



Virginia



Forest Health Highlights 2017

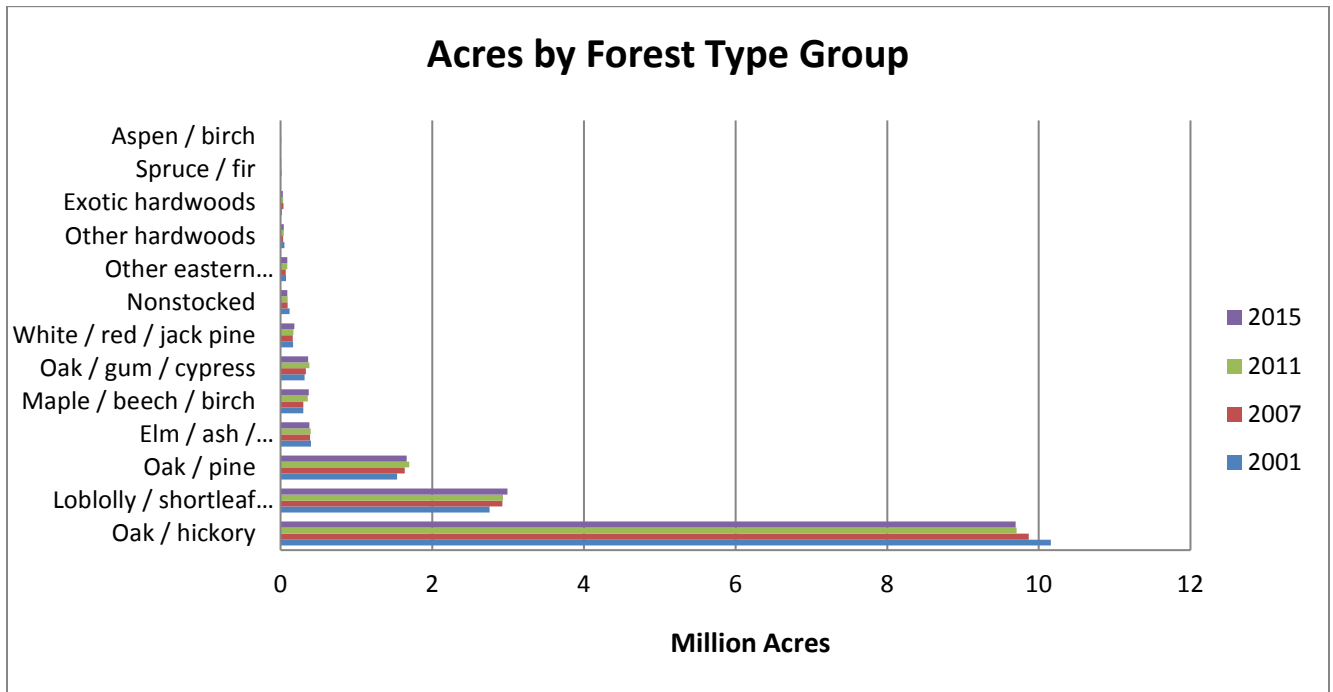
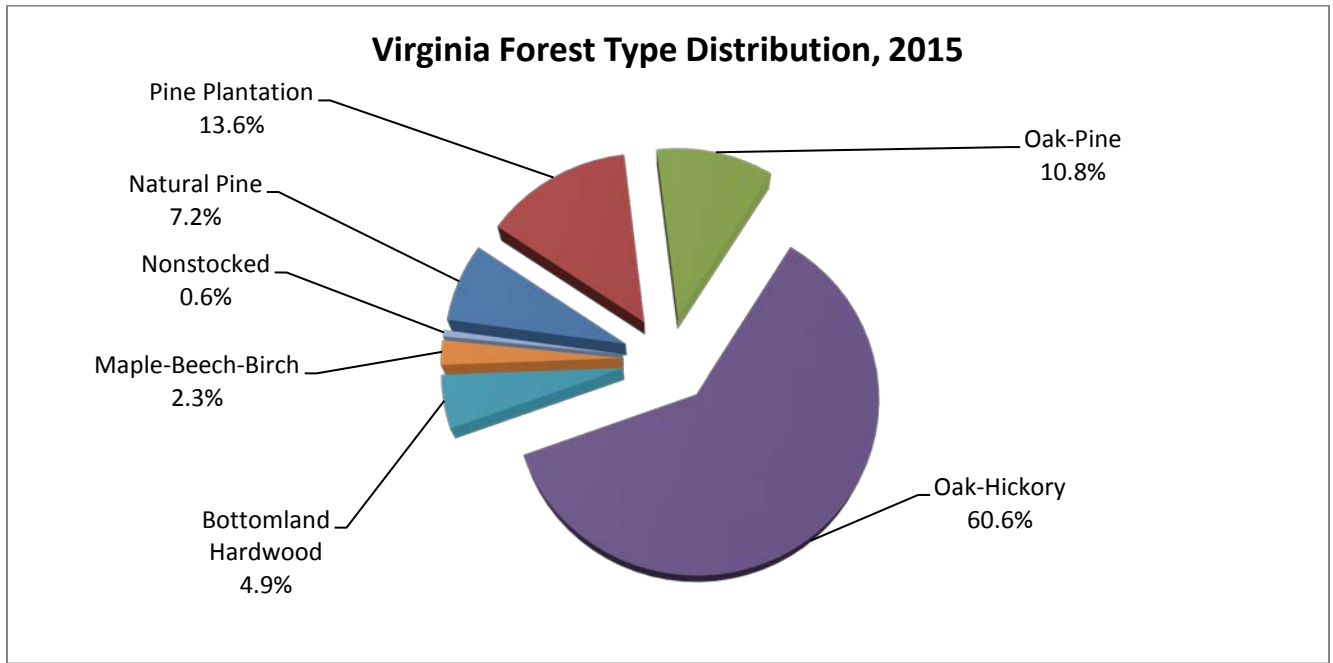


