Halifax Harbour Water Quality Monitoring Project
Weekly Summary #104

Survey Date: 13 June 2006
Nature of Survey: Coliform Survey
Report File (this document): HHWQMP_report104_060613.doc
Data File: HHWQMP_data104_060613.xls

Data Return:

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

Sample Notes:

Insufficient instrument stabilization time has resulted in surface DO values that are artificially low in many cases. In the Basin, where vertical gradients are highest, this deficit may be approaching 1 mg/L. Other sensors require less stabilization time and should not be affected.

QA/QC samples:

Fecal Coliform (CFU/100ml)

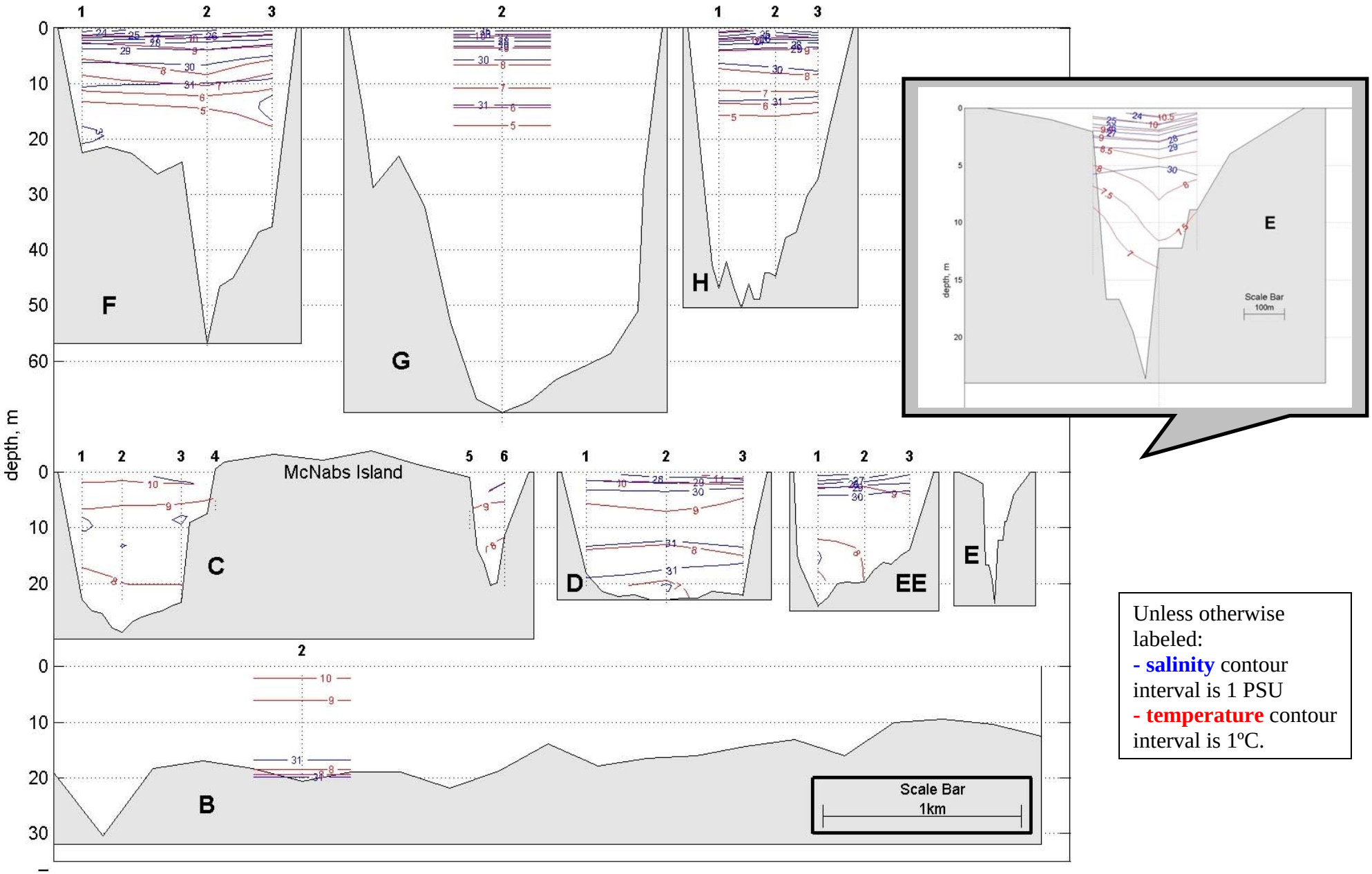
Site	E2-10m	H2-1m	D3-1m	C3-10m
Reference	89	12	660	2
QA/QC	270	19	920	1

