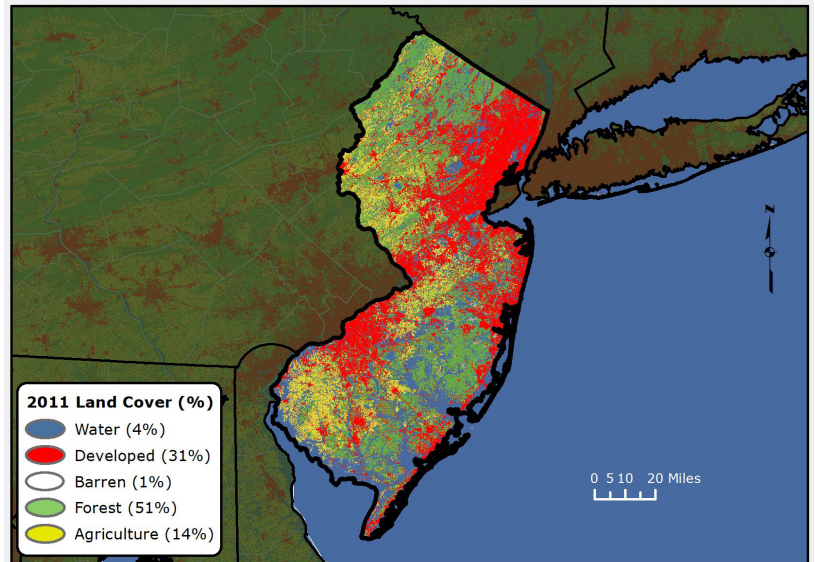




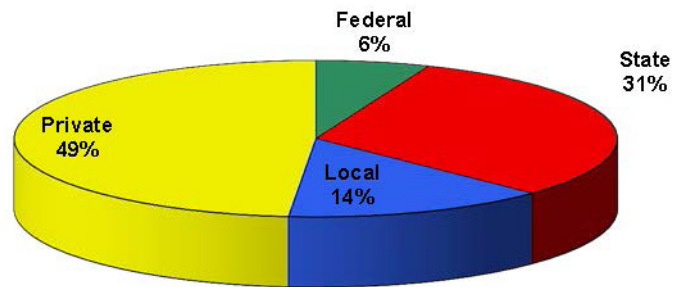
2015 Forest Health NEW JERSEY highlights

Forest Resource Summary

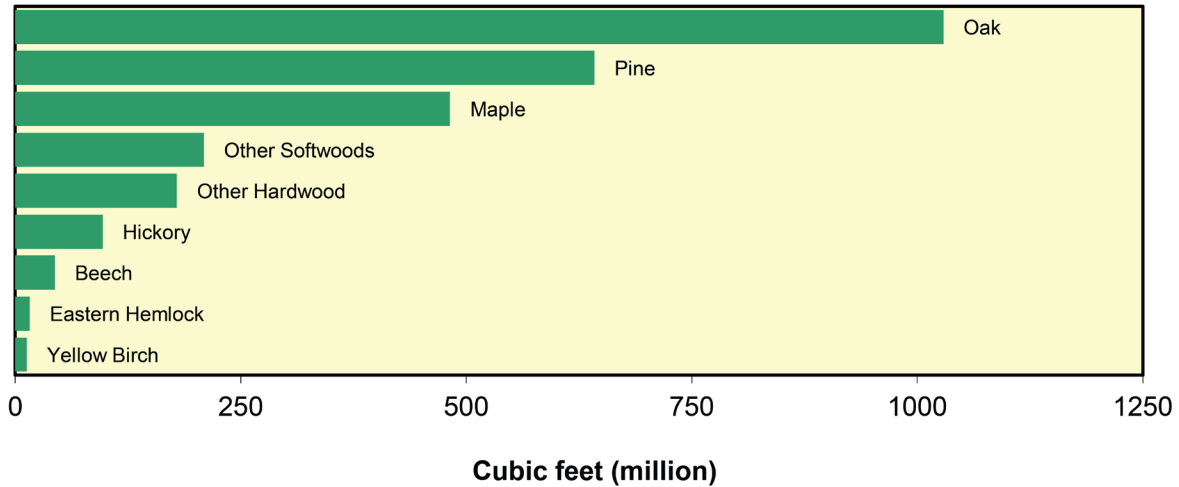
Even though New Jersey is the most densely populated State in the Nation, its forest covers approximately 2 million acres (42 percent) of the State's 4.1 million acres. Forest cover represents the largest single land use in New Jersey. The State has a diversity of forest tree species, with pitch pine and white oak/red oak/hickory representing the two dominant forest types by area. The northern counties (Sussex, Warren, Hunterdon, and Morris) are dominated by northern hardwoods, white pine, eastern hemlock, mixed oak, and a variety of other species, including isolated stands of red spruce. The southern counties (Cape May, Atlantic, Cumberland, and Burlington) are dominated by southern yellow pines such as pitch and shortleaf and, to a lesser extent, Virginia and loblolly. Various oak species such as southern red, scarlet, chestnut, and white are also prevalent. In an urban State such as New Jersey, it is critical to maintain forested areas and to manage them properly. Through forest health monitoring and sustainable planning, the State can take action to minimize or eliminate the detrimental effects of forest health-related issues.



