

New Jersey - 2007



Forest Health Highlights

The Resource

New Jersey is the most densely populated State in the Nation. However, forests cover 2.1 million acres (45 percent) of the State's 4.7 million acres. New Jersey has a diverse forest tree species composition. In northern counties, approximately 810,000 acres is comprised of the oak-hickory forest type. In part of central and most of southern New Jersey, pitch pine (*Pinus rigida*) is the dominant species with a component of mixed oak, shortleaf and loblolly pine, and Atlantic white cedar. The forests have faced various crises ever since colonists first arrived in the 16th century and began removing trees for a multitude of purposes mainly associated with survival. Today, more than 5,000 acres of woodland are cut down per year for development. The remaining forest resources are vulnerable to attack by insects and disease. Through monitoring, aggressive action can be undertaken to minimize or eliminate the detrimental effects of forest health problems.

Forest Pest Issues

Gypsy Moth (GM) — During May 2007, aerial suppression was conducted on 3,753 acres of State parks and forests. Ground surveys were made to ascertain hatch rates and larval development prior to starting treatment with B.t.k. (*Bacillus thuringiensis*). Excellent gypsy moth control was achieved in all spray blocks because of a combination of even hatch rates and favorable weather conditions. A statewide aerial defoliation survey revealed that gypsy moth activity increased from 127,000 acres in 2006 to 324,000 acres in 2007. Followup egg mass surveys indicate a need to treat approximately 10,000 acres within State parks and forests, and 112,000 acres of privately owned residential forested areas in 2008. Approximately 55,000 acres will be treated twice with B.t.k. Additional egg mass surveys were completed within State lands that are adjacent to private lands scheduled for treatment. Spraying will attempt to prevent larval migration from State to private lands. The Japanese fungus (*Entomophaga maimaiga*) has not been as active in the last 3 years as in the past due to drier weather conditions during the spring. As a result, statewide

gypsy moth populations have been surging upward from 44,000 acres in 2005 to 324,000 acres in 2007. The highest year of defoliation occurred in 1981 when 800,000 acres were affected statewide.

Asian Longhorned Beetle (ALB) — The New Jersey Forest Service Community Forestry Program continues to administer the ALB Reforestation Project within the cities of Linden, Carteret, Rahway, and Woodbridge. To date, 4,968 nonhost trees have been planted in Essex, Bergen, and Union Counties. Of these, 329 trees have died within 1 year of planting, and 55 were replaced in 2007.

The USDA Animal and Plant Health Inspection Service (APHIS) removed 25,581 trees from the cities of Linden, Carteret, Rahway, and Woodbridge in Middlesex and Union Counties. No further host tree removal is anticipated. Although no additional ALB infestations were found in New Jersey, the beetle was discovered in Richmond County, NY, in March 2007. This infestation resulted in the removal of over 10,000 host trees. Because Richmond County is just across the Arthur Kill from Linden, NJ, the USDA APHIS office in Rahway will oversee the ALB eradication program for this specific infestation site.

Emerald Ash Borer (EAB) — No known occurrences of the EAB have been documented in New Jersey's forested environments. This includes urban, suburban, and rural areas.

Hemlock Woolly Adelgid (HWA) — There are approximately 26,000 acres of hemlock situated primarily in the northern third of New Jersey. All hemlock stands can be considered infested with the HWA to a greater or lesser degree. Since 1997, the predatory beetle *Sasajiscymnus tsugae* has been released at various sites on State-owned lands. More recently, a second beetle (*Laricobius nigrinus*) has been added to the attack against the HWA. Ground surveys have been performed for larval and adult stages of this predatory beetle in hemlock stands where it was released. Evidence of their activity has so far been minimal. It will take years for this natural biological control to become effective.

HWA populations have declined to a small degree due to severe cold temperatures. As a result, hemlock growth has increased to a small degree, which should result in rising HWA populations. Two surveys were completed to determine activity levels of the elongate hemlock scale (*Fiorinia externa*). Results indicated that almost 37 percent of hemlock stands were infested at levels that are detrimental to tree growth. In most cases, these were stands already infested with the HWA. There were no aerial surveys of hemlock stands in either the winter or summer to determine mortality. However, future surveys of damage causing agents will include observations of the hemlock component.

