

Halifax Harbour Water Quality Monitoring Project Weekly Summary #62

Survey Date: 23 August 2005
Nature of Survey: Coliform Survey
Report File (this document): HHWQMP_report062_050823.doc
Data File: HHWQMP_data062_050823.xls

Data Return:
 Profile: 80%
 Bacteria: 98%
 Chemical: na
Overall: 87%

Sample Notes:

Station PC was moved to PC2 (44° 36.742' N 63° 334.056' W) due to difficulty accessing PC in the larger sampling vessel. The CTD data from this site is also missing.

Station C3 was not sampled.

On many stations (C2, C4, C5, C6, D3, EE1, E3, F2, F3, H3, BRB, DYC and SYC) the CTD was not allowed sufficient time for the DO sensor to reach equilibrium. The result is artificially low DO values (perhaps 0.2 to 0.5 mg/L) at the surface for these profiles. The other sensors should be unaffected.

QA/QC samples:

Fecal Coliform (CFU/100ml)

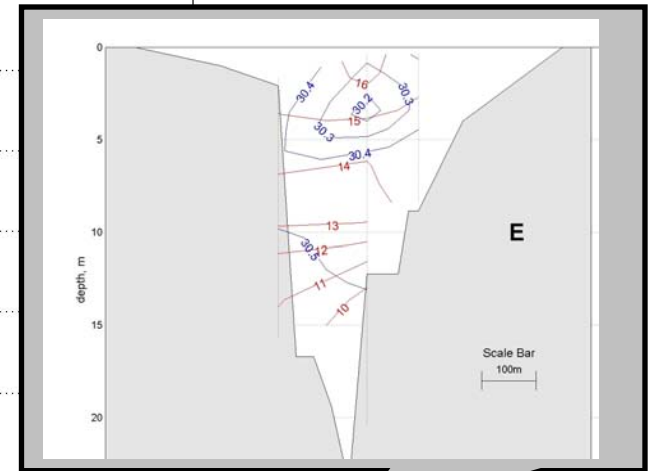
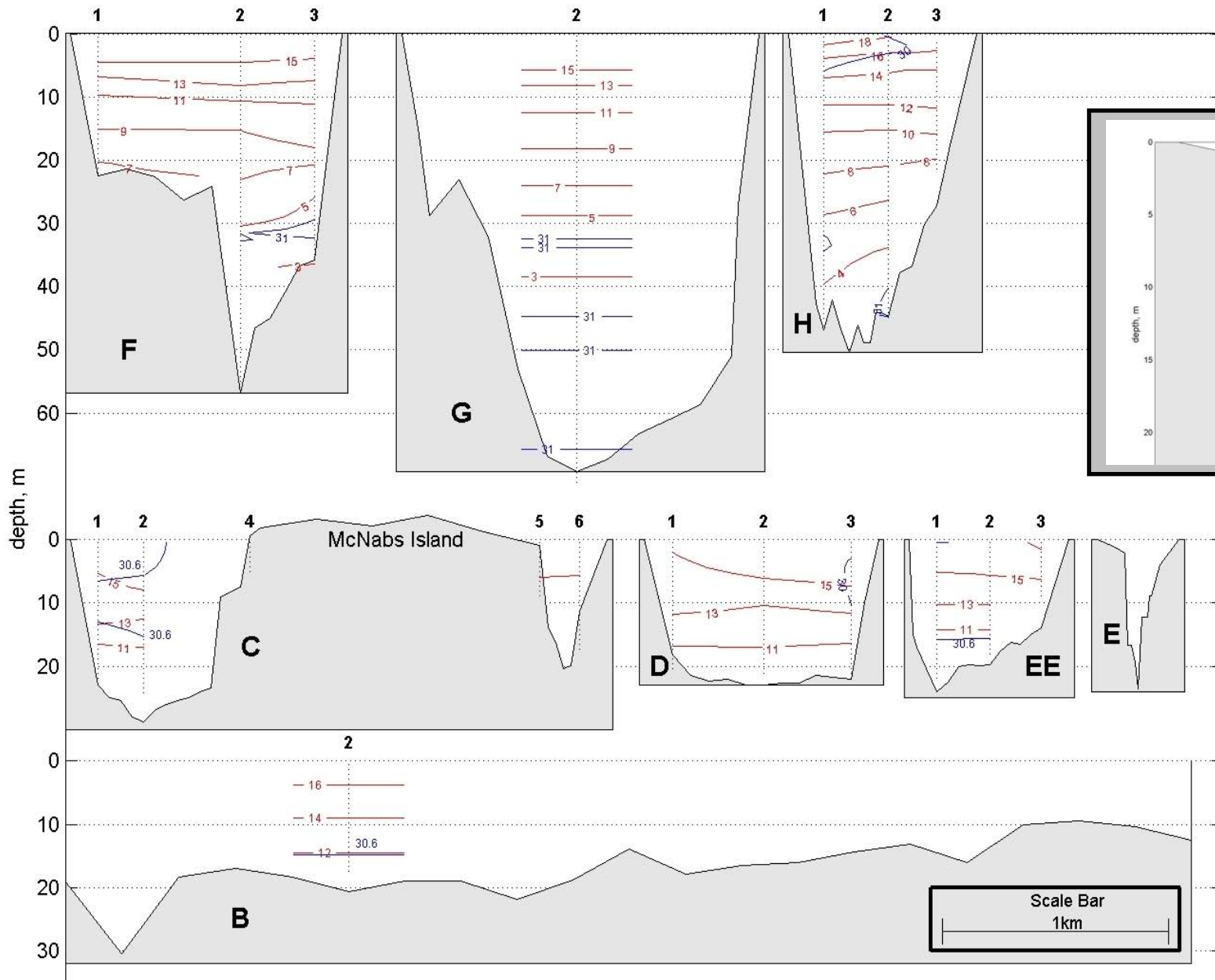
Site	G2-1m	F3-10m	D2-1m	C6-1m
Reference	12	110	5	7500
QA/QC	9	160	160	9200