The Resource:

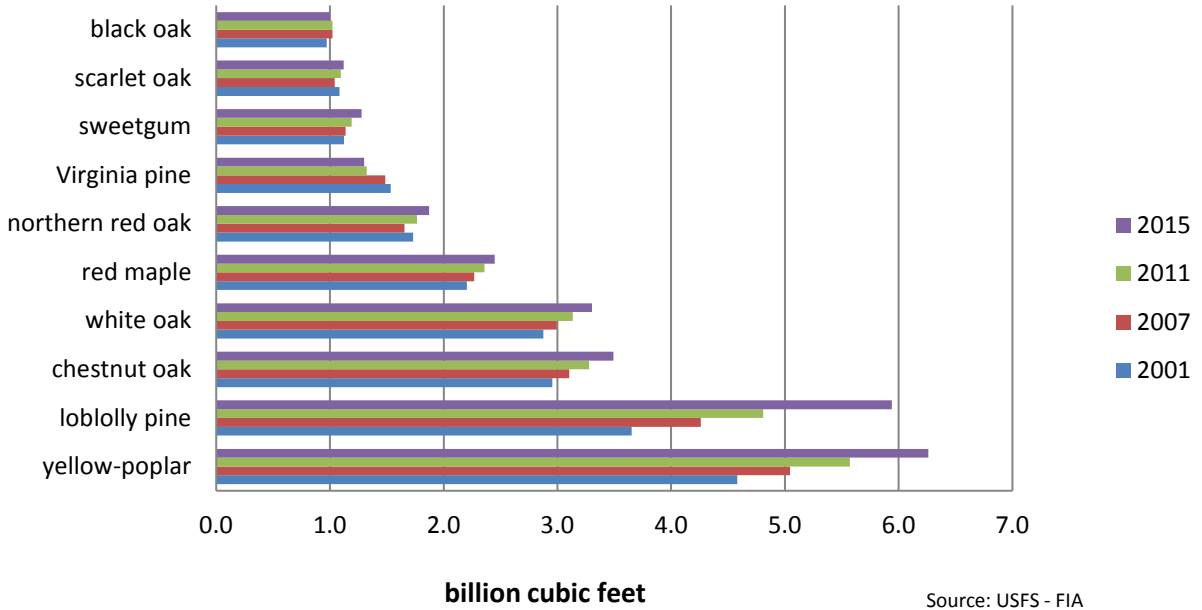
More than 16 million acres in Virginia are classified as forestland, and the diversity of species within these acres contributes to the challenges and rewards of managing this valuable resource. Hardwoods account for 79% of forestland while pine forests represent the remaining 21%. Forest Inventory Analysis surveys have documented 123 species of live trees in Virginia with yellow-poplar, loblolly pine, chestnut oak, and white oak being the most abundant in terms of standing volume. Red maple ranks most abundant in terms of number of stems. The Commonwealth is dominated by oak-hickory forest types (62%) followed by loblolly-shortleaf pine forests (20%). Most of the forestland within the Commonwealth is owned by nonindustrial private landowners (62%), which foster a deep connection between Virginia citizens and the forests they own and manage. The economy of Virginia is also closely tied to its forests since the forest industry contributes \$21.5 billion to Virginia's economy each year and employs over 108,000 Virginians. As Virginia's population continues to grow, urbanization and sprawl from major metropolitan areas add to the challenges of maintaining land in forests and conserving the resource for future generations. The Virginia Department of Forestry is a key player in protecting these lands and ensuring that forestry remains one of the most sustainable industries. This is done by conserving forests and protecting waterways, monitoring for invasive and native plants, insect, and disease threats, and restoring diminished habitats and species such as longleaf and shortleaf pine. Forests in Virginia are an important commodity to be protected so that these landscapes persist for decades to come.

