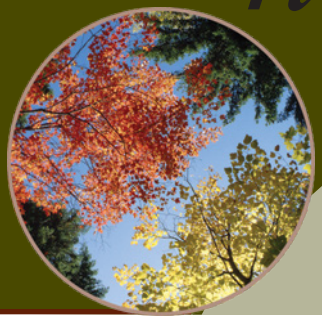
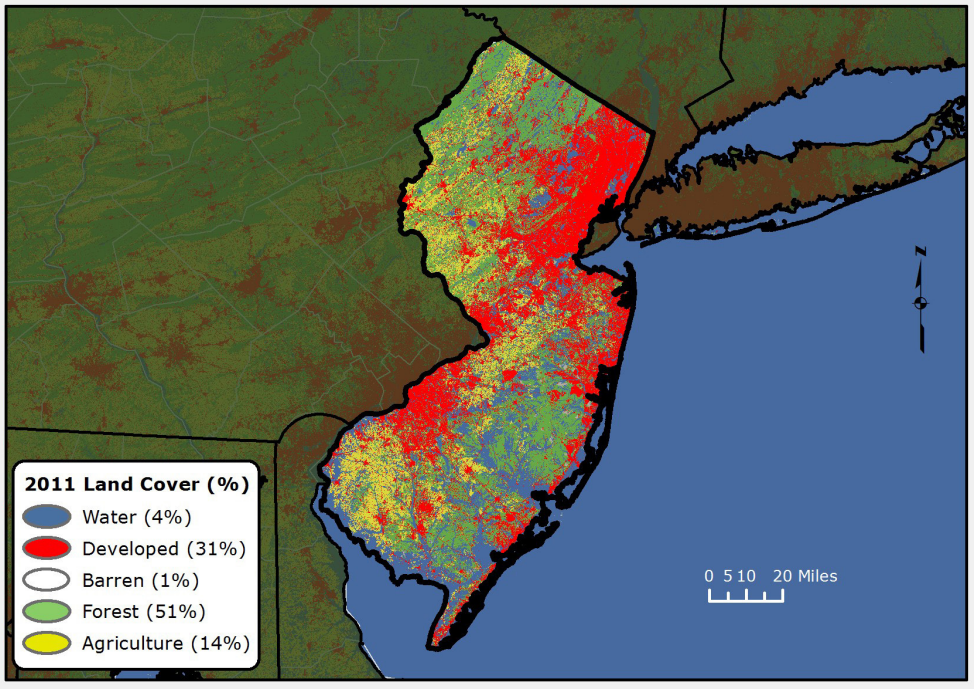
2014 Forest Health highlights

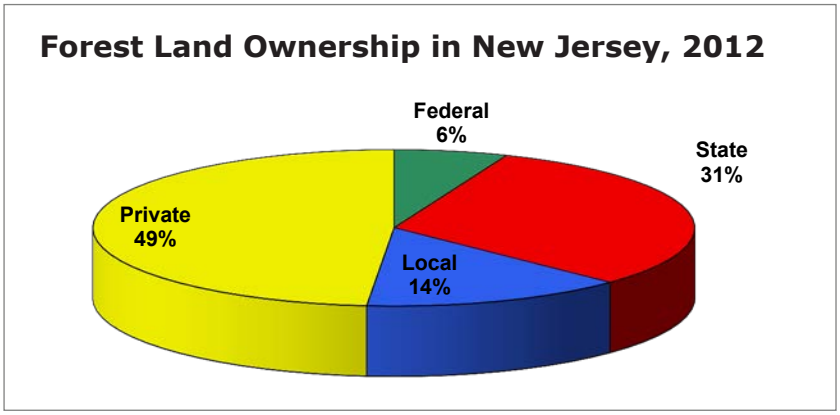
NEW JERSEY



Forest Resource Summary

New Jersey is the most densely populated State in the Nation and yet 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 with a diversity of forest tree species, with pitch pine and white oak/red oak/ hickory representing the two dominant forest types by area in the State. The northern counties, such as 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. Southern counties such as 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,

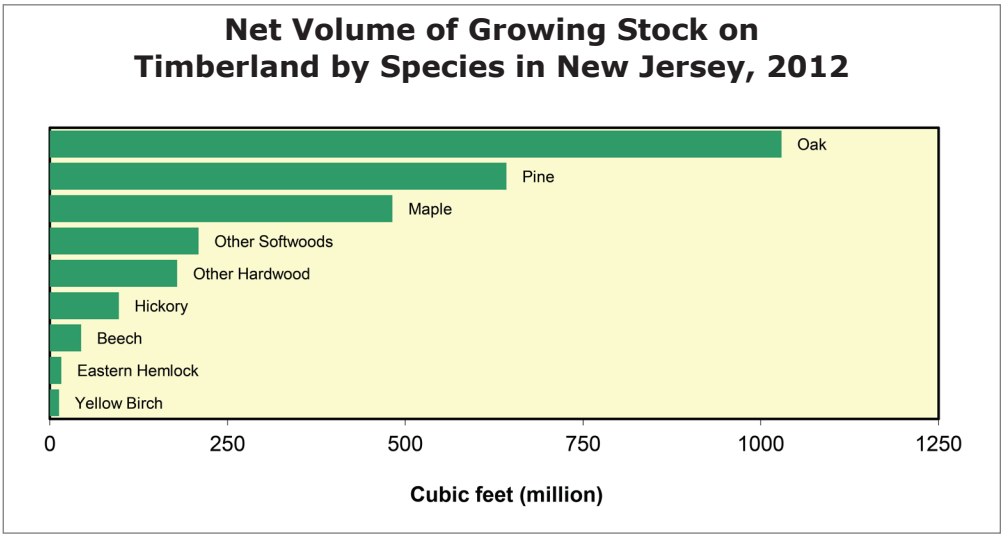




Forest Health Programs

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.

chestnut, and white are also prevalent. In an urban State such as New Jersey, it is critical to maintain forested areas and manage them properly. Through forest health monitoring and sustainable planning, action can be undertaken to minimize or eliminate the detrimental effects of forest health-related issues.



