



# Virginia

## Forest Health Highlights 2016

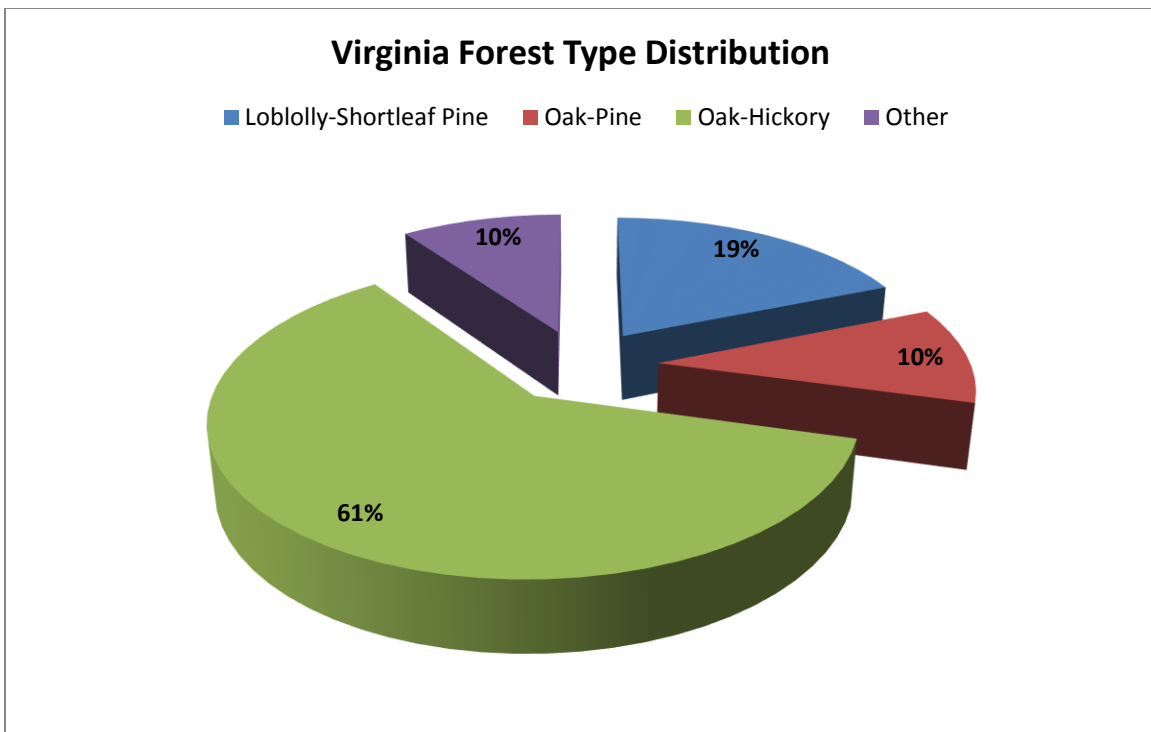
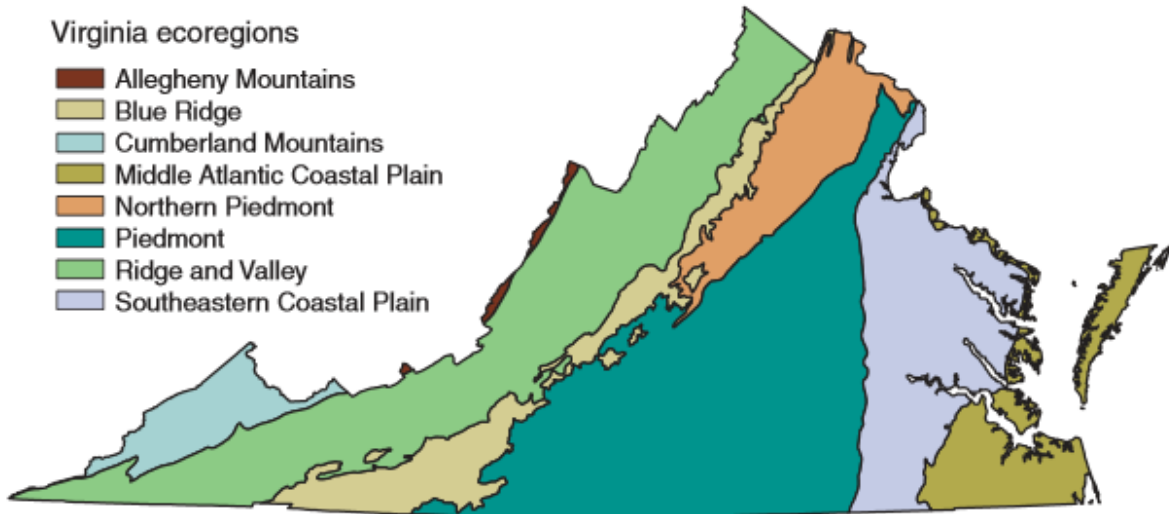


