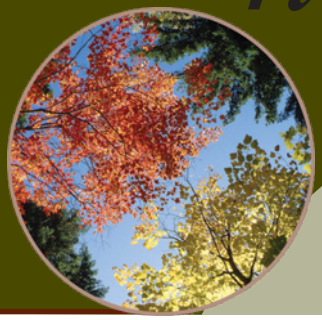
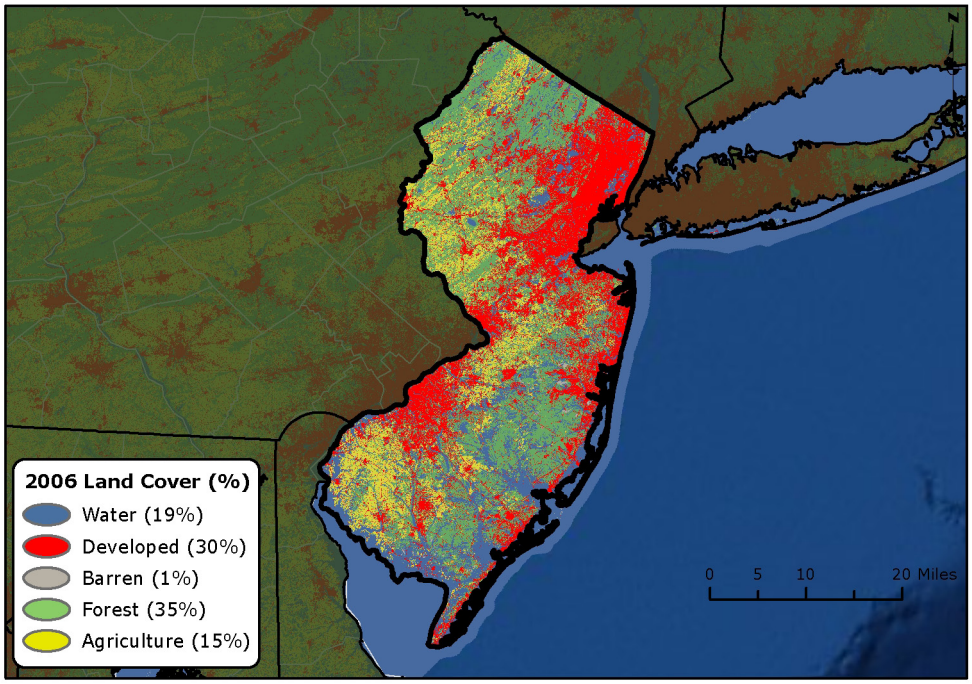
2011 Forest Health highlights

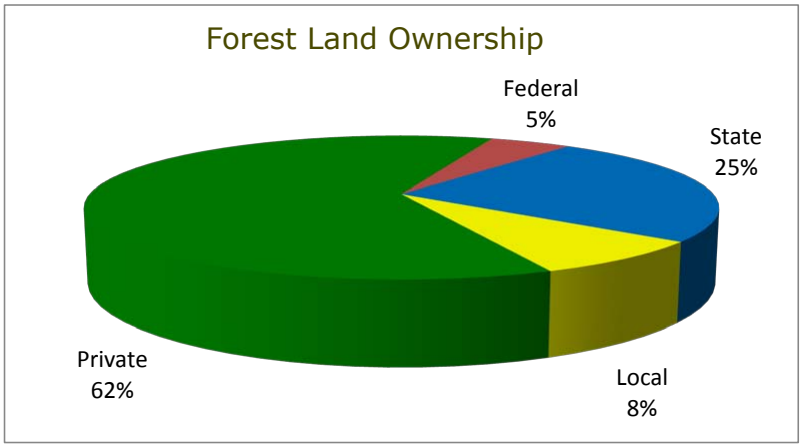
NEW JERSEY



The Resource

New Jersey is the most densely populated State in the Nation, yet its forests cover 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. Pitch pine and a white oak-red oak-hickory mix represent the two dominant forest types by area in the State. 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

