

Halifax Harbour Water Quality Monitoring Project

Weekly Summary #114

Survey Date: 10 October 2006
Nature of Survey: Complete Survey
Report File (this document): HHWQMP_report114_061010.doc
Data File: HHWQMP_data114_061010.xls

Data Return:

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

Sample Notes:

There were only two fecal coliform QA/QC samples this week rather than the normal four.

This is the first week of regular sampling of the three hospital point sites (HP1-3). This is also the first week that the three E section sites are sampled consecutively.

QA/QC samples:

Chemical Analysis		E2-10m		H2- 1m	
Detectable Parameter	units	reference sample	Dup	reference sample	QA/QC
Ammonia (as N)	mg/L	<0.05	n/a	<0.05	<0.05
Total Suspended Solids	mg/L	2.9	n/a	8	6
Copper (Cu)	ug/L	0.5	0.5	0.6	0.7
Iron (Fe)	ug/L	17.0	16.0	9.0	8.0
Lead (Pb)	ug/L	0.1	ND	ND	ND
Manganese (Mn)	ug/L	3.0	3.0	3.0	3.0
Zinc (Zn)	ug/L	3.0	3.0	2.0	2.0

Fecal Coliform (CFU/100ml)

Site	H2-1M	C3-1M
Reference	5	1
QA/QC	10	0

Comments:

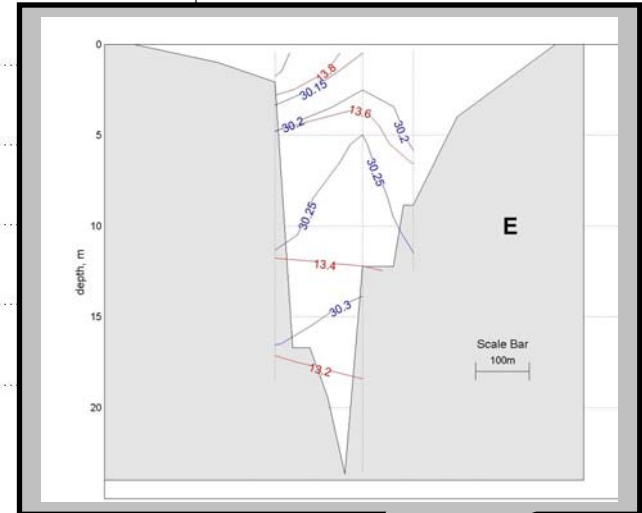
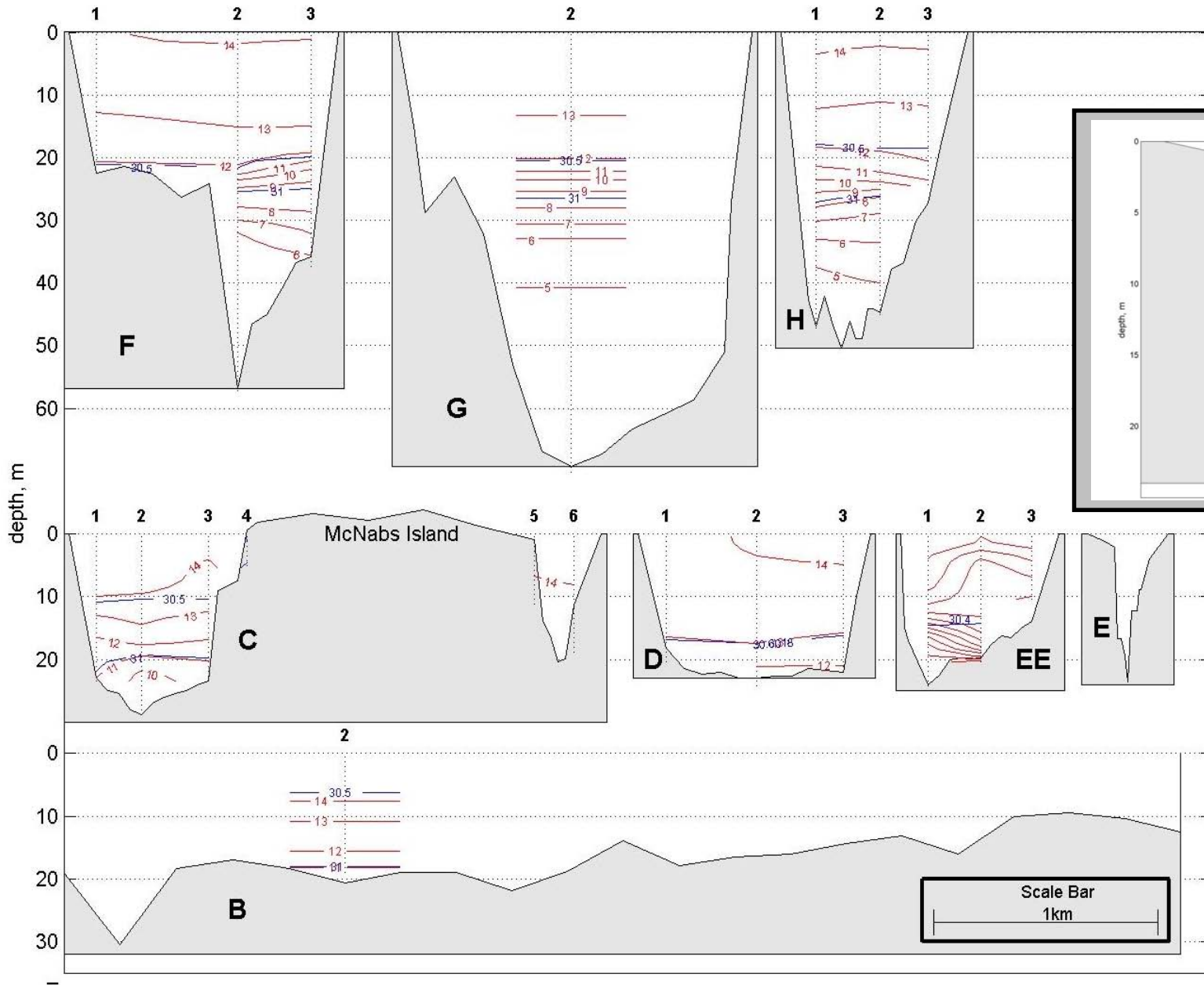
General: The weather has been relatively dry and mainly clear. There was a light, variable wind on sampling day. The salinity distribution is quite uniform horizontally and vertically throughout the harbour. The variation in surface salinity from the northern Basin (H section) to the Outer Harbour (B section) is only 0.3 PSU, and the salinity is everywhere > 30 PSU. In the Inner Harbour and top 20 m in the Basin, the vertical salinity difference in the top 20 m is about 0.6 PSU everywhere. The surface temperature is also uniform at about 14°C. The FC concentrations are not particularly high but show higher concentrations in the 10 m samples in the Basin, typical of estuarine flow situations, in spite of the weak stratification.