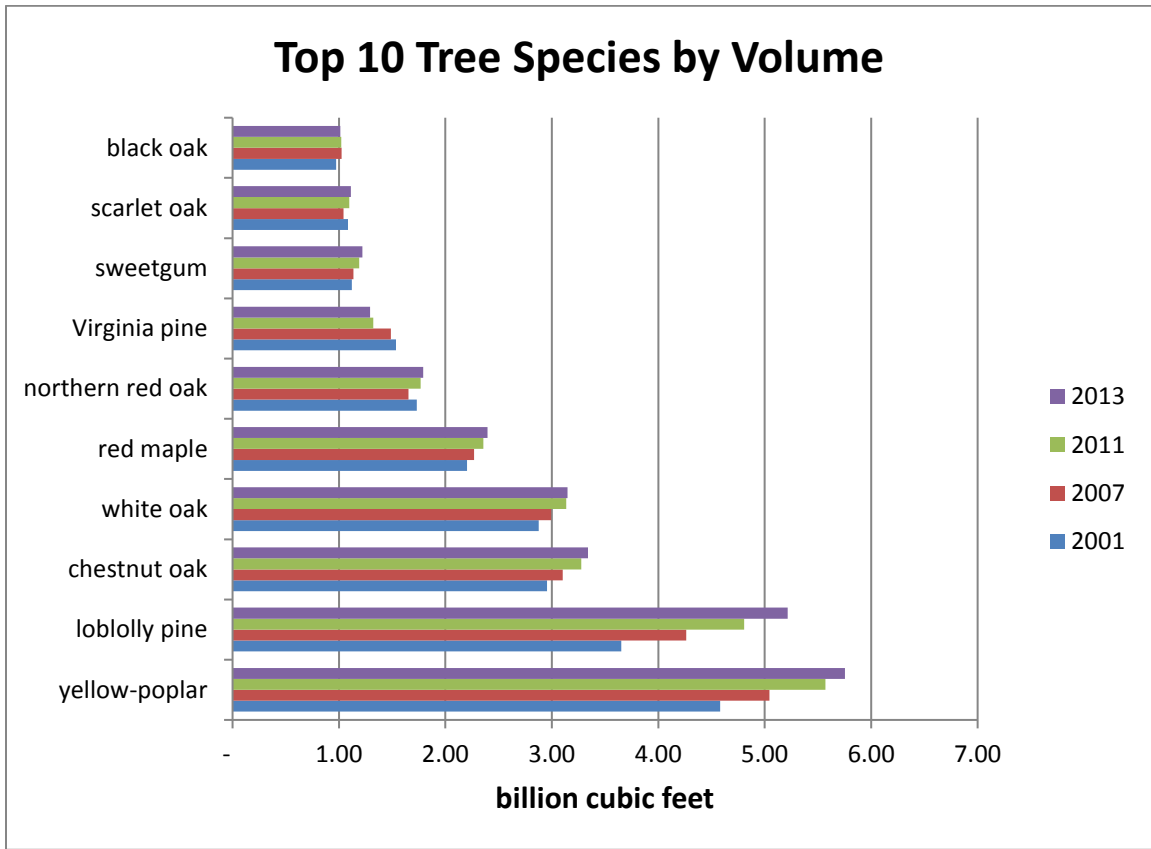
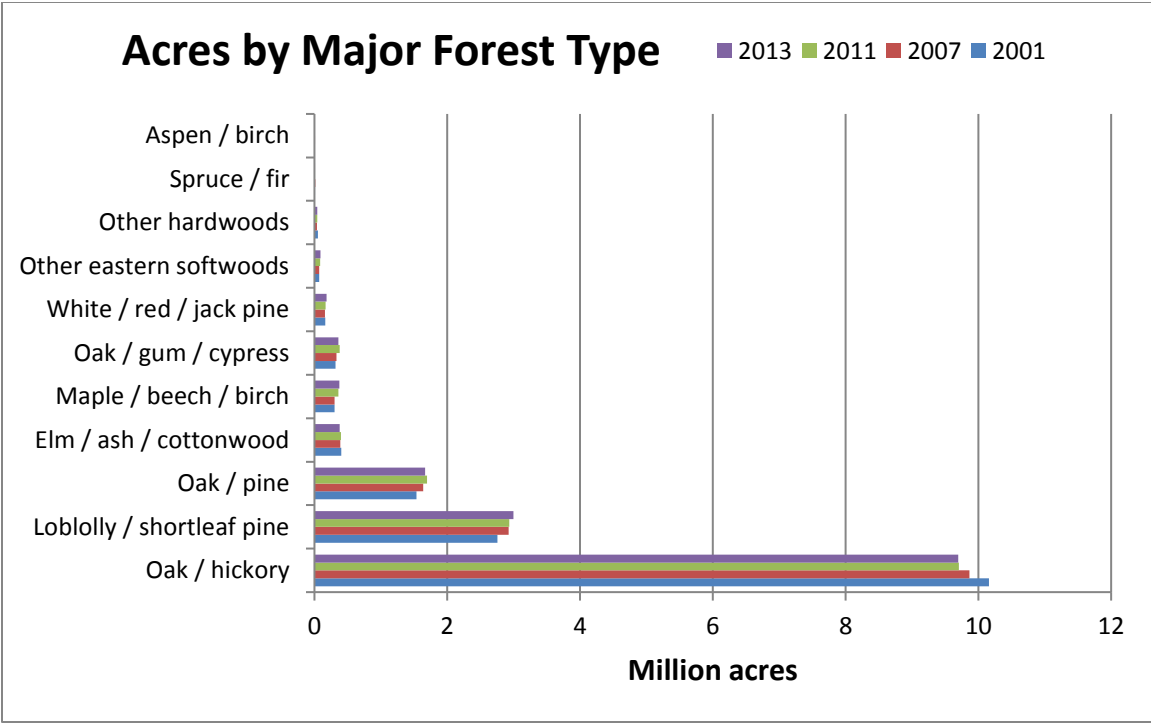
### **The Resource:**