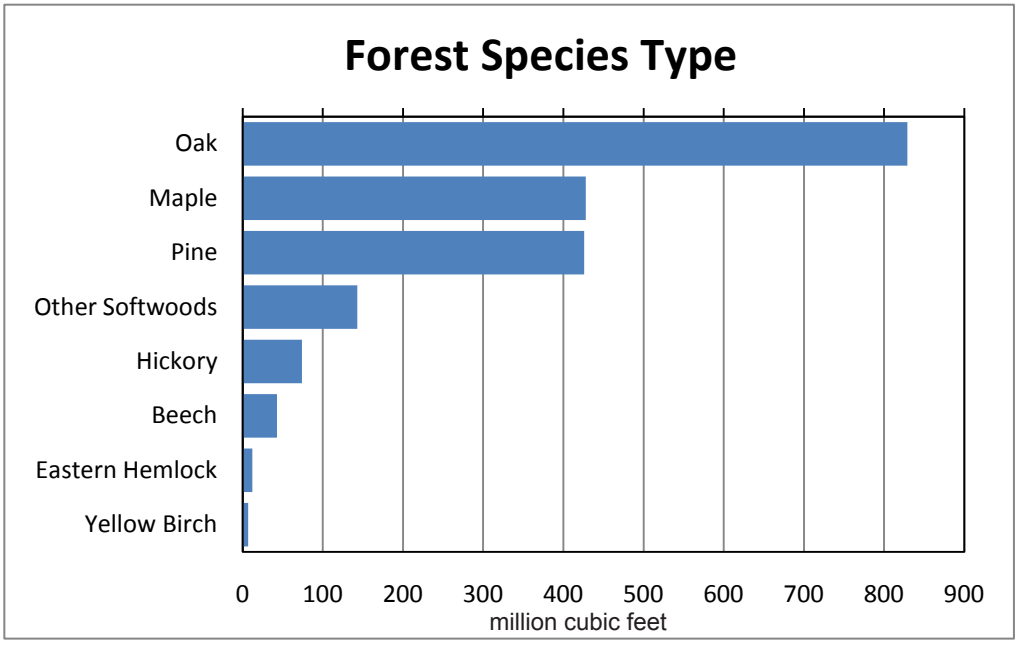




Forest Health Programs

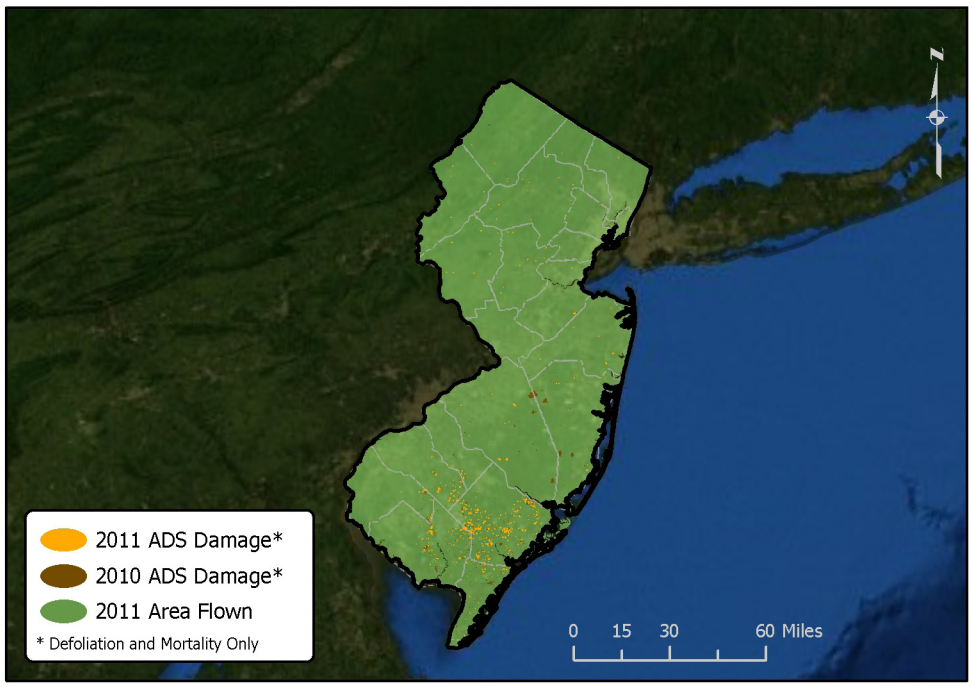
State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.

lesser extent Virginia and loblolly. A variety of oak species, including southern red, scarlet, chestnut, and white oak, 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, action can be undertaken to minimize or eliminate the detrimental effects of forest health-related issues.



Aerial Surveys

According to aerial detection survey results for New Jersey in 2011, 8,473 acres were damaged. Most of this damage (6,789 acres) was attributed to the southern pine beetle. Gypsy moth damaged 1,313 acres, and wildfire caused 371 acres of damage.



This map delineates aerial detection survey (ADS) results for New Jersey in 2011 and 2010.

