Southeast Coast Network

National Park Service
U.S. Department of the Interior

Southeast Coast Network
Inventory and Monitoring Program
Atlanta, GA

Climate Change Resource Brief

Monitoring Vital Signs to Assess Impacts of Climate Change

Within the Southeast Coast Network (SECN), climate change is expected to affect both aquatic and terrestrial communities and the migratory and resident species that depend on them. In addition to direct measures of climate change such as temperature, precipitation, which will be collected for all SECN parks, the Southeast Coast Network will be monitoring and analyzing data from several Vital Signs. Climate change Vital Signs data will assist with understanding impacts of climate change, informing planning efforts, and guiding management actions.

Salt Marsh Elevation

Of interest primarily to the network's coastal parks, salt marsh elevation will be monitored using rod surface elevation tables at eight parks in the network in coordination with partners at NOAA, USGS, USFWS, and other networks within the NPS. The Southeast Coast Network is currently working with partners to standardize station installation, monitoring and data management across the three agencies as part of our effort to integrate climate monitoring into the new DOI Landscape Conservation Cooperative Program.

Coastal Water Chemistry

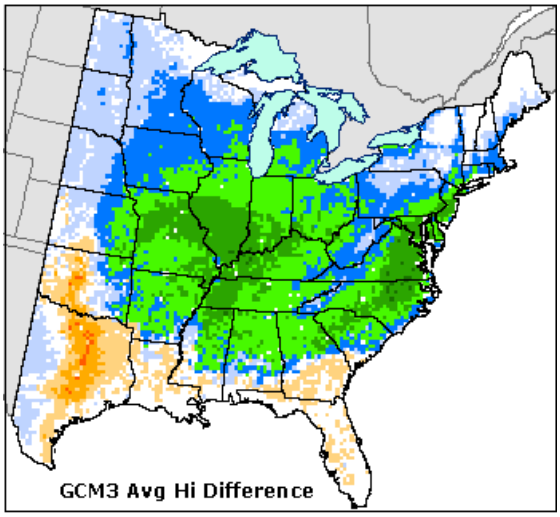
The Southeast Coast Network monitors several indicators of water quality that are expected to be affected by global climate change. Examples include estuarine salinity (resulting from changes in freshwater inputs), temperature, and pH.

Breeding Forest Birds

Diverse bird communites exist in all SECN parks and are a primary attraction for many visitors throughout the year. The distribution of birds across park lands, trends in occurrences, and bird-community composition (presence and absence of species) is of interest to park managers.

The SECN is monitoring breeding-forest bird communities with a variable-circular plot technique. In response to climate change, we expect to detect shifts in community composition and species' distribution within individual parks and across the network as a whole.

The USDA Forest Service developed predictive models of the influence of climate change on the distribution of over 150 birds that occur in SECN parks. SECN bird monitoring will include many of these species, other climate-change indicator species will be identified and evaluated, and these models will be validated, in addition to forthcoming models to be developed in cooperation with the South Atlantic Landscape Conservation Cooperative.



Expected change in distribution of cattle egrets based on global climate change models. Green areas indicate largest expected differences in distribution.

Shoreline Erosion and Position

Changes in sea level, storm intensity and storm frequency are expected to significantly alter coastal geomorphic processes along the Atlantic coast. The network will use its coastal shoreline mobile surveyor to detect changes in shoreline position within coastal network parks and nearby partner lands managed by NASA, USFWS, Florida, and others. Monitoring data will be used to identify locations and rates of change in "erosional hot spots" to aid planning efforts.

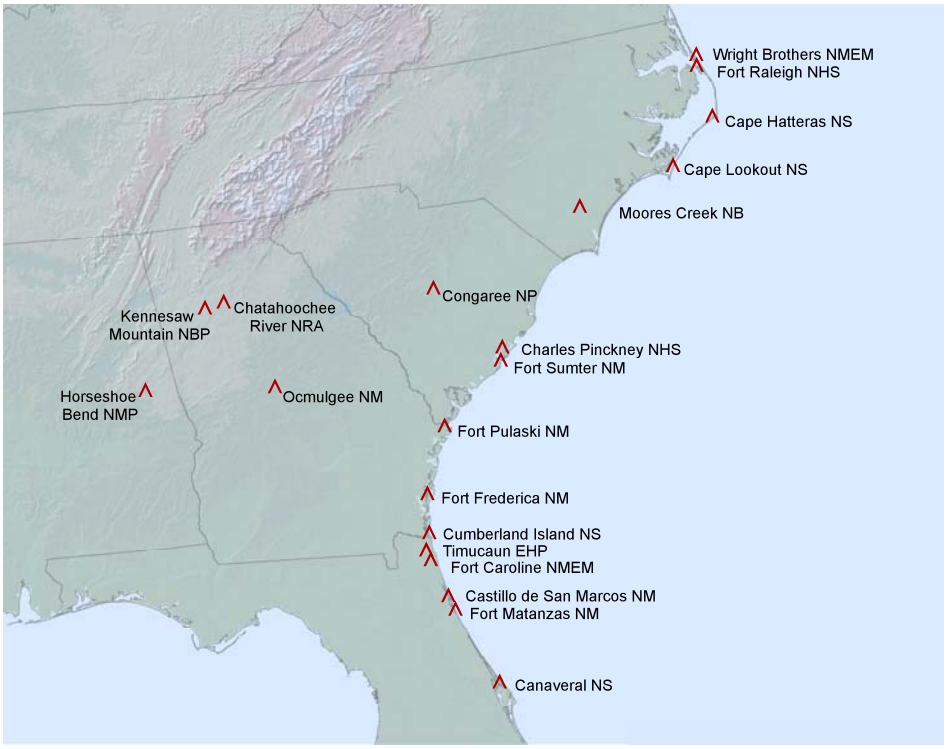
Nesting Coastal Birds and Reptiles

Sea level rise and the resultant inundation of the network's coastal parks is likely to have an adverse impact on nesting shorebirds and sea turtles. Five coastal parks in the network have long-standing sea turtle and nesting shorebird monitoring programs. Beginning in FY2010, the SECN will be working with State and USFWS partners to develop a coordinated monitoring database to track changes in nesting populations of these two taxa groups in response to climate change.

About the Southeast Coast Network

The Southeast Coast Network (SECN) includes seventeen national parks with significant natural resources and extends along the Atlantic coast from the North Carolina-Virginia border south to Cape Canaveral, Florida and inland as far as Atlanta, Georgia and the Alabama Coastal Plain.

Beginning in FY 2010, the SECN will be coordinating its monitoring activities with the 34 National Wildlife Refuges within the South Atlantic Landscape Conservation Cooperative.



The five primary goals of the Network's Inventory and Monitoring program are to:

- Inventory the natural resources under National Park Service stewardship to determine their condition and status.
- Monitor park ecosystems to better understand their dynamic nature and to provide reference points for comparisons with other, altered environments.
- Establish natural resource inventory and monitoring as a standard practice throughout the National Park system.
- Integrate inventory and monitoring information into National Park Service planning, management, and decision making.
- Share National Park Service science and information with other management and science organizations and to meet shared goals and objectives.

For more information, visit us on the web at: http://science.nature.nps.gov/im/units/secn/.

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