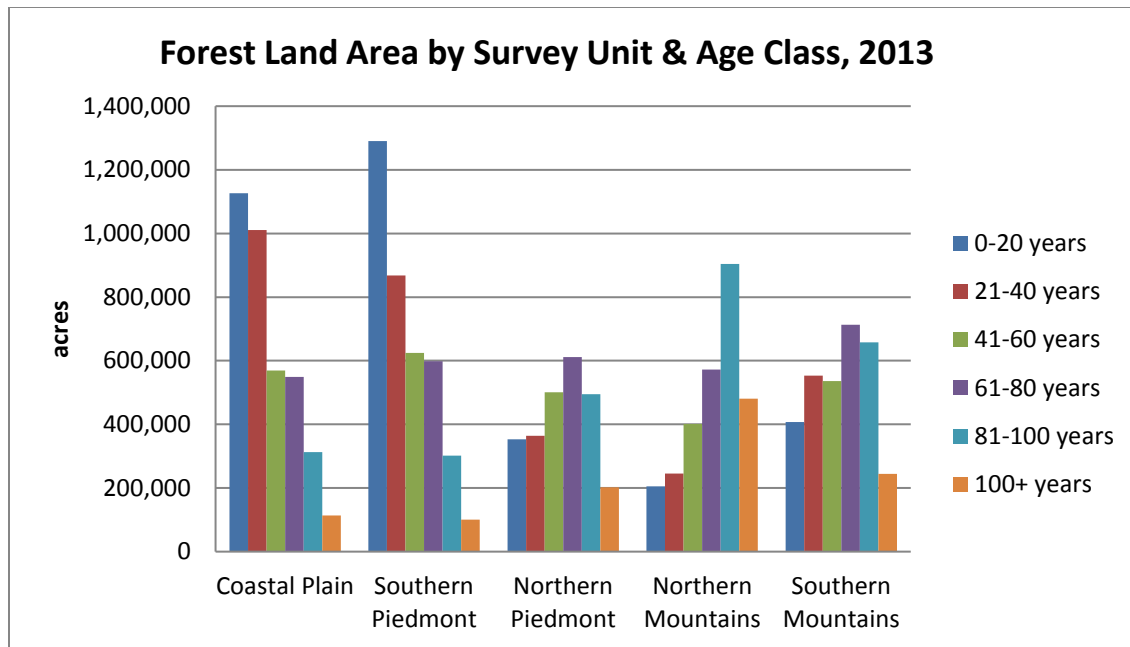
The diversity of forestland in Virginia is one of its most valuable resources. From longleaf pine in the southeastern coastal plain, to the abundance of mature hardwoods in the western region, the Commonwealth is tasked with the challenges and rewards that come from managing a variety of species and ecosystems. Forests provide \$17 billion to Virginia's economy and employ over 100,000 Virginians in all facets of the forest industry. There is also a close relationship between landowners and the forests on their properties. Of all forestland statewide, 82% of it is privately owned and the timber harvest industry has paid these landowners more than \$327 million. The undeniable impact of forests in Virginia reinforces the importance of knowing and protecting the resource. Surveys conducted by Forest Inventory Analysis estimate 16 million acres of forestland in Virginia. These FIA surveys also documented 123 species of live trees with yellow-poplar, loblolly pine, chestnut oak, and white oak being the most abundant by volume. The Commonwealth is dominated by oak-hickory forest types (9.7 million acres) followed by loblolly-shortleaf pine forests (3.1 million acres). Forest land in Virginia is maturing, which can lead to valuable timber harvest but also some management challenges. In addition to maintaining the forest types currently present in Virginia, efforts are underway to replant and restore diminished habitats and species, such as longleaf pine. Virginia Department of Forestry, along with a number of other agencies and organizations, have planted thousands of longleaf pines throughout its naturally occurring range in the state, as well as conducted prescribed burns and

