USGS
science for a changing world

Patuxent Wildlife Research Center

Vital Signs Monitoring of Estuarine Nutrient Enrichment in Northeastern Coastal Parks

- ***The Challenge:*** Estuaries in some northeastern coastal parks are severely threatened by the adverse impacts of nutrient over-enrichment. USGS led the development of a monitoring protocol to detect changes in nutrient loads in park estuaries which can determine if nutrient inputs are nearing thresholds that would result in shifts in ecosystem structure and function. This protocol is now implemented through the NPS Vital Signs Monitoring Program in coastal parks from Massachusetts to Virginia.

- ***The Science:*** Estuarine monitoring focuses on indicators of water quality, sediment organic carbon, and seagrass distribution and abundance. Biennial monitoring is conducted during a summer index period at a hierarchy of temporal and spatial scales. Vital signs and sampling designs were deliberately selected to be compatible with broad coastal monitoring programs implemented by the U.S. Environmental Protection Agency throughout the northeastern states to allow park data to be examined in a regional context.

- ***The Future:*** USGS will assist NPS with consistent implementation of monitoring standards, synthesis, and interpretation of estuarine monitoring data. Partnerships with other federal programs will permit evaluation of NPS estuaries within the broader context of northeastern coastal condition and watershed characteristics.

Contact: Hilary Neckles at (207) 622-8205 ext. 119 or hneckles@usgs.gov