The Nature Conservancy
Protecting nature. Preserving life.™

Adaptation Forestry in Minnesota's Northwoods

Through this place-based effort we will demonstrate **climate-informed forestry practices** in northern Minnesota.

The Challenge: Conventional forestry practices in the Great Lakes region emphasize regenerating aspen-birch forests by clear-cutting, or feature planting of white spruce or red pine. This approach will likely be commercially and ecologically unviable as many northern tree species continue to decline under anticipated warmer, drier conditions.

The Opportunity: Adaptation forestry, the focus of our project, consists of a combination of management and planting that increases ecosystem complexity and bolsters forest resilience. We will manage for a range of species with a diverse array of life history traits (e.g., tolerance of shade, drought and fire). A full spectrum of traits translates to a better ability to respond favorably to new climate conditions.

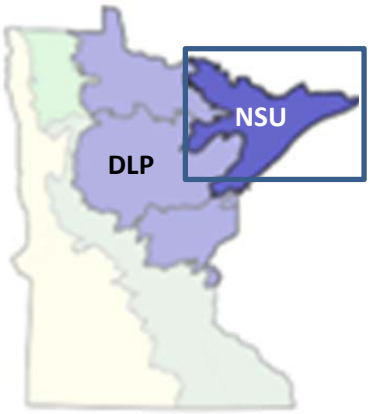
If managed for a range of climate-adapted native species, northern forests of the future may look different from today's boreal landscape. Maintaining resilient forests is crucial to sustaining habitat, ecosystem services and the local timber economy.

Forests for the Future

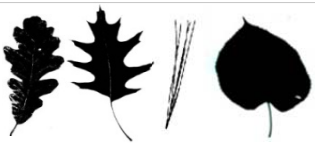
This project is a first step in helping northern forests transition to an uncertain future, ultimately influencing the adaptive capacity across millions of acres in the Great Lakes region.

Project at a Glance

- 2,000 acres (500 acres each for these forest types):
  - Boreal Mixed
  - Mesic Pine
  - Dry-Mesic Pine
  - Hardwood-Conifer
- County, state, and federal ownerships
- 88,000 native tree seedlings
- Climate-informed forestry practices, such as:
  - Establish new mixes of native species
  - Promote diverse age classes
  - Retain biological legacies
  - Use genetic material from a wider geographic range
  - Manage herbivory to protect regeneration



Project sites are located in the Northern Superior Uplands (NSU) ecological section (dark blue area within box). Seedlings will be sourced from both the NSU and the Northern Minnesota Drift and Lake Plains (DLP).



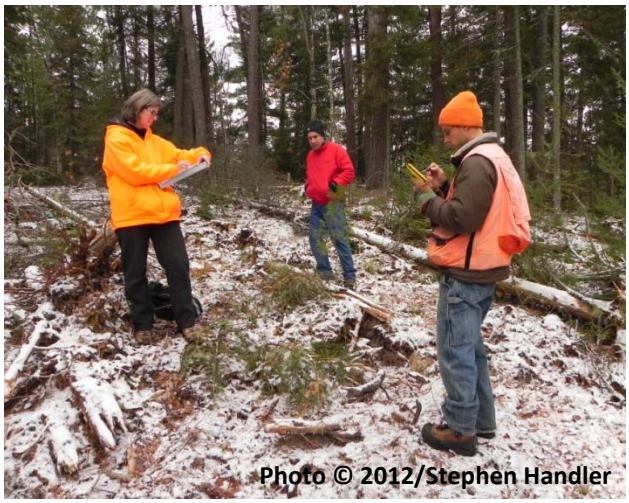
Species Selection

Our suite of climate-adapted tree species (L-R): bur oak, red oak, white pine, and basswood.

Why These Species?

1. Our ecological modeling suggests they are likely to thrive under warmer, drier conditions, a result corroborated by other modeling work.

2. All four species are native to the region, but uncommon due to a legacy of past harvesting practices, a climate that historically favored boreal species and dispersal limitations.



Conservancy foresters assess a potential site for adaptation plantings (fall, 2012).

Collaborators

The Nature Conservancy

Northern Institute of Applied Climate Science

University of Minnesota-Duluth

Partners

Minnesota Forest Resources Council

Sustainable Forestry Education Cooperative

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For more information about this project contact Meredith Cornett: 218.727.6119 or mcornett@tnc.org
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