Forest Pest Issues

Southern Pine Beetle (SPB)

SPB is surveyed using aerial detection and select ground verifications. SPB damage is identified by pine tree crown color changing 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 2014, SPB impacted 2,016 acres; this represents a decrease of approximately 3,630 acres from 2013. SPB is still mainly found in the southern counties of the State.

The New Jersey Forest Service (NJFS) has suppressed SPB on a total of 30.5 acres using the cut-and-leave method in Burlington, Atlantic, and Cape May Counties.

SPB continues to infest New Jersey's native pine species on public and private property. NJFS 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 suppression activities. NJFS performs extensive trapping, select ground verification, and aerial surveys annually. Three funnel traps are deployed in each of six southern counties for a total of 18 traps. All trapped insects are sent to the U.S. Forest Service Morgantown Field Office for identification.

Aerial view of SPB damage in New Jersey.

Sirex Woodwasp

No Sirex traps were hung in 2014. Some visual observations were made, but no signs of Sirex were detected.

Asian Longhorned Beetle (ALB)

The Middlesex and Union County ALB quarantine zone was deregulated in 2013. ALB is now considered to be eradicated from these areas. No additional ALB infestations were found in 2014.

Gypsy Moth

Gypsy moth activity remains low in 2014 and appears to be decreasing when compared to 2013. Based on the New Jersey Department of Agriculture (NJDA) aerial survey detection program, approximately 1,330 acres were defoliated by gypsy moth in 2014, a 1,557-acre decrease from 2013. Egg mass surveys on lands owned by the New Jersey DEP (including State Parks and Forestry parcels, Wildlife Management Areas, and Nature Land Trust Preserves) are currently pending. Egg mass surveys will likely take place in Morris, Passaic, and Hunterdon Counties because these are areas where gypsy moth activity has been observed.

Emerald Ash Borer (EAB)

In May 2014, EAB was positively identified in Somerset County. An arborist working in the area first detected the infested trees. Then in September, EAB was found on purple prism traps in Burlington and Mercer Counties. The entire State is included under the Federal EAB quarantine. NJFS continued to work cooperatively with NJDA to deploy approximately 415 purple, triangular EAB traps statewide in the summer of 2014. NJFS hung 22 of those traps on State-owned lands and deployed an additional 3 traps on State lands on girdled trap trees. These trap trees will be cut and peeled in January/February of 2015 to look for EAB life stages. The two trap trees from 2013 were cut and peeled, and no signs of EAB were found. The traps were deployed in May/June, inspected and had the lure changed in June/July, and inspected and taken down in August.

EAB larval galleries.

Beech Bark Disease (BBD)

In 2014, an additional permanent plot was added to last year's list, making a total of 8 permanent plots (4 in northern New Jersey, 3 in central New Jersey, and 1 in the south). New Jersey continues to cooperate with the U.S. Forest Service to monitor beech stands across the State. Beech health and possible BBD resistance were also recorded. 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 has been infested and infected by the scale and fungus, respectively. At this time, no BBD has been found in central or southern New Jersey. The scale has also 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 (HWA)

Nearly all hemlocks in New Jersey, which grow on approximately 25,000 acres, have been infested with HWA to some extent. Eastern hemlock is designated as a priority forest resource in the New Jersey Statewide Forest Resource Assessment and Strategies document. NJFS was awarded a grant to chemically treat trees in select hemlock areas and to prepare a hemlock resource assessment. Treatments began in the spring of 2011 and continued in 2012, 2013, and 2014. In 2014, a total of 237 trees were treated in Sussex, Passaic, and Mercer Counties (12 in Ringwood State Park, 118 in Stokes State Forest, 45 in Swartswood State Forest, 27 in Washington Crossing State Park, 22 in Kittatinny Valley State Park, and 13 in Princeton Battlefield). A combination of treatment methods included soil injection, trunk injection (with use of a contractor), and tablets. NJFS 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 2014. Results were sent to Virginia Tech. NJDA continues to monitor and manage the HWA biocontrol agent *Laricobius nigrinus*.

Hemlock trees are chemically treated for HWA via trunk injection.

Thousand Cankers Disease (TCD)

Although TCD has not been detected in New Jersey, TCD was detected in 2011 in Bucks County, Pennsylvania. Due to the proximity of this detection to New Jersey, NJDA set up eight traps for the walnut twig beetle in Mercer County (two traps), Hunterdon County (five traps), and Passaic County (one trap) in April. The traps were taken down in June 2014 and all samples were submitted to the Rutgers Plant Diagnostic Lab and NJDA. To date, no walnut twig beetles have been detected in New Jersey. Visual inspections also continue.

References

Land Cover Map:

Jin, S.; Yang, L.; Danielson, P.; Homer, C.; Fry, J.; Xian, G. 2013. A comprehensive change detection method for updating the National Land Cover Database to circa 2011. Remote Sensing of Environment. 132: 159–175.

Forest Land Area by Ownership:

Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A. 2014. Forest resources of the United States, 2012: a technical document supporting the Forest Service 2015 update of the RPA Assessment. Gen. Tech. Rep. WO–91. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. Table 2.

Net Volume of Growing Stock on Timberland by Species:

Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A. 2014. Forest resources of the United States, 2012: a technical document supporting the Forest Service 2015 update of the RPA Assessment. Gen. Tech. Rep. WO–91. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. Table 23 & 24.

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