

Halifax Harbour Water Quality Monitoring Project

Weekly Summary #98

Survey Date: 02 May 2006
Nature of Survey: Coliform Survey
Report File (this document): HHWQMP_report098_060502.doc
Data File: HHWQMP_data098_060502.xls

Data Return:

Profile: 97%
 Bacteria: 96%
 Chemical: na
Overall: 97%

Sample Notes:

At site F1 the CTD did not come to proper equilibrium. The reason is uncertain. The data from this site is plotted but has been removed from the data file. Bacteria samples were not obtained at station EE1 due to sampler breakdown.

QA/QC samples:

Fecal Coliform (CFU/100ml)

Site	BYC-1m	C2-1m	D3-10m	SYC-10m
Reference	4	3	57	10
QA/QC	10	3	40	8

Comments:

General: This is an unusual week. There has been moderate rainfall of 9.5 mm in the day before the survey. Nonetheless since last week the salinity stratification has decreased in the Basin and is elsewhere similar. The 30 psu isohaline is at a depth of about 10 m from section C north through Bedford Basin. The surface temperature has not changed significantly, it is slightly higher in the Basin and slightly lower elsewhere. The deeper water is definitely cooler than last week. In the Inner Harbour, out to Section C the bottom water, about 4.5 °C last week, has been replaced by water, likely from the Shelf, about 1.5° C cooler. However, at the time of the survey the water at the bottom(>20 m) at B2 is 4.5 °C, warmer than the water at this depth anywhere else in the Harbour. Overall, water at site B2 is very slightly warmer and saltier than last week and is almost completely vertically uniform in both

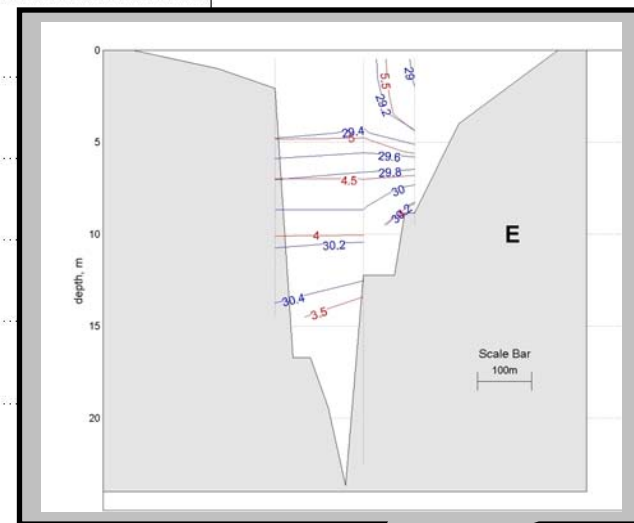
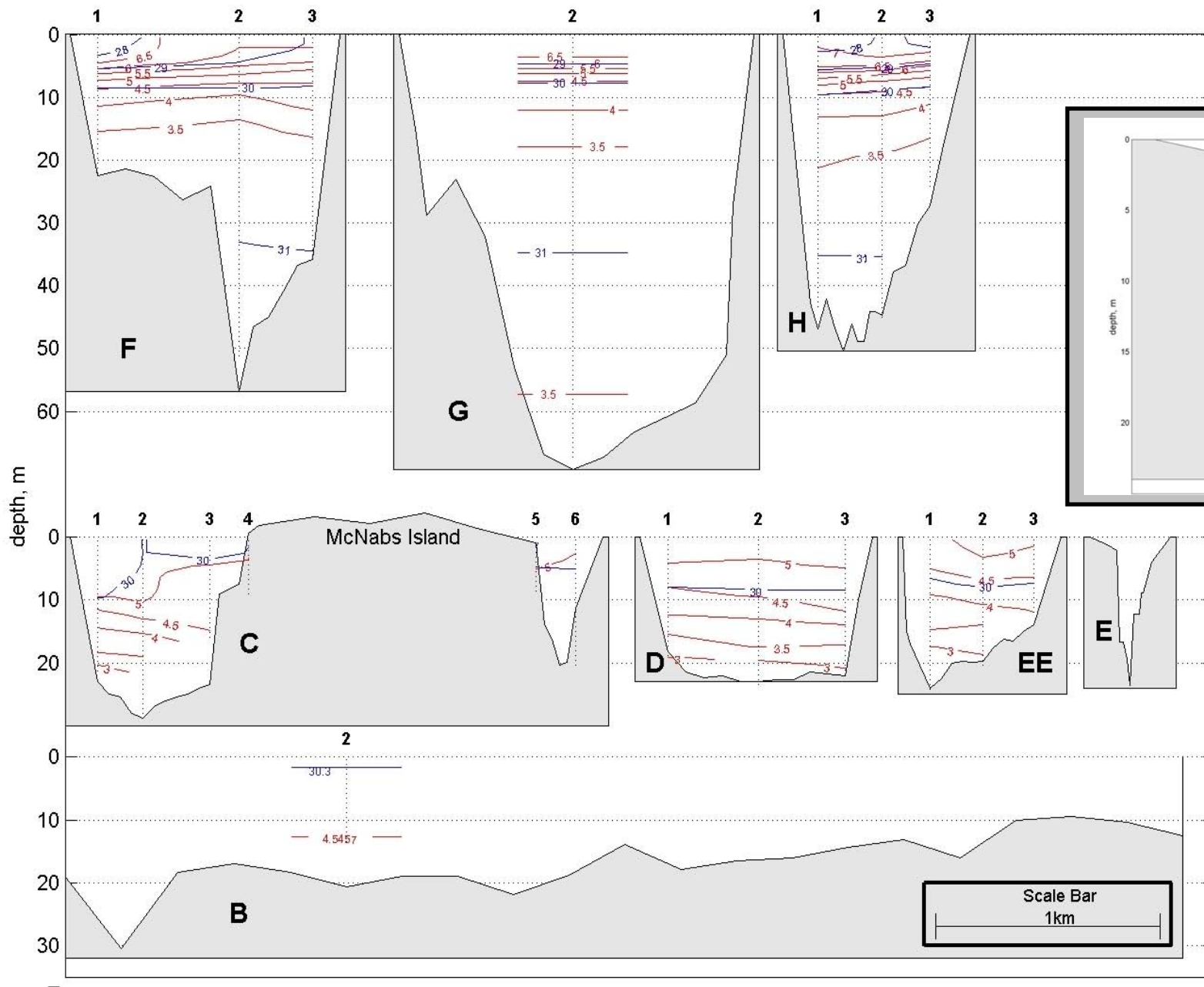
temperature and salinity. The wind since the previous day has been moderate 20-30 km/h from the east and east northeast. The water level data indicates that the observed water level is set down about 10 cm from the predicted tide.

