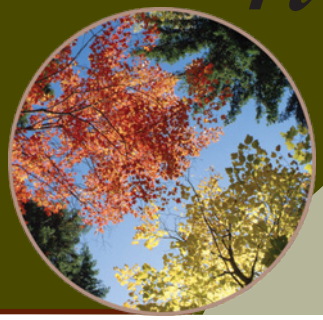
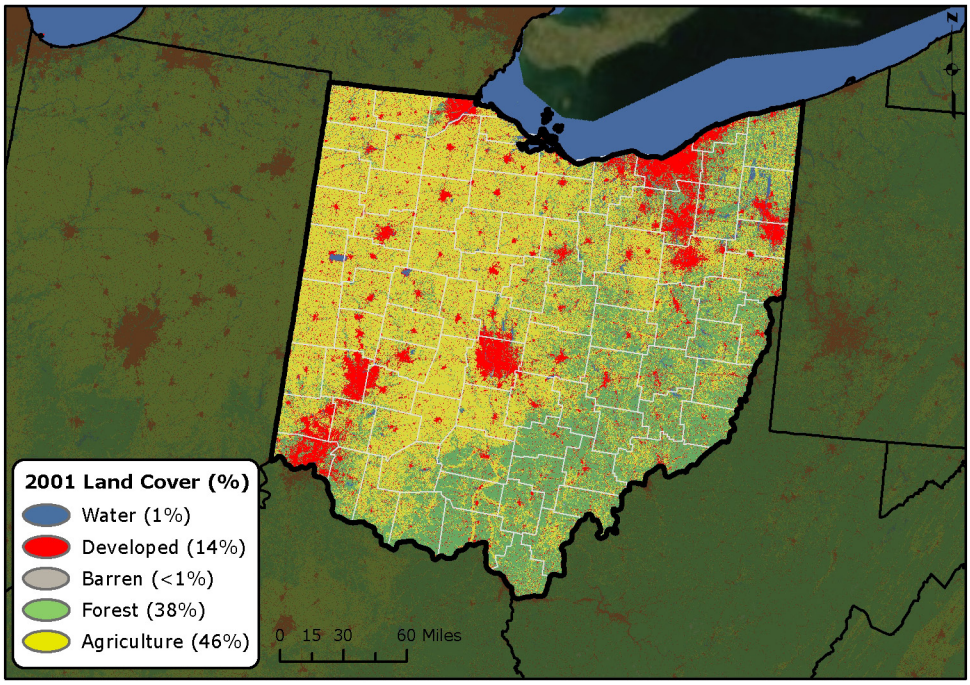
2010 Forest Health highlights

