

Pennsylvania — 2009

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 four percent of the total population. Forests provide timber, watershed protection, wildlife habitat, and recreational benefits for all Pennsylvanians.

Weather Conditions

Temperature trends from April through October were cooler than normal. Early spring temperatures were near normal until April 20-24 when temperatures spiked from 85 to 90 °F. This event appeared to advance host tree bud emergence and synchrony of egg mass hatch of major defoliating insect species (i.e., gypsy moth, forest tent caterpillar, and eastern tent caterpillar). From early May through September, temperatures tended to remain at or below normal throughout the Commonwealth.

Precipitation remained well above normal throughout most of the growth period with early season shortfalls in the Northcentral, Northwestern, Eastcentral, and Southwestern regions until late May. By late June, precipitation levels tended to remain above normal throughout the Commonwealth. In general, soil moisture levels tended to be at or near adequate levels in most areas throughout the growth period. Although moisture was abundant, anthracnose on sycamore or maples was insignificant in 2009. From June to early September, extreme rainfall events of several inches were documented at regular intervals in the Southeastern region, resulting in excessive surface and streambank erosion.

A series of frost and freeze events occurred between May 19 and May 25; these cold temperature events caused significant and widespread damage to foliage and reproductive structure development on sugar maple, beech, and oak species across the northern half of the Commonwealth. Seed sets of sugar maple were lost in many areas of the Northern tier due to the frost. Abortion of beech nuts was also observed, but damage to acorns of oak appeared to be variable with many areas having a very good crop of acorns.

Forest Pest Issues

2009 Gypsy Moth—The gypsy moth has had severe impacts on the Commonwealth's forests since the early 1970s. On average, outbreaks occur every 5 to 7 years. The latest outbreak started in 2005 and ended in 2009. The level of gypsy moth defoliation has varied considerably among years and regions.

In 2009, gypsy moth populations collapsed across the Commonwealth following several years of heavy defoliation. The fungal pathogen *Entomophaga maimaiga* and the gypsy moth nuclear polyhedral virus (NPV) were prevalent throughout the most infested areas within the State and were responsible for the overall population decline. At its peak in 1990, gypsy moth defoliated 4.3 million acres of forest. Overall, only a small proportion of infested areas were treated in any given year.

2009 Gypsy Moth Suppression Program

The operational period for the 2009 gypsy moth suppression program was May 7 through May 29, with aerial applications conducted in 25 counties. A total of 177,668 acres consisting of 1,017 spray blocks were treated using *Bacillus thuringiensis* var. *kurstaki* (Btk) (Foray 76B) undiluted at 38 BIU in a single application of ½ gallon per acre. Expenses for the 2009 gypsy moth suppression program totaled \$6,397,741 with an average cost of \$31.79 per acre. State, county, and Federal governments shared the expense of this program.

Hemlock Woolly Adelgid (HWA)

The number of counties infested by HWA increased incrementally from 50 to 53 out of 67 in Pennsylvania. However, HWA population levels decreased dramatically in most of the State. Hemlock woolly adelgids defoliated 2,000 acres in 2009, a 90 percent decrease from 2008.

Biological Control

The Pennsylvania Department of Conservation and Natural Resources (DCNR) continued work on the biological control of HWA by releasing the predatory beetle *Laricobius nigrinus* Fender (Coleoptera: Derodontidae) in 2009. A total of 2,000 laboratory-reared adult beetles were released at four sites along the leading edge of HWA in western Pennsylvania.

Elongate Hemlock Scale (EHS)

Outbreaks of the elongate hemlock scale increased in 2009. Four new counties reported outbreaks, including Allegheny, Blair, Perry, and Somerset. To date, EHS infestations have been confirmed in 38 out of 67 counties in Pennsylvania.

Emerald Ash Borer (EAB)

The DCNR has been actively involved in the survey and monitoring of EAB since 2003. Those activities intensified in 2008 and 2009 after the first discovery in 2007. Seven new counties (Armstrong, Indiana, Juniata, Lawrence, Mifflin, Washington, and Westmoreland) were added to the infestation map in 2009, with 123 acres of moderate to heavy damage to ash trees reported from Allegheny, Butler, and Mifflin Counties.

Forest Tent Caterpillar

In 2009, forest tent caterpillar damage was reported at 367,092 acres. Most areas reported heavy (>60 percent) defoliation.

Disease Conditions

Anthracnose

Sycamore anthracnose was observed in many areas of the Commonwealth along riparian woodlands and in urban landscapes. The disease was not prevalent in the early growing season; however, symptoms appeared in July as moisture conditions improved. By late August, leaf lesions were apparent at light to moderate intensity in many areas where sycamore is prevalent.

Elm Yellows

Elm yellows was observed at low to moderate levels throughout the State.

Sudden Oak Death (SOD)

Phytophthora ramorum Stream Baiting Survey

Stream baiting of select streams in Delaware County for the fourth year was completed in October 2009. Four stream baiting locations were maintained from late April through mid-October. Results for the 2009 baiting season indicated that *P. ramorum* was not detected in any of the Rhododendron leaf bait samples either by PCR or direct culturing of leaf lesions.

Fabrella Needle Cast

Fabrella needle cast is widespread throughout Pennsylvania at low or trace levels of damage. Due to cool, wet conditions throughout the 2009 growth period, needle cast symptoms were observed in counties where a history of the disease has been recorded. The disease has been reported in 46 of 67 counties since 2002.

For More Information



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