Comments:

Dissolved Oxygen: In general, based on the good profiles, the measured DO values are relatively low and quite uniform throughout the Harbour. Surface values are 7.0 – 7.5 mg/L (except G2, 8.0 mg/L) and there are small maximums roughly corresponding to the chlorophyll maximums (~5-10m depth). At site B2, the surface waters are below the 8 mg/L SA guideline but the DO increases with depth to 8.2 mg/L. The Basin bottom water below 30 m is below the class SB 7.0 mg/L guideline, with the minimum value being 4.2 mg/L.

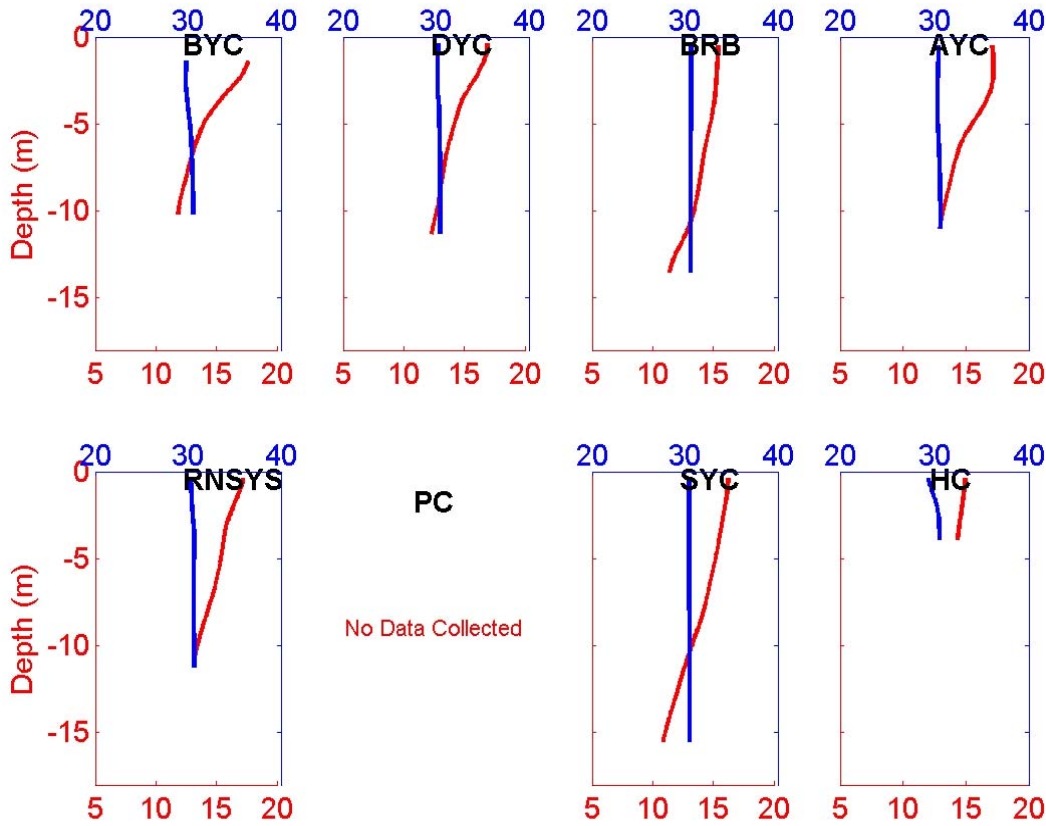
Fluorescence: There is a fluorescence maximum of 14 – 18 mg/m³ at a depth of about 10 m in the Basin. This continues further out the Harbour at similar depth but is somewhat lower in value. The values drop to 5 mg/m³ at section C and 1.7 mg/m³ at section B. There is a local peak of fluorescence of 64 mg/m³, at 7.5 m, measured at AYC, near the head of the Northwest Arm.