Forest Land Ownership in New Jersey, 2012

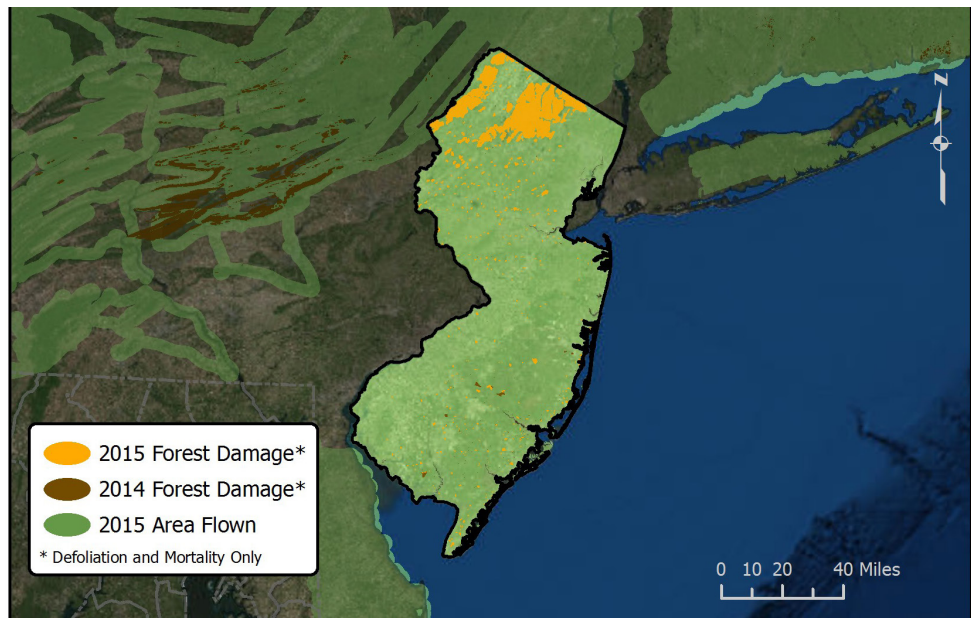


Net Volume of Growing Stock on Timberland by Species in New Jersey, 2012



Forest Health Surveys

New Jersey forest health was surveyed in 2015 using both ground and aerial surveys. In 2015, the gypsy moth defoliated the greatest acreage (285,752.4 acres), mostly in northern New Jersey. A Hesperiidae moth defoliated 5,274.6 acres, southern pine beetle mortality was found on 5,203.6 acres, and wildfire mortality was detected on 1,657.7 acres of pitch pine.



Forest health survey observations in New Jersey in 2014 and 2015.

