

Halifax Harbour Water Quality Monitoring Project

Weekly Summary #106

Survey Date: 27 June 2006
Nature of Survey: Coliform Survey
Report File (this document): HHWQMP_report106_060627.doc
Data File: HHWQMP_data106_060627.xls

Data Return:
 Profile: 18%
 Bacteria: 100%
 Chemical: na
Overall: 49%

Sample Notes:

Due to operator error the CTD was deployed too quickly for stabilization of the DO sensor and often before the instrument's pump started. This invalidates the DO data and has an uncertain effect on the fluorescence data. The fluorescence plots display erratic behaviour even in sites where the conductivity and temperature data is stable. At sites where the pump had not started, the top of the profiles for conductivity and temperature are affected. All profile data is plotted in this report, however, the DO and fluorescence data has been deleted from the data file. For the remaining CTD profile data, that from sites AYC, BRB, BYC, C1-4, C6, E1, E2, F3, HC, H3 and PC is obviously in error and has been deleted from the data file. The CTD data from the remaining sites is acceptable.

QA/QC samples:

Fecal Coliform (CFU/100ml)

Site	C2-10m	F1-1m	DYC-1m	C6-10m
Reference	840	610	95	27
QA/QC	8	640	42	22

Comments:

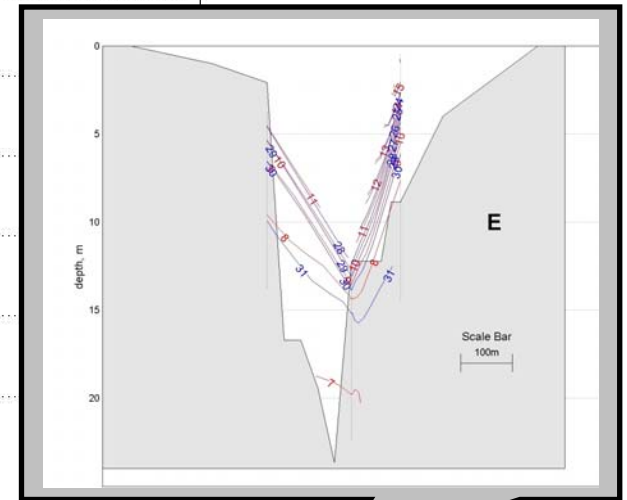
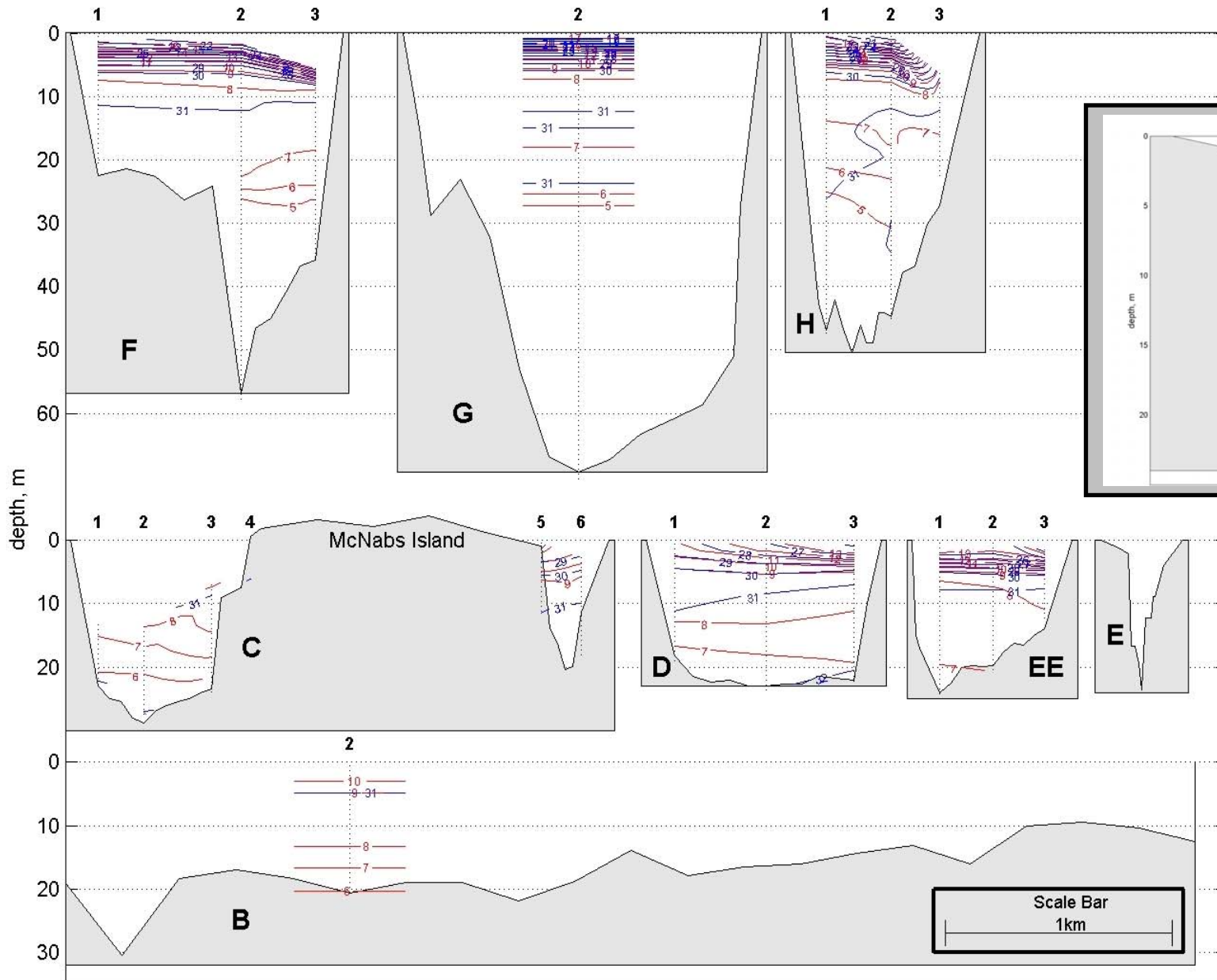
General: Significant rainfall, of 52.1 mm ending two days before the survey, has contributed to the maintenance of the strongly stratified conditions evident last week. Unusually, the freshest water measured is in the center of the Basin (there is no reliable data from BYC). This is also the only site where the field notes record a brown tinge (tannin?) in the surface water. Consistent with this and last weeks' observations, the secchi disk readings in the Basin and Inner Harbour are low (2-2.5 m). In the Outer Harbour (B2) the secchi disk reading is 11m.

