

Halifax Harbour Water Quality Monitoring Project

Weekly Summary #39

Survey Date: 15 March 2005
Nature of Survey: Complete Survey
Report File (this document): HHWQMP_report039_050315.doc
Data File: HHWQMP_data039_050315.xls

Data Return:

Profile: 90%
 Bacteria: 89%
 Chemical: 100%
Overall: 93%

Sample Notes:

AYC, DYC and HC not sampled due to ice

The dissolved oxygen sensor malfunctioned so the DO data is not valid, the pump appears to have been working and other sensors appear unaffected.

A strong front was observed adjacent to the Duffus St. Outfall. This stretched from the edge of the dry-dock to the wharf edge adjacent to the outfall. Photos were taken of the feature (roll #2, frames 21, 22 and 23) and a surface water sample was taken at 44.6703° N, 63.5977° W.

QA/QC samples:

Chemical Analysis

Detectable Parameter	units	F2-10m		G2-1m	
		reference sample	Dup	reference sample	QA/QC
Ammonia (as N)	mg/L	0.08	Missing	0.08	0.14
Total Suspended Solids	mg/L	6.8	Missing	6.3	7.7
Boron	ug/L	4100	4100	3800	4300
Lithium	ug/L	190	180	180	180
Strontium	ug/L	7500	7400	7000	6900
Titanium	ug/L	59	56	51	56
Uranium	ug/L	3	2.8	2.6	2.5

Fecal Coliform (CFU/100ml)

Site	SYC-1m	E1-1m	D1-10m	G2-1m
Reference	190	7	310	8
QA/QC	88	8	310	9

Regulated parameters with all samples below detection (<EQL)

Parameter	EQL(µg/L)	Parameter	EQL(µg/L)	Parameter	EQL(mg/L)
Cadmium	3	Nickel	20	Oil and Grease	5
Chromium	20	Zinc	50	CBOD ₅	5
Lead	5				

Detectable non-regulated metals

Boron, lithium, strontium, titanium and uranium exhibit very stable background concentrations in the harbour. These levels have been documented in previous reports.

Comments:

Copper: One sample (G2-1m) had detectable levels of copper, at 120 ug/L. This sample exceeds the guideline for copper of 2.9 ug/L.

Manganese: Two samples (F2-1m and H2-10m) had detectable levels of manganese (26 ug/L and 24 ug/L, respectively). Neither of these exceeds the 100 ug/L guideline for manganese.

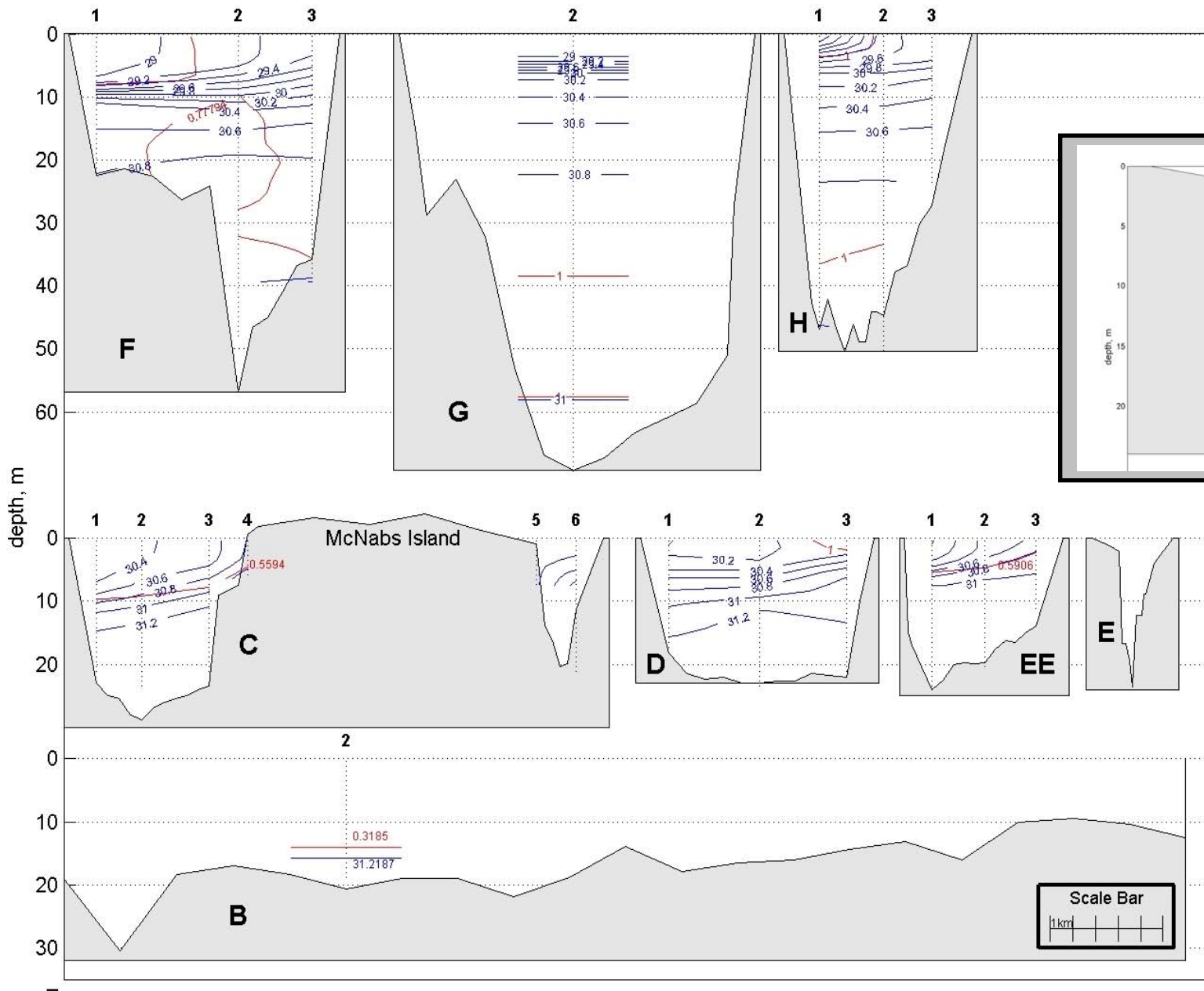
Chlorophyll a: Chlorophyll a values are up compared to winter values. There is a maximum in all profiles at a depth of 7-10m. In the Basin this maximum is approximately 5-8 mg/m³, in the inner Harbour it is about 2.5-4 mg/m³ and at B2 it is 1.6 mg/m³

