

# Halifax Harbour Water Quality Monitoring Project

## Weekly Summary #61

**Survey Date:** 16 August 2005  
**Nature of Survey:** Complete Survey  
**Report File (this document):**

HHWQMP\_report061\_050816.doc

**Data File:** HHWQMP\_data061\_050816.xls

**Data Return:**

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

**Sample Notes:**

N/A

**QA/QC samples:**

**Chemical Analysis**

Detectable Parameter	units	E2-1m	
		reference Sample	QA/QC
Total Suspended Solids	mg/L	9.4	16
Aluminum	ug/L	190	<100
Boron	ug/L	5500	3600
Chromium	ug/L	32	<20
Lithium	ug/L	250	160
Manganese	ug/L	<20	41
Selenium	ug/L	94	<50
Iron	ug/L	780	580
Strontium	ug/L	7200	6100
Titanium	ug/L	86	62
Vanadium	ug/L	34	<20
Uranium	ug/L	5.3	4.1

**Fecal Coliform (CFU/100ml)**

Site	RNSYS-1m	PC-1m	HC-1m	E2-1m
Reference	7	15	110	150
QA/QC	20	9	170	270

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

Parameter	EQL	Parameter	EQL
Cadmium	3 µg/L	Nickel	20 µg/L
Lead	5 µg/L	Oil and Grease	5 mg/L

**Detectable non regulated metals**

Metal	EQL (µg/L)	Number >EQL	Mean (µg/L)	Range (µg/L)
Aluminum	100	1	190	190
Boron	500	15	4180	3500-5800
Iron	500	6	657	580-780
Selenium	50	1	94	94
Thallium	1	1	1.1	1.1
Vanadium	20	2	28	21-34
Lithium	20	15	185	160-250
Strontium	50	15	6373	5800-7700
Titanium	20	15	67	54-100
Uranium	1	15	4.2	3.5-5.3

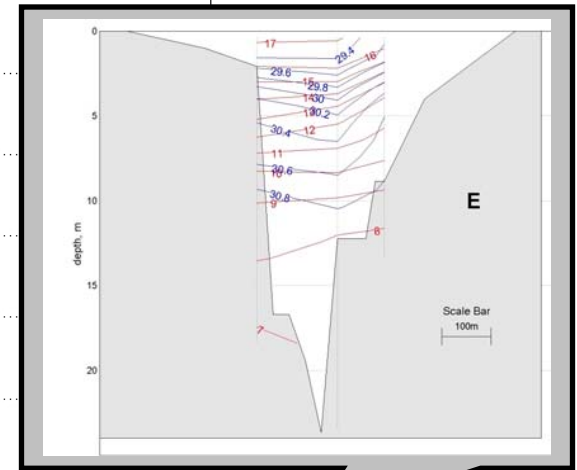
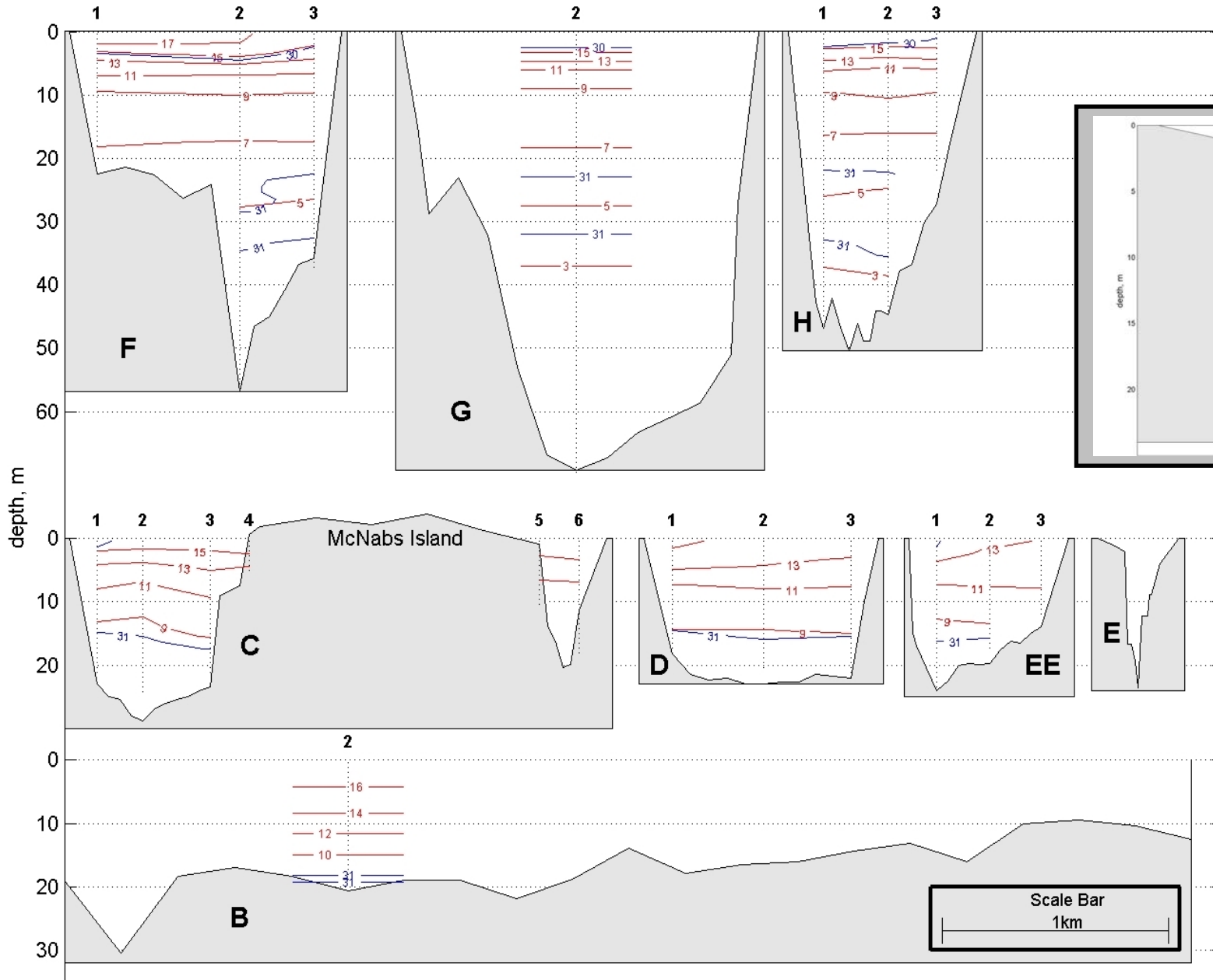
**Comments:**

