2005 Forest Health Highlights

Vermont

Sugar Maple

January 2006

The Resource

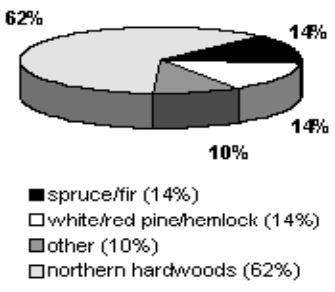
Vermont's forests are valuable ecologically, economically, and socially. Covering nearly 80 percent of the State, forests provide jobs, stability to the landscape, wildlife habitats, biological diversity, clear water, scenic vistas, and diverse recreational opportunities. While changes are always occurring to the forests, these are values that Vermonters want to maintain.

A Forest Resource Plan was developed to sustain the many values and meet the various demands on the forest resource. The vision states that, *In the future, the forests of Vermont will consist of healthy and sustainable ecosystems, with a prosperous and sustainable forest products industry, abundant recreational opportunities, and a combination of ownership patterns supporting a working forest landscape and undeveloped forest land.*

Today 78% of the State is forested (4,544,400 acres) compared to 63% in 1948. Out of the forested area:

- **97.3% timberland**
- **2.7% noncommercial**

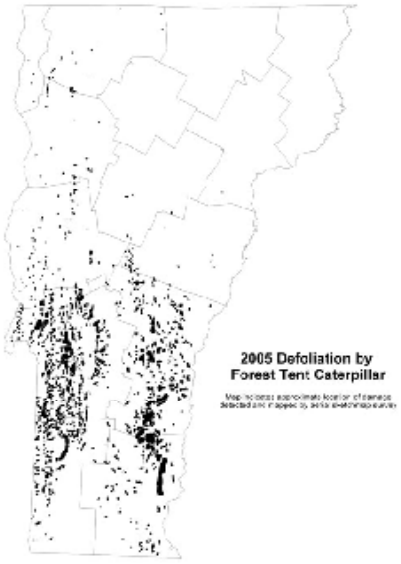
Major Forest Types



Special Issues

Tree health and forest ecology has been affected by a major outbreak of the **forest tent caterpillar**. This native insect is in it's third year of high populations in Vermont. Defoliation of sugar maple, ash, oak and other hardwood tree species increased substantially in 2005, affecting 230,000 acres of forest and expanding northward. While defoliation is a natural process in forests, and most trees are able to recover from 1-3 years of defoliation, defoliation coupled with additional stress can lead to tree decline. Decline is visible in some areas defoliated for the second or third time. Additional defoliation is predicted for 2006 and is expected to affect southern, central, and northwestern counties. More details and management recommendations can be found at www.vtfpr.org/protection/ftcfrontpage.cfm.

Sugar maple and other hardwood trees were also affected by a little known sapsucking insect called **lecanium scale** or **European fruit lecanium**. There was a dramatic increase in the population of this insect statewide, and in some cases it has been associated with sugar maple decline. Although this insect has not been known to cause damage to trees in Vermont in the past, the combination of past drought stress, forest tent caterpillar defoliation, and lecanium may adversely affect tree health. Surveys indicate that the population will be noticeable again in 2006.



A heavy, wet **snow storm** on October 25, 2005, caused widespread damage to trees and shrubs. An especially late foliage season meant delayed leaf drop and resulted in more severe damage to trees with leaves remaining. A survey of sugar maples following the storm showed that most of the tree damage was to regeneration. The majority of large diameter trees suffered less than 10 percent loss of branches. Most trees should recover.

Birch decline and mortality continued on paper birch at upper elevations. Initiated by recent drought years and successive years of defoliation, birch decline was mapped on nearly 8,000 acres of forests around the State. The recent drought was also responsible for initiating declines of hemlock and larch.

Exotic Pests

The introduction of **nonnative insects**, **diseases**, and **plants** can lead to significant changes in Vermont forests. The natural controls that keep species in balance are not present, so these organisms out-compete native species for resources and space. Some potentially damaging exotics have not reached Vermont and are the subject of detection surveys. Other species are already in Vermont and are monitored for population changes and tree damage.

Vermont is actively surveying high risk forest areas for several new U.S. introductions of serious forest pests. No evidence was found of the **emerald ash borer**, **hemlock woolly adelgid**, **Asian longhorned beetle**, nor *Phytopthera ramorum* **(sudden oak death)** during surveys in 2005. More information on exotic pests of interest can be found at www.vermontagriculture.com/CAPS/invasive/forestpests.htm.

Beech bark disease continues to cause tree decline on severely infested trees. The area of damage decreased to 42,191 acres this year from nearly 78,000 acres in 2004.

Gypsy moth populations increased this year, and light to moderate defoliation was observed in scattered locations. This insect was often found in forests where forest tent caterpillar was also present. The caterpillars feed on oak and other hardwood species; high populations can result in tree declines.

Pear thrips has been responsible for large areas of defoliation to sugar maples in the past. In 2005, cool weather during spring leaf-out gave the insect time to feed in buds and resulted in light to moderate defoliation in scattered locations in northern Vermont.

Common pine shoot beetle was first detected in Vermont in 1999 in northern Vermont. Since then surveys have found the beetles in many counties, including new detections in Rutland County in 2005. Observations in Vermont have been that tree damage is limited to new shoot injury. A Federal quarantine is in place to limit the spread of this exotic insect into uninfested States. Pine material may be transported within Vermont. Quarantine details can be found at http://www.vtfpr.org/protection/for_protect.cfm
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Monitoring Forest Health

Although forest health is much more than just tree health, trees represent a major component of forests and tree health will ultimately affect all the other forest components. In Vermont, a variety of surveys are done annually or periodically that contribute to our understanding of trends in forest health. Ongoing monitoring of sugar maple forests showed that 92 percent of trees on our plots were healthy in 2005. This survey of North American Maple Project plots in Vermont also indicated tree stress from forest tent caterpillar defoliation and lecanium scale. Forests with lower tree diversity were most affected by defoliation.

Vermont continues to participate in monitoring the health of our forests in collaboration with the USDA Forest Service Forest Health Monitoring Program. Results from surveys conducted since 1990 in Vermont are available through the Forest Health Monitoring Web site, along with a summary report of *Forest Health Monitoirng in the Northeastern United States,* at http://fhm.fs.fed.us/.

For More Information

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