



A Research Program for the Northern Forest



TO LEARN MORE:

www.nsrcforest.org

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HOW TO APPLY FOR FUNDING:

A Request for Proposals (RFP) is announced in late summer each year, with pre-proposals due in October. Investigators are asked to submit pre-proposals to the appropriate Theme Manager. Approved pre-proposals advance to the next competitive round of full proposals due in January. Details and the RFP can be found on the NSRC website.

The Northeastern States Research Cooperative (NSRC) is a competitive grant program, supporting cross-disciplinary, collaborative research in the Northern Forest – a 30-million acre working landscape that is home to more than two million residents and stretches from eastern Maine through New Hampshire and Vermont and into northern New York. The program addresses the importance of the Northern Forest to society and the need for research activities to benefit the people who live within its boundaries, work with its resources, use its products, visit it, and care about it. Funds support a range of projects that fit into four research themes. (See reverse side.)

RESEARCH THEMES:

Theme One *Sustaining productive forest communities: Balancing ecological, social, and economic considerations.*

Theme One supports research focused on sustainable and integrated solutions to the social, economic, and ecological challenges of communities, businesses, and working landscapes in the Northern Forest. Topics include sustainable forest management, community and economic development, ecological economics and ecosystem services, nature-based tourism, and watershed planning.

Theme Two *Sustaining ecosystem health in northern forests.*

Theme Two supports research that will improve understanding of the health and productivity of forest and associated aquatic ecosystems in the Northern Forest. Topics include hydrological, biogeochemical, and carbon cycling processes in forested ecosystems and surface waters as affected by pollutants, climate change, and forest management for biomass or carbon.

Theme Three *Forest productivity and forest products.*

Theme Three supports research that will quantify, improve, and sustain productivity of the Northern Forest as a working forest landscape. Topics include underlying biological processes, management practices, and methods of prediction that will influence future wood supplies and forest conditions.

Theme Four *Biodiversity and protected area management.*

Theme Four supports research focused on biodiversity and protected area management in the Northern Forest. Topics include forest biodiversity, conservation, ecological services to society, and protected area management.

Learn more about each theme, read project results, and view the most recent RFP on the NSRC website <http://www.nsrcforest.org>.

Examples of Funded Research Projects

How Forest Evapotranspiration May Be Affected by Climate Change

Heidi Asbjornsen, University of New Hampshire, Theme Two

Scientists studied tree growth and evapotranspiration, how water moves from soil to atmosphere through plants, in some cases using data collected over 50 years. Findings from Maine to West Virginia, demonstrate much greater sensitivity to warming climate and drought in the southern part of the region than in the cooler, more humid Northern Forest.



Photo by Matt Vadeboncoeur

Reducing Forest Fragmentation Through Subdivision and Zoning Strategies

Jamey Fidel, Vermont Natural Resources Council, Theme One

Researchers scrutinized the relationship of subdivision and land use change in Vermont towns to devise ways to reduce forest fragmentation. In coordination with regional and local planners, they created an engaging technical assistance manual “Community Strategies for Vermont’s Forests and Wildlife: A Guide for Local Action,” an online community planning tool kit, and a forest fragmentation action plan to help Northern Forest communities grapple with development pressures on forestland.



High Site Quality and Pruning Improve White Pine Lumber Yield and Quality

René Germain, SUNY College of Environmental Science & Forestry, New York, Theme Three

In a comparison study in the Adirondacks, researchers found that eastern white pine trees grown on high quality, fertile sites yielded more 16-foot logs than did pines grown on marginal sites. On high quality sites, pines that were intensively pruned in the 1930s produced butt logs that yielded the highest quality lumber.

Experimental Ice Glazing in a Northern Hardwood Forest to Understand Ecological Impacts of Ice Storms

Lindsey Rustad, USDA Forest Service Northern Research Station, New Hampshire, Theme Two

In a northern hardwood forest in New Hampshire, scientists manually created ice glaze on tree branches using methods similar to those used to make snow at ski areas. This novel tool will allow scientists to study icing events as the Northern Forest faces an increase in ice storms in response to climate change.



Photo by Larry Master

Ecological Impacts of Residential Roads on Songbirds in the Adirondacks

Michale Glennon, Wildlife Conservation Society, New York, Theme Four

Researchers demonstrated that bird communities may be impacted as far as 200 meters from both roads and houses in the Adirondack Park. Roads provide foraging and feeding opportunities but provide less opportunity for nesting compared to areas near houses. Keeping residential roads narrow and speed levels low will help reduce strong negative impacts on songbird communities in the Adirondacks and in other areas of the Northern Forest region.

20-Year Results from Ecological Based Silviculture Studies in Maine

Robert Seymour, University of Maine, Theme Three

Scientists will evaluate the economic trade-offs of using ecological based silvicultural systems, or ways to grow and harvest trees that mimic natural disturbances in a forest. Results from 20-year-old studies on the Penobscot Experimental Forest will inform forest managers, particularly those of larger production-based holdings who have concerns that such silvicultural systems may result in lost economic productivity, compared to more traditional forestry.



Personal Contact Remains Effective Form of Mountain Summit Visitor Education and Stewardship

Robert Manning, University of Vermont, Theme One

GPS tracking and a survey of visitors on Sargent Mountain, Maine revealed that visitors tend not to notice resource impacts and few acknowledge causing impacts. Personal contact by a steward more successfully delivered educational messages to visitors than did posted signs.

Rare Fern Valuable to Understand Plant Responses to Climate Change

Danilo Fernando, SUNY College of Environmental Science & Forestry, New York, Theme Four

Scientists determined that changes in precipitation are more critical to survival of rare fragrant fern than are increasing temperatures. Fragrant fern is an example of a species with a southern range limit in the Northern Forest and serves as a model for understanding elements of biodiversity we could lose to climate change.