**Metals:** Remarkably, there were 10 samples with detectable levels of regulated metals this week. These included: Three values of Cr (EQL = 20 µg/L) at stations D2-1m (31 µg/L), D2-10m (30 µg/L), and E2-1m (32 µg/L). One value of Cu (EQL= 20 µg/L) at D2-1m (22 µg/L). Four values of Mn (EQL=20µg/L), E2-10m (33µg/L), EE2-1m (21 µg/L), G2-10m (30 µg/L) and the Qa/Qc sample at E2-1m (44 µg/L). Two values of Zn (50 µg/L), B2-10m (68 µg/L) and D2-1m (180 µg/L). The relatively high number of these values and the fact that they are relatively concentrated in the Inner Harbour may indicate an extraordinary metals source.

**Dissolved Oxygen:** In addition to the usual class SB violation in the Basin bottom water there is a class SA violation (< 8 mg/L) in the surface water at station B2. This coincides with seemingly anomalous warm water.

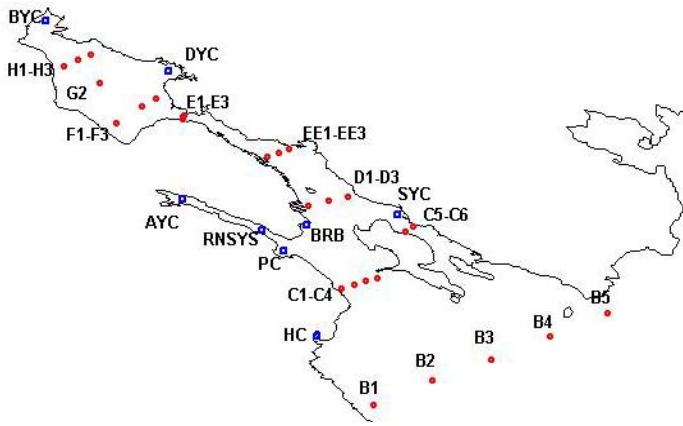
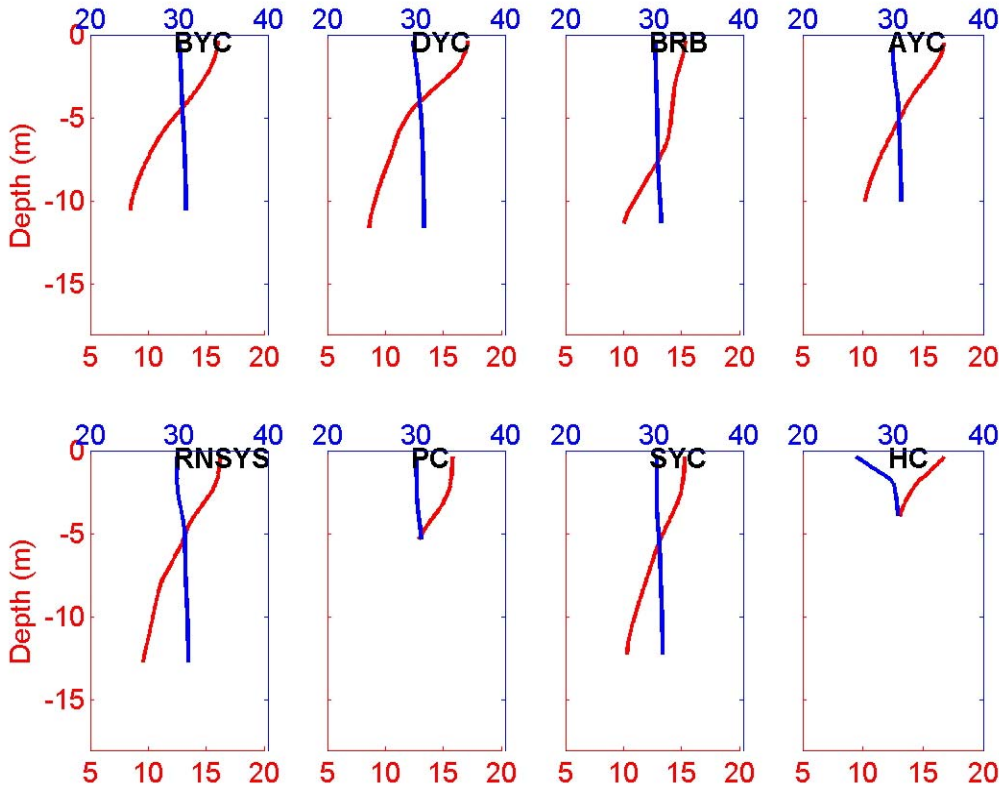
**Chlorophyll:** There is a fluorescence maximum of about 11-16 mg/m<sup>3</sup> at 5-10 m everywhere inside of section C. The values are reduced in the Outer Harbour.