Comments:

General: Continuation of last week's relatively wet weather (26.3 mm of rain in the previous 5 days) has resulted in overall freshening of the Harbour. Density stratification is fairly strong at the head of the Basin and is continuous through the Inner Harbour. The 1m fecal coliform levels are relatively high in the Inner Harbour, and are significantly higher than the 10m values everywhere except in the Basin. Here, the 10m values, though not particularly high, are higher than the surface values. This distribution is consistent with the estuarine circulation implied by the salinity/temperature (density) distribution. The only anomaly is that the highest observed value is at the surface on the western side of the Narrows. To be consistent with an outward surface flow, the source of these bacteria would have to be in the Basin. This may be the result of diversion of some or all of the Duffus St. effluent to the Fairview Cove CSO, which is between the F and E sections.

Fluorescence: The maximum profile values in the Basin are similar to those of last week, at levels in the mid to high 20's (mg/m^3) in the top 5m. Similarly, the profile maximums decrease monotonically, at about the same depth, going out of the Harbour. At B2 the levels are vertically uniform at about 2 mg/m^3, which is slightly above "background " levels.

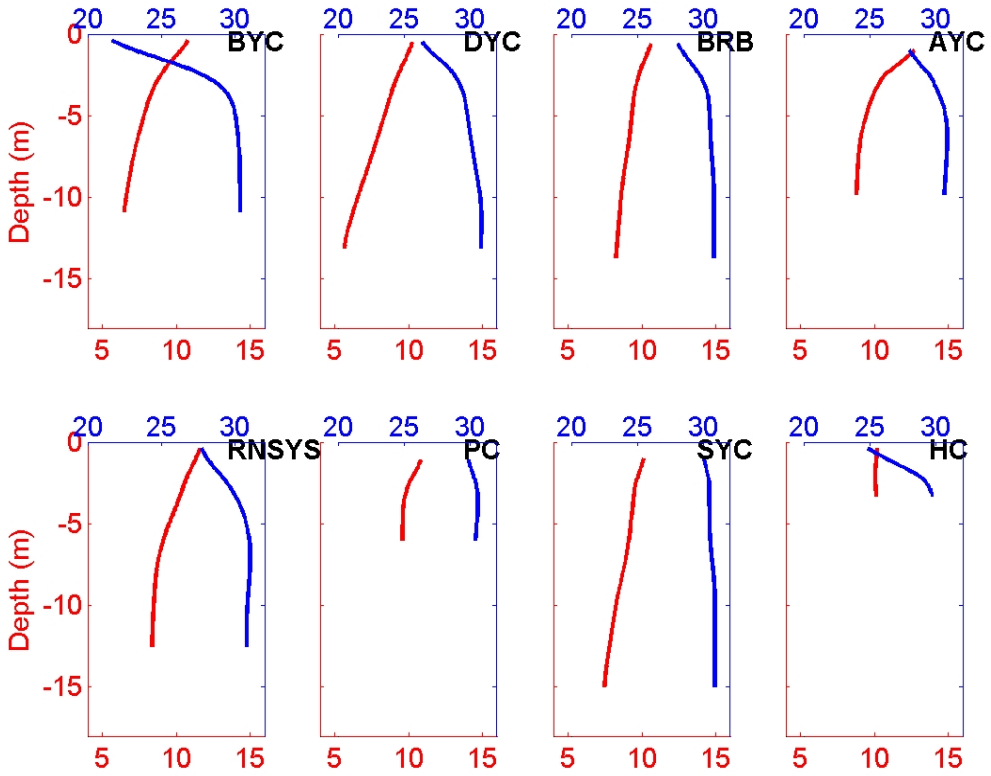
Dissolved Oxygen: The data indicate that, accounting for the uncertainties associated with this weeks DO data, the surface values are about the same as last week. The values in the deeper water of the Basin are similar in magnitude to those of last week, but show that the more usual monotonically decreasing gradients have reestablished themselves after the relatively uniform conditions last week. The minimum value, about 4.7 mg/L, occurs at the bottom of site G2. This bottom water is below the applicable class SB guideline of 7.0 mg/L. The approximately 7.7 mg/L value throughout the water column at site B2, in the Outer Harbour, is below the 8.0 mg/L class SA guideline. These are the only two regions of the Harbour where the data indicate values below the applicable guidelines. The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1).

