

Halifax Harbour Water Quality Monitoring Project

Survey Summary #176

Survey Date: 27 January 2009
Nature of Survey: Complete Survey
Report File (this document): HHWQMP_report176_090127.doc
Data File: HHWQMP_data176_090127.xls

Data Return:

Chemical: 100%
 Bacteria: 97%
 Profile: 94%
Overall: 96%

Sample Notes:

There was a minor spike in the DO data at B2. The unedited data is potted here but the spike has been edited out in the data file.

The profile at site E1 did not pass quality control, the data is plotted here but has been deleted from the data file.

DYC was not sampled and the BYC sample was relocated (44° 42.846' N, 63° 39.859' W) due to ice.

A supplementary CTD cast was taken at the LOBO buoy location (44.6291 N, 63.5915 W) at 16:25 local time (AST).

To match the collected reference data the presented DO values should be scaled by a factor of 1.6 (see data file cover sheet).

QA/QC samples:

Chemical Analysis		E2-1m	
Detectable Parameter	Units	Reference Sample	QA/QC
Ammonia (as N)	mg/L	0.09	0.09
Total Suspended Solids	mg/L	2.0	3.0
Copper	ug/L	0.4	0.4
Iron	ug/L	9.0	12.0
Manganese	ug/L	3.0	4.0
Zinc	ug/L	2.0	2.0

Fecal Coliform (CFU/100ml)

Site	C6-10m	PC-10m	E2-1m
Reference	45	82	22
QA/QC	16	30	15

Comments:

General: The weather has been dry with no precipitation in the five days before the survey. Overall, the Harbour is less fresh (more saline) than the previous week. The bottom water has warmed slightly suggesting the intrusion of warmer saltier shelf bottom water. The density stratification remains quite low. The fecal coliform levels are high in the southern part of the Inner Harbour, mostly section D in both the 1 and 10 m samples. The levels are higher on the Halifax side. This distribution is likely due to source location and generally down Harbour winds.

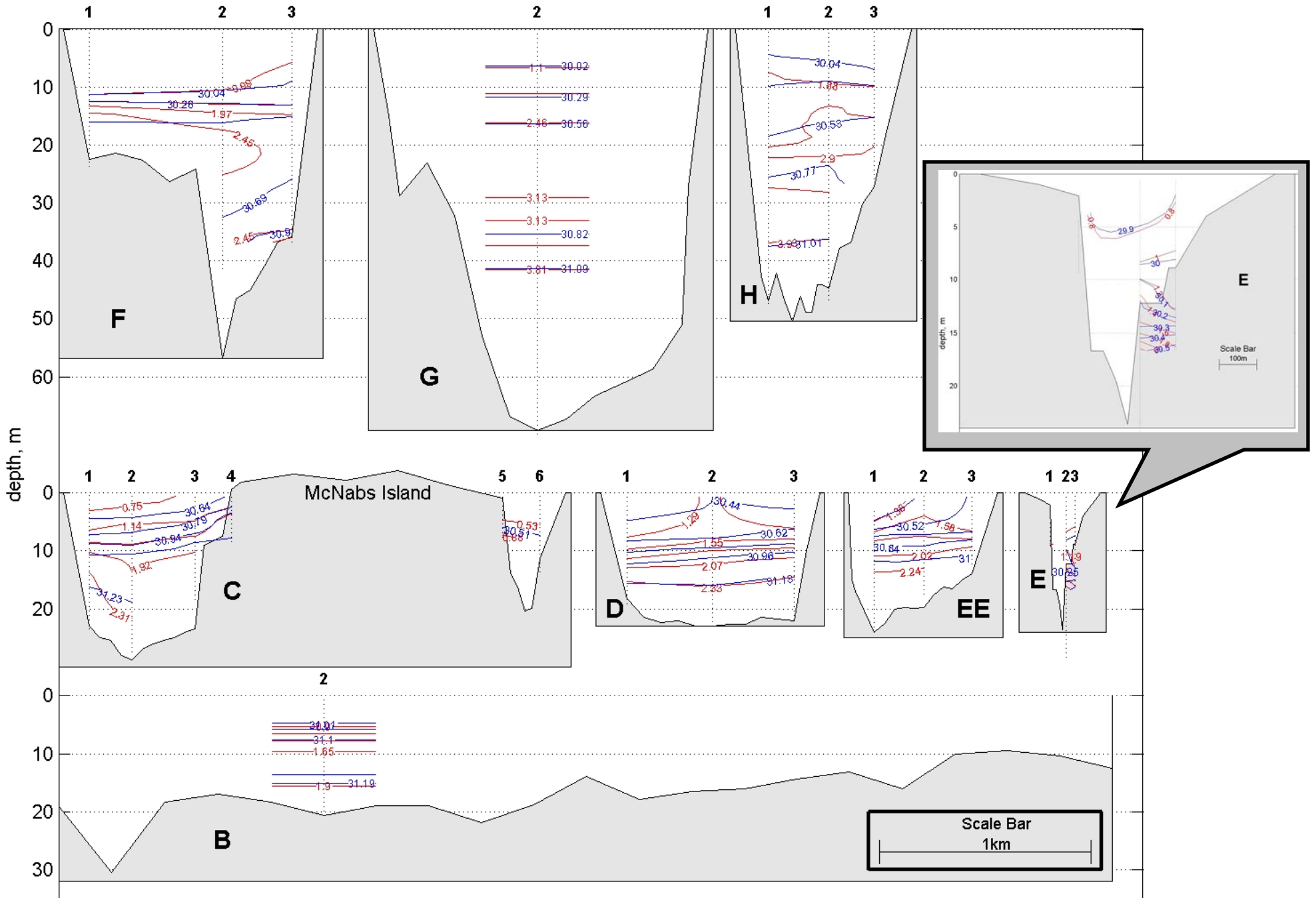
Fluorescence: The fluorescence data indicates minimal phytoplankton activity with values all < 3.0 mg/m³ (mostly <2.0 mg/L) or about annual minimum levels. The highest values are in the Basin.

TSS: The TSS levels are mostly quite low. The max value is 8.0 mg/L at F2-10 m. Otherwise the values are all below 4.0 mg/L with a mean of 2.6 mg/L.

