

Halifax Harbour Water Quality Monitoring Project

Survey Summary #170

Survey Date: 03 December 2008
Nature of Survey: Complete Survey
Report File (this document): HHWQMP_report170_081203.doc
Data File: HHWQMP_data170_081203.xls

Data Return:
 Chemical: 100%
 Bacteria: 100%
 Profile: 100%
Overall: 100%

Sample Notes:

A supplementary CTD cast was taken at the LOBO buoy location (44.6291 N, 63.5915 W) at 15:30 local time.

To match the collected reference data the presented DO values should be scaled by a factor of 1.3 (see comparison in data file).

QA/QC samples:

Chemical Analysis		E2-1m	
Detectable Parameter	Units	Reference Sample	QA/QC
Ammonia (as N)	mg/L	0.08	0.09
Total Suspended Solids	mg/L	1.0	2.0
Copper	ug/L	0.5	0.5
Iron	ug/L	15.0	6.0
Manganese	ug/L	3.0	1.0
Mercury	ug/L	<0.01	0.01
Zinc	ug/L	2.0	2.0

Fecal Coliform (CFU/100ml)

Site	C3-10m	DYC-1m	PC-10m	E2-1m
Reference	19	110	8	230
QA/QC	18	200	2	130

Comments:

General: There has been significant rainfall (almost 30 mm) 2-3 days previous to this survey. There is a strong freshwater signature in the Harbour particularly evident in the southern Basin and Narrows. This is also evident in the Halifax end of section EE. The Inner Harbour is fresher overall and, south of section EE, less stratified than in the previous survey. There are some elevated fecal coliform values in an, heretofore, unusual spatial distribution. Values slightly in excess of the swimming guideline (200 CFU/100 mL) occur in the 1 m samples in the centre of section EE and at the western side of sections E, F and H.

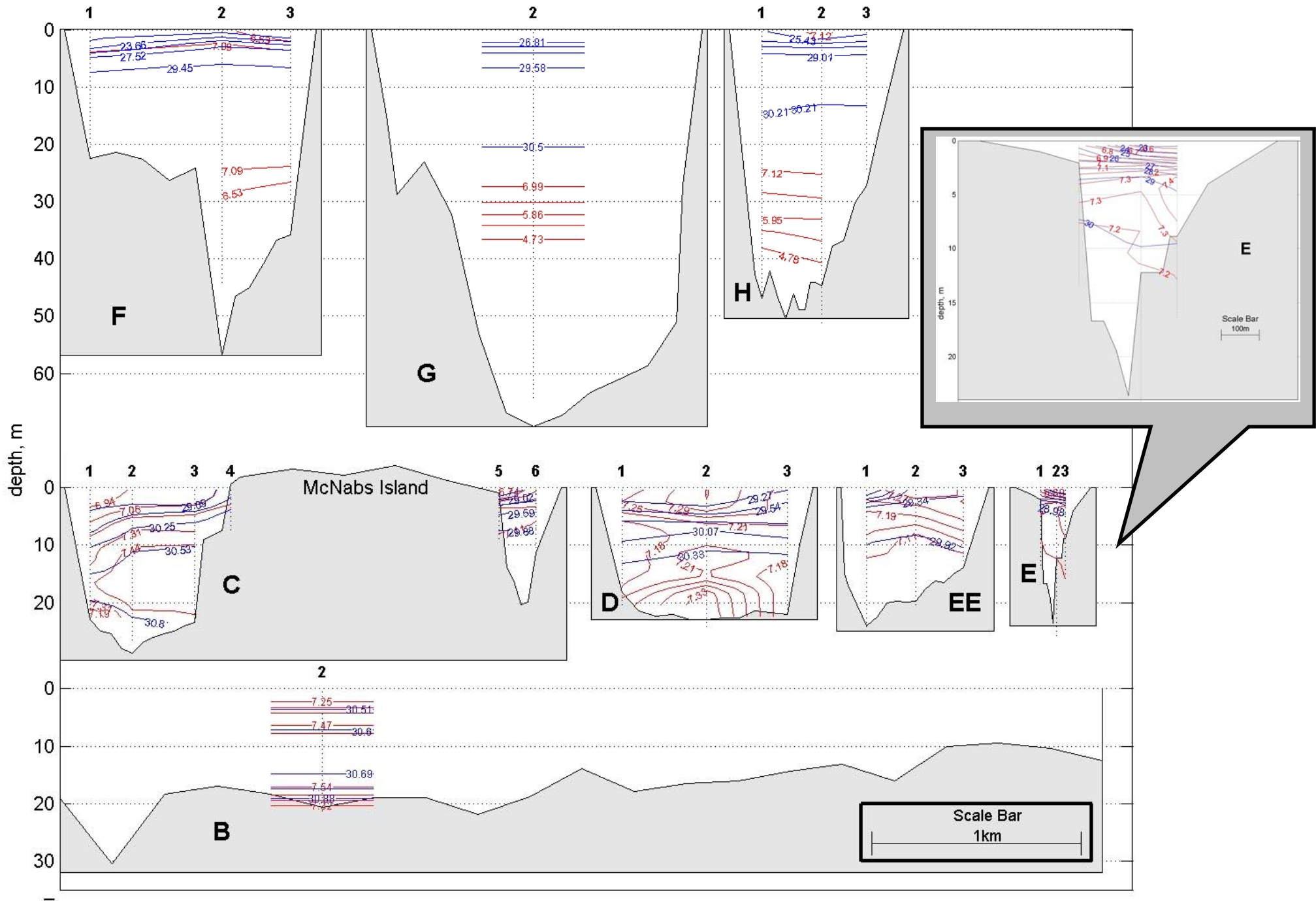
Fluorescence: The fluorescence data indicates relatively low phytoplankton activity. Levels are less than 10 mg/m³ in the Basin decreasing going out of the Harbour to 2-3 mg/m³ in the Outer Harbour.

TSS: The TSS levels are relatively low with all values 5 mg/L or less (mean 2.0 mg/L). The higher values tend to be in the southern Basin and Narrows.