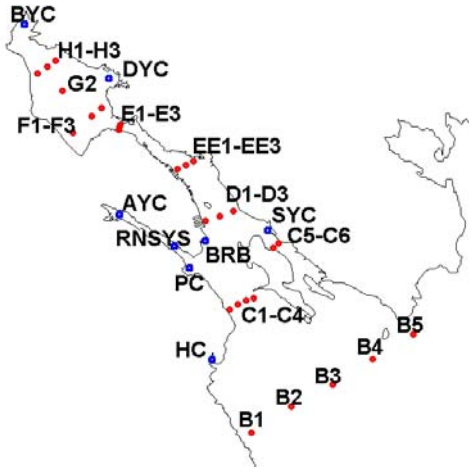


Unless otherwise labeled:
- **salinity** contour interval is 1 PSU
- **temperature** contour interval is 1°C.

Salinity in PSU **Temperature in °C**

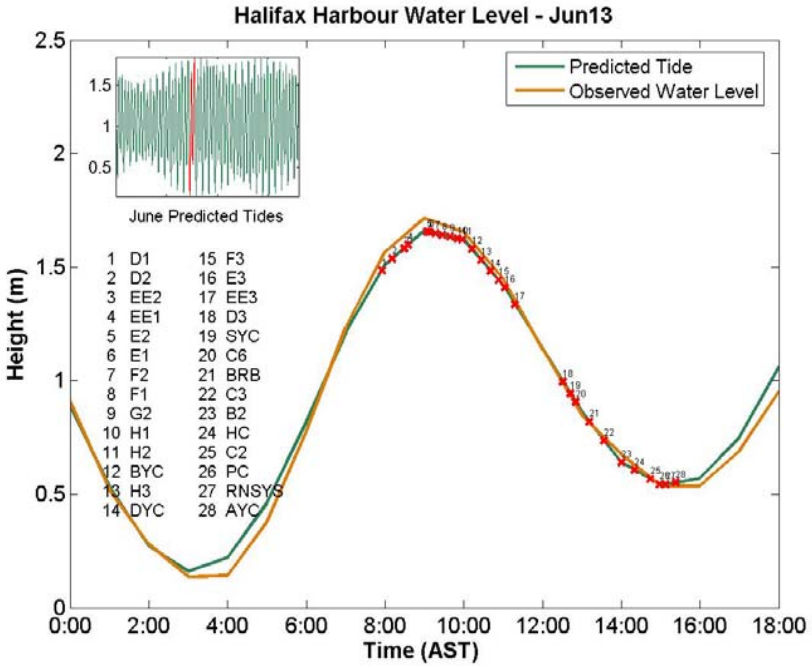
Yacht Clubs