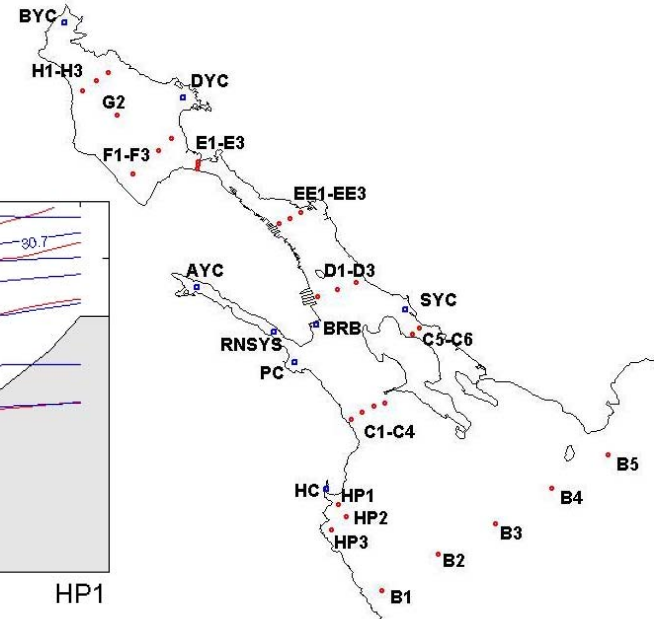
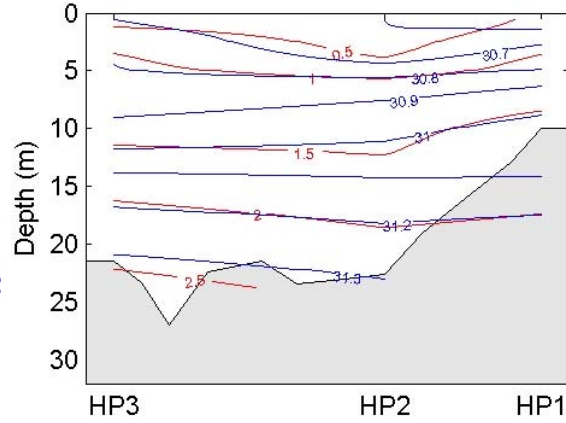
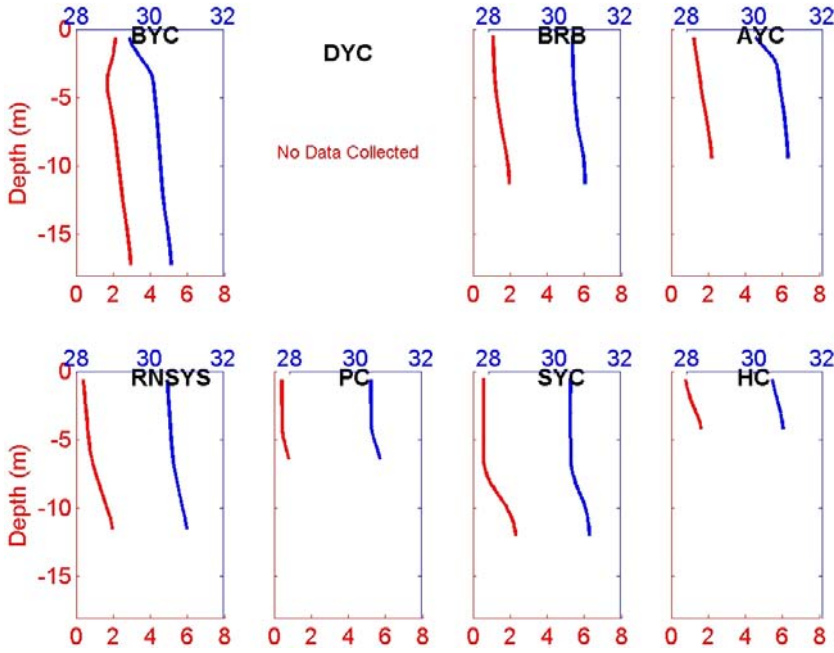
Ammonia: The ammonia levels are moderate, with detectable concentrations (>0.05 mg/L) in all samples except at B2 in the Outer Harbour. The highest values are in the Basin and generally decrease going out of the Harbour. The mean value is about 0.08 mg/L

Metals: There are no guideline exceedences. The single detectable mercury concentration (B2-10m) is closest to guideline exceedence. The value is 40% of the 0.025 ug/L guideline.

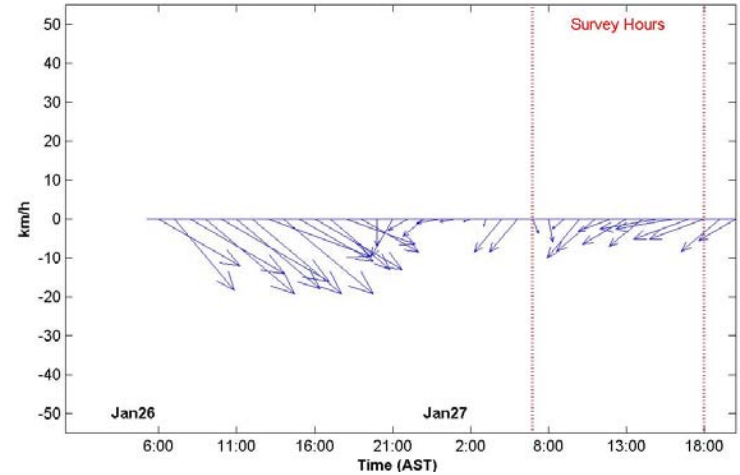
Dissolved Oxygen: The dissolved oxygen data, scaled appropriately by a factor of 1.6, indicates that the surface (< 20 m) DO levels are very high with all values between 10 and 12 mg/L. There is a slight decrease with depth, particularly in the Basin. In the deep Basin the DO remains low at about 3-4 mg/L.