Sources:

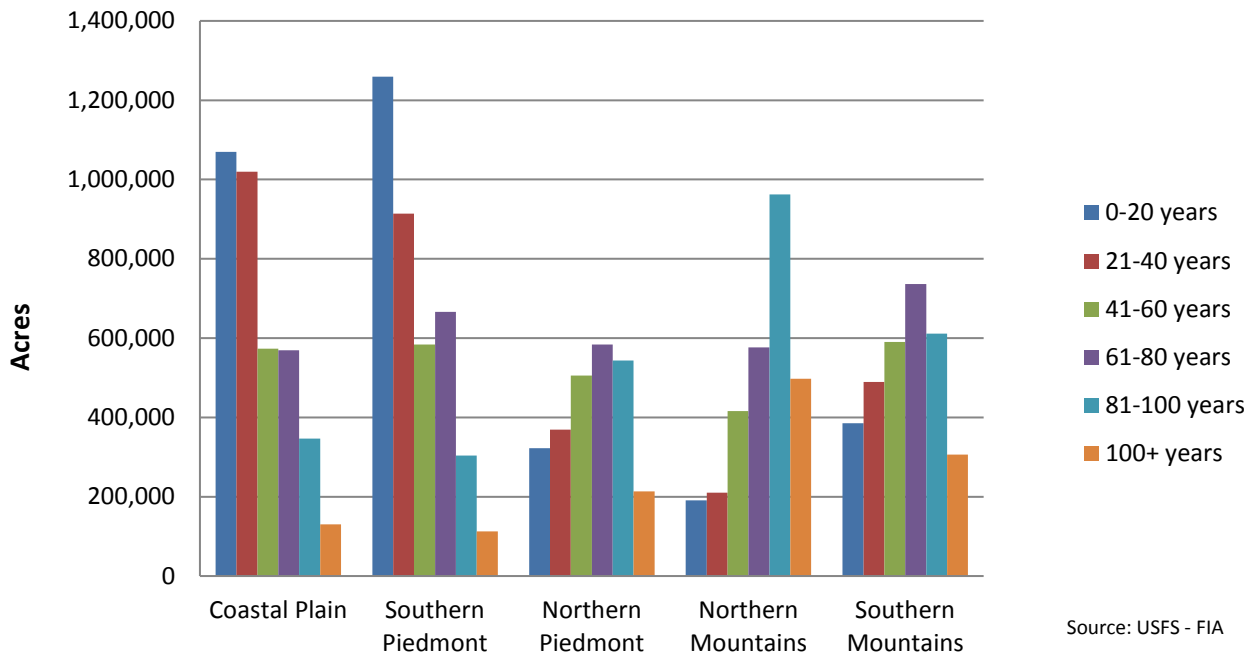
Brandeis, T.J.; Hartsell, A.J.; Brandeis, C. 2017. Forests of Virginia, 2015. Resource Update FS-129. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 4p.
 Ring, Bettina. 2017 State of the Forest. Virginia Department of Forestry. VDOF P00129; October 2017.