Fluorescence: Levels of fluorescence are quite high, and there appears to be a phytoplankton bloom occurring. The profile maximum values are highest at the head of the Basin (approx 54 mg/m³ at BYC), and decrease monotonically going out of the Harbour to about 6 mg/m³ at B2. The maximum value is near surface at BYC but everywhere else occurs at about 6-7 m.

Dissolved Oxygen: There is a surface layer (5-10m) of well oxygenated (saturated), water in the Basin. However, there is water that is below the use-specific guidelines throughout the Harbour. In the Basin, this water occurs below the well oxygenated layer, in the Inner Harbour water below the 6.0 mg/L class SC guideline is only present in the near bottom water, while in the NW Arm and Outer Harbour the entire water column is below the Class SB or SA guideline. The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1).

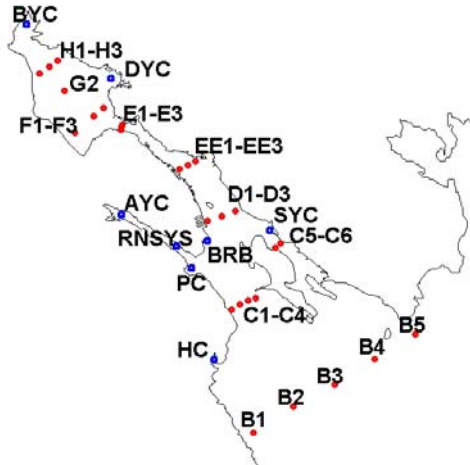
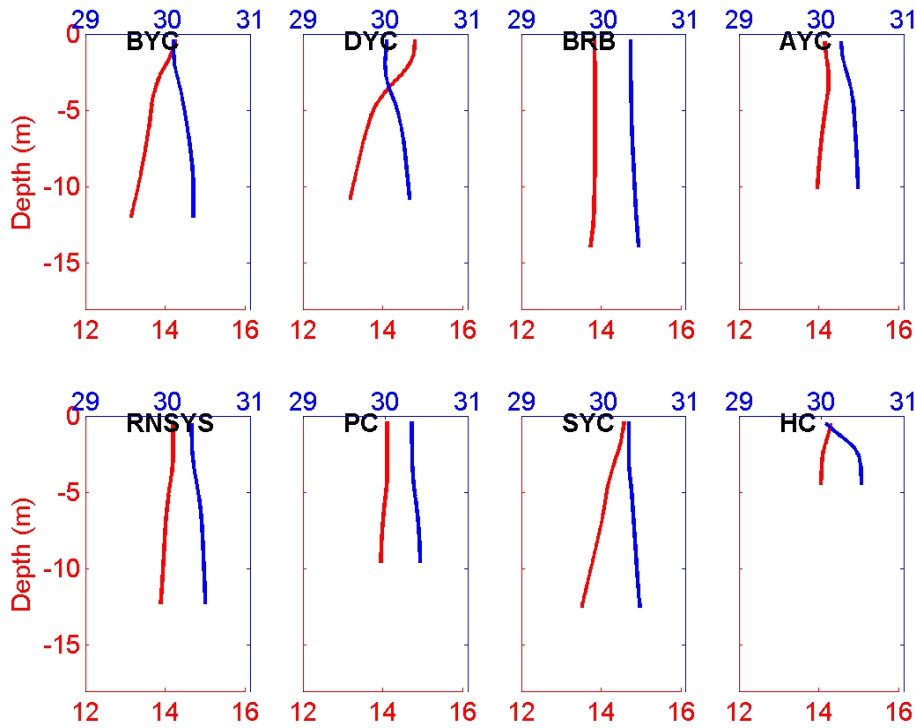
TSS: The TSS values are somewhat elevated with values as high as 8 mg/L in the 1m samples in the Basin. The field notes document visible detritus and/or plankton flocs in many locations in the Harbour

Ammonia: The ammonia values are quite low with only four of fourteen values above the detection limit of 0.05 mg/L. All three 10m samples in the Basin have levels slightly above the detection limit.



