

New Jersey — 2009

Forest Health Highlights



The Resource

The forests of New Jersey cover 1.8 million acres, or 42 percent of the total land mass of 4.2 million acres. Urban and suburban sprawl has been 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.

Forest Pest Issues

Gypsy Moth—All State forest and park lands are aerially surveyed during June to determine the extent and severity of gypsy moth defoliation. A ground egg mass survey is undertaken within and adjacent to defoliated areas from August to December. One-fortieth-acre plots are used to determine population levels. Spray blocks are designated using a minimum criterion of 500 egg masses per acre. Suppression occurs during May using B.t.k. for larval control. Since 1990, populations have been low due to the activity of the Japanese fungus *Entomophaga maimaiga*. Although gypsy moth populations began a sharp increase in 2006, *E. maimaiga* became very active during spring 2009 due to wet weather. As a result, statewide defoliation plummeted to 92,000 acres. Aerial and ground surveys will continue to determine where future aerial suppression programs will be carried out.

Asian Longhorned Beetle (ALB)—New Jersey has more than 1 million acres of urban tree cover and the highest percentage of total tree cover in urban areas nationwide, 22 percent. New Jersey is the most densely populated and urbanized State in the Nation, which makes the management of its community forest resources vital to the quality of life. Urban forests comprised of street trees, open spaces, parks, forested patches, and highways lined with trees constitute a critical part of community infrastructure.

Recently, there have been new threats to the vitality of New Jersey's urban forest. During 2005,

ALB was found in the cities of Carteret, Linden, Rahway, and Woodbridge. These communities have a combined population of 1.3 million residents. Urban street tree assessments have shown that 47 percent of the tree species are susceptible to ALB attack. A 14.2-square mile Federal quarantine has been put in place to restrict the movement of wood from this area.

Currently, all host trees within $\frac{1}{4}$ mile of an infested tree are removed. To date, more than 10,000 trees have been removed. The resulting 14,000 tons of wood chips could not be used for mulching and composting material. As a result, the New Jersey Forest Service (NJFS) helped forge a partnership with the Union County Resource Facility-COVANTA ENERGY. The wood chips received from tree removal have been burned using state-of-the-art combustion technology and converted to an energy equivalent of 11 million kilowatt hours of electricity, 3,840 tons of coal, or 733,600 gallons of heavy fuel oil.

The NJFS is responsible for replacing trees lost to the ALB with suitable species that are compatible with community need, appropriate for urban forest ecosystems, and not susceptible to the ALB. Residents can select replacement trees from a list of species. In 2008 over 4,200 trees were planted in affected communities.

Emerald Ash Borer (EAB)—As of 2009, the emerald ash borer is still absent from New Jersey.

Hemlock Woolly Adelgid (HWA)—Since 1998, the primary activity of the Philip Alampi Beneficial Insect Laboratory of the New Jersey Department of Agriculture has been the rearing and release of predacious beetles.

Sasajiscymnus tsugae beetles were released in northern New Jersey forests. Approximately 279,000 *S. tsugae* have been released at 68 sites since 1998. Most sites were within State forests and parks. Recovery methods, including beating sheets and double-sided sticky traps, have produced few adult or larval specimens. Virginia Tech shipped 300 *Laricobius nigrinus* beetles to New Jersey, which were released in Worthington State Forest. This predator is native to the Pacific Northwest and is active from fall until spring as long as temperatures remain above 32 °F.

The hemlock woolly adelgid continues to negatively impact 26,000 acres of hemlock as evidenced by the increased percentage of trees in the highly stressed category following statewide surveys in 2005. Other stressors contributing to poor hemlock health include diminished water supply, the elongate hemlock scale (*Fiorinia externa*), drought, the hemlock borer, and periods of extreme cold. On 9 out of 10 monitored plots, tree health has

improved based on an increase in the abundance of new twig growth. This could result in a resurgence of HWA and further tree decline in hemlock forests during 2010.

Southern Pine Beetle (SPB)—The SPB continues to be active in extreme southern New Jersey. Cape May, Cumberland, and Atlantic Counties have active populations at various levels. Infestations are occurring on State, Federal, and private lands. To determine whether the SPB is going to be an environmental factor in a given year, the NJFS 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 °F to coincide with mass spring flights of SPB. This also overlaps the blooming period of flowering dogwood. 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 in the traps 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.

The aerial survey covers the entire New Jersey Pinelands region and outlying areas, totaling approximately 1.5 million acres. This survey is performed using Digital Aerial Sketchmapping (D-ASM) in September of each year. It was determined that there are approximately 88 individual infestations covering 633 acres. A pilot suppression project initiated on State forest land resulted in control of local populations. Additional sites will be selected for future suppression and forest rehabilitation projects.

Sirex Woodwasp (*Sirex noctilio*)—The U.S. Forest Service will provide funding to the NJFS for *Sirex* surveys. New Jersey is part of a regional multistate survey to monitor for *Sirex* in the mid-Atlantic States. Because *Sirex* was discovered in New York and Pennsylvania, it is prudent for the NJFS to survey for potential infestations. *Sirex* is a woodwasp native to Europe that entered U.S. ports with wood-packing materials. This insect has the potential to cause widespread pine mortality.

The NJFS expanded the 2006 *Sirex* survey from four locations in two counties to nine locations in approximately nine counties in 2009. Traps were spatially distributed to successfully capture any *Sirex* that may have been in the area. This includes *Sirex* that are attempting to brood or migrate. *Sirex* is still absent from New Jersey's pine forests.

Gouty Oak Gall—Forests in southern New Jersey have had a dramatic increase of gouty oak gall appearing on forested and landscape trees. In 2006, DASM indicated that more than 17,200 acres were defoliated. Various oak (*Quercus*) species, such as scarlet, pin, black, southern red, scrub, and post, had slight to complete defoliation caused by the gall wasp. Areas typically infested are located in the Pinelands region and in outlying boundaries. In 2009, ground surveys indicated varying rates of decline and mortality. These areas overlap with previous gypsy moth defoliation events, which increased tree stress. Infested areas infested will continue to be monitored for decline, mortality, and salvage opportunities.

Other Insects and Diseases of Concern

Other insects and diseases of concern include orange striped oak-worm, eastern tent caterpillar, forest tent caterpillar, spring and fall cankerworm, fall webworm, hemlock looper, lace bugs, larch casebearer, birch leafminer, black locust leafminer, variable oakleaf caterpillar anthracnose, hemlock needle cast, oak wilt, beech bark disease, dutch elm disease, and dogwood anthracnose.

For More Information



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