The coliform values are high and displaced up harbour in both the 1 and 10m samples. This pattern seems mirrored in the NW arm, where the values at both RNSYS and AYC are higher than usual. Site E2 has an out of range value (>10,000 fc/100 ml) in the one metre sample. This is a very unusual if not unique occurrence at this site. Anomolously, the highest values in the southern Basin are in the 1m samples rather than the more normal situation with the higher values in the 10 m samples. In the Outer Harbour the coliform values are at very low or non-detectable levels.

At first glance there appears to be an up-harbour flow of surface water,. This is supported by the bacteria distribution, perhaps caused by the consistent downwelling winds. However, this seems inconsistent with the lower than predicted water levels and the occurrence of the colder bottom water in the Inner Harbour. The situation here is complex, perhaps the result of disparate wind/waterlevel events during the week

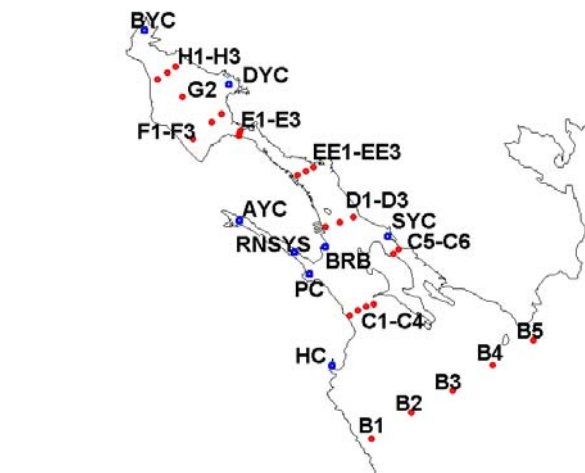
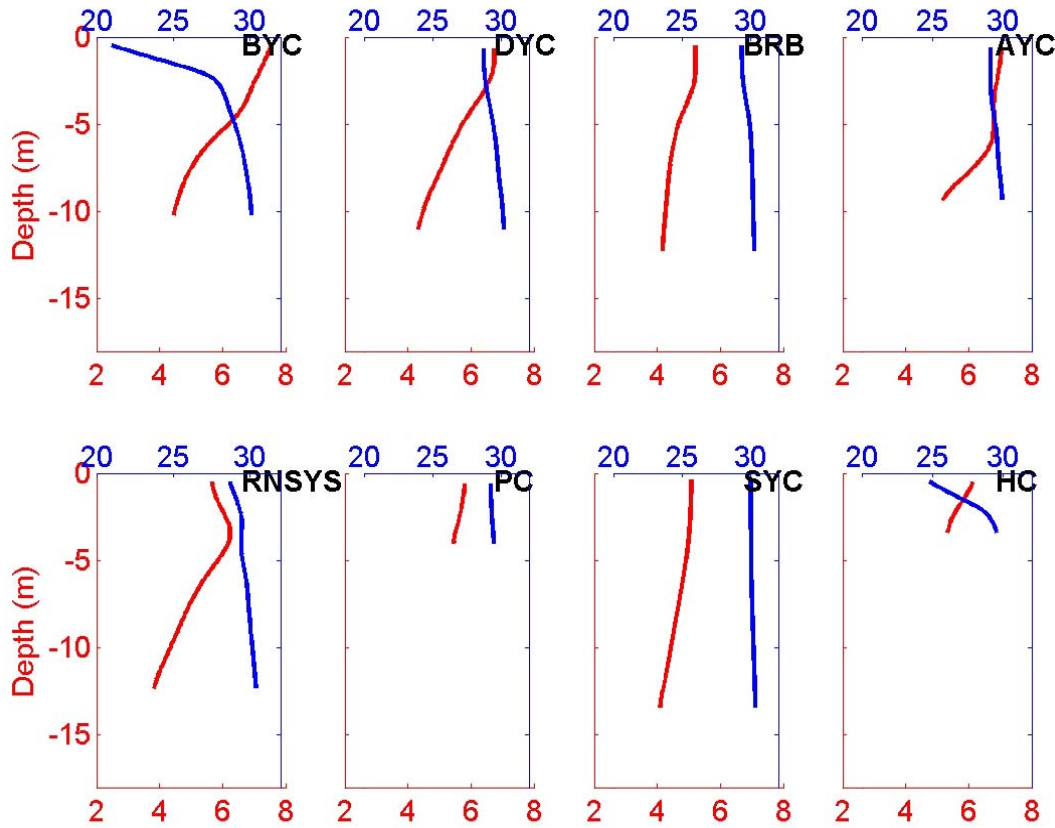
Fluorescence: The fluorescence levels are generally higher than those of last week. The highest values, about 22mg/m³ (more than twice last weeks maximum) occur in centre of the Basin (site G2). Elsewhere in the Basin, Inner Harbour and Northwest Arm profile maximums are in the low teens. Everywhere the maximums are at a depth of 5-10 m. The levels drop precipitously in the Outer Harbour to about 3.0 mg/m³ at Section C , a little higher in Eastern Passage, and a typical “background” level of 1.1 mg/m³ at B2.

Dissolved Oxygen: The data indicate that, the DO values are slightly higher than last week. The surface water values are at 8.5 to 9.0 mg/L. The minimum value in the deepest part of Bedford Basin has increased by about 0.5 mg/L suggesting a partial renewal, which may be related to the cold bottom water in the inner harbour, this is not obvious in the salinity/temperature data. The Basin deep water represents the only values below the applicable use-specific guidelines this week. The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1).



