

Inventory and Monitoring Program Northeast Coastal and Barrier Network



Assateague Island National Seashore
Cape Cod National Seashore
George Washington's Birthplace NM

Colonial National Historical Park
Thomas Stone National Historic Site

Gateway National Recreation Area
Fire Island National Seashore
Sagamore Hill National Historic Site

MONITORING NEKTON IN SALT MARSHES

Salt marshes are ranked as some of the most productive and valuable ecosystems of the world. They serve as nursery grounds for economically important fish and shellfish, feeding and stopover areas for birds, nutrient filters for polluted waters and critical coastline buffers from storm damage. Over the last three centuries, large areas of salt marsh have been ditched, drained, and filled because they were viewed as having little natural and economic importance. Direct wetland filling, pollution, and restriction of tidal flow have taken a heavy toll on coastal salt marshes. National Park Service managers have expressed concern over the degradation of these valuable habitats within their parks. National Park Service lands along the Atlantic coast preserve some of the last pristine and natural areas of salt marsh in the east.

The Northeast Coastal and Barrier Network (NCBN), a group of eight parks along the North Atlantic coast, is developing and employing long term ecological monitoring tools to help detect signs of biological impairment to salt marshes at the earliest possible stages. This information will be used to assist management and protection efforts within these parks.



Example of Fish found in Nekton sample

Photo by M.J. James-Pirri

As part of this effort, the NCBN will be monitoring nekton communities in salt marshes. Nekton are free swimming fish and crustaceans that are common inhabitants of salt marsh pools and tidal creeks. Scientists have learned that nekton can serve as indicators of ecosystem change because they are sensitive to environmental changes, resulting in variations in their community composition, production and density of species.

Nekton are sampled in shallow creeks, pools and mosquito ditches. Sampling occurs twice per year; once in early summer and once in late summer-early fall. Nekton community composition, as well as the density and length of individuals, are recorded at each sampling location. These data provide estimates of nekton densities, species richness, and community composition. Environmental parameters collected concurrently include temperature, salinity, water depth, dissolved oxygen, and vegetation cover in order to help us better understand how these factors contribute to change in these communities.

A complete protocol for monitoring nekton in salt marshes is available on the NCBN website. Monitoring data will be collected in the following NCBN parks: Assateague Island National Seashore, Colonial National Historical Park, George Washington's Birthplace National Monument, Gateway National Recreation Area, Fire Island National Seashore and Cape Cod National Seashore.



Nekton Sampling at Cape Cod National Seashore

Photo by M.J. James-Pirri



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