

# New Jersey Forest Health Highlights



April 1999

## The Forest Resource

New Jersey has nearly two million acres of forested land and a forest cover of approximately 42 percent. To maintain healthy and sustainable forest resources, the New Jersey Forest Service faces many challenges. The major forest health issues in New Jersey are: urban development, loss of habitat, invasive species, and exotic insect infestations.

In New Jersey, forestland with the potential for producing timber products has decreased slightly over the past 40 years.

<i>Inventory</i>	<i>Acres of forestland classified as capable of producing timber</i>
1955	2.1 million
1974	1.8 million
1987	1.8 million

In addition to this loss, urban development is resulting in forest fragmentation and the loss of habitat, while changes in landownership patterns are resulting in more people owning fewer acres. In 1955, an estimated 29,000 landowners held 88 percent of the forestland. By 1987, this number had increased to 78,000 landowners indicating a shift towards more landowners holding fewer acres.

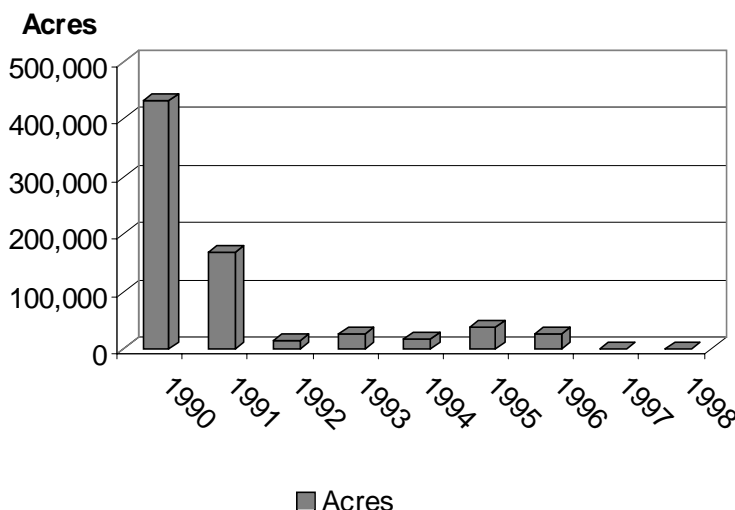
## Exotic Forest Pest Issues

**Purple loosestrife** — This exotic plant species was introduced into the United States in the early 1800's. In New Jersey, it has become a problem during the last 8-10 years. The plant thrives in wetland habitats including marshes, wet fields, and drainage ditches. Though the plant produces a beautiful purple flower, it also crowds out native wetland species, thereby changing the ecology of the area. For example, some concern has been expressed about the effect the abundance of loosestrife may have upon the endangered Bog Turtle. The New Jersey Department of Agriculture, Beneficial Insect Rearing Laboratory has reared and released a beneficial

insect that feeds upon the leaves of purple loosestrife. However, the benefits of loosestrife as a pollen source have limited aggressive loosestrife efforts because of concerns expressed by beekeepers.

**Gypsy moth** — The gypsy moth has been in New Jersey for so long that many people think of it as a native pest of trees and forests. The gypsy moth is an exotic pest, first introduced into Massachusetts in the late 1860's. In New Jersey, defoliation caused by this insect has occurred since 1965 with oak species being the most susceptible species. In the last two decades, there has been three distinct cycles of this pest. The first cycle peaked in 1973 when 258,000 acres were defoliated statewide. The second and most damaging cycle occurred in 1981 when 780,000 acres were defoliated. Most recently, a third cycle peaked in 1990 when 431,000 acres were defoliated. Since 1990, gypsy moth populations have been on a steady decline. One important factor in this decline has been the occurrence of the insect pathogen, *Entomophaga maimagia*. This fungal pathogen has spread throughout the gypsy moth population helping to keep gypsy moth densities at low levels. In 1998, only 1,995 acres of defoliation were observed.