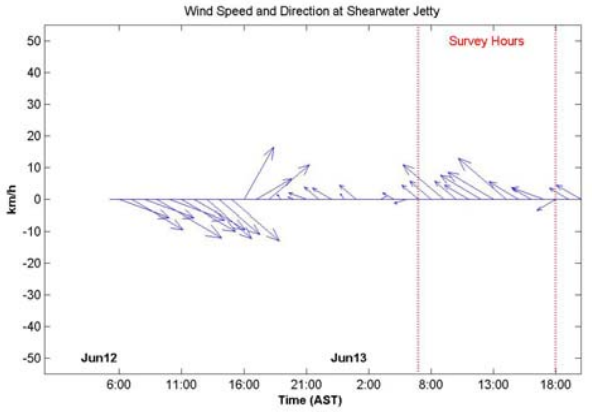


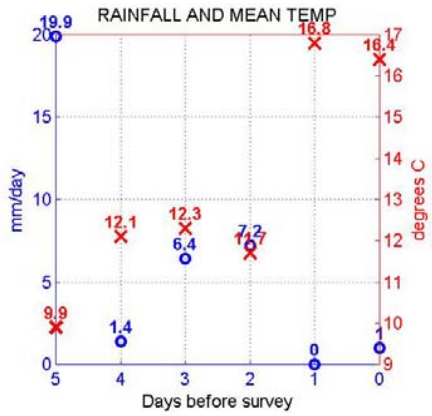


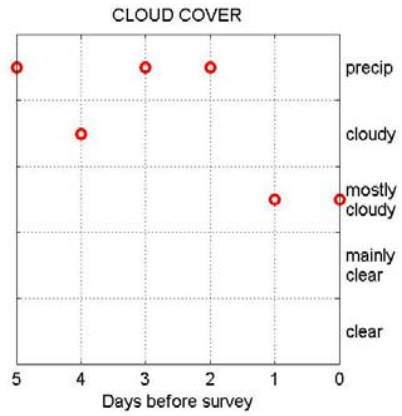
Weather data collected at Shearwater Autoport.

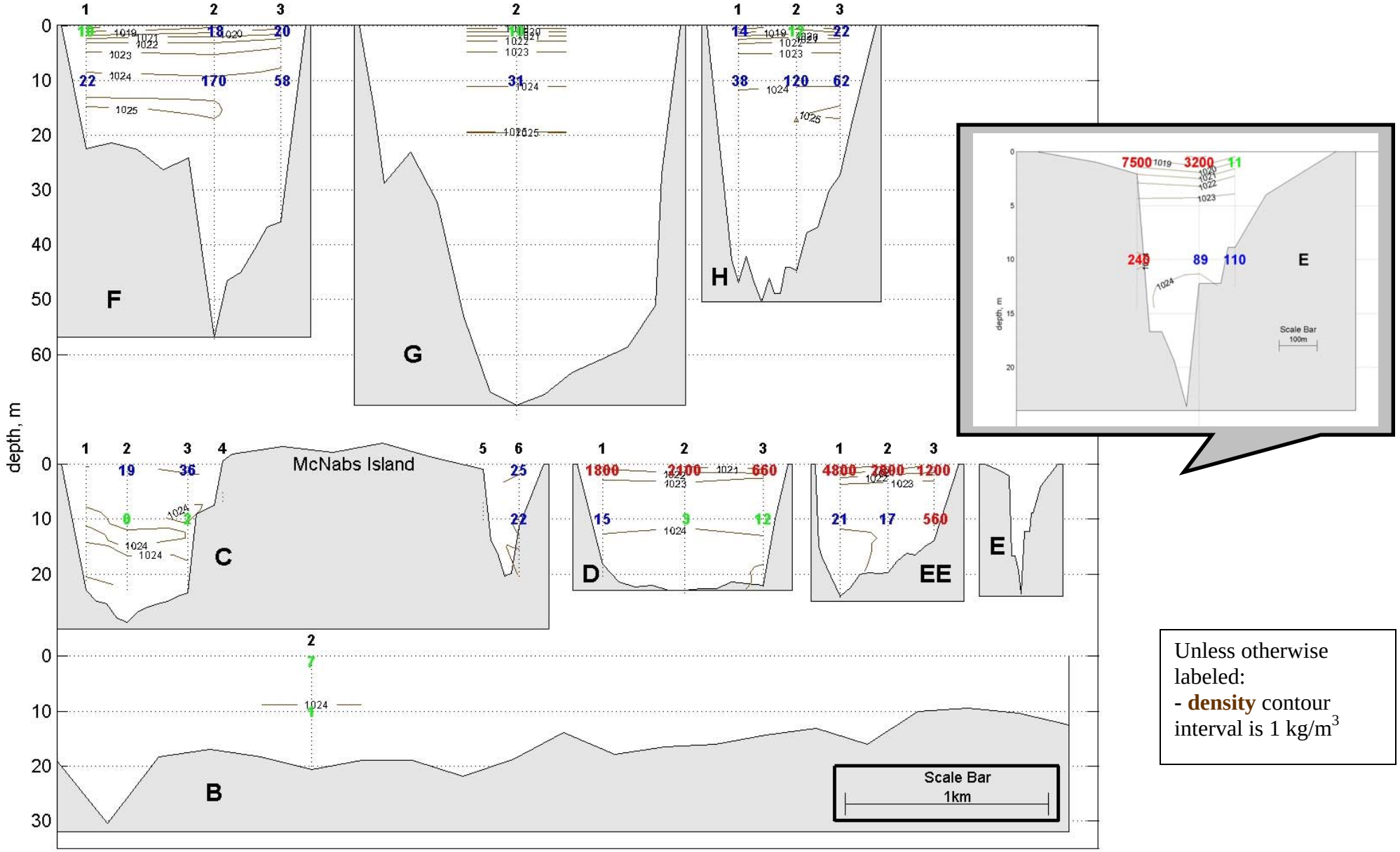
Salinity in PSU **Temperature in ^{o}C**





