



FOREST HEALTH REVIEW

January 2017



Gypsy Moth damage observed in Giles County during an aerial survey in June 2016.

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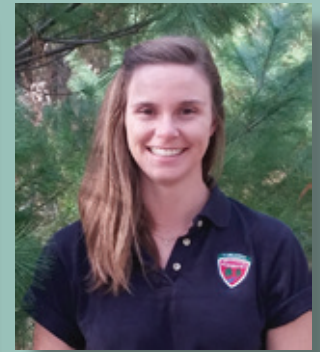
GREETINGS

I'd like to welcome Katlin Mooneyham, our new forest health specialist. Katlin received a bachelor's degree in natural resources from North Carolina State University and then a master's degree in entomology from Virginia Tech, where she conducted research on biological control of the hemlock woolly adelgid. Katlin was hired in May 2016 and hit the ground running with field work throughout the state. She has become an essential part of the forest health team, and we are fortunate to have her on board.

Considering the recent turnover within the forest health program, 2016 was a time to reflect on the mission and direction of our program. We want to continue the good work that has been established over many years but also evaluate how we can better meet the needs of our agency and the Virginia forest landowners we serve. In an effort to learn more about local issues, Katlin and I have been traveling to each of the 22 work areas to meet with field staff and discuss forest health concerns. It has truly been our pleasure meeting VDOF employees throughout the state and learning from their experiences. Each work area visit was enjoyable and productive, and we are excited to implement the many ideas and recommendations brought forth. If you have any further suggestions, please don't hesitate to contact us.



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BLUE RIDGE PRISM

The Blue Ridge Partnership for Regional Invasive Species Management (PRISM) is a collaboration of private landowners, conservation organizations, federal agencies, state agencies, local government entities and companies involved with treating invasive plants. Their mission is to reduce the impact of non-native, invasive plants in a 10-county region, which includes Albemarle, Augusta, Clarke, Greene, Madison, Nelson, Page, Rappahannock, Rockingham and Warren. VDOF has worked with the Blue Ridge PRISM since its inception, and we are happy to announce its new Regional Conservation Partnership Program (in conjunction with the USDA Natural Resources Conservation Service). This program will provide invasive species removal funding for nonindustrial, private forestland and agricultural producers to treat at least one of the following 10 high-priority invasive species: ailanthus (tree-of-heaven), autumn olive, Chinese privet, garlic mustard, Japanese honeysuckle, Japanese stiltgrass, kudzu, mile-a-minute vine, multiflora rose or oriental bittersweet. To apply, landowners must first establish farm records with USDA's Farm Service Agency and verify compliance with the provisions of the Agricultural Act of 2014 or "Farm Bill." They will then work with VDOF area foresters or NRCS district conservationists to develop a conservation plan that outlines treatment areas and the specific species that will be treated. As non-native, invasive plants continue to aggressively spread throughout the state and out-compete native flora, weed control becomes more difficult but also more imperative to forest health. We applaud the work of the Blue Ridge PRISM; it is a great example of collaboration across landscapes and a successful effort that was initiated by landowners. To request additional information, email info@blueridgeprism.org.



PINE BARK BEETLE PREVENTION PROGRAM

A system for predicting southern pine beetle (SPB) infestation trends using pheromone traps has been in place across the South since 1986. These traps were deployed this spring in five 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 activity was observed in four counties across the state, but only in small, isolated spots. There was also minimal black turpentine and *Ips* beetle activity (only 10 observations across nine counties). Chincoteague Island on the Eastern Shore of Virginia has been the main source of SPB activity over the last four years. Mature dense pines on the island are subjected to saltwater intrusion, and these stressed trees have become extremely susceptible to beetle attack. Unfortunately, there is little to be done except let the beetle outbreak run its course and begin planning management on the island following pine mortality.

In general, the southern pine resource in central and southeast Virginia remains healthy and productive. Federal funds from the USDA Forest Service, Forest Health Protection, support our Pine Bark Beetle Prevention Program including the following three components:



Southern Pine Beetle funnel trap placed in Prince Edward-Gallion State Forest.