Top 10 Tree Species by Volume



Forest Land Area by Survey Unit & Age Class, 2015



Forest Influences and Programs:

Southern Pine Beetle- Virginia has not seen a large scale southern pine beetle outbreak for over a decade, but we continue monitoring activities and surveys. Twenty-one southern pine beetle pheromone traps were deployed in March of 2017 across 9 counties and the results indicate that SPB populations in Virginia persist at low static levels. Southern pine beetle spots were reported in 2 counties across the state, neither of which were large outbreaks. Black turpentine and *Ips* beetle activity was also limited with only 10 observations across 7 counties. Chincoteague Island on the Eastern Shore of Virginia has been the primary source of SPB activity for the last 5 years. Mature dense stands of pines on the island continue to be stressed due to saltwater intrusion which increases their likelihood of beetle attack. SPB traps placed in Chincoteague this spring caught a disproportionately higher number of clerid predator beetles than southern pine beetles, which indicates the outbreak may be coming to an end.

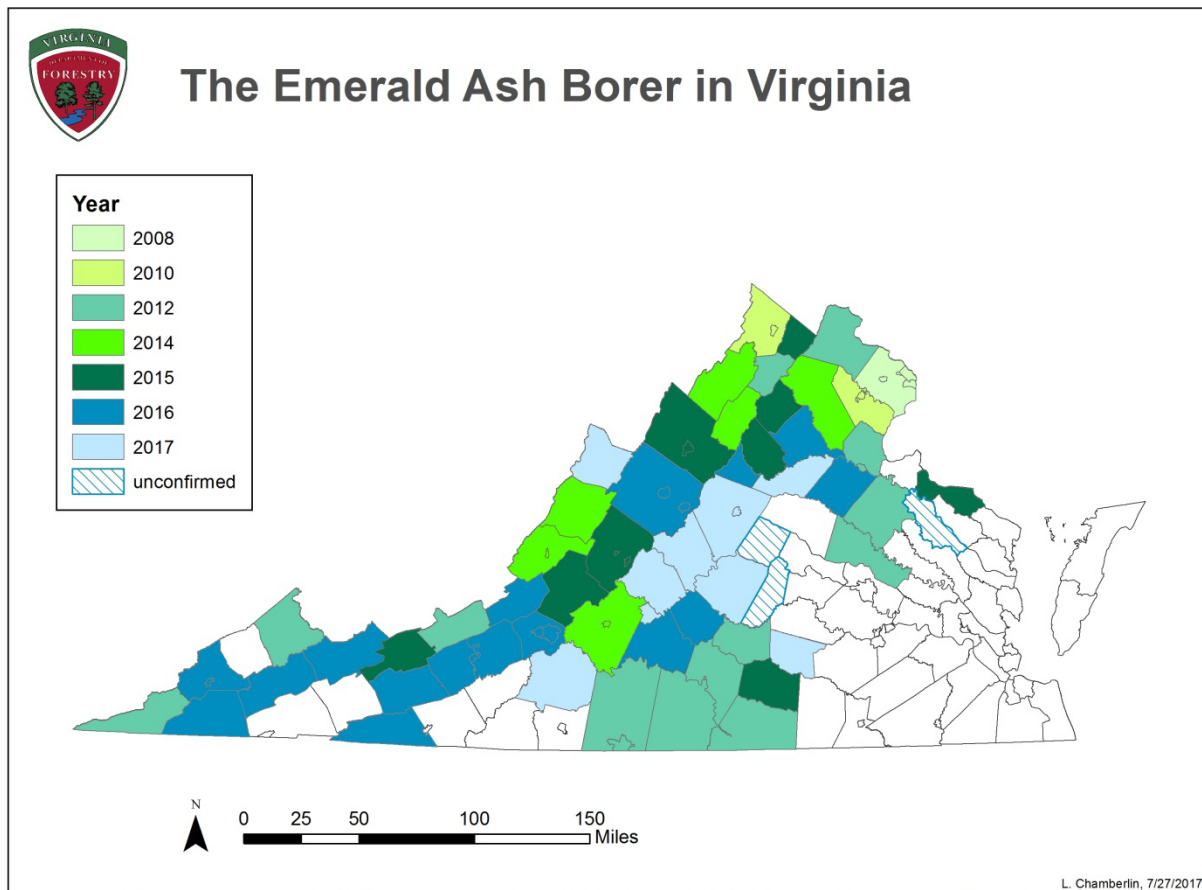


Southern Pine Beetle Prevention Program- The Virginia Pine Bark Beetle Prevention Program is composed of three cost share programs: pre-commercial pine thinning for landowners, first commercial pine thinning for loggers, and longleaf restoration for landowners. This program continues to be supported by USFS funds granted to the VDOF. At the time of this report, Virginia has thinned over 56,000 acres of pine (mostly pre-commercial) through such cost share programs.