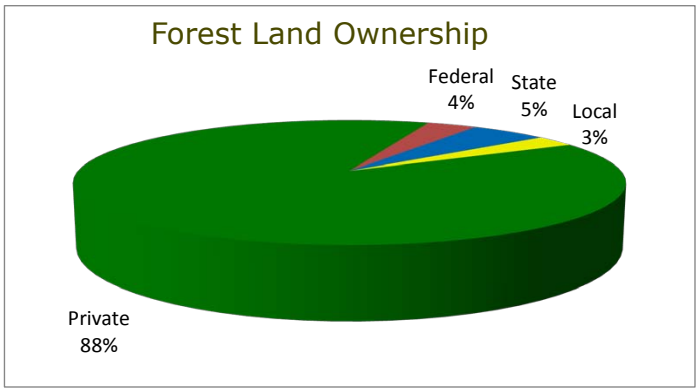
OHIO



The Resource

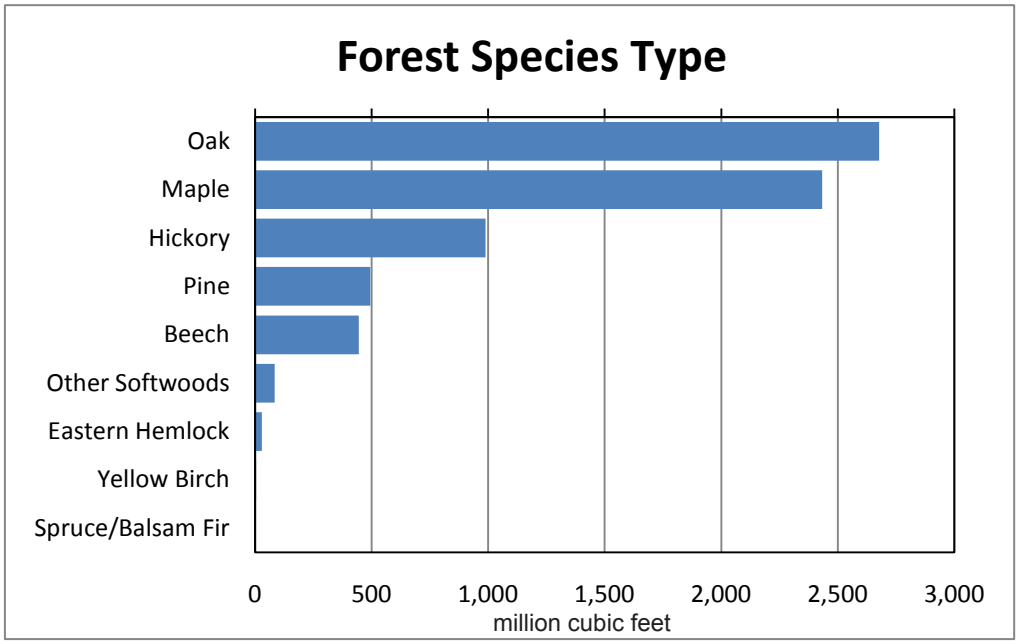
Ohio encompasses 26,209,700 acres, and 30.2 percent of these acres are forested, not including the urban forest. Forests have increased dramatically since 1940, including an increase from 7.1 to 7.9 million acres since the late 1970s. Ohio's forests are 88 percent privately owned and 96 percent deciduous forest types. Ohio forest industries contribute over $15 billion to Ohio's economy.





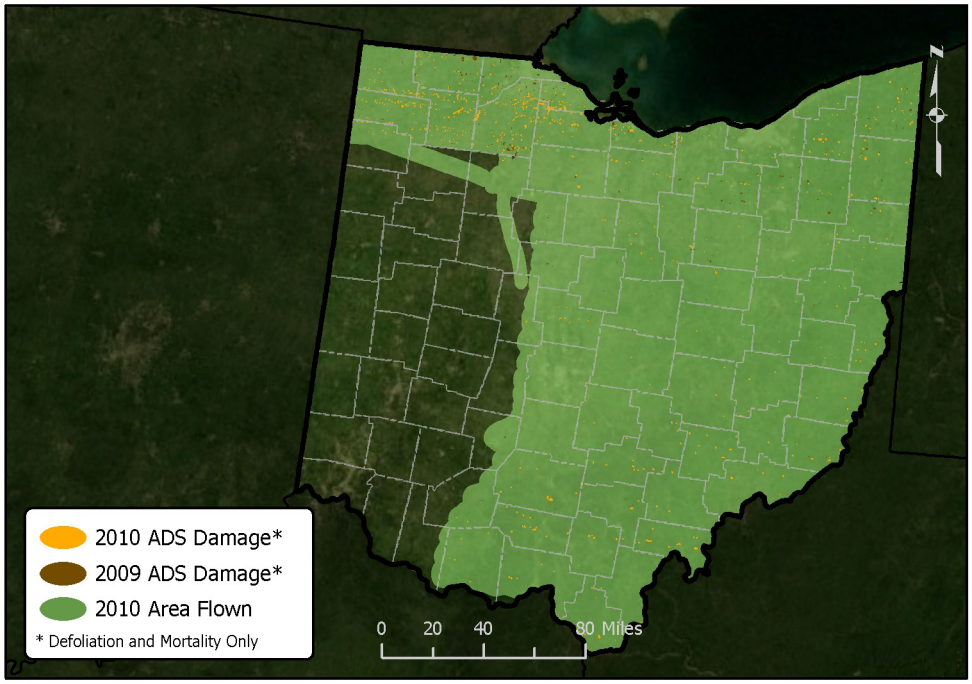
Forest Health Programs

State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.



Aerial Surveys

Of the acreage flown in Ohio's aerial detection survey in 2010, 63,326 acres were damaged. Approximately 40 percent of this damage (25,390 acres) was caused by the emerald ash borer. Flooding and high water contributed to 6,125 acres of damage, and the locust leafminer accounted for 5,249 acres of damage. Other leading causes of damage included oak decline (4,180 acres), leaf skeletonizers (3,056 acres), hardwood anthracnose (2,619 acres), Dutch elm disease (2,229 acres), and herbicides (1,861 acres).



This map delineates aerial detection survey (ADS) results for Ohio in 2009 and 2010.

