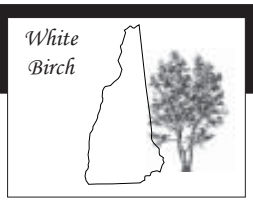
2001 Forest Health Highlights

New Hampshire



The Resource

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

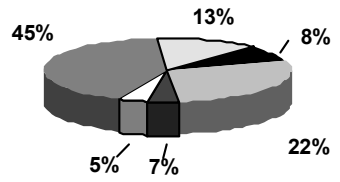
• 84% of the State is forested (4,800,000 acres)

Out of the forested area:

• 94% timberland

• 6% noncommercial or reserved forest land

Major Forest Types:



- spruce/fir (8%)
- white/red pine/hemlock (22%)
- oak/pine (7%)
- other (5%)
- northern hardwoods (45%)
- oak/hickory (13%)

Special Issues

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

The leading forest threat in 2001 was the discovery of a new infestation of **hemlock woolly adelgid** in Peterborough. Although the infestation was small, it showed that hemlock woolly adelgid is capable of surviving outside the milder climate of the Seacoast. Similar to the Portsmouth infestation, the adelgid was likely brought to Peterborough by birds. Attempts are currently underway to eradicate the infestations, with positive results. The insect is currently being monitored at three locations in Portsmouth and one in Peterborough.

In early May, a heavy **frost** caused patchy damage to hardwoods on approximately 776,000 acres. Red and white oak, with inclusions of ash, locust, and hickory, were primarily affected. The frost killed the tender, newly emerged leaves. A second set of leaves quickly replaced the damaged foliage.

Another significant weather related event that affected the forest was the prolonged **drought** conditions throughout the growing season. Even if adequate moisture is received in 2002, it may take some trees a year or two to recover from the drought stress.

The more noticeable forest defoliators were **gypsy moth**, **birch leafminer**, and **maple leafcutter**. The gypsy moth defoliated almost 9,000 acres in 2001, an increase of 6,000 acres from the previous year. Most of the increase occurred around Manchester and Hooksett; however, there was a large amount of defoliation in Wakefield. Based on egg mass counts, the amount of defoliation is on the rise.

Larch decline was observed on about 1,000 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 decline and the beetles were attracted to the stressed trees. The larch has shown little ability to overcome this complex, and a salvage harvest of affected trees may be necessary to preserve the healthiest trees in the stand.

An **ash decline** investigation continued to look for the cause of dying white ash throughout the State. Samples collected to determine if ash yellows was the cause were inconclusive. An alternative sampling technique will be utilized in 2002.

Special Issues cont.

Pine shoot beetle, an exotic pest, was caught for the third time in Pittsburg in an insect trap, however no infested trees have been found. The beetle prefers Scots pine and other hard pines, but will also feed on white pine. It bores into the shoots of the pines 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 the spread of this insect.

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*. This tree is important for forest biodiversity. In 2001, 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 2002.

Forest tent caterpillar, **saddled prominent,** and **spruce budworm** populations were virtually non-existent in 2001.

Localized **high winds** associated with summer storms knocked down trees in various locations around the State.

Surveys for **Asian longhorned beetle**, an exotic insect killing maple and other hardwoods in New York and Chicago, have been ongoing. Fortunately, this insect has not been found in New Hampshire.

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 initiation. 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 12 years. In 2000, 95 percent of trees greater than 5 inches diameter had normal crown fullness, about 85 percent had little or no crown dieback, and 70 percent showed 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 look at 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 New Hampshire. 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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State and Private Forestry

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