General: The lack of rainfall in the intervening week has allowed the Harbour to return to a very unstratified, uniform state. Surface salinities are greater than 30 PSU and surface temperatures are between 16 and 17 °C everywhere in the Harbour. The exception is section H near the head of the Basin where surface water is very slightly fresher and about one degree warmer. The bacteria levels are intermediate in magnitude but the distribution is interesting. Ten of the thirteen values which exceed the swimming guidelines are in the 10m samples. These occur at every section north of the central Harbour (section EE). The cause of this distribution is unclear. There is nothing obvious to suggest strong bottom water transport up the Harbour, though there is approximately a 10 cm surge over tide on the sampling day. This might indicate forcing from shelf processes. The distribution may be affected by an increase in sunlight on sampling day (previous two days were cloudy) which could differentially increase the bacteria decay rate in the surface water.

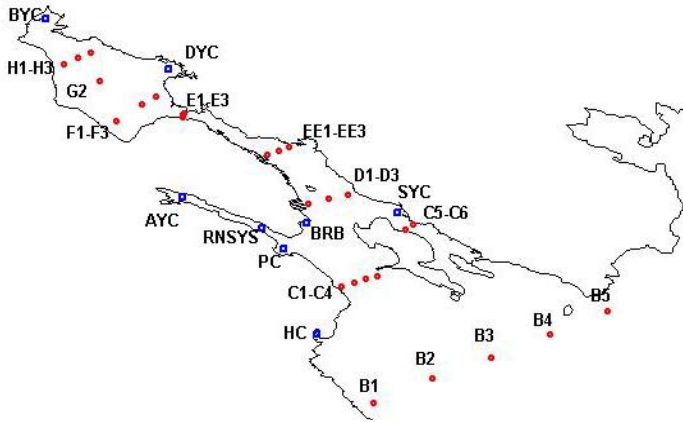


Unless otherwise labeled:
 - salinity contour interval is 1 PSU
 - temperature contour interval is 2°C.

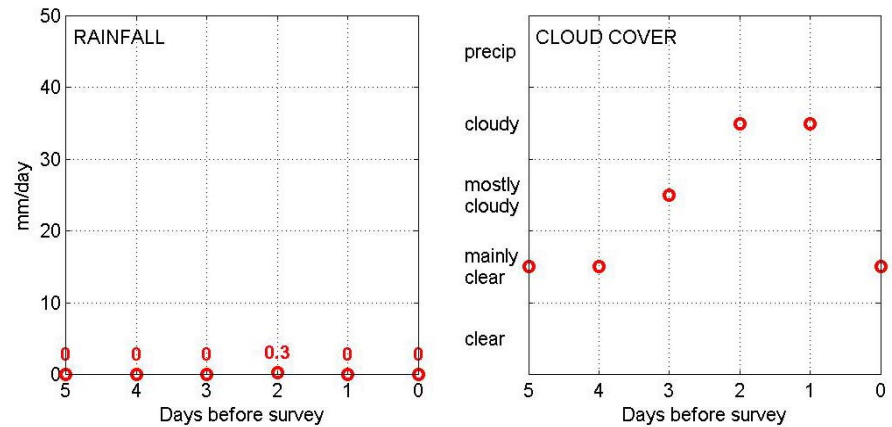
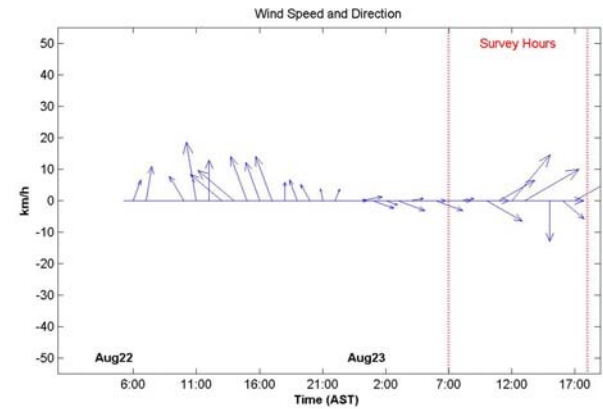
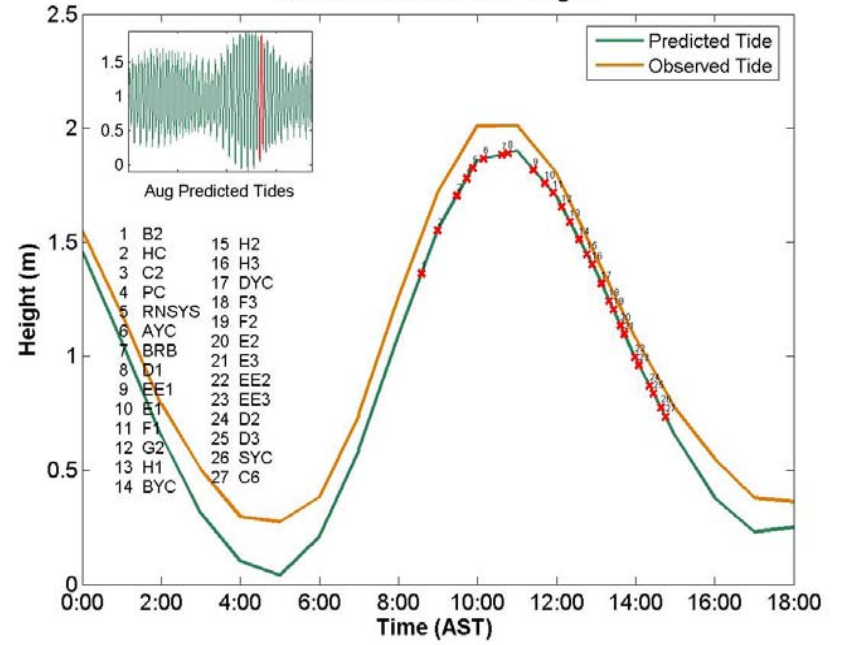
Yacht Clubs