**General:** The Harbour is very slightly more stratified than last week, particularly in the Narrows, likely due to moderate rainfall throughout the previous several days. The coolest surface water is in the Inner Harbour sections D and EE and there is warmer surface water in the Outer Harbour (B2). The bacteria concentrations are higher than in the previous few weeks, likely the result of an increase in source strength (rainfall) and lower decay rate due to cloudy weather.



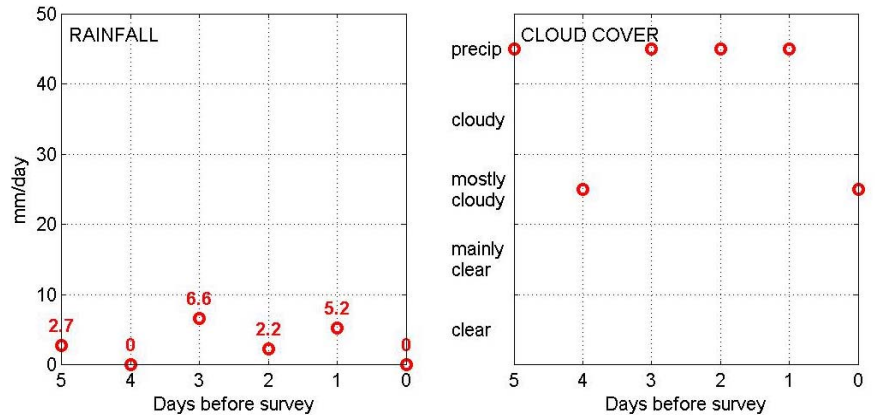
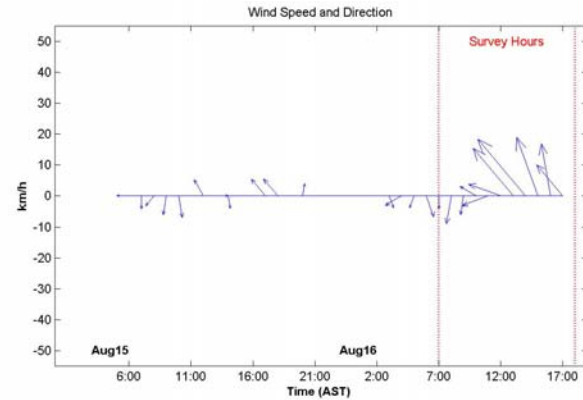
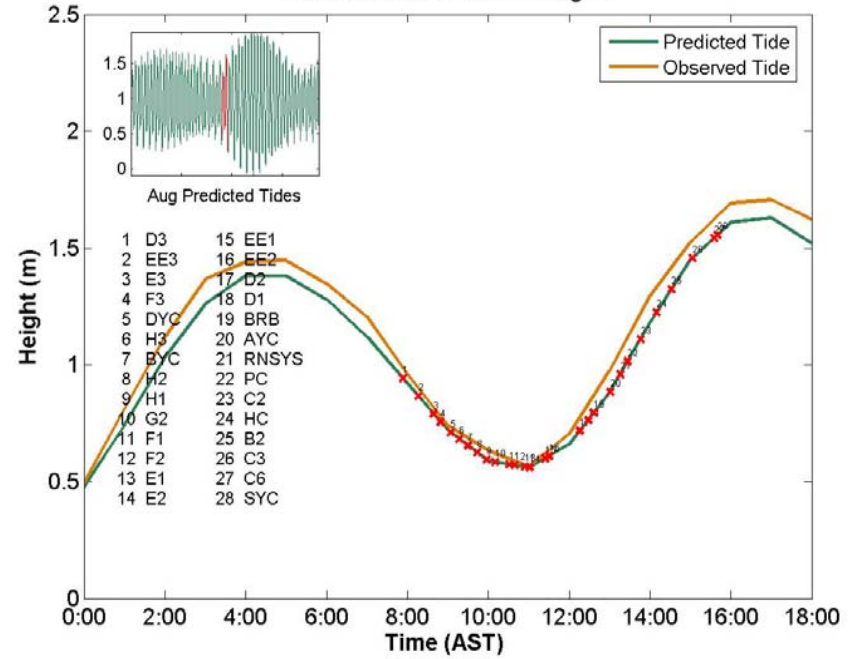
Unless otherwise labeled:  
 - salinity contour interval is 1 PSU  
 - temperature contour interval is 2°C.