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

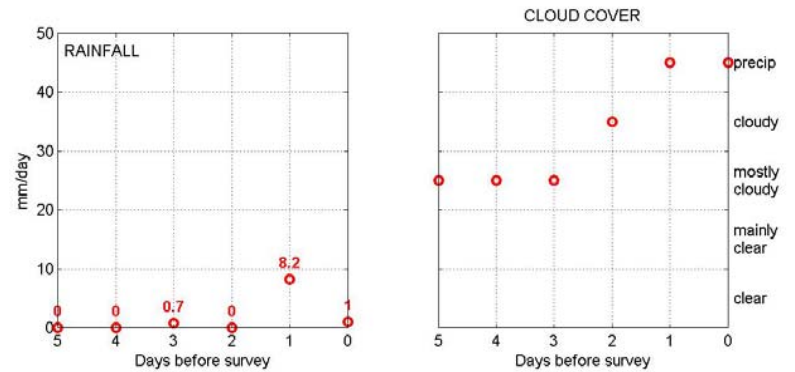
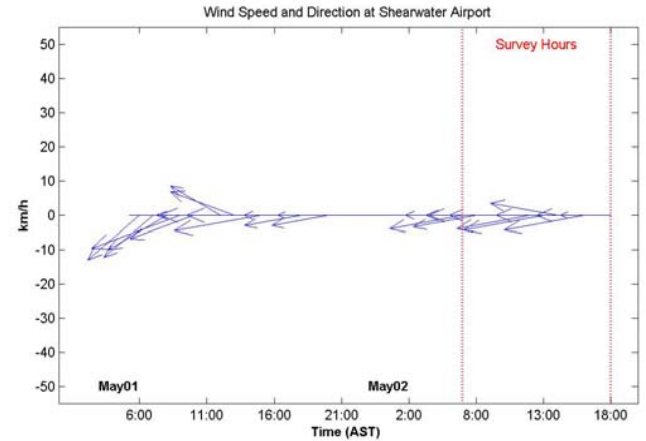
