



HUBBARD BROOK EXPERIMENTAL FOREST

West Thornton, New Hampshire



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Located in the White Mountain National Forest in a bowl-shaped valley in central New Hampshire, the 7,750-acre (3,138 ha) Hubbard Brook Experimental Forest was established in 1955 as a major center for hydrologic research in New England. The Hubbard Brook Experimental Forest (HBEF) is covered by northern hardwoods and contains a network of streams which are ideal for watershed research. In 1988 the HBEF was designated as a Long Term Ecological Research (LTER) site by the National Science Foundation. Long-term measurements from the Hubbard Brook EF are used to document and assess the ecological effects of disturbance at regional, national and global scales, including ecosystem effects from air pollution and climate change.



Assets

Scientists: 5 Northern Research Station scientists are conducting studies on the Hubbard Brook.

Scientific support: 10 technicians and/or professionals support the work of these scientists.

Cooperators: Cary Institute of Ecosystem Studies, Cornell, Syracuse, Yale, Brown, Wellesley, University of New Hampshire, SUNY-ESF, Plymouth State University, Boston University, California - Berkeley, U.S. Geological Survey, and Hubbard Brook Research Foundation.

Needs

Annual operating costs: \$320,000

Critical needs: Full-time data manager and one additional field technician - \$150,000.

Long-term needs:

- Modernization of field data collection at watersheds: automated, wireless data collection of hydrological and meteorological data, including technical support - \$200,000 initial and \$75,000 recurring
- Stream gauging station on the main branch of Hubbard Brook - \$150,000



The Hubbard Brook Experimental Forest is administered by:

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More about the Hubbard Brook Experimental Forest

Location: Lat. 43°56' N, long. 71°45' W"

The HBEF is located just west of the village of West Thornton, NH which is about 75 miles north of Manchester, NH.

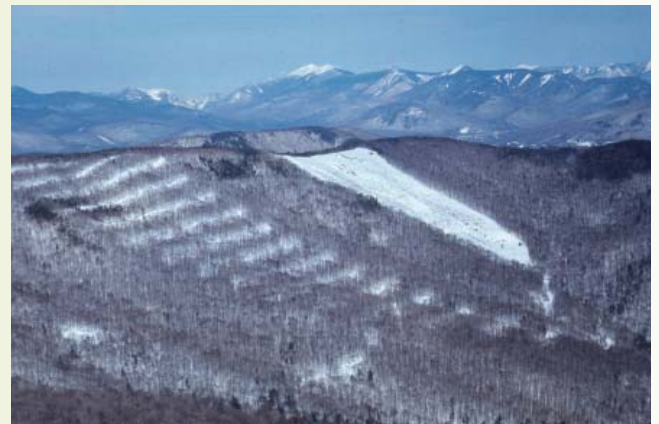
Vegetation: Second growth even-aged forest and is composed of 80-90 percent northern hardwoods and 10-20 percent spruce-fir.

Climate: Annual precipitation at Hubbard Brook averages about 65 inches (1400 mm), with about one-third to one-half of that precipitation occurring as snow. The month of January is coldest and averages about 16 °F (-9 °C). The warmest month is July where the temperature averages 65 °F (18 °C).

Research—past and present: Hubbard Brook is renowned for its long-term record of ecosystem measurements and experiments that began when the Hubbard Brook Ecosystem Study was initiated in 1963. There are many long-term databases at the Hubbard Brook including instantaneous stream flow and daily precipitation, weekly snow depth, and weekly soil temperature and moisture. Long-term measurements from the HBEF are used to document and assess the ecological effects of disturbance at regional, national and global scales, including ecosystem effects from air pollution and climate change, and the response and recovery from catastrophic and noncatastrophic forest events. In addition, studies of birds, mammals, amphibians, snails, and insects draw heavily on the long-term data record. Among the topics currently being studied are: the role of calcium in forest and aquatic systems, stream systems, acid deposition, canopy nitrogen and calcium content, animal populations and communities, and nitrogen retention and nitrogen gas fluxes.

Research opportunities: The Hubbard Brook staff welcomes new studies and collaboration on existing ones. The Hubbard Brook has 9 long-term experimental watersheds.

Facilities: The Robert S. Pierce Ecosystem Laboratory located at Hubbard Brook provides 8,940 sq. ft. (835 m²) of space including 6 offices, 4 laboratories, a conference room, 6 dormitory rooms and a kitchen, baths and showers. There is also a sample archive building and maintenance, storage, garage and shop facilities.



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