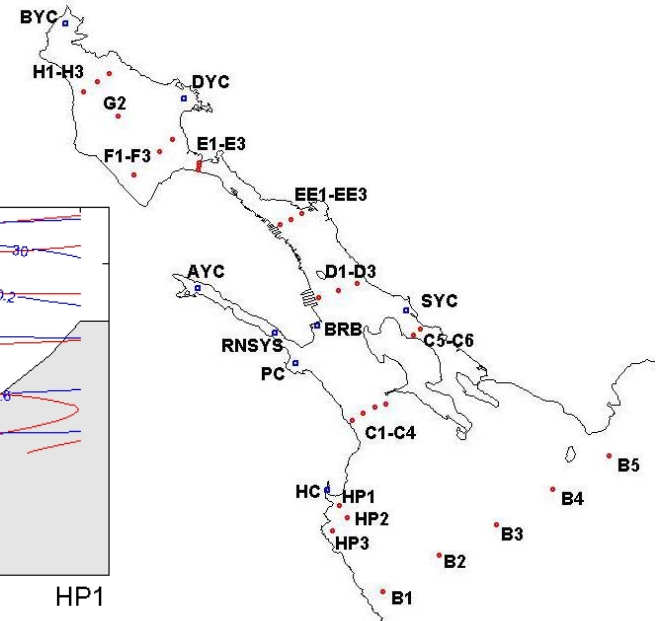
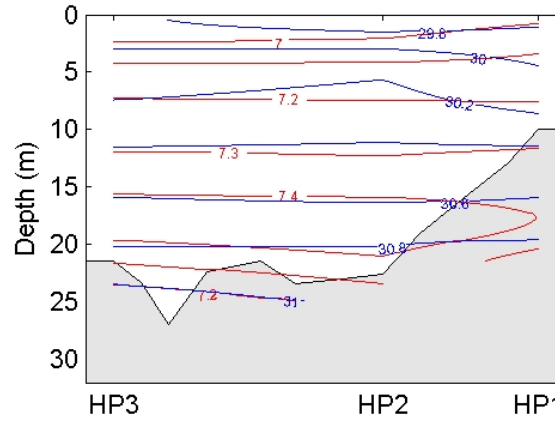
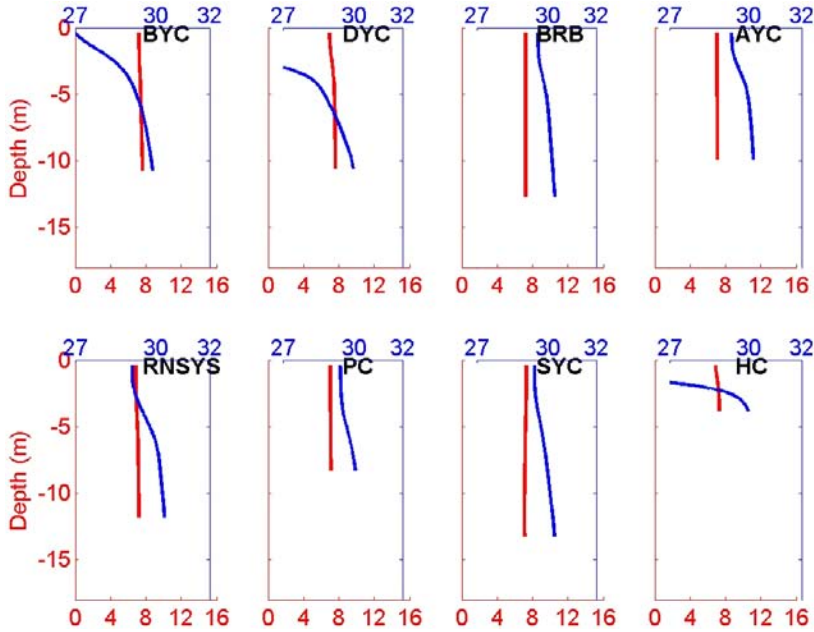
Ammonia: The ammonia levels are generally moderate and quite uniform. There are 2 (at B2) of the total of 12 samples below the 0.05 mg/L detection limit. The average concentration is about 0.074 mg/, with a max concentration of 0.12mg/L.

Metals: There are no guideline exceedences. The closest value to exceedence is the one detectable mercury concentration in sample (EE2-1) that is about 80% of the 0.025 ug/L guideline. Otherwise there are several 1 m copper samples that are about 50% of the 2.9 ug/L guideline.

Dissolved Oxygen: The dissolved oxygen data, scaled appropriately by a factor of 1.3, indicates that the surface DO levels are about 8.0 to 8.6 mg/L. The levels are lowest in the Basin. Outside of the Basin the levels are quite vertically uniform. The only guideline exceedence is the class SB (7.0 mg/L) guideline in the deeper water of the Basin. The scaled value in the deepest basin is about 4.0 mg/L. The YSI/scaled Seabird values are slightly lower than both the LOBO and BBPMP values.