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

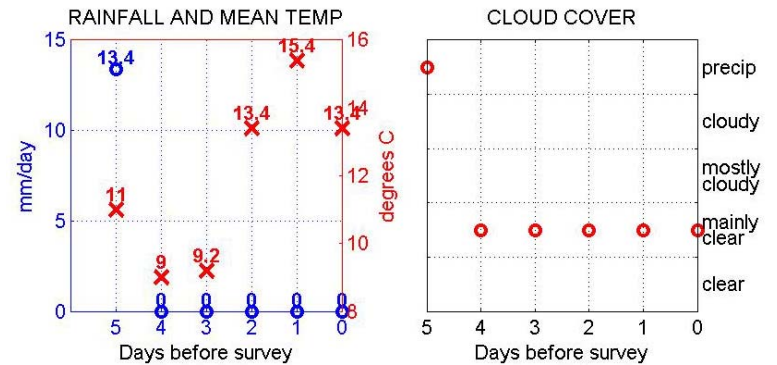
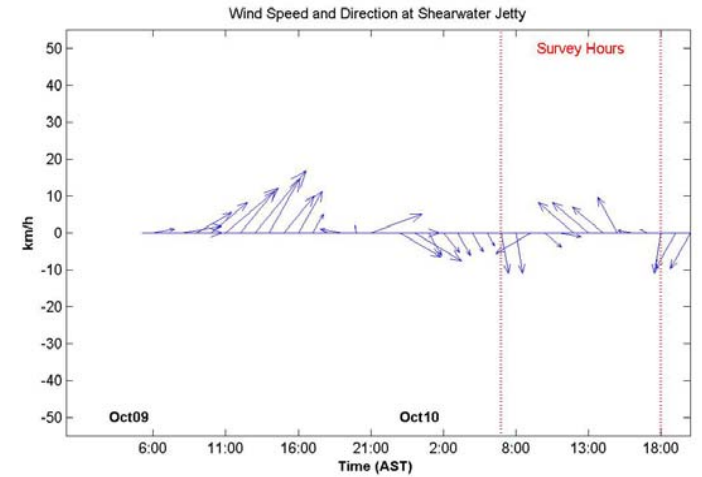
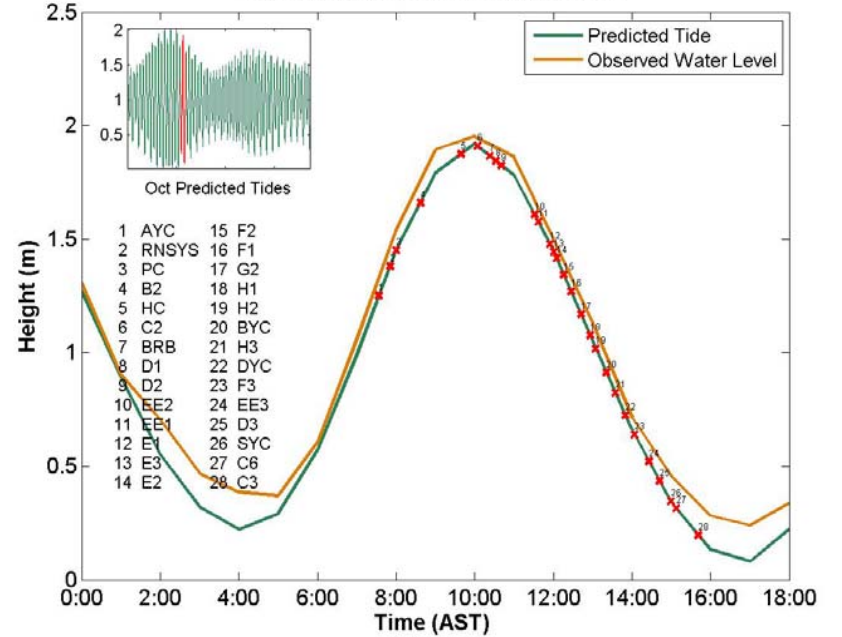
Yacht Clubs

