

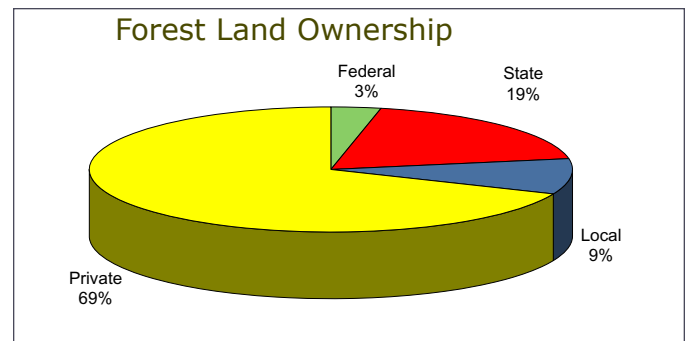
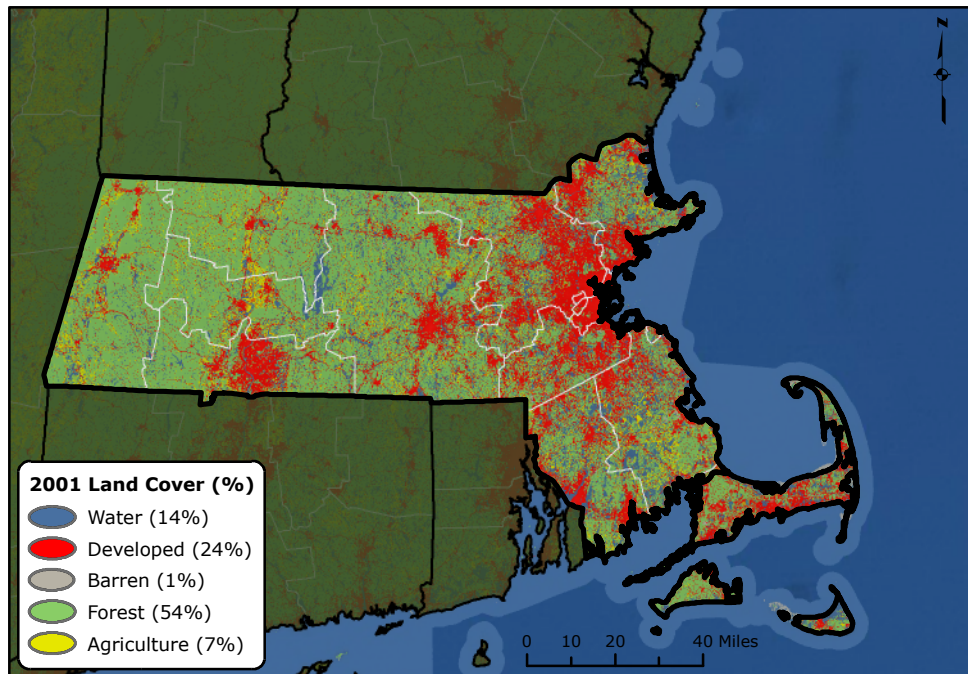
2009 Forest Health