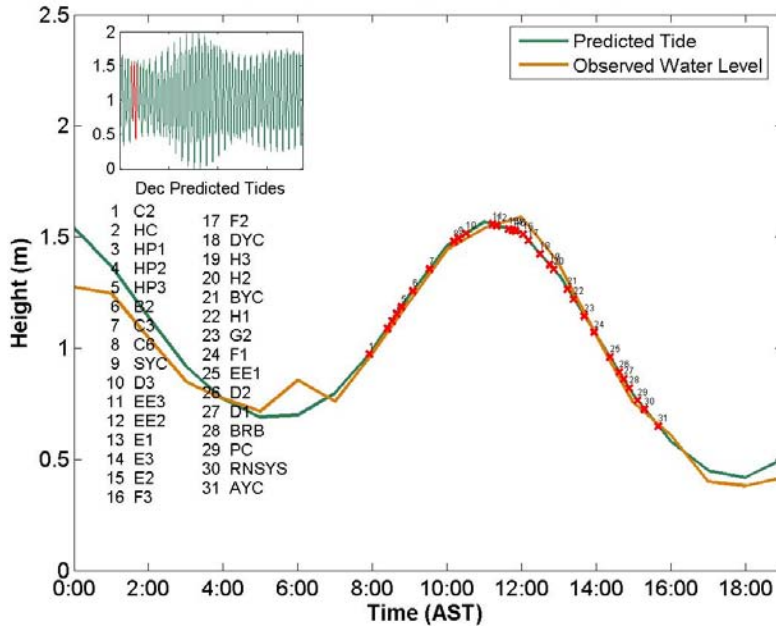


Yacht Clubs

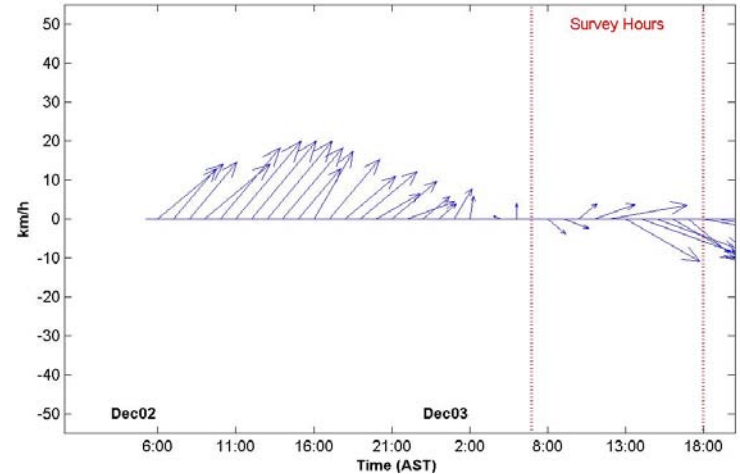


Rainfall and temperature data collected at Shearwater Autoport.
Cloud cover data collected at Shearwater Airport

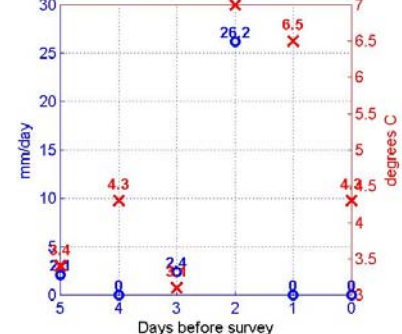
Halifax Harbour Water Level - Dec03



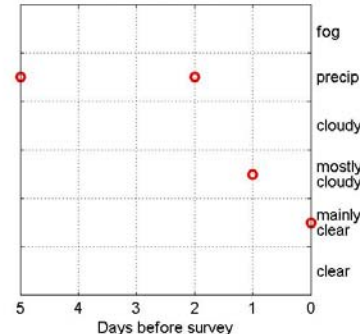
Wind Speed and Direction at Shearwater Jetty