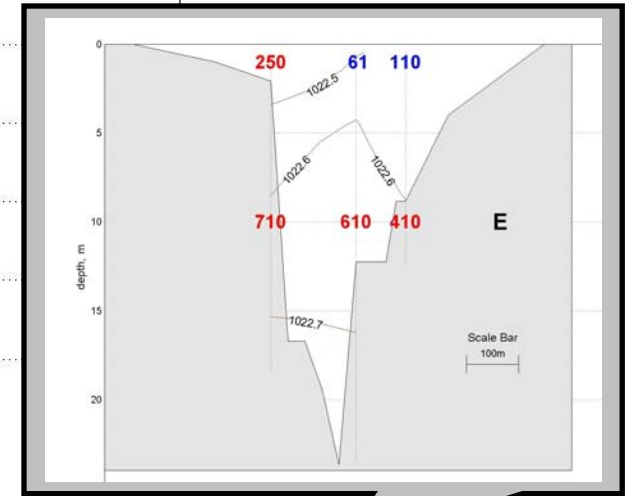
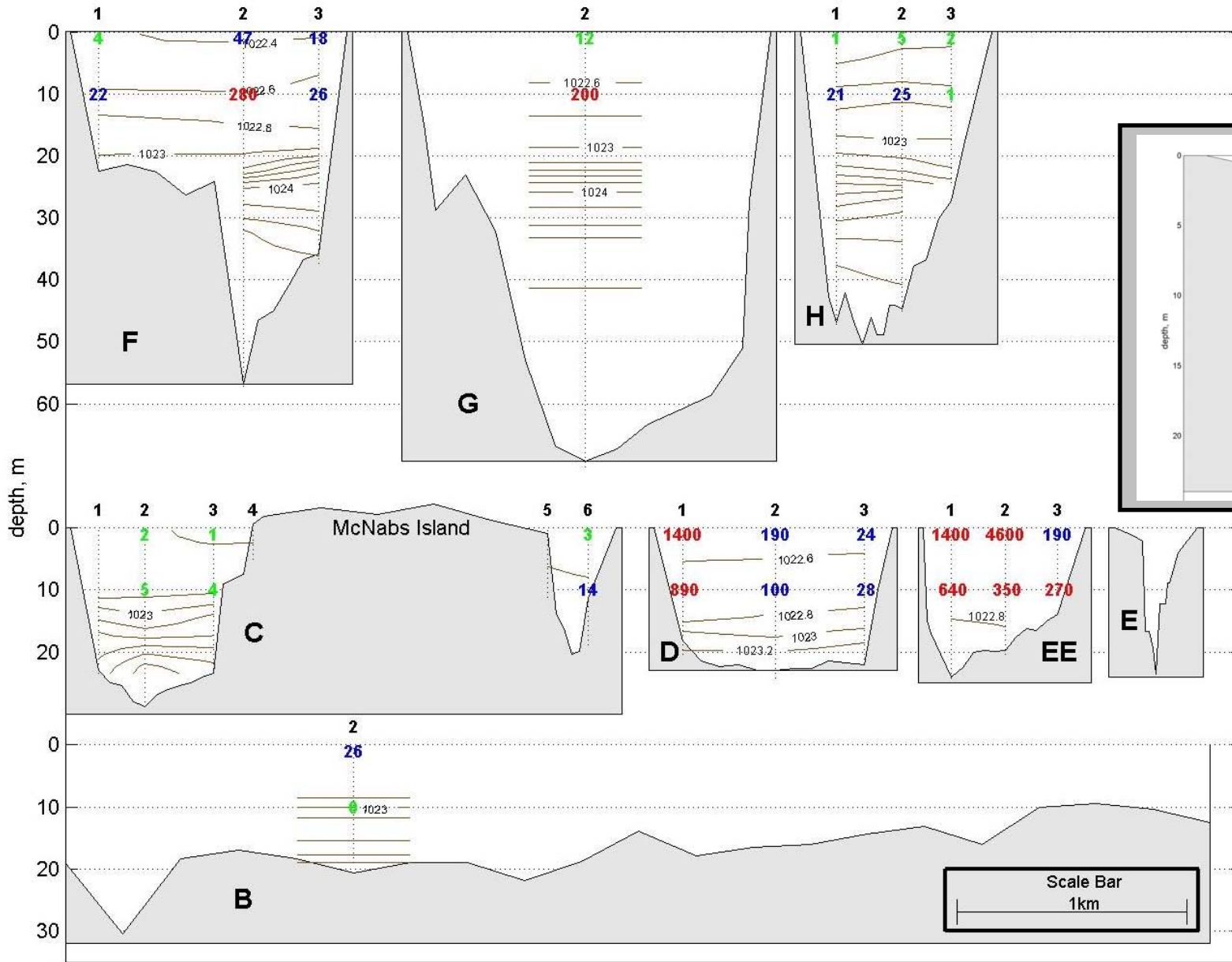


