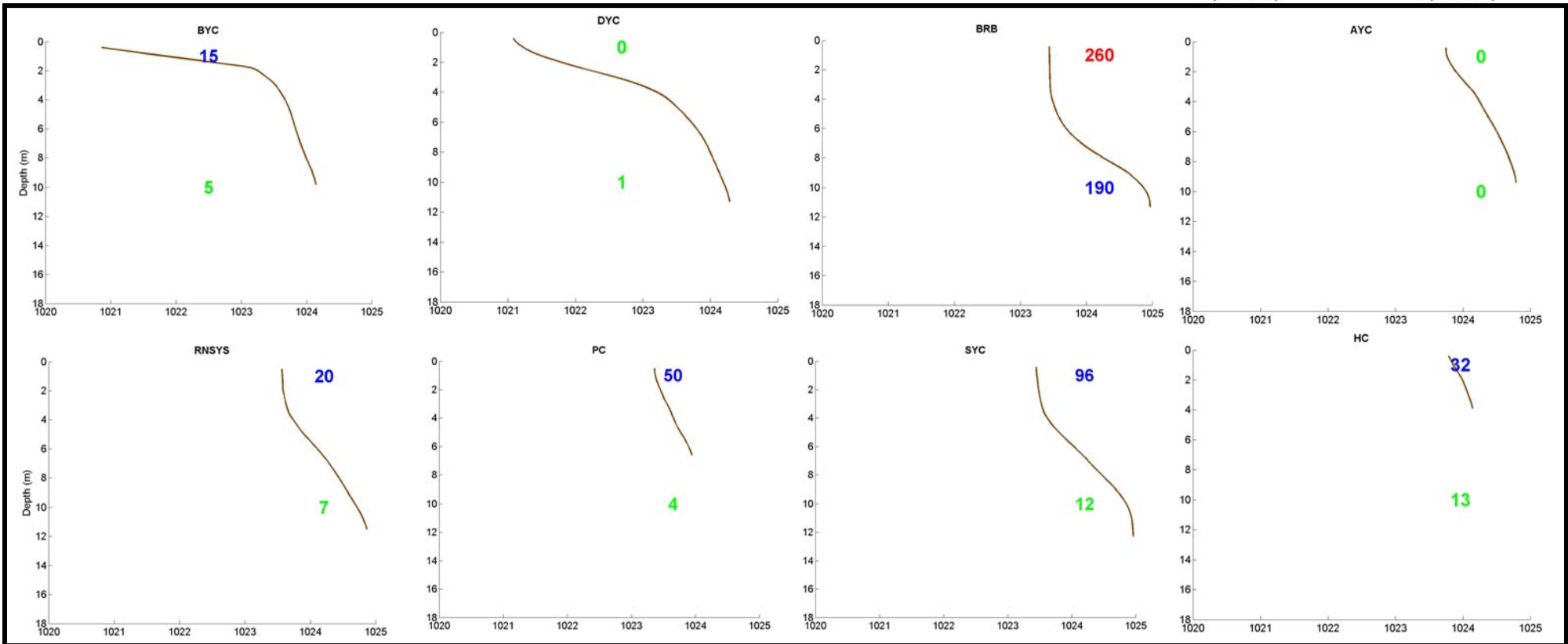


Unless otherwise labeled:  
 - density contour interval is 0.5 kg/m<sup>3</sup>

Density in kg/m<sup>3</sup>      Fecal coliform: below limits  
 above shellfish limit (14 cfu/100mL)  
 above swimming limit (200 cfu/100mL)



