



United States
Department of
Agriculture

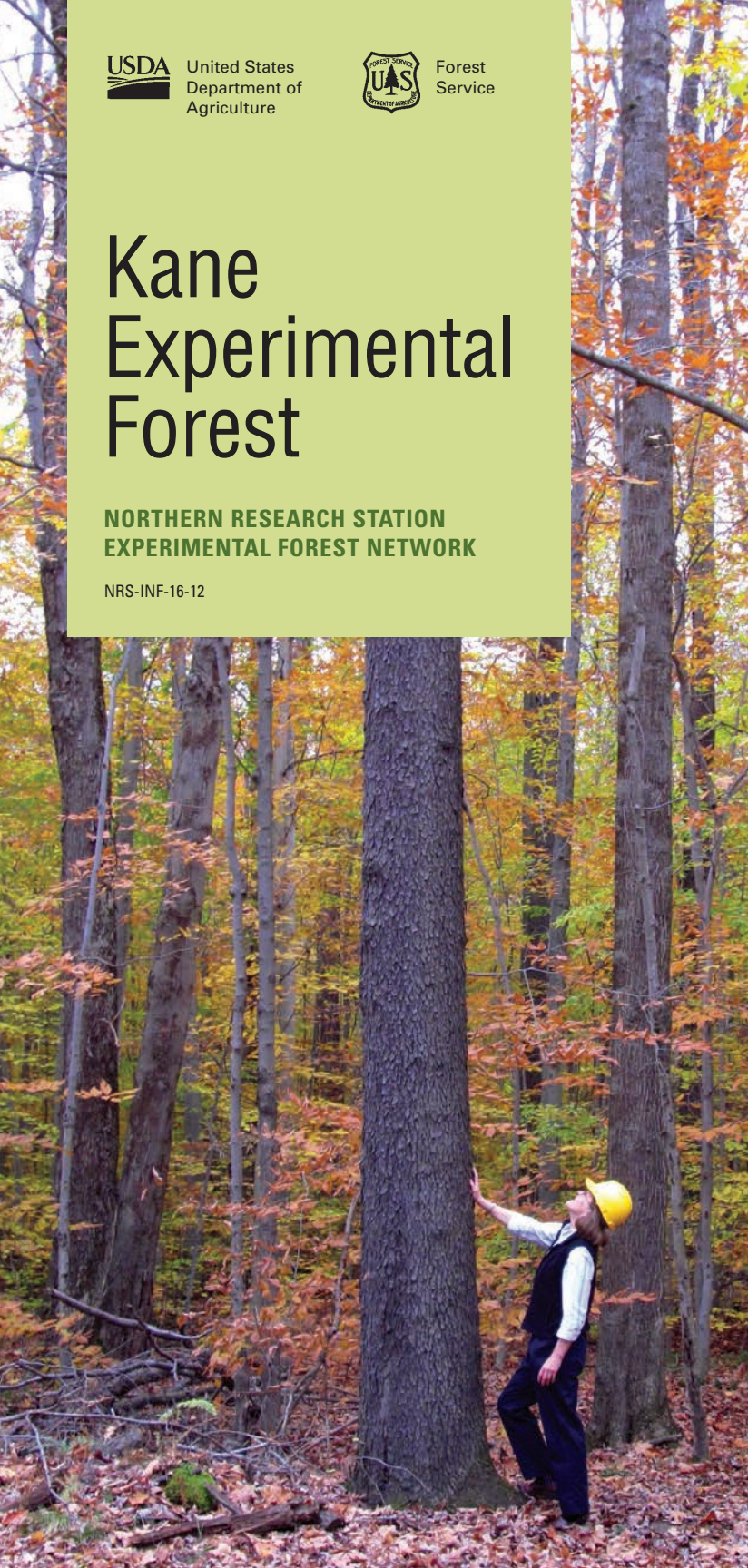


Forest
Service

Kane Experimental Forest

**NORTHERN RESEARCH STATION
EXPERIMENTAL FOREST NETWORK**

NRS-INF-16-12



Kane Experimental Forest

The 3,441 acres that comprise the Kane Experimental Forest (KEF) are a special management zone on the Allegheny National Forest. On March 23, 1932, land was formally dedicated for research on the unglaciated portion of the beech-birch-maple-hemlock or northern hardwood forest type, and the area was expanded in 2007. The Allegheny hardwood or cherry-maple forest is a subtype of the northern hardwood forest that spans the northern portion of the eastern United States from New England to the Lake States. Today, the Experimental Forest serves as a field laboratory for the research project "Sustaining Forests in a Changing Environment" which is headquartered at the Forestry Sciences Laboratory in Irvine, Pennsylvania.