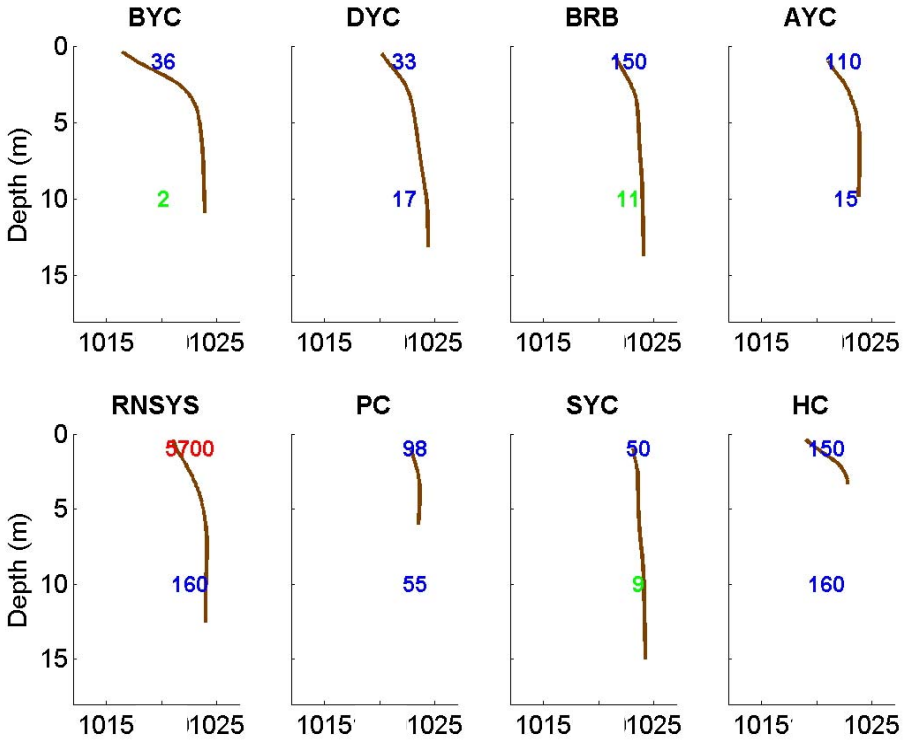


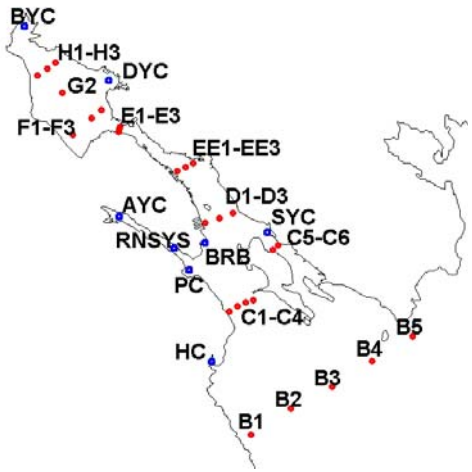




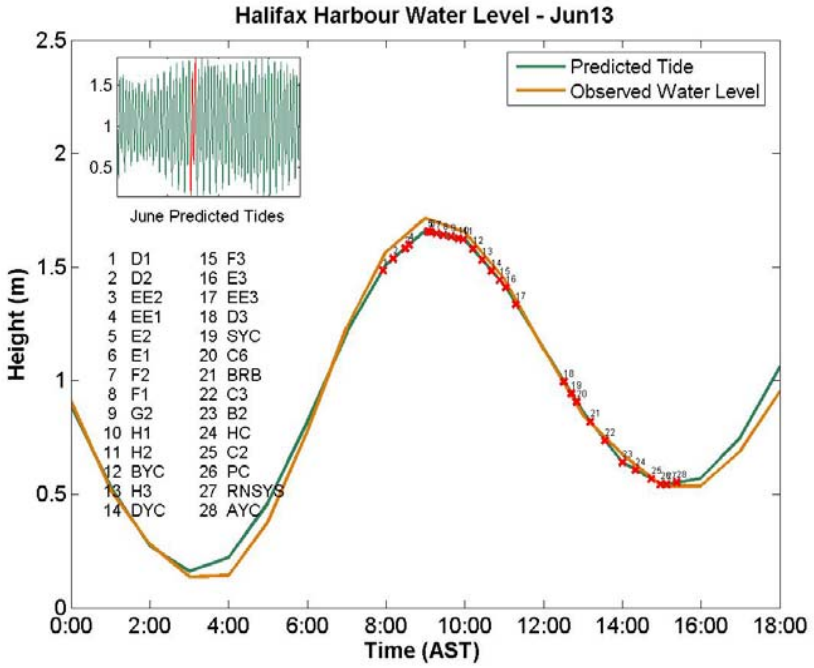
Unless otherwise labeled:
- **density** contour interval is 1 kg/m^3

