

Pennsylvania

Forest Health Highlights



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The Resource

Pennsylvania occupies a land area of 25,333 square miles of which 59 percent are classified as forests. Seventy-five percent of the forestland in the State is privately owned by 513,900 landowners. Yet with a population of 12 million people, forest landowners account for only 4 percent of the total population. Forests provide not only timber, but also watershed protection, wildlife habitat, and recreational benefits for all Pennsylvanians.

<http://www.dcnr.state.pa.us/forestry/index.htm>

Forest Pest Issues

Defoliation — In 1999, insect defoliation in Pennsylvania totaled 333,595 acres. Once again, the greatest amount of damage was caused by gypsy moths defoliating 281,605 acres. This large increase above the 35,466 acres in 1998 resulted partially from an increasing gypsy moth population and a decrease in gypsy moth mortality as a result of pathogens and insect predators. It is believed that the fungal pathogen, *Entomophaga maimaiga*, was not as effective in controlling gypsy moth in 1999, due to the extremely dry conditions dominating the State during the spring season. Gypsy moth suppression activities included aerially spraying *Btk* on 44,820 acres of State and private forestlands. An increase in the gypsy moth population and suppression activities are expected in 2000. Defoliation by native insects (oak leaf-tier, leafroller, leafminers) and mites, increased nearly seven-fold to 37,034 acres in 1999 compared to only 5,329 acres in 1998.

Hemlock Woolly Adelgid — Hemlock woolly adelgid (HWA) defoliated 14,956 acres in 1999. A series of mild winters has enabled the HWA population to increase and expand in Pennsylvania. Presently, 30 counties have confirmed HWA outbreaks, and this trend is expected to continue in 2000. An experimental release of the HWA predatory ladybird

beetle, *Pseudoscygnus tsugae*, was initiated in May at a southcentral Pennsylvania location. This study is expected to yield information as to the effectiveness of this predator for controlling HWA.

Elm Yellows — The elm yellows survey that began in 1997 detected elm yellows in 45 of Pennsylvania's 67 counties. The survey was initiated after an outbreak of elm yellows that began in the early 1990's in parts of the eastern panhandle of West Virginia and Maryland adjoining Pennsylvania. It is anticipated that Pennsylvania will be surveyed completely by September 2000.

Sycamore Anthracnose — From 1994 through 1998, Sycamore anthracnose, a fungal disease, increased throughout Pennsylvania's riparian and urban habitats. By the end of 1998, Sycamore crown dieback, crown thinning, and tree mortality were widespread. It is rare for this disease to produce the extensive crown damage and tree mortality observed. During 1999, however, Sycamore trees experienced a period of recovery as the disease apparently subsided during the prevailing drought conditions.

Drought Stress — Drought conditions throughout Pennsylvania were the most severe experienced since the mid-1960's. Below average rainfall and sustained warm weather since July 1998, along with two mild winters with low snow fall, contributed to the most widespread and damaging drought on record in Pennsylvania and the surrounding region. Moisture patterns as of December 1999 have been insufficient to end the drought; the year 2000 will reveal the impact of the 18-month drought on forest stands.

Symptoms of drought stress on trees are expected next spring and summer throughout Pennsylvania's forests. The most common symptoms will be crown dieback, stem and branch cankers, and widespread tree mortality. The damage caused by drought to individual trees is offset within forest stands by the creation of new openings and opportunities for establishing understory trees and seedlings. Damage will be most evident in drier sites (ridge tops, steep slopes, southern aspects). Some tree species may be better adapted to drought. In addition, drought conditions favor many canker-causing diseases. For example, Fusarium canker in sugar maple or cankers caused by *Botryosphaeria* and *Leucostoma* fungi on deciduous and coniferous tree species are frequently associated with drought-stressed trees. Fusarium canker on sugar maple was first observed throughout Pennsylvania during the drought years of the early and mid-1960's; this disease was responsible for causing extensive damage and tree mortality in western and central Pennsylvania sugar maple stands.

Deer Browsing — The increased number of white-tailed deer in Pennsylvania's forests and urban areas continues to deter successful tree seedling establishment. The most affective means of reducing this impact is provided by 10-foot, woven wire fencing. <http://www.dcnr.state.pa.us/forestry/fpm.htm>

Forest Stewardship

Forest Stewardship Program — During the past five years, about 725 plans covering 120,000 acres have been completed — only a small fraction of the half million landowners in the State, and less than 1 percent of the 12.5 million acres of private forests. To reach more landowners, the program promotes stewardship three ways: awareness, knowledge, and adoption. The awareness component focuses on utilizing audio, visual, and printed media to increase awareness about forest values and the importance of forest stewardship. The knowledge component utilizes a Stewardship Newsletter distributed to about 7,000 readers four times a year, and a series of informational bulletins on various resource management topics. Landowner workshops are offered, some in major metropolitan areas to target absentee landowners. Most importantly, a cadre of 150 exceptional landowners have been trained as stewardship volunteers in natural resources management to increase landowner knowledge of forest resources by acting as ambassadors of good forestry in Pennsylvania. The adoption component is based on developing a written stewardship plan for each landowner. Training workshops, held one or two times a year since 1991, have trained over 300 private consulting resource professionals about stewardship plans. A directory of available plan writers is updated annually. <http://www.dcnr.state.pa.us/forestry/Stewardship/wwwstw.htm>

Forest Health Monitoring

One-quarter of the 176 forest health monitoring (FHM) plots established in 1998 were visited as part of the annual FHM detection monitoring program. Forty-four percent of the plots are forested. These forested plots are distributed across the State and represent a very small sample of Pennsylvania's forest resources that are dominated by hardwoods, mostly maples and oaks. The data gathered from these plots will contribute to evaluating the influence of climate change, insect and disease pests, and anthropogenic impacts on forest ecological resources across the United States.

<http://willow.ncfes.umn.edu/fhm/northeast/ne99.htm>

Forest Fire Protection

The Division of Forest Fire Protection is responsible for the prevention and suppression of wildfires on the 17,000,000 acres of wildlands throughout Pennsylvania. The Division also enters into partnerships with other state and federal agencies to share knowledge and resources to suppress wildland fires. The Operations Section is responsible for fire surveillance and fire suppression. Fire training not only is given to State Forest District personnel, but also to fire wardens and volunteer fire departments, thereby ensuring that all personnel within Pennsylvania are trained in the latest techniques of fire prevention and suppression. The Services Section is responsible for the enhancement of public safety and awareness in wildfire prevention through education, enforcement activities, and the development of new fire technology.

The 1999 fire season in Pennsylvania was more severe than normal because of the drought conditions prevailing throughout the state. One of the more costly fires occurred in the Tobyhanna State Park involving a bog. Debris burning and incendiary fires accounted for most fires and acreage burned.

<http://www.dcnr.state.pa.us/forestry/ffp/ff/.htm>

For More Information



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