

Halifax Harbour Water Quality Monitoring Project Survey Summary #161

Survey Date: 29 July 2008
Nature of Survey: Complete Survey
Report File (this document): HHWQMP_report161_080729.doc
Data File: HHWQMP_data161_080729.xls

Data Return:

Chemical: 86%
 Bacteria: 84%
Profile: 85%
Overall: 85%

Sample Notes:

Sites HP1-3, HC and B2 were not sampled due to boat problems.

A supplementary CTD cast was taken at the LOBO buoy location.

YSI 1m DO samples were not taken due to instrument unavailability. Based on past surveys and other data sources the DO values should be scaled by approximately 1.3

The DO profile at E2 had a data spike the profile is truncated at 23 m in the data file.

QA/QC samples:

Chemical Analysis		G2 - 10m	
		Reference Sample	QA/QC
Detectable Parameter	Units		
Total Suspended Solids	mg/L	9	2.3
Copper	ug/L	0.6	0.3
Iron	ug/L	11	9
Manganese	ug/L	4	3
Mercury	ug/L	<0.01	0.01
Zinc	ug/L	2	2

Fecal Coliform (CFU/100ml)

Site	H3-1m	SYC-10m	PC-10m	G2-10m
Reference	6	9	4	2
QA/QC	1	8	2	4

Comments:

General: A very large storm (approx 125 mm precipitation) 3-4 days before the survey has left the Harbour strongly and uniformly stratified in both temperature and salinity. Interestingly, there is a region of slightly colder saltier water at the surface in the centre of the Harbour (section EE). The fc levels are generally quite low. There are somewhat elevated fc levels in the Inner Harbour but only three, all in section EE, are above the swimming guideline.

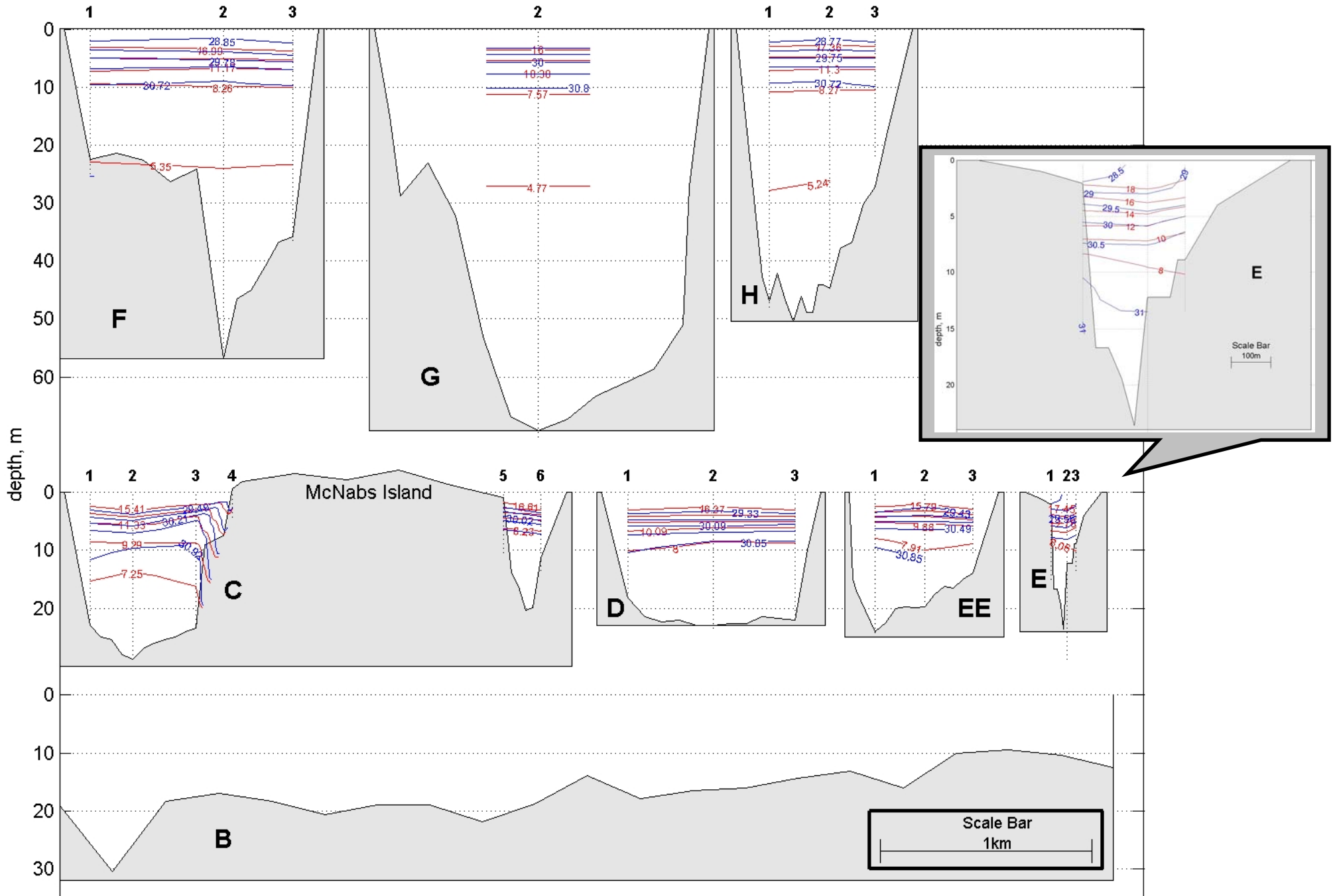
Fluorescence: The fluorescence levels are slightly elevated and quite uniform, with profile maximums of about 10 mg/m³ at a depth of 6-10 m everywhere. At section EE the maximum values occur slightly deeper, at about 10 m. Levels are also somewhat deeper in the Outer Harbour (section C).

TSS: The TSS levels are moderate with an average value of 6.2 mg/L, the highest values occur in the mid to southern Basin.