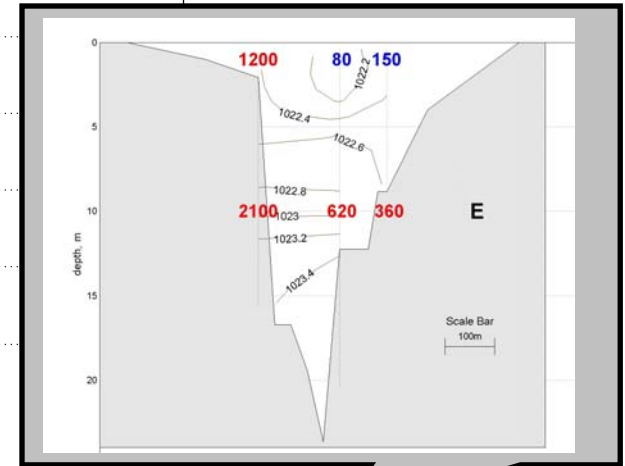
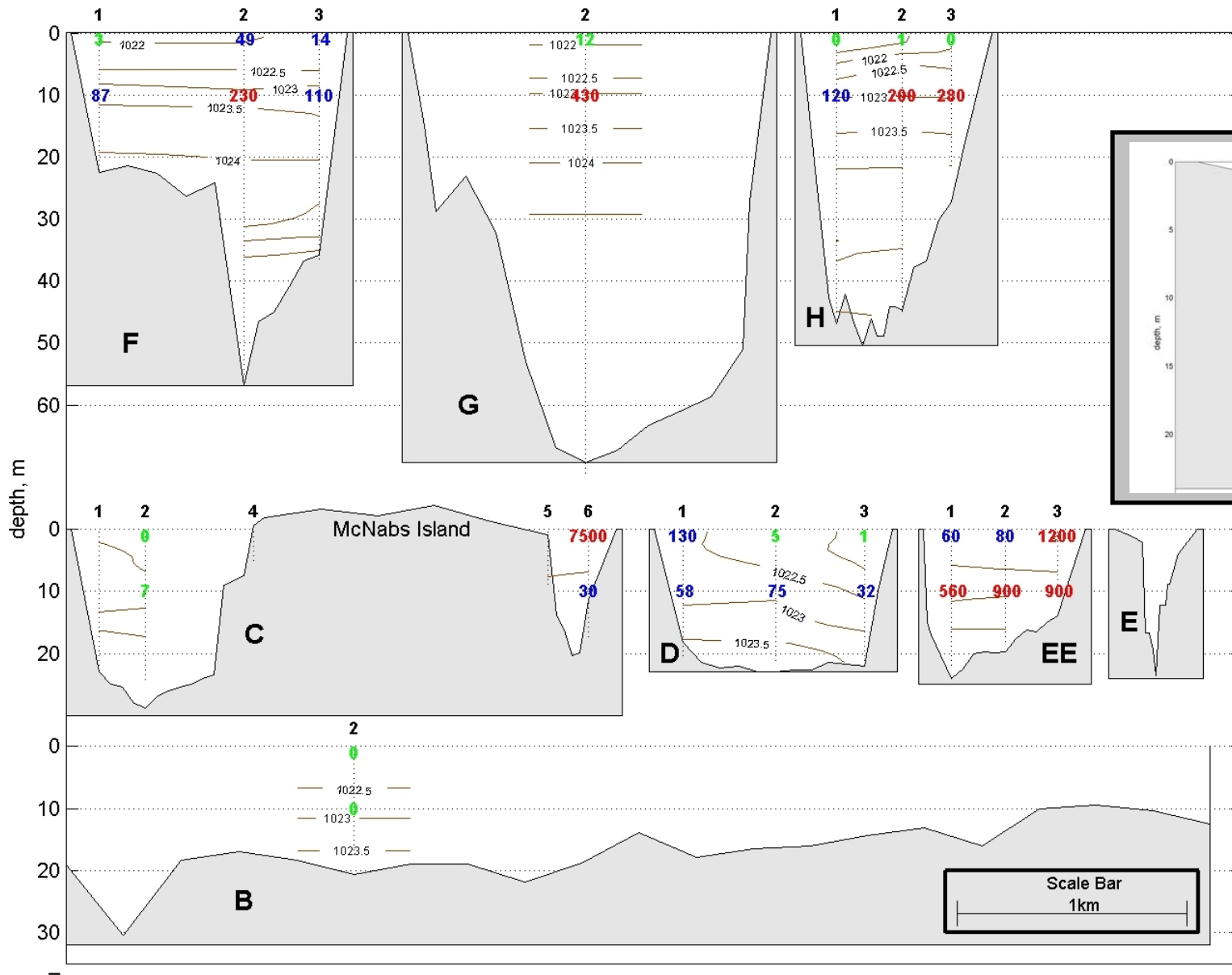


