



Vegetation Monitoring at Lincoln Boyhood National Memorial

Importance: *The Landscape That Lincoln Knew*

Majestic oak forests and boundless prairie characterized the landscape that early settlers found in the Heartland of our nation. The National Park Service has memorialized Abraham Lincoln's boyhood home in Indiana with nearly 200 acres of homesteads, old fields and varied hardwood forest communities. A specific goal of the memorial is to restore the cultural landscape to a mature hardwood forest, as would have surrounded the Lincoln homestead.



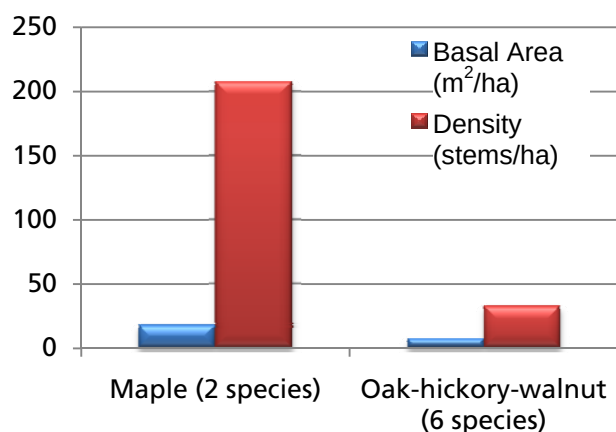
Vegetation monitoring plot in the forest

Long-term Monitoring: *Forest Succession*¹

Plant community monitoring quantifies species composition, structure, and diversity. Scientists use monitoring to detect and describe changes in the community conditions. The Heartland Inventory and Monitoring Network established a set of monitoring sites within a portion of the memorial's successional forest and collected information on the overstory structure and composition. Scientists report the condition of the forest using certain measures of community structure. The measures indicate progress in restoring the cultural landscape. Specific metrics, such as species diversity and richness, can help to compare changes in the community succession and conditions over time.

Status and Trends: *The Forest Isn't What It Used To Be*

Forest structure and composition within these four sites reflect land use history, ranging from pre-settlement forest to logging and fire suppression and to reforestation. Hardwood species of pre-settlement forest in the Lincoln era include oaks (*Quercus* spp.) and shagbark hickory (*Carya ovata*). However these species currently occur in low density and basal area. Forests are changing to a sugar maple (*Acer saccharum*) dominated community. This trend will likely alter the forest to conditions dissimilar to those that the Lincoln family encountered. Scientists also discovered:



1. The understory of the four forest sites is characterized by a few plants of many native species and a small number of species that occur very frequently. These measures suggest low species richness. This implies that the plant community is not as healthy as managers would like to see.
2. Two non-native species, common periwinkle (*Vinca minor*) and Japanese honeysuckle (*Lonicera japonica*), are abundant in the understory and may represent an invasive plant problem.

Maples, principally sugar maple, contribute greatly to the forest regeneration, indicating a steady succession to maple forest. Change in measures of basal area (diameter of trees) and density (number of stems per area) over time will demonstrate whether efforts to return to an oak-hickory forest are successful.

¹ James, K. M. 2011. Vegetation community monitoring at Lincoln Boyhood National Memorial, Indiana. Natural Resource Data Series NPS/HTLN/NRDS—2011/194. National Park Service, Fort Collins, Colorado.