Forest Pest Issues

Southern Pine Beetle

The southern pine beetle (SPB) is surveyed using aerial detection and select ground verifications. The aerial survey covers the southern half of the State, including the Pinelands Region, which totals approximately 1.3 million acres. SPB damage is identified by a change in the color of pine tree crowns 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*), but SPB has been observed infesting Norway spruce (*Picea abies*) and white pine (*Pinus strobus*). The 2011 aerial flight data revealed that SPB impacted 6,789 acres. This represents a decrease of approximately 7,200 acres from 2010. SPB is still mainly found in the southern counties of the State, including Atlantic, Cape May, Cumberland, Gloucester, and Salem. The SPB was not detected in Ocean and Monmouth Counties this year, even though it was detected in these counties last year.

Aerial surveillance is used to detect southern pine beetle infestations.

Pitch tubes are one symptom of a southern pine beetle infestation.

The SPB continues to infest New Jersey's native pine species on public and private property. This year less than half of the infestations were located on lands owned by the New Jersey Department of Environmental Protection (DEP) and the remainder was located on non-DEP owned lands, including private, municipal, county, and Federal properties. Some landowners in the Forest Stewardship Program have updated their management plans to include SPB suppression activities. The New Jersey Forest Service (NJFS) conducts extensive trapping, select ground verification, and aerial surveys annually. Funnel traps are deployed in six southern counties at the rate of three per county for a total of 18 traps. All trapped insects are sent to the U.S. Forest Service Morgantown Field Office for identification. This year, trapping continued until the first frost (November 1) to determine the number of SPB generations in New Jersey. The complete results of the trap survey are not yet available.

The NJFS continues to ground truth aerial survey data to determine areas to be suppressed, salvaged, and restored. Suppression actions were carried out on 48.4 acres of DEP-owned lands using the cut-and-leave method. State in-house sawyer crews treated 25.5 acres and contract vendors treated 22.9 acres. Treated sites are monitored for SPB breakouts.

The Community Forestry Program has reached out to 256 municipalities requesting an SPB liaison to coordinate SPB suppression in their towns. To date, 110 have responded with a liaison. In addition, 28 municipalities have been notified of specific SPB infestations detected through aerial surveys on non-DEP owned land within their municipality.

The NJFS continues to work with the Pinelands Commission regarding a process to expedite suppression, salvage, and restoration efforts for SPB suppression actions on both private and public lands.

Sirex Woodwasp

The NJFS deployed six traps in the northern region for its 2011 ground survey of the *Sirex* woodwasp, fewer traps than deployed in 2010. However, the USDA APHIS and the State University of New York deployed a total of 12 traps: 8 in the northern region and 4 in the central region. This survey was conducted from June through mid-November. Traps were checked and the insects were collected every 2 weeks and forwarded to the U.S. Forest Service Morgantown Field Office for identification. Traps are located in red, scotch, and pitch-shortleaf pine stands. To date, no *Sirex* woodwasps have been identified.

Asian Longhorned Beetle

The USDA-APHIS Plant Protection and Quarantine unit continues to survey host trees using bucket trucks, climbing, and ground surveys. As of November 5, 2011, the results for the 2011 tree surveys indicated that no new infestations were found.

- 10,499 trees surveyed within the Level 1 Third Survey Cycle verification
- 1,601 trees within the Level 2 Third Survey Cycle verification
- 0 trees within the Level 3 Survey
- 306 trees within the Level 4 Survey

Information and education outreach items, such as pest alerts, information sheets, Don't Move Firewood posters, and index cards, were sent to State Parks, Forestry offices, and consulting foresters to raise awareness of this invasive and exotic insect.

Gypsy Moth

Gypsy moth activity was low in 2011 and appears to be declining when compared to 2010. Based on the New Jersey Department of Agriculture's aerial survey detection program, approximately 1,300 acres were defoliated by gypsy moth in 2011, a 2,500-acre drop from 2010. Egg mass surveys on five State Parks and Forestry parcels indicate that a suppression program is not necessary for 2012 due to the low incidence of active egg masses. The Japanese fungus (*Entomophaga maimaiga*) and the nucleopolyhedrosis virus may have played a role in reducing gypsy moth populations over the last 3 years. Although gypsy moth populations are low, many trees previously defoliated show signs of decline and mortality, resulting in hazardous conditions. Hazard trees located near popular public use areas continue to be felled using funds from the American Recovery and Reinvestment Act of 2009.

Emerald Ash Borer

In the summer of 2011, the NJFS worked cooperatively with the New Jersey Department of Agriculture (NJDA) to deploy over 600 purple triangular emerald ash borer (EAB) traps on a 2-mile by 2-mile grid across the northern half of the State. The traps were optimally placed in the middle of the grid and hung on an ash tree when possible. The NJFS was responsible for hanging 105 of those traps on State-owned lands. The New Jersey Division of Fish and Wildlife helped the NJFS deploy 33 traps on Wildlife Management Areas. The traps were deployed between April 27 and May 24, were inspected and had the lure changed from June 13 to July 6, and were

inspected and taken down between August 3 and August 24. At least one suspect insect was collected in the first inspection and sent to the NJDA for further inspection. During the final inspection, there was no minimum requirement for suspect insect collection. No EAB were detected.