RAINFALL AND MEAN TEMP

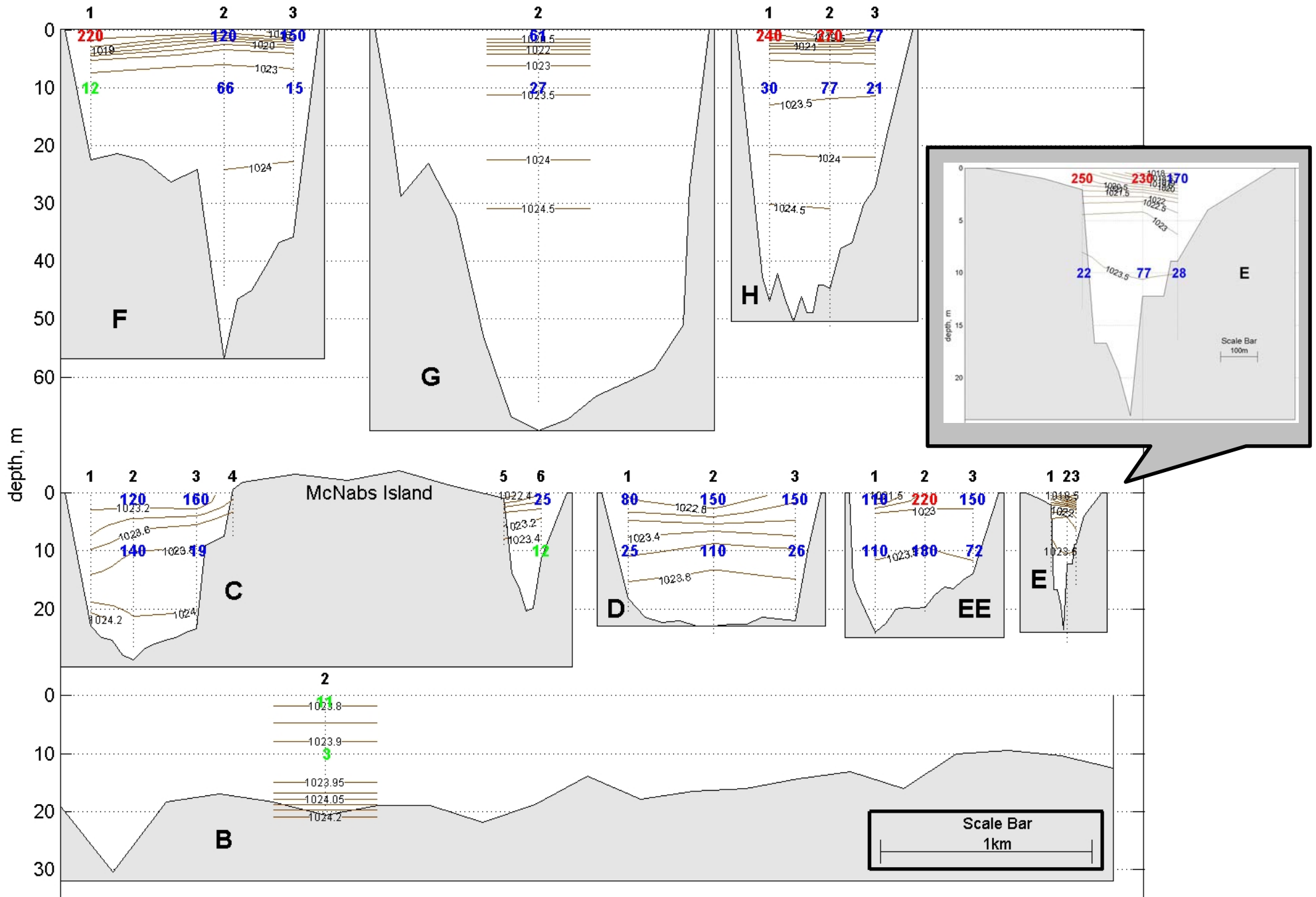


CLOUD COVER

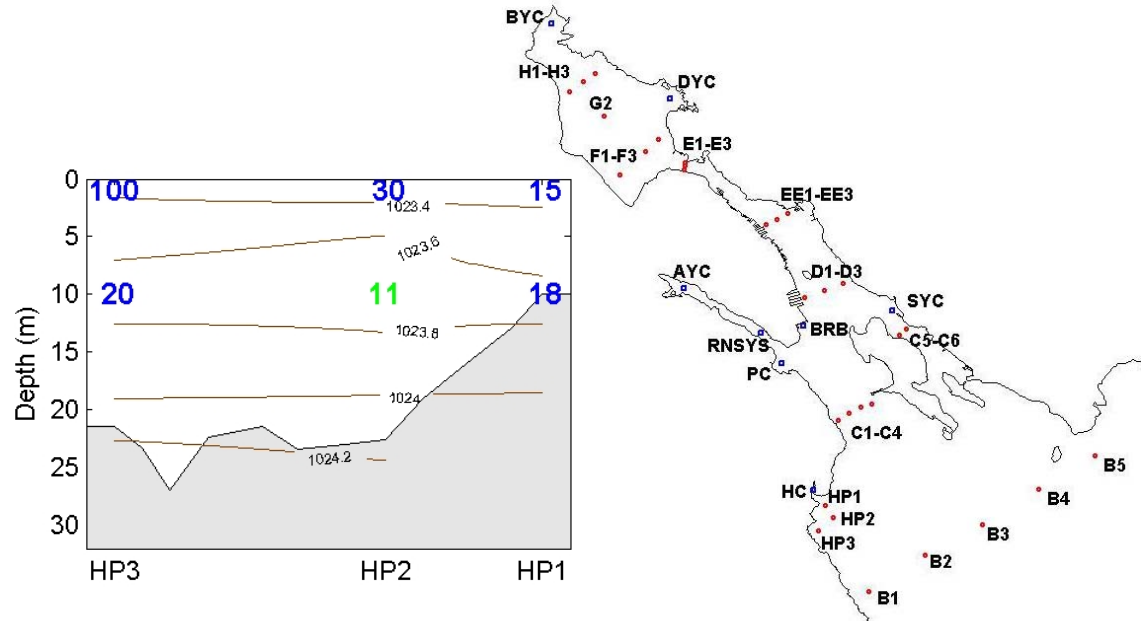
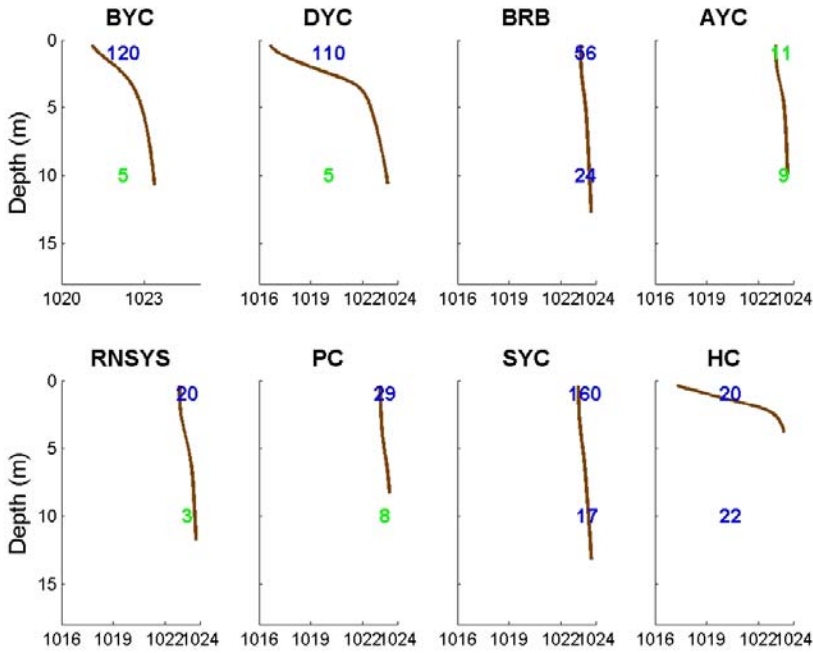


Salinity in PSU

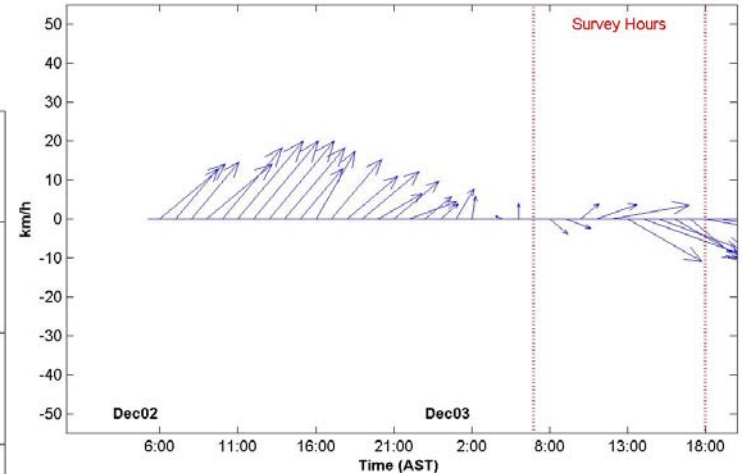
Temperature in °C



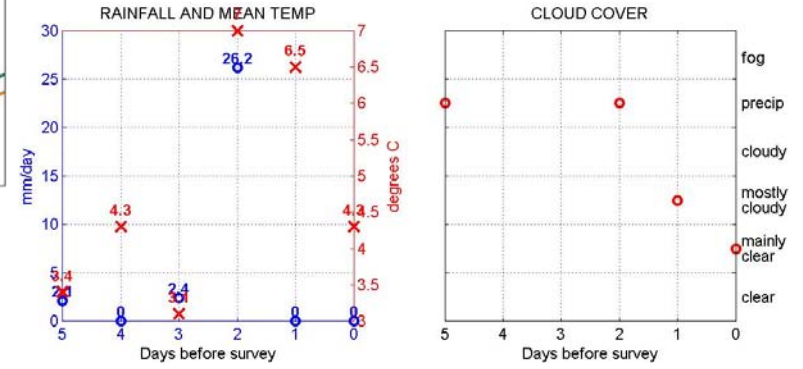
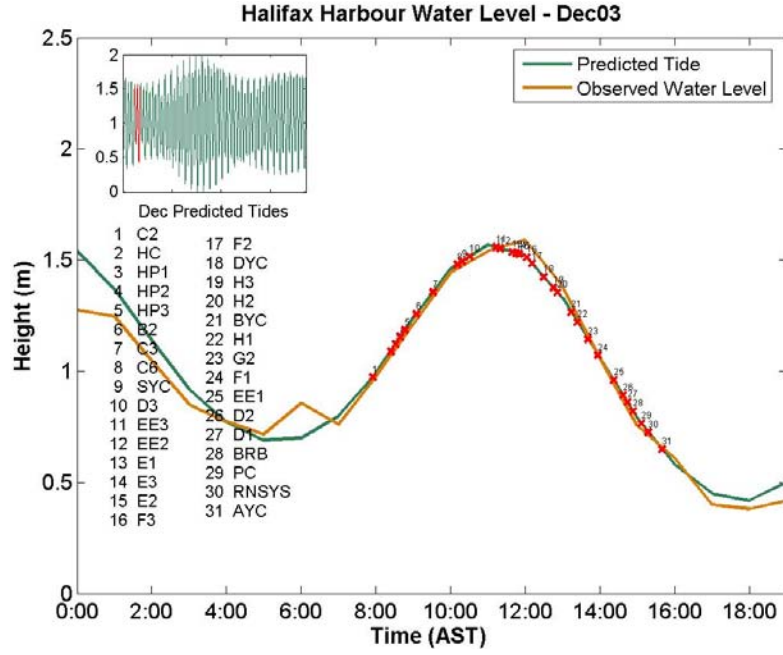
Yacht Clubs



