



BARTLETT EXPERIMENTAL FOREST

Bartlett, New Hampshire



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The 5,789 acre Bartlett Experimental Forest in New Hampshire was established in 1932 as a location to study silviculture and management of northern hardwoods. For the last two decades silviculture-wildlife habitat relationships have been studied at Bartlett, and since 1995 this experimental forest has become increasingly important as a site for studies of carbon and nutrient cycling. Research at Bartlett has been instrumental in understanding how northern hardwood forests respond following silvicultural treatments and natural disturbances and today management of northern hardwoods in New England is largely based on research conducted here. In addition, much of the knowledge about using airborne and satellite remote sensing to evaluate primary productivity and health of northern hardwood forests has been developed from Bartlett EF research. Technology transfer is a major component of the program at Bartlett with numerous workshops and tours annually for land managers and owners, students, and the public.



Assets:

Scientists: 6 Northern Research Station scientists are currently working on studies at Bartlett EF.

Scientific Support: 2 professionals support the work of these scientists.

Cooperators: Other NRS units, White Mountain National Forest, University of New Hampshire, Brown University, SUNY-ESF, Northeastern Area, State & Private Forestry, NASA, NH Dept. of Resources and Economic Development, NH Fish and Game Department, Audubon Society of New Hampshire, NH Timberland Owners Association

Needs:

Annual operating costs: \$210,000

Critical needs:

- Establish permanent sample plots on and inventory the areas of the experimental forest added in 2005 that doubled the size of the Bartlett
- Install high-speed internet connection; consolidate all long-term data and metadata into readily accessible and web-compatible formats

Long-term needs:

- Expand quarters and upgrade laboratory facilities
- Upgrade GPS/GIS capabilities and improve expertise among staff
- Modernize data collection technology with electronic data-logging systems and wireless remote

The Bartlett Experimental Forest is administered by:

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More About the Bartlett Experimental Forest

Location: Lat. 44°2'39" N, long. 71°9'56" W

The Bartlett Experimental Forest is located in Bartlett, NH, about 90 miles north of Durham, NH.

Vegetation: The Bartlett Experimental Forest consists of areas of old-growth northern hardwoods with American beech, yellow birch, sugar maple, and eastern hemlock the dominant species. Even-aged stands of red maple, paper birch, and aspen occupy sites that were once cleared. Red spruce stands cover the highest slopes, and eastern white pine is confined to the lowest elevations.

Climate: Summers are warm with high temperatures occasionally reaching above 90 °F (32 °C). Winters are cold with low temperatures often reaching -30 °F (-35 °C). Average annual precipitation is 51 inches (1,270 mm), well distributed throughout the year. In winter, individual storms can drop more than 24 inches (600 mm) of snow, which most years accumulates to depths of 5 to 6.5 feet (1.5 to 2 m).

Research—past and present: For the first 50 years, research on the Bartlett focused on managing northern hardwood stands for timber. An array of silvicultural prescriptions was applied, including single-tree selection, group and patch cutting, clearcutting, and diameter-limit harvesting. Although these are among the longest running studies in this forest type, many management questions remain and silvicultural research continues. For the past 20 years, relationships between vegetation management and needs of wildlife throughout their life cycles have been investigated intensely. Such research focuses on amphibians, small mammals, and birds. The Bartlett's long-term data provide the ground observations needed to develop remote sensing data layers that can be extended to broader landscape and regional scales. These data are also used to develop and test forest ecosystem models designed to estimate current ecosystem condition and predict changes through time caused by factors such as acid precipitation, climate change, insect infestation, and various other disturbances.



Research opportunities: Opportunities for studying all aspects of ecology and management of northern hardwood forests in New England are nearly unlimited on Bartlett EF and manipulative experiments are possible in collaboration with NRS scientists. Project staff will facilitate nonmanipulative studies that do not conflict with the long-term mission of the forest.

Facilities: Facilities at the Bartlett include an office and laboratory space, a conference room, and quarters, including a kitchen and laundry, for up to 25 people.

More information can be found at: <http://www.nrs.fs.fed.us/ef/locations/nh/bartlett/>