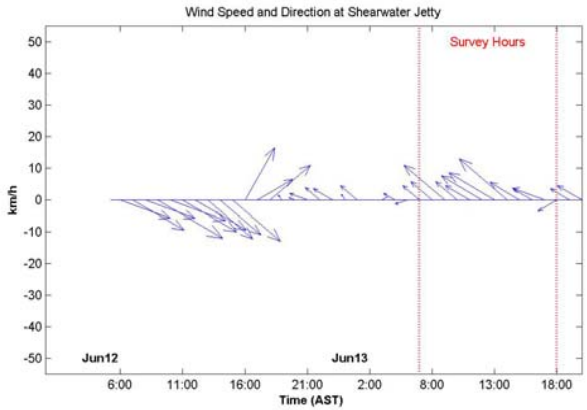
Yacht Clubs

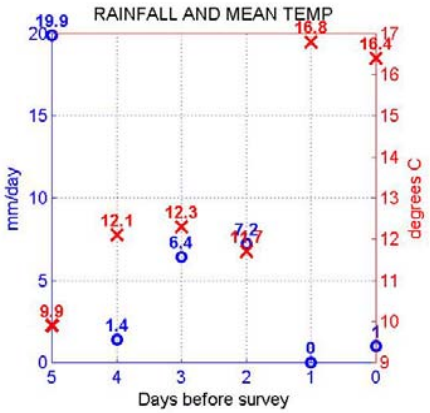


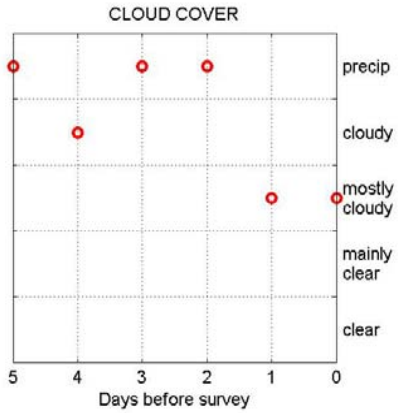


Weather data collected at Shearwater Autoport.



