

Inventory & Monitoring Program Northeast Temperate Network





Don't Know Much about the Inventory and Monitoring Program...

Not so long ago (FY 1999), in a place not so far away (Washington DC), a plan was developed, called the Natural Resource Challenge. This program set forth challenges for the National Park Service to meet in order to live up to the Organic Act of 1916 which stated that we are to “conserve the scenery and the natural and historic objects and the wild life therein...as will leave them unimpaired for the enjoyment of future generations”.

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The challenge is to connect the parks to vital natural resources and the parks to the people.

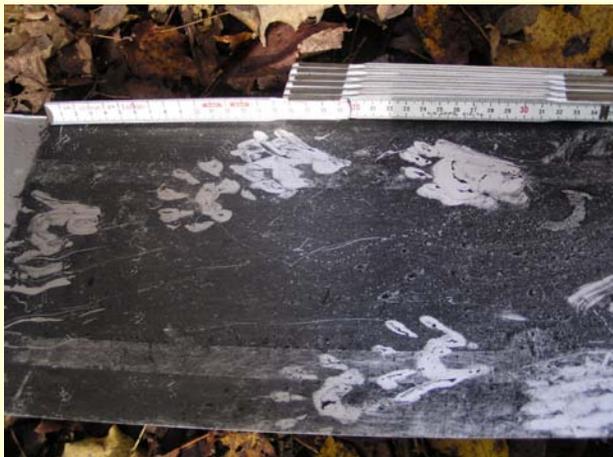
The National Park Service has created networks of parks linked by geography and shared natural resource characteristics to facilitate collaboration, information sharing, and economies of scale in natural resource management.



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Inventory: A consistent set of basic data on natural resources is essential in order to understand the processes that occur in national parks. Such an inventory should lead to an understanding of species diversity, abundance, and distribution.



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Monitor: Preservation depends on acquiring accurate information about the condition of natural resources, tracking how that condition changes over time, and developing standards to evaluate changes in condition and the effectiveness of management actions.

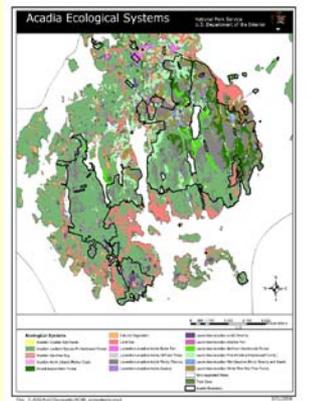


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A Monitoring Program must:

Be relevant to current and future management issues based on threats to park resources;



Produce data of known quality to managers and researchers; and



Be scientifically credible;



Have an explicit link to management decision-making.



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What is the Northeast Temperate Network, otherwise known as NETN? We are a group of 11 parks with diverse cultural and natural resources. Parks range from Acadia NP to Morristown NHP. The network covers a diverse region where 61 ecological systems have been identified, not including the diversity that the Appalachian Trail encompasses!



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The parks of the NETN vary in cultural and natural resources. We have the only two parks that are solely dedicated to artists: Saint-Gaudens NHS and Weir Farm NHS.



A view of Mt Ascutney from the pergola of Augustus Saint Gaudens' studio. Augustus was America's foremost sculptor in the late 19th century.



The studio of J. Alden Weir, one of America's renowned impressionist painters in the late 19th century.

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The NETN also has two parks that preserve important northeast coastlines: Acadia NP and Boston Harbor Islands NPA.



Acadia is comprised of a glaciated landscape in addition to a biological diversity encompassing the transition zones between southern deciduous and northern coniferous forests.

Boston Harbor Islands has 34 islands, and is part of the only drumlin field to intersect a coastline in the U.S.



Drumlin: a long ridge formed of glacial drift

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Minute Man NHP, Morristown NHP, and Saratoga NHP are all important sights for the American Revolution.

Minute Man is the site of “the shot heard around the world.”



Saratoga is one of the top 15 ranked decisive battles in world history.



Morristown is where George Washington and the Continental Army wintered in 1779-1780.



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Roosevelt-Vanderbilt includes three sites: the Home of Franklin D. Roosevelt, the Vanderbilt mansion, and the home of Eleanor Roosevelt.



Springwood is the lifelong home of FDR. He returned to Springwood 200 times during his presidency.



Val-Kill is the cottage Eleanor Roosevelt called home, and the only NPS site dedicated to a First Lady.

The Vanderbilt mansion has 54 rooms and is a glittering example of the Gilded Age mansions of the 19th century.



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And last but not least are Marsh-Billings-Rockefeller NHP, Saugus Iron Works NHS, and the Appalachian NST.



