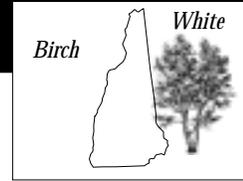


# 2000 Forest Health Highlights

## 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 our 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 as paper products and shelter. We could not survive without them.

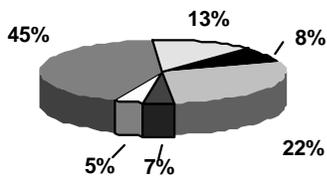
Maintaining healthy forests in New Hampshire is important. A healthy forest provides a positive quality of life that is important to those who live, work, and recreate in the state of New Hampshire.

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

#### Out of the forested area:

- 94 % timberland
- 6 % non commercial or reserved forestland

#### 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 of forest. Aerial surveys, exotic insect detection and forest health plot re-measurements were the main focus in 2000.

The leading forest threat in 2000 was the discovery of **hemlock woolly adelgid** in Portsmouth. The infestation covers a four-acre area with roughly 70 hemlocks infested. The adelgids were likely brought to this neighborhood by birds, however, the possibility that the insects originated from infested nursery stock is still being investigated. We are currently trying to eradicate the infestation and prevent it from spreading out of the neighborhood and into the forest. Since the discovery of this outbreak in Portsmouth extensive hemlock woolly adelgid surveys have been conducted. At this time no infested hemlocks have been found outside of Elwyn Park.

**Anthracnose leaf disease** was heavy on sycamore and white oak during the spring. Many trees throughout the state were completely defoliated, however, new leaves were produced to make up for the early loss. A roaring population of **red oak twig pruner** littered lawns across the state with oak twigs. This insect is primarily a nuisance problem and the control recommendation was to rake and destroy the twigs. **Hemlock looper** moths were common all over for the second year in a row. No hemlock looper defoliation was reported in 2000.

**White pine canker** (*Caliciopsis pinea*), in some regions of New Hampshire, is causing profuse pitching from shallow, reddish, lesions on white pine trees. White pine canker infects the thin bark in the central to upper portion of the tree. Survey results show this disease throughout the range of white pine in New Hampshire, however, heavy pockets were found in the central region of the state. Many of these heavily infected stands have dead and declining trees throughout. The relationship between the cankers and the declining trees is not fully understood at this time. Environmental factors such as drought conditions may be playing a significant role at these sites. Evaluation of this problem will continue.

**Pine shoot beetle** was caught for the second time in northern New Hampshire, just south of the Canadian border. The insect was caught in a pheromone trap and no infested trees have been found. Monitoring will continue in 2001.

Forest tent caterpillar, saddled prominent and spruce budworm were virtually nonexistent in 2000. The more noticeable **forest defoliators** were birch leafminer, maple leafcutter, maple trumpet skeletonizer, high winds, and gypsy moth. Canopy discoloration was caused by aspen blight, larch decline, and beaver flooding. Balsam gall midge damage was heavy all over.

## Special Issues cont.

**Ice injury** is still visible in the areas that were hardest hit. Crown dieback was mapped in areas still suffering from the 1998 ice storm. However, after three years, the amount of visible damage is down considerably due to the three seasons of new growth masking the branch breakage from the storm.

Since 1995, butternut trees have been surveyed for **butternut canker**, a disease that has killed butternuts from Wisconsin to Maine. More than 90% of the butternuts found in New Hampshire are infected with the canker causing fungus *Sirococcus clavigignenti-juglandacearum*. This tree is important for forest biodiversity and the Division of Forests and Lands initiated a grafting project to produce a disease resistant seed orchard. In 2000, the effort to help butternut recover continued. Each year brings us closer to our goal of nut production and a healthy scion source that will be used to grow butternuts with high resistance to the disease.

The results from a pilot study to investigate **tree decline associated with timber harvests** were published. The tree decline was found during general pest detection aerial survey. Elevation, aspect, understory vegetation, and mean tree diameter showed no correlation to the amount of dieback in the residual stand. Tree species and logging injury showed a slight correlation to increases in tree decline. Residual stocking levels and amount of root compaction showed the highest relationship to increases in tree dieback.

Surveys and public awareness programs concerning **Asian longhorned beetle**, an exotic insect killing many trees, including maples, in New York and Illinois have been ongoing. Fortunately, all reports of insects looking suspiciously like Asian longhorned have been negative.

## Regional Surveys

Interest in regional forest condition prompted the implementation of the National Forest Health Monitoring Program and the North American Maple Project.

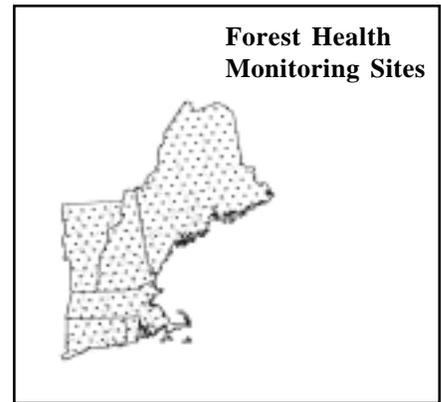
### FOREST HEALTH MONITORING PROGRAM

The objective is to assess trend in tree condition and forest stressors. All of 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 FHM 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 11 years. In 2000, 95 percent of trees greater than 5 inches diameter had normal crown fullness. About 85 percent of the trees 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

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### NORTH AMERICAN MAPLE PROJECT

This cooperative project with Canada was initiated in 1988 to look at change in sugar maple tree condition. There are several states in the Northeast involved including New York, New Hampshire, Vermont, Maine, 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 in 2000; the fourteenth year for these measurements in New Hampshire.

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 non sugarbush stands.

### For More Information:

NH Dept. of Resources &  
Economic Development  
Division of Forests and Lands  
Forest Health Program  
P.O. Box 1856  
Concord, NH 03302-1856



(603) 271-7858

Forest Health Protection  
USDA Forest Service  
P.O. Box 640  
Durham, NH 03824

(603) 868-7709