Beech Bark Disease

American beech occurs on approximately 205,000 acres throughout New Jersey. The majority is found in northern New Jersey, and there is a component in the southern half of the State along the Delaware River corridor. Based on field observations, it appears that many stands of beech in the northern counties, including Sussex, Warren, Passaic, and Hunterdon, have been infested and infected with the scale and fungus, respectively. Additional surveys are still needed to determine the extent of beech bark disease (BBD) across the State, especially in the southern half, which is further south than was originally recorded by the U.S. Forest Service Forest Inventory and Analysis unit. Burlington County in southern Jersey is of particular interest because in 2010, American beech trees showed signs of scale infestation, but signs of fungal infection were not observed. Surveys are being scheduled with the U.S. Forest Service to determine if new scale and fungus infections are occurring; to identify where the advancing, killing, and aftermath zones are located; and to identify any additional resistant beech trees or stands. By establishing stands or selecting individual trees that appear to be resistant to BBD, seed orchards or seed trees, respectively, can be established to provide a seed source for future generations of American beech.

In addition, consulting foresters have responded positively to allow the NJFS to survey their clients' properties in the Farmland Assessment or Stewardship Program that contain an American beech component.

A beech tree is infected with beech bark disease.

Hemlock Woolly Adelgid

Nearly all hemlocks in New Jersey, covering 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 State Forest Action Plan, formerly known as the Statewide Forest Resource Assessment and Strategies. The NJFS was awarded a multistate grant for $80,000 to initiate a treatment program in select hemlock areas and to prepare a hemlock resource assessment. Treatments began in the spring of 2011 and the assessment of the resource continues. A total of 104 trees were treated with CoreTect tablets in Sussex and Passaic

Counties (29 in Kittatinny State Park, 15 in Ringwood State Park, 34 in Stokes State Forest, and 26 in Swartswood State Park). An evaluation of the treatment and overall hemlock health will take place in spring 2012. It is also anticipated that similar treatments will continue in 2012.

Hemlock woolly adelgids on the underside of a hemlock branch.

Ground assessments of hemlock were conducted concurrently with the EAB trap deployment over the summer. It appears that HWA populations in 2011 are continuing to decrease or remain static. In addition, aerial surveys are being conducted in November and December of 2011 to assess hemlock in the northern half of the State. The result of these flights is still to be determined. Using the results of the ground assessments and aerial flight data, a statewide hemlock resource recovery plan will be developed in 2012.

Since 2005, the NJDA has released the predatory beetle *Laricobius nigrinus*. However, in 2011, no *L. nigrinus* beetles were released because of the recovery of 204 larvae and 10 adult *L. nigrinus* in the spring of 2011, indicating that populations are successfully overwintering and reproducing. The NJDA has applied for a Plant Protection and Quarantine permit to release *Scymnus coniferarum* next year. *S. coniferarum* is an active predator of HWA during summer months while *L. nigrinus* is more active in the fall and winter months.

Bacterial Leaf Scorch

The NJFS continues to observe bacterial leaf scorch (BLS) damage in and around Belleplain State Forest. Additional work is still needed on the 36-acre treatment area that was designated to evaluate the effect of a sanitation cut that removes many BLS-infected trees in order to monitor the health and condition of residual trees over time.

Thousand Cankers Disease

Although thousand cankers disease (TCD) has not been detected in New Jersey, TCD was detected in Bucks County, Pennsylvania, in 2011. Due to the close proximity to New Jersey, samples of suspect black walnut trees were collected along the Delaware River and given to the U.S. Forest Service for identification. No TCD was detected from these samples. It is anticipated that in 2012, a TCD survey will take place in New Jersey to trap the walnut twig beetle on DEP lands that border Bucks County, Pennsylvania.

References

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U.S. Department of Agriculture, Forest Service. 2009. Forest resources of the United States, 2007. Gen. Tech. Rep. WO–78. Washington, DC. 336 p.

Forest Health Protection
USDA Forest Service
Northeastern Area State and Private Forestry
180 Canfield Street
Morgantown, WV 26505
304–285–1545
http://www.na.fs.fed.us

New Jersey Division of Parks and Forestry
501 East State Street, Station Plaza 5
P.O. Box 404
Trenton, NJ 08625-0404
609–984–3861
http://www.state.nj.us/dep/parksandforests/

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