

New Jersey - 2001

Forest Health Highlights



The Forest Resource

About 42 percent of New Jersey's 4.2 million acres are forested, and 1.8 million acres of public forested lands are administered by the New Jersey Forest Services. Forest health issues, such as exotic invasive pests, native pest infestations, and the continued threat of bacterial leaf scorch to red oaks, are a few of the challenges to the health and sustainability of New Jersey's forests.

Exotic Pest Issues

Gypsy Moth — The 1,380 acres of gypsy moth defoliation in 1999 had grown dramatically to 132,762 acres in 2000, and remained high at 140,838 acres in 2001. Most of the defoliation occurred in northern New Jersey in Bergen, Morris, Passaic, Sussex, and Warren Counties, but major increases were also found in Atlantic, Burlington, and Cape May Counties reflecting the spread of the gypsy moth outbreak into central and southern areas of the State. The extent of the defoliation in 2001 encompassed 16 counties and can be characterized in terms of intensity as follows: 36,388 acres as moderate (25 to 50 percent); 55,290 acres as heavy (51 to 75 percent); 49,160 acres as severe (76 to 100 percent).

The 23 municipalities participating in the voluntarily gypsy moth suppression program treated 8,514 acres in 2001. In May 2001, all acreage was aerially sprayed with *Btk*. Just over 4,000 acres of State-owned lands in Camden, Hunterdon, Morris, and Passaic Counties were sprayed, and the remaining acreage involved private forest lands in these same counties plus Bergen, Ocean, Salem, Sussex, and Warren Counties. Ground, and aerial checks found that spray blocks in most areas showed good foliage protection (5 to 30 percent defoliation inside a block compared with 50 to 100 percent outside in untreated areas). However, heavy defoliation occurred in several spray blocks in Passaic County, where egg mass densities were extremely high, and caterpillars in adjoining untreated areas migrated into the spray blocks.

Hemlock Woolly Adelgid (HWA) — The greatest challenge to overcome during the 2001 *Pseudotsuga tsugae* (Pt) rearing season at the

Alampi Beneficial Insect Laboratory was keeping the Pt alive. The Hemlock Woolly Adelgid (HWA) food source was of poor quality because of reduced growth on the hemlock trees. The continuing drought resulted in little new growth, which is necessary to sustain a healthy HWA population. Despite this, 30,500 Pt were released in New Jersey during May through June 2001, and 38,800 Pt went to the States of North Carolina, West Virginia, Virginia, Pennsylvania, Massachusetts, and New Hampshire. The ongoing drought has accelerated the death of many hemlocks that a year ago were otherwise healthy. Over 250 old growth trees in the Wawayanda Hemlock Gorge Natural Area died in less than one year. The Hemlock Borer attacked stressed trees.

Some of the Pt release sites within state lands were surveyed using a bucket truck. It was found that Pt was present in the tops of trees, where larvae were also found. There is continuing hope that the Pt will be successful in managing the HWA, and thereby, saving the 26,000 acres of hemlock trees remaining in New Jersey. It will take at least another three years of releases and follow up observations to realize this goal.

Exotic Long-horned Beetles — An **Asian long-horned beetle** (ALB) survey was initiated in November by NJDA in cooperation with USDA APHIS-PPQ. This will be the first phase of a multi-year, 25-mile radius survey for ALB over the next three years. Plans call for examination by NJDA of 65,700 potential host trees for signs of ALB infestation in the northeastern counties of New Jersey that lie within 25 miles of the known ALB infestations in New York City. The survey will cover street and forest trees in over 7,300 sites in 813 square miles in the northern part of the State. This effort will help to determine whether the pest has moved into New Jersey and is part of the USDA's eradication program for this exotic pest.

Native Pest Issues

Variable oakleaf caterpillar – A large, noticeable infestation of the variable oakleaf caterpillar, *Heterocampa manteo*, appeared for the second consecutive year in the oak forests of Ocean County. Until last year, this native forest pest had not been abundant enough to cause that much damage in four decades. Severe defoliation by variable oakleaf caterpillars in 2000 covered 595 acres in three areas of Ocean County adjacent to the New Jersey coast. This year, complaints by landowners and subsequent surveys by a NJDA staff entomologist found greater damage over a larger area. Complete defoliation of oak was observed on several thousand acres in Ocean, Barnegat, Stafford, and Eagleswood Townships of Ocean County. The largest contiguous infestation of the pest was located in a triangle bordered by Route 554 on the north, the Garden State Parkway to the east, and Route 72 from the Parkway to Route 554.