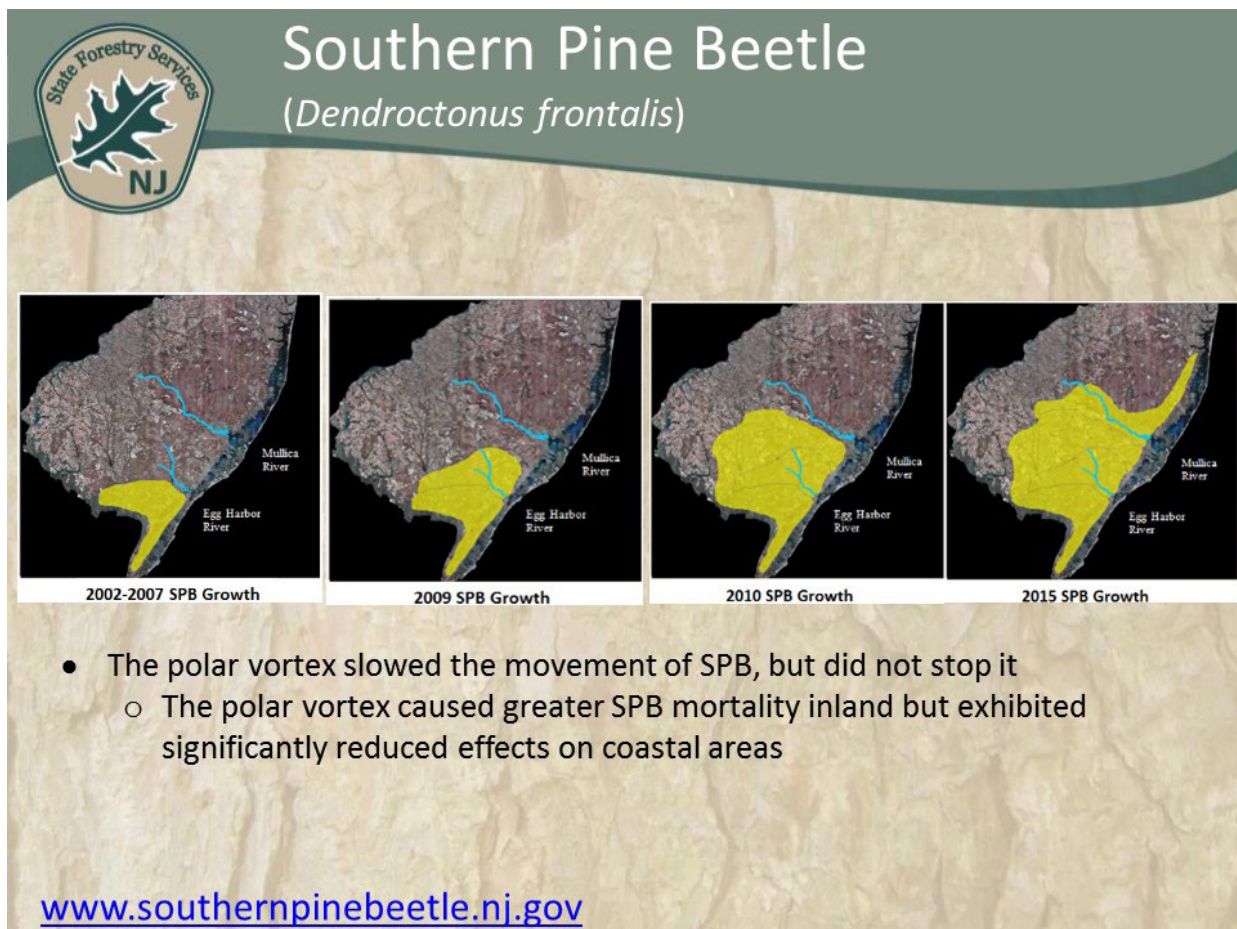
Forest Pest Issues

Southern Pine Beetle

Southern pine beetle (SPB) is surveyed by aerial detection and select ground verifications. SPB damage is identified by pine tree crown color that changes from yellow to red to brown, typically over contiguous areas. Additional symptoms associated with SPB include pine mortality, crown fragmentation, pitch tubes, exit holes, and larval galleries. In New Jersey, SPB mainly affects pitch pine (*Pinus rigida*), shortleaf pine (*P. echinata*), and Virginia pine (*P. virginiana*); it has also been observed infesting Norway spruce (*Picea abies*) and white pine (*Pinus strobus*). In 2015, SPB impacted 2,369 acres; this represents a static population from 2014. SPB is still mainly found in southern New Jersey counties; however, it has moved eastward and slightly north along the coast, most likely due to the two consecutive cold winters.

The New Jersey State Forestry Services (NJSFS) has suppressed SPB on a total of 9.6 acres using the cut-and-leave method in Burlington, Atlantic, and Ocean Counties.

SPB continues to infest New Jersey's native pine species on public and private property. NJSFS continues to ground truth prioritized sites on lands owned by the New Jersey Department of Environmental Protection (DEP) and address those areas for suppression. Some landowners in the Forest Stewardship Program have updated their management plans to include SPB suppression activities. NJSFS performs extensive trapping, select ground verification, and aerial surveys annually. They deploy funnel traps in six southern counties at the rate of three per county for a total of 18 funnel traps. All trapped insects are sent to the U.S. Forest Service Morgantown Field Office for identification.



Southern pine beetle population growth in southern New Jersey from 2002 to 2015.

Sirex Woodwasp

No Sirex traps were hung in 2015. Some visual observations were made, but no signs of Sirex were detected.

Asian Longhorned Beetle

The Middlesex and Union County ALB quarantine zone was deregulated in 2013. Asian-longhorned beetle (ALB) is now considered to be eradicated from these areas. No additional ALB infestations were found in 2015.