Wind Speed and Direction at Shearwater Jetty

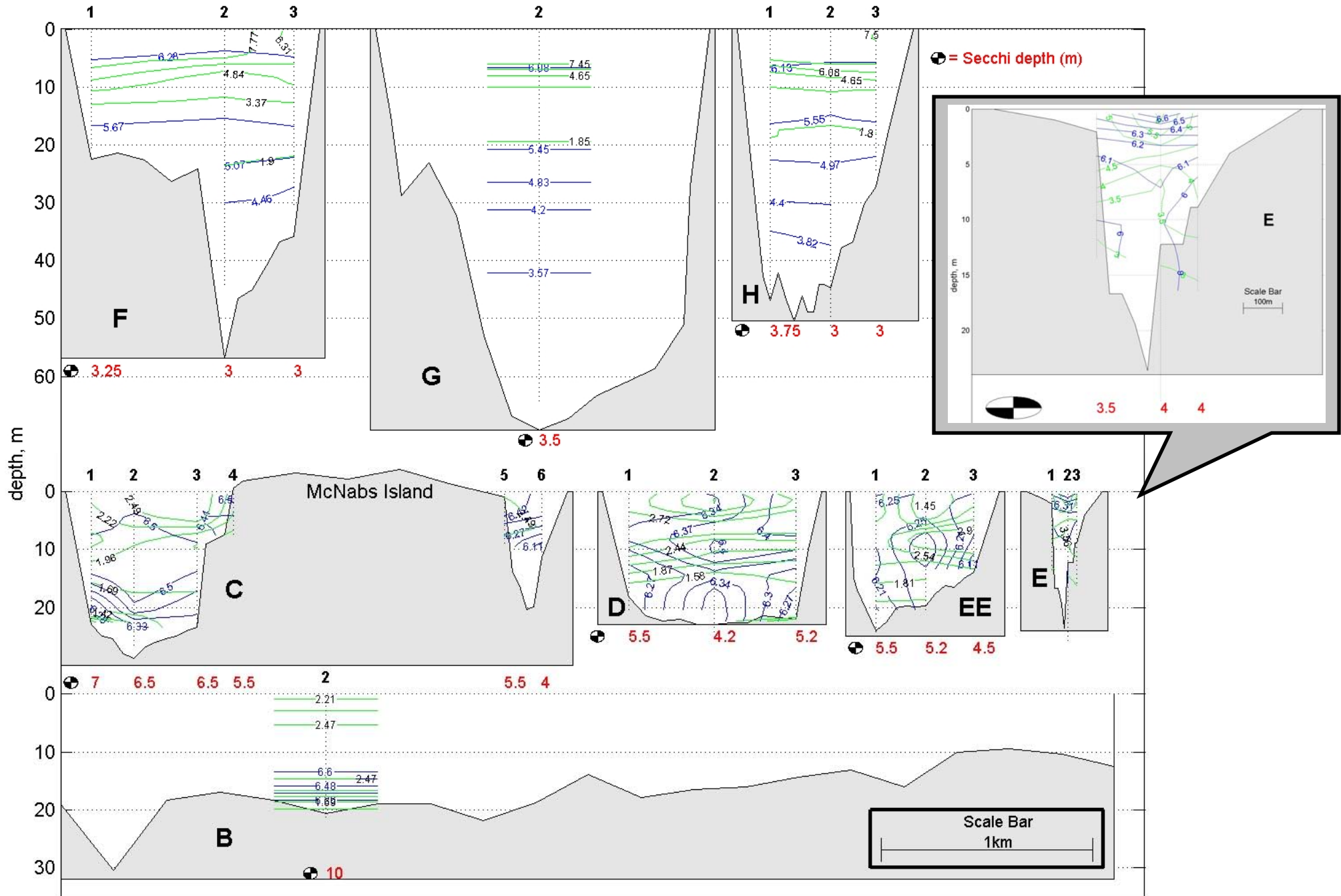


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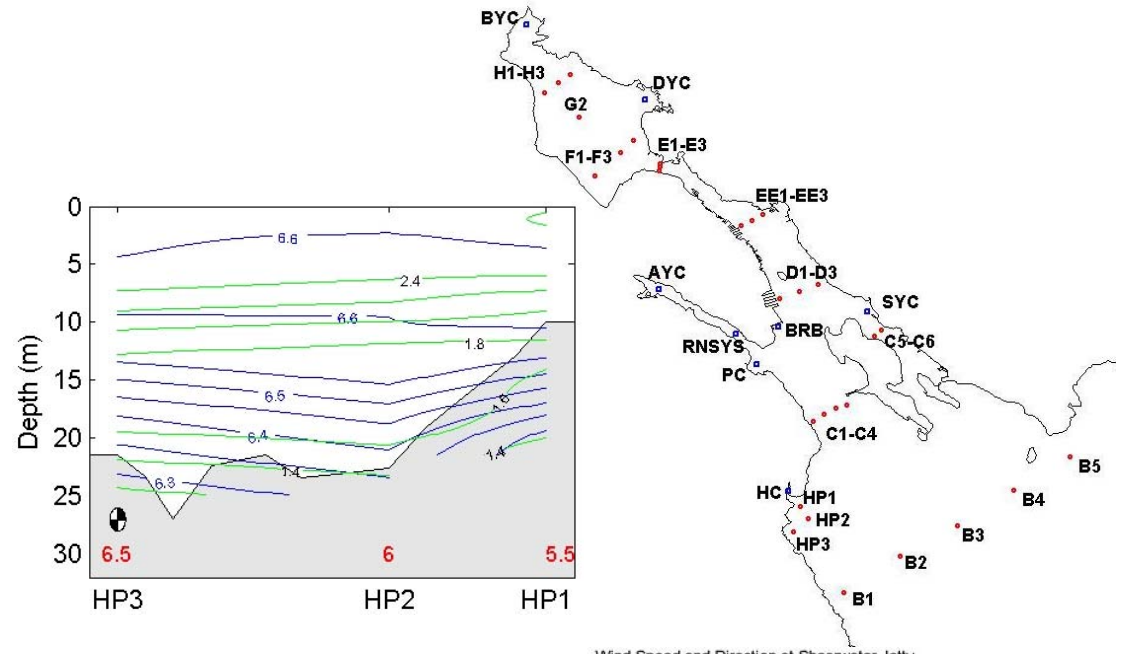
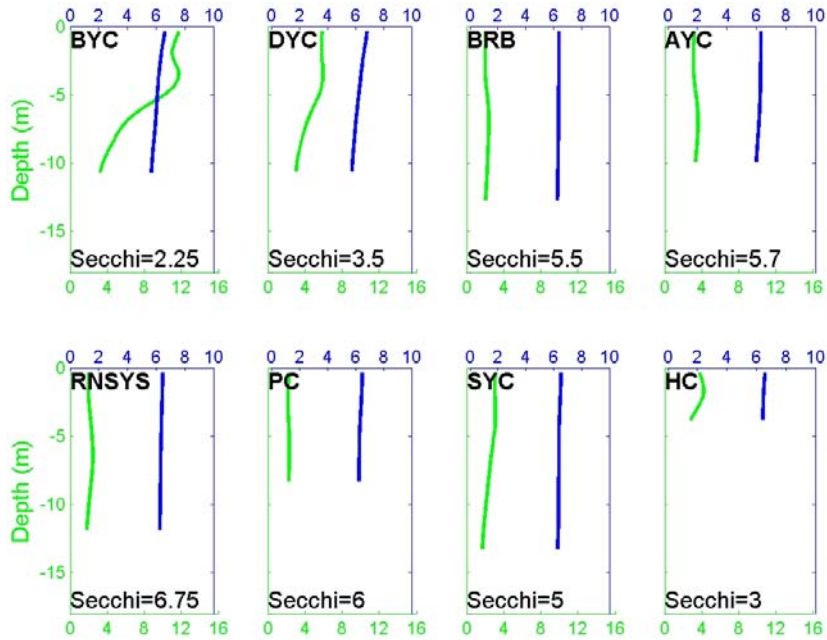


Potential Density in kg/m³