Salinity in PSU Temperature in °C

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

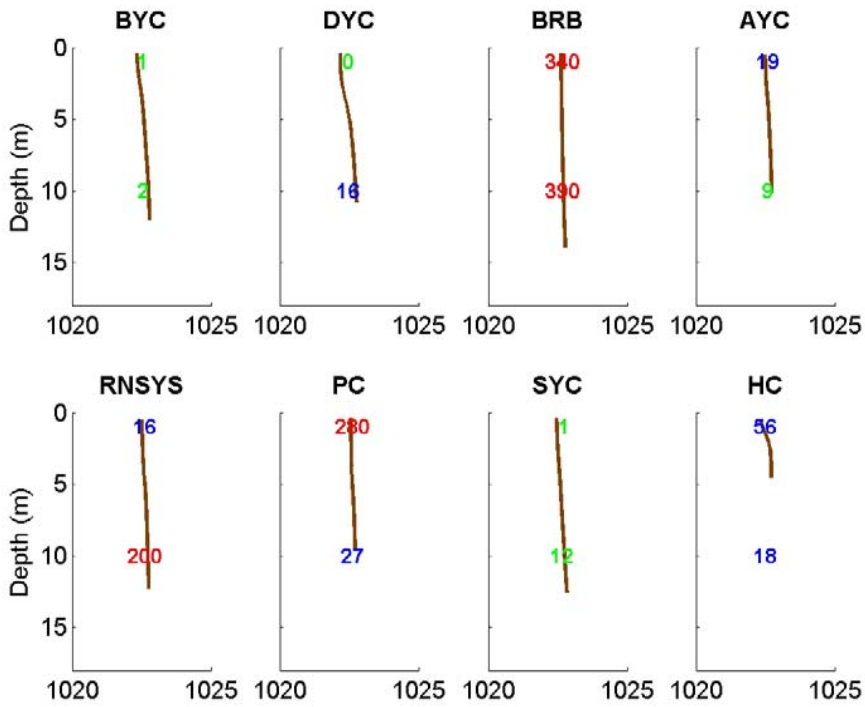
Halifax Harbour Water Level - Oct10



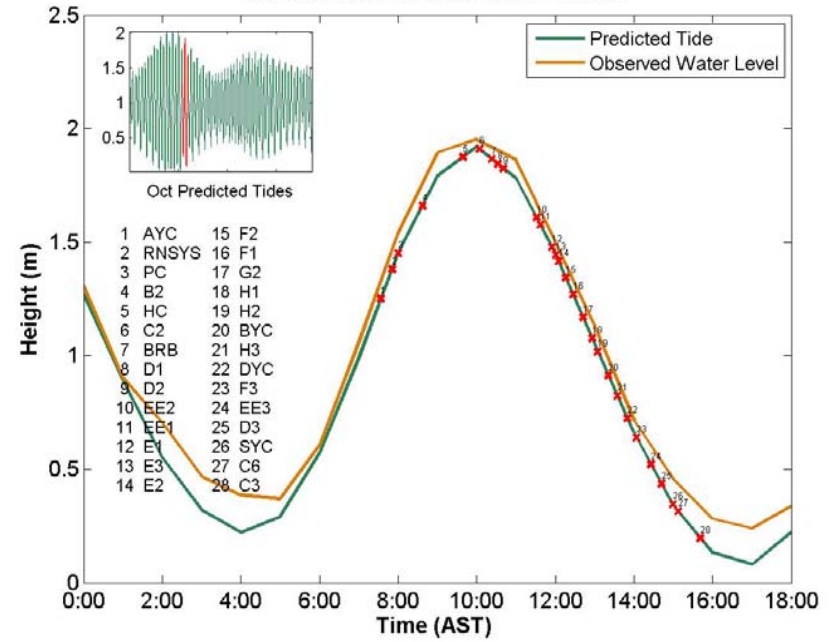


Unless otherwise labeled:
 - **density** contour interval is 0.2 kg/m³

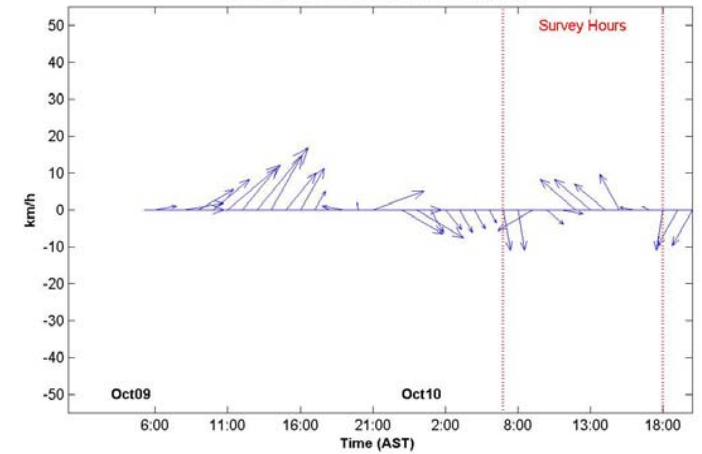
Yacht Clubs