Salinity in PSU Temperature in °C



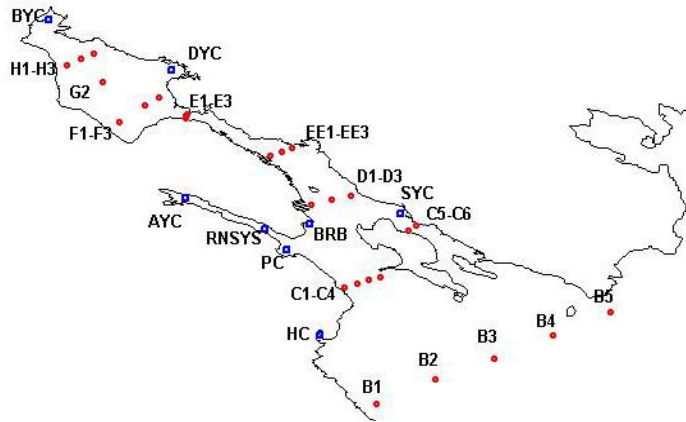
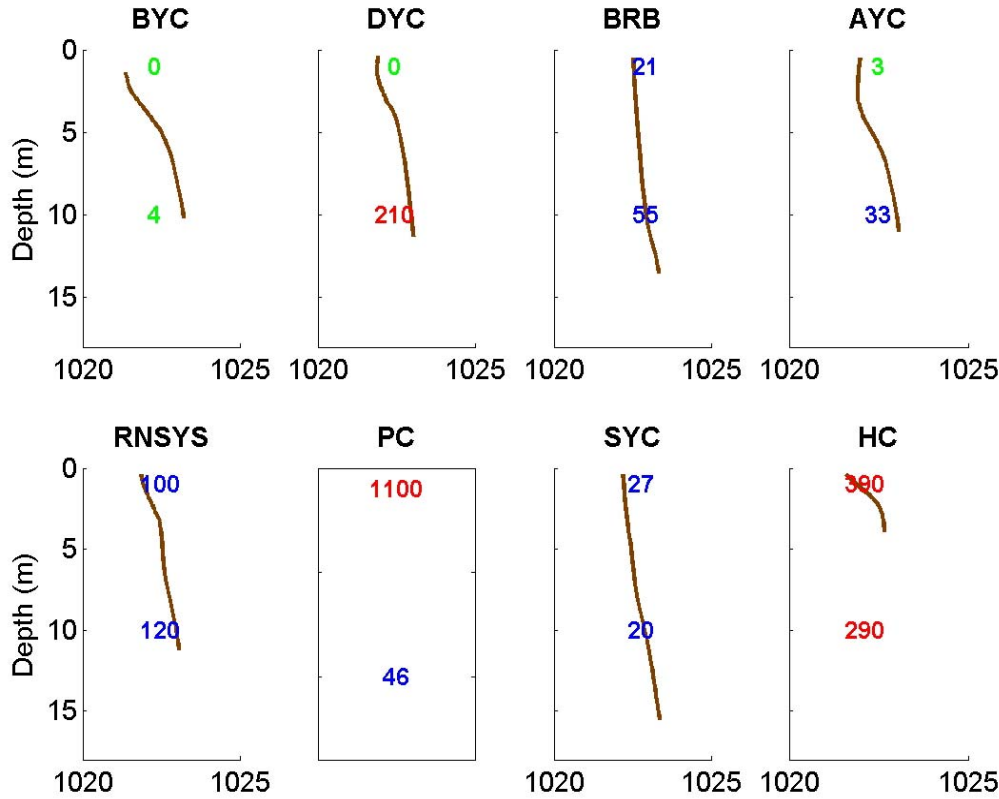
Halifax Harbour Tides - Aug23