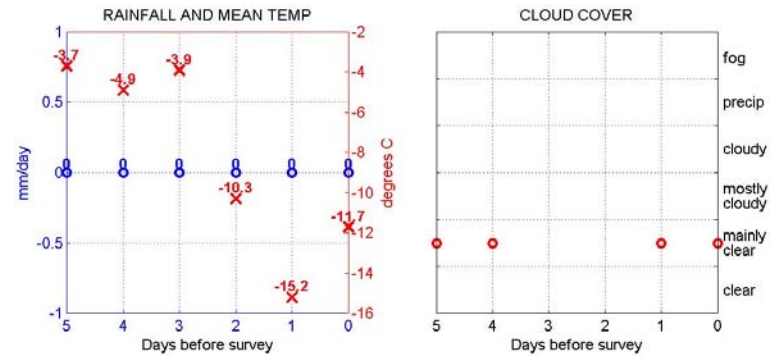
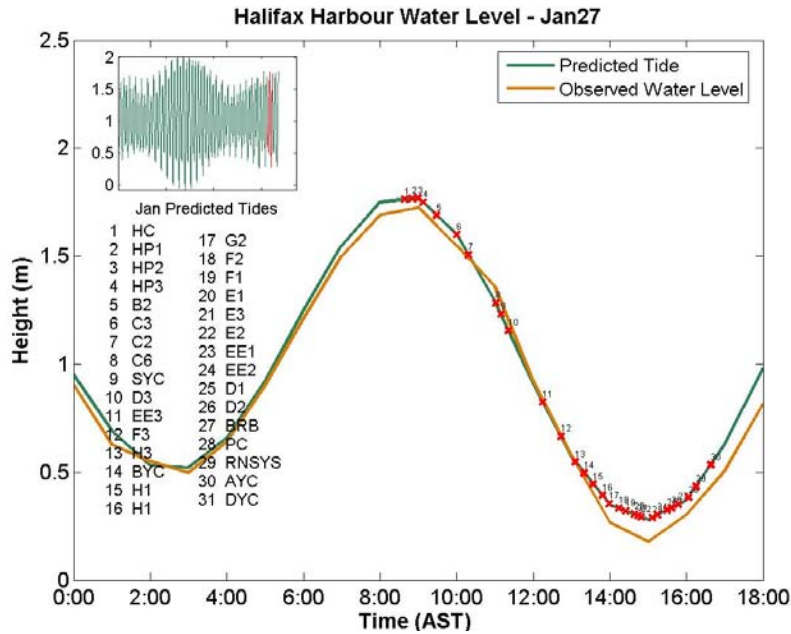
Yacht Clubs



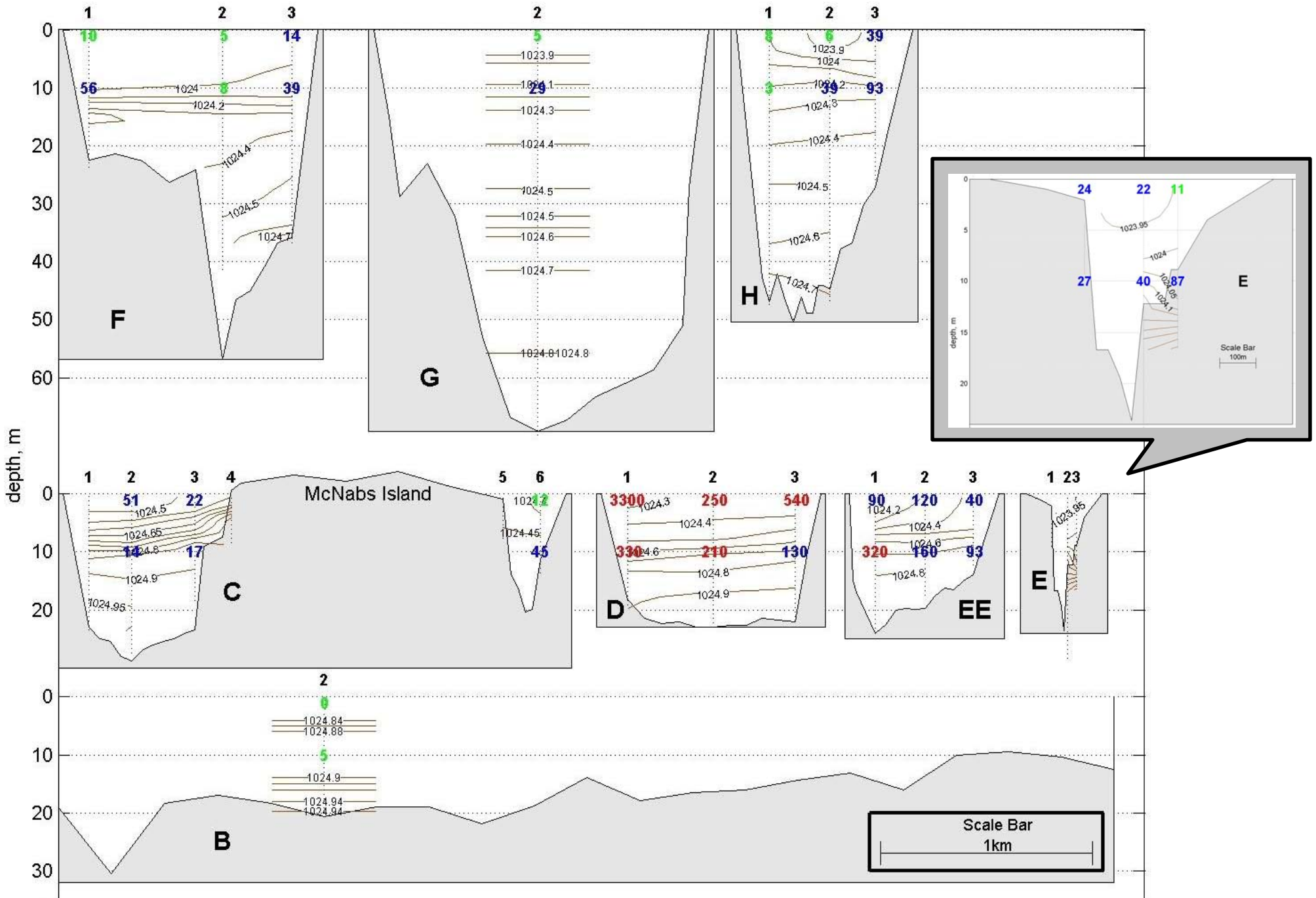
Wind Speed and Direction at Shearwater Jetty