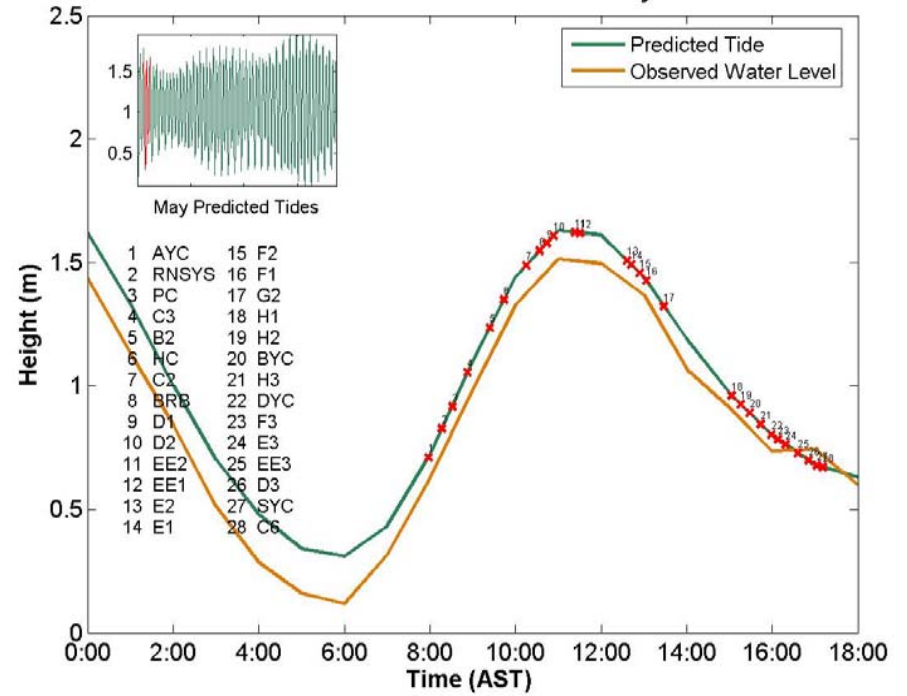
Yacht Clubs

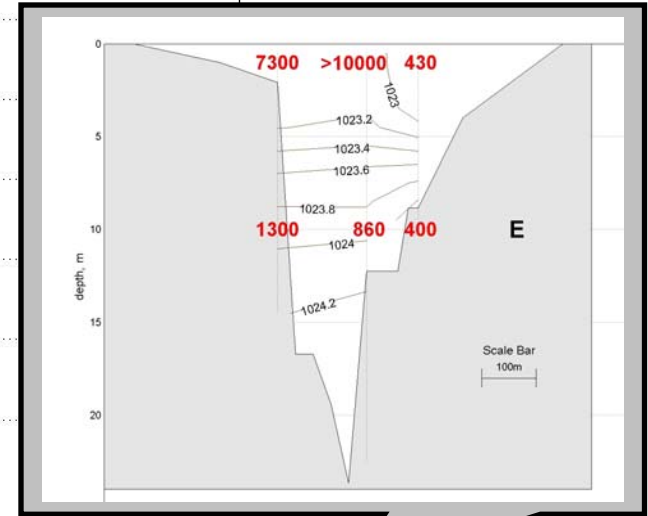
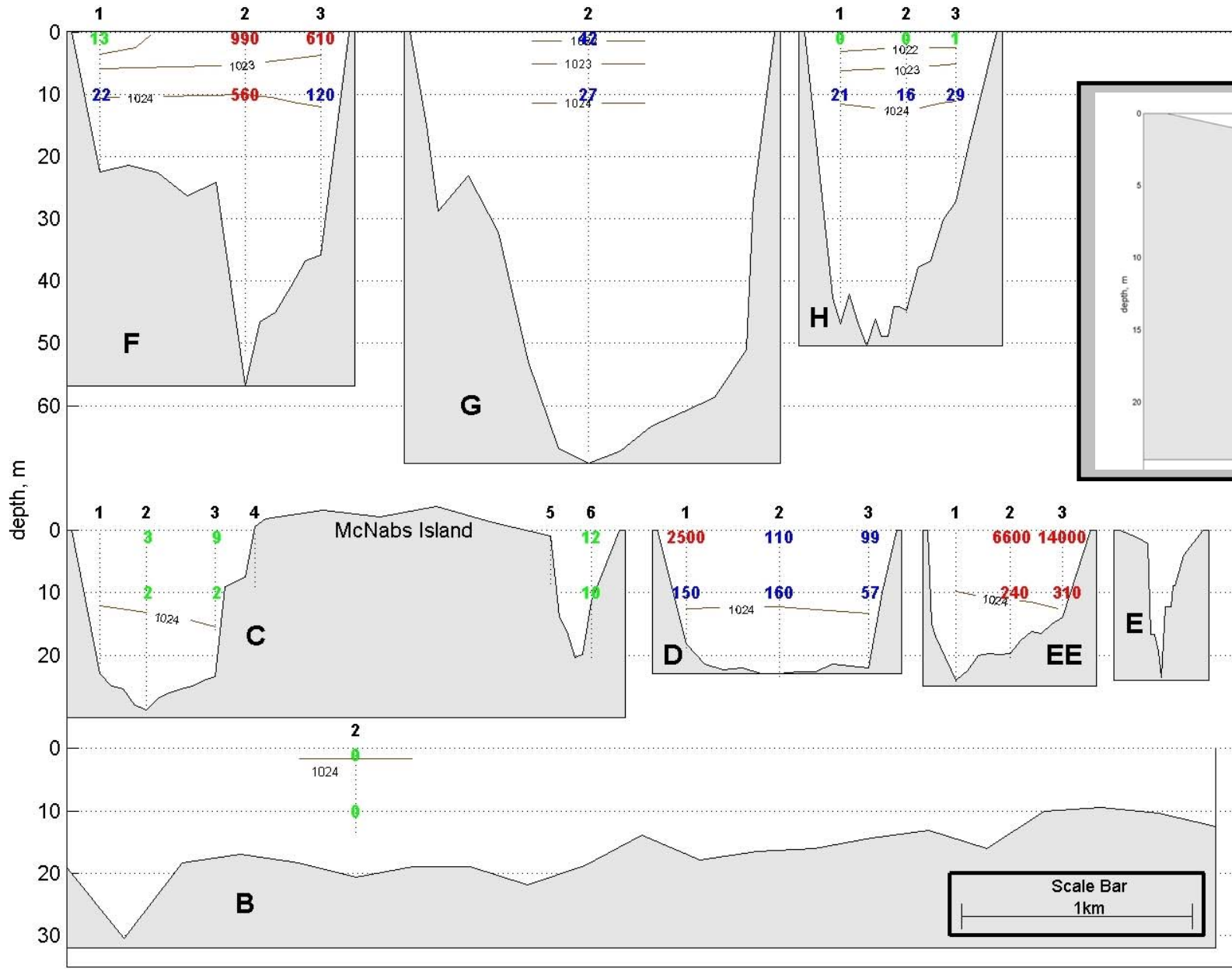