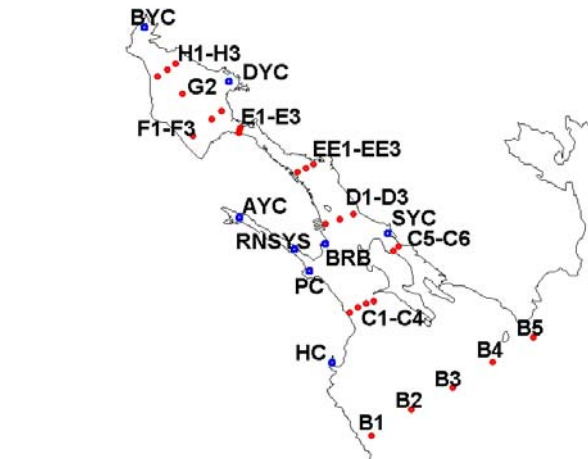
Halifax Harbour Water Level - Oct10



Wind Speed and Direction at Shearwater Jetty

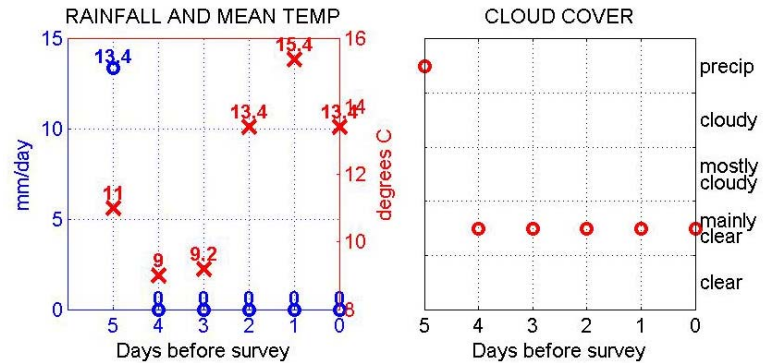


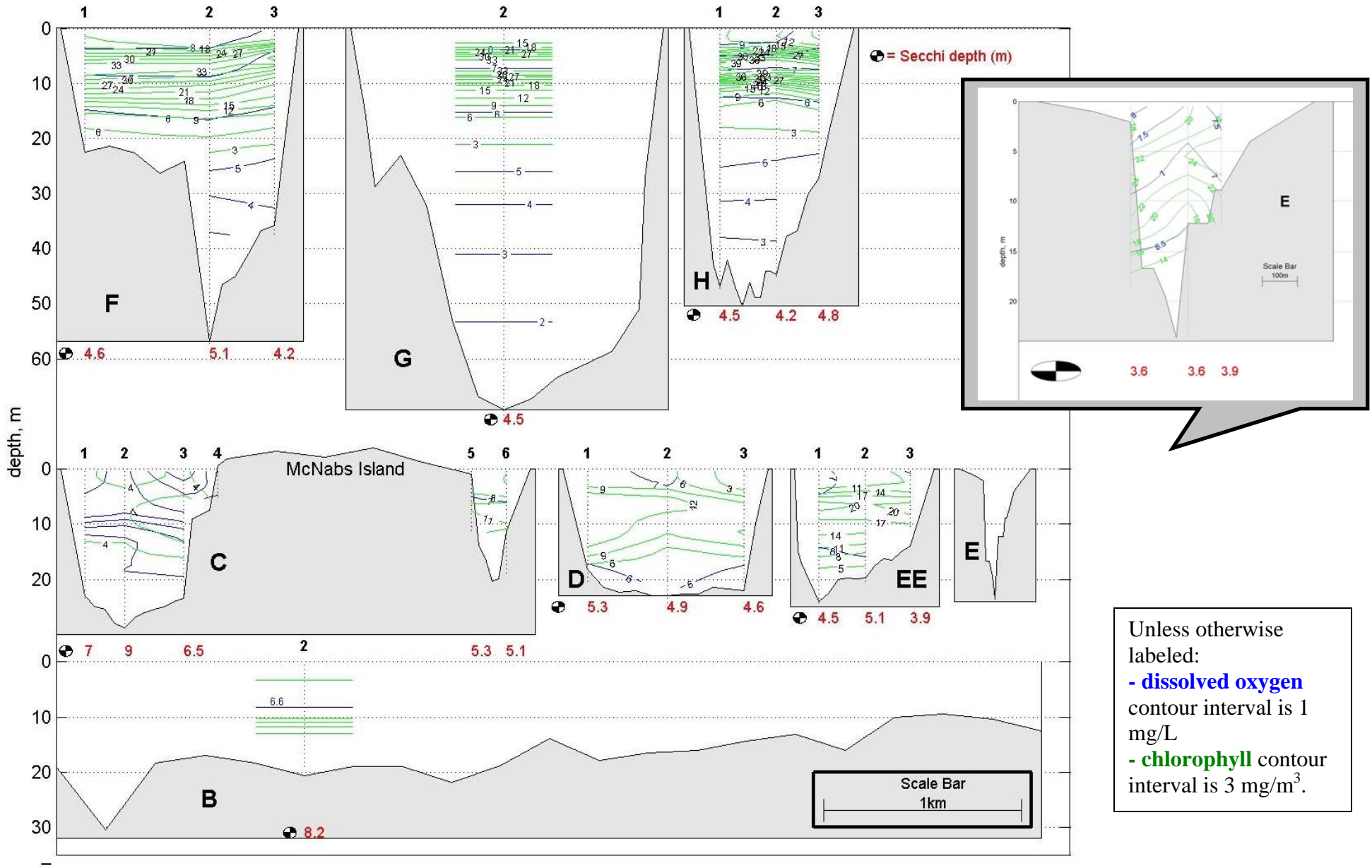
Rainfall and temperature data collected at Shearwater Autoport.
 Cloud cover data collected at Shearwater Airport