The density distribution, even given the uncertainty associated with this week's CTD data, would imply a relatively strong surface flow out of the Basin and Inner Harbour. This may be offset by the moderate up harbour wind. The fecal coliform (fc) values are anomalously high in the surface water of the Basin. There are two features that are particularly unusual. The first is the continued high values at the head of the Basin, noted last week. The second feature is that all three fc values in the 1 m samples in the Narrows (section E) are out of range. These are among the highest values observed at this location to date. These, combined with elevated values at F1-1m and F2-1m, suggest the Fairview Cove CSO, which is sporadically receiving diverted flow from the Duffus St outfall, as a potential source. Paradoxically, the freshest surface water observed in the Basin (G2) also has the lowest fc count.

The fc counts in the NW Arm imply an up harbour surface flow and a bottom water return flow past the Chain Rock outfall. North of the outfall (RNSYS and AYC), the surface values are unusually high, while south of the outfall (PC), the 10m sample is unusually high. Again this week, the bottom sample in Herring Cove has a high fc count, perhaps caused by a bottom inflow of effluent from the Church Point outfall.

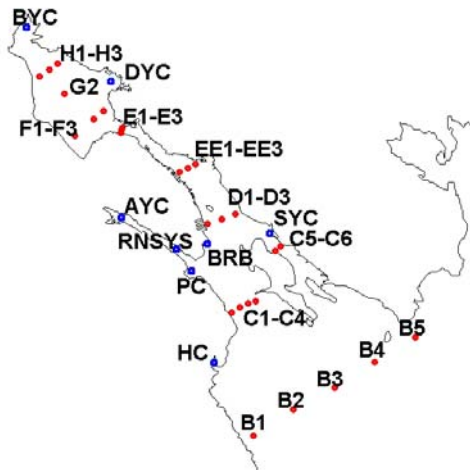
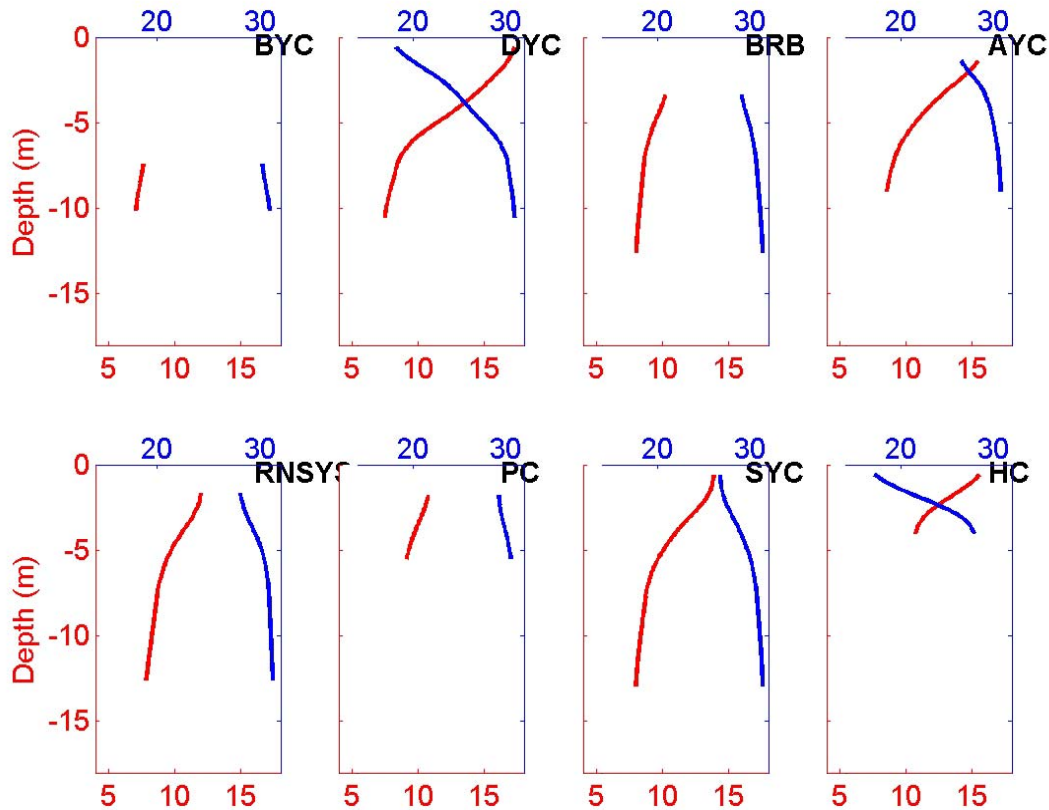
Fluorescence: There is no reliable fluorescence data this week.

Dissolved Oxygen: There is no reliable dissolved oxygen data this week.



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

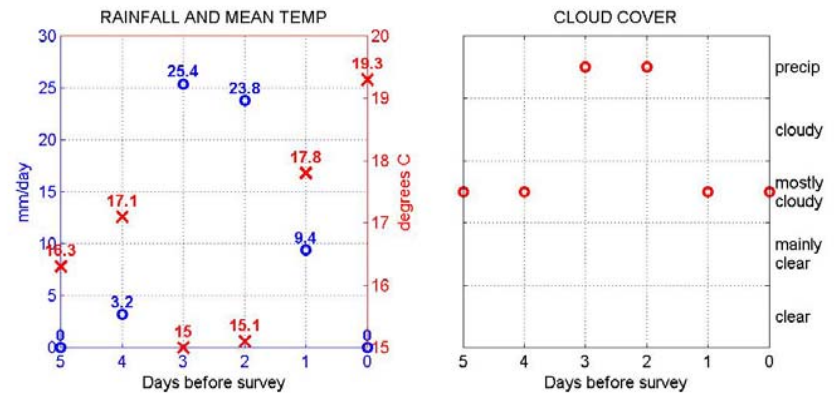
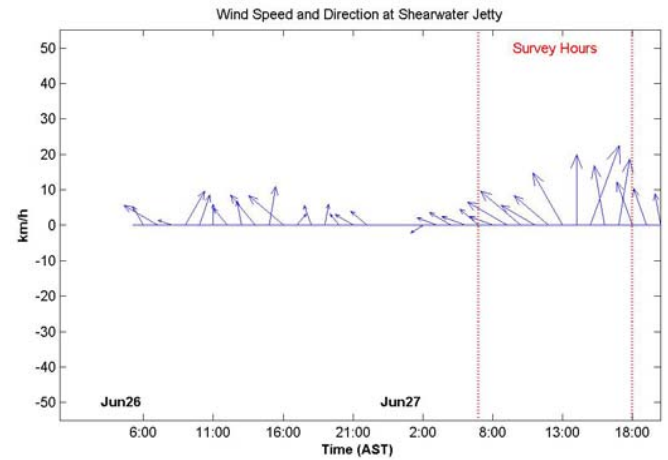
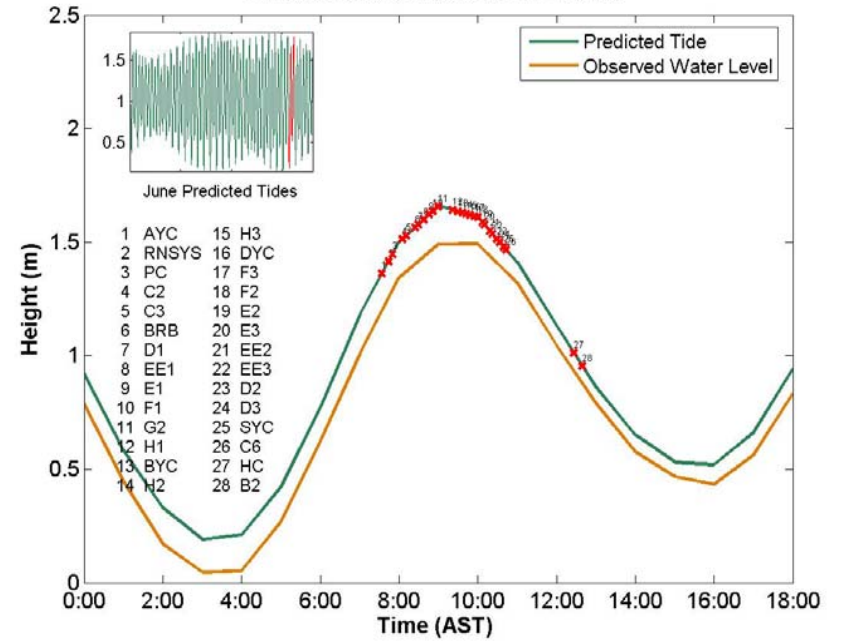
Yacht Clubs

