

# North Carolina



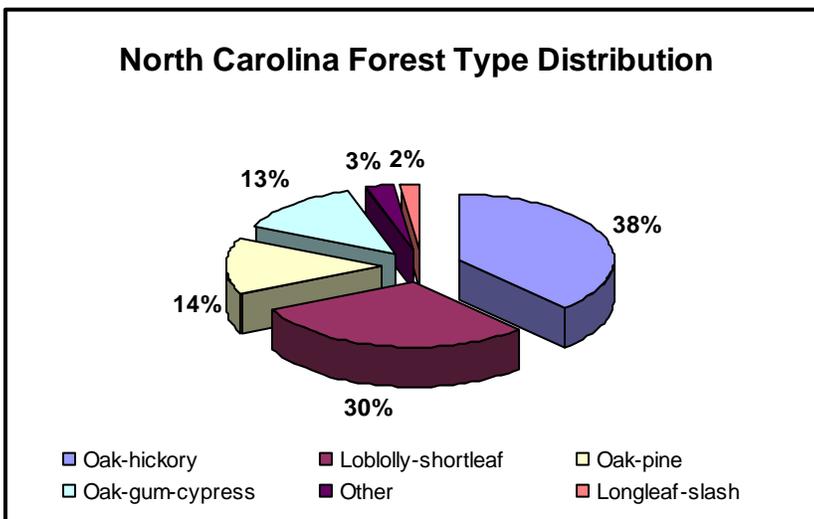
## Forest Health Highlights 2008

### The Resource

North Carolina's forests cover 18.6 million acres, more than 57% of the state's land area. The majority of the state's forested land, some 12 million acres, is in non-industrial private ownership, while approximately 1.1 million acres are in national forests. Forestry is the state's second most important industry, providing 97,000 jobs and producing \$6.0 billion in annual revenue. North Carolina's forests are also prized for their scenic beauty, supporting tourism and outdoor recreation and providing wildlife habitat from the Appalachian Mountains to the lowlands of the Atlantic Coastal Plain. Major forest types in the state include oak-hickory, loblolly-shortleaf pine, oak-pine, and oak-gum-cypress. Longleaf-slash pine forests, historically much more widespread, now comprise only 2% of the state's forests, while other minor types account for an additional 3%.



**North Carolina Forest Type Distribution**

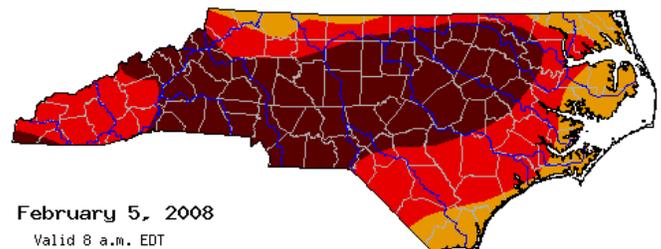


**Drought Classifications**

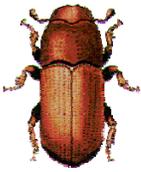
- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought

### Forest Influences and Programs

**Drought:** The impacts of serious pests were moderate to low in North Carolina in 2008. Many impacts were directly and indirectly results of lingering drought. There was an increase in scattered pine mortality across the entire state in response to drought conditions that increased susceptibility to **bark beetle** attack. Mortality of oaks associated with drought and oak decline was observed across the state.



**Bark Beetles:** The **southern pine beetle** (*Dendroctonus frontalis*) is North Carolina's most significant forest insect pest. Southern pine beetle (SPB) populations remained low throughout North Carolina. Beetle activity along the Virginia line near Kerr Lake has somewhat subsided since last year. Southern pine beetle activity has increased in the eastern part of the state in Tyrrell and Hyde Counties. Activity did not reach epidemic status and there was no significant spread of spots observed. An ongoing SPB prevention cost-share program was initiated in 2005 to assist landowners in timber stand improvement work (particularly thinning) to create healthier stands to reduce the likelihood of SPB infestations. **Pine engraver beetles** (*Ips spp.*) reports show scattered light to moderate activity statewide in 2008 due to drought conditions. Because *Ips* infestations tend to be relatively small and scattered they usually cannot be effectively controlled or efficiently salvaged, but their economic losses may approach those caused by SPB. New engraver beetle reports subsided as rainfall returned to normal across most of the state later in the year