- Pre-commercial pine thinning cost-share for landowners
- First commercial pine thinning cost-share for loggers
- Longleaf restoration cost-share for landowners

The southern pine beetle is the most destructive native forest insect in the southeast, and the costs of prevention are significantly less than potential impacts. Thinning is an effective strategy that reduces a stand's susceptibility to the southern pine beetle and limits the beetle's ability to expand in a stand. To date, Virginia has thinned more than 50,000 acres of pine (mostly pre-commercial) through our cost-share programs. Our logger cost-share is an attempt to incentivize loggers to conduct first commercial thinning jobs on tracts that are five to 25 acres in size and often too small to justify the overhead costs

associated with moving to and working on the site. Virginia's Pine Bark Beetle Prevention Program also supports all aspects of longleaf restoration, including site prep, planting and burning. Longleaf is generally more resistant to the southern pine beetle so this is an important aspect of the overall prevention program. Contact your local area forester for more information.

LAUREL WILT DISEASE

This new forest health concern is not yet in Virginia, but it is quickly spreading throughout the Southeast. Present in nine counties in Southeastern North Carolina, this disease could be extremely detrimental to native redbay and sassafras. It was initially detected in the United States in Georgia in 2002. Laurel Wilt Disease is caused by the fungal pathogen *Raffaelea lauricola*, which is carried by the redbay ambrosia beetle, native to Asia. Beetles bore into host plants and transfer the fungus to the plant tissue. Fungal activity causes blockage of water-conducting cells in the plant, which prevents movement of water, thus causing wilted foliage and, eventually, tree death. This pathogen and beetle complex attacks redbay, avocado trees and sassafras. Its presence has been confirmed in Florida, Mississippi, Alabama, Georgia, South Carolina, North Carolina and more recently in Louisiana, Texas and Arkansas. LWD can spread two ways: through the natural dispersal of the beetle, and through the movement of wood that is infested with the redbay ambrosia beetle. Though redbay is

limited to a narrow geographical range in Virginia, sassafras is a common tree found throughout the state. Virginia's pervasive sassafras population may enable the disease to reach remote redbay populations quickly, thus facilitating a rapid spread of the disease. The impact of Laurel Wilt Disease on both tree species is a concern, and we will continue to monitor the state for signs of this new disease.

GYPSY MOTH

Gypsy moth won the “forest pest of the summer” award in western Virginia this past year. After more than five years of low gypsy moth activity, populations have begun to increase. The last big outbreak in Virginia occurred in 2008-2009, and crashed by 2010. From 2010 to 2014, there was no significant damage in the state due to gypsy moth. In 2015, however, an area of more than 8,000 acres of defoliation was detected in Highland and Bath counties, and damage in 2016 was even more widespread.

Reports of significant defoliation in Giles and Bland counties started coming in late May and early June. 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. The forest health staff conducted two aerial surveys in these areas to map the damage using new Digital Mobile Sketch Mapping (DMSM) technology. The DMSM enabled us to map the damage instantaneously as we flew over large areas of defoliated ridgetops. The USFS also flew the national forests in Virginia this summer, and it was able to confirm damaged areas in Bland and Giles, as well as identify a few more spots in Bedford, Botetourt and Rockbridge counties. The 2016 gypsy moth map on page 5 is a

synthesis of data collected from VDOF and USFS aerial surveys. In total, we mapped approximately 28,900 acres of defoliation on 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 it is, perhaps, an indication that populations are on the rise. However, much of the gypsy moth population dynamics are dependent of the presence of *Entomophaga maimaiga*, a fungus that attacks gypsy moth larvae. This fungus proliferates in wet weather, so a spring with high precipitation could lead to a reduction of gypsy moth.

The winter is a good time to survey for gypsy moth egg masses, which may help predict the likelihood of defoliation in the coming spring/summer. Egg masses are generally 1-2 inches long, yellow-tan in color and look similar to felt material. Each mass contains 500-1,000 eggs, so the destruction of egg masses may help protect trees on small lots. Look for egg masses on the bark of trees and objects on the ground, such as rocks, logs or outdoor furniture. Scrape off and destroy egg masses by soaking them in soapy water. Chemical control is also an option in the spring when gypsy moth larvae first emerge.

