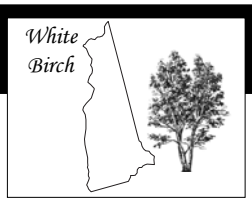
2002 Forest Health Highlights

New Hampshire



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The Resource

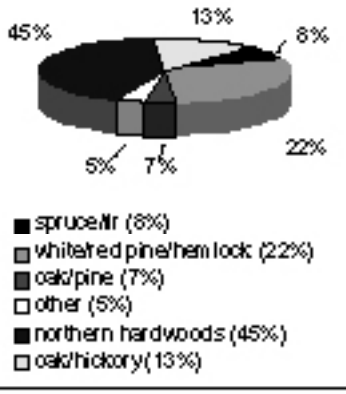
New Hampshire's forests provide a wide variety of goods and services to an ever-increasing number of residents and visitors. These forests offer pleasant surroundings for outdoor recreational pursuits; critical habitat for fish, birds, and wild animals; and countless goods to serve our daily needs, such as paper products and shelter; and acts as a giant sponge to absorb and cleanse our water supply. We could not survive without them. Keeping New Hampshire's forests healthy, provides a positive quality of life that is important to those who live, work, and recreate in the State.

- 84% of the State is forested (4,800,000 acres)

Out of the forested area:

- 94% timberland
- 6% noncommercial or reserved forest land

Major Forest Types:



Special Issues

Statewide, forest health surveys were conducted on 4.8 million acres of forest land. One method used by the NH Division of Forests and Lands to collect information about forest health is aerial survey. It is an excellent method for tracking insect outbreaks and other widespread problems such as weather damage. The Forest Health Section has used statewide aerial surveys for forest health monitoring for over 30 years.

The leading forest threat in 2002 was the discovery of additional **hemlock woolly adelgid** infestations. The newest sites were found in Bedford (Hillsborough Co.) and Epsom (Merrimack Co.). Although each infestation only involved two or three trees, these incidents show that there is no natural barrier to keep the adelgid from moving throughout the State. We believe the adelgid most likely arrived at these sites on birds. We are currently attempting to eradicate any adelgid found outside of Rockingham County. To date, all of the adelgid infestation in Portsmouth, where the insect was first found in the State, has been contained. As of 2002, hemlock in Rockingham County is quarantined to prevent the insect from spreading. If hemlock is to be transported to a mill in another NH county, it will have to be inspected and certified free of the adelgid by an official inspector before transport.

In early May, a heavy **frost** caused patchy damage to oaks in central and southern New Hampshire. Red and white oak were primarily affected. The frost killed the tender, newly emerged leaves. A second set of leaves quickly replaced the damaged ones.

Another significant weather related event that impacted the forest was the prolonged **drought** conditions throughout the growing season. This was the second year with drought conditions throughout the State. Many calls were received regarding discolored white pine and eastern hemlock. It can take some trees a year or two to recover from drought stress; therefore, even with adequate rainfall in 2003, we will most likely see more symptoms from drought stress.

The more noticeable forest defoliators were gypsy moth, birch leafminer, and oak leaf skeletonizer. The **gypsy moth** defoliated almost 11,800 acres in 2002; about 3,000 acres more than 2001. Most of the increase was around Manchester, Hooksett, and Allenstown. A fungus that kills the caterpillars before they become moths was working through all of the defoliated area. Counting the number of egg masses laid by adult females helps predict next year's expected defoliation level. Throughout the defoliated area new egg masses were difficult to find. **Birch leafminer** defoliation increased and spread in 2002. It was found mostly in the middle tier of the state. **Oak leaf skeletonizer** was heavy in the state's southern tier.

Special Issues cont.

Larch decline was mapped on about 400 acres in the far northern part of the State. These larch are in decline due to a complex of damage from bark beetles and a root rot fungus. At most of these sites a change in the water table initiated the larch decline and attracted the beetles. The larch has shown little ability to overcome this complex and a salvage harvest of infested trees may be necessary to preserve the healthiest trees in a stand.

Pine shoot beetle trap catches increased this year, but the insect still hasn't moved out of Coos County. The beetle prefers Scots pine and other hard pines, but will feed on white pine. While the insect bores in the shoots of the pine it does not kill trees and is considered more of a problem in Christmas trees because tree shape can be affected. Pine shoot beetle is a Federally quarantined beetle and, accordingly, certain restrictions will be placed on pine leaving Coos County to prevent its spread.

Since 1995, butternut trees have been surveyed for **butternut canker**, a disease that has killed butternuts from Wisconsin to Maine. More than 90 percent of the butternuts found in New Hampshire are infected with the canker causing fungus *Sirococcus clavigignenti-juglandacearum*. In 2002, trees from the Division of Forests and Lands disease resistant seed orchard were planted into a natural area. Newly grafted butternuts will be added to the seed orchard in 2003.

Regional Surveys

National Forest Health Monitoring Program

The program's objective is to assess trends in tree condition and forest stressors. The New England States have been involved since the program was initiated in 1990.

New Hampshire has participated since the program's inception. The permanent plot data is incorporated into the regional New England database and included in annual forest health regional and national reports. The aerial surveys for forest damage are conducted each year according to the adopted survey standards. The survey information is shared with State forestry personnel and the general public to inform them of the extent of biotic and weather related damage.

Results indicate that there has been minimal change in crown condition in the last 13 years, with 95 percent of trees greater than 5 inches diameter having normal crown fullness, about 85 percent with little or no crown dieback, and over 70 percent showing no measurable signs of damage. The most common damage was decay indicators, which were more evident on hardwoods than softwoods. Additional surveys indicate there are concerns for individual species such as ash, butternut, and hemlock due to various damage agents.

Forest Health Monitoring Sites

North American Maple Project

This cooperative project with Canada was initiated in 1988 to evaluate changes in sugar maple tree condition. Several States in New England continued to survey in 2001, including New Hampshire, Vermont, and Massachusetts.

The New Hampshire Division of Forests and Lands measured forest health variables on 10 permanent plots in the North American Maple Project network. This was the fifteenth and final consecutive year for collecting these measurements in the State. The plots will be maintained and remeasured periodically in the future.

Overall, sugar maple located within the sample sites are in good condition. Periodically, insect defoliation has affected crown condition in some areas. There was little difference found between sugarbush and nonsugarbush stands.

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