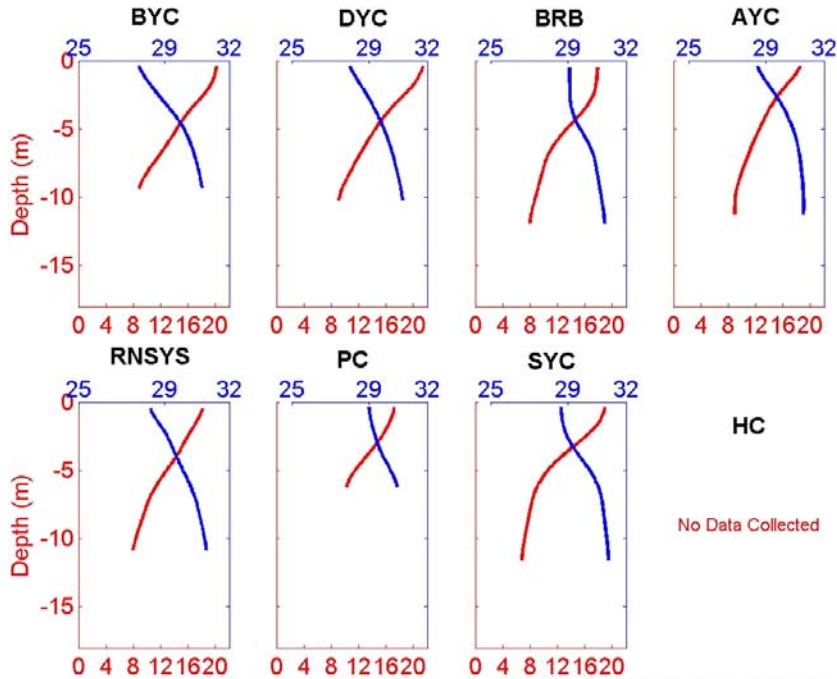
Ammonia: There were no samples with concentrations above the 0.05 mg/L detection limit.

Metals: There are no guideline exceedences. The closest to exceedence is copper in the D2-1 m sample. At 0.9 ug/L, this is about 35% of the guideline value.

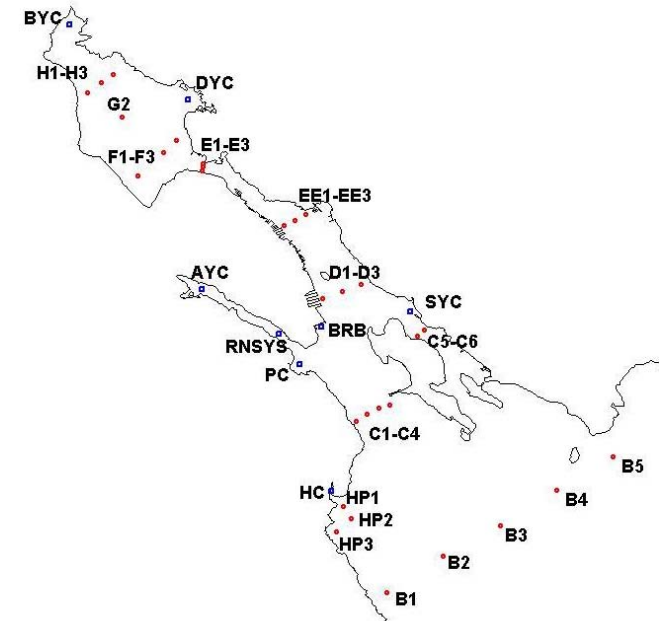
Dissolved Oxygen: The DO data, scaled approximately by a factor of 1.3, indicates that the surface water is generally > 9.0 mg/L or above saturation values given the warm water temperatures. The vertical gradient is quite high in the Basin but values remain above the SB guideline (7.0 mg/L) at depths less than 20 m. In the deep water the 7.0 mg/L guideline is exceeded. South of section EE the Harbour is more uniform, at near saturation levels. Here there is some slightly more oxygenated water at about 10-15 m. At section EE there appears to be a convergence of the less oxygenated deeper water from the Basin with the more oxygenated deeper water from the Outer Harbour resulting in a relatively complex distribution.