MASSACHUSETTS *highlights*



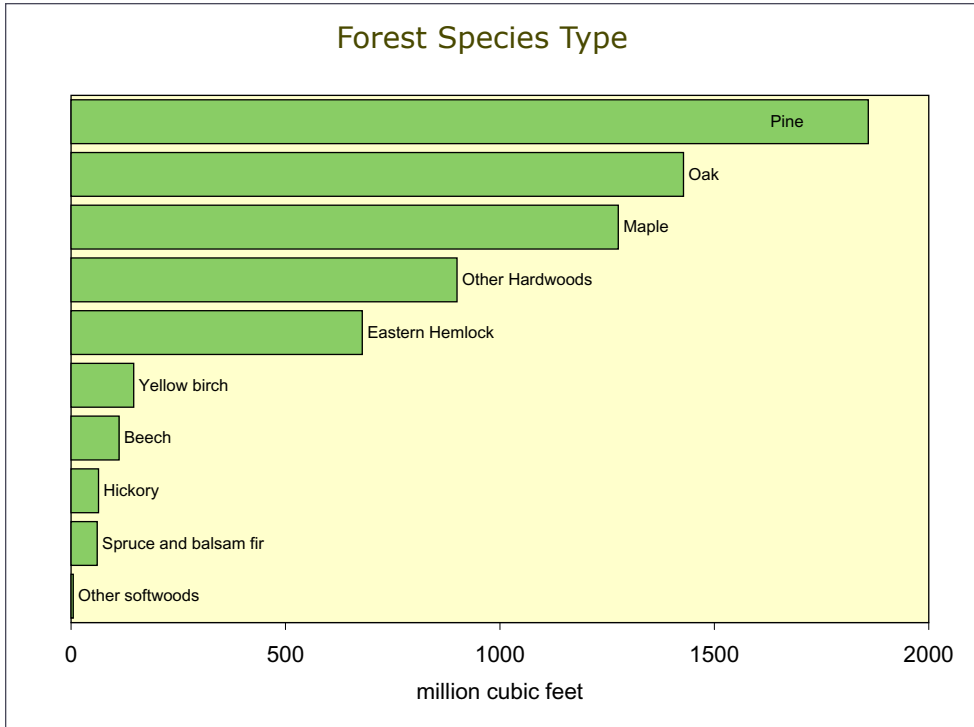
Forest Resource Summary

The forest resource of Massachusetts has great demands placed on it. Although Massachusetts is thought of as an urban State, about half of the land area is forested. This forested area is managed for a multitude of purposes, including recreation, water quality, wildlife habitat, and a forest product industry. About two-thirds of the forest lands in Massachusetts are privately owned—69 percent—with only 3 percent in Federal ownership. However, 28 percent is in State and local town ownership, which is quite unique in the region. The latest Massachusetts forest inventory estimates that 54 percent of the State is forested, approximately 3.2 million acres. The forest resource is made up of a variety of forest types, mostly pine, oak, maples, other hardwoods, and eastern hemlock.