**Hemlock woolly adelgid (HWA):** Infestations of the hemlock woolly adelgid (*Adelges tsugae*) continued to intensify in the Southern Appalachians in 2008. The adelgid now infests most of the range of both eastern and Carolina hemlocks in the state. Mortality is very apparent in infested counties—primarily in forested stands where control is difficult and cost prohibitive. The use of systemic insecticides has been the primary control method used on state and private forests; however some releases of predatory beetles have occurred on state forests. Most control measures are confined to urban landscape trees and trees of high aesthetic, historic and sentimental value on private lands. However, the impact of the adelgid continues to outpace efforts to control the pest. Because of its important role in riparian ecology, the loss of hemlock could have a devastating impact on these ecosystems.



**Gypsy Moth:** No gypsy moth (*Lymantria dispar*) defoliation was observed in North Carolina in 2008. The gypsy moth Slow the Spread program continued to monitor populations and treated isolated infestations ahead of the edge of the generally infested area along the North Carolina and Virginia state line. A total of 431 acres in Warren County were sprayed with the biological insecticide *Bacillus thuringiensis* (*Bt*) and 18,920 acres in Caswell County were sprayed with mating disruption treatments to control the spread of gypsy moth populations during the year.



Five areas totaling 3,414 acres are proposed for treatment in 2009. Spray blocks for 2008 can be found at: [www.ncagr.gov/plantindustry/plant/entomology/GM/2008ProposedTreatments.htm](http://www.ncagr.gov/plantindustry/plant/entomology/GM/2008ProposedTreatments.htm) . A map of proposed treatment areas for 2009 can be found at: [www.ncagr.gov/plantindustry/plant/entomology/2009ProposedTreatments.htm](http://www.ncagr.gov/plantindustry/plant/entomology/2009ProposedTreatments.htm) .

**Dogwood Anthracnose:** Dogwood anthracnose (*Discula destructiva*) is a fungal disease affecting flowering dogwoods in cool, moist areas in the higher elevation forests of western North Carolina. It has been found in 30 counties and is causing significant mortality to native dogwoods. No new occurrence counties were reported in 2008. Prior to 1991, forty permanent forest plots, totaling 372 trees, were established in 24 affected counties to monitor the spread and impact that dogwood anthracnose would have on natural stands of flowering dogwoods. Since then, only 37 (10%) of the original trees remain alive. Of those that died, 70% were confirmed victims of dogwood anthracnose—others died due to land use practices and other disease and insect damage.



**Fall Cankerworm:** Very large populations of fall cankerworm (*Alsophila pometaria*) have annually defoliated oaks in Charlotte/Mecklenburg County over the past 20 years. In the past few years, populations have increased to damaging levels within the City of Charlotte. Nearly 73,000 acres of oaks, primarily willow oaks, were defoliated late in 2007. Some mortality was reported in the city. In the spring of 2008, about 63,000 acres were sprayed with *Bt*. The USDA Forest Service, Region 8, Forest Health Protection unit provided technical assistance for the spray project.



**Exotic pest surveys:** The Division of Forest Resources has been conducting formal and informal surveys for non-native invasive species that have potential to threaten forest resources within the state. There were no known detections in the state of the pathogen that causes **sudden oak death** (*Phytophthora ramorum*), the insect (*Xyleborus glabratus*) or pathogen (*Raffaelea lauricola*) that cause **laurel wilt**, or the **sirex woodwasp** (*Sirex noctilio*).

Photo Credits:

Drought Map—North Carolina Drought Management Advisory Council, [www.ncdrought.org](http://www.ncdrought.org)  
Hemlock Woolly Adelgid--Connecticut Agricultural Experiment Station Archive, [Bugwood.org](http://Bugwood.org)  
Gypsy Moth—Tim Tigner, Virginia Department of Forestry, [Bugwood.org](http://Bugwood.org)  
Fall Cankerworm—Ogden Archive, [Bugwood.org](http://Bugwood.org)

## Forest Health Assistance in North Carolina

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