### Yacht Clubs



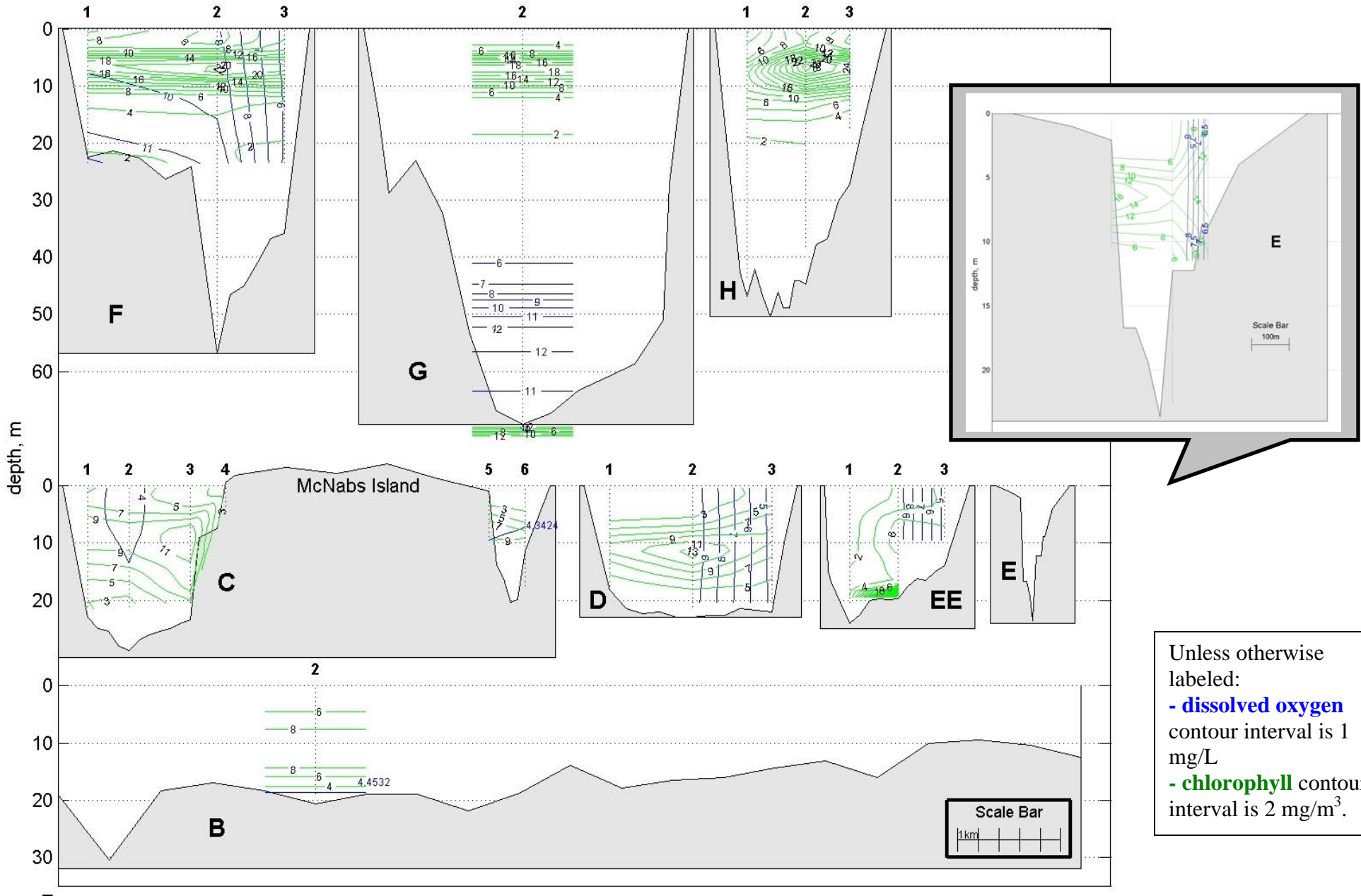
Density in kg/m<sup>3</sup>

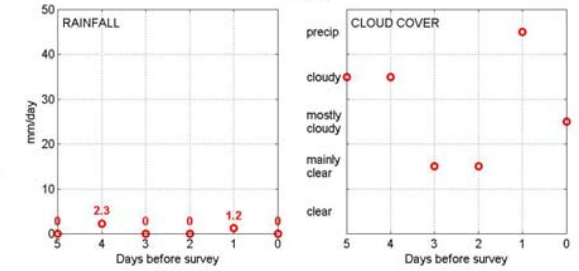
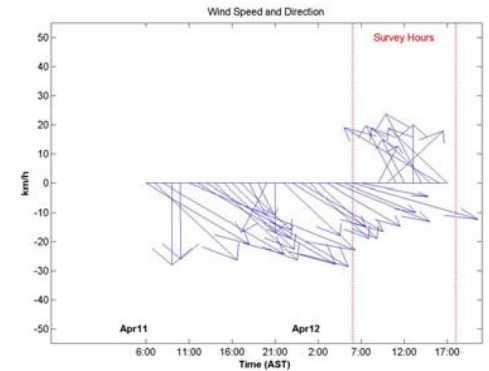
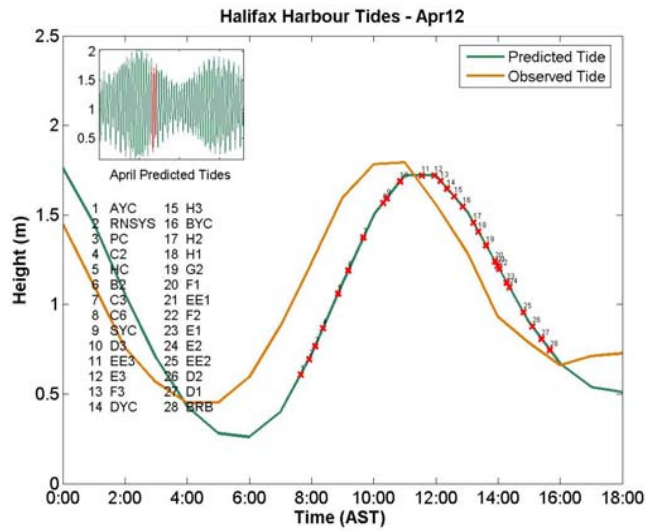
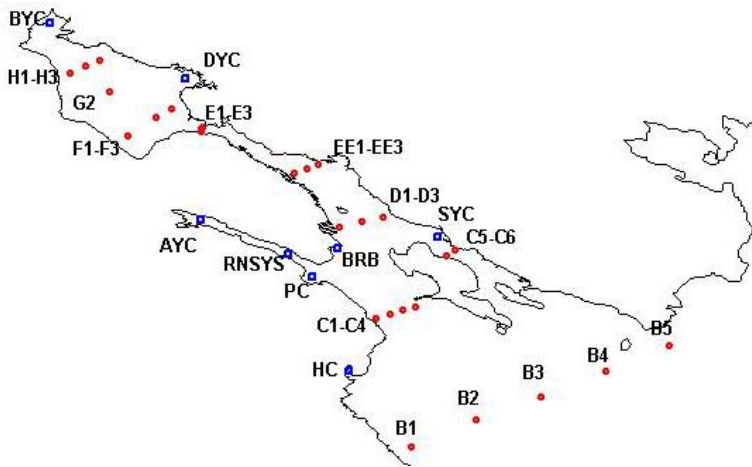
Fecal coliform: below limits

