

Pennsylvania - 2002

Forest Health Highlights



The Resource

Pennsylvania covers a land area of 25,333 square miles and is 59 percent forested. Seventy-five percent of the forest land 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.

Weather Conditions

The drought of 1998 through 1999 was severe, but the drought of 2001 exceeded all expectations as one of the driest years on record. Precipitation patterns had improved during December, but ground water supplies remain low in many areas of the State, and daily stream flows have tended to remain very low throughout the central and eastern regions of the State. Persistent drought conditions affect forest tree growth, crown condition, pest and disease outbreaks, tree declines, mortality rates, and create conditions that increase the risk of wildfire. Most regions of Pennsylvania remain under a drought watch or warning.

Forest Pest Issues

Insect Defoliators: **Gypsy moth** defoliation remained prevalent in the mid- and south-central counties of the Commonwealth. This defoliation was reported on 237,764 acres in 2001, which represents a 71 percent decline in damage as compared to the previous year. For the two damage intensity classes reported, 124,770 acres had moderate damage (32 to 60 percent defoliation) and 112,994 acres had heavy damage (greater than 61 percent defoliation). Gypsy moth suppression in 2001 resulted in treatment of 168,161 acres in 1,185 separate spray blocks scattered across 25 counties. Evaluation of gypsy moth damage

in 2001 has been completed, and suppression program acreage scheduled for 2002 will be approximately 63,785 acres.

Orangestriped oakworm - Damage by this defoliator was reported on 3,103 acres in the central and south-central regions of Pennsylvania.

Variable oakleaf caterpillar - This defoliator caused noticeable defoliation on 13,702 acres of northern hardwood stands of north-central Pennsylvania.

Miscellaneous insects - Damage associated with a cynipid gall wasp, mites, lacebugs, fall webworm, hemlock leaf-miner, and locust leafminer was also reported; however, damage by the latter two pests was much lower compared to the previous year.

Hemlock Woolly Adelgid - Five additional counties reported infestation by hemlock woolly adelgid during 2001. The pest has been detected in hemlock stands throughout most of the eastern and central regions of the Commonwealth and is now reported in 40 counties. Approximately 1,595 acres of damage in hemlock stands was reported in 2001. The adelgid, drought, and above normal temperatures during the autumn may be contributing factors to the increased incidence and damage to hemlock stands in Pennsylvania.

The biological control of hemlock woolly adelgid is an important program activity involving collaboration and cooperation of several states and the USDA Forest Service. Supervised releases of the ladybird beetle, as reported in previous years (1999 and 2000), resulted in the addition of 14,000 *Pseudoscymnus tsugae* predatory beetles among three new release sites. Since 1999, more than 34,000 beetles have been released by the Pennsylvania Bureau of Forestry. Monitoring of release sites resulted in the recovery of ladybird beetles near the original release site, which was established in 1999, and from both release sites in the 2000 program. Monitoring of release sites has resulted in recovery of adults and larvae and demonstrates that these predatory beetles have the potential to survive, reproduce, and spread. The biological control program associated with hemlock woolly adelgid continues to be an important multi-agency cooperative program in Pennsylvania and throughout much of the Northeastern region.

Other biological control program activities involve monitoring of gypsy moth populations for disease agents including *Entomophaga maimaiga* and nuclear polyhedrosis virus. These pathogens were observed to produce dramatic reductions in gypsy moth populations in 2001, but not in time to prevent intensive defoliation by this pest. Generally, early

spring rainfall events contribute to the effectiveness of these biological control agents; in 2001, precipitation patterns were not as favorable in stimulating *Entomophaga* infections until later instars had formed.

Several other larval and pupal parasites of gypsy moth were observed at low levels; the two most frequently encountered were the wasp *Cotesia melanoscelus* and the fly *Blepharipa pratensis*.

Elm Yellows – Elm yellows has been reported in 63 counties. Carbon, Monroe, Pike, and Warren Counties were added to the list in 2001. The disease has not been observed in Bucks, Delaware, Northampton, and Philadelphia. Elm yellows is scattered throughout most areas of the Commonwealth. It is most frequently observed along fencerows, road right-of-ways, and riparian areas where elms are most likely to be encountered. The disease affects red elm, American elm, rock elm, winged elm, and various non-native elm species or cultivars.

Beech Bark Disease – A statewide survey was initiated in 2001 to determine the extent of spread of beech scale and beech bark disease since a previous survey in 1989. Beech bark disease and/or beech scale has been found in beech stands in many areas of the Commonwealth. This disease was first observed in the extreme northeastern counties in the early 1970s and has spread in a southerly and westerly pattern. The disease has been observed across the northern tier and has been found as far south as Somerset County in western Pennsylvania, and to the east in Dauphin, Lebanon, Berks, and Montgomery Counties.

Forest Fires

Wildfires in Pennsylvania's forests are generally not as frequent or severe as those in the western states. Climate moisture patterns, good road accessibility in forests, and organized suppression of forest fires all help to reduce the impact of wildfire on Pennsylvania's forest resources. In general, the incidence of wildfires increases during drought periods. During the drought year of 1999, the Bureau of Forestry reported a total of 1,405 fires that consumed 8,424 acres. Similarly, 736 fires consumed 4,800 acres in year 2000, which was relatively normal in regard to the frequency and amount of rainfall throughout the growth period. During the 2001 spring fire season there were 476 fires reported that consumed 2,549 acres. The autumn fire season was very active, but final figures of acres burned have not been verified at this time.

Forest Regeneration Programs

Deer exclosures have been used to protect tree seedlings from deer. An additional 3,795 acres of State Forest were fenced this year to promote and protect valuable tree seedlings. Similarly, fences have been removed from more than 1,500 acres since 1999. The deer exclosures and invasive plant species management programs are conducted to protect and advance desirable forest tree species through the forest regeneration program. Funds for this program are generated by timber sales conducted on State Forests that are made available to support planting, fencing, assessment, and research projects.

For More Information



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