Thousand cankers disease- This disease was first detected in Virginia in June, 2011 in five counties surrounding the Richmond area. TCD was confirmed the following year in two more counties in northern Virginia and quarantines were established to prohibit the movement of walnut products or material out of the infected areas. State-wide monitoring efforts continue for both the walnut twig beetle and the fungus *Geosmithia morbida*, but no new infestations have been identified in Virginia. Tree mortality has not been as severe as expected and in some

instances infected walnut trees appear to be recovering. Continued trapping and monitoring is required to fully determine the long term effects of TCD and the population dynamics of the walnut twig beetle.

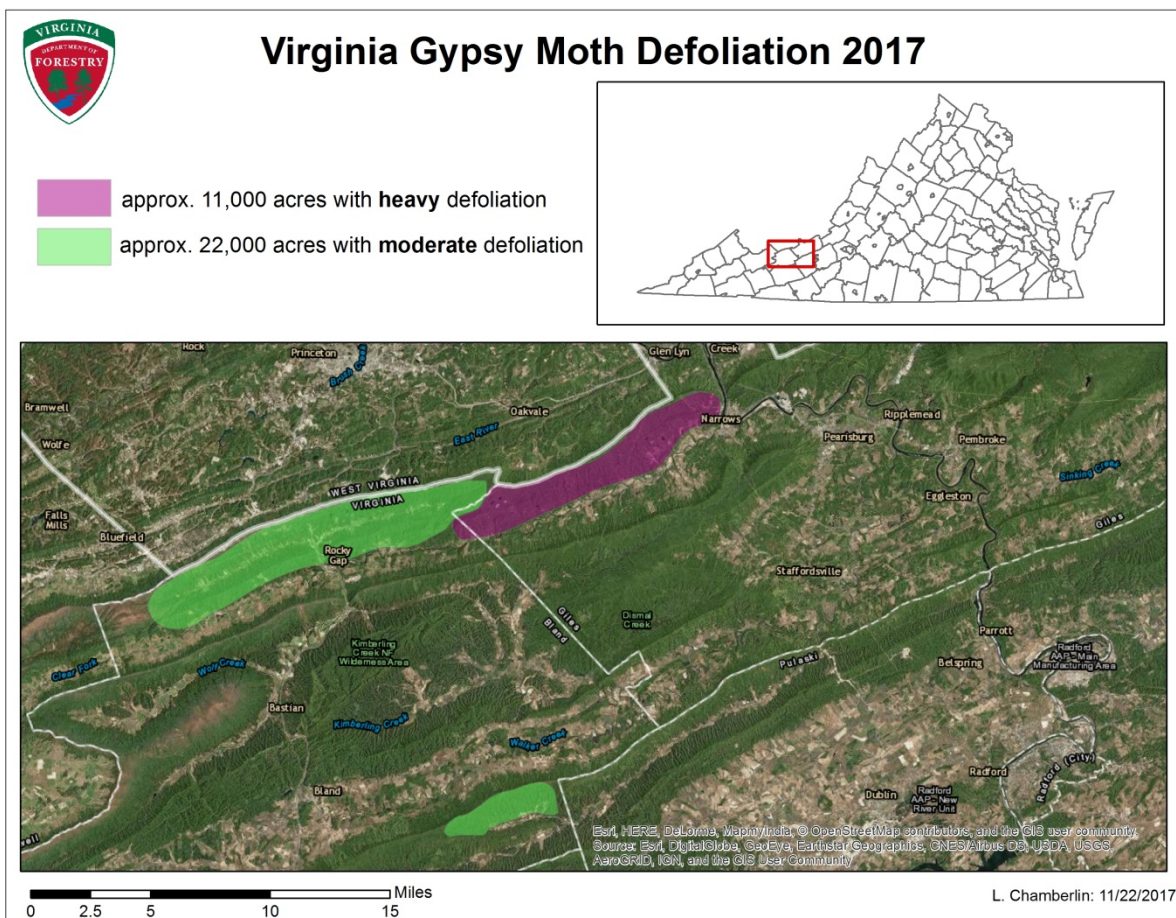
Emerald Ash Borer- The emerald ash borer has been making its way through Virginia since 2008. In 2017, this beetle was discovered in 8 new counties bringing the total number of infested counties in Virginia to 55. The majority of newly confirmed counties this year were clustered in central Virginia (Orange, Albemarle, Amherst, Nelson, and Buckingham), in addition to other scattered discoveries in Highland, Franklin, and Nottoway counties. Three additional counties are considered unconfirmed (Fluvanna, Cumberland, and Essex) meaning that while all the evidence of EAB is there, no adult or larval specimen has been collected and confirmed by the Virginia State Entomologist. With its presence now confirmed in over half of the Commonwealth's counties, this pest is of great concern for all species of ash found statewide. Education and outreach to the public regarding identification and treatment options has become a priority, especially in the eastern part of the state where EAB has yet to be confirmed.