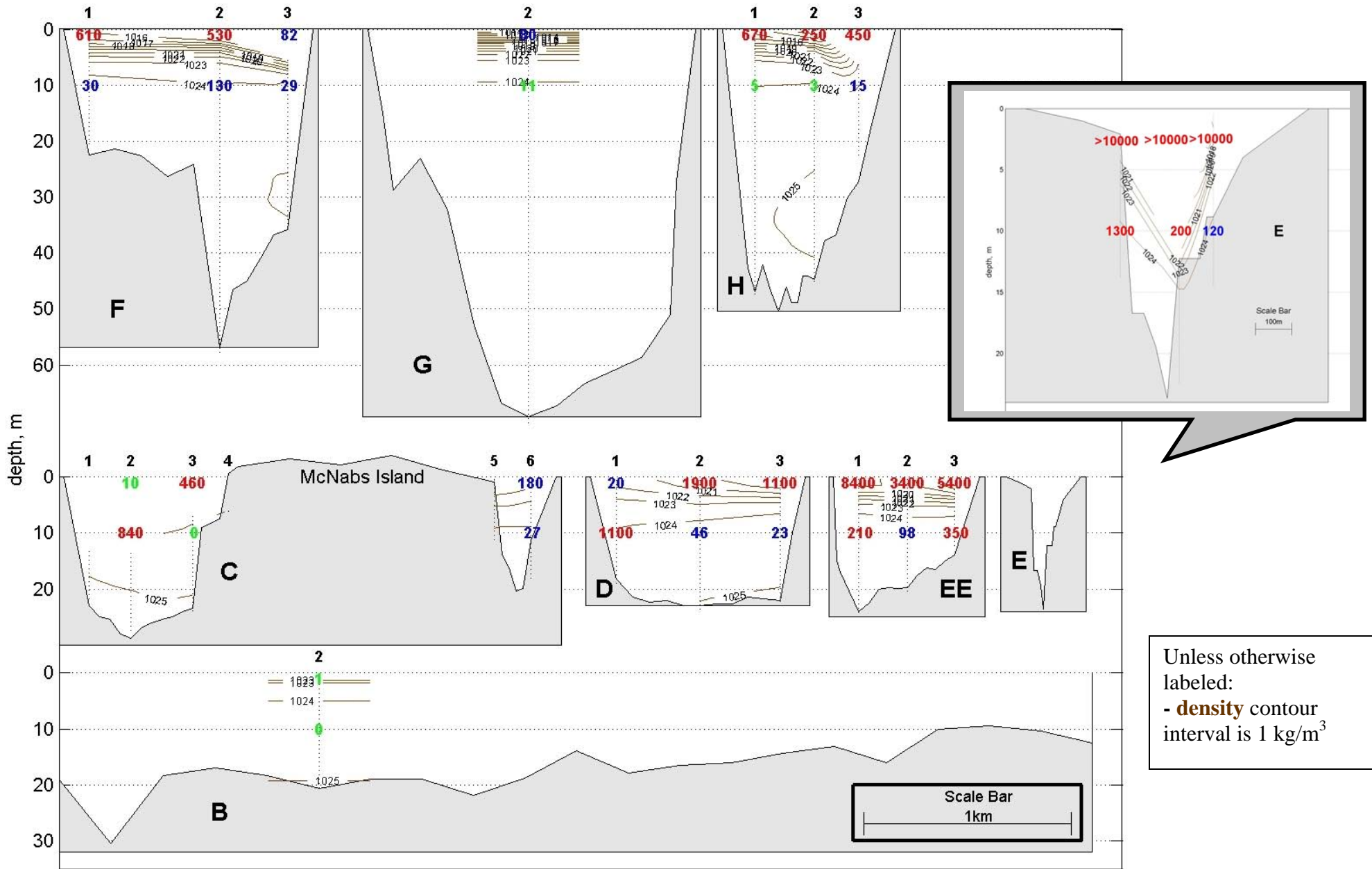


Salinity in PSU Temperature in °C

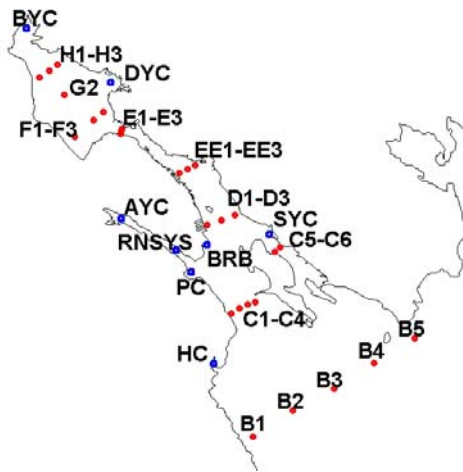