Southern pine beetle — Southern Pine Beetle (SPB) has been found and confirmed in New Jersey. SPB was first brought to the attention of the New Jersey Forest Service in December 2001, by a private consulting forester during a pine harvest. Reconnaissance of the surrounding area by air and ground has resulted in the identification of additional SPB spots. Samples were taken and sent to the USDA Forest Service for positive identification. To date, SPB have been found only in two southern counties of NJ, Cumberland and Cape May, along the Delaware Bay. The largest spot infestation of active beetles is 17 acres in size. Most spots average 0.25 to 0.5 acres in size and are located in Belleplain State Forest. Beetles were found in mature and young (12 years old) pine stands of pitch, loblolly, and Virginia pine. Additional surveillance and trapping will occur in the Spring. The appearance of this outbreak most likely resulted from beetles moving northward after surviving the warmer winters in the mid-Atlantic region in recent years. The dry weather in southern New Jersey during the same period has undoubtedly contributed to the susceptibility of the pines growing there. The vast pitch pine forests of southern New Jersey may be at risk from the southern pine beetle if these weather patterns continue.

Special Pest Issues

Bacterial Leaf Scorch — Bacterial Leaf Scorch (BLS) continues to be a serious health threat to urban shade trees in New Jersey. Leaf discoloration and dieback in the crowns of pin, scarlet, and northern red oaks was first evident over ten years ago. Trees infected by BLS include northern red oak, pin oak, scarlet oak, elm, and sycamore. Trees growing in urban settings, such as along highways and around homes, are those most likely to exhibit symptoms. Infections in natural forest settings are rare. There is no effective treatment to prevent BLS infection.

Bacterial leaf scorch is a wilt disease of trees in the red oak group caused by the bacterium, *Xylella fastidiosa*. The bacterium is transmitted to healthy trees by feeding leafhopper and spittlebug insects, and possibly other xylem feeding insects, moving from

diseased trees or perhaps any understory herbaceous plants, such as goldenrod, blackberries, and clover. The bacterium enters the tree at the feeding site, rapidly colonizes the water conducting tissues of the infected tree, thereby physically interrupting water transport. Additional bacterial toxins and host tyloses further disrupt water conductivity. Characteristically, leaves of infected trees first show brown margins with a “watersoaked” zone between live and dead tissue. The entire leaf changes color from the tip toward the petiole and eventually dies. Leaf scorch on oak first appears on the outer and upper main branches.

Symptoms of this disease develop more rapidly during hot weather. Symptoms of BLS, which start to appear in mid-summer and continue into the fall, include leaves that begin to dry and brown along their margins, progressing slowly downward toward the midrib and petiole. Typically, during the first and second year of BLS infection, only one or two main branches are affected, and these branches are dead the following spring. Eventually, the infection spreads to other parts of the canopy. Smaller diameter trees may only live up to four years after the initial infection while larger diameter trees can live up to 10 years.

BLS infections, especially on ornamental red, pin, and scarlet oaks, have been confirmed by serological testing in Mercer, Burlington, Camden, Salem, and Gloucester Counties. Approximately one quarter of the State may be presently affected. Aerial surveys in 2001, determined that the disease was concentrated more in urban areas than woodlands. An extensive ground survey in Moorestown, New Jersey, in 2001 determined that about 30 percent of the urban oaks had symptoms of bacterial leaf scorch. During the summer of 2001, NJDA staff observed, for the first time, typical symptoms of BLS on red, willow, and pin oak around State buildings in Trenton. During mid-August, these apparently healthy oaks began to show a sectional wilting of leaves in the canopy followed by premature leaf drop. Significant numbers of BLS-infected oaks have been observed and/or reported in Cranbury, Riverton, and Moorestown.

Forest Fires

During 2001, there were 1,929 fires, which burned 4,424 acres. The average size of the fire was 5 acres. There was one fire over 1,000 acres and one fire over 300 acres. Most of the fires were incendiary (699/42 percent) which means they were intentionally started. The southern Pineland region of the State experienced the greater majority of fires (1,412). The fields in the Pinelands are especially conducive to major fire episodes.

For More Information



New Jersey
Department of Environmental
Protection
Forestry Services

501 E. State Street, CN-404
Trenton, NJ 08625-0404
Phone: (609) 292-2531
<http://www.state.nj.us/dep/forestry/service>

New Jersey Department of
Agriculture
Division of Plant Industry

P.O. Box 330
Trenton, NJ 08625-0330
Phone: 609/292-5440
<http://www.state.nj.us/agriculture/plant>

USDA Forest Service
Northeastern Area
State and Private Forestry



Forest Health Protection
180 Canfield Street
Morgantown, WV 26505
Phone: (304) 285-1541
<http://www.fs.fed.us/na/morgantown>