White Pine Scale Pathogen Complex- Since 2005 decline in white pines has been observed in western Virginia. Flagging and branch cankers are observed initially, followed by tree mortality. While tree death has been observed in white pines across all age classes, seedlings and saplings appear to be dying off at a higher rate. This decline phenomenon has been observed in New Hampshire down to Georgia affecting white pines in the Appalachian Mountains. Pathologists and entomologists hypothesize that the cause of this white pine decline is a scale and pathogen

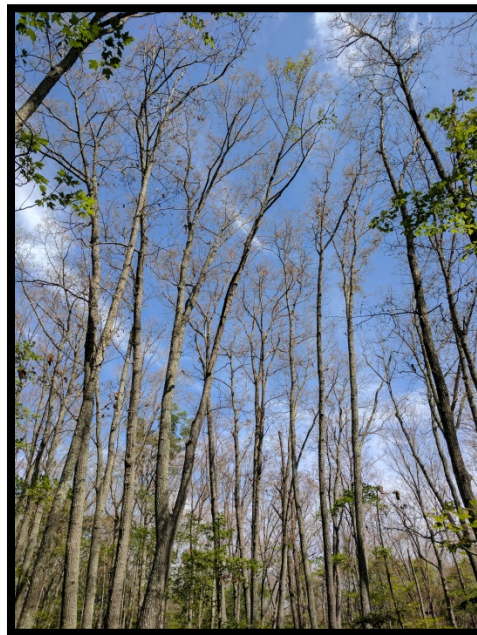
complex. The scale insect *Matsucoccus macrocitrices* (Canadian pine scale) has been found in association with secondary pathogens, most commonly *Caliciopsis pinea*. In 2012 the VDOF established monitoring sites to document white pine health in western Virginia. Each site is visited annually to monitor 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.

Gypsy Moth- The gypsy moth is present in Virginia and caused localized damage in the spring of 2017. Larvae were observed in southwest Virginia at the end of April, followed by severe defoliation in the beginning of May. Defoliation was first reported on USFS national forest land in Bland County, so an aerial survey was conducted using Digital Mobile Sketch Mapping (DMSM) technology to map damage in that area. Most defoliation occurred on ridgetops along the Virginia/West Virginia state line and also a small spot along a ridge bordering the Bland/Pulaski county line. The 2017 Gypsy Moth map is produced from data collected during this VDOF aerial survey. In total there was approximately 33,000 acres with moderate to heavy defoliation. While this is less gypsy moth damage than last year, it is the second consecutive year of defoliation in Giles and Bland counties which may lead to some tree mortality, either as a direct result of severe defoliation or indirectly due to secondary pests such as armillaria root rot or the two lined chestnut borer.