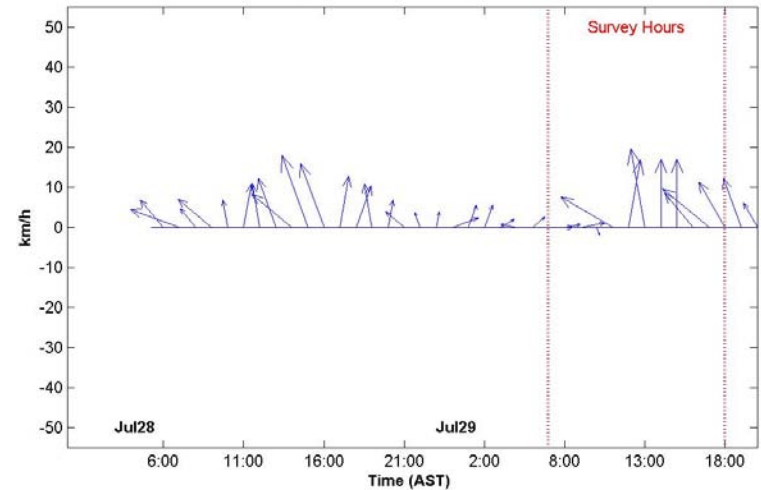
Yacht Clubs



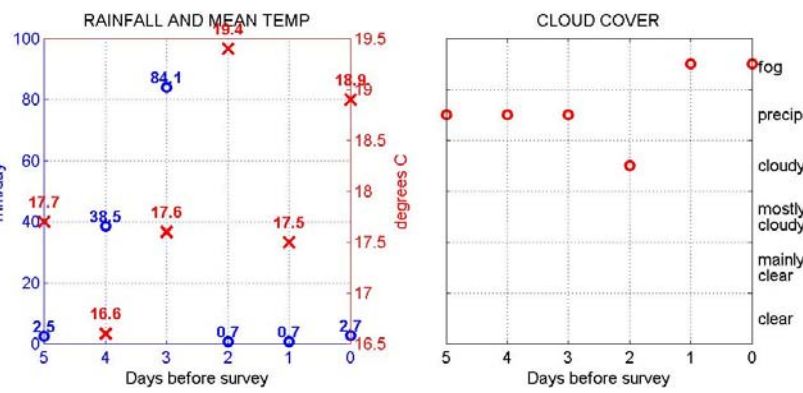
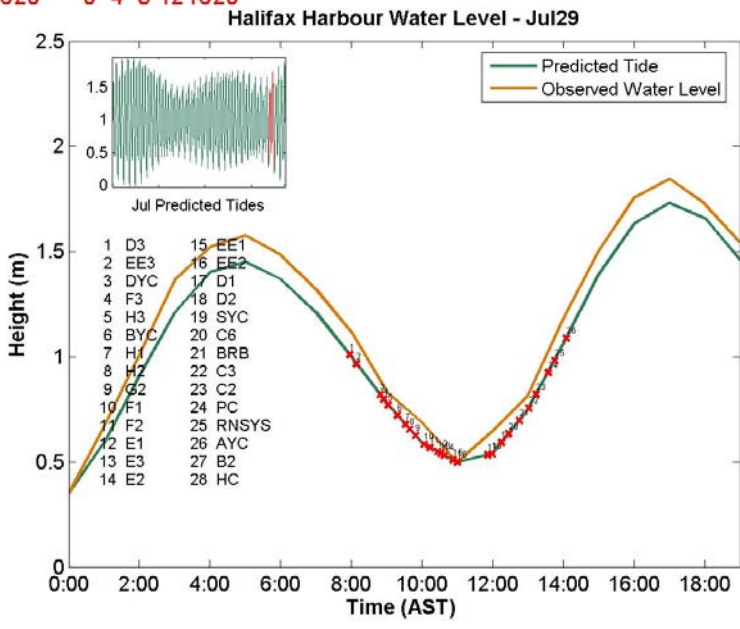
HC
No Data Collected



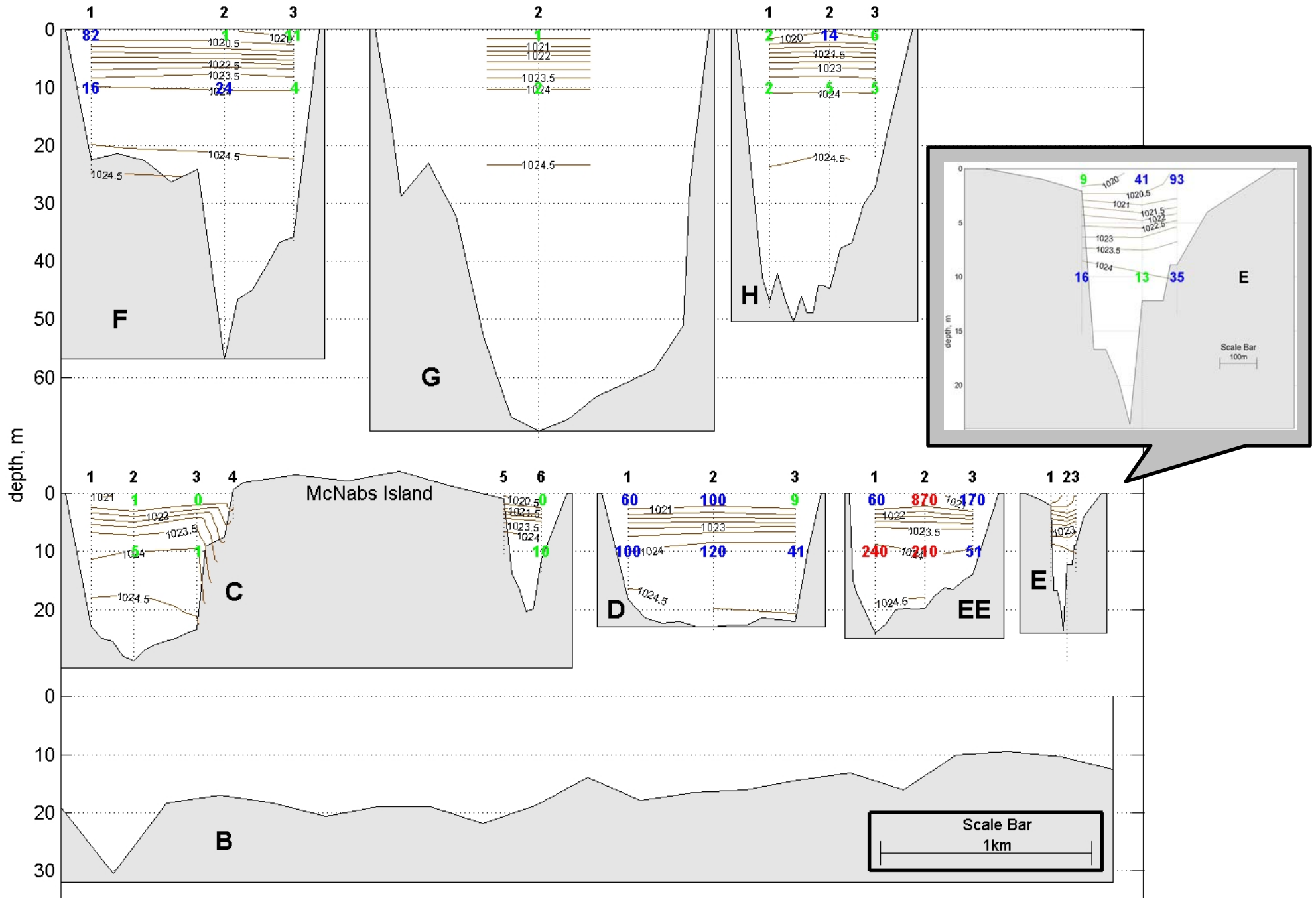
Wind Speed and Direction at Shearwater Jetty