other related management activities. Overall, the forests are highly valued in Virginia for both the economic and the environmental benefits they provide.

**Sources:** Rose, A.K. 2015. Forests of Virginia, 2013. Resource Update FS-37. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 4p.







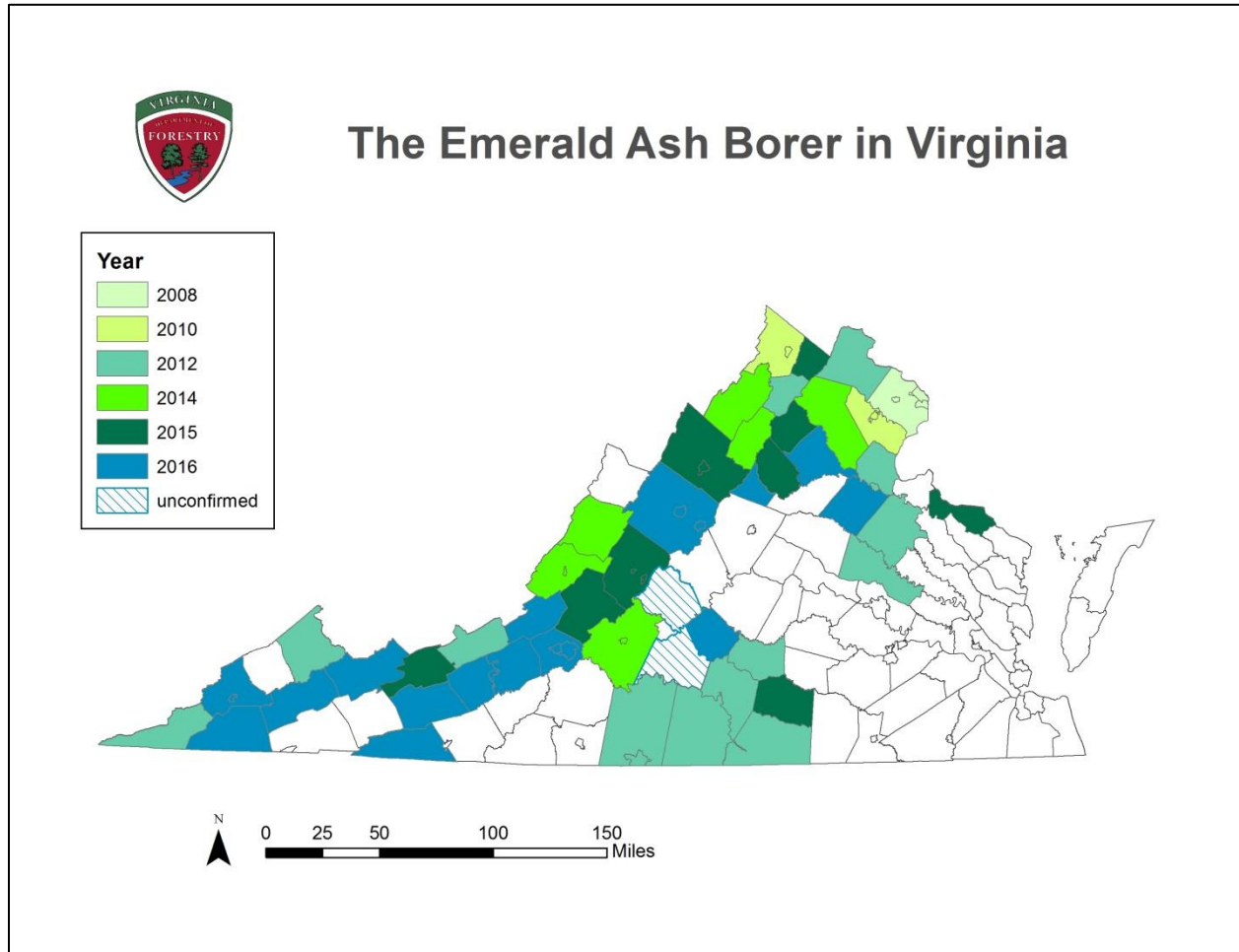
### **Forest Influences and Programs:**

**Southern Pine Beetle-** Southern pine beetle traps are placed annually in Virginia. They were deployed this spring across 5 counties to monitor for southern pine beetle populations and the results of the survey indicated that SPB infestations in Virginia are at low static levels. Southern pine beetle was observed in 4 counties across the state, but only in small isolated spots. There was also minimal black turpentine and *Ips* beetle activity. Chincoteague Island on the Eastern Shore of Virginia has been the main source of SPB activity over the last 4 years. Mature, dense pines on the island are subjected to saltwater intrusion, and these stressed trees have become extremely susceptible to beetle attack. Not much can be done in this area due to the location of impacted pines, except let the infestations run their course and salvage when possible.

**Southern Pine Beetle Prevention Program-** Federal funds from the USDA Forest Service, Forest Health Protection, support Virginia's Pine Bark Beetle Prevention program including the following three components: pre-commercial pine