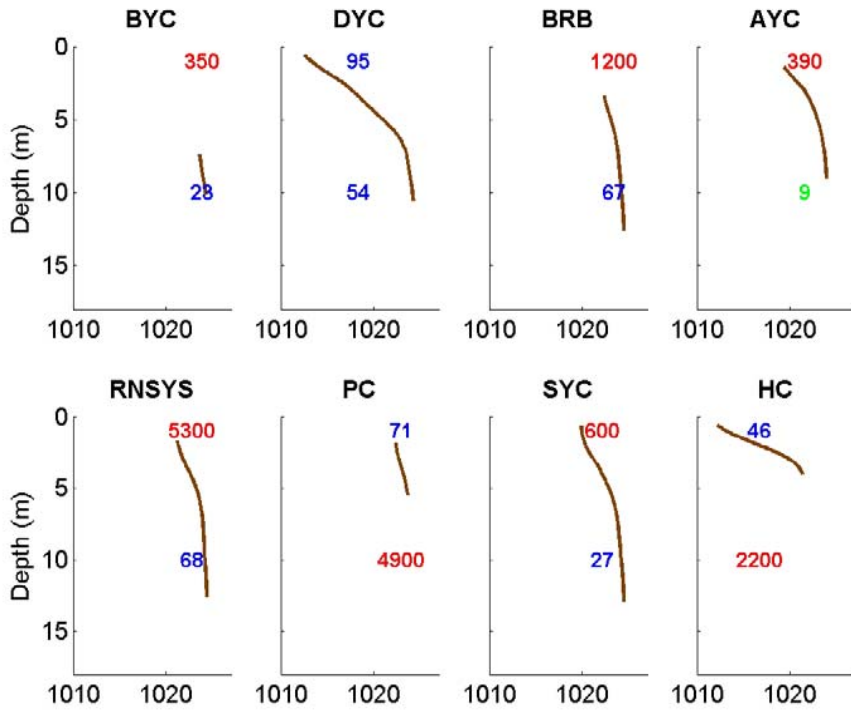
Weather data collected at Shearwater Autoport.