Sudden Oak Death (SOD) — Sudden oak death (SOD) is a disease caused by the pathogen *Phytophthora ramorum*, first reported in central

coastal California in 1995. Once infected, certain oak tree species can die within a few months to a few years. California nurseries that had contaminated stock or the potential for contamination were quarantined to prevent materials from being sent to other parts of the country. However, prior to the quarantine, plant material, particularly *Camellia* (*Camellia* spp.), was shipped to New Jersey garden centers and nurseries and other States in 2003. Because SOD host plant material was entering New Jersey, the New Jersey Forest Service applied for and received a Federal grant each year from 2004 to 2006 to perform a survey of the woodland perimeters of nurseries that received material. This year, the survey protocols required stream baiting. This entailed selecting three streams located in central, southern, and extreme southern New Jersey. Each stream had two traps consisting of a mesh screen with four pouches to hold rhododendron leaves for possible inoculation by *P. ramorum*. The trap season ran from June until October. During this period, five deployments and retrievals were made when stream temperatures were below 24 °C, thereby excluding the hot months of July through September. All suspect samples were collected and shipped to laboratories via overnight delivery to maintain sample integrity for diagnostic analysis. All samples submitted tested negative for *P. ramorum*.

Southern Pine Beetle (SPB) — The SPB continues to be active in southern New Jersey. The counties of Cape May, Cumberland, and southern Atlantic have active populations at various levels. Infestations are occurring on Federal lands, private lands, and to a lesser degree on State lands. In order to determine whether the SPB is going to be an environmental factor in a given year, the New Jersey Forest Service performs extensive trapping, ground, and aerial surveys. Funnel traps are deployed in six southern counties at the rate of three per county. These traps are deployed when temperatures are approximately 60 °F to coincide with mass spring flights. The traps are checked and the contents collected weekly for 4 to 6 weeks. All trapped insects are sent to a laboratory for identification. Based on

the number of SPB and the checkered beetle, an insect predator of the SPB, it can be determined whether the SPB will have a declining or low; increasing; or high, extreme outbreak. Trap data indicated that southern New Jersey would have a static population. The aerial survey covers the entire New Jersey Pinelands region and outlying areas, totaling approximately 1.3 million acres. This survey is performed using Digital-Aerial Sketchmapping (DASM) in September through October of each year. It was determined that there are approximately 60 individual infestations covering 894 acres. A pilot suppression project initiated on State forest land resulted in control of local populations. These suppression sites have successfully been restored. Additional sites will be selected as necessary.

Bacterial Leaf Scorch (BLS) — Bacterial leaf scorch is a group of diseases caused by the xylem-limited bacterium (*Xylella fastidiosa*). In New Jersey, BLS causes leaf scorch and decline primarily on red, black, pin, and scarlet oaks planted as landscape or street trees. The disease was first identified in Camden, Gloucester, and Burlington Counties more than 15 years ago and has since increased to alarming proportions (up to 44 percent) in some residential neighborhoods, parks, and woodlots around the State. Currently, there are few cost-effective methods for managing this disease. Antibiotics introduced in symptomatic trees are not curative and are only effective for a short time.

In 2001 and 2006, a private forested woodlot, State park, and forest lands were surveyed and sampled to determine if BLS continues to occur in rural forested environments. Sampling results determined that BLS was in fact present. Approximately 90 percent of these samples had BLS. Although there is no cure for BLS, the New Jersey Forest Service will integrate a proposed timber harvest with the monitoring of BLS on infected trees. The New Jersey Forest Service will select trees with BLS for removal and as residuals. The residual (BLS) trees will be monitored to record if the cultural activity has any long-term, positive effect on extending tree and stand rotation. Depending on results, this silvicultural prescription can be incorporated into the development of forest management plans.

Sirex Wood Wasp — The New Jersey Forest Service conducted a statewide trap survey to determine if the Sirex wood wasp was in New Jersey's forested environment. No Sirex wood wasps have been identified in any of the samples.

Gouty Oak Gall — Forest and landscape trees in southern New Jersey have had a dramatic increase in gouty oak gall. In 2006, DASM indicated that more than 17,200 acres were defoliated. In 2007, ground surveys indicated varying rates of decline and mortality.

For More Information



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