Salinity in PSU Temperature in °C

Weather data collected at the Shearwater Airport

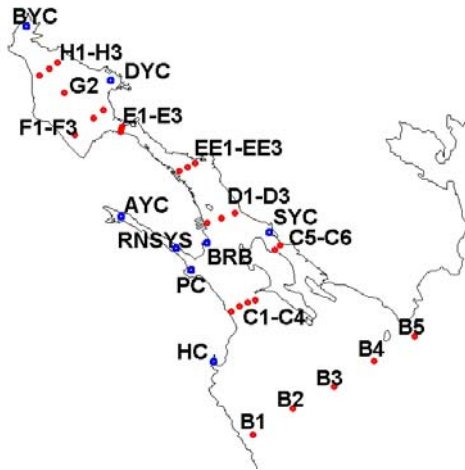
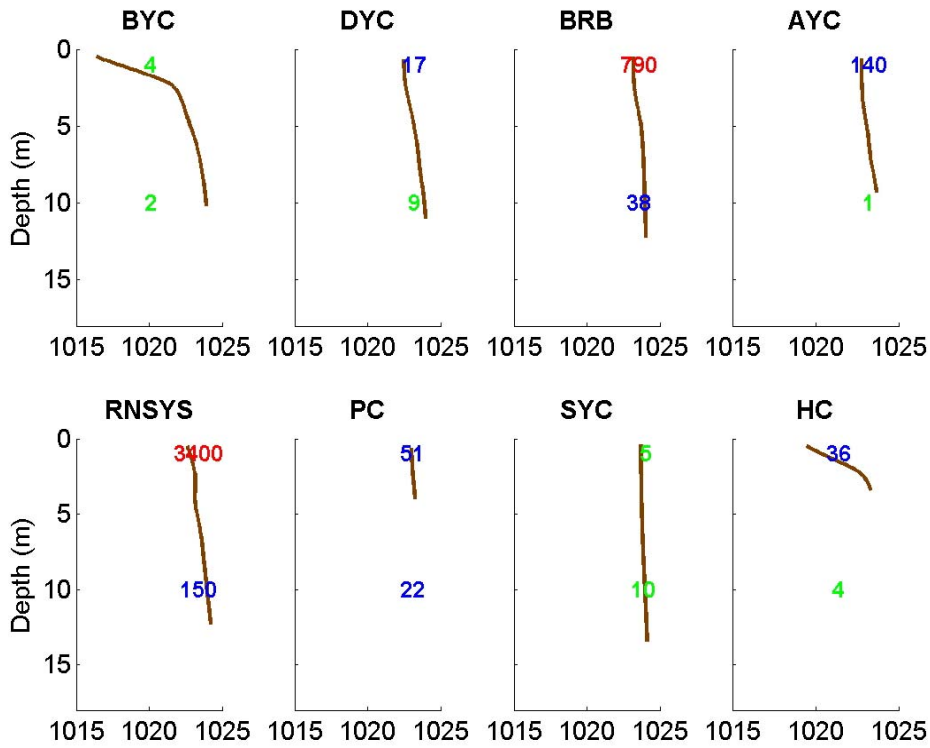
Halifax Harbour Water Level - May02