Opportunistic Sample: The Duffus St. sample had the following relevant values :

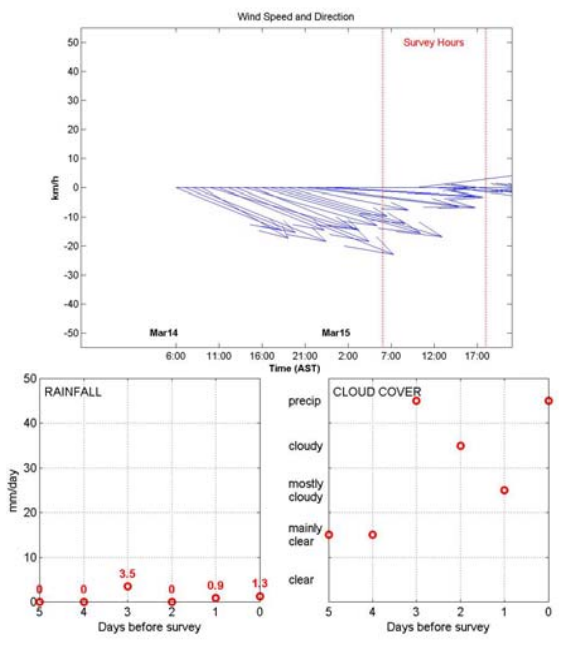
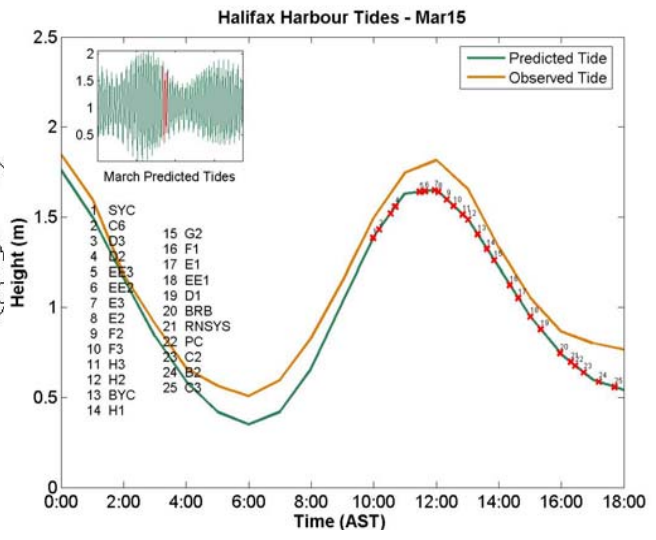
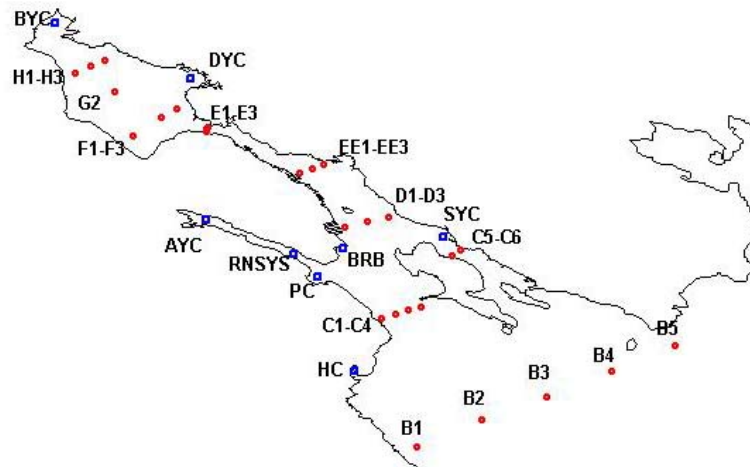
Detectable Parameter	Units	Value	Detectable Parameter	Units	Value
Fecal Coliform	CFU/100mL	64000	Ammonia (as N)	mg/L	0.55
CBOD ₅	mg/L	5.7	TSS	mg/L	14

General: There is bottom water at the sill in the Narrows which is denser than the Basin bottom water. This implies that intrusion into the Basin is occurring. The fecal coliform distribution is displaced down harbour (EE and D sections) likely due to the combination of the intrusion of shelf bottom water, strong north winds and a falling tide.

