



Seeing the Forest for the Trees (and Snags)

Results of Annual Forest Health Survey at Minute Man NHP

Background

Forests of the northeast have a long history of resiliency and recovery. Ice ages, weather events, large scale clearing, and introduction of pests and invasive species have all played significant roles in shaping the forest communities we have around us today.

Long-term health of the forests of Northeast Temperate Network (NETN) parks is a high-priority for the network. The goals of the forest monitoring program are to assess status and trends in the composition, structure, and function of forested ecosystems, and to interpret and report the condition of forest systems in a way that effectively informs park managers and other stakeholders.

Purpose and Scope

To aid in reporting data in a clear and useful way, NETN developed the Ecological Integrity Scorecard, which interprets the condition of forested ecosystems by assessing a range of ecological components in relation to their natural or historical conditions.



A typical stand of beech trees in the park NPS photo.

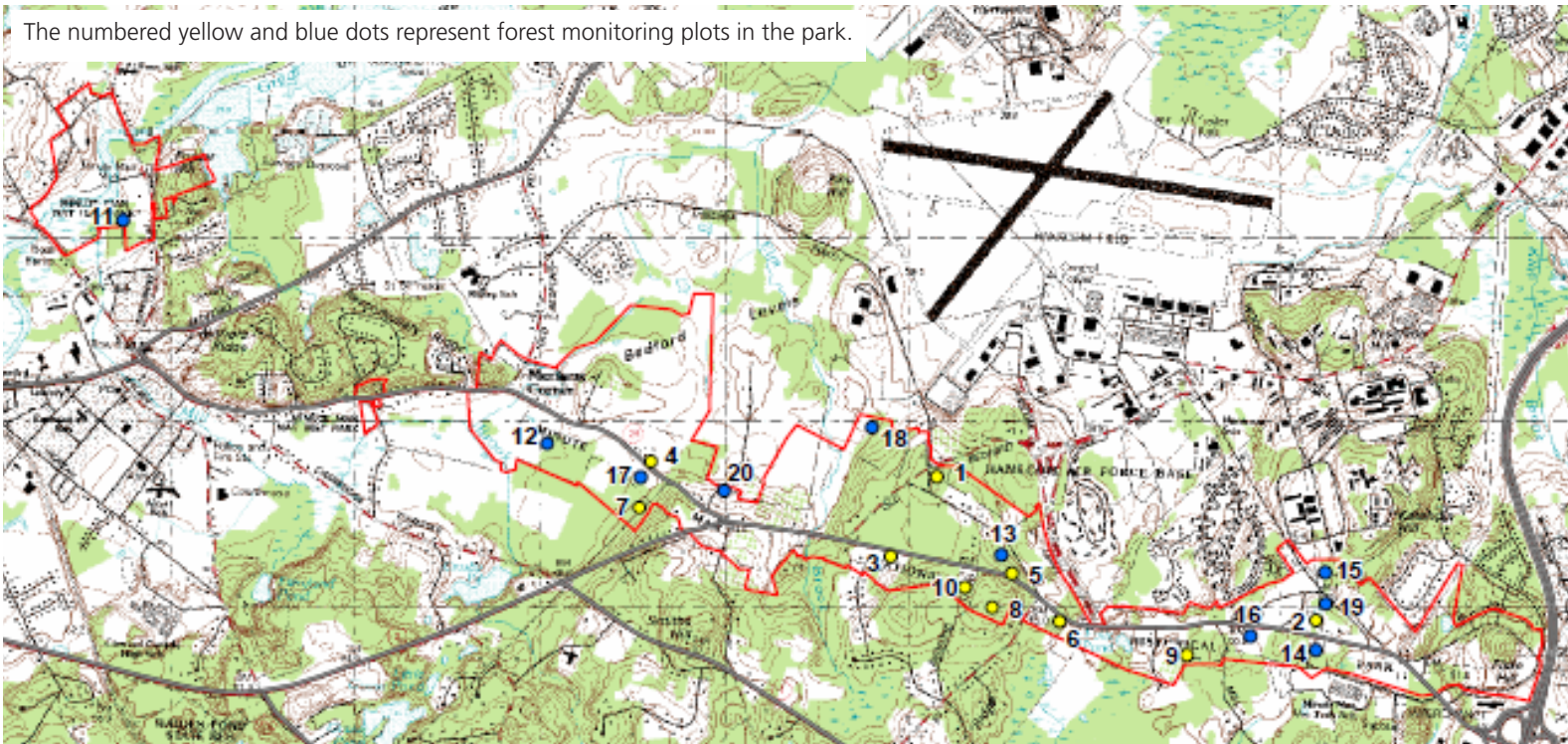
Integrity is ranked in one of three categories: Good, Caution and Significant Concern. “Good” represents acceptable or expected conditions; “Caution” indicates a problem may exist; and “Significant Concern” indicates undesired conditions that may need management action. It is important to note that “ecological integrity” may not be the primary goal of natural resource management at all network parks, particularly at historical parks and sites where cultural resource management may take precedence. However, being able to compare the condition of park resources to ecological integrity benchmarks is valuable because it provides a deeper understanding of park condition, as well as a consistent baseline for assessment of management goals.

