

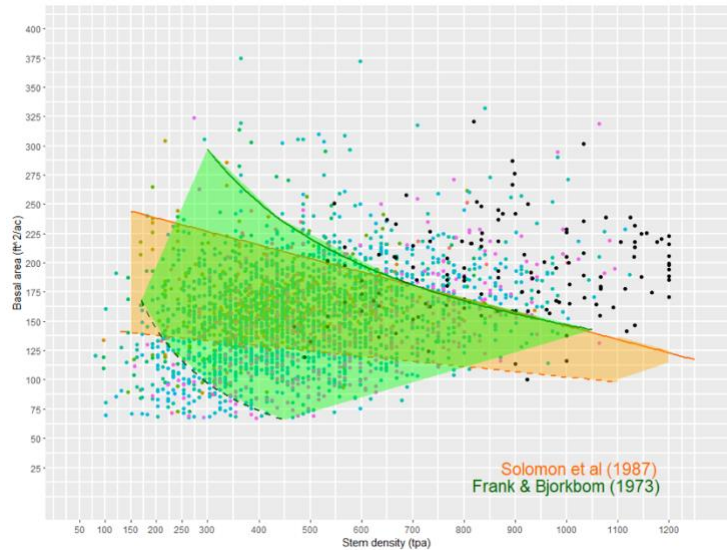
NSRC Progress Report 2021

A New Silvicultural Guide for Northern Conifers in the Northeast

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Project abstract

The silvicultural guide for the northern conifer forest type covering 6 million acres of New England is close to 50 years old and has little relevance to the conditions and challenges facing forest managers today. NSRC researchers will remedy that problem by synthesizing and interpreting an additional half-century of forest research to develop scientifically robust and ecologically sound silvicultural recommendations within the context of contemporary forest management needs. Researchers will ensure applicability and inclusion of diverse perspectives through a process of co-production in which an advisory panel of stakeholders from state and federal agencies, Tribal entities, landowners, forestry practitioners, and others provide guidance on content and delivery.



A comparison of previously published spruce-fir stocking guides to data from contemporary measurement plots reveals that actual forest conditions align poorly with the maximum stocking those guides imply, suggesting an update is needed. Graph by David Ray, University of Maine

Outputs include a new silvicultural guide for northern conifers based on the best available science and published by the USDA Forest Service, a professionally produced companion video, and a field workshop for practitioners. Outcomes will include more effective near-term management with improved long-term sustainability of northern conifers and the communities they support in the Northern Forest region.

Summary of progress in 2021

In 2021 the writing team was finalized with the addition of a new co-PI (Nicole Rogers). A project manager (Carolyn Ziegra, University of Maine) was hired, and a contributor (David Ray, University of Maine) was hired to focus on development of quantitative tools. The project team compiled and reviewed literature on silviculture of northern conifer forests in the Northeast. The co-production advisory panel was formed, consisting of cooperators from different sectors of forestry and spanning multiple states within the northeastern region of the United States. A draft of the proposed table of contents for the guide was delivered to the advisory panel for review. The advisory panel was also asked to identify their challenges related to the management of northern conifer forests, including but not limited to silviculture, regeneration, landscape management, forest health, and operations. They were also asked to provide suggestions for additional content. Results were compiled and used to plan discussion topics for future meetings with the advisory panel. Members of the writing team and professional support staff began data summary and mapping of available northern conifer data, as well as development of updated quantitative tools for this forest type.

Problems or changes

No problems or changes were encountered for this project in 2021.

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Collaboration with USFS

The project lead is a USFS scientist, and this work will update and modernize the existing silvicultural guide for northern conifers (A Silvicultural Guide for Spruce-Fir in the Northeast; Frank and Bjorkbom 1973). That guide, which is nearly 50-years old, was published by the USFS based on research conducted at the Penobscot Experimental Forest. It has become less relevant to present day challenges and forest conditions over time. The new version will have an expanded scope that will include other important species commonly associated with the spruce-fir forest type in the Northeast (eastern white pine, eastern hemlock, northern white-cedar, and maple, birch, and aspen species). It will draw upon lessons learned and data available from an additional 50 years of research at the Penobscot Experimental Forest and elsewhere. As such, it will provide more relevant guidance on how to successfully manage northern conifer forests at this time, and into the future.

As stated in our 2020 NSRC Full Proposal: *“This work will leverage substantial investment by the U.S. Forest Service in historical and ongoing studies, the PI’s salary, publication editing, layout, and printing, and professional support staff (federal monies not listed as match). Outputs, including a print and online silvicultural guide, companion video and workshop, will support northern conifer silviculture based on the best available science, leading to more effective and sustainable Northern Forest management and provision of ecosystem services.”*

Plans for 2022

Identifying information for inclusion in the silvicultural guide and refining the table of contents will continue in 2022. This will involve meeting with the advisory panel early in the year (March) to gain their input, as well as gathering additional data from unpublished sources to update supporting materials such as growth and yield tables. A draft of the guide will be written, as will an outline for the companion video. Following this, the advisory panel will meet with the writing team again to discuss missing information and other areas for improvement. Revisions to these drafts will be made through the remainder of the year, and a rough cut of the video will be produced. The plan to write this guide and progress thus far will be presented in a dedicated session at the annual meeting of the New England Society of American Foresters in Portland, ME in March.



The new northern conifer silviculture guide will provide forestry practitioners with the information they need to manage spruce-fir and associated species in the Northeast across a range of stand types and compositions. Photos by U.S. Forest Service.