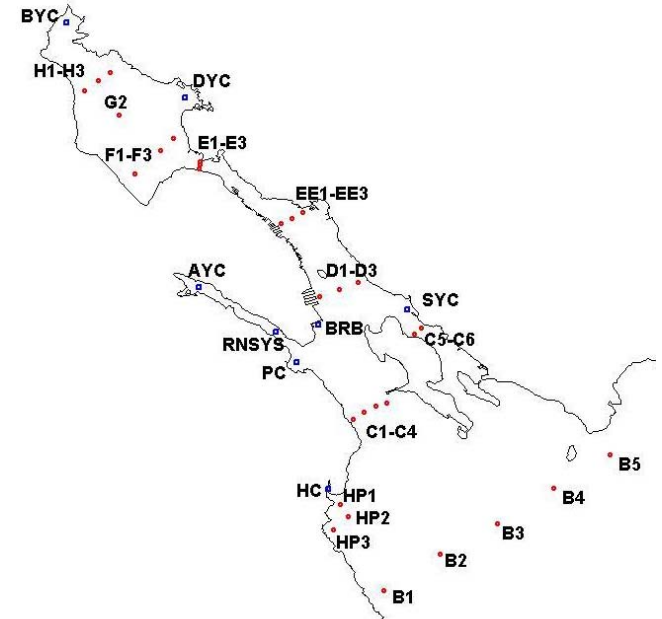
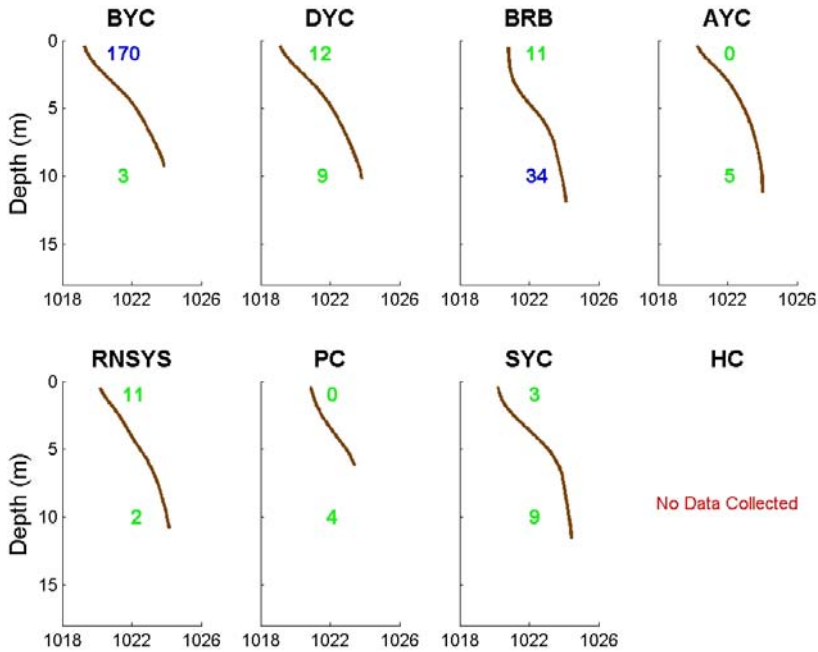
Rainfall and temperature data collected at Shearwater Autoport.
Cloud cover data collected at Shearwater Airport



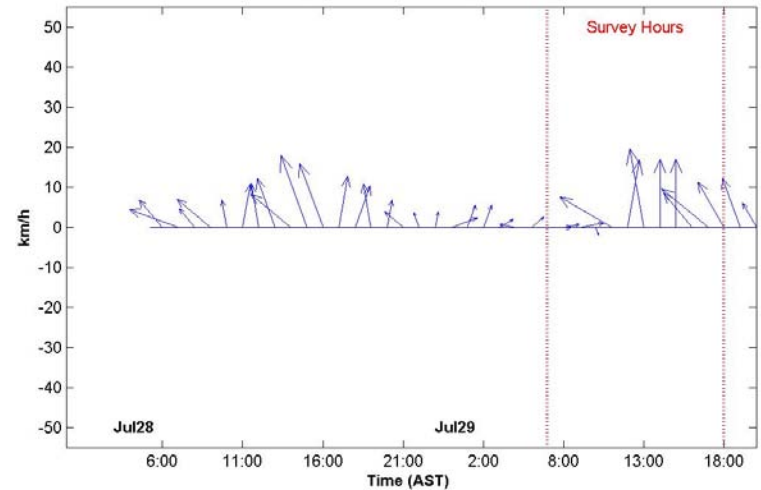
Salinity in PSU Temperature in °C



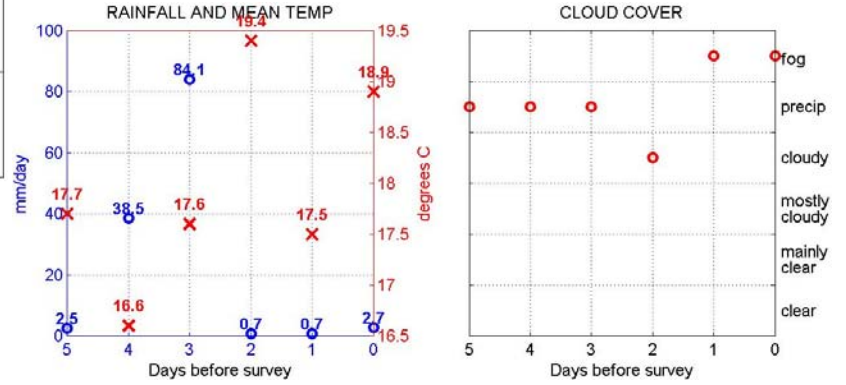
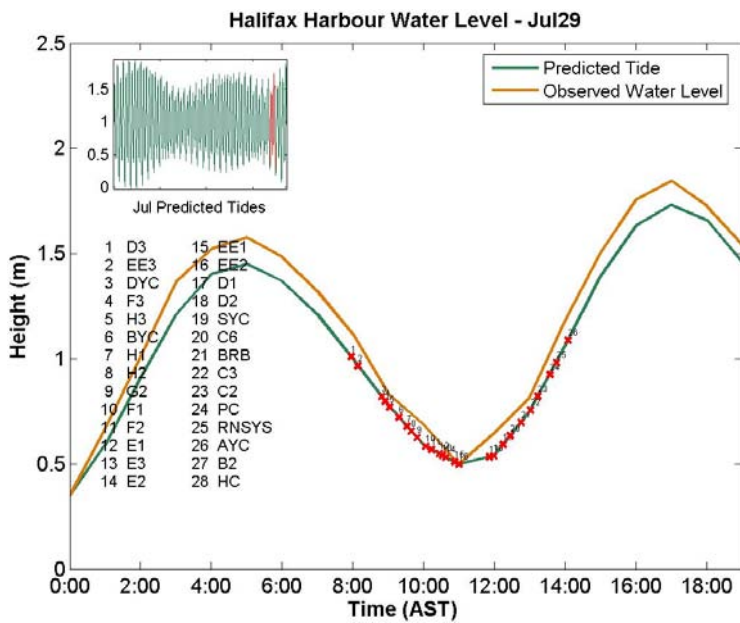
Yacht Clubs