Halifax Harbour Water Level - Jun27





Yacht Clubs

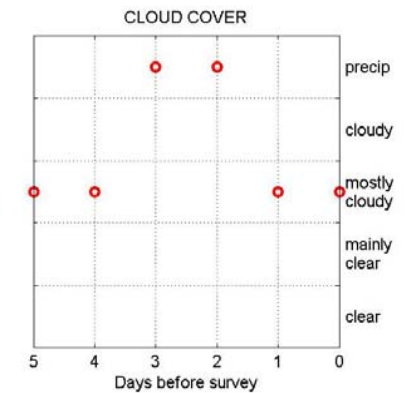
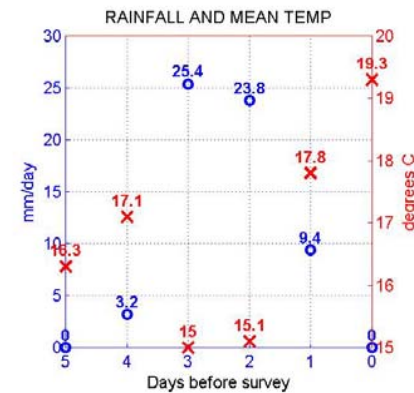
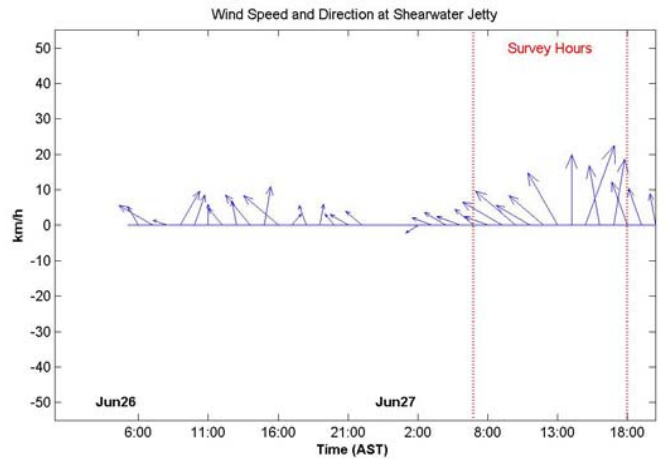
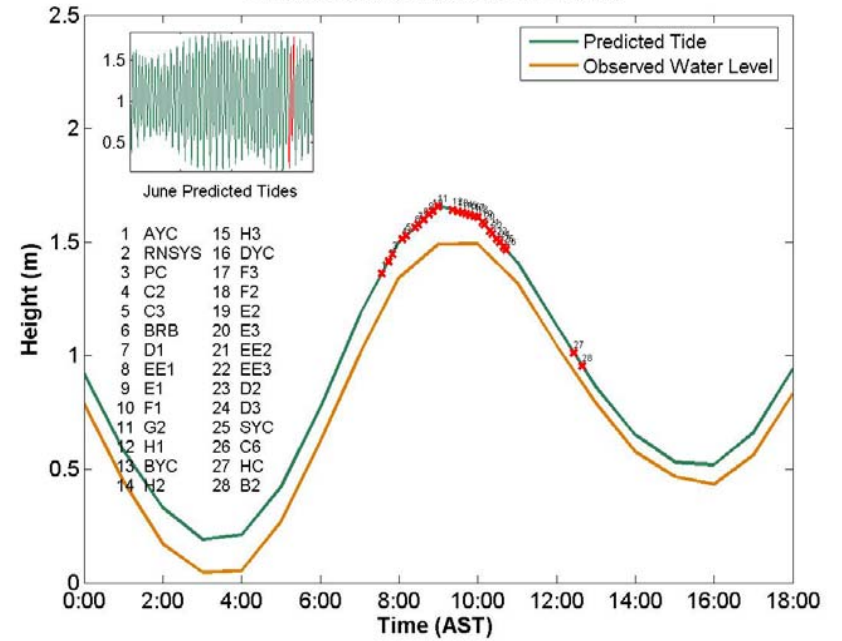


