Ohio — 2009

Forest Health Highlights

The Resource

Of the 26.2 million acres that make up Ohio, nearly one-third of this acreage (30.2 percent) is forested, not including the urban forest. Forest cover has increased dramatically since 1940, including an increase from 7.1 to 7.9 million acres since the late 1970s. Eighty-eight percent of Ohio's forests are privately owned and comprised of 96 percent deciduous forest types. Ohio forest industries contribute over $15 billion to Ohio's economy.

Urban Forestry

Within the State, there are 11,485,910 people (2008 U.S. Census estimate). Ohio's 937 incorporated municipalities (cities and villages) occupy 11 percent of the land area and represent a substantial urban forest resource. Ohio leads the Nation with 249 Tree City USA communities. These communities represent over half of the 80 percent of Ohioans living and/or working in urban areas, and a significant commitment to their quality of life. Throughout most of the State, these Tree City USA communities planted more trees than they removed, while maintaining more trees than they planted. This was true everywhere except northwestern Ohio, where the emerald ash borer had become established and this region's cities, villages, and townships were faced with the reality of removing dead and dying ash trees. To proactively address the economic and environmental burden presented by this pest, all Ohio communities are being encouraged to develop emerald ash borer management plans. To date, at least 62 of these plans have been completed in Ohio.

Special Issues

The emerald ash borer (EAB) (*Agrilus planipennis*) is non-native insect pest of ash trees in the United States. It was first found damaging ash trees in southeastern Michigan in May 2002. It may have been in Michigan for as long as 10 to 15 years. The insect's short history in the United States shows that it can spread rapidly and kill trees quickly. If unchecked, EAB could easily cause more than an estimated $3 billion in damage to Ohio's economy during the next 10 years. The pest was first identified in Ohio (Lucas County) in February 2003. Subsequently, several infestations of EAB were discovered in the State, most traced to infested logs and nursery stock from Michigan. In 2004, the Ohio Department of Agriculture (ODA) completed eradication projects at four sites in Ohio by removing all ash trees within a ½-mile radius of these infestation sites. More than 30,000 trees were cut, chipped, and burned. In 2005 and 2006, new EAB finds popped up at an alarming rate not only in new areas but also in areas where eradication efforts had been previously made. Eradication efforts were suspended in 2006 due to lack of funding to support this enormous effort. ODA's current strategy is focused on containment through quarantine, early detection, and educating the public about this destructive pest and what can be done to prevent its artificial spread. EAB has now been detected in a fairly contiguous area starting in northwestern Ohio, east to Cleveland, and south to Columbus and Cincinnati, corresponding very closely to the Interstate 80/90, U.S. 23, and Interstate 75 corridors, respectively. Following trapping in 2009, a total of 53 of Ohio's 88 counties are now under quarantine. USDA APHIS has implemented a similar quarantine that prohibits the movement of regulated articles over the State lines of Ohio, Michigan, Indiana, and Illinois. The Federal quarantine also applies to Prince George's County, MD, and a four-county area in western Pennsylvania. The ODNR Division of Forestry continues to help woodland owners manage their forests and utilize their ash resources, assist communities that are dealing with current and future EAB issues, and work to increase public awareness about the insect. An Ohio EAB Task Force has continued to help address these rapidly changing issues.

Asian Longhorned Beetle (*Anoplophora glabripennis*)—In 2007, a live adult was found in the northern Cincinnati area in Hamilton County. In 2009, two warehouse workers found one live adult in an industrial district of northern Hamilton County.

Bacterial Leaf Scorch (*Xylella fastidiosa*)—There was a positive find in 2009 on a white oak tree in Franklin County in central Ohio. The Ohio Division of Forestry is planning on conducting an urban survey in 2010.

Cup Shakes—This problem is common throughout the State with the exception of the southern portions. It is likely a cold injury associated with Autumn Blaze Freeman Maple. It looks like frost cracks or bark slipping along the trunk. The trunk contracts with low temperatures during the night. In the morning, the sun heats the bark, phloem, and cambium, causing them to expand rapidly outside of the still-frozen and contracted xylem and thus pull away from the xylem, causing an opening along the trunk. Autumn Blaze Freeman Maple is commonly found in nurseries; landscapes; and as an urban, park, or street tree.

Shingle Oak Skeletonizer—During the 2009 aerial survey, there was an approximate 50-acre area of discoloration in Guernsey County. After ground truthing this location, it was noted that only shingle oaks in that area were affected. This damage is believed to be caused by this Lepidopteran moth. Information about this pest was noted in Kansas and Missouri with infestations in 1983, 1991, 1996, and 1997. The larvae build silken tunnels on the underside of leaves and feed on lower layers of leaf tissue, leaving leaf veins and the upper leaf surface as skeletonized remains. As a result, entire crowns of shingle oak are brown. These signs and symptoms seem to match what was found at the Guernsey County site.

Sirex Wood Wasp—A USDA trapping survey was conducted in Ashtabula, Fulton, Geauga, Lake, Lucas, Mahoning, Ottawa, Trumbull, and Wood Counties. One live adult was found in a trap in Lake County.