thinning cost-share for landowners, first commercial pine thinning cost-share for loggers, and longleaf restoration cost-share for landowners. To date, Virginia has thinned over 50,000 acres of pine (mostly pre-commercial) through these cost share programs. Overstocked pine stands are more susceptible to bark beetles, and thinning is the best method of reducing this threat.

**Emerald Ash Borer-** The emerald ash borer has been established in Virginia since 2008 when it was found in northern counties. It was a new arrival to 15 counties in 2016 bringing the total number of confirmed counties in the state to 46. The majority of the newly confirmed counties tended to be clustered in the Southwestern part of the state (Wise, Scott, Craig, Russell, Tazewell, Grayson, Wythe, Pulaski, Montgomery, and Roanoke counties) while the others were more centrally located (Appomattox, Augusta, Greene, Spotsylvania, and Culpeper). In addition to the now 46 confirmed counties, we have two additional counties that are unconfirmed

(Campbell and Amherst) meaning that while all the evidence of EAB is there, no adult or larvae EAB has been collected and confirmed by the Virginia State Entomologist. With its presence now confirmed in almost half of the Commonwealth's counties, this pest is of great concern for all species of ash found statewide. Trapping efforts in Shenandoah National Park found 6 new positive locations within the park, including the newly added Augusta County.