Unless otherwise labeled:
 - **density** contour interval is 0.5 kg/m³

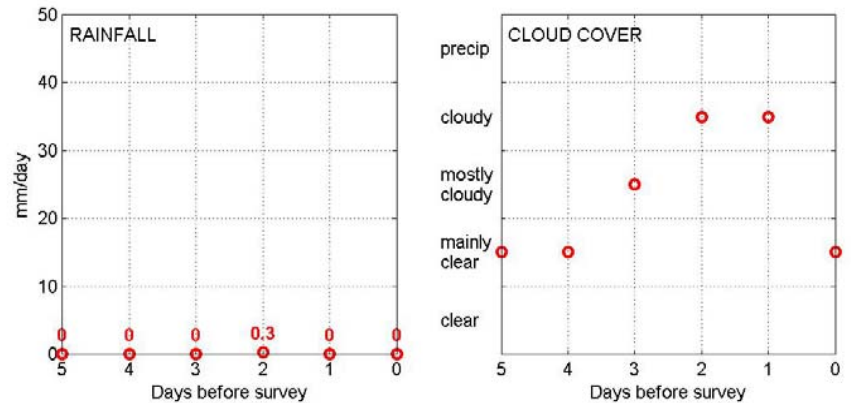
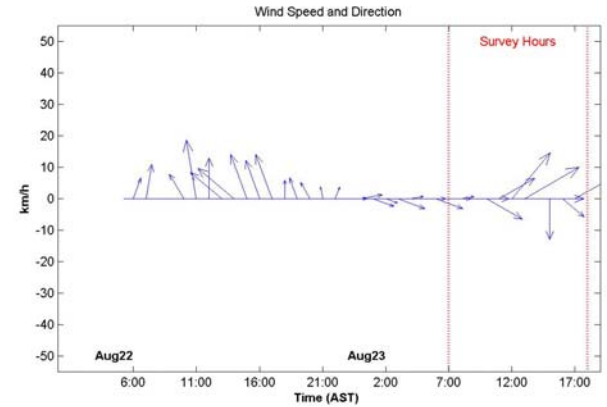
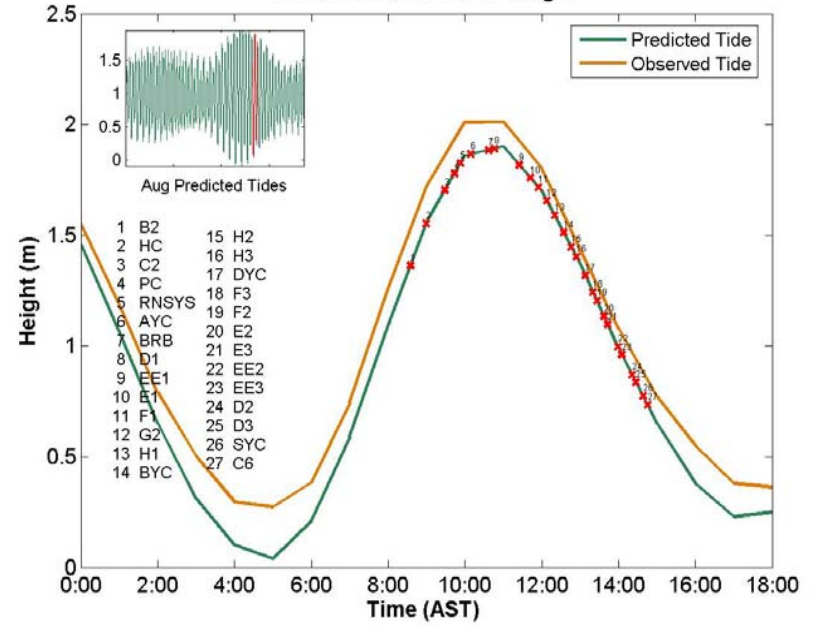
Yacht Clubs