Wind Speed and Direction at Shearwater Jetty

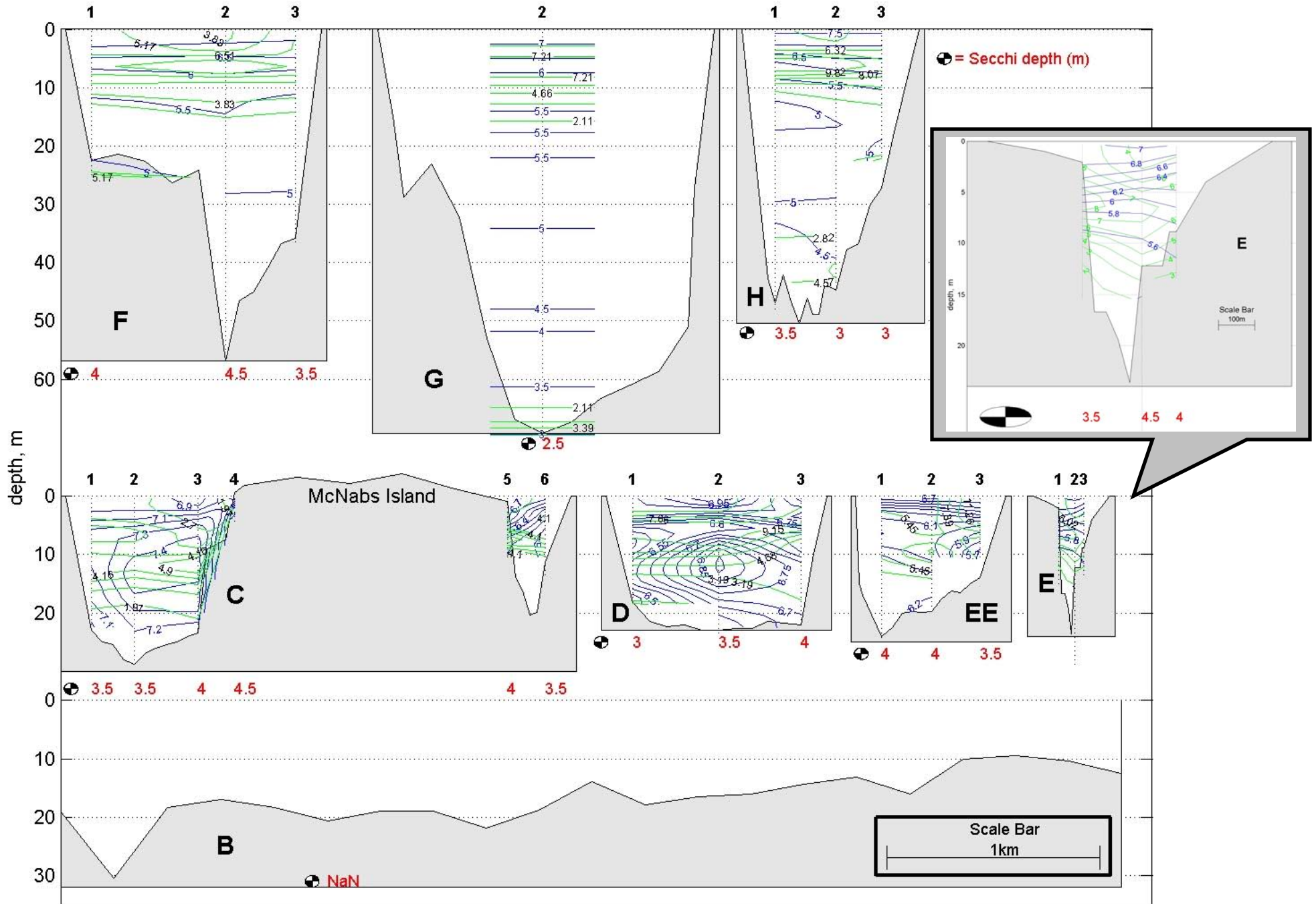


Rainfall and temperature data collected at Shearwater Autoport.
Cloud cover data collected at Shearwater Airport