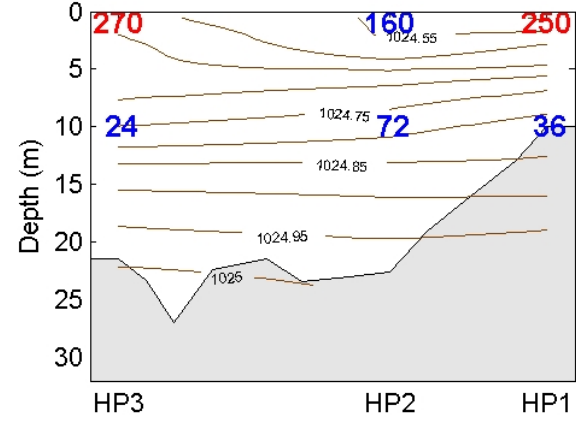
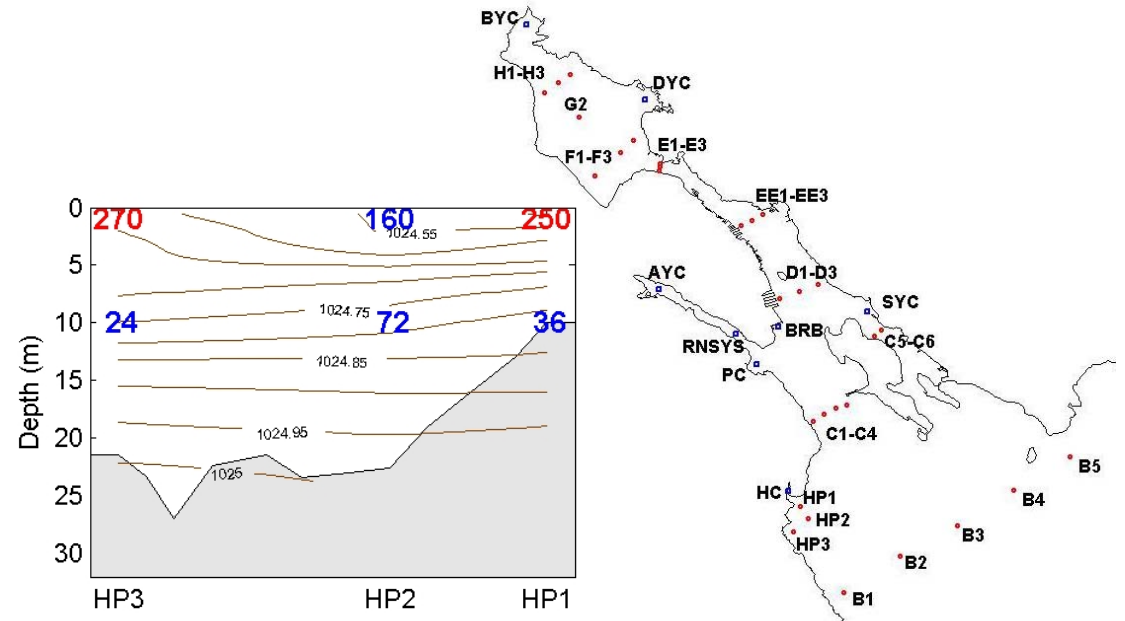
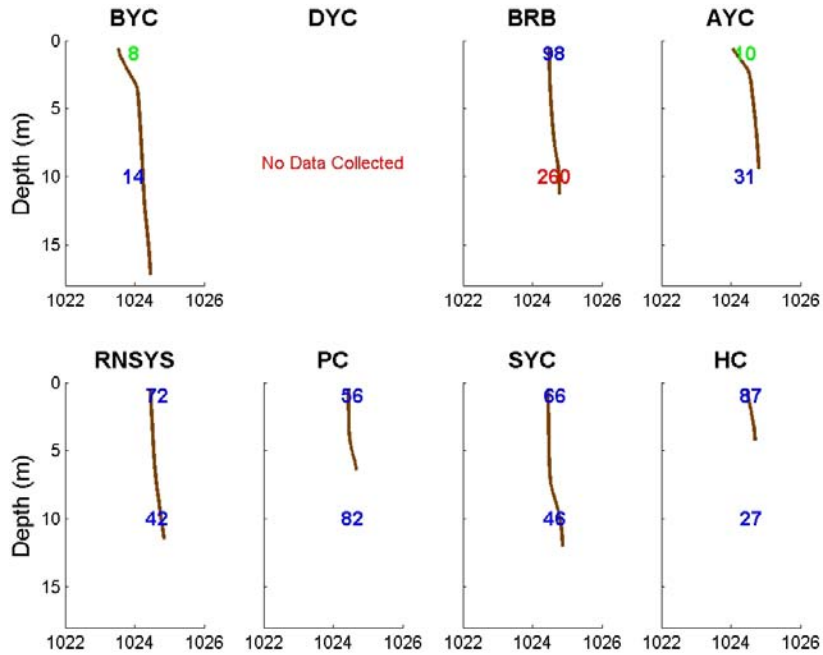
Rainfall and temperature data collected at Shearwater Autoport.
Cloud cover data collected at Shearwater Airport



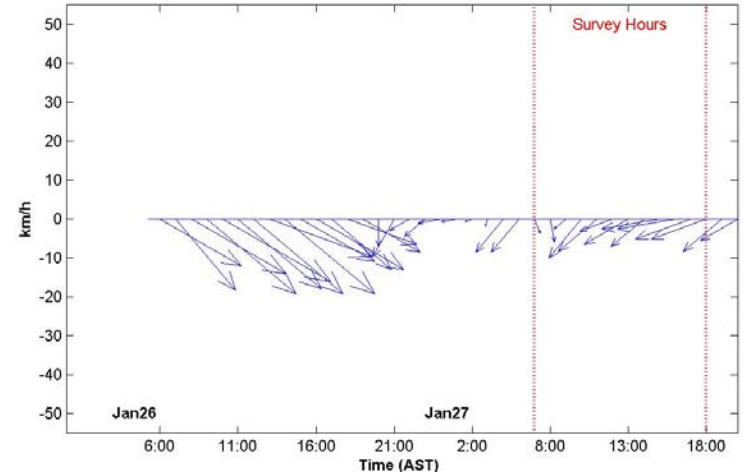
Salinity in PSU Temperature in °C



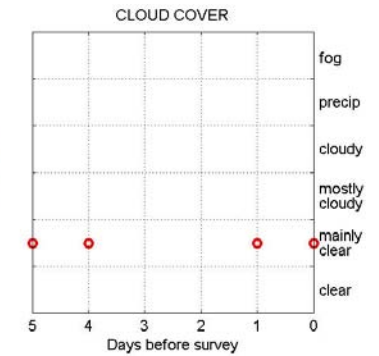
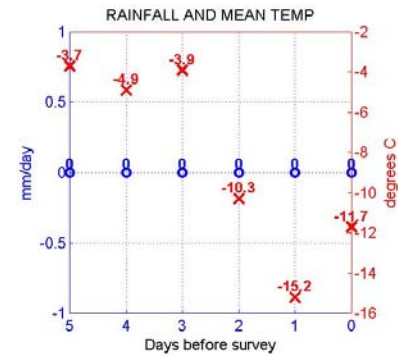
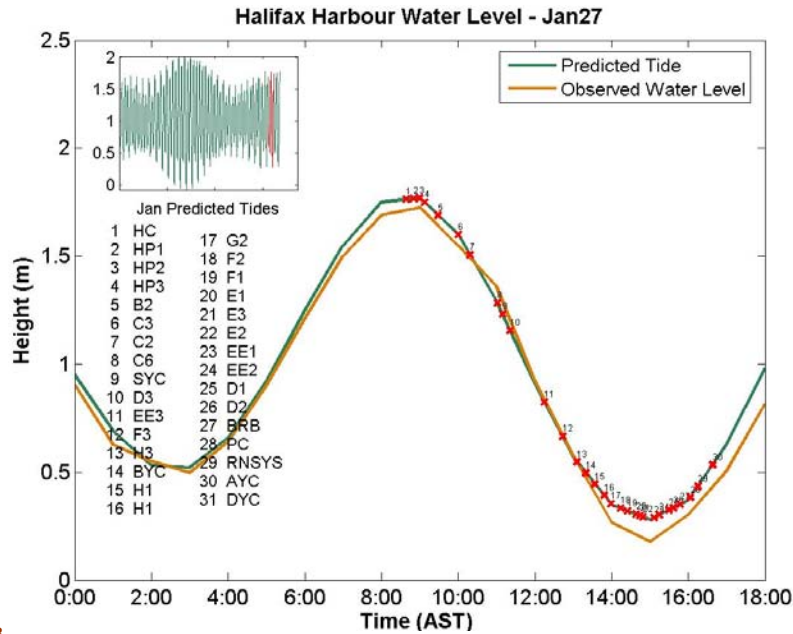
Yacht Clubs