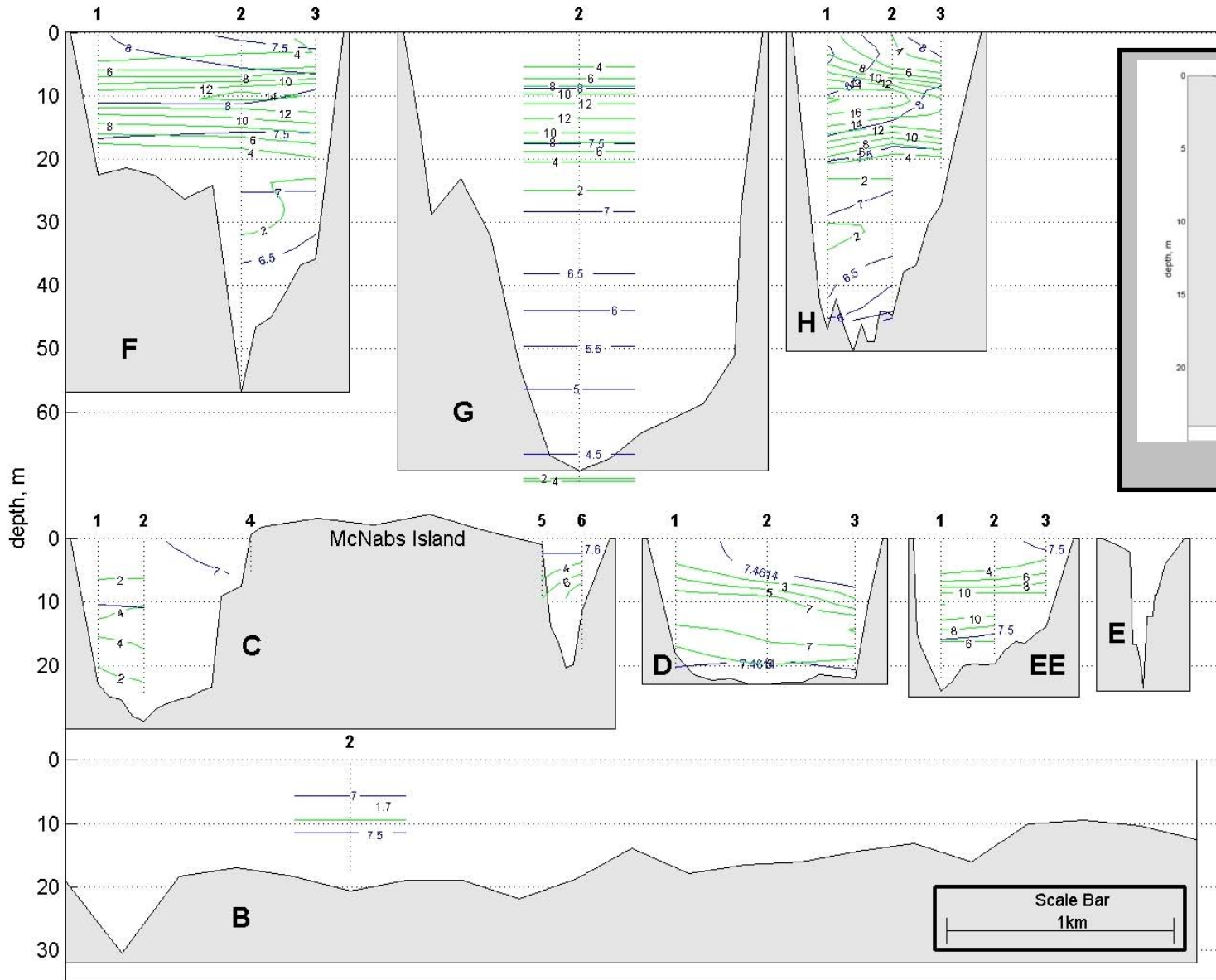


Potential Density in kg/m^3

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

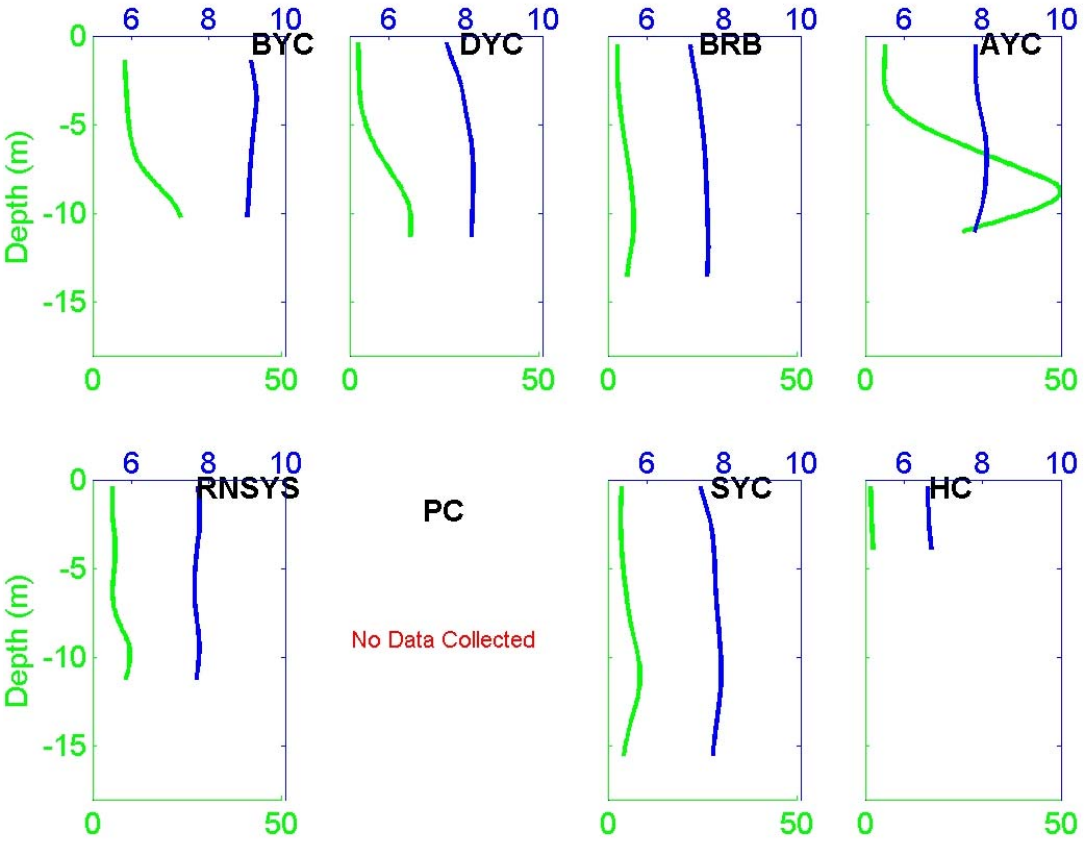
Halifax Harbour Tides - Aug23



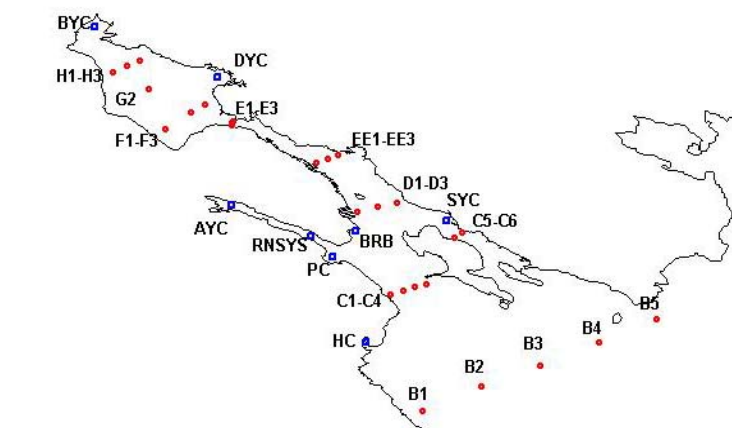
