

# Highstead

To inspire curiosity and build knowledge

about plants and wooded landscapes  
in order to enhance life, preserve nature  
and advance sound stewardship practices

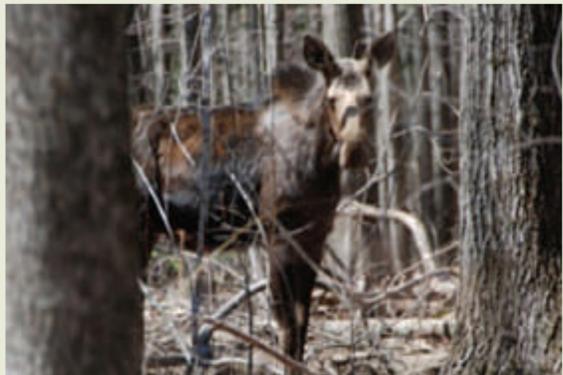
Highstead's Ecology Program performs forest research, promotes long-term forest monitoring, and synthesizes complex scientific topics to inform land management and educate the public.

## Ecology and Stewardship Science

### Large Herbivores and Forests



White-tailed deer and moose have inhabited southern New England's forests for thousands of years. After being extirpated from much of the region by habitat loss and overhunting in the 19th century, both species have recovered today. Deer are abundant in southwestern Connecticut and common throughout the region. Moose occur in the coolest and least developed areas of northern Connecticut and central and western Massachusetts.



Deer foraging can reduce wildflower diversity and promote invasive plants, and both animals can suppress tree regeneration. Deer also disperse wildflower seeds into new areas, and moose browsing can thin young forests to densities desirable to foresters. Both animals can promote regional habitat diversity by browsing some landscapes more than others. Hence, large herbivores can have "positive" or "negative" effects on forests, depending on one's perspective and the scale (size of the area or length of the time period) at which a phenomenon is considered.

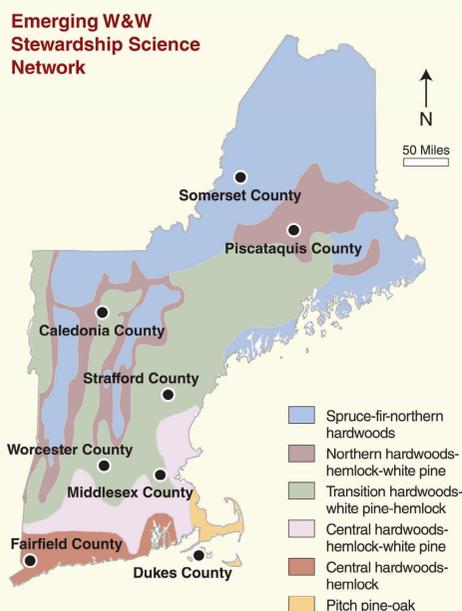
How many deer or moose should inhabit our forests? Despite what many people think, this question is not a scientific one; it is a question about aesthetics and values, and thus a question for society to answer. Science can provide data and potential outcomes of different management options from which society can make more informed decisions. Highstead's ecology program studies how large mammals influence forests at different spatial scales to help provide this information. We collaborate closely with the Harvard Forest and the USGS Massachusetts Cooperative Fish and Wildlife Research Unit.

### Wildlands and Woodlands Stewardship Science

How are our forests changing over time? How do we know if a management initiative was successful? And how do we decide when a change in management is necessary? We can't know for sure unless we monitor the areas in question. Few landowners, however, undertake such measurements.

Highstead, in collaboration with the Harvard Forest, seeks to change this monitoring deficit with the Wildlands and Woodlands (W&W) Stewardship Science Initiative: a monitoring program available to landowners of any type and technical expertise.

If adopted broadly, *W&W Stewardship Science* will not only benefit individual landowners' management goals but provide more comprehensive understanding and thoughtful management of New England's forests as a whole.



### Synthesis and Communication of Science

A critical aspect of environmental conservation is to bring science and society closer together through effective communication of ecological research. Ecology is one of the most complex and interdisciplinary scientific fields, and therefore communicating ecology accurately requires (1) synthesis of a diverse array of knowledge and (2) precise wording about when and where ecological concepts can be applied.

How well are ecologists performing this task? In other words, does society's perception of a particular ecological topic align with the scientific evidence on that topic? Highstead has begun to study this question in relation to topics important to the general public such as deer-forest relationships and the former abundance of American chestnut.

Highstead also supports a Senior Fellow who broadens Highstead's reach through initiatives that synthesize and communicate key scientific findings relevant to forest policy and management, including a collaborative Future Scenarios of New England initiative that is modeling what our forested landscape will look like in the future depending on what decisions we make today.



American chestnuts in North Carolina, 1910  
(Photo by Forest History Society)