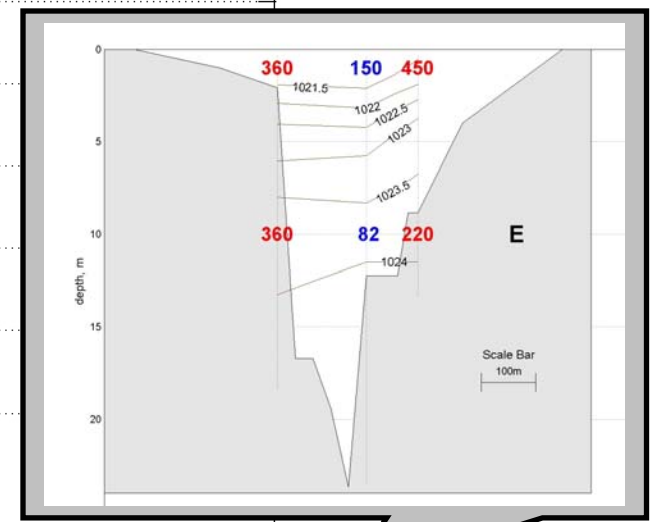
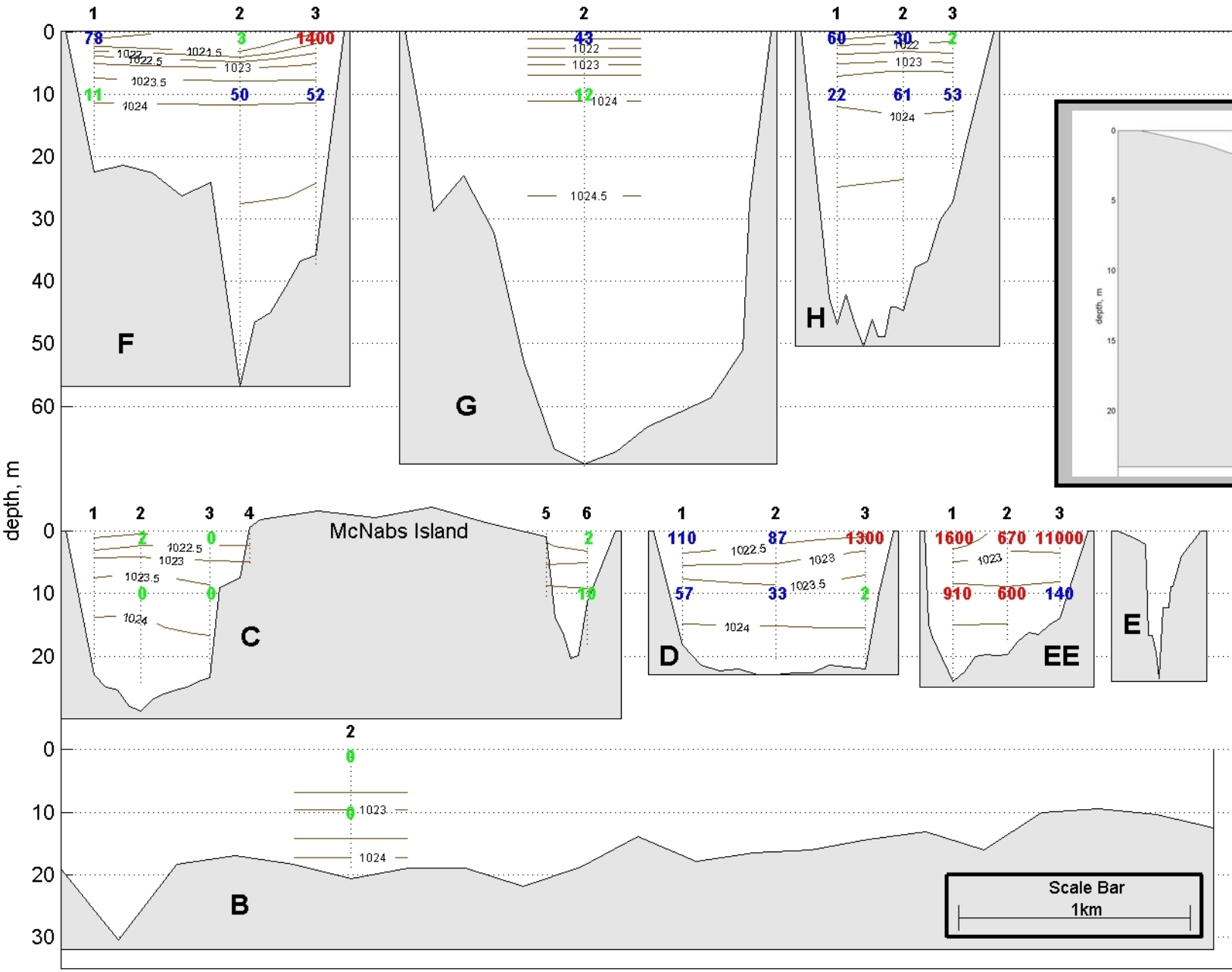
# Yacht Clubs