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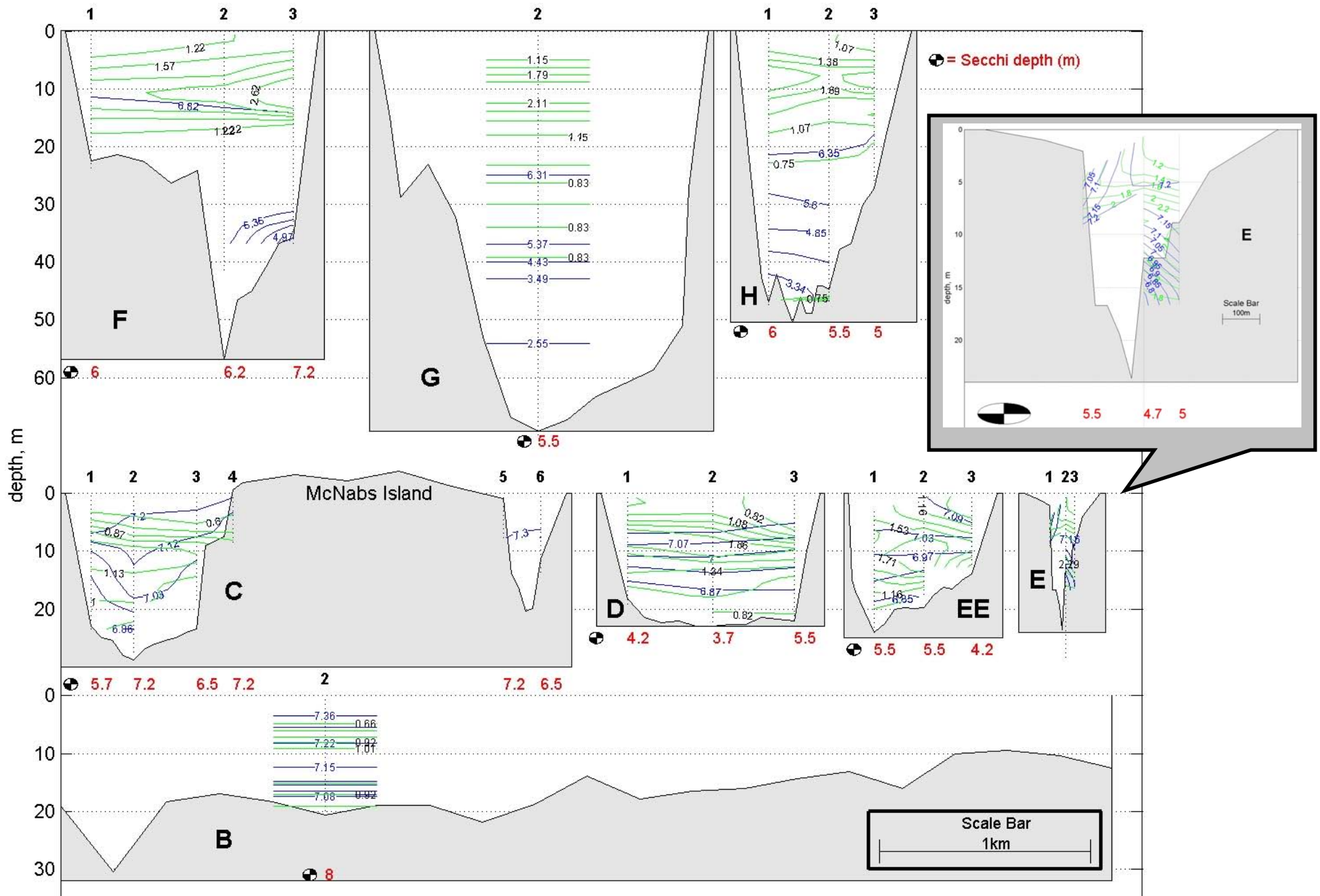