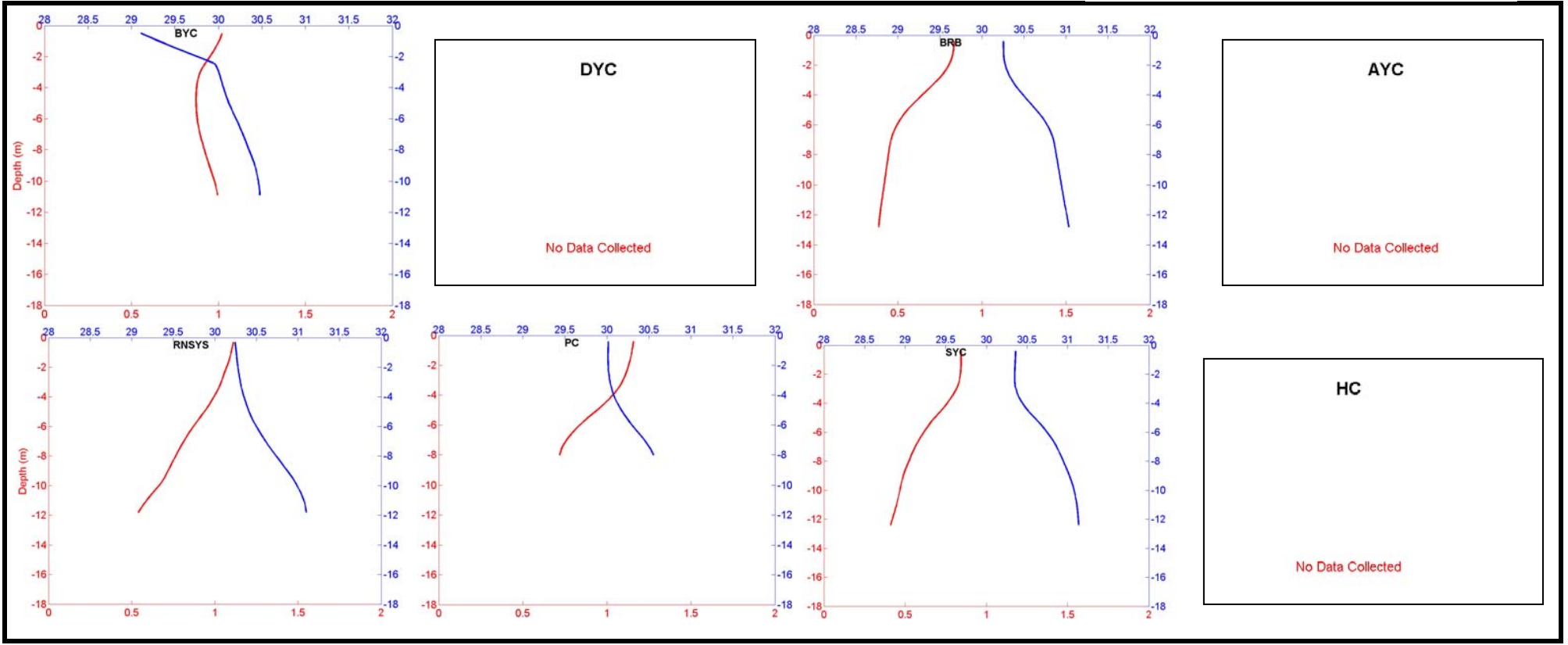
TEMPERATURE-SALINITY CONTOURS



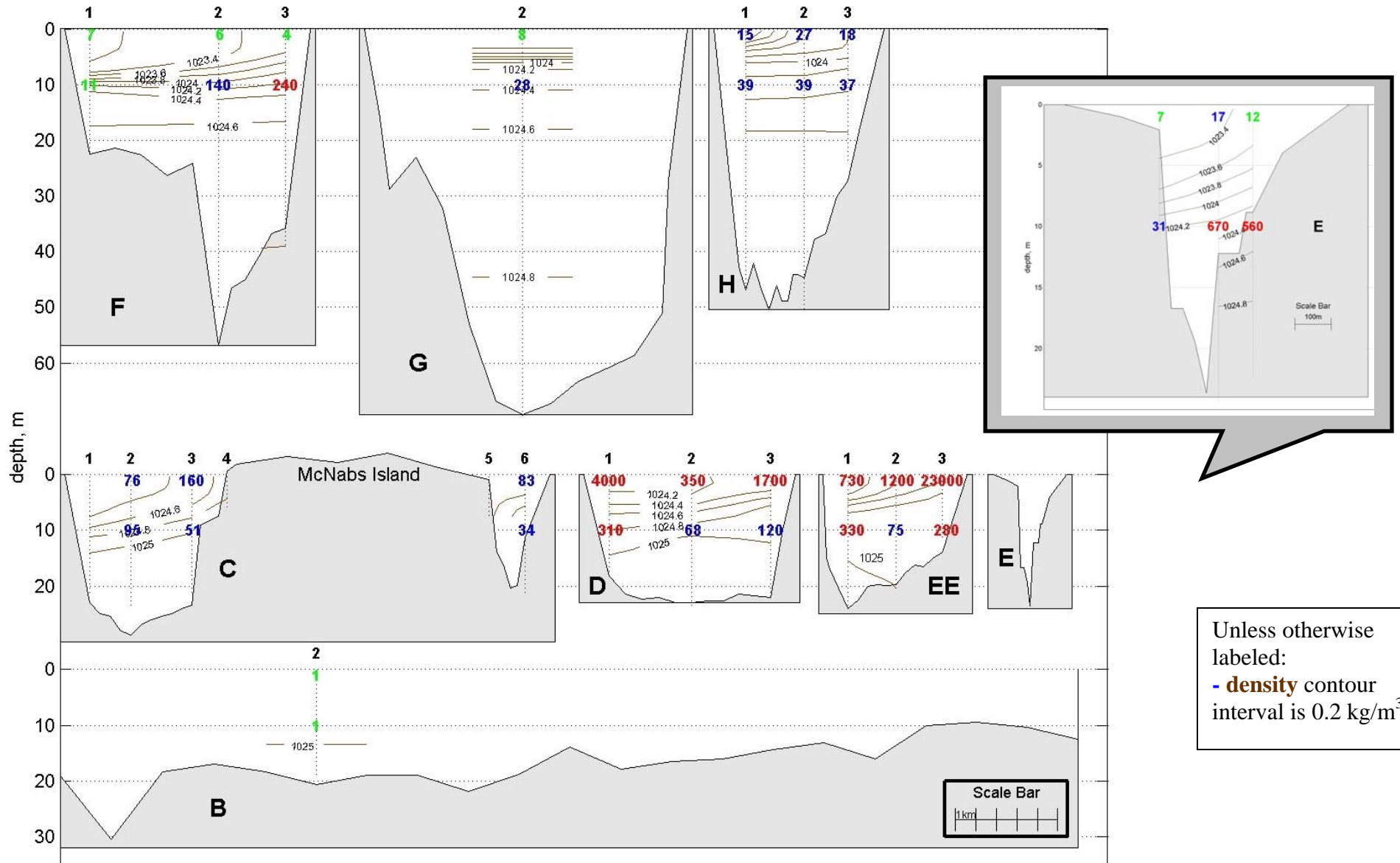
Unless otherwise labeled:
 - salinity contour interval is 0.2 PSU
 - temperature contour interval is 1°C.