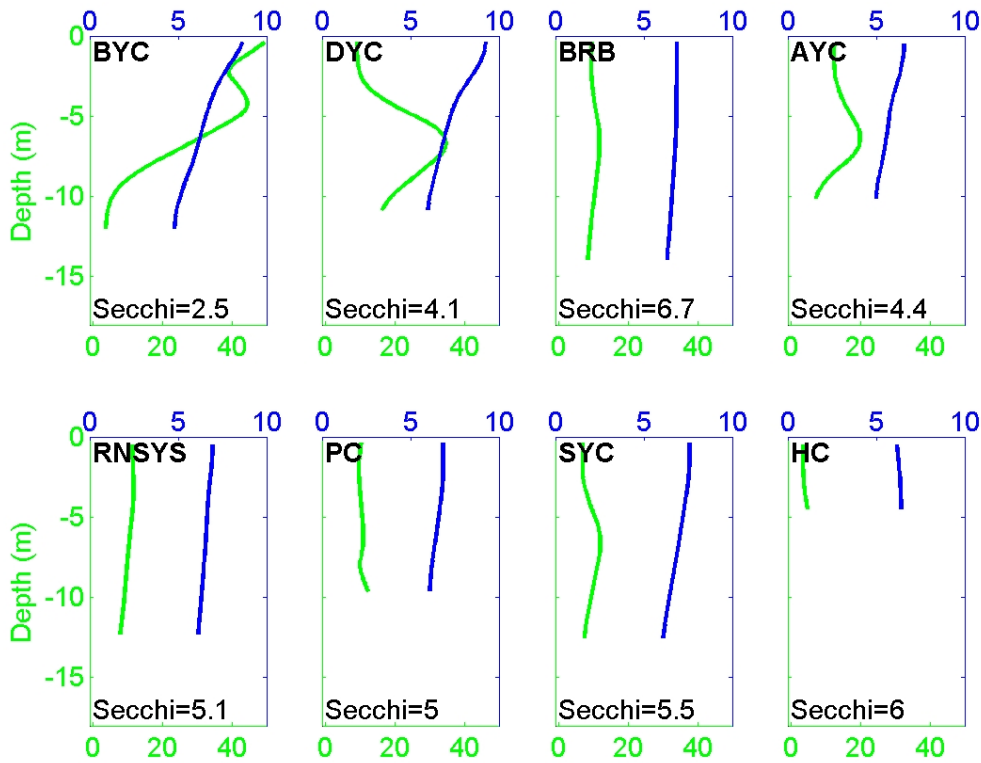
Potential Density in kg/m^3

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

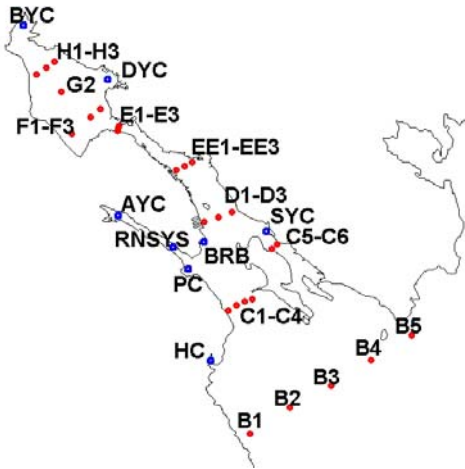
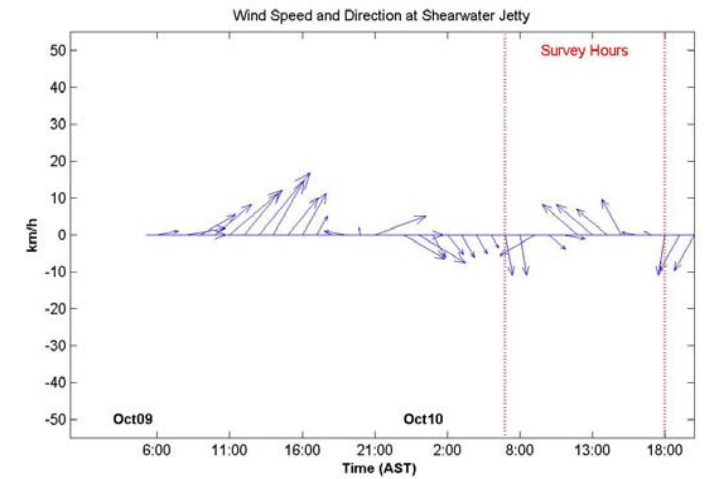
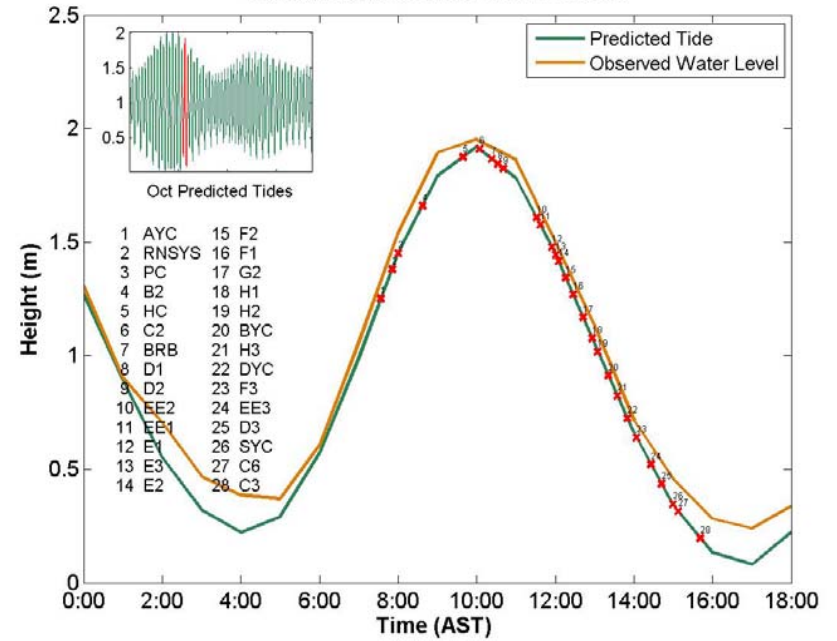




