

## **LONG-TERM MONITORING OF NATIONAL PARK SERVICE SOUTHEAST COASTAL WATERS USING ESTABLISHED PROTOCOLS**

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### **ABSTRACT**

The Southeast Coast Network (SECN) of the National Park Service (NPS) contains seventeen National Park units located between Florida and North Carolina and as far west as Alabama. All parks contain significant natural resources. Six of those contain significant estuarine habitats. The SECN has developed a two-part monitoring program for estuarine waters using 1) the System-Wide Monitoring Program (SWMP) protocols developed by NOAA's National Estuarine Research Reserve program, and 2) the National Coastal Assessment protocols developed by the US EPA. The combination of these two protocols facilitates the examination of short-term variability and long-term status and trends of park estuarine water resources. One example from a SECN park is Cumberland Island National Seashore (CUIS) where population growth within the watershed has the potential of impacting the park's estuarine resources. Two continuous monitoring sites have been established at CUIS, measuring pH, dissolved oxygen, temperature, salinity, turbidity and depth every half-hour. One of those sites was established in August, 2005, and the other in January, 2007. In addition, monthly (standardized by tide) nutrient, chlorophyll and secchi depth sampling started at these sites in February, 2007. Combined, these data have allowed SECN to evaluate short term variability and seasonal trends. The first probabilistic survey for SECN took place at CUIS in July, 2007. That survey has been used to assess condition of the CUIS estuarine water resources by using evaluation criteria established by the US EPA for dissolved oxygen, nutrients, chlorophyll, water clarity, sediment total organic carbon and sediment contaminants. Summaries of these data will provide park managers with information to help manage valuable estuarine resources for the enjoyment of future generations.

### **KEYWORDS:**

Water Quality Monitoring, Estuary, National Park Service, Southeast Coast Network