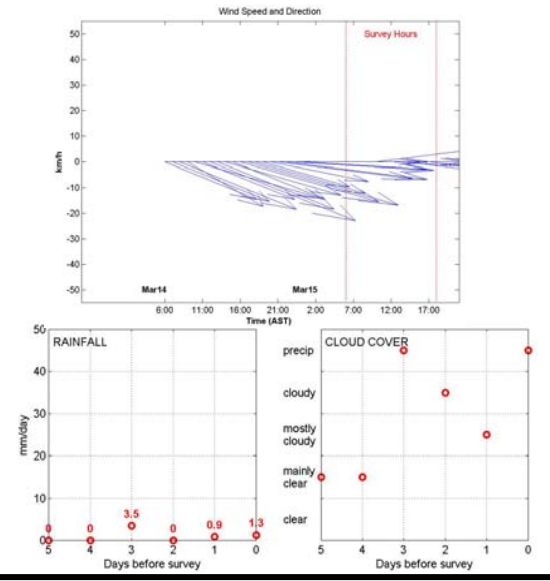
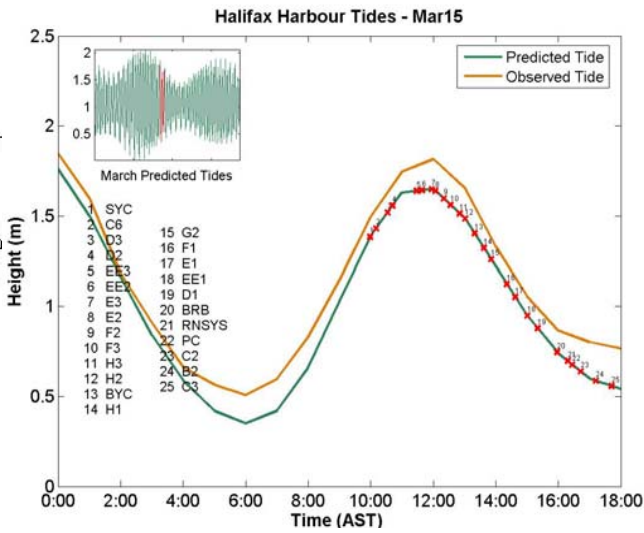
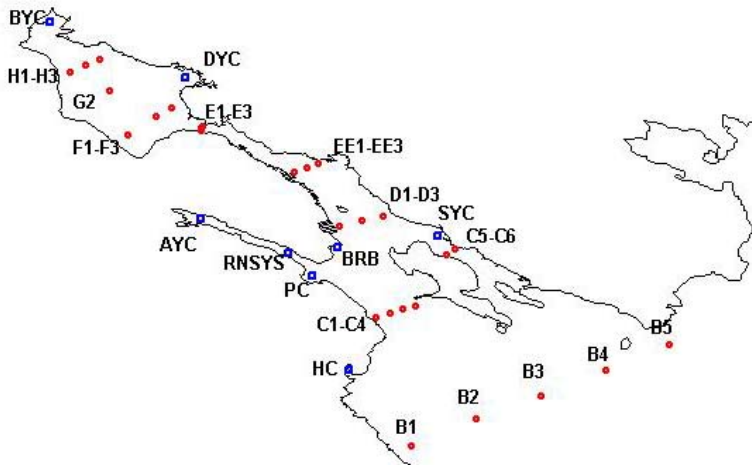
Yacht Clubs