Salinity in PSU      Temperature in °C

# Halifax Harbour Tides - Aug16

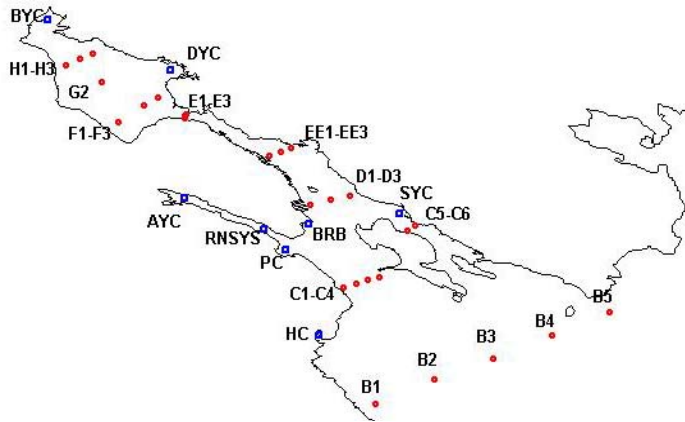
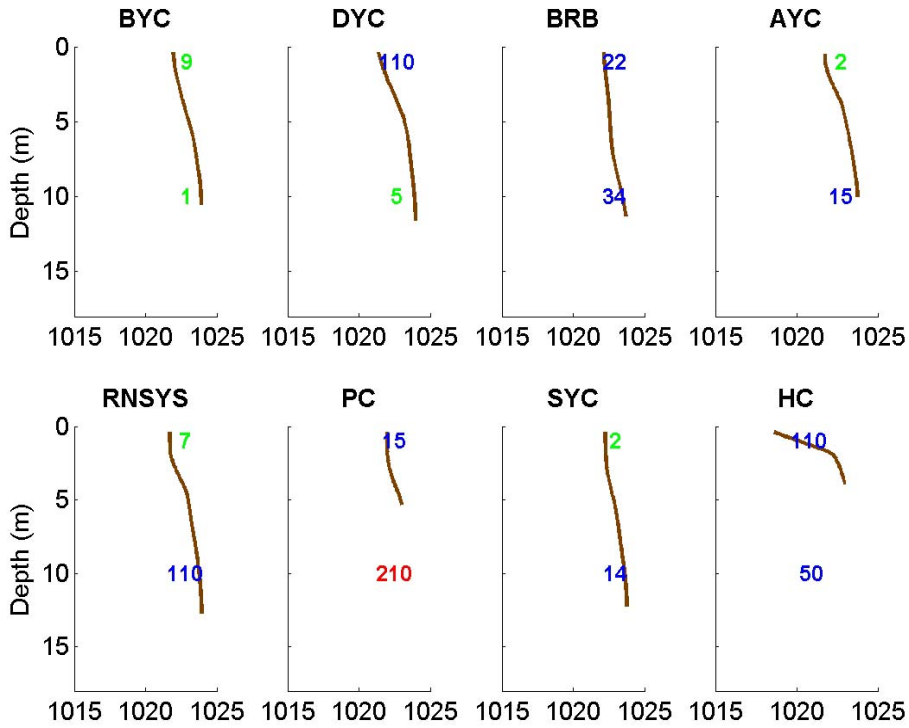




Unless otherwise labeled:  
 - **density** contour interval is 0.5 kg/m<sup>3</sup>

Scale Bar  
1km

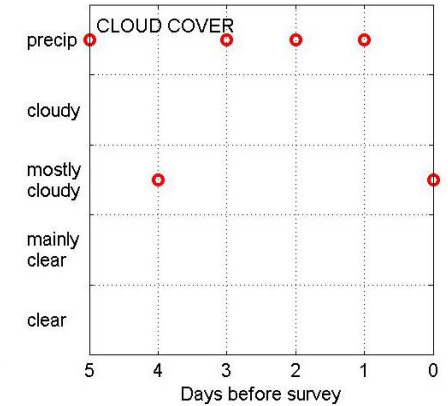
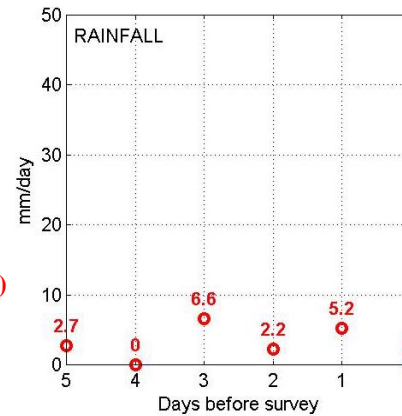
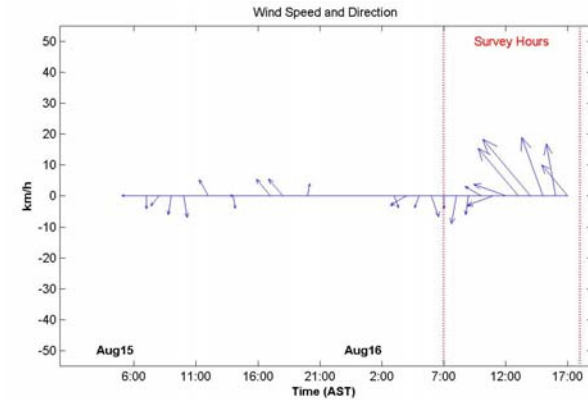
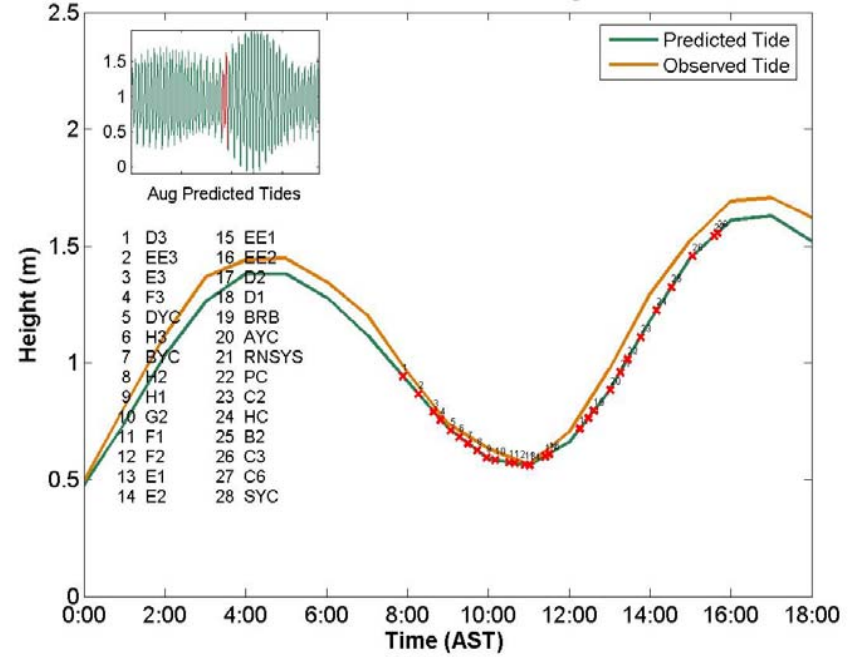
# Yacht Clubs