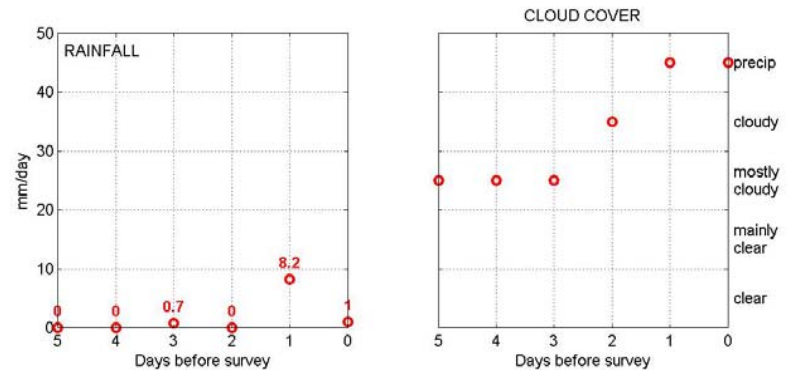
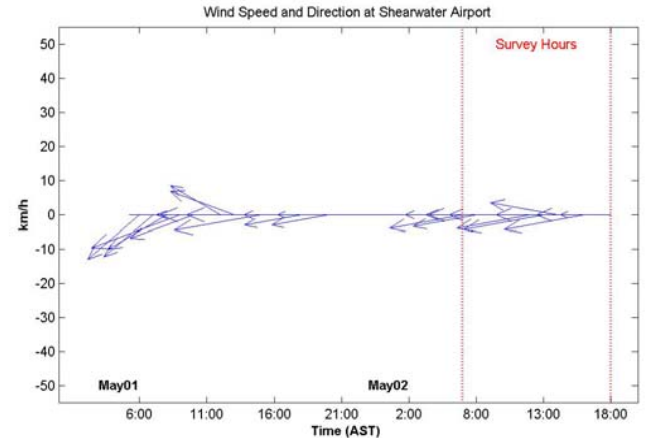
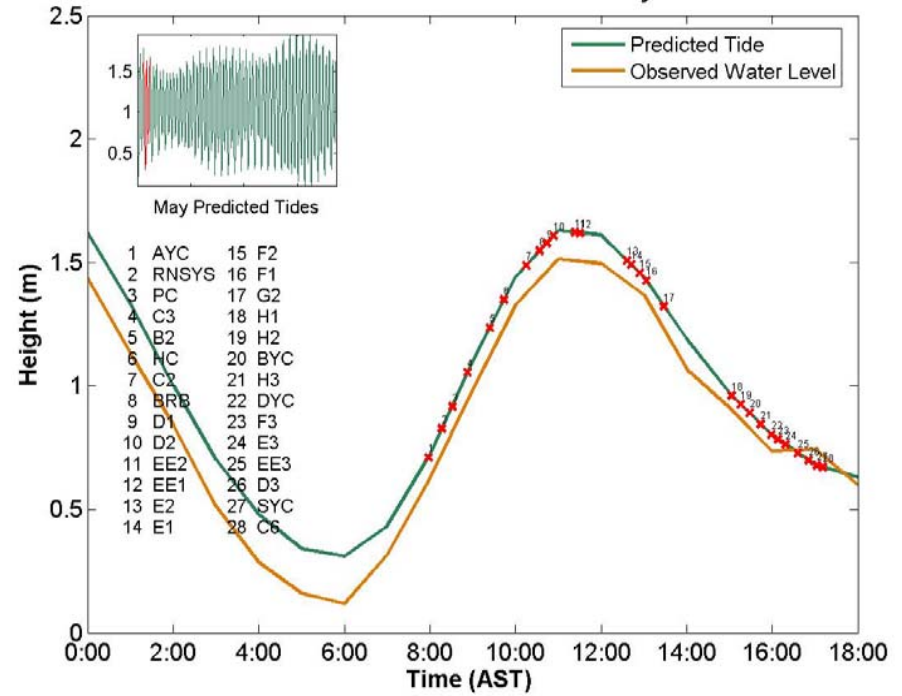
Unless otherwise labeled:
 - **density** contour interval is 1 kg/m³