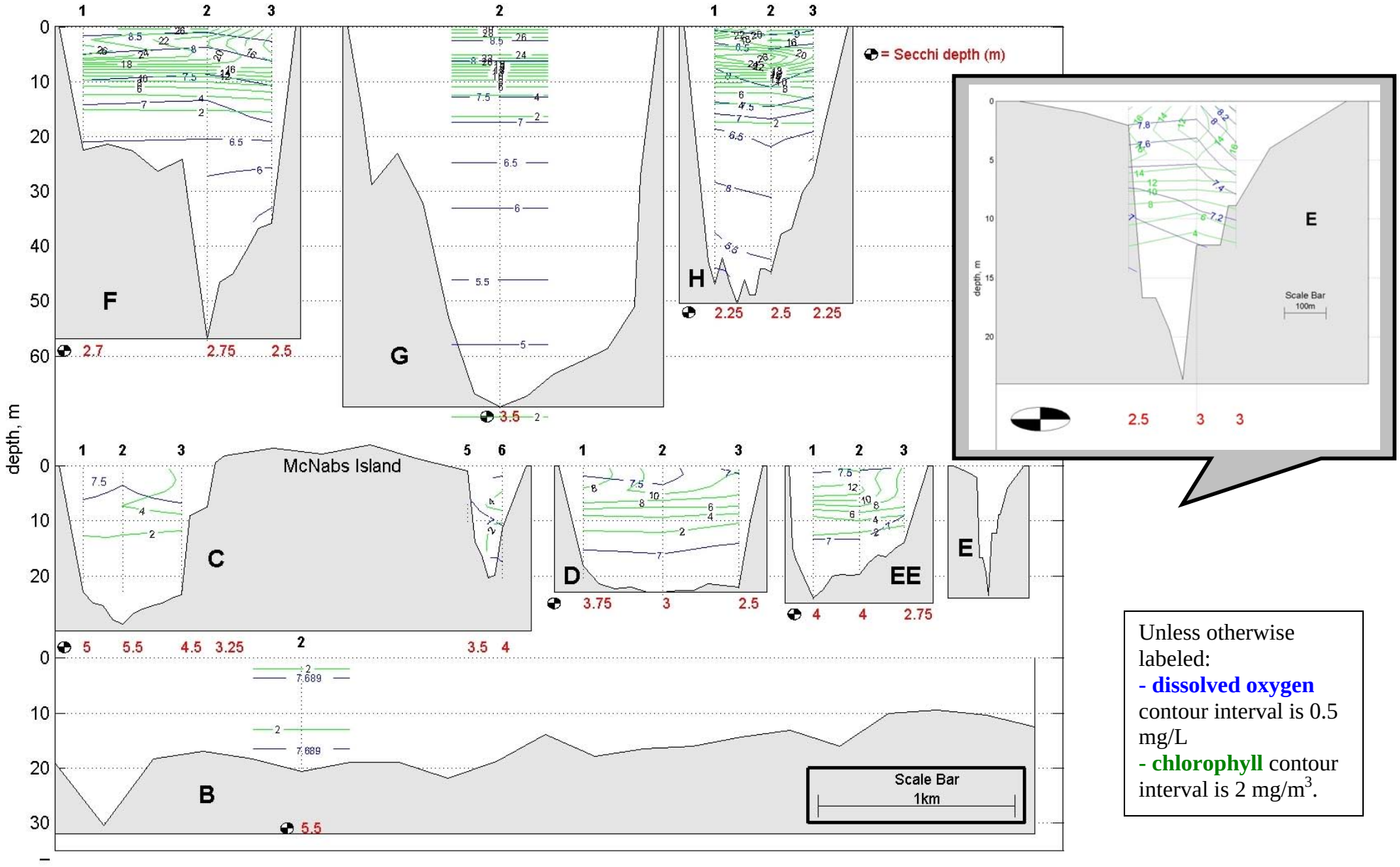






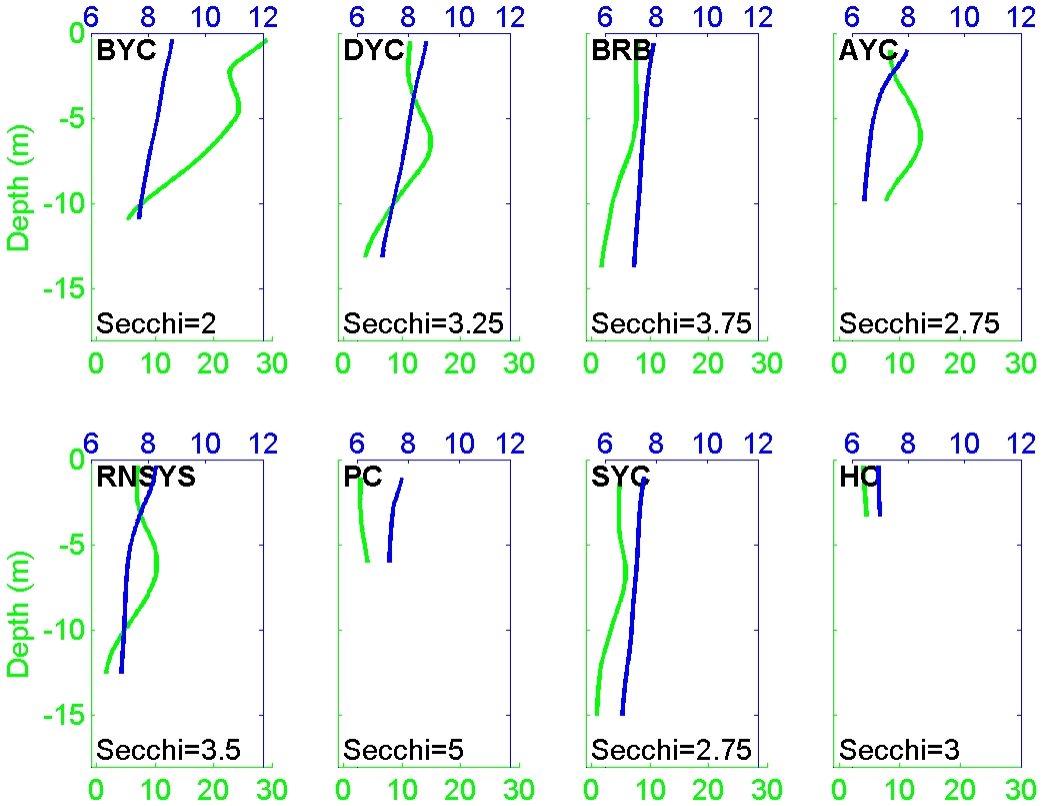
Potential Density in kg/m^3

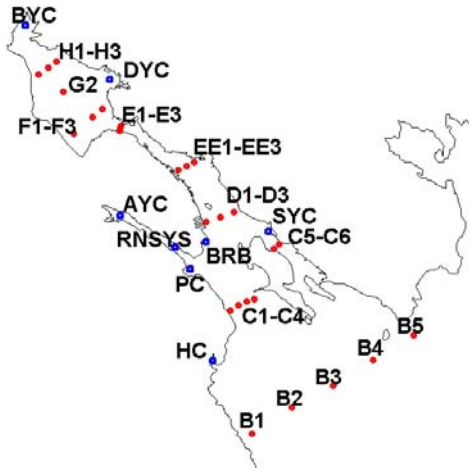
Fecal coliform: **above swimming limit (200 cfu/100mL)**
above shellfish limit (14 cfu/100mL)
below limits



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

Yacht Clubs





DO in mg/L **Chlorophyll in mg/m^3**

Weather data collected at Shearwater Autoport.