Marsh-Billings-Rockefeller is the only NPS site dedicated to conservation and stewardship.

Saugus Iron Works was the first site in North America for the integrated production of cast and wrought iron.



The AT is 2,175 miles long and was the first trail designated as an NPS site.

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What do we have here?

Amphibians: 14

Birds: 165

Fish: 2

Mammals: 48

Reptiles: 6



Jefferson salamander



coyote

For more information about the inventories that have been completed you can visit NPSpecies. This site requires a password which you can get from Fred Dieffenbach:

Fred_Dieffenbach@nps.gov or

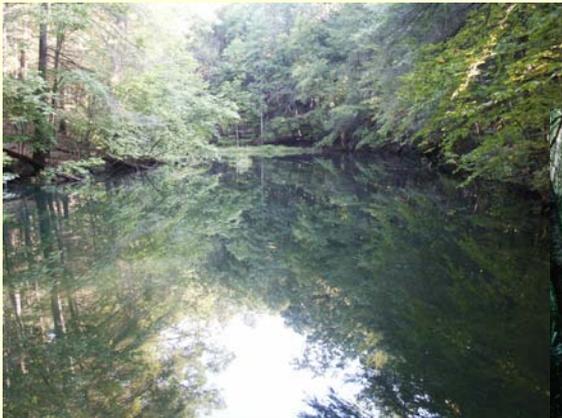
802-457-3368 ext 36.

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Protocol Development for NETN

Protocols for monitoring Water Quality, Forest Condition, and Breeding Landbirds have been developed for the Network. These will take place at ACAD, MABI, MIMA, MORR, ROVA, SAGA, SARA, and WEFA starting in 2006.



Protocol: detailed study plans that explain how data are to be collected, managed, analyzed and reported and are a key component of quality assurance for natural resource monitoring programs

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Breeding Landbird Monitoring

The overall goal of landbird monitoring is to track the status and trends of breeding landbirds within Network parks. Birds are an important natural resource and they are a robust indicator of ecosystem integrity.



Blackburnian warbler

Sampling Design: Sampling stations will be laid out systematically and sampled during 10 minute point counts.

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Breeding Landbird Monitoring

Site Selection:

- point count stations were spaced approximately 250m apart to avoid duplicate sampling while permitting observers to move efficiently between points;
- stations were located at least 50m from forest edges in order to maximize sampling effort on focal species and avoid fragmentation effects; and
- stations were located within the dominant, mature forest cover types found in each park.



White-throated sparrow

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Breeding Landbird Monitoring

Population Being Monitored:
Sampling will be limited to the breeding season of migratory landbirds (mid-May through late-June, depending on latitude), and will include those species that may potentially breed in the park.



Oven bird

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Breeding Landbird Monitoring at Marsh-Billings-Rockefeller NHP

Monitoring will be conducted each year at 25 point count stations.

Ecologically similar count locations will be grouped into 3-5 study sites.

The monitoring will be conducted by volunteers coordinated through the Vermont Institute of Natural Science (VINS).

Volunteers will be driving personal vehicles and display a placard on their dash.



Park Monitoring Project

"to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations".

—Organic Act 1916



The Marsh-Billings-Rockefeller Mansion, Marsh-Billings-Rockefeller NHP

This vehicle is being used for National Park Service Inventory & Monitoring Research. Researchers are currently in the field monitoring Breeding Birds, Forest Health, or Water Quality. If you have any questions about this research please contact the Northeast Temperate Network.

Contact Information

Northeast Temperate Network
54 Elm Street
Woodstock, Vermont 05001
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Yellow Warbler, photo by Charley Eisenman

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Forest Condition Monitoring

The overall goal is to monitor status and trends in the structure, function and condition of NETN forested ecosystems in order to inform management decisions affecting those systems. NETN plans to monitor forest resources within eight NETN parks.

Sampling Design:



- *Remote sensing* will provide landscape-level data on landuse and fragmentation in and around NETN parks.
- *Extensive* tier is designed to assess stand structure and canopy closure, tree condition and regeneration, snag abundance, indicator plant presence, coarse woody debris, and forest floor condition.
- *Intensive* plots will quantify tree growth and mortality rates, understory plant diversity, and soil chemistry.

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Forest Condition Monitoring

Population Being Monitored: The population being monitored is all upland forests and woodlands within park boundaries.