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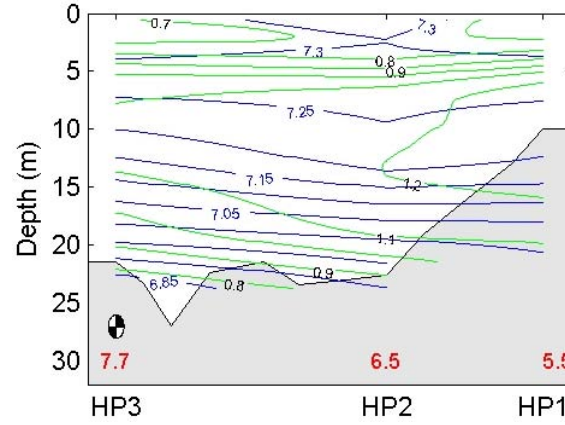
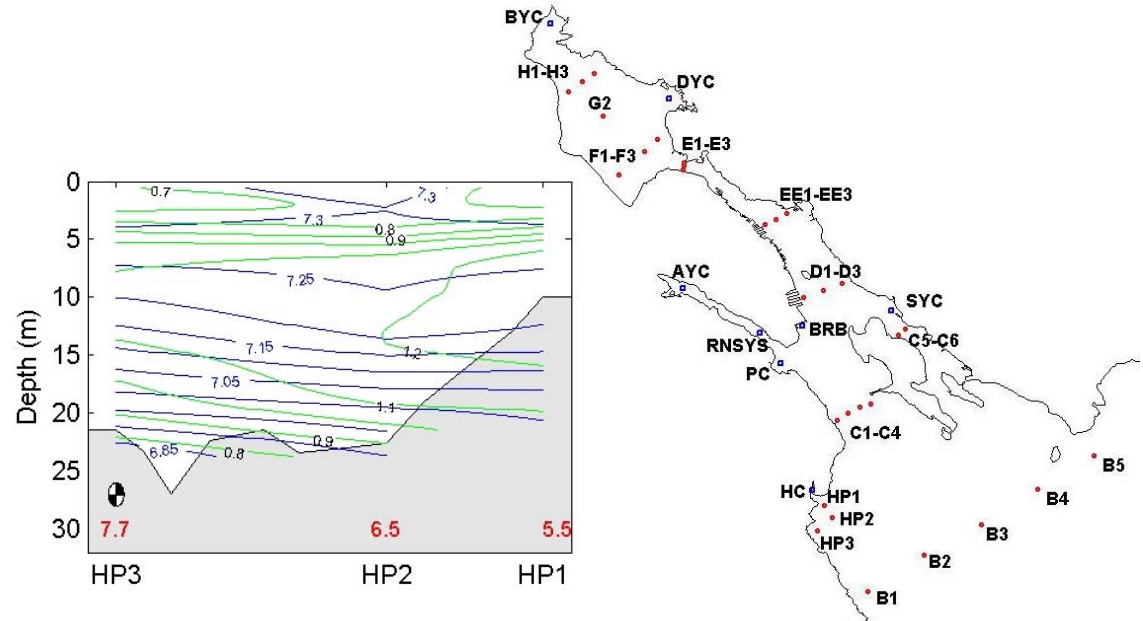
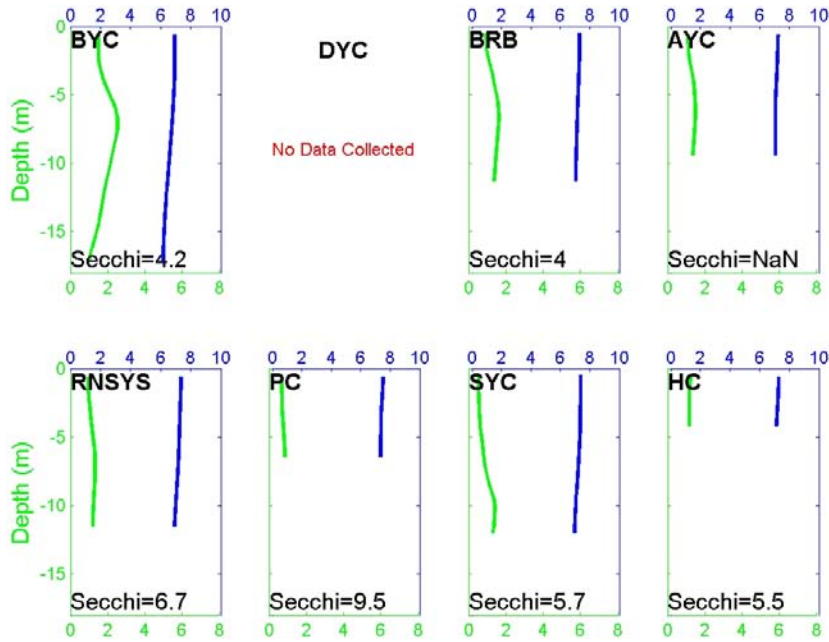


Potential Density in kg/m^3

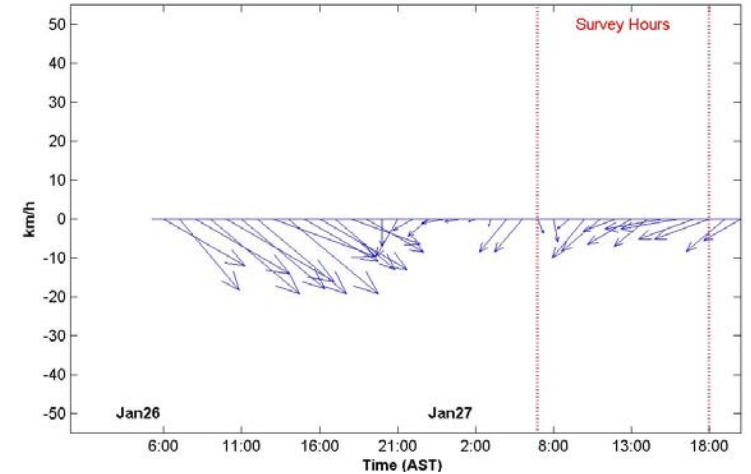
Fecal coliform: **above swimming limit (200 cfu/100mL)**
above shellfish limit (14 cfu/100mL)
 below limits



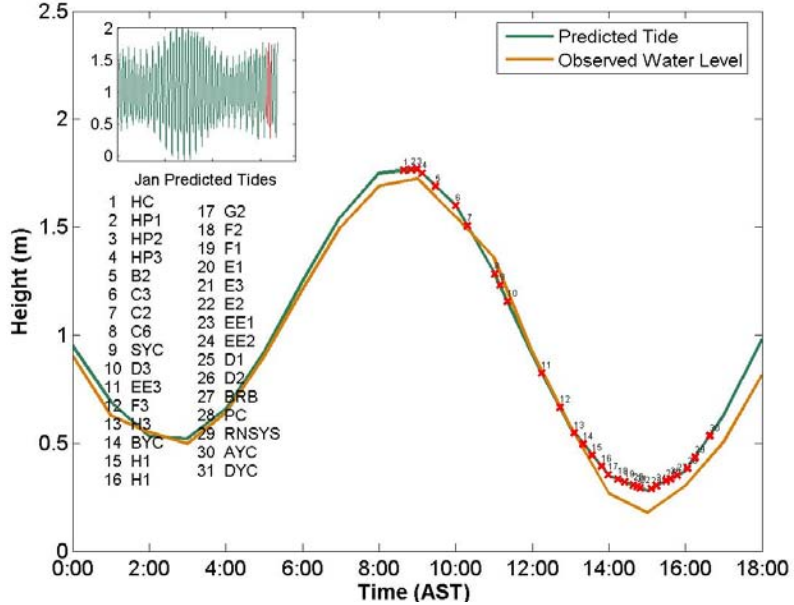
Yacht Clubs



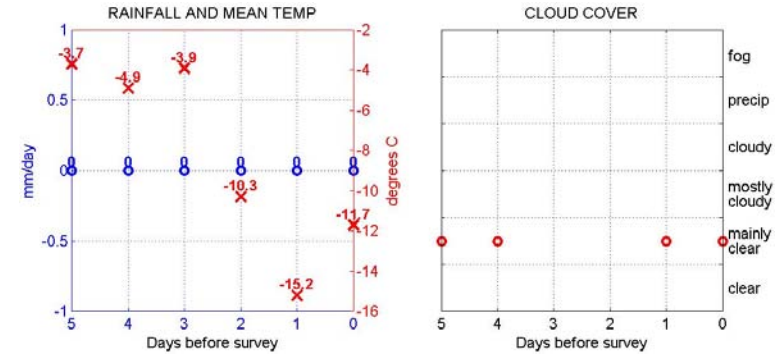
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Halifax Harbour Water Level - Jan27

