

New Jersey - 2006



Forest Health Highlights

The Resource

The forests of New Jersey cover 1.8 million acres, or 42 percent of the total landmass of 4.2 million acres. This is in contrast to the approximately 3.7 million acres of forest land that existed in 1899. Following the Civil War, tens of thousands of acres were denuded for firewood, charcoal, tanning, and building uses. Overall, most of New Jersey was rural in nature, comprised of farmland with some larger cities and small towns woven into the overall landscape. Urban and suburban sprawl has and is taking place; widespread, open space is being lost at a rate of 10,000 acres per year. The remaining forests face many hazards from insects, diseases, pollution, and exotic invasive pests. As a result, many challenges exist to maintaining the health and sustainability of New Jersey's forests.

Forest Pest Issues

Gypsy Moth (GM) — Gypsy moth populations have dramatically increased over the last several years. In 2004, 6,815 acres were defoliated. In 2005, more than 44,131 acres were defoliated; this number rose to 128,000 acres in 2006. This increase is primarily due to the decreased activity of *Entomophaga maimaiga* due to very dry weather conditions experienced in the spring of 2006. In May 2006, 27,000 acres were treated with Bt on private residential wooded areas statewide. Additionally, 1,569 acres were treated in two State-owned forests. Egg mass surveys undertaken in 2006 indicate a need to treat more than 57,000 acres on private lands and 28,000 acres within 8 State forests and parks.

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, a total of 3,743 nonhost trees have been planted in Linden (397), Carteret (1,619), Rahway (1,062), and Woodbridge (665). Thirty-eight different nonhost species, including baldcypress (*Taxodium distichum*), sophora (*Sophora japonicum*), amur corktree (*Phel-*

lodendron amurense), Kentucky coffeetree (*Gymnocladus dioica*), Douglas-fir (*Pseudotsuga menziesii*), and Eastern redbud (*Cercis canadensis*), have been planted. To date, a total of 263 trees have died within 1 year following planting but have been replaced. The Community Forestry Program will continue to work with these cities in upcoming planting seasons.

Emerald Ash Borer (EAB) — As of December 31, 2006, no occurrences of the EAB have been noted in New Jersey's forested environments. This includes urban, suburban, and rural areas. Future monitoring (2007 to 2008) for early detection rapid response will take place in the form of trapping. Indirect monitoring will occur during Forest Stewardship Plan preparation. Areas of the State that have an ash component will be selected via the Spatial Analysis Project as a priority for a Forest Stewardship Plan. The Forest Health data set generated for the Spatial Analysis Project will be edited to include areas designated by ECOMAP that have an ash component. These designated areas, along with other Damage Causing Agents, will be among the first to receive funding through the Stewardship Program, thereby enabling forest reconnaissance and inventory to take place in the formulation of a plan. Any decline and/or mortality should be discovered during these onsite activities. Consequently, suppression efforts would commence.

Hemlock Woolly Adelgid (HWA) — The hemlock woolly adelgid continues to negatively impact some hemlock stands in New Jersey as indicated by the increased percentage of highly stressed trees dying. Former infestations, in addition to other stressors such as drought, the elongate hemlock scale (*Fiorinia externa*), the hemlock borer, and periods of extreme cold, can accelerate this mortality rate. In other stands, hemlocks are not impacted as much as evidenced by new twig growth. Adelgid populations were low and appeared static this year possibly due to cold weather and poor tree growth due to past infestations. The predatory beetle *Sasajiscymnus tsugae* was released in 2006 in two State forests (1,500 beetles). Recovery rates of beetles released in 2005 were marginal. Cold weather conditions in northern counties could account for this. New Jersey will also investigate the possible occurrence of adelgid-resistant hemlocks in some stands.

Sudden Oak Death (SOD) — Sudden oak death (SOD) is a disease caused by the pathogen *Phytophthora ramorum* that was 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 to other States in 2003. Because SOD host plant material was entering New Jersey, the New Jersey Forest Service ap-

plied for and has received a Federal grant each year since 2004 to conduct a survey of the woodland perimeters of nurseries that received material. The 2006 survey was conducted in June and proceeded from Cape May to Morris County. Out of the 10 nurseries surveyed, only 11 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*. Among all 3 years the survey has been conducted, 2006 had the fewest symptoms occurring, and therefore had the fewest number of samples collected. Woodland areas were selected for the survey based on the presence of host species in the understory and oak in the overstory.

Southern Pine Beetle (SPB) — The SPB continues to be active in extreme southern New Jersey. The counties of Cape May, Cumberland, and southern Atlantic have active populations at various levels. Infestations are occurring on State, Federal, and private 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. Three funnel traps are deployed in each of six southern counties. These traps are deployed when temperatures are approximately 60 degrees F to coincide with mass spring flights of SPB. 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 southern pine and checkered beetles (an insect predator of the SPB) caught in the traps, 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 declining population. Despite this result, an increase of approximately 300 acres was observed. 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 (D-ASM) from September through early October

of each year. It was determined that there are approximately 71 individual infestations covering 964 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) — Since 2001, woodlots and other forested areas have been monitored for BLS spread and symptoms. In late summer 2006, this woodlot was resampled more intensely than in 2001. It was concluded that the trees are declining further and that trees not previously showing symptoms of BLS now have the disease. These infected trees will be harvested under the existing forest management plan. In addition to this property, a State park and forest within 10 and 30 miles were also sampled for BLS. Approximately 90 percent of these samples tested positive for BLS. Although there is no cure for BLS, the New Jersey Forest Service will integrate a timber harvest with the monitoring of BLS on infected trees. The Forest Service will select trees with BLS for both removal and to leave as residuals. The residual (BLS) trees will be monitored to record if the cultural activity has any long-term, encouraging effect on extending the tree and stand rotation. This silvicultural prescription will be incorporated into the updated forest management plan for the forest. Results of this study can be used for future management on both public and private lands.

Sirex Woodwasp (*Sirex noctilio*) — The New Jersey Forest Service contracted to have a trapping survey conducted to determine if the Sirex woodwasp was in New Jersey's forested environment. This survey was performed from August through November. Traps were checked and the contents were collected every 2 weeks and forwarded to a lab for identification. No Sirex woodwasps were identified in any of the samples. The New Jersey Forest Service will perform an expanded survey in 2007.

Gouty Oak Gall — Forests in southern New Jersey have had a dramatic increase in gouty oak gall appearing on forest and landscape trees. Various oak (*Quercus*) species, including scarlet, pin, black, southern red, scrub, and post, have had slight to complete defoliation caused by the gall wasp. Areas typically infested are located in the Pinelands region and in outlying boundaries. D-ASM indicated that more than 17,200 acres were defoliated. Mortality rates will vary among stands but are anticipated to be high. These affected areas also overlapped with prior gypsy moth defoliation, causing increased tree stress. Infested areas will be monitored for decline and/or mortality.

For More Information



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