Yacht Clubs



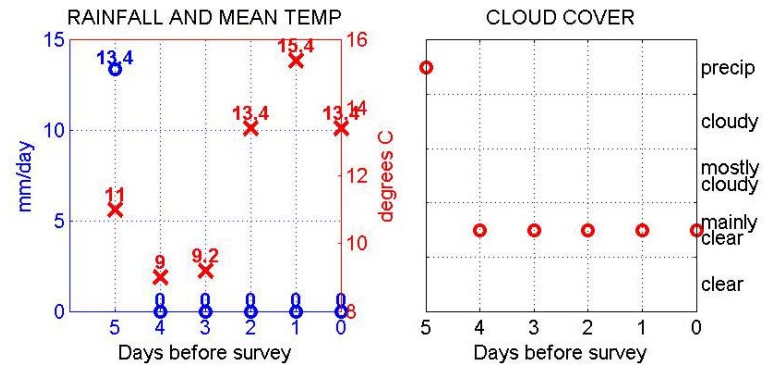
Halifax Harbour Water Level - Oct10

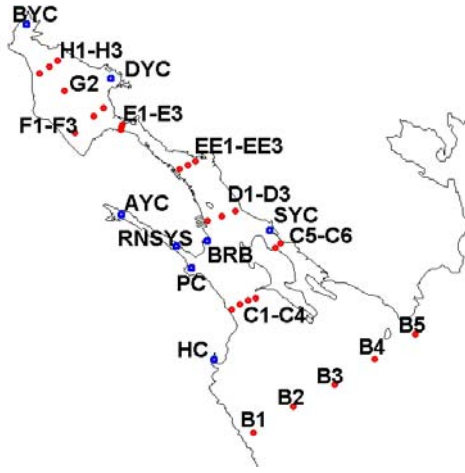
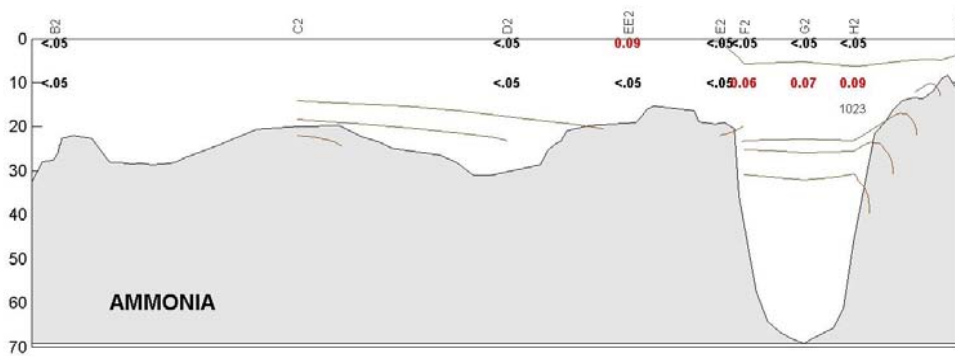
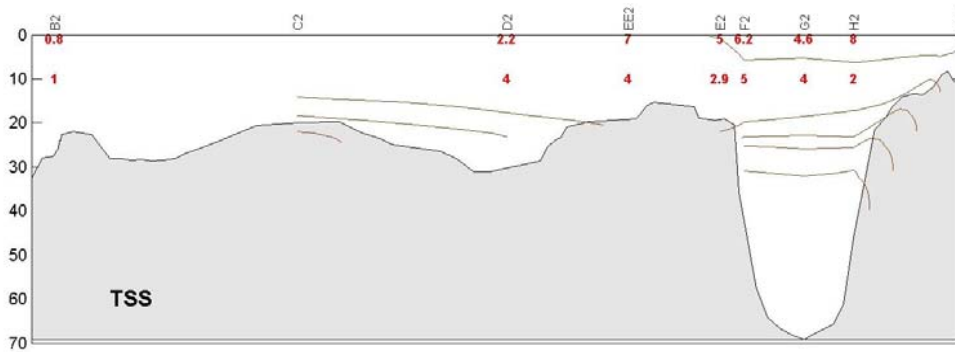


Rainfall and temperature data collected at Shearwater Autoport.
 Cloud cover data collected at Shearwater Airport

DO in mg/L

Chlorophyll in mg/m³





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

Potential Density in kg/m^3

Ammonia in mg/L

TSS in mg/L

Halifax Harbour Water Level - Oct10