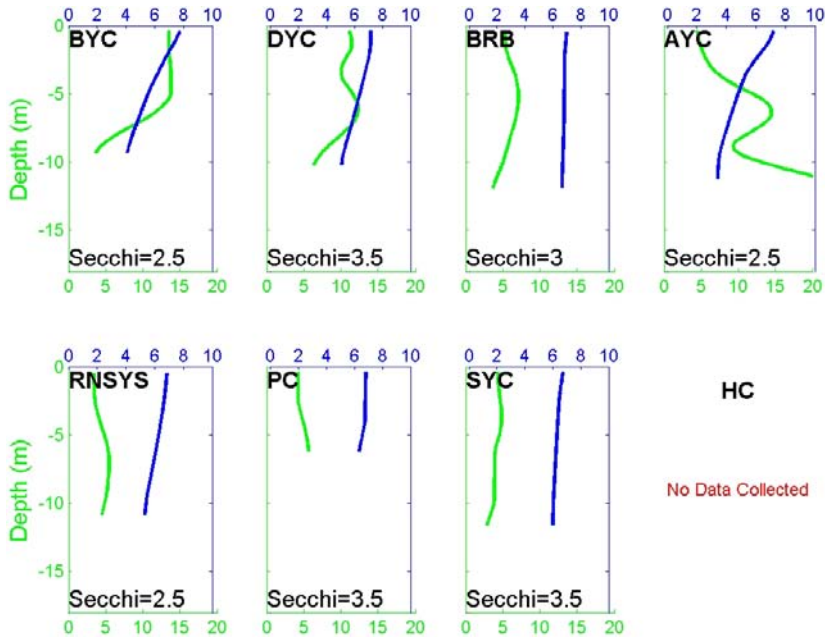


Potential Density in kg/m³

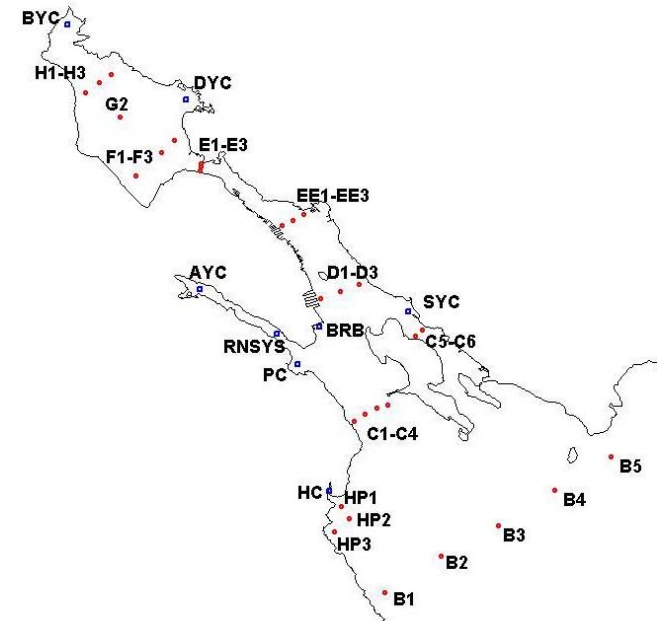
Fecal coliform: **above swimming limit (200 cfu/100mL)**
above shellfish limit (14 cfu/100mL)
below limits