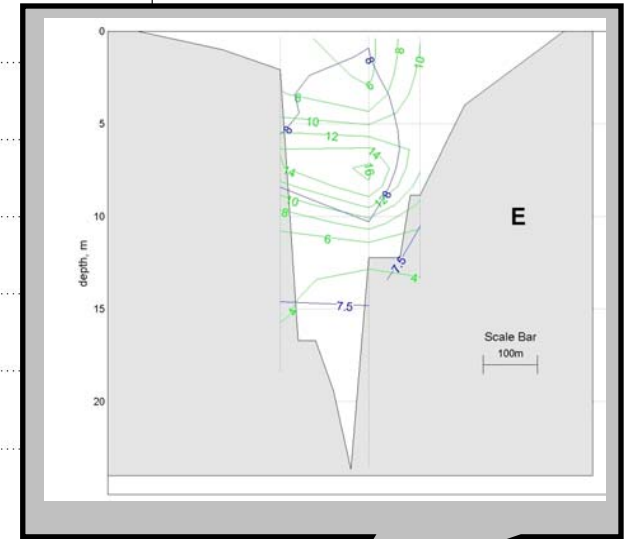
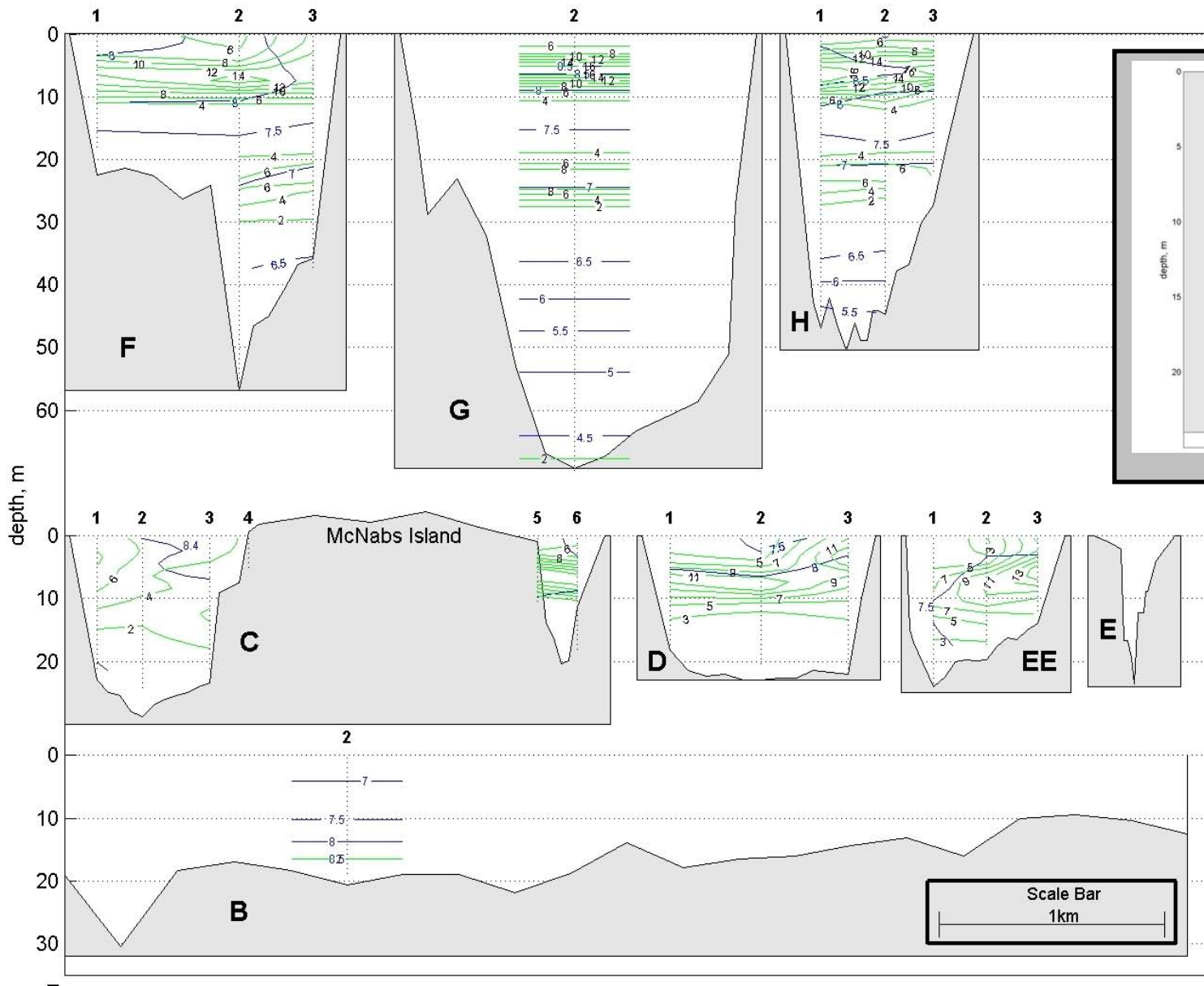