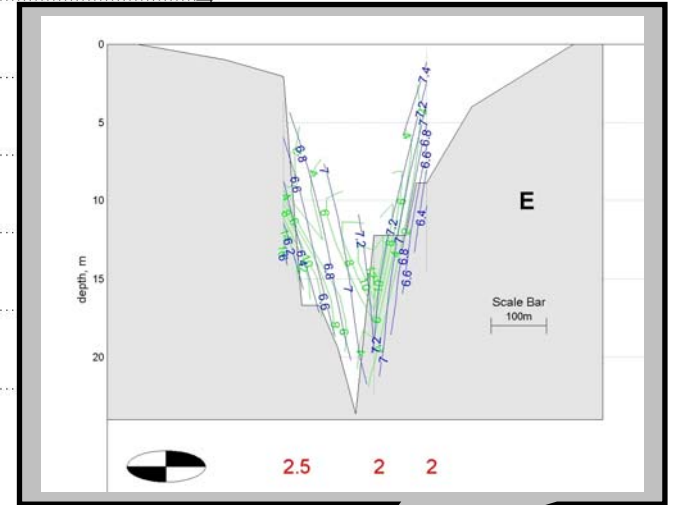
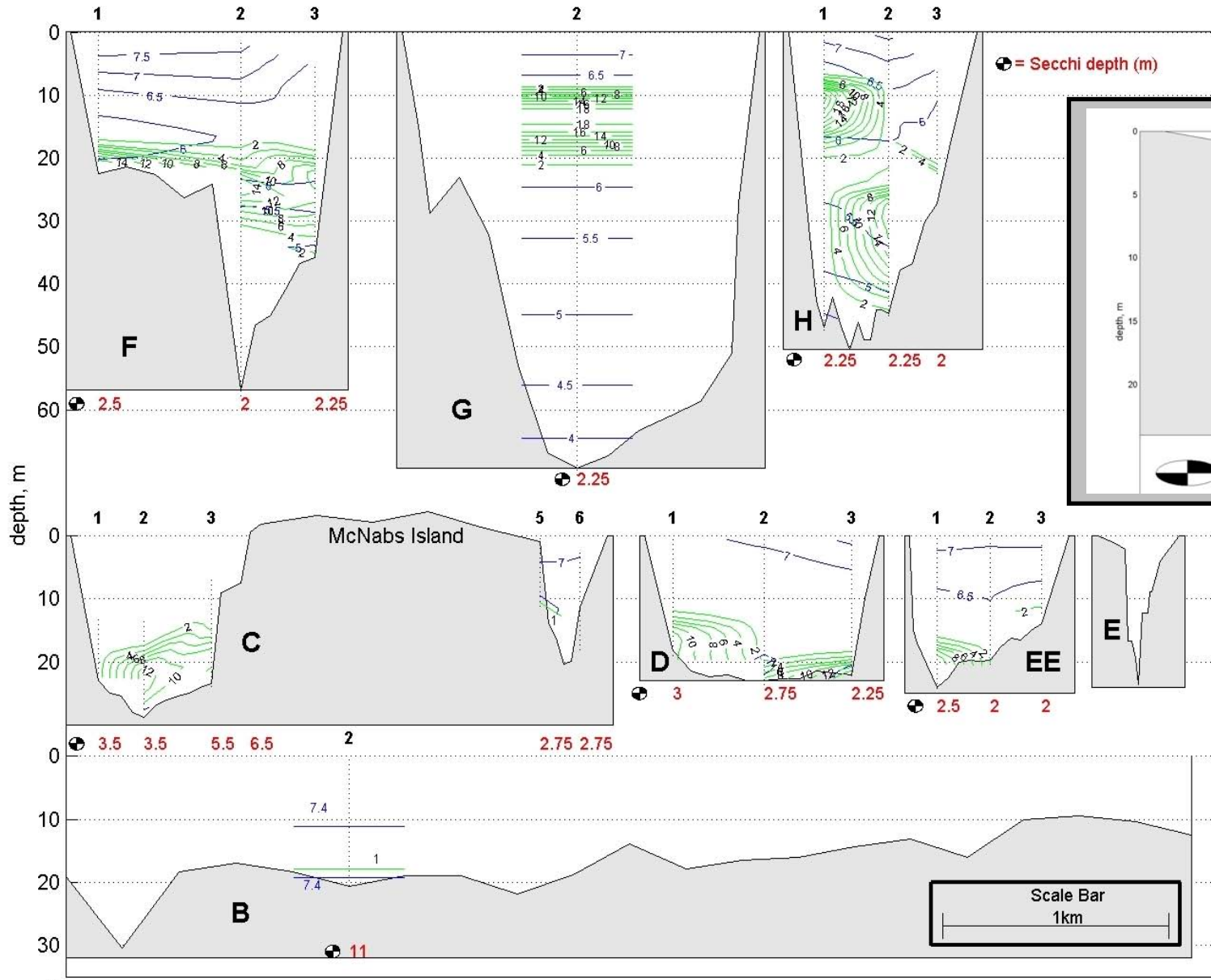
Weather data collected at Shearwater Autoport.