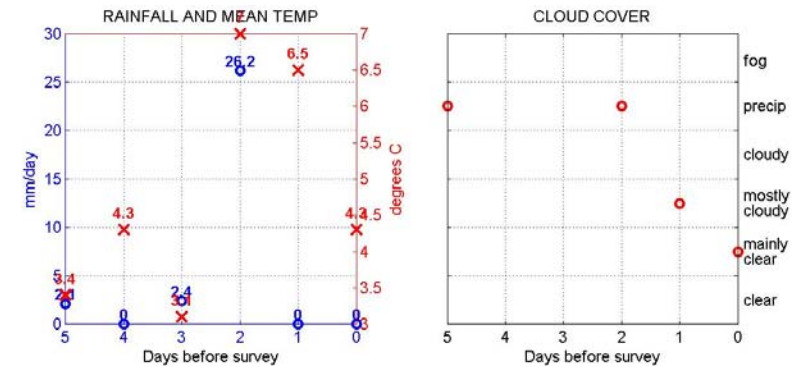
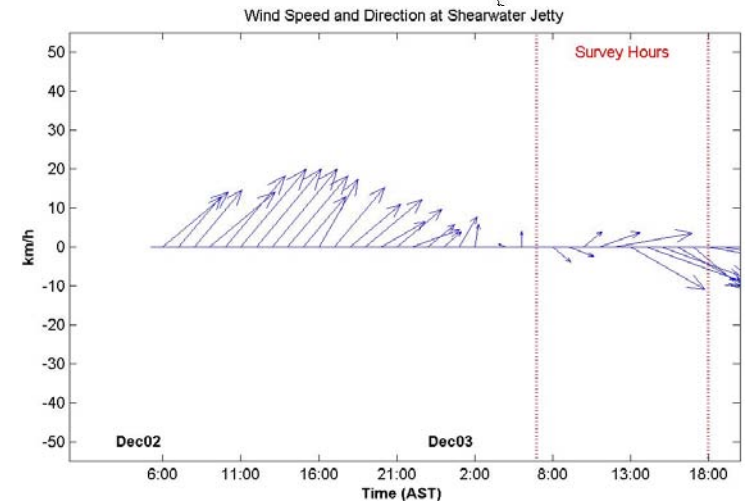
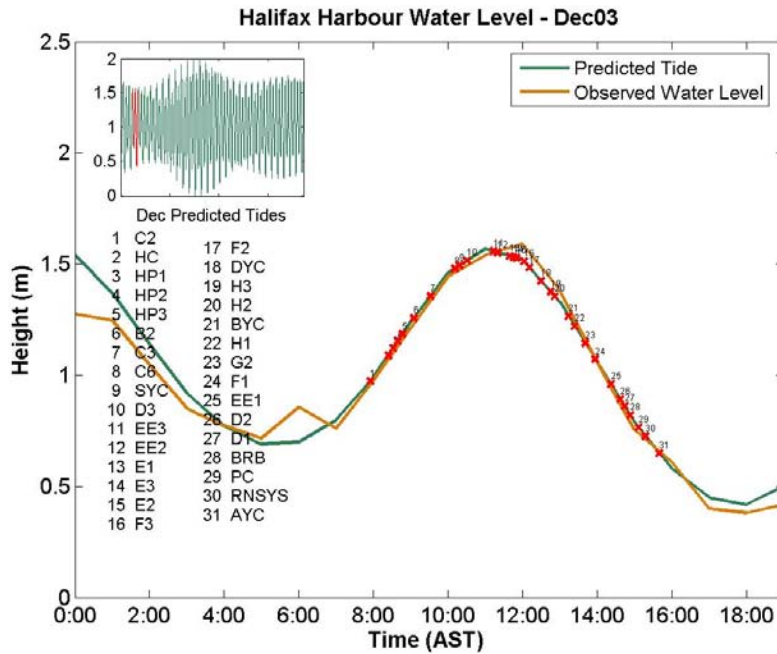
Fecal coliform: **above swimming limit (200 cfu/100mL)**
above shellfish limit (14 cfu/100mL)
below limits