Gypsy Moth

Gypsy moth activity increased significantly in 2015. Based on the New Jersey Department of Agriculture's aerial survey detection program, gypsy moth defoliated approximately 290,000 acres in 2015, a 288,670-acre increase from 2014. The majority of the defoliation was seen in the northern part of the State. Egg mass surveys on DEP-owned lands (including State Parks and Forestry parcels, Wildlife Management Areas, and Nature Land Trust Preserves) are ongoing; however, areas with significant egg mass numbers have already been identified. A spray program on State DEP lands will most likely be proposed in 2016.



Gypsy Moth (*Lymantria dispar*)

- **290,696** acres defoliated in 2015



Gypsy moth defoliation in New Jersey.

Emerald Ash Borer

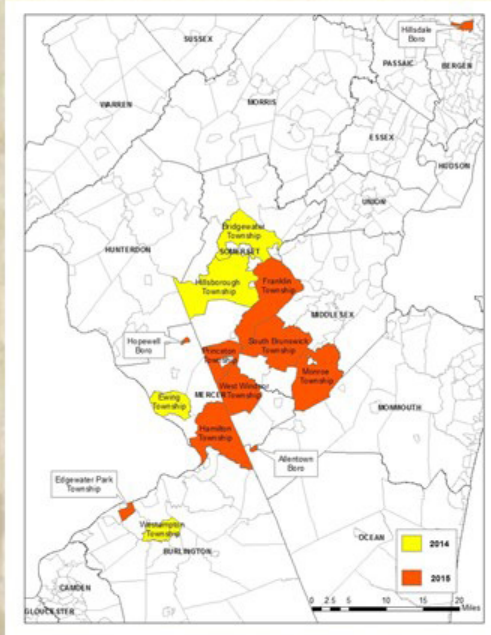
In 2015, the emerald ash borer (EAB) was positively identified in Bergen County (Hillsdale Borough); Burlington County (Edgewater Park T.); Mercer County (Hamilton T., Princeton T., Hopewell Borough, West Windsor T.); Middlesex County (Monroe T., South Brunswick T.); Monmouth County (Allentown Borough); and Somerset County (Franklin T.). All of these finds were through trap catches or adult insect finds. The entire State is included under the Federal EAB quarantine.

NJSFS continued to work cooperatively with the New Jersey Department of Agriculture (NJDA) to deploy 81 purple, triangular EAB traps and 12 green funnel traps statewide in the summer of 2015. NJSFS hung 2 purple traps and 12 green funnel traps on State-owned lands. Of those, five of the EAB trap trees were girdled. The trap trees were cut in October 2015 and will be peeled in November/December 2015 to look for EAB life stages. The traps were deployed in May/June, inspected and had the lure changed in June/July, and inspected and taken down in August.



Emerald Ash Borer (*Agrilus planipennis*)

EAB detections in NJ in 2014-2015



EAB detection tree with green funnel trap. Detection trees were cut down in October 2015 and will be peeled in November/December 2015.

www.emeraldashborer.nj.gov

Map of EAB detections in New Jersey in 2014 and 2015. A girdled EAB detection tree has a green funnel trap hanging from one of its branches.



Emerald Ash Borer (*Agrilus planipennis*)

Chemically treated 29 ash with
Tree-age in a State Park



Twenty-nine ash trees were chemically treated with Tree-age® insecticide in a New Jersey State Park.

NJSFS and NJDA also worked cooperatively to release two parasitoids, *Oobius* and *Tetrastichus*, at four sites (Franklin T., Bridgewater T., and Hillsborough in Somerset County; Ewing T. in Mercer County).

Six trees were selected at each site; each site had three releases, for a total of 18 releases at each site, between September 15, 2015, and October 14, 2015.



Emerald Ash Borer (*Agrilus planipennis*)

2015 EAB Biocontrol releases in Somerset County (Franklin T., Bridgewater T., and Hillsborough) and Mercer County (Ewing T.).