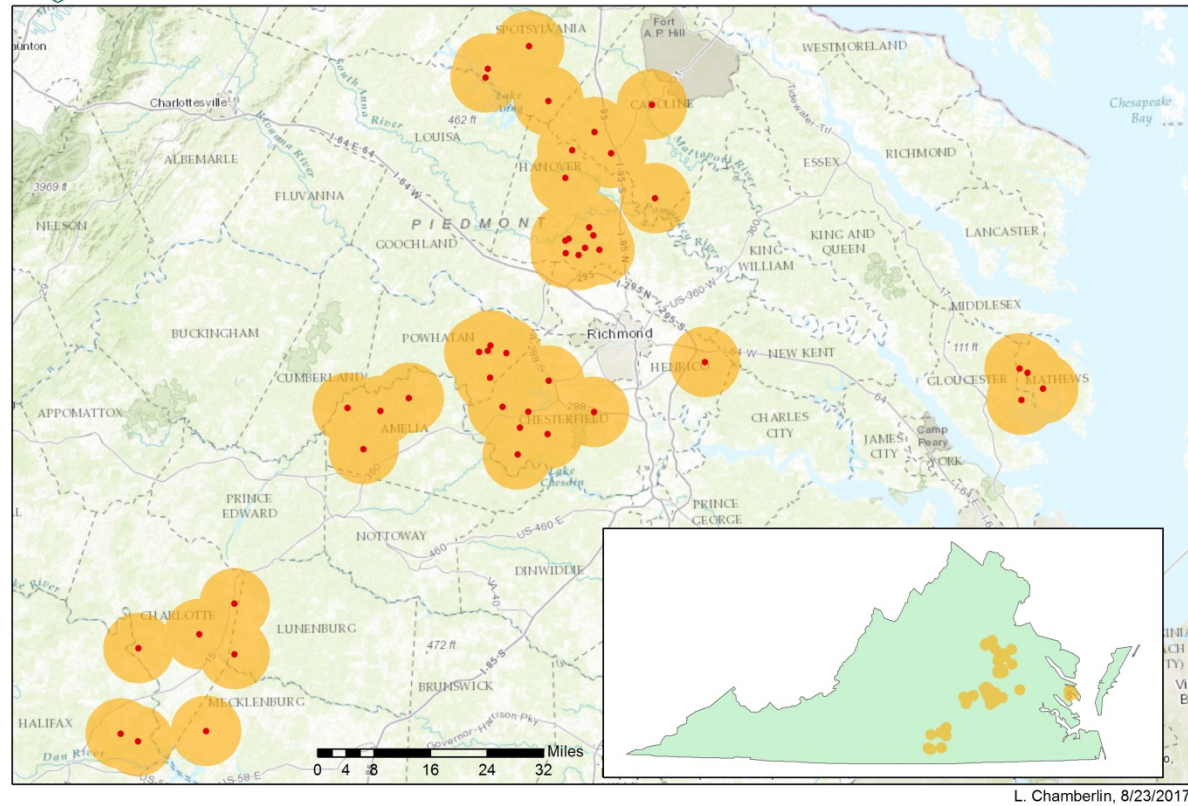
Oak decline- Virginia continues to see decline of mature oaks statewide. Large components of oak forests are reaching or approaching maturity at the same time, and these older trees are beginning to show dieback leading ultimately to death. Periods of prolonged drought stresses oaks and allows for opportunistic insects and fungi to colonize and further weaken them. Defoliation events also weaken trees and may lead to tree death in oaks that were already approaching the end of their natural lifespan. A few counties in southwest Virginia were heavily defoliated by gypsy moth in the springs of 2016 and 2017, and a variable oakleaf caterpillar outbreak caused severe defoliation of oaks in parts of central and eastern Virginia in July of 2017. Many of these defoliated trees were observed re-foliating later in the season, which may actually further weaken the tree by depleting its nutrient reserves. As Virginia's cohort of oaks continue to age and are weakened by environmental conditions such as drought and biotic stressors such as defoliating insects, oak decline will continue to be a problem throughout the state.

Variable Oakleaf Caterpillar- Virginia experienced an outbreak of the variable oakleaf caterpillar during the summer of 2017. This native defoliator is usually present in low numbers but can sometimes have population booms; the last documented outbreak was over 10 years ago. Reports of raining frass began mid-July, mainly from the area surrounding Richmond City. Trees were completely defoliated over the following two weeks of heavy variable oakleaf caterpillar feeding, and the VDOF responded to numerous inquiries with site visits and press releases. Patchy defoliation occurred in Virginia's piedmont region and parts of the coastal plain totaling approximately 18,000 acres spread over 14 counties. While the defoliation was alarming, very little long term damage is predicted and affected trees were observed re-foliating by mid-August. However, consecutive years of defoliation could lead to tree mortality, so trees in Chesterfield County will be monitored since parts of Chesterfield experienced a VOLC outbreak in 2016 as well.





Variable Oakleaf Caterpillar 2017



Abiotic Factors- Virginia did not experience large abiotic disturbances in 2017. Only a few incidents of localized high wind storms were reported. Weather conditions for much of the field season alternated between periods of drought and warmth followed by wet, cool conditions. These weather extremes can certainly stress trees and increase the likelihood of attack by secondary pests, contributing to decline patterns seen in older, mature trees.

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
(434) 220- 9026
Katlin.mooneyham@dof.virginia.gov
(434) 220-9060