Yacht Clubs



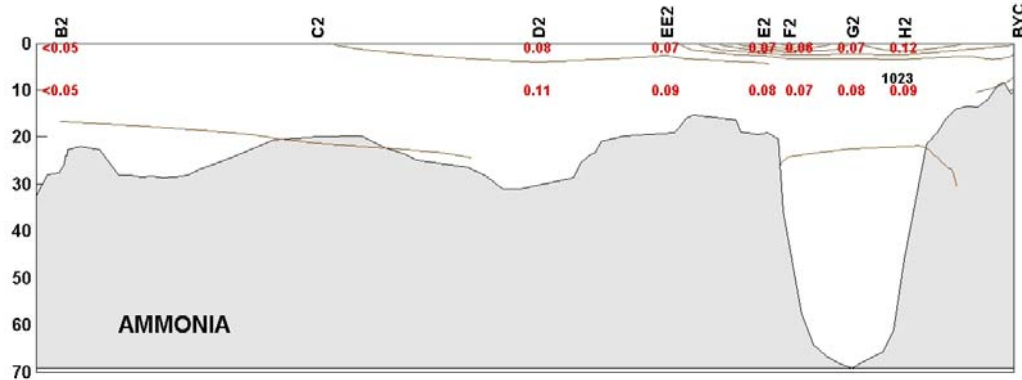
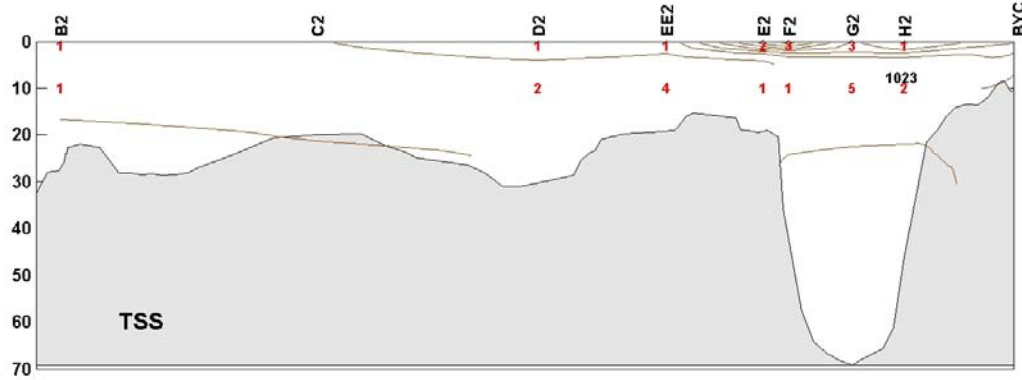
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DO in mg/L