Results and Findings

In this park, most of the dominant species that make up the forest canopy are also present in the regeneration (i.e., seedling and sapling) layer. An important concern is the presence of non-native tree species, especially Norway maple and black locust, in both the regeneration and canopy layers. Norway maple is fast growing, extremely shade tolerant and a prolific seed producer, and out competes native maple species. If not controlled by management, this species may replace sugar and red maples as the dominant maple species in the richer sites in the park. Black locust may pose less of a threat than Norway maple because the species is short-lived and not able to regenerate in shade. However, it has been documented that a higher abundance and diversity of invasive species can grow under a black locust canopy than a canopy composed of native tree species.

Dead wood, in the form of standing dead trees (snags) and fallen coarse woody debris (CWD), is an important structural feature of forests that provides habitat for a wide variety of species. Logging and hazard tree removal can reduce the quantity or quality of these features, but strategic land management can maintain or enhance snags and CWD. The forest plots at Minute Man rated as “Significant Concern” for both categories.

The numbered yellow and blue dots represent forest monitoring plots in the park.



More Information

Brian Mitchell
NETN Program Manager

Phone/Email
802-457-3368 ext. 37
brian_mitchell@nps.gov

Full Report online at:
<http://science.nature.nps.gov/im/units/NETN/monitor/monitor.cfm>

Kate Miller
NETN Plant Ecologist

207-288-8736
kathryn_miller@nps.gov



Species Spotlight: Black Locust

Black locust (*Robinia pseudoacacia*) grows naturally on a wide range of sites but does best on rich moist limestone soils. It has escaped cultivation and become naturalized throughout eastern North America and can be considered an invasive species here.

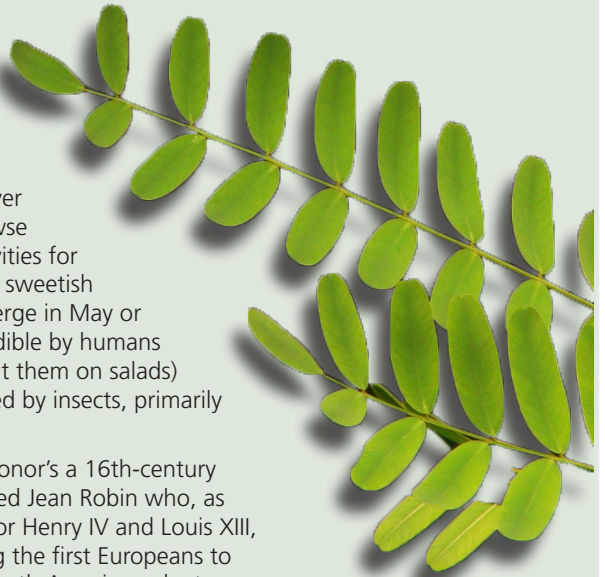
The locust's incredibly hard, strong wood is the most durable of American hardwoods (taking white oak as the standard of 100%, black locust has a durability of 250%). Although the wood tends to warp badly when dried, it is still very popular for furniture, cabinetry, boats, and fencing. It is known to some carpenters as "the nail bender" as it is virtually impossible to nail without pre-drilling holes. In the days of master ship builders, locust wood was used for nails for wooden ships and proved to be more durable than the hulls of the ships themselves. The British held that their defeat on Lake Champlain during the war of 1812 was partially due to the strength of the nails on American vessels.

Because it is a nitrogen fixer and has rapid juvenile growth, black locust is widely planted as an ornamental, for shelter

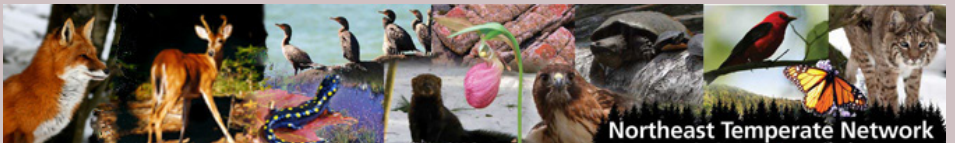
belts, and for land reclamation.

It is also suitable for fuel-wood and pulp and provides cover for wildlife, browse for deer, and cavities for birds. Its showy, sweetish flowers that emerge in May or June are quite edible by humans (some people put them on salads) and are pollinated by insects, primarily bees.

It's Latin name honor's a 16th-century Frenchman named Jean Robin who, as head gardener for Henry IV and Louis XIII, had been among the first Europeans to grow seeds of North American plants collected by early explorers. There is a sign in the *Jardin des Plantes*, where Robin worked, that pointed out a gnarled black locust as the oldest tree in Paris.



Northeast Temperate Network
54 Elm Street, Woodstock, Vermont 05091
802-457-3368
<http://www.science.nature.nps.gov/im/units/netn/>



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