above shellfish limit (14 cfu/100mL)

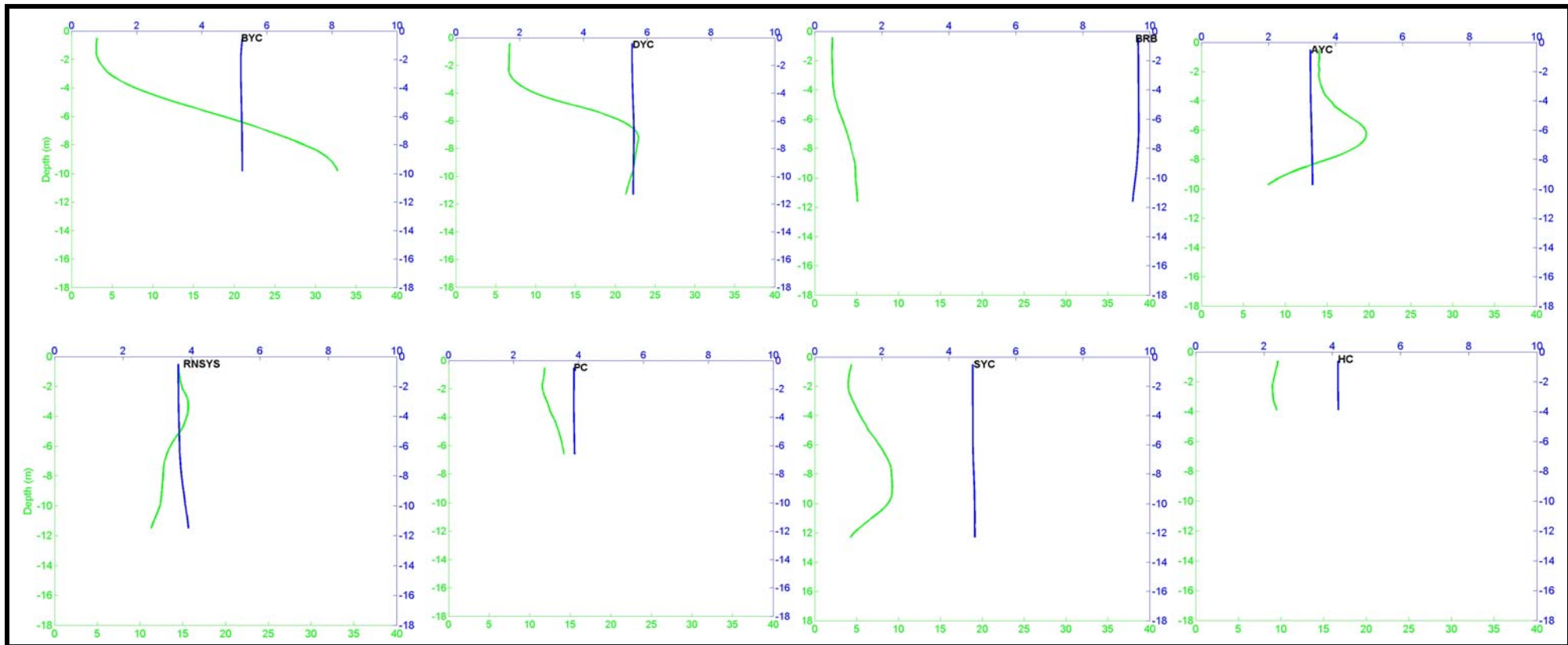
above swimming limit (200 cfu/100mL)







