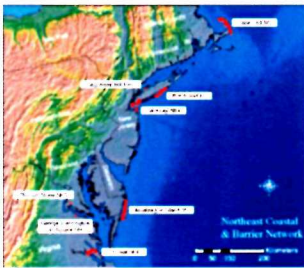




The Inventory & Monitoring Program and You: Working Together to Achieve Resource Stewardship



Northeast Temperate Network (NETN) website:
<http://www3.nps.gov/ncn/ncn/index.cfm?cid=101>



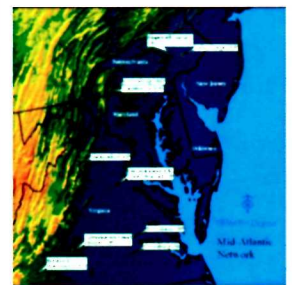
Northeast Coastal and Barrier (NCBN) website:
<http://www3.nps.gov/ncn/ncn/index.cfm?cid=101>

Knowing the condition of natural resources in national parks is fundamental to the Service's ability to conserve park resources "unimpaired for the enjoyment of future generations." National park managers are confronted with complex and challenging issues that require an understanding of the status and trends of each park's natural resources. This information is the basis for decision making, interagency cooperation, and communication with the public to protect park natural systems and native species. The challenge of protecting and managing a park's natural resources requires an ecosystem approach because most parks are open systems, with threats such as air pollution, water pollution, and invasive species originating outside of park boundaries.

Vital Signs Monitoring tracks a subset of physical, chemical, and biological elements and processes of park ecosystems. These elements represent the health or condition of park resources, effects of stressors, or elements that have important human values. The Inventory and Monitoring (I&M) Program is part of the National Park Service's effort to "improve park management through greater reliance on scientific knowledge." The primary roles of the program are to collect, organize, and make available natural resource data and to contribute to the Service's institutional knowledge by facilitating the transformation of data into information through analysis, synthesis, and modeling.



Eastern Rivers and Mountains Network (ERMN) website:
<http://www3.nps.gov/ncn/ncn/index.cfm?cid=101>



Mid-Atlantic Network (MIDN) website:
<http://www3.nps.gov/ncn/ncn/index.cfm?cid=101>

The Goals of Vital Signs Monitoring:

- Determine **status and trends** in selected indicators of the condition of park ecosystems to allow managers to make better-informed decisions and to work more effectively with other agencies and individuals for the benefit of park resources.
- Provide **early warning** of abnormal conditions of selected resources to help develop effective mitigation measures and reduce costs of management.
- Provide data to better **understand the dynamic nature** and condition of park ecosystems and to provide reference points for comparisons with other, altered environments.
- Provide data to **meet certain legal and Congressional mandates** related to natural resource protection and visitor enjoyment.
- Provide a means of **measuring progress** towards performance goals.



Vital Signs and Management Applications

Vital Signs Categories		Management Application	NCBN	NETN	ERMN	MIDN	APPA
Air and Climate	Air Quality	Document the condition of air quality related values, including acid deposition, ozone, air contaminants, and visibility, and evaluate impacts and causes.	●	●	●	●	◆
	Weather and Climate	Supports understanding of local climate change and land use impacts.	●	●	+	●	
Geology and Soils	Geomorphology	Provide long-term data to assess the impacts of natural processes and human related events on geology and soil resources in terrestrial and aquatic habitats.	+	◆	◆	●	
	Soil Quality		●		+		
Water	Hydrology	Document and understand changes in local hydrology in relation to natural processes and land use change.	●	+	+	●	
	Water Quality	Characterize the range of chemical constituents in park waters, and their impact on aquatic communities.	+	+	+	●	◆
Biological Integrity	Invasive species, infestations, and disease	Document distribution and spread of invasive species and pathogens to assist in targeting species management efforts.	+	+	+	●	◆
	Focal Species or Communities	Document and understand structure, composition, and dynamics of species and communities important to parks, and their changes in relation to a variety of natural and human induced stressors	●	+	+	●	◆
	At-risk Biota	Monitor T&E species to ensure long-term maintenance in parks	+		+	●	◆
Human Use	Visitor and Recreation Use	Identify park visitor use patterns and intensity, and possible threats to natural resources	+	+	+	●	◆
Ecosystem Pattern and Processes	Landscape Dynamics	Evaluate ecosystem conversion, inform regional assessments of land use, determine importance of parks in urbanizing landscape	+	+	+	●	◆

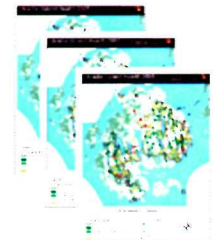
1. NCBN includes ongoing monitoring at CACO.
 2. MIDN includes only monitoring at SHEN; MIDN will select vital signs in 2006.
 ● Vital sign already being monitored
 ◆ Developing or adapting process
 + High priority vital sign with no current or planned protocol due to limitations in staff time or funding

Reporting Vital Signs

Vital signs monitoring is a key component in the Service's strategy to provide scientific data and information needed for management decision-making and education. The primary purpose is to provide park managers with scientifically-credible, relevant data on the status and trends of selected park resources as a basis for making decisions, working with other agencies, and communicating with the public to protect park natural systems and native species.

By developing statistically designed sampling schemes that measure a subset of park ecosystems, I&M will be able to make inferences regarding natural resource health. Over time, continued monitoring will enable us to determine the status and trends in park resources, and to work with park managers using the adaptive management framework to determine the best options for managing or restoring park resources based on predefined desired conditions.

The I&M Program will collect, analyze and make available extensive data on a variety of vital signs, and transfer that data to information through synthesis, modeling, and reporting. Information dissemination can take a variety of forms, including technical and administrative reports, newsletters, maps (right) and web pages or a desktop "dashboard" (below). We anticipate that the monitoring



results will provide a valuable contribution to GPRA, PART, Land Health Goals, reports to congress, State of the Park reports, as well as the diverse array of documents used for park planning and management.

An approach that is being tested by the NETN is the use of desktop "dashboard" or graphical interface that will give park managers access to summaries of selected vital signs, and to drill down to the underlying reports and data. Such an intuitive interface would provide summaries on the status and trends of park resources that are based on sound scientific data.