**Abiotic Factors-** This has been an interesting year of weather that negatively impacted parts of Virginia's forests. Alternating periods of drought and hydric conditions contributed to tree stress and increased incidences of fungal disease such as fusiform rust and anthracnose. In addition, a series of tornadoes swept through various parts of the state in late winter; at least seven tornadoes were reported in Fluvanna, Appomattox, Mecklenburg, Waverly, and the Middle Peninsula/Northern Neck areas. These tornadoes uprooted and overturned numerous trees and negatively impacted over a thousand acres of land throughout Virginia. Additionally, a hail event in Prince George County impacted over 200 acres of forestland, including planted loblolly pine. There was also an increase in fires throughout the fall fire season, and dry, windy conditions kept foresters busy containing and putting out fires in western and central Virginia.



Tornado Damage in Appomattox-Buckingham State Forest

**Oak decline-** Oak decline continues to be a pervasive cause of mortality statewide for oaks. Alternating periods of drought and moisture cause stress on these trees and when coupled with insect defoliation and other biotic agents, these stressors ultimately lead to tree mortality. This spring was initially very wet and then very dry, resulting in increased fungal activity. Oaks in parts of the western region of Virginia experienced heavy gypsy moth defoliation during early summer when foliage was still young. Summer was particularly hot and dry and ultimately, many species were stressed from drought. Seasonal outbreaks of native defoliators, both early and late season, fed on oaks causing noticeable damage. Previous years of drought and heavy defoliation from insects, coupled with other factors such as a poor site quality or decay from fungi also contribute to this slow decline in Virginia's oak trees.

#### **White Pine Scale-Pathogen Complex**

Since 2005, decline in white pines has been observed in western Virginia. Flagging and branch cankers are observed initially, but ultimately these trees, mostly seedlings and saplings, appear to be dying off at a significant rate. Based on research conducted by pathologists and entomologists, a scale insect, *Matsucoccus macrocitrices* (Canadian pine scale) appears to be the primary cause. The fact that this scale insect was previously unknown to inhabit the southern Appalachians is perplexing and raises questions regarding the origin and distribution of the scale. There are also one or more pathogens at work as well. *Caliciopsis pinea* has been isolated along with a suite of other secondary fungi. In 2012 VDOF established white pine monitoring sites in western Virginia to be measured annually to monitor decline and mortality among different white pine size classes. Sites are located in the following counties where the scale/pathogen complex has been identified: Bath, Highland, Augusta, and Grayson.



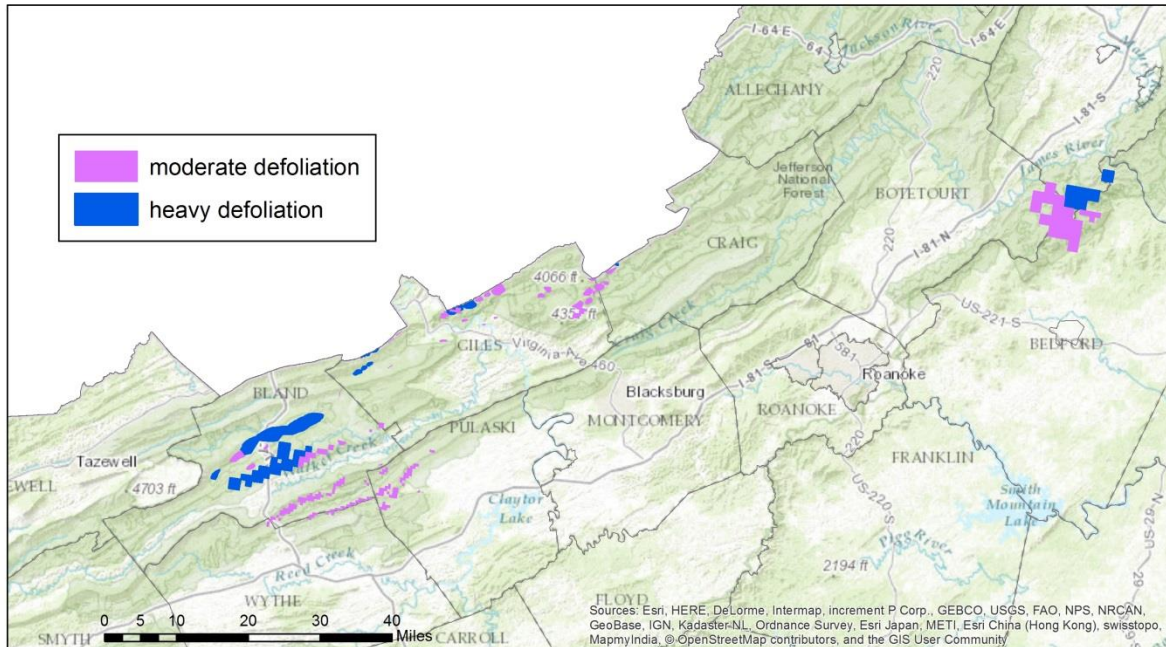
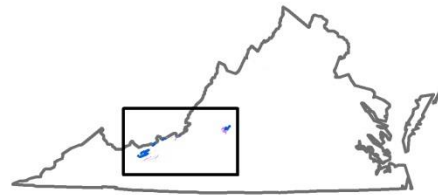
White Pine Mortality in Highland County, Virginia