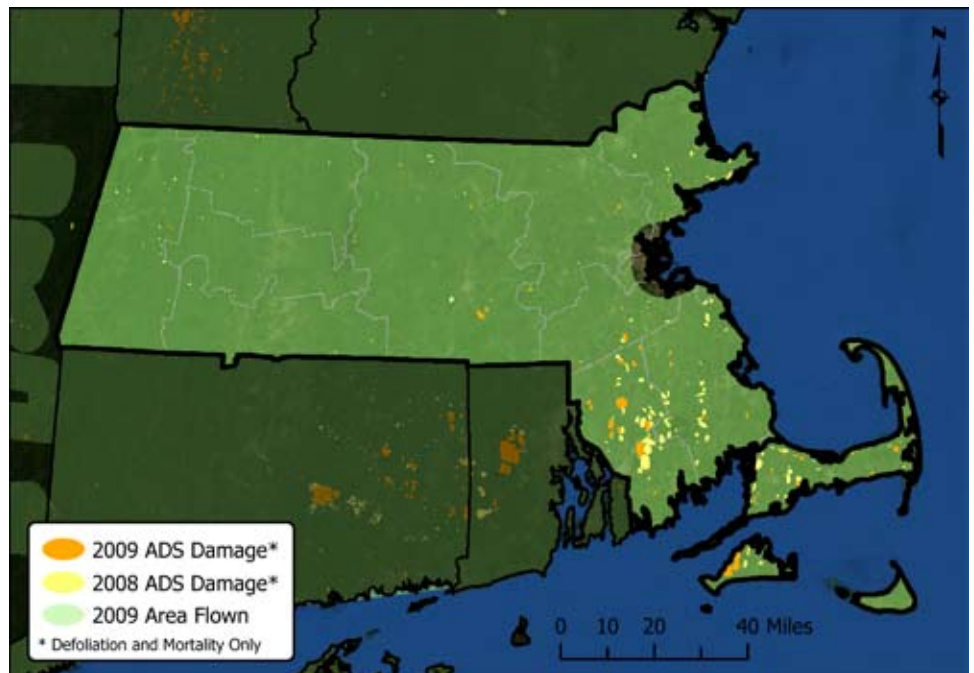
Forest Health Programs in the Northeast

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

In Massachusetts, over 33,300 acres of damage were reported. The major type of tree damage observed from the air was mortality caused by insect defoliators. Mortality from winter moth defoliation was found on 15,680 acres and gypsy moth accounted for 2,561 acres of mortality. The second leading type of damage, which was observed on 8,989 acres, was branch breakage caused by snow and ice from the December 2008 ice storm in New England.



This map delineates aerial detection survey (ADS) results for Massachusetts in 2008 and 2009.

Forest Damage

Defoliators annually affect forest resources throughout Massachusetts. The **winter moth**, a recently introduced forest pest, caused a total of 18,900 acres of defoliation in Middlesex, Essex, Plymouth, Barnstable, Bristol, and Norfolk Counties. Northern red oak, American elm, red maple, basswood, poplar, apple, and willow were affected. In Bristol and Norfolk Counties, about 16,000 acres of oak mortality were observed. This tree mortality has been occurring over the last few years in an area that has been repeatedly defoliated by winter moth as well as gypsy moth and forest tent caterpillar. No defoliation was recorded this year from the **gypsy moth**; however, 2,500 acres of mortality caused by previous defoliation from this insect were documented in Bristol and Barnstable Counties.

There was also scattered defoliation from native insects. The **eastern tent caterpillar** was observed statewide on roadside and ornamental pin oak and black cherry. The **oak skeletonizer** caused moderate to severe defoliation of northern red oak. About 190 acres containing maple and oak were completely defoliated by the **forest tent caterpillar** in western Worcester County.

The most significant introduced forest pest in the State is the **Asian longhorned beetle**, which was first detected in August 2008 in Worcester. As of December 2009, 16,421 trees have been identified as infested, and 25,335 infested or high-risk trees have been removed. A variety of infested tree species have been found in the area, including maples, elms, horsechestnut, and birch. The quarantine area now encompasses 74 square miles. Surveys and tree removal continue, and the replanting program has begun.