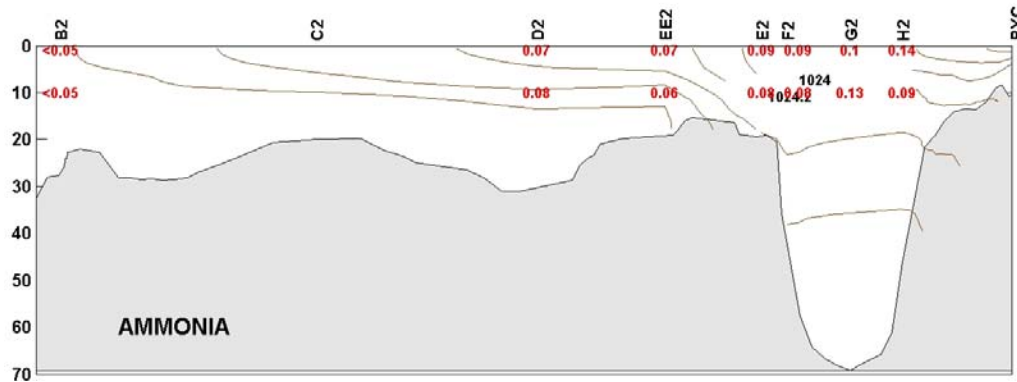
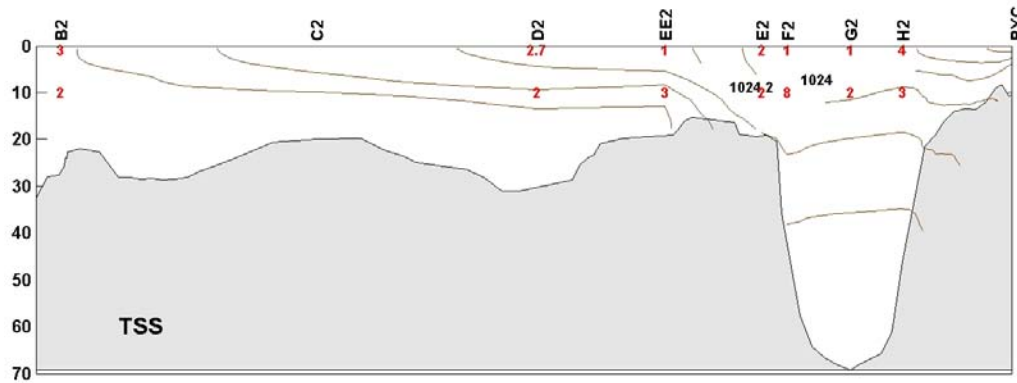


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DO in mg/L Chlorophyll in mg/m³