Forest Pest Issues

Gypsy Moth —Surveys by the ODA revealed high gypsy moth population densities in some Ohio forests with caterpillars defoliating about 2,100 acres of forested land. Oak mortality is localized. The gypsy moth threat has been lessened by the fungus, *Entomophaga maimaiga*, which has drastically reduced this pest in many areas since 1996. Dry weather conditions in May 2008 lessened the impact of the fungus in Ohio; however, Ohio experienced a wet spring in 2009. Even though this pathogen was active, it could not completely control gypsy moth populations. Gypsy moths damaged trees in previously infested areas and continued to spread to new areas in the State, including the oak-hickory forests of southern Ohio in 2009. Evidence of this spread is found in the treatment of about 30,000 acres in unregulated parts of Ohio as part of the National Gypsy Moth Slow the Spread Program compared to 53,000 acres in 2009.

Butternut Canker — Decline and mortality of butternut, *Juglans cinerea*, have occurred throughout Ohio. The Ohio Department of Natural Resources, Division of Forestry, developed and implemented a butternut management policy in 1994 to protect remaining resources and promote any potential genetic resistance to the disease. The policy requires retention of healthy butternut trees in State forests. It also encourages education of private woodland owners regarding proper health assessment and management of this threatened species.

White Pine Decline — Although Ohio experienced short-term dry conditions in 2008, wet soils during the past four growing seasons are still contributing to decline and mortality of white pine. About 1,400 acres of white pine forests were affected in Ohio in 2008. Mortality is highest in over-stocked stands. Blue stain fungi appear to be invading wounds created by heavy pine bark adelgid feeding on the trunks of white pine trees weakened by soil conditions and/or overstocking. A similar decline was observed in the mid 1990s. Timely thinning of white pine stands seems to be the best defense against periodic decline.

Beech Bark Disease (BBD) — The beech scale, *Cryptococcus fagisuga*, was first discovered in Ohio in 1985 at the Holden Arboretum in Lake and Geauga Counties. Since then, this area has been periodically inspected for BBD, and the arboretum set up a monitoring program for its beech trees. In December 2003, the fungal component of this disease was found on American beech trees at the arboretum. This was the first confirmed case of BBD in Ohio. In 2008, beech surveys continued in northeastern Ohio. While the BBD fungus was not found at any new sites, beech scale is still easily found in several northeastern Ohio counties, including Medina, Portage, Cuyahoga, Trumbull, Ashtabula, Lake, and Geauga.

White Oak Mortality — Defoliation of white oak trees in southern Ohio was more difficult to find in 2009. Mortality has slowed, but has continued through 2009, requiring continued salvage of dead and dying white oak trees in some areas. Several insect pests began defoliating white oak trees in 2002. Severe defoliation, coupled with drought conditions in 1999 and 2002, caused significant tree mortality starting in 2002, especially in some Ross County white oak stands. Other affected counties included Pike, Lawrence, Scioto, Vinton, and Athens. The half-wing geometer (*Phigalia spp.*), the common oak moth (*Phoberia autumalis*), and tent caterpillars joined forces to cause the initial defoliation damage. Two-lined chestnut borer, Armillaria root rot, Hypoxylon canker, and Phytophthora root rot worked together as a group of secondary pests to kill already weakened trees.

Hemlock Woolly Adelgid (HWA) — HWA was found in two counties this year—Cuyahoga and Clermont. The Cuyahoga find was on a landscape tree that was removed and burned. Several lightly infested hemlock trees were discovered during a routine inspection by ODA personnel at a nursery in Clermont County. The entire shipment associated with these trees was seized and sent back to the shipper in Tennessee. Several trees associated with this load were sold and subsequently found and ordered to be treated or destroyed. Followup inspections will be done at these locations to ensure that no HWA is present. HWA was found in a Summit County landscape in 2008. For 2007, a few trees in Lake County were found to be infested with HWA. The infested trees discovered in 2008 and 2007 were destroyed by ODA personnel. In 2006, about 10 landscape trees were destroyed by ODA in Lorain, Cuyahoga, and Geauga Counties. The ODA removed infested trees at two Ohio sites in 2004 in an effort to eradicate this exotic insect from landscape trees. Eight to ten trees were removed at a site in Summit County and two trees were destroyed at a site in Geauga County. Two HWA infestations were discovered in 2002, and trees were destroyed in Lake and Summit Counties at that time. Surveys completed in the areas around all infestation sites showed no evidence that HWA had spread into other surrounding trees. No infestations were found during a 2007 or 2008 survey of the Clearfork Gorge area in Ashland County and the Hocking Hills region, or during a 2009 survey of these regions.

Forest Health Issues

Forest Health Monitoring — Collection of annual forest inventory and forest health information started in Ohio during 2001 and has continued through 2009. Sample plots are part of a nationwide grid design. An estimated 1,334 inventory plots and 83 forest health monitoring plots will be permanently established in Ohio forests. The plots will be visited on a 5-year cycle, with one-fifth of the total plots being visited each year.

Prescribed Fire — An ongoing study continues to reveal how prescribed fire enhances the health of Ohio's oak ecosystems. This is a cooperative effort among several agencies and universities that is led by the ODNR Division of Forestry and the U.S. Forest Service. The effects on oak forests of burning alone, thinning alone, and both practices combined are being studied.

For More Information

Ohio Department of
Natural Resources
Division of Forestry

2045 Morse Road, H–1
Columbus, OH 43229–6693
Phone: (614) 265–6694
www.ohiodnr.com/forestry

USDA Forest Service
Northeastern Area
State and Private Forestry

Forest Health Protection
180 Canfield Street
Morgantown, WV 26505
Phone: (304) 285–1541
www.na.fs.fed.us/