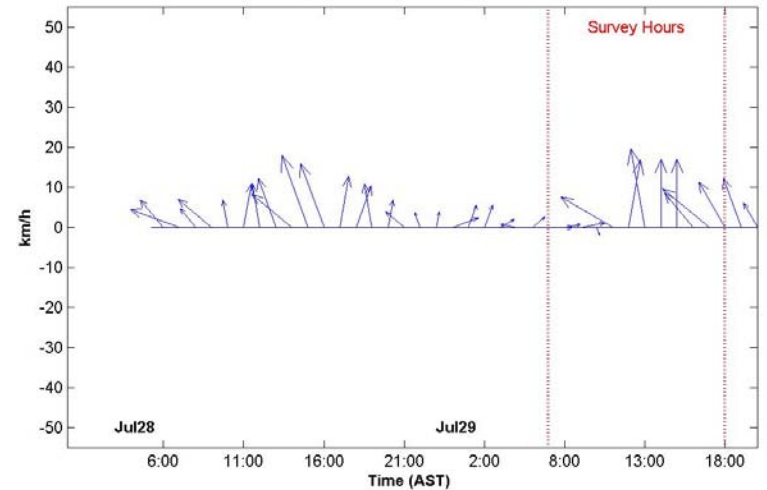
Yacht Clubs



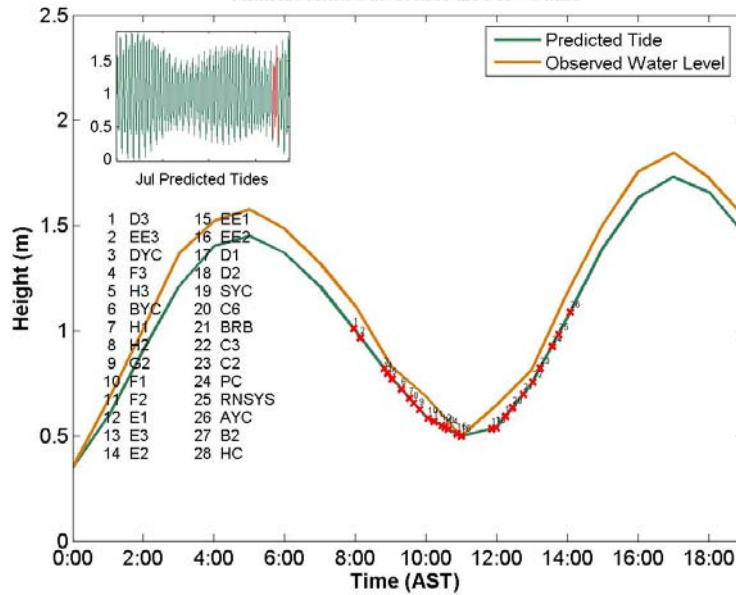
HC
No Data Collected



Wind Speed and Direction at Shearwater Jetty



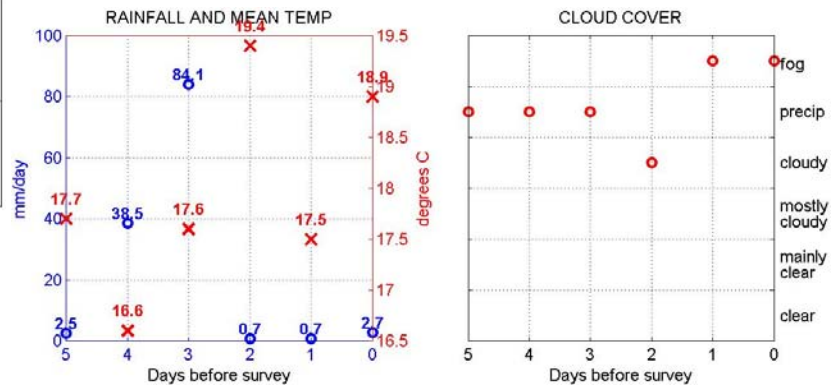
Halifax Harbour Water Level - Jul29



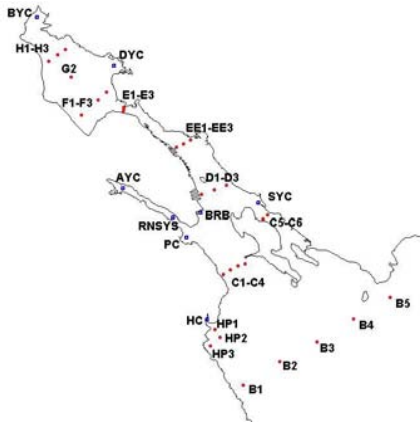
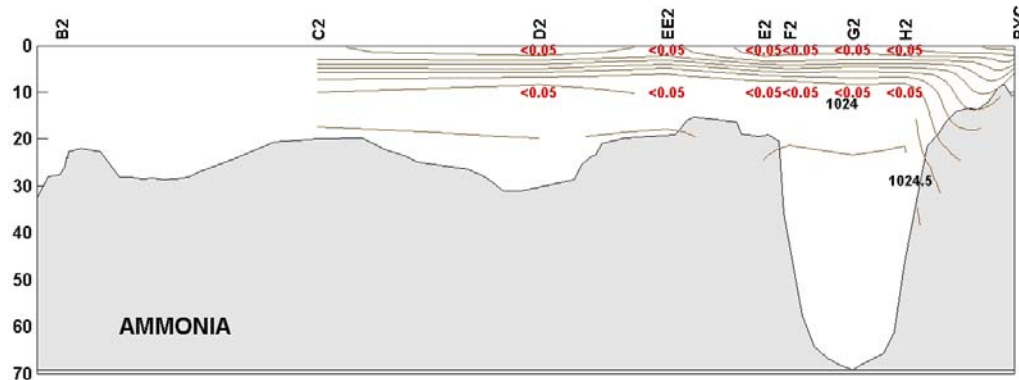
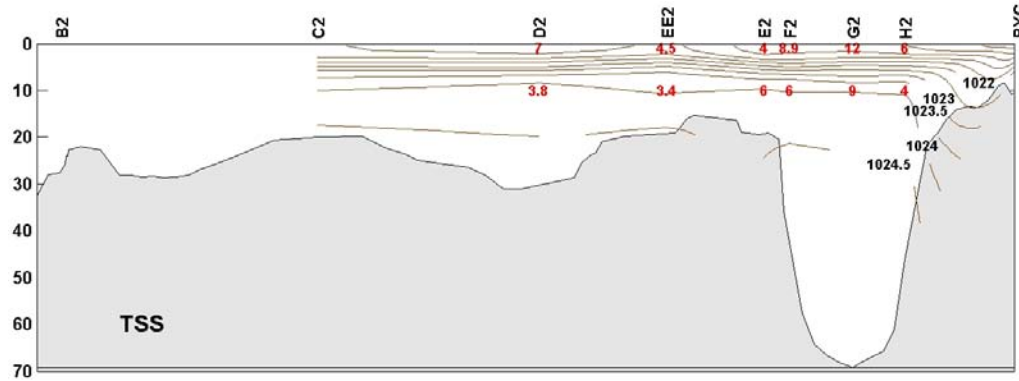
Rainfall and temperature data collected at Shearwater Autoport.
Cloud cover data collected at Shearwater Airport

DO in mg/L

Chlorophyll in mg/m³

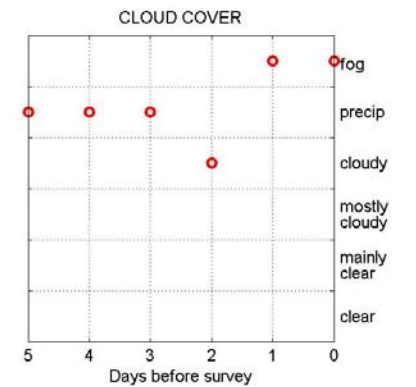
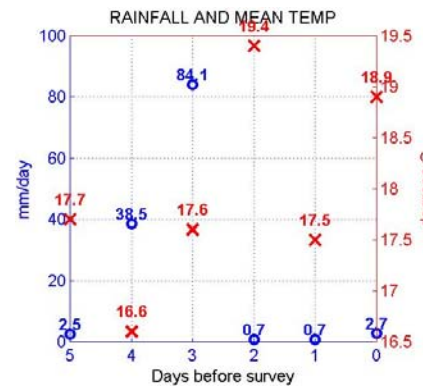
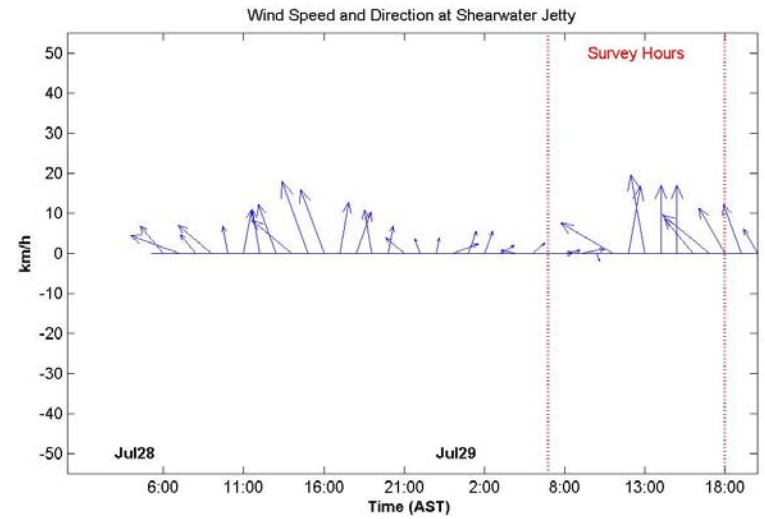
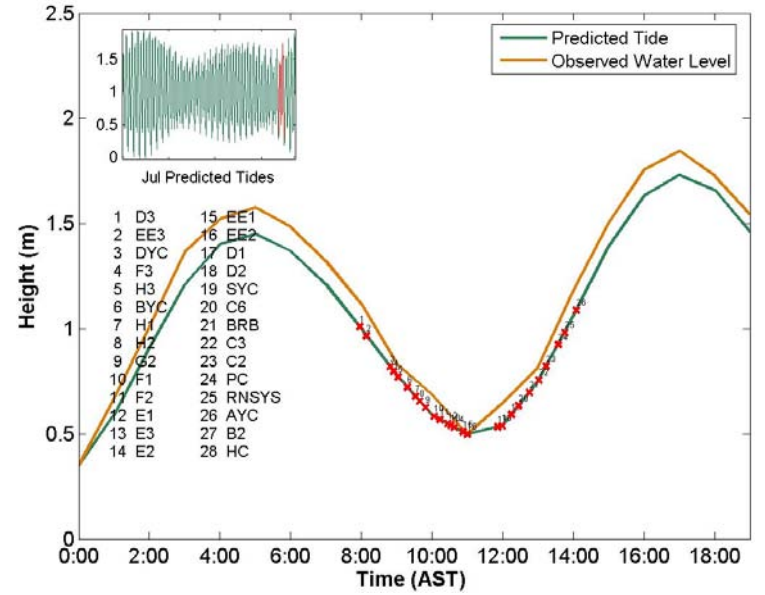