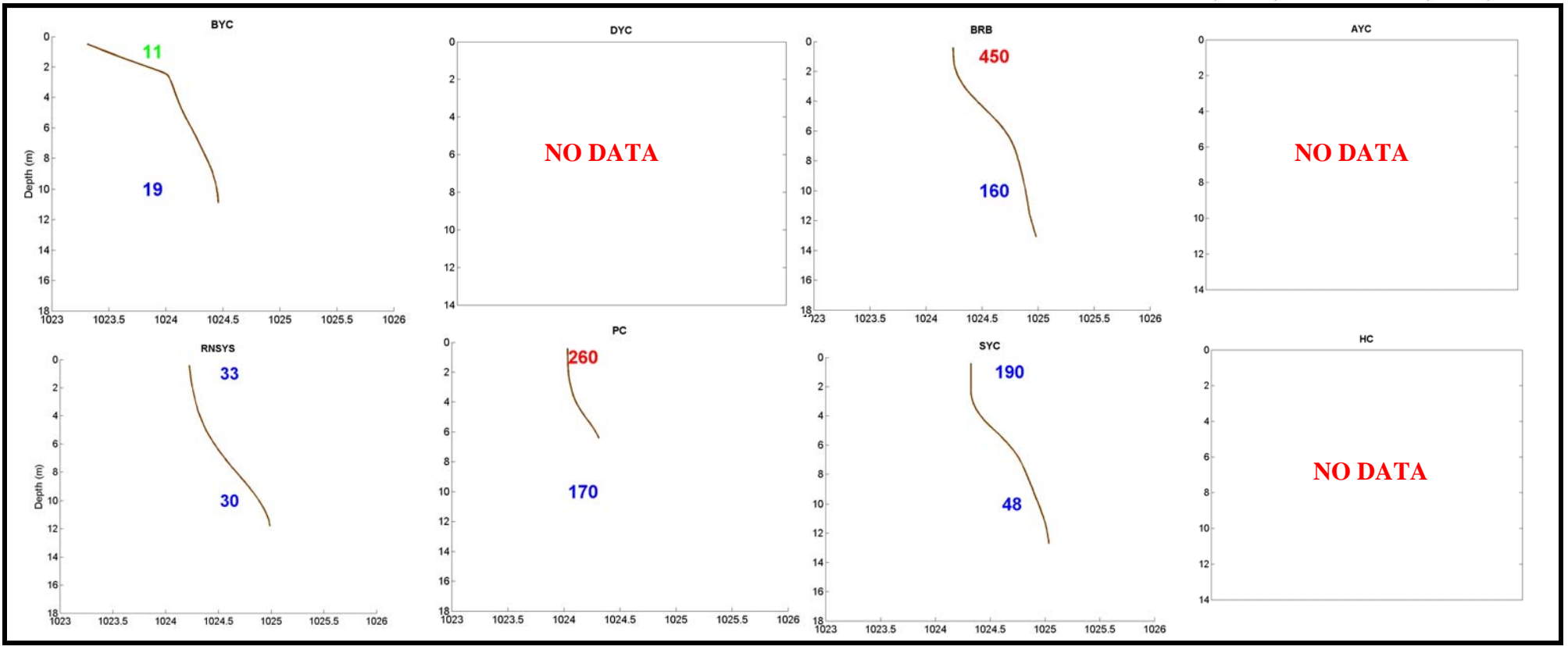
Salinity in PSU Temperature in °C



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



Yacht Clubs