Potential Density in kg/m^3

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

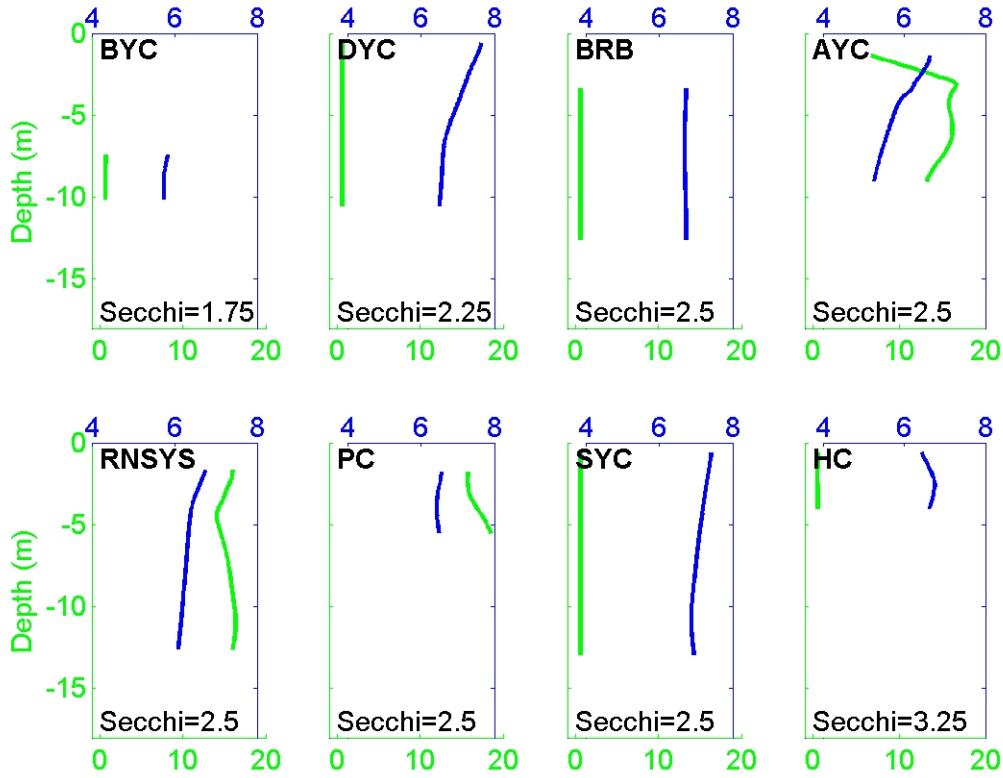
Halifax Harbour Water Level - Jun27



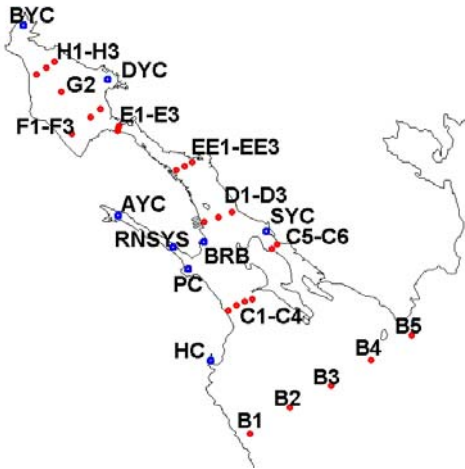
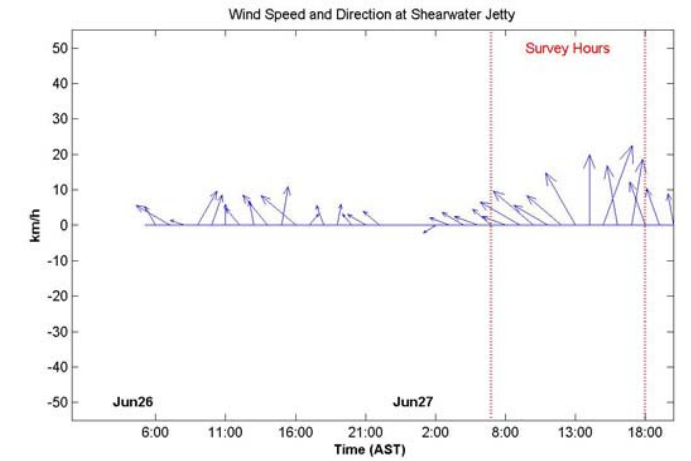
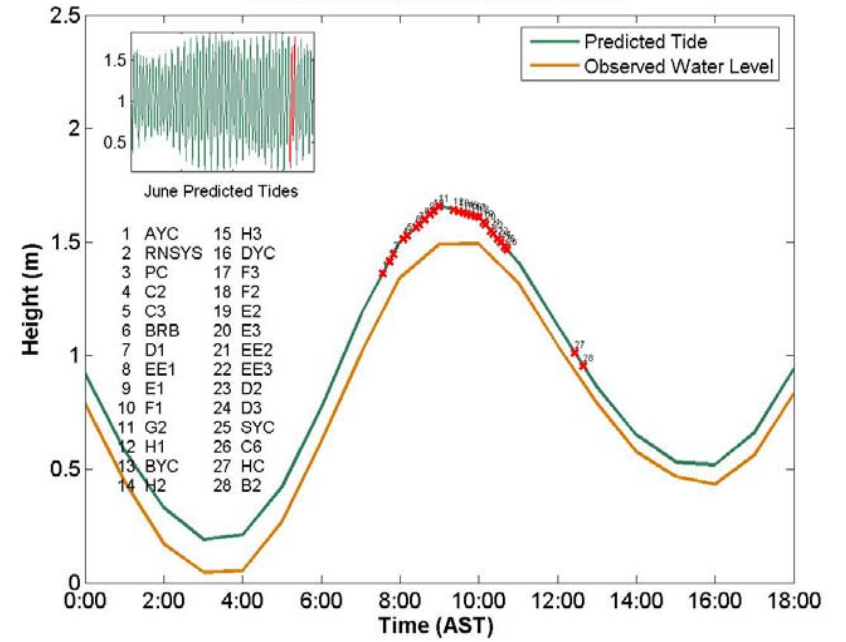


Unless otherwise labeled:
 - **dissolved oxygen** contour interval is 0.5 mg/L
 - **chlorophyll** contour interval is 2 mg/m³.

Yacht Clubs



Halifax Harbour Water Level - Jun27



Weather data collected at Shearwater Autoport.

DO in mg/L

Chlorophyll in mg/m³