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Forest Condition Monitoring

Site Selection: Sites were randomly selected, and at each monitoring site a suite of measurements will be taken, consisting of:

- Stand structural class
- Canopy closure
- Snag abundance
- Coarse woody debris (CWD)
- Photopoint
- Tree condition
- Tree growth and mortality rates
- Tree regeneration
- Indicator plants
- Understory diversity
- Forest floor condition
- Soil chemistry
- Canopy stress index
- Landscape context



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Forest Condition Monitoring at Marsh-Billings-Rockefeller NHP

Forest Condition Monitoring will be conducted on 24 plots; 12 will be installed in 2006 and 12 in 2008. The tentative start date is the week of July 30, 2006. Monitoring will be done by a crew from the State University of New York College of Environmental Science and Forestry (SUNY-ESF). The crew will be displaying placards on the dash of the university vehicles being used.

National Park Service
U.S. Department of the Interior
Northeast Temperate Network
Inventory & Monitoring Program



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Water Quality Monitoring



The overall goals of this protocol are to monitor the status and trends of NETN aquatic resources, to assess changes in ecological integrity and the impacts of key stressors, and to guide management decisions affecting those resources. Identified vital signs that are included in this protocol are water chemistry, nutrient enrichment, water quantity, and the detection of invasive exotic plant species.

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Water Quality Monitoring

Sampling Design:

The network will measure water chemistry, including pH, dissolved oxygen (DO), water temperature and specific conductance.

Furthermore, acid neutralizing capacity (ANC), color, and nutrients will be analyzed twice each year.

Staff will search for invasive species in ponds and lakes each year.

Measures of stream flow and lake or pond level will provide important context for interpreting water quality data.



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Water Quality Monitoring

The early detection of invasive species has been recognized as a top priority in NETN parks. It was the stressor of biggest concern across all systems in the parks including freshwater aquatic, wetlands, marine, and terrestrial systems.

EURASIAN WATERMILFOIL,
Myriophyllum spicatum



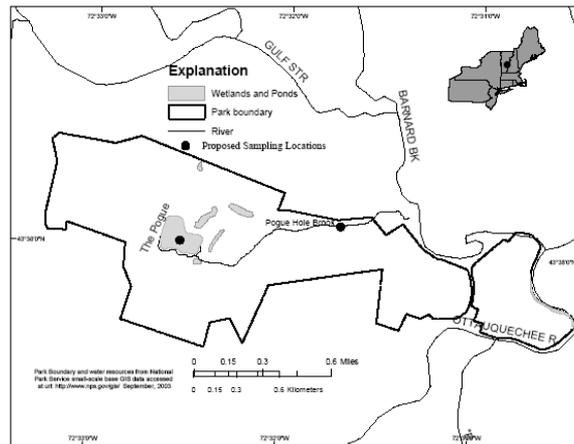
VARIABLE WATERMILFOIL,
Myriophyllum heterophyllum



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Water Quality Monitoring at Marsh-Billings-Rockefeller NHP



Site Selection: There will be two sites visited each month (May-October). These are the Pogue Brook and the Pogue.

Pogue Brook will have water quality and flow measurements taken.

The Pogue will have water quality and pond level measurements taken.

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Water Quality monitoring will occur from May to October. Joe Bartlett, a Water Technician from the University of Vermont, will be monitoring the water sites. He will display a placard on the dash of a rental car while at the park.



Joe Bartlett



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Upcoming Projects!

Wetlands Monitoring:

This will occur in all parks with wetlands and will be field evaluated in FY 2007.

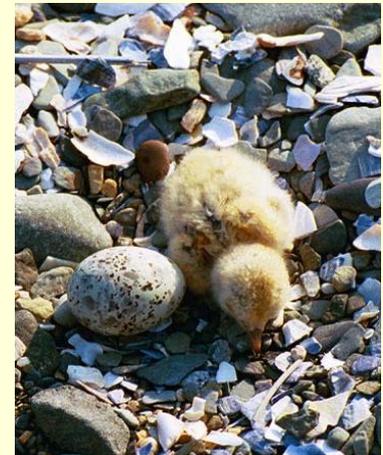


Rocky Intertidal:

Acadia NP and Boston Harbor Islands will be working with this protocol. The protocol is expected to be evaluated in FY 2008.

Coastal Breeding Birds:

Boston Harbor Islands will be using this protocol. The protocol is expected to be evaluated in FY 2007.



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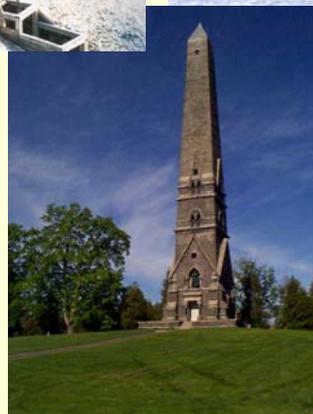


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