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 northwest Ohio, where the emerald ash borer had become established. Here 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 89 of these plans have been completed in Ohio.

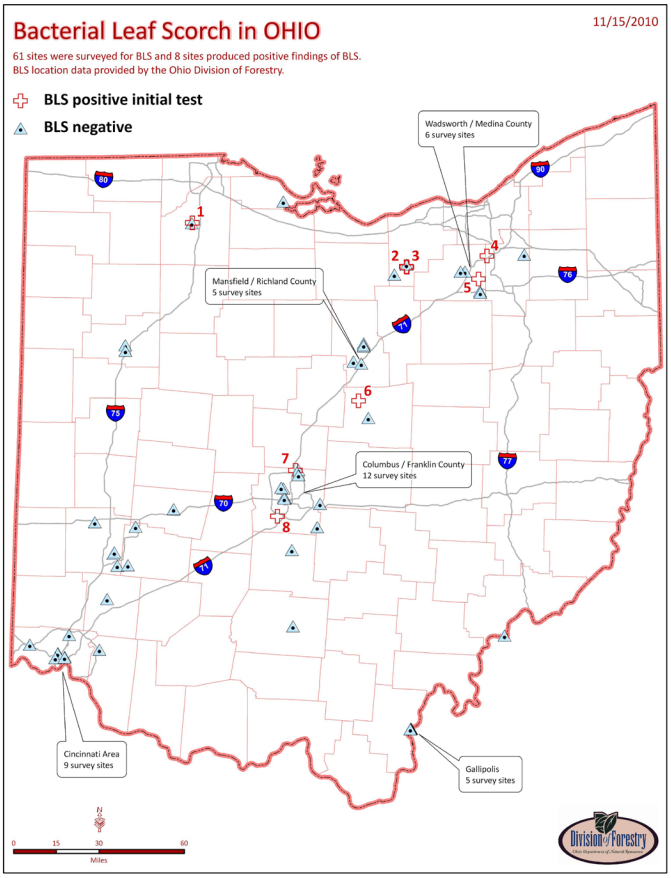
Special Issues

Asian Longhorned Beetle

Anoplophora glabripennis. In 2007, a live adult was found in northern Cincinnati (Hamilton County). In 2009, two warehouse workers found one live adult in an industrial district of northern Hamilton County. In March 2010, a survey was completed in southwestern Ohio that encompassed both areas where the beetles were previously found in warehouses. The survey covered 280 1-square-mile areas. Host trees were inspected in each 1-square-mile tract. No known infestations were found.

Bacterial Leaf Scorch

Xylella fastidiosa. There was a positive find in 2009 on a red oak tree in Franklin County in central Ohio. The Ohio Division of Forestry completed a preliminary survey in 2010. The survey included a training session for city foresters, a Web page for information and a collection protocol, and sample testing using an Ohio lab. There were 61 samples submitted, 8 of which were positive for bacterial leaf scorch. All positive samples were located in central and northern Ohio (see map below).



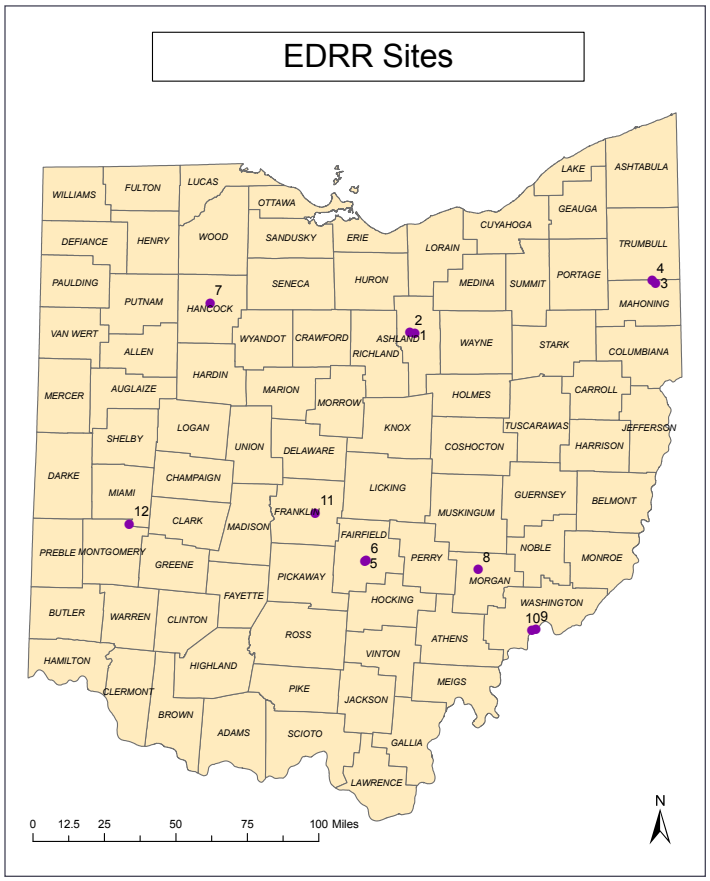
This map depicts the results of bacterial leaf scorch surveys in Ohio as of November 15, 2010.