Potential Density in  $\text{kg/m}^3$

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

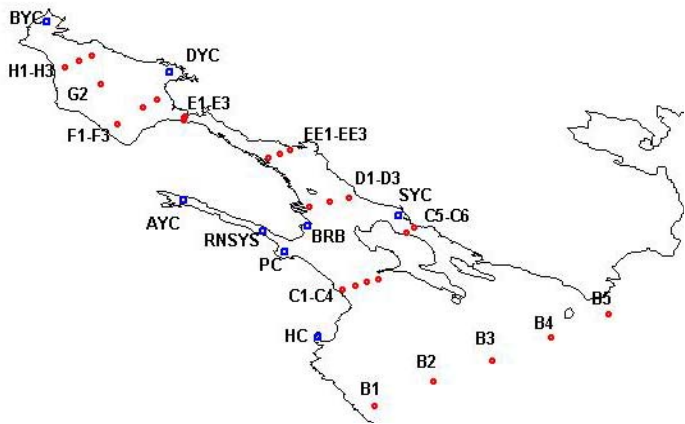
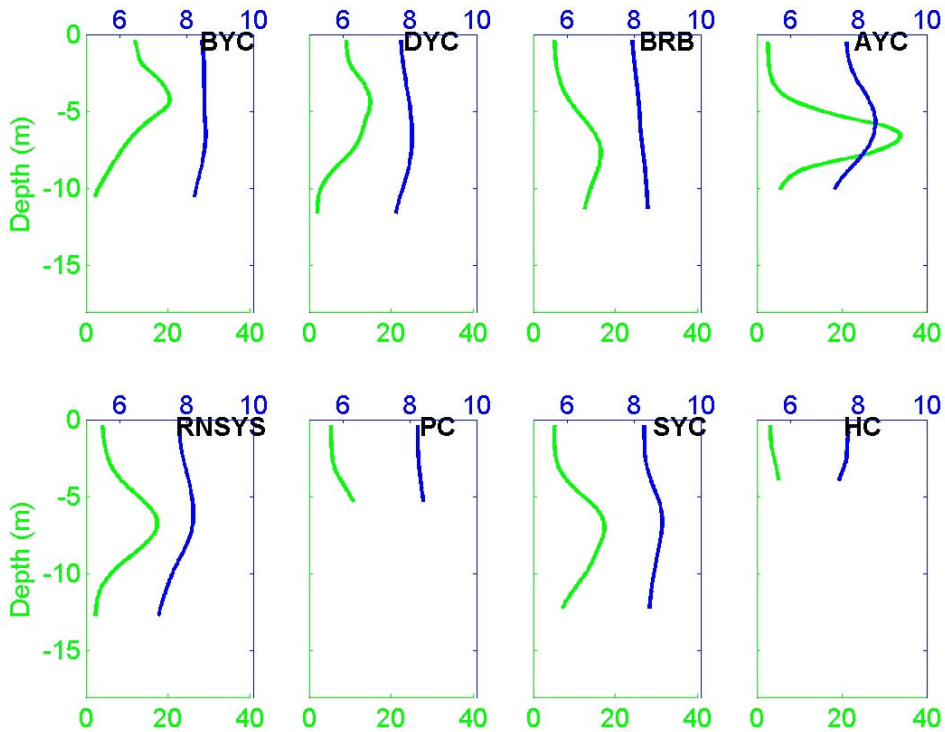
# Halifax Harbour Tides - Aug16





Unless otherwise labeled:  
 - **dissolved oxygen** contour interval is 0.5 mg/L  
 - **chlorophyll** contour interval is 2 mg/m<sup>3</sup>.

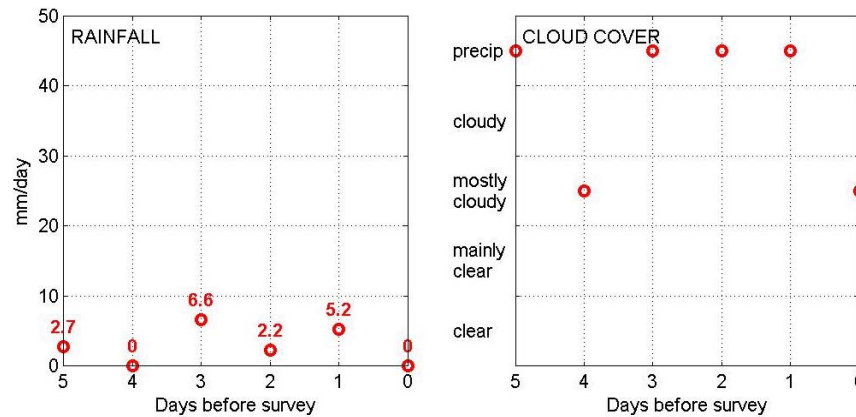
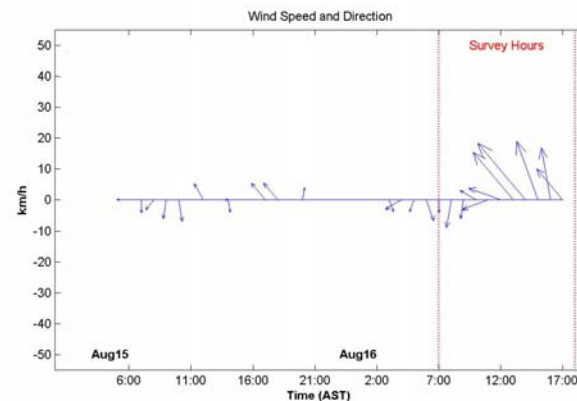
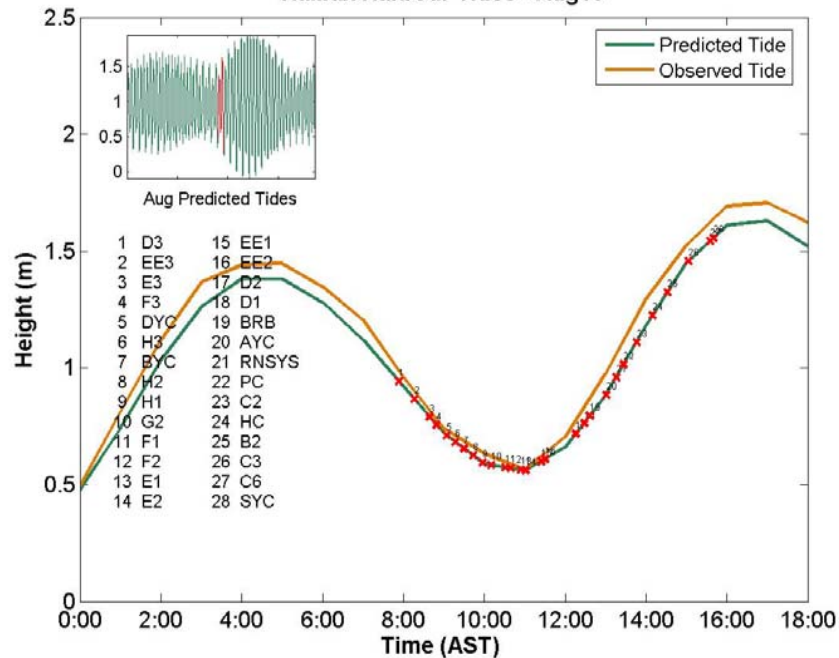
# Yacht Clubs