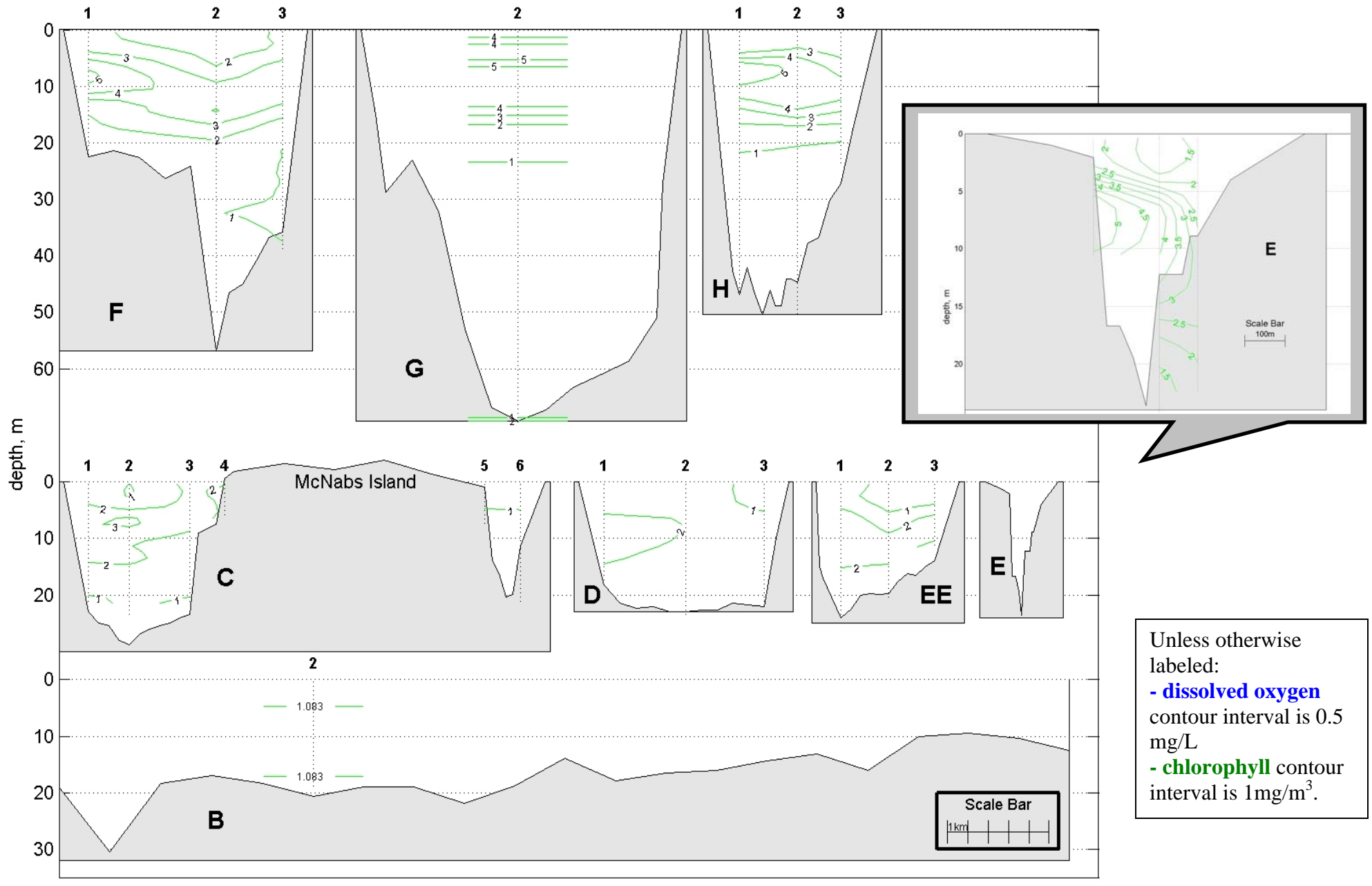


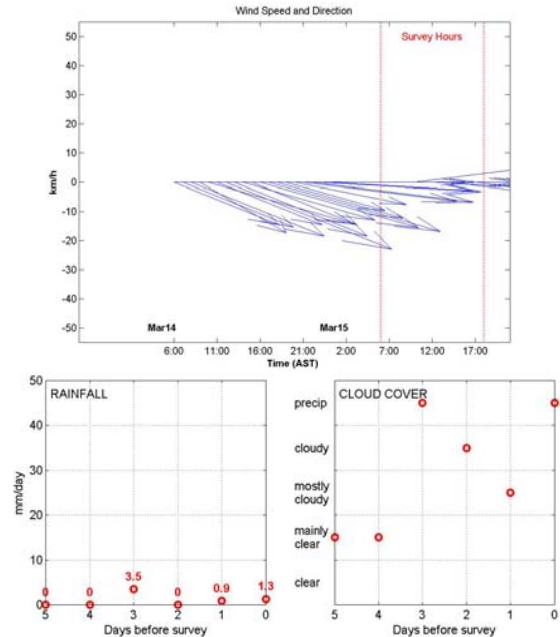
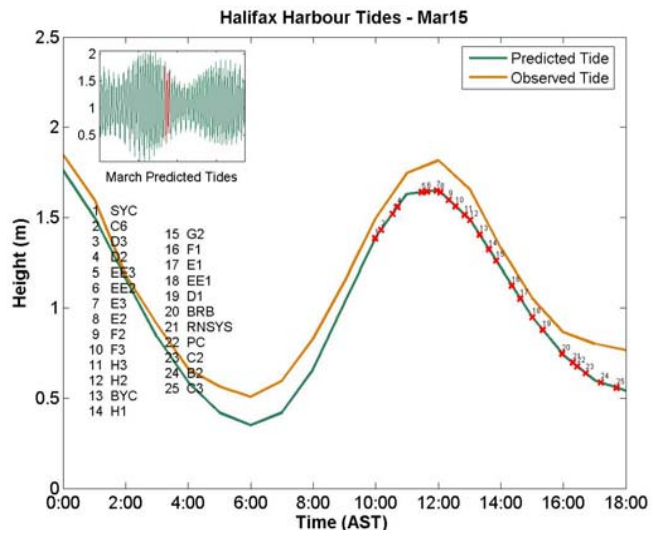
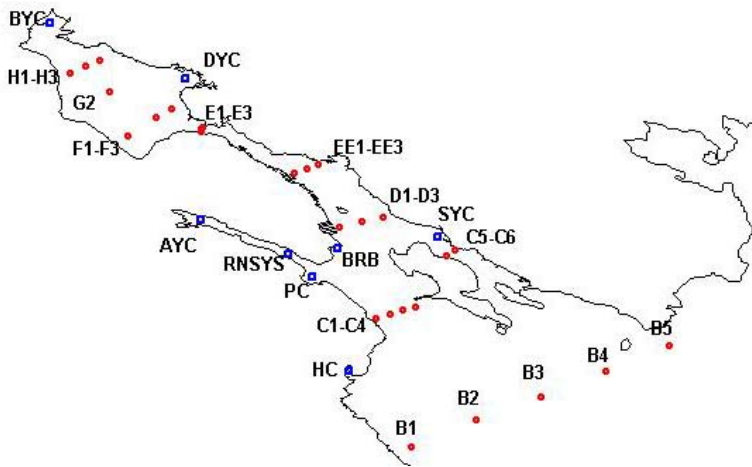
Density in kg/m³