CHEMISTRY



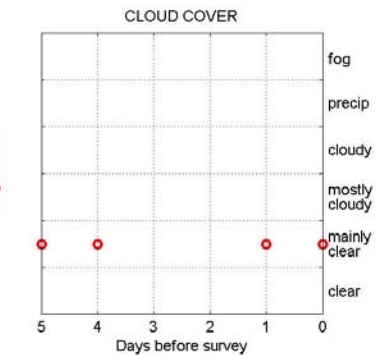
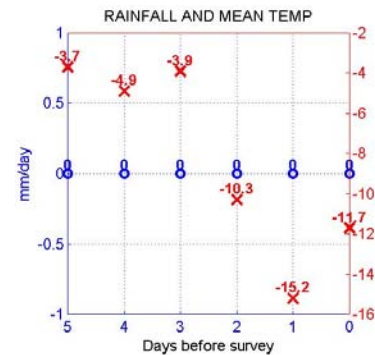
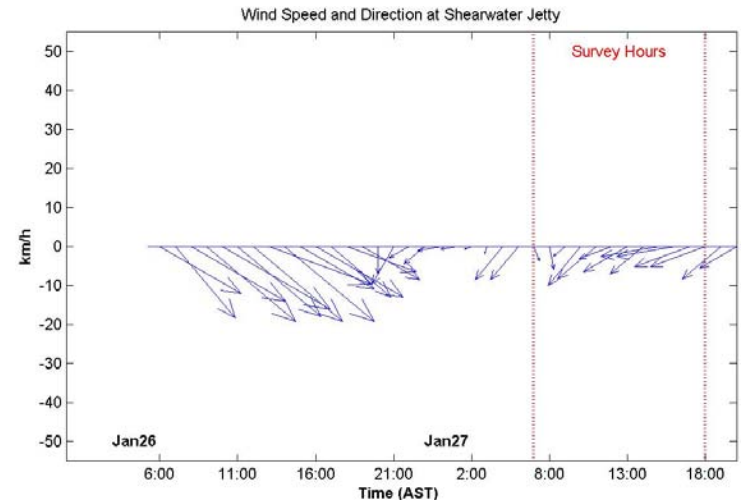
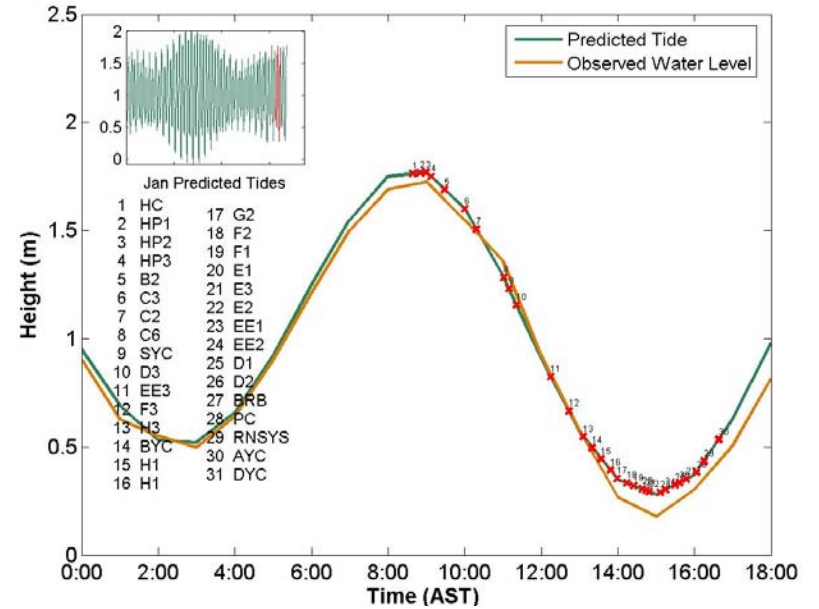
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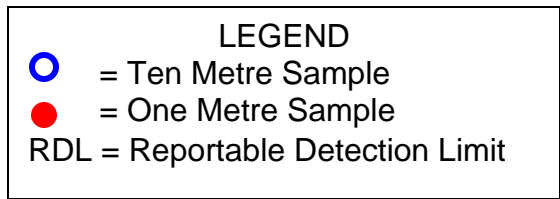
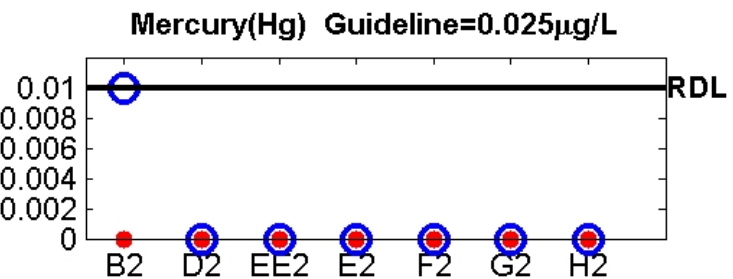
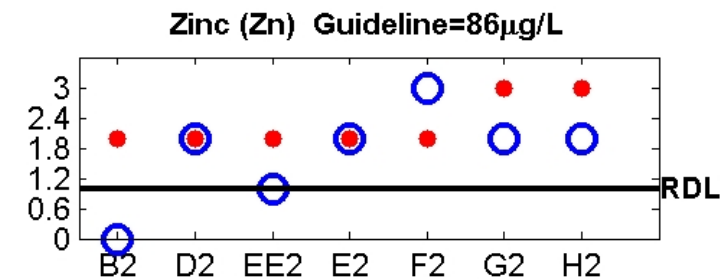
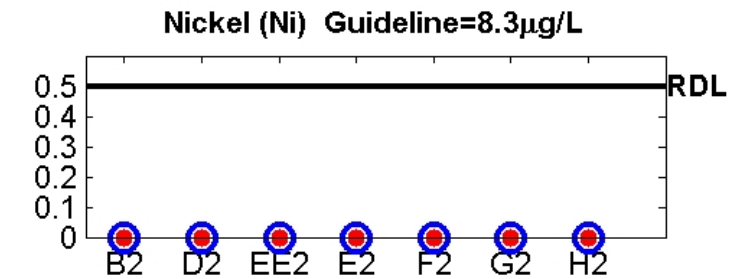
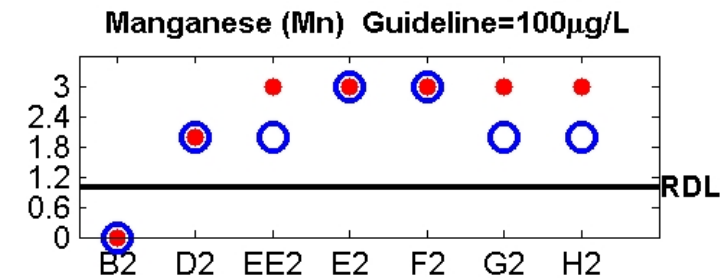
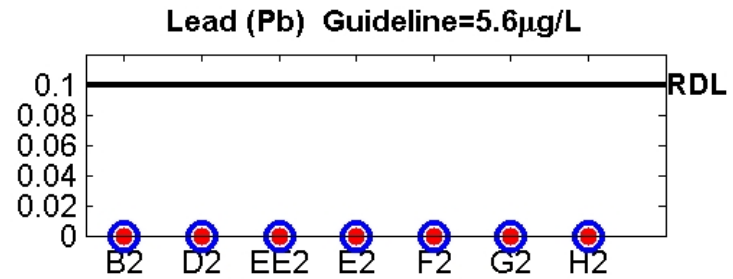
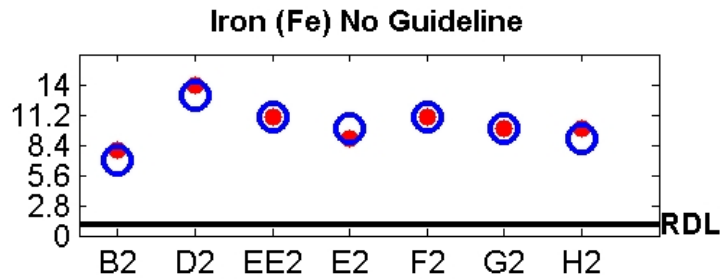
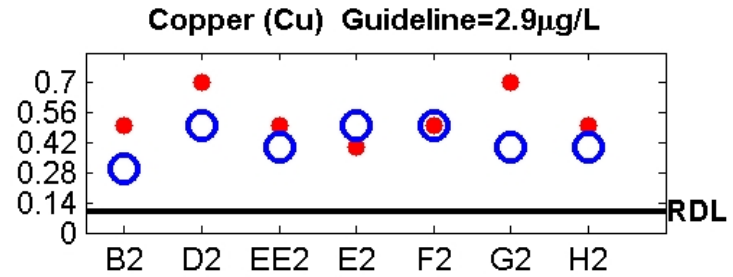
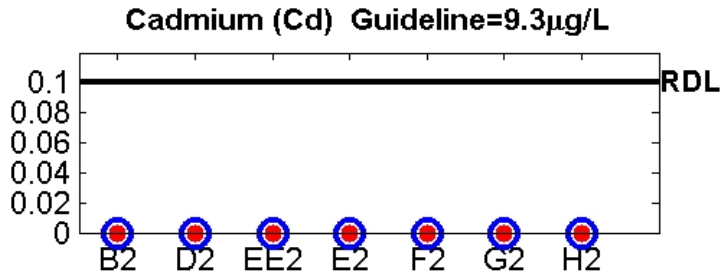
Potential Density in kg/m^3

Ammonia in mg/L

TSS in mg/L

Halifax Harbour Water Level - Jan27





HRM Water Quality Monitoring

Fecal Coliform Summary – January 27, 2009