Yacht Clubs



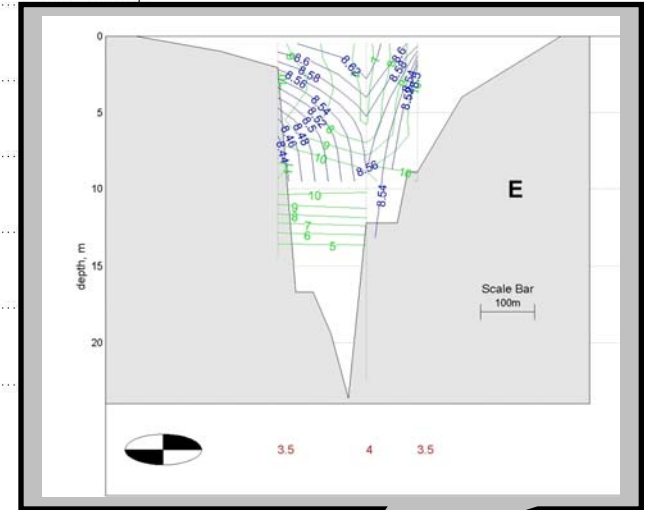
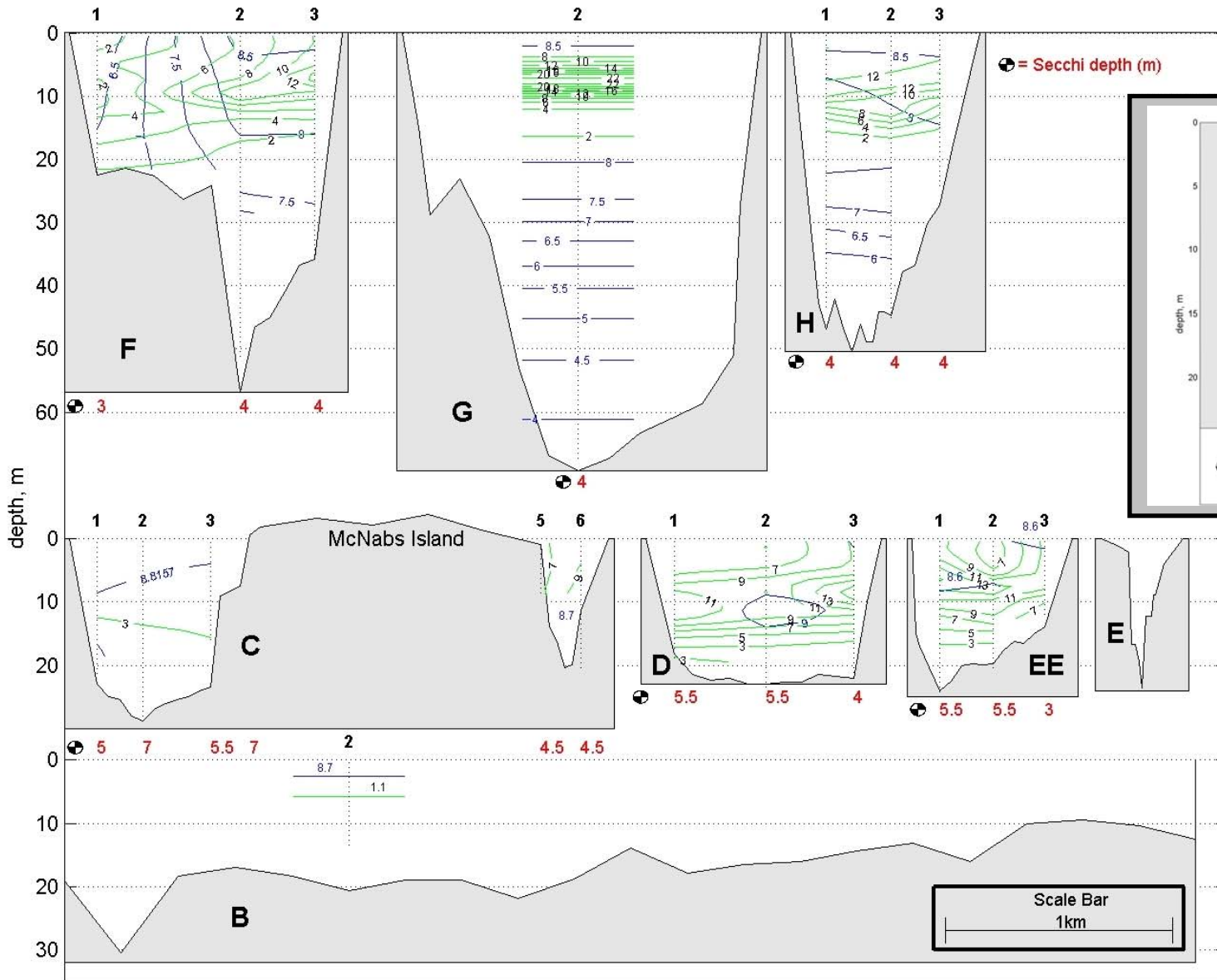
Weather data collected at the Shearwater Airport

