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Defense Date: July 10, 2007

Title: Characterization Of Water Quality In The Tidal Occoquan River Using Continuous Monitoring

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ABSTRACT

The purpose of this study is to use continuous monitoring and discrete sampling to evaluate factors controlling water quality in the tidal Occoquan. Factors to be evaluated include: freshwater inputs from the flowing Occoquan River, tidal incursions from the tidal Potomac, seasonal and diurnal variations in climatic variables such as temperature and light, and the growth of nearby beds of submersed aquatic vegetation. There are weather changes, changes in temperature, humidity, and precipitation, varying from hour to hour and from season to season. Because of this, the water bodies' habitats (dissolved oxygen, chlorophyll a , and water clarity to name a few) are also changing. To understand the impacts on the water body's long-term trends in water and habitat quality, short-term and seasonal dynamics need to be measured and accounted for. The purpose of my study is to determine, what factors are actually influencing Belmont Bay's water quality. This study will show how (1) frontal passages (rain, runoff, temperature changes) are related to water quality, (2) seasonal changes might be related to seasonal climate patterns, (3) diurnal/diel changes of water quality parameters (including maximums and minimums) are related to other parameters.