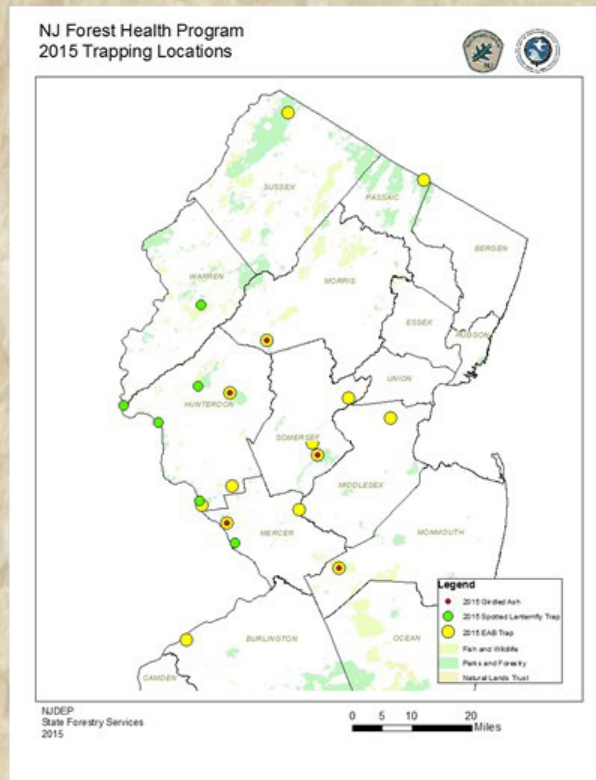


Two biocontrol parasitoids were released in New Jersey in 2015.



Emerald Ash Borer (*Agrilus planipennis*) Spotted Lanternfly (*Lycorma delicatula*)

2015 EAB and Spotted Lanternfly
trap locations



Map of both EAB and spotted lanternfly trap locations in 2015.

Spotted Lanternfly

Spotted lanternfly was detected in Berks County, Pennsylvania, in 2014, the first find in North America. Due to its proximity to New Jersey, NJSFS deployed six sticky band traps on ailanthus trees along the western State border. No spotted lanternflies were detected.

Beech Bark Disease

In 2015, NJSFS continued to cooperate with the U.S. Forest Service to monitor beech stands across the State. American beech occurs on approximately 205,000 acres throughout New Jersey, with the

majority found in northern New Jersey and a component in the southern half of the State along the Delaware River corridor. The majority of beech found in the northern counties have been infested and infected by both the scale and fungus, respectively. At this time, no beech bark disease has been found in central or southern New Jersey. In addition, scale has not yet been identified in the southern half of the State; however, some small scale populations have been identified in the central counties.

Hemlock Woolly Adelgid

Nearly all hemlocks in New Jersey, which cover approximately 25,000 acres, have been infested with hemlock woolly adelgid (HWA) to some extent. Eastern hemlock is designated as a priority forest resource in the New Jersey Statewide Forest Resource Assessment & Strategies. NJSFS was awarded a grant to chemically treat select hemlock areas and to prepare a hemlock resource assessment. Treatments began in the spring of 2011 and continued in 2012, 2013, 2014, and 2015. In 2015, a total of 70 trees were treated in Sussex County (36 in Swartswood State Forest and 34 in Wawayanda State Park). A combination of treatment methods included soil injection and tablets. NJSFS also participated in an HWA winter mortality study in cooperation with NJDA. Branch samples from five sites were observed for HWA mortality in February and in June 2015. Results were sent to Virginia Tech. NJSFS and NJDA are jointly participating in the HWA-resistant hemlock planting study with the University of Rhode Island. NJDA continues to monitor and manage the biocontrol agent *Laricobius nigrinus*.

Bacterial Leaf Scorch

Bacterial leaf scorch (BLS) continues to occur across the State. BLS was detected at Liberty State Park, thus confirming BLS in Hudson County.

Thousand Cankers Disease

Although thousand cankers disease has not been detected in New Jersey, it was detected in Bucks County, Pennsylvania, in 2011. To date, no walnut twig beetles have been detected in New Jersey. Visual inspections also continue.

Ash Yellows

Ash yellows continues to occur in New Jersey.

Eastern Tent Caterpillar

In 2015, NJSFS received numerous calls and emails from concerned citizens regarding an eastern tent caterpillar (ETC) outbreak on their property or on adjacent lands. Aerial surveys also detected ETC damage in southern New Jersey. We received correspondence from the following areas: Maple Shade and Southampton (Burlington County); Glassboro, Mullica Hill, and Swedesboro (Gloucester County); Middletown/ Belford (Monmouth County); Wayne (Passaic County); and Sunrise Mountain Road, Stokes State Forest (Sussex County). No specific survey for ETC is performed in the State, so populations in other parts of the State may have been present but not reported.

Fall Cankerworm

Although fall cankerworm is a native insect that naturally occurs in New Jersey, pockets of heavy populations were seen in Franklin Township (Somerset County) and Piscataway (Middlesex County). New Jersey does not specifically survey for fall cankerworm, so populations in other parts of the State may have been present but not reported.

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(1 March 2016).



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.

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