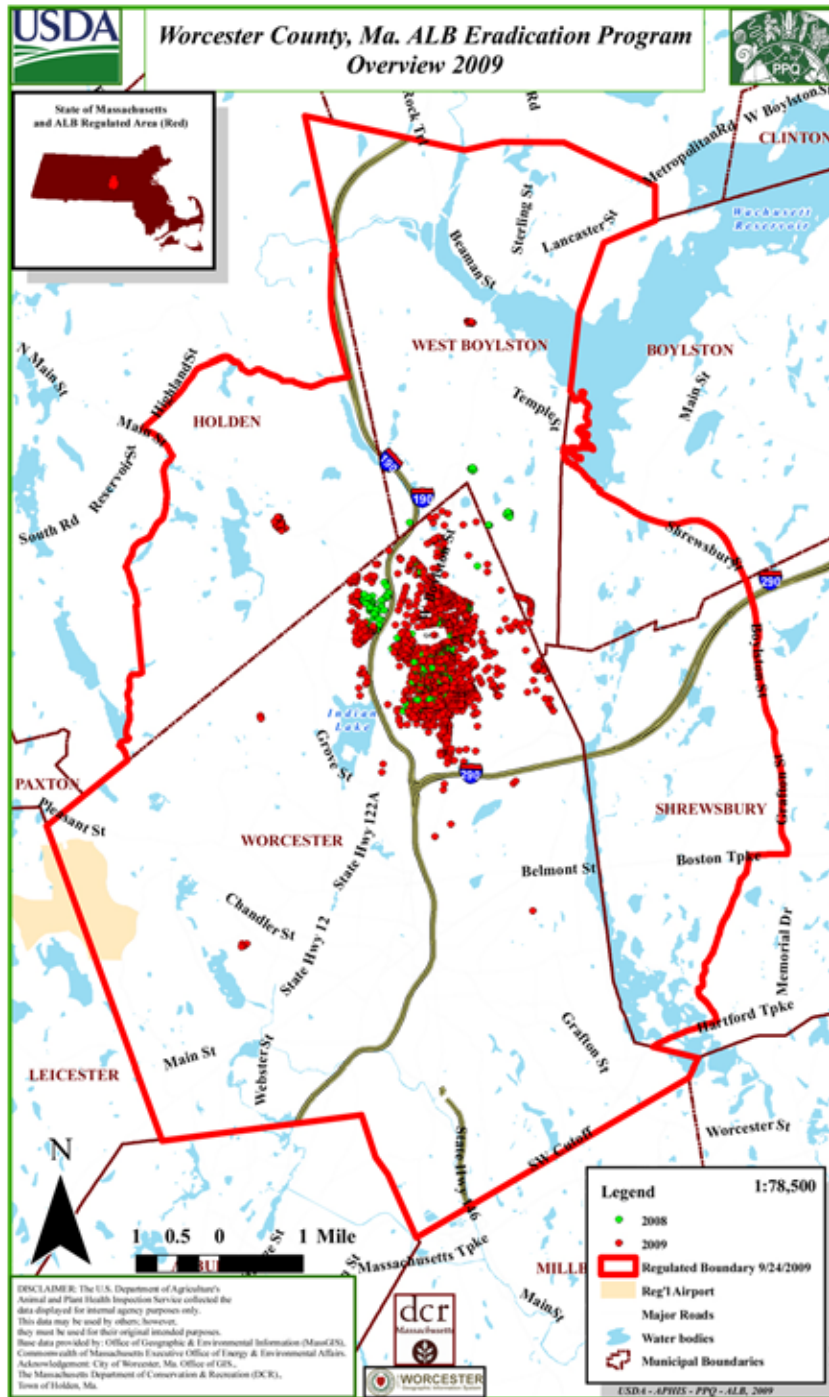


The Asian longhorned beetle.

Another introduced forest pest, the **hemlock woolly adelgid**, continues to be a concern on eastern hemlock throughout the State. One new eastern hemlock community was found to be infested in 2009. Predator release sites, established in an attempt at biological control, continue to be monitored. State personnel have been unable to recover progeny from either of the predators that have been released; however, a University of Massachusetts researcher has reportedly recovered *Laricobius* beetles. An associated hemlock pest, the **elongate hemlock scale**, appears to be increasing. In southern Berkshire County, where this scale was first observed, approximately 35 acres of mortality were documented.

Red pine scale continues to spread, with approximately 337 acres of mortality in red pine plantations being observed. In addition, surveys identified 619 acres of red pine discoloration. Laboratory tests at the University of Massachusetts confirmed the presence of ***Diplodia pinea*** as the causal agent. Another 40 acres of red pine mortality were observed, which is also believed to be caused by this pathogen.

During the year, tree damage from several weather-related events occurred. In June, southern Worcester County experienced the most severe **hail storm** in recent memory. Approximately 1,300 acres had twig and foliar damage. In some cases, golf ball-size hail was observed. In December 2008, a significant **ice storm** caused approximately 9,000 acres of stem and branch breakage in Berkshire, Franklin, Middlesex, and Worcester Counties. This area overlapped the Asian longhorned beetle quarantine area, causing concerns over removal of broken infested material.



Massachusetts Department of
Conservation & Recreation
Division of Forests & Parks
51 Military Rd.
PO Box 484
Amherst, MA 01004-0484
413.253.1798 Ex. 204
Web site: www.mass.gov/dcr/



Forest Health Protection
USDA Forest Service
271 Mast Rd.
Durham, NH 03824
603.868.7708
Web site: www.na.fs.fed.us

January 2010

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