CHEMISTRY



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

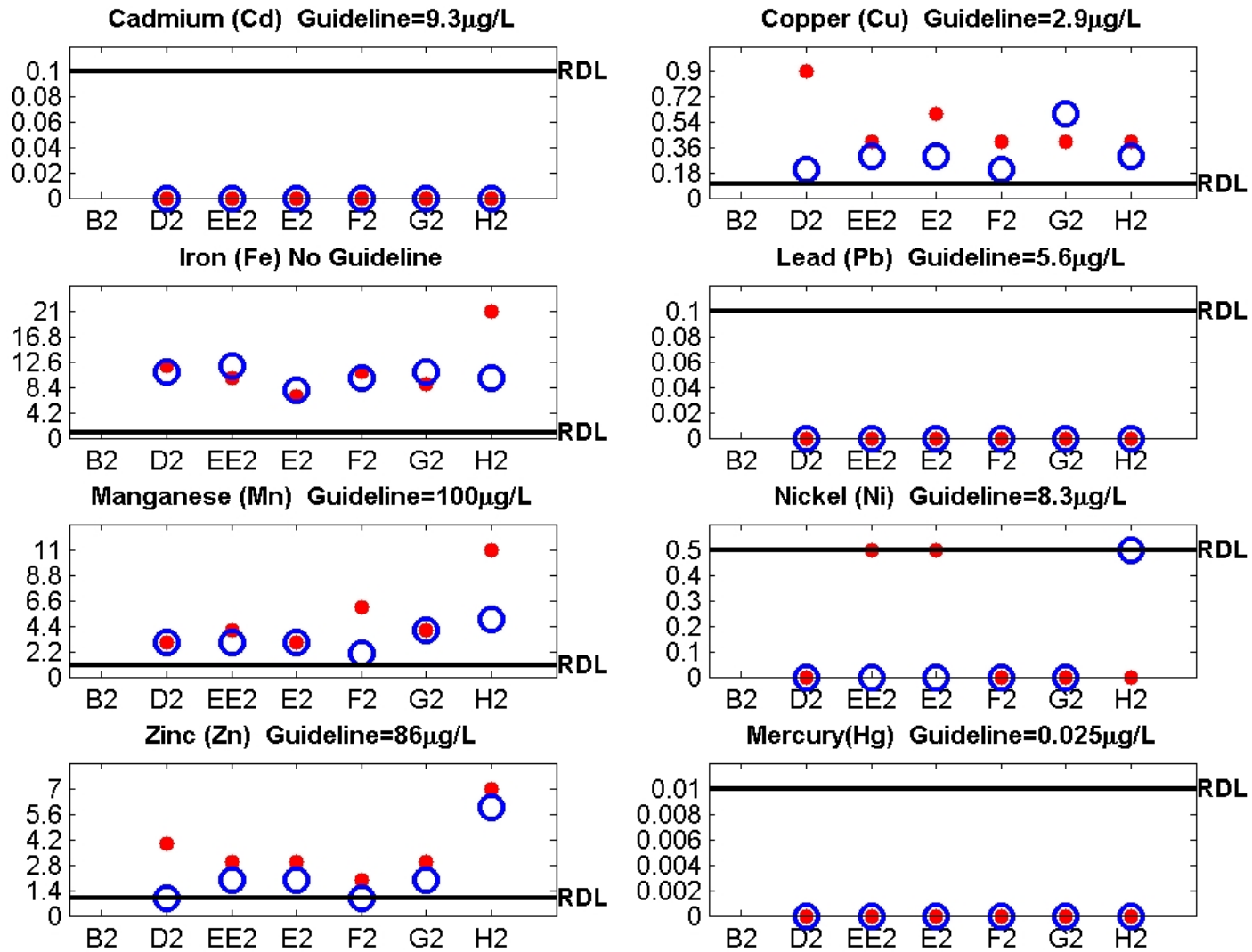
Halifax Harbour Water Level - Jul29



Potential Density in kg/m^3

Ammonia in mg/L

TSS in mg/L



LEGEND

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

HRM Water Quality Monitoring

Fecal Coliform Summary – July 29, 2008

