

# Pennsylvania Forest Health Highlights



April 1999

## The Resource

There are 17 million acres of forestland in Pennsylvania, which is nearly 60 percent of the State's total land area. The Hardwood Lumber Manufacturers' Association estimates that \$5 billion of timber products are produced annually within the State. This includes lumber, export logs, and pulpwood, as well as finished products such as furniture, crating, pallets, and veneer. The forests also provide watershed protection, wildlife habitat, and recreational benefits. Pennsylvania's forests are dominated by hardwoods, particularly maples and oaks.

## Forest Stewardship

During the fall of 1997 and spring of 1998, more than 814,000 tree seedlings were lifted from the former Musser Nursery site in Indiana County where a new prison is being built. The Departments of General Services and Corrections donated the seedlings to the Governor's effort to plant forested buffers along 60 miles of streams in the State by the year 2010. Equipment was provided by the Bureau of Forestry and Game Commission nurseries, and labor was provided by Youth Conservation Corps groups throughout the area. Additional seedlings will be lifted in the spring of 1999 to be distributed for planting in similar riparian zones.

**Forest Stewardship Volunteers** — In July, training was held at McKeever Environmental Education Center near Scranton for 24 outstanding forest landowners interested in becoming Forest Stewardship Program volunteers. This was the eleventh group to be trained since 1991.

Participants in the training program receive approximately 40 hours of training over two full weekends. Field work is combined with indoor sessions to increase landowner understanding of forest resources

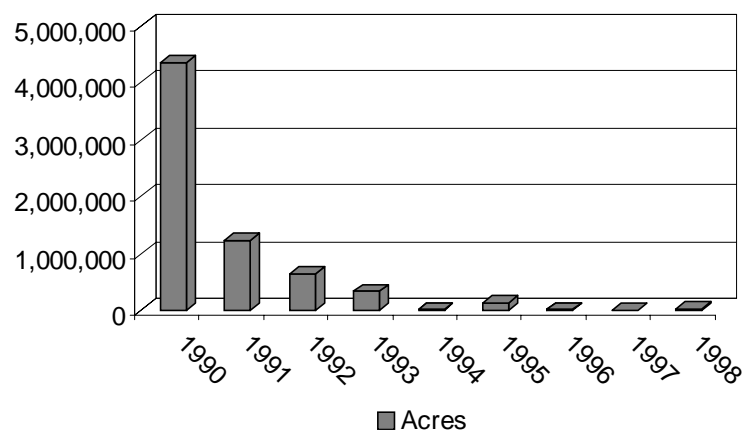
and to provide them with the tools they need to speak as ambassadors of good forestry. There is no charge for the training, but landowners are required to attend both weekends, and agree to contribute approximately 40 hours of their time in helping to promote forest stewardship.

One-day training sessions were conducted for 2,534 loggers to share information in five proficiency areas: business management, sustainable forestry (silviculture, forest ecology, erosion control), logging safety, environmental logging, and first aid (including CPR).

## Pest Issues

**Defoliation** — Insects defoliated 35,466 acres of Pennsylvania woodlands during the spring of 1998. Nearly 85 percent (30,137 acres) of the defoliation was attributed to gypsy moth, which is greater than twice the acreage defoliated by this insect in both 1996 and 1997. However, this acreage would certainly have been considerably larger if the insect pathogen, *Entomophaga maimaiga*, had not been a strong controlling factor in most infestations. *Entomophaga maimaiga*, a fungal pathogen of gypsy moth, has drastically reduced gypsy moth populations in many areas of the Northeast over the last several years. Even though this pathogen is present in Pennsylvania, it is not known if it will continue to affect gypsy moth populations.

Gypsy Moth Defoliation in Pennsylvania



**Sugar Maple Decline** – The sugar maple decline prevalent in the northern portions of Pennsylvania is being studied by a research team consisting of scientists from Pennsylvania Bureau of Forestry, the U.S. Forest Service, and The Pennsylvania State University. The cooperative study has progressed rapidly, and an elevation gradient study has been added to the investigations. A total of 43 plots located at 19 topographic gradient sites across the glaciated and unglaciated portions of the Allegheny Plateau in Pennsylvania and New York were used to evaluate the impact of various site factors on the condition of sugar maple. At each location, stand measurements were made to evaluate tree growth, vigor, composition and position, and herbaceous species composition. In addition, soil descriptions, chemical analysis, and foliar analysis from five healthy sugar maples were made to evaluate nutrient conditions at each site. Subsequent analyses have shown that decline is more prevalent on sites with relatively low levels of base cations and a recent history of moderate to heavy defoliations on at least two occasions over a ten-year period.

**Elm Yellows** – Elm yellows, once referred to as elm phloem necrosis, is caused by a phytoplasma (a bacteria-like organism). The disease carried from tree to tree by the white-banded leaf-hopper, affects trees by clogging the vascular system thereby cutting off the flow of water and nutrients. Symptoms include the rapid yellowing of foliage and premature leaf drop. Trees are killed quickly. A 1998 elm yellows survey was extended to the southern tier of Pennsylvania and north throughout the central region to the New York border. Elm yellows has been detected in the following counties: Adams, Bedford, Blair, Bradford, Chester, Cumberland, Dauphin, Fayette, Franklin, Greene, Huntingdon, Juniata, Lancaster, Lebanon, Lycoming, Montgomery, Perry, Snyder, Somerset, Sullivan, and Tioga Counties. The survey will be extended beyond the current areas of detection.

**Hemlock Woolly Adelgid** – The hemlock woolly adelgid has been in the forest pest spotlight during

the past several years. The impact of this exotic pest in Pennsylvania has not been as severe as that attributed to hemlock woolly adelgid in Connecticut and New Jersey. While there has been some mortality of hemlock in Pennsylvania, it has not occurred in the absence of hemlock looper, gypsy moth, or summer drought.

## Other Forest Health Concerns

**Weather** – Most areas of Pennsylvania received normal amounts of rainfall during the 1998 growing season. There was a deficit of precipitation in many areas during 1997 which could have had a lingering negative effect on tree health during 1998. The amount of precipitation during the period September through November 1998 was significantly lower than normal. This deficit in moisture resulted in conditions conducive to wildfire in woodlands and grasslands. During 1998, 910 fires occurred burning approximately 6,000 acres.

**Timber Management** – The number of salvage sales, that is, sales that are marked for the purpose of salvaging trees killed as a result of some disturbance, including insect defoliation and tree disease deprecations, has been much reduced in comparison to the years following the large-scale gypsy moth epidemics of the 1970's and 1980's. Approximately 5,888 acres of timber sales were classified as salvage in 1998, which was 34 percent of the total timber sale area. The total value of the stumpage sold in 1998 was \$29,063,602, which was higher than ever before.

**Geographic Information System** – Considerable progress has been made on a project (referred to as CIMPADS) to employ computers, global positioning system, aerial photography, and electronic data to conduct spray projects and other forest health activities in a more efficient manner. When CIMPADS is fully operational, spray pilots will be able to navigate using electronically generated maps that utilize up-to-date aerial photography. Among the many benefits of this technology will be a considerable reduction in the need for ground personnel, an accurate electronic record of both flight path and placement of spray material, and improvement in safety.

**Deer Browsing** – The increasing number of white-tailed deer in forested areas is impacting successful tree seedling regeneration. Deer fencing has been shown to be the most effective means of keeping deer out of areas where seedling regeneration is necessary.

### For More Information



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