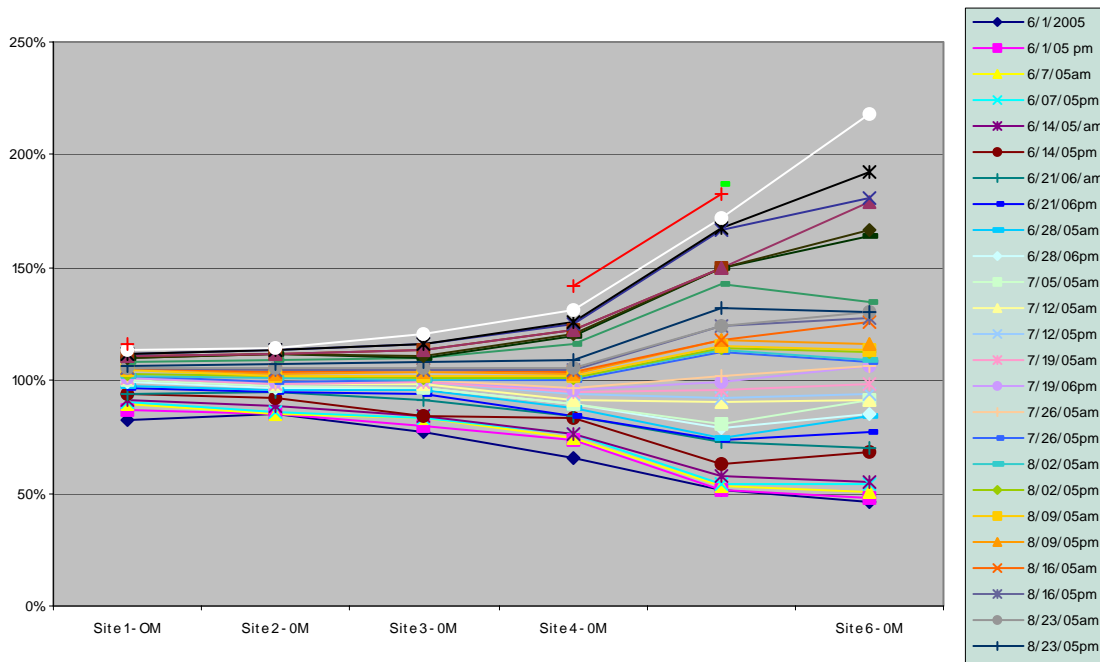


**Spruce Creek Association**  
**Review & Analysis of 2005 Water Quality Data**  
*Prepared by Sue Cobler\**

Generally speaking, the down stream stations 1, 2, and 3 have less variability in oxygen saturation than the upstream stations 4, 5 and 6. The variability increases with increasing distance upstream



All Station measured appear to be tidally influenced based on the measured fluctuating salinity levels.

The table below summarizes the oxygen saturation data for the 6 stations samples. While stations 4 and 5 have the highest mean measured saturation, they also have a higher frequency of low readings, indicating how variable the measurements were at those stations.

Station	Mean Measured Oxygen Saturation	Minimum Measured Oxygen Saturation	Maximum Measured Oxygen Saturation	Measurements under 85% oxygen saturation	Measurements under 75% oxygen saturation
1	102	83	116	0/33	1/33
2	100	85	115	0/32	0/32
3	100	78	120	6/32	1/32
4	100	65	142	8/33	2/33
5	104	51	183	9/34	7/34
6	111	46	218	9/32	7/32

Water column oxygen saturation alone cannot characterize the overall health of the environment in the areas sampled. I would recommend getting corresponding sediment data at these locations including benthic grab, samples as well as sediment chemical and physical data (at a minimum sediment Total organic content (TOC) and grain size analysis). Additional data on the water column would also be helpful, such as nutrient concentrations.

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With a BA in biology from Wellesley College (1981) and an MS in marine ecology from Northeastern University (1984), Ms. Cobler has over 20 years experience in environmental management and consulting. Her primary field of expertise is in the environmental impact assessment and regulatory compliance of wastewater quality and treatment processes with special regard to nutrient enrichment, organic loading, toxicity, and pathogenic effects. In addition to her wastewater expertise, Ms. Cobler has extensive experience in assessing the environmental effects of dredged material disposal, hazardous waste, and solid waste. As a project biologist for Metcalf & Eddy, Inc. for 10 years, Ms. Cobler managed over 60 multi-disciplinary environmental projects including the U.S. EPA Environmental Impact Statements for the Boston Harbor Clean-Up; several Environmental Risk Assessments for U.S. EPA Superfund Sites; several Environmental Impact Statements for DOD military installations. Ms. Cobler has also worked extensively with regulators at the local, state, and federal levels in developing environmental guidance and in assuring environmental compliance for a variety of projects. Ms. Cobler most recently managed corporate development and regulatory affairs for WASTECH International, an environmental equipment developer.