Fecal coliform: below limits

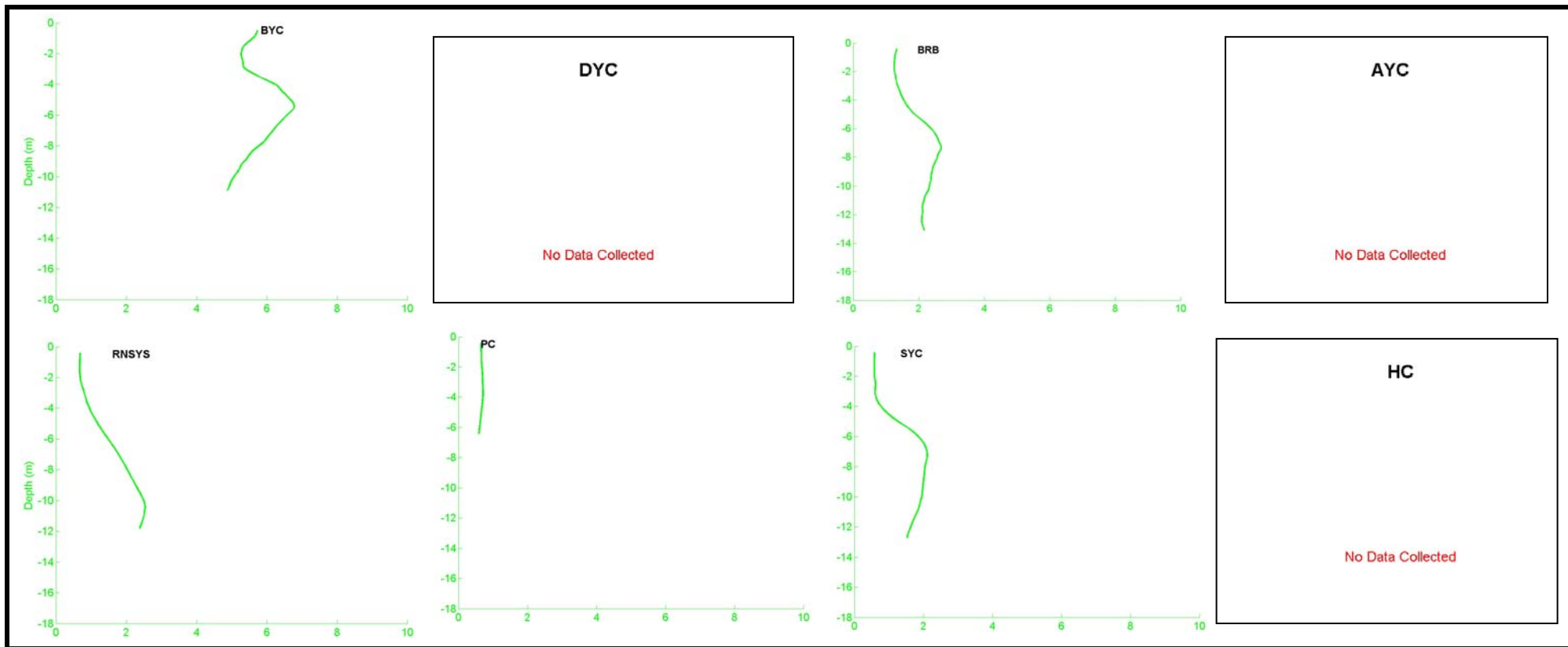
above shellfish limit (14 cfu/100mL)

above swimming limit (200 cfu/100mL)





