



Birch tree with fall foliage in background. Ed Sharron photo

Forest Health Monitoring

Northeast Temperate Network Program Brief



Northeast Temperate Network (NETN) forests range from the central oak-hardwoods of New Jersey to the northern hardwoods and spruce-fir forests of northern New England, and include the pine woodlands of Acadia National Park as well as the plantations and successional habitats found in several of the National Historical Parks and Sites.

Why monitor forest health?

Forest vegetation is a primary component of most NETN parks, and its structure, composition and condition determines habitat for a wide variety of organisms.

Forest vegetation was identified as a high priority vital sign in the early days of the Network. This monitoring program also provides data for three additional high-priority vital signs including the condition of forest soil, white-tailed deer feeding habits, and landscape context. The program's overall goal is to assess the status and trends in the composition, structure, and function of NETN forested ecosystems.

How is the monitoring done?

Permanent forest plots are established in each participating park.

Tree and stand measurements are made every 4 years within permanent forest monitoring plots that were randomly located in participating parks. Tree regeneration is measured within three 2-meter radius circular microplots within each plot. Coarse woody debris (CWD) is assessed using a line intersect sampling method along three 15-meter transects originating at plot center. Understory diversity is monitored within eight 1-meter² quadrats, and soil samples are obtained from a location adjacent to the plot so as not to disturb the plot itself. See the illustration on the back page for plot layout, and for a complete description of forest monitoring techniques, including field methods and sample design, download the protocol from NETN's website.

How is the information delivered to parks?

The Ecological Integrity Scorecard tells the story

An Ecological Integrity Scorecard is used to aid the reporting and interpretation of forest condition in NETN parks. The scorecard examines a suite of compositional, structural, and functional measurements in relation to their natural or historical range of variation. The Network recognizes that "ecological integrity" may not be the primary goal of park resource management, particularly at historical parks and historic sites where cultural resource management may be the primary motivating factor. Even if this is so, having the ability to compare the condition of park resources to ecological integrity benchmarks is valuable because it provides a deeper understanding of park conditions, as well as a consistent baseline to assess management goals. NETN staff are working with managers at several parks to develop scorecards that more

Right: Hemlock woolly adelgid is one of several pests and pathogens that the Network keeps an eye out for when monitoring forest plots. Cornell fungi photo.



Below: The NETN forest health crew takes plot measurements in Acadia National Park. NPS Photo.