## Gypsy Moth Defoliation in New Jersey



**Hemlock woolly adelgid** — New Jersey has approximately 26,000 acres of eastern hemlock, with the greatest concentrations located in Sussex, Passaic, Warren, and Morris Counties. Eastern hemlock can also be found scattered around the State as an ornamental tree. Virtually all of the eastern hemlock found in New Jersey's forest have some level of infestation of the hemlock woolly adelgid. This exotic pest of Asian origin has been spreading throughout the hemlock forests causing a steady decline in hemlock health. During the winter of 1997-

1998, survey results of 166 monitored forest stands indicated that 75 percent of the stands had detected hemlock woolly adelgid populations. Hemlock mortality caused by the adelgid ranges from 37 to 86 percent in the most heavily infested stands.

Hemlock is ecologically important. It helps to provide cooler water temperatures required for brook trout survival; cover for deer, turkey, and ruffed grouse; and shelter and nesting sites for about 90 species of birds. Hemlock is also important in parks and recreation areas.

In an effort to save as many hemlock stands in New Jersey as possible, the New Jersey Department of Agriculture's Philip Alampi Beneficial Insect Laboratory, in cooperation with the USDA Forest Service State and Private Forestry, has initiated a biological control program using a small beetle native to Japan - *Pseudoscytnus tsugae*. Seventy-five thousand adelgid predators were released in fifteen sites in northern New Jersey during 1998. Additional releases are planned in 1999.

**Asian longhorned beetle** — The Asian longhorned beetle, a potentially serious tree and forest pest, has been accidentally introduced from China into New York City and Chicago. The Asian longhorned beetle infests a variety of hardwood trees. It feeds on the wood by boring tunnels and eventually killing the tree. Although the beetle has not yet been found in New Jersey, surveys have been conducted in both forested areas and urban areas to detect its presence. Personnel from the New Jersey Department of Agriculture, New Jersey Forest Service, and the U.S. Department of Agriculture examined trees across a wide area of northern New Jersey. All surveys were negative.

## Native Forest Pests

During the late summer of 1998, two native insects, the eastern pine looper and the pine needleminer,

damaged foliage on approximately 390,000 acres of pitch pine in the Pinelands region of south central New Jersey. The combination of the two insects caused defoliation, needle browning, and needle drop. The eastern pine looper had caused extensive defoliation within the same general area in 1991 and 1992. This is the first recorded outbreak of the needleminer in the Pinelands. It is expected that most trees will recover from the effects of the outbreaks but only over an extended period of time. Meanwhile the potential danger presented by dry and dead pine needles in increasing the risk of wildfire cannot be underestimated. The New Jersey Forest Service continues to monitor the situation. There are no plans to attempt controlling the insect outbreaks. This might change if the situation continues to worsen.

## Urban Forest Health Alert

**Bacterial leaf scorch** — During the summer of 1998, pin oak trees that grow primarily within the intercoastal plain began showing signs of dieback. Surveys conducted by the New Jersey Forest Service revealed that foliage on these trees were affected by a bacterial disease known as bacterial leaf scorch. Though not much is known about bacterial leaf scorch, it is known that elms, oaks, and sycamores are all affected. Leaf scorch on oak first appears on the outer and upper branches, where chlorosis and then faded green colors develop at the leaf tips and margins. The discolored area then turns reddish brown. It is thought that hot, dry weather enhances the progression of the disease.

**Sycamore anthracnose** — Because of a wet spring, sycamore trees in many areas of the State experienced leaf drop due to a fungal disease known as sycamore anthracnose. Blight of leaves and shoots, cankers and dieback of twigs, and occasionally branch deformity characterize sycamore anthracnose. Trees can be weakened by repeated infection. The disease is caused by a fungal pathogen, which closely resembles pathogens causing similar symptoms on ash, maple, oak, and other hardwood species. The occurrence of sycamore anthracnose in 1998 was particularly severe, and it was not uncommon to see trees with only about 10 percent of their normal foliage complement. Trees will refoliate during the latter part of the season, but after repeated infection, they will begin to lose twigs and branches.

### 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

USDA Forest Service  
Northeastern Area  
State and Private Forestry



Forest Health Protection  
180 Canfield Street  
Morgantown, WV 26505  
Phone: 304/285-1541