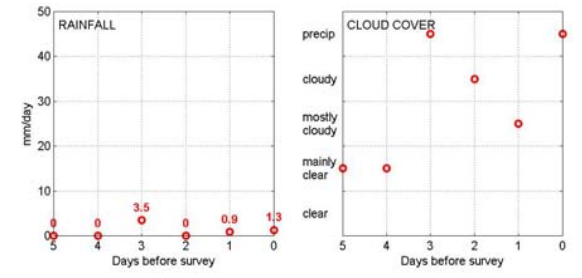
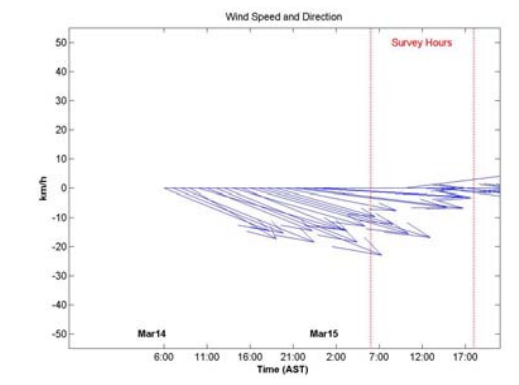
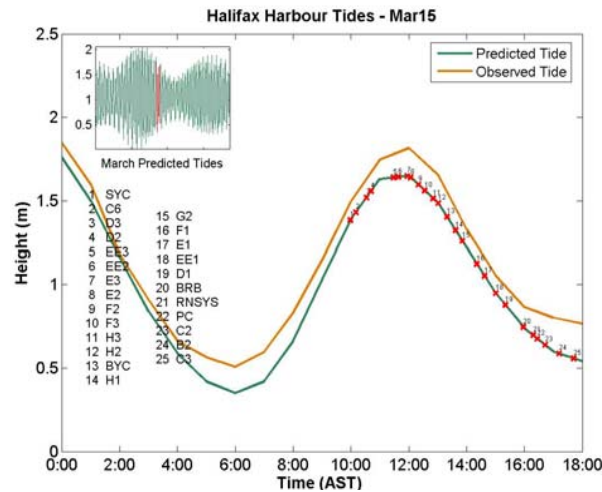
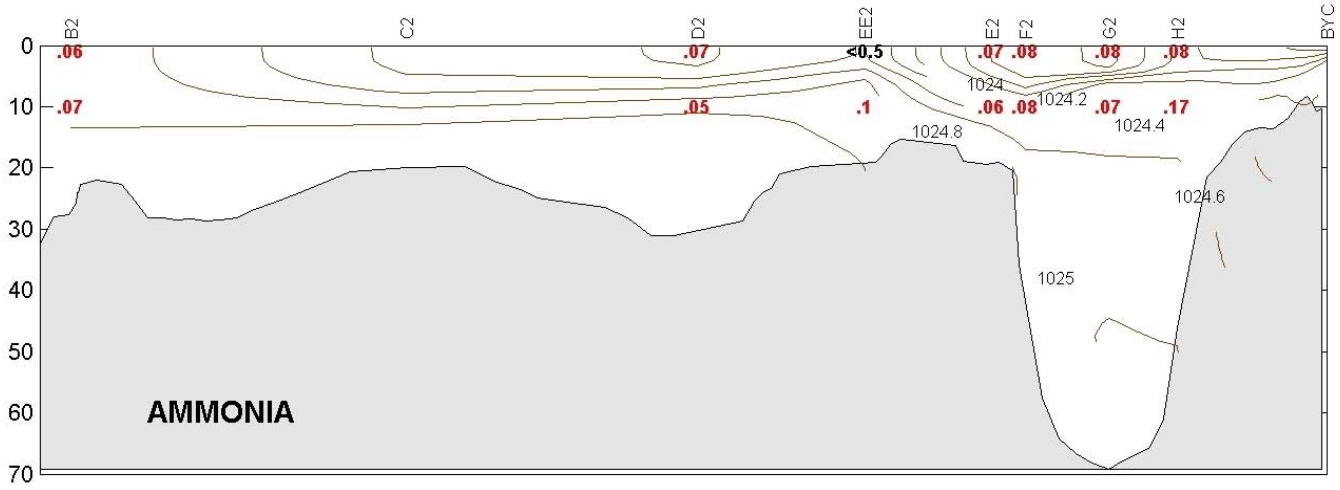
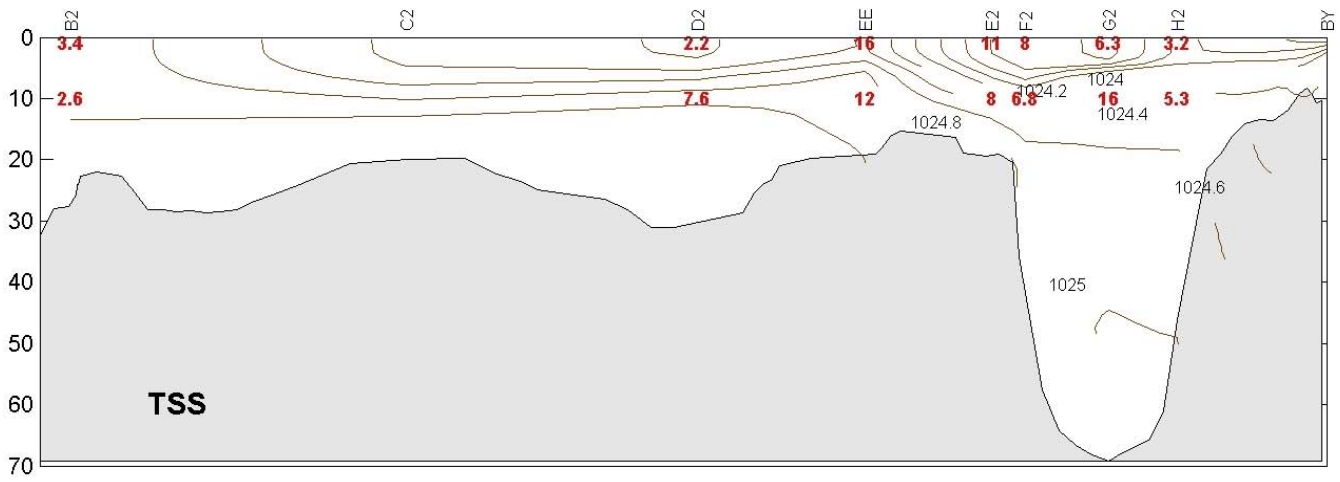
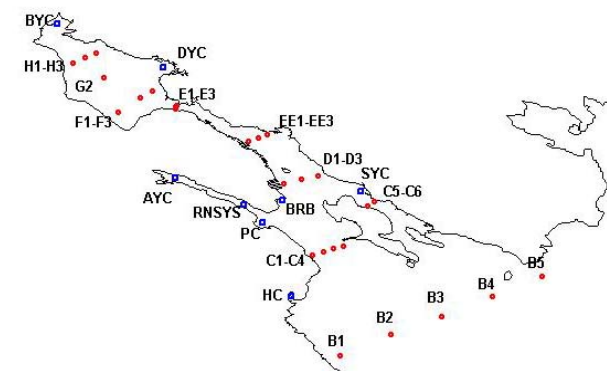
Yacht Clubs



DO in mg/L

Chlorophyll in mg/m³

CHEMISTRY



Density in kg/m^3

Ammonia in mg/L

TSS in mg/L