A 2003 windstorm led to a new line of research on recovery after natural disturbance, with and without salvage of blown down timber. Photo by U.S. Forest Service.

Features

The Kane Experimental Forest ranges in elevation from approximately 1,800 to 2,100 feet above sea level, primarily on flat to gently sloping land.

The climate is humid-temperate. Annual rainfall is about 45 inches, of which an average of 4 inches per month falls during the growing season. The average annual temperature is 43 °F.

The soils are derived from shales and sandstones. In general, they are extremely stony loams and sandy loams and are strongly acidic. The major soils are the well drained Hazelton series, the moderately well-drained to somewhat poorly drained Cookport series, and the somewhat poorly drained Cavode series.

The forests are primarily second-growth, arising from logging in the early 20th century. Some stands were only partially cut, giving them mature forest characteristics. In recent decades, sugar maple decline, beech bark disease, and a 2003 windstorm added complexity to the forest.

Research

Early research at the Kane Experimental Forest was done to develop silvicultural methods for improving quality and yield of forests on the Allegheny Plateau. The oldest study (1932), an ongoing inventory of fixed plots on regularly spaced transects, is also used for insect and disease monitoring and as a greenhouse gas registry pilot study. A 1936 study of species composition control is entering its second rotation, and research on impacts of white-tailed deer on forests began here as early as 1934. Current research includes regeneration and thinning strategies for Allegheny hardwoods, and a study of recovery after the 2003 windstorm.

Science Delivery

Annual programs on the Kane Experimental Forest bring research results to natural resource managers, students, landowners, and the public and include:

- **SILVAH (SILViculture of Allegheny Hardwoods) Training Sessions:** Since 1976, a systematic approach to applying research results in forest management has been presented each year in week-long workshops.
- **Abundant study and demonstration sites across the KEF provide excellent opportunities to teach students and the public the basics of forest management in Allegheny hardwood stands.**



Since 1978, the weather station at KEF has been collecting air temperature, precipitation, and other climatic data to determine the influence of environmental factors on tree development and air quality. Photo by U.S. Forest Service.

Outcomes

Research conducted on the Kane Experimental Forest has influenced the management of Allegheny hardwoods for several decades:

- **Inventory procedures and management guidelines developed at KEF are standard practice on public lands throughout the region through the use of the SILVAH computer program.**
- **Early research on white-tailed deer and forest interactions influenced management policy and stimulated research elsewhere.**
- **Guidelines developed by Forest Service researchers for herbicide treatment of interfering plants are used by a variety of forest management organizations.**
- **Ongoing thinning studies have led to major advances in the understanding of forest growth and development**

Partners

Collaboration with a variety of organizations is at the foundation of numerous studies that take place at the Kane Experimental Forest. Private industry, federal and state agencies, universities, and others all partner with researchers at the KEF to promote the accumulation and application of scientific knowledge on the ecology and management of Allegheny hardwoods.

Facilities

The headquarters of the Kane Experimental Forest provide offices for Experimental Forest personnel, a conference building for meetings and training sessions, and temporary quarters for visiting scientists and students working on the Forest.

U.S. Forest Service Experimental Forest and Range Network

Forest Service Research and Development (R&D) works at the forefront of science to improve the health and use of our nation's forests and grasslands. Research has been part of the Forest Service mission since the agency's inception. Today, Forest Service researchers work in a range of biological, physical, and social science fields; their research covers all 50 states, U.S. territories, and commonwealths. The Northern Research Station is one of six in R&D, and includes 20 states in the north-central and northeastern U.S., comprising both the most densely populated and most heavily forested portions of the country.

The Experimental Forest and Range (EFR) network contributes importantly to R&D's research infrastructure and is increasingly viewed as one of its most valued assets. There are currently 22 official experimental forests in the Northern Research Station, and 80 EFRs nationwide. Taken together, these sites provide a record of forests and forest change that dates back more than 100 years. Though initially focused on local and regional topics, EFRs are becoming increasingly networked to address issues of national and international concern such as climate change, carbon sequestration, air and water quality, and invasive plants and animals.

For more information about the Kane Experimental Forest

Website:

<http://www.nrs.fs.fed.us/ef/locations/pa/kane/>

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The USDA is an equal opportunity
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On the cover: Black cherry is an
important species in the region. Its
biology and ecology are the subject
of many KEF studies. Photo by U.S.
Forest Service.