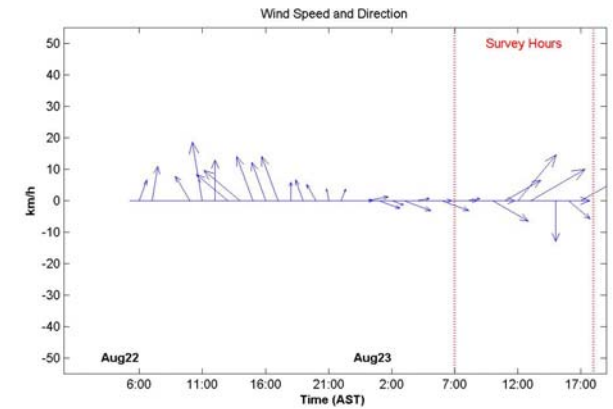
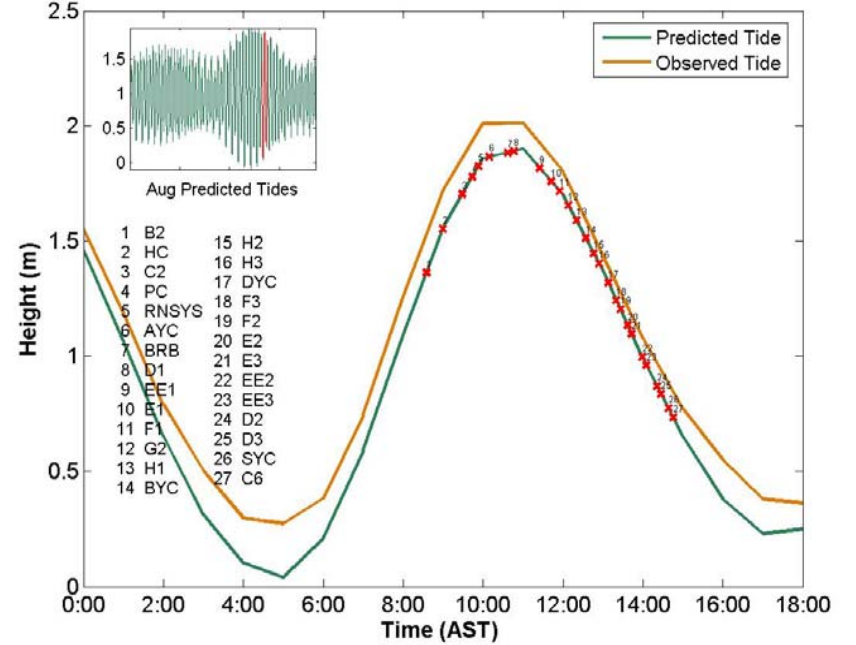


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 - **chlorophyll** contour interval is 2 mg/m³.

Yacht Clubs



Halifax Harbour Tides - Aug23



DO in mg/L Chlorophyll in mg/m³