Chlorophyll in mg/m³

CHEMISTRY



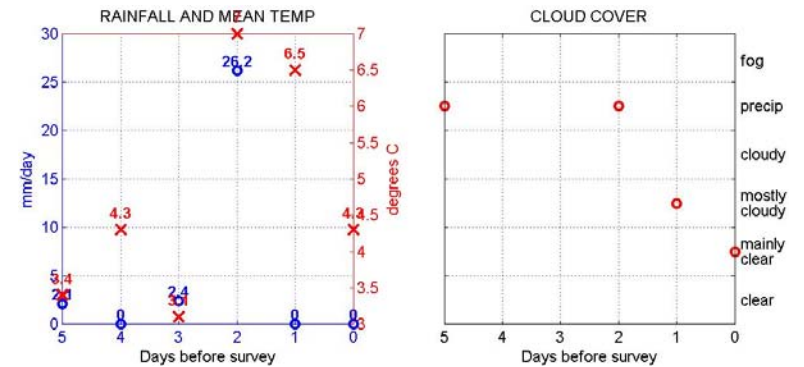
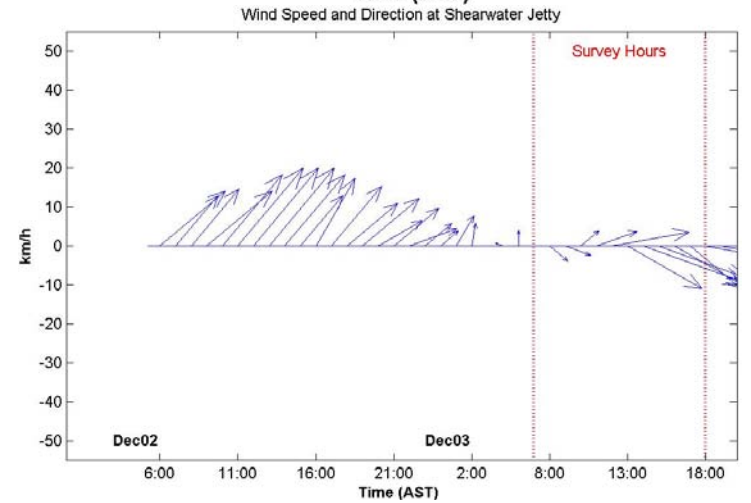
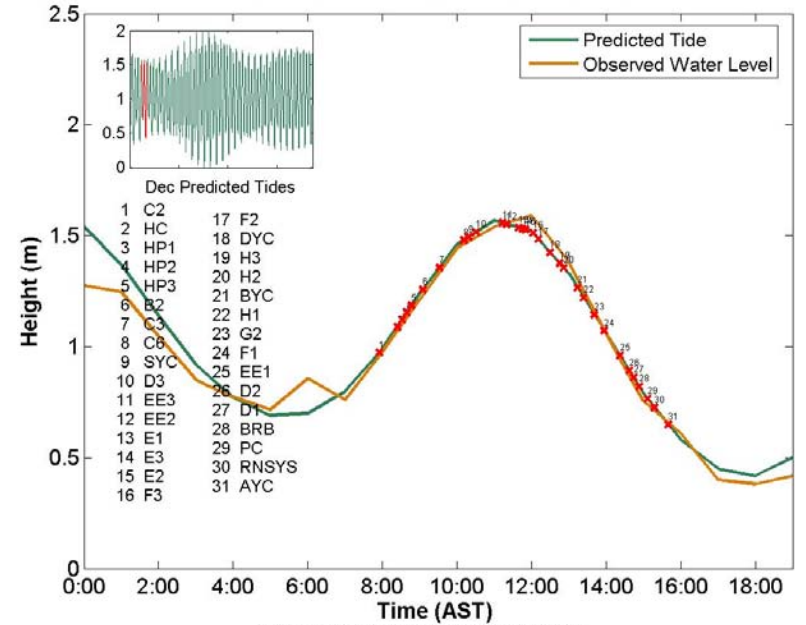
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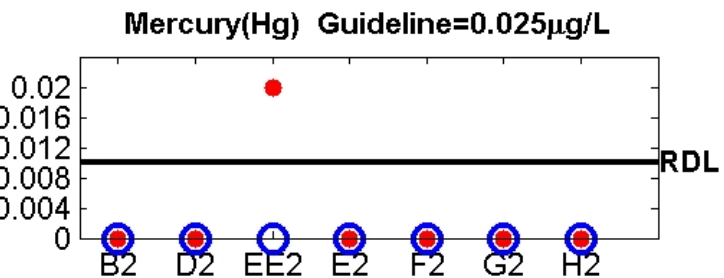
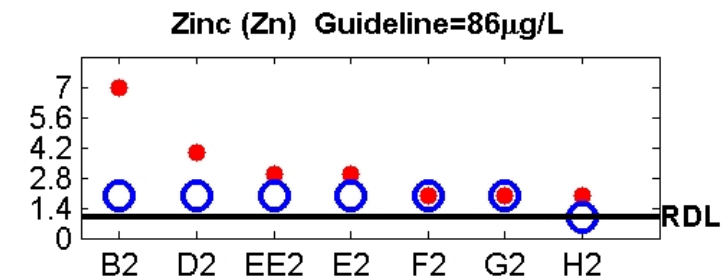
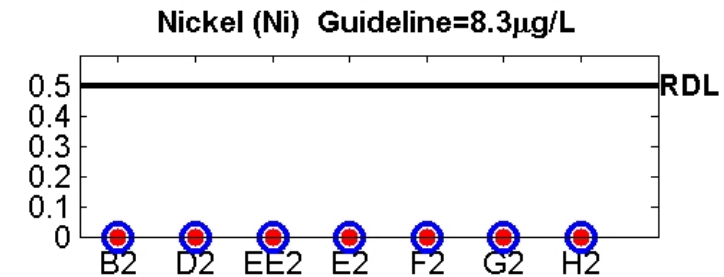
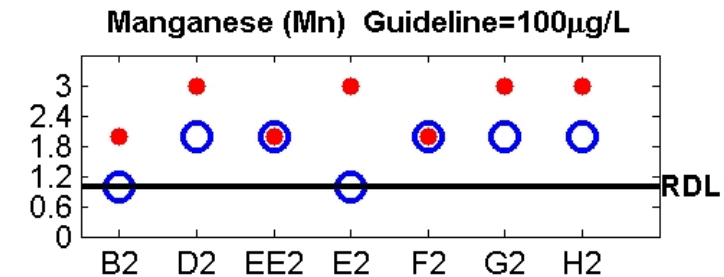
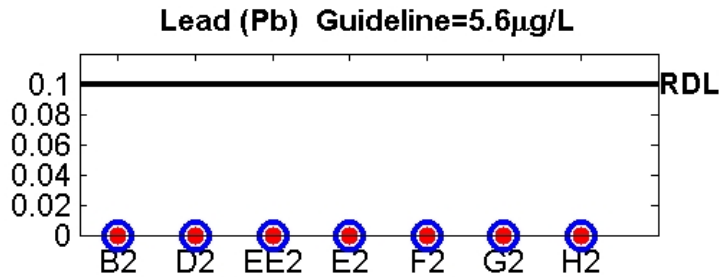
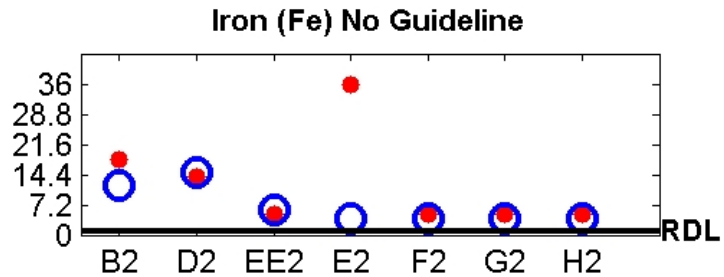
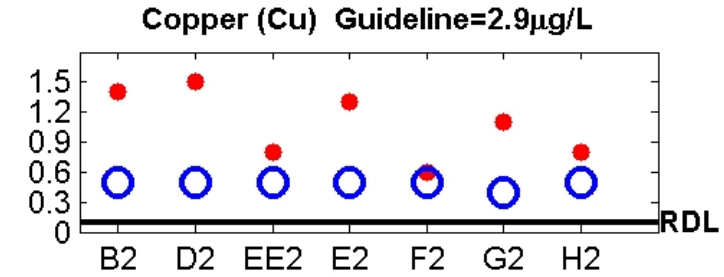
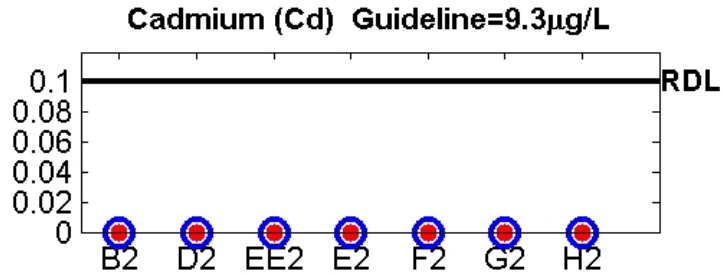
Potential Density in kg/m^3

Ammonia in mg/L

TSS in mg/L

Halifax Harbour Water Level - Dec03





LEGEND

- = Ten Metre Sample
- = One Metre Sample
- RDL = Reportable Detection Limit

HRM Water Quality Monitoring

Fecal Coliform Summary – December 03, 2008