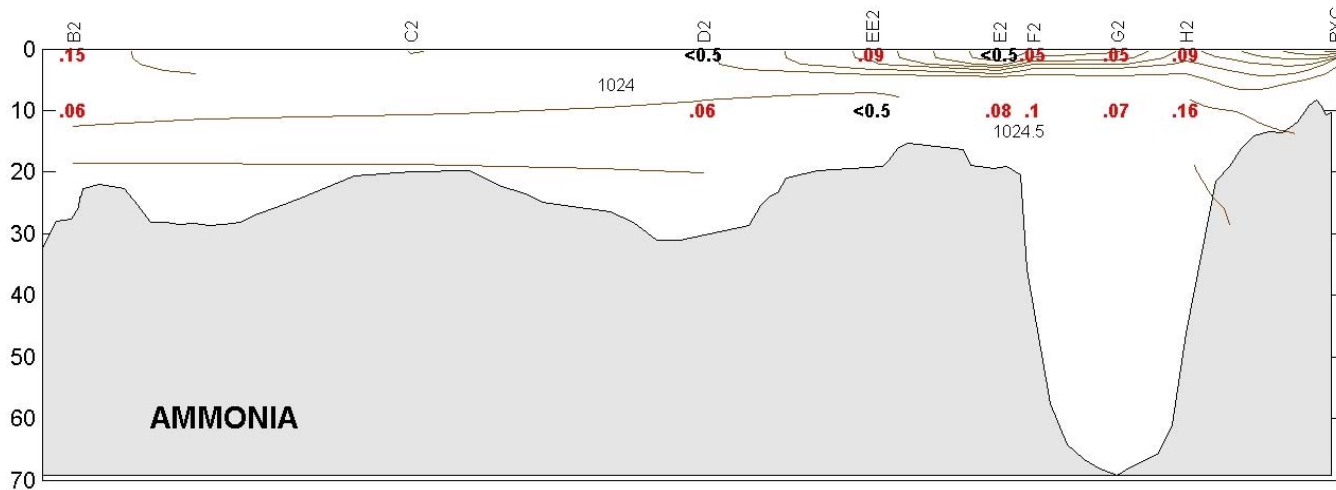
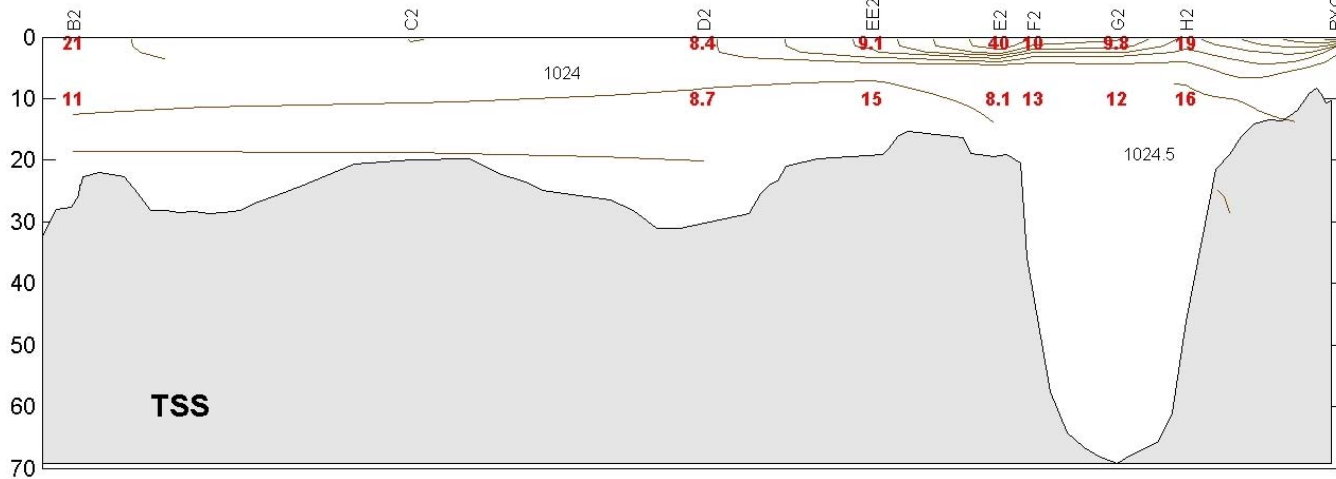
## Yacht Clubs



DO in mg/L

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

CHEMISTRY



Density in kg/m<sup>3</sup>

Ammonia in mg/L

TSS in mg/L