Bark and Ambrosia Beetle Survey

Lindgren funnel traps were set up in 12 locations in Ohio to monitor the presence of bark and ambrosia beetles as part of the Early Detection Rapid Response (EDRR) effort. Eleven traps were set up in industrial locations where invasive insects are most likely to emerge from packaging materials, and one trap was set up in an inner-city park (see EDRR Sites on page 4). Forty-nine species of beetles were collected and identified among

the 4,930 insects collected. Twenty of these species were Ambrosia beetles, 10 of which were exotic.

A Lindgren funnel trap was set up in Ashland, OH, to monitor bark and Ambrosia beetles.



This map illustrates the location of Early Detection Rapid Response (EDRR) sites in Ohio for 2010.

Jumping Oak Gall

Neuroterus saltatorius was quite prevalent in portions of the State in 2010. It was reported in Adams, Athens, Gallia, Highland, Hocking, Jackson, Lawrence, Meigs, Monroe, Morgan, Noble, Perry, Pike, Ross, Vinton, and Washington counties. Oak discoloration was very visible during the aerial survey conducted in June in southern and south-central Ohio.

Sudden Oak Death (SOD) Stream Survey

Two stream sites were monitored. Samples showed no indication that SOD was present at these sites.

Rhododendron leaves in a mesh bag are placed in streams to sample for the presence of Phytophthora ramorum*, the plant pathogen that causes sudden oak death.*

Forest Pest Issues

Emerald Ash Borer (EAB)

Agrilus planipennis. In 2010, the Ohio Department of Agriculture quarantined the entire State, with known infestations occurring in 53 of the 88 counties. EAB is suspected to be present in many other areas of the State. The Ohio Department of Natural Resources, 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. Communities and property owners across the State are now burdened with standing dead ash trees.

Gypsy Moth

In 2010, the gypsy moth seemed to be on the decrease. Damage was observed during aerial survey and ground-checking efforts in two new counties.

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 we experienced short-term dry conditions in 2008, wet soils during the past 4 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 overstocked 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. Nine counties reported the presence of pine bark adelgid this year. 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 that time, the 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 case of BBD confirmed in Ohio. While the BBD fungus was not found at any new sites, beech scale is still easily found in several northeastern Ohio counties, including Portage, Cuyahoga, Trumbull, Lake, and Geauga.

White Oak Decline (WOD)

White oak mortality has continued through 2010, requiring continued salvage of dead and dying white oak trees in some areas. For 2010, foresters in 19 of Ohio's 88 counties reported white oak decline. WOD was reported in nine western counties, one northeastern county, and numerous southern counties in Ohio. 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.), 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)

This year, HWA was found on landscape trees in Cuyahoga and Franklin Counties. The Cuyahoga County tree is being treated and the Franklin County tree was destroyed. Nursery inspectors made inspections in all but two counties: Auglaize and Hardin. In 2011, monitoring will continue with surveys in 13 counties to determine the presence or absence of HWA and other pests in naturally occurring hemlock stands.

Forest Health Monitoring

Each year, the Ohio Division of Forestry and the Ohio Department of Agriculture cooperatively conduct an aerial survey over the majority of the State to survey Ohio's forest health. Five- and three-minute lines were flown in an east-to-west direction. This year's survey began on June 7 and concluded on June 25. For each flight, two observers were equipped with a computer containing a GIS/GPS mapping system. One thousand one hundred fifty-four sites were identified from the air that had discoloration, defoliation, or mortality. Ground truthing efforts were made at about 40 percent of these sites.

Forest managers, service foresters, and urban foresters periodically asked for assistance and provided input related to forest health issues throughout the year.

A tornado that touched down on June 5, 2010, made a swath about one-third of a mile wide through the heart of the 3,100-acre Maumee State Forest in northwestern Ohio, as shown in this aerial photograph.

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