**Thousand cankers disease-** Virginia continues to regulate the movement of walnut in two quarantined areas as a result of thousand cankers disease. The disease was first detected in 2011 in five counties in the Richmond, VA area. In 2012, two more counties were positively identified in northern Virginia. Trapping efforts continue for the walnut twig beetle, the beetle that vectors the fungus associated with thousand cankers disease, but no new infestations have been reported since the initial detections.

**Gypsy Moth-** Evidence of significant gypsy moth activity appeared in late May and early June. ForWarn satellite imagery showed impacted areas in southwestern Virginia and numerous reports from field foresters confirmed the presence of this pest. Defoliation in Giles County was observed along Peters Mountain at the state's border with West Virginia and also along Salt Pond Mountain near the Mountain Lake Wilderness area. Defoliation was more severe and extensive in Bland County, and was observed on both sides of I-77 along Brushy Mountain, Round Mountain, and the Kimberling Creek Wilderness area. Two aerial surveys were conducted in these areas in order to map the damage using new Digital Mobile Sketch Mapping (DMSM) technology. The DMSM enabled mapping of the damage in real-time while flying over large areas of defoliated ridgetops. The USFS also flew the national forests in Virginia this summer and they were able to confirm damaged areas in Bland and Giles, as well as identify a few more in Bedford, Botetourt, and Rockbridge counties. The 2016 Gypsy Moth map is a synthesis of data collected from VDOF and USFS aerial surveys. In total, approximately 28,900 acres of defoliation was mapped over about 54,500 acres of land. This is the most gypsy moth damage Virginia has seen since the last outbreak in 2008 and 2009, and is perhaps an indication that populations are on the rise.



## Virginia Gypsy Moth Defoliation 2016



**Rhododendron dieback-** Widespread mortality of *Rhododendron maximum* (rosebay rhododendron) in parts of western and central Virginia has become significant. Large stretches of dead and declining rhododendron line the Blue Ridge Parkway and surrounding areas in Floyd and Patrick counties. This rhododendron mortality is visible along both sides of the parkway, sometimes next to healthy plants. Many plants are also in early stages of decline with wilted foliage. The surface layer beneath these dying rhododendron plants is thick organic matter with circular tunnels that were perhaps constructed by voles. Signs of *Armillaria*, a fungus that commonly decays roots of forest trees that are stressed by some other factor, have also been observed. Soil samples, collected and analyzed by the Virginia Tech Nematode Assay Clinic, revealed the presence of ring nematodes. The conundrum surrounding this rhododendron mortality is that a primary damage agent has not yet been identified. Fungal and nematode infections, and possible vole damage, may all be secondary damage agents; we are still searching for the primary cause of this rhododendron decline.





Rhododendron dieback along the Blue Ridge Parkway

**Forest Health Assistance in Virginia:**

For more information or assistance, please contact:

**Virginia Department of Forestry**  
**900 Natural Resources Dr., Suite 800**  
**Charlottesville, VA 22903**  
[lori.chamberlin@dof.virginia.gov](mailto:lori.chamberlin@dof.virginia.gov)  
**(434) 220- 9026**  
[katlin.mooneyham@dof.virginia.gov](mailto:katlin.mooneyham@dof.virginia.gov)  
**(434) 220-9060**