Halifax Harbour Water Level - May02



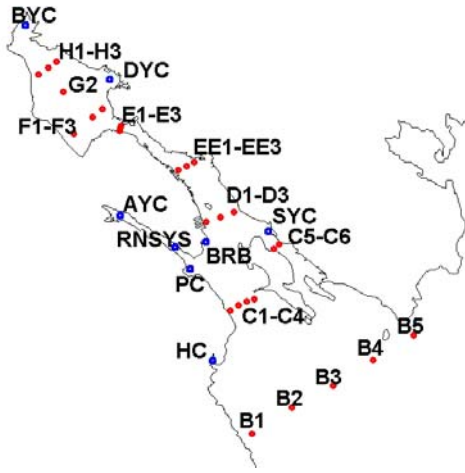
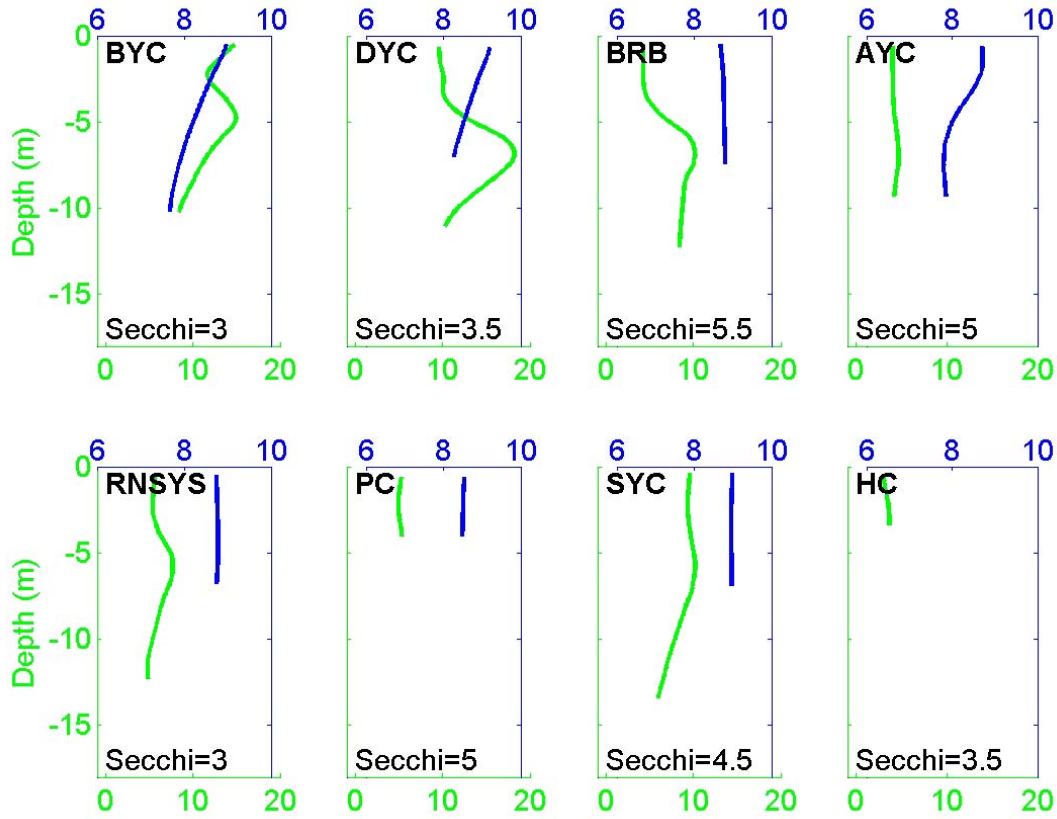
Potential Density in kg/m^3

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



Unless otherwise labeled:
 - **dissolved oxygen** contour interval is 1 mg/L
 - **chlorophyll** contour interval is 2 mg/m³.

Yacht Clubs



DO in mg/L

Chlorophyll in mg/m³

Weather data collected at the Shearwater Airport

Halifax Harbour Water Level - May02