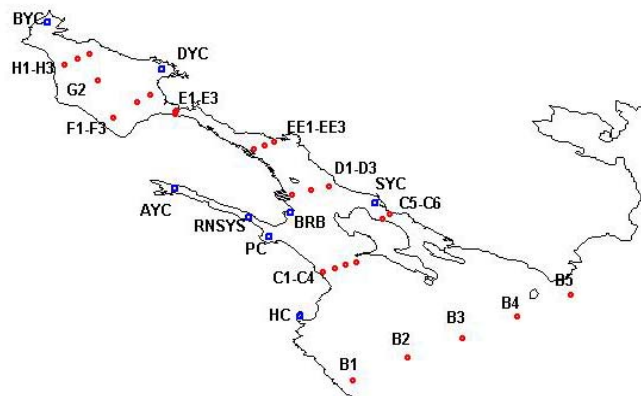
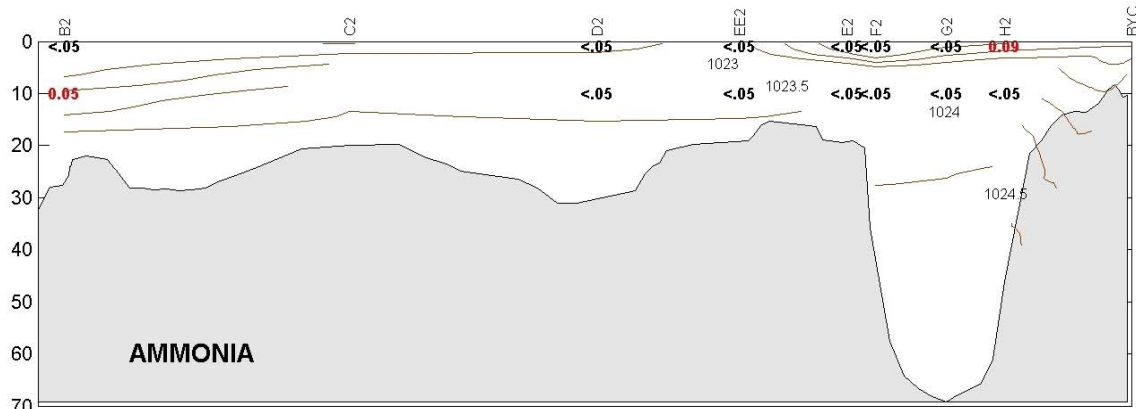
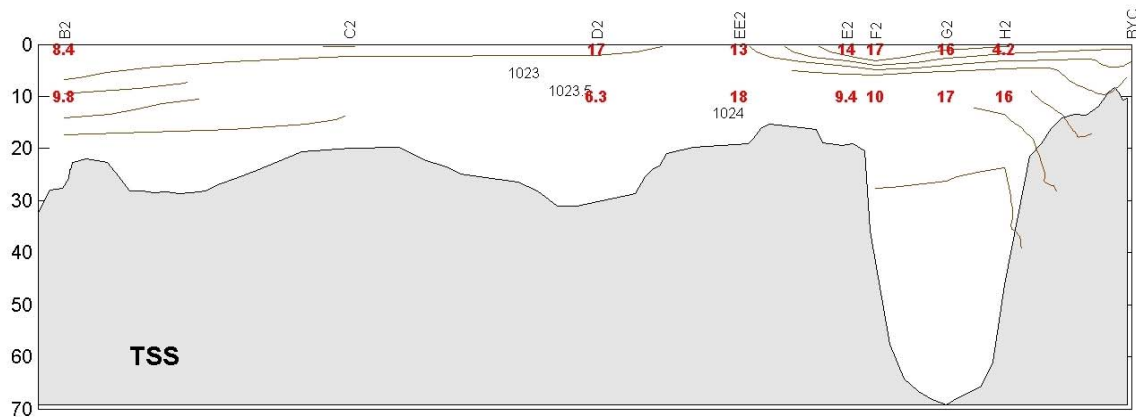
DO in mg/L

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

# Halifax Harbour Tides - Aug16



CHEMISTRY



Potential Density in  $\text{kg/m}^3$

Ammonia in  $\text{mg/L}$

TSS in  $\text{mg/L}$

Halifax Harbour Tides - Aug16