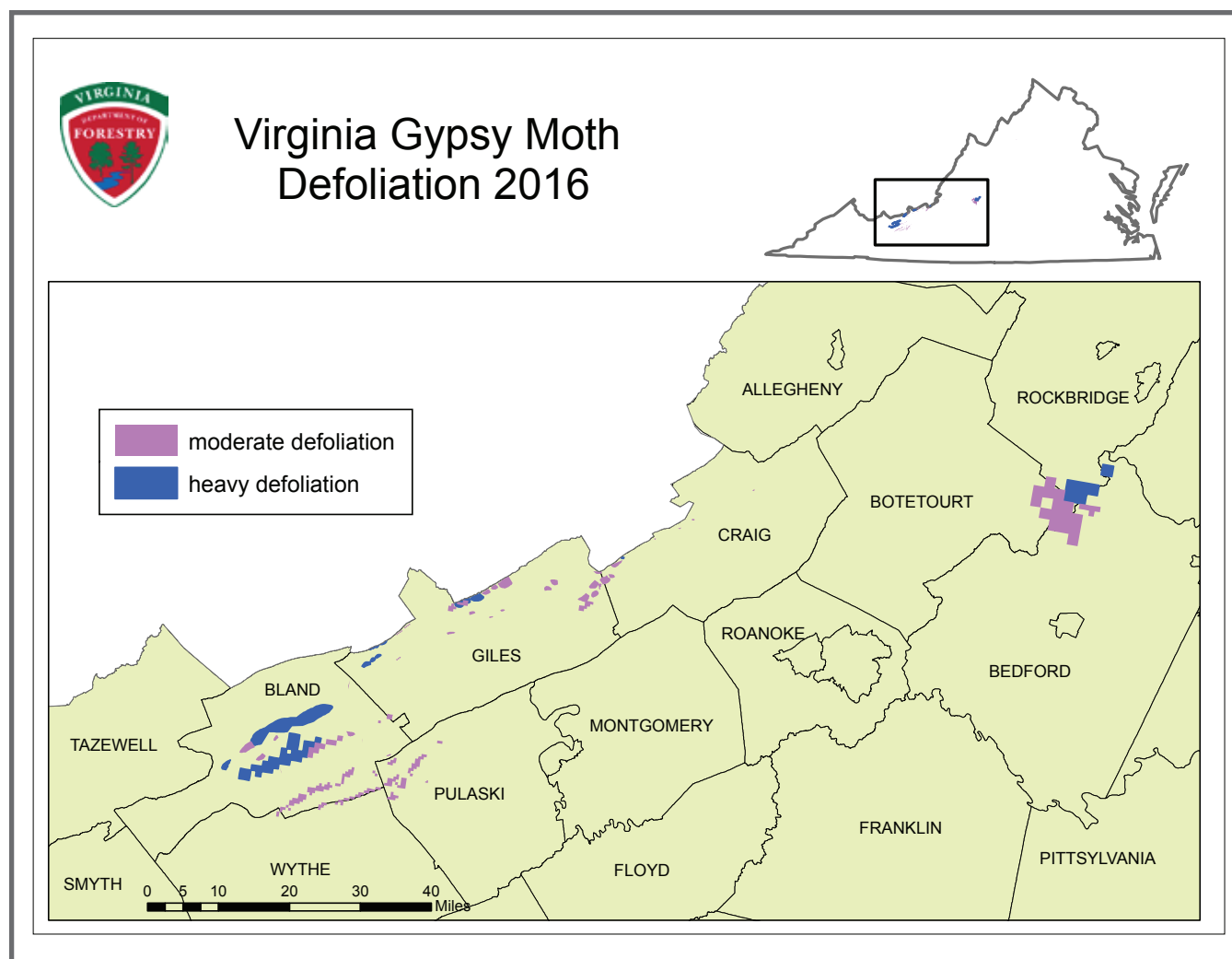


Gypsy moth egg mass



Gypsy moth larva

Continued on page 5



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. We received many phone calls and emails from both landowners and foresters about mature oaks declining or dying. In most cases, we diagnosed these trees as experiencing oak decline, with these seasonal and biotic factors all contributing to accelerated

mortality of already mature and declining oaks. This year is not unique in experiencing these stressors. 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. With many of the state's oaks reaching maturity at the same time, this is a phenomenon that we will continue to see as these environmental conditions continue to factor in with overall tree health.

TORNADO

Tornado warnings were issued Feb. 24, 2016 throughout central and southern Virginia. This type of severe weather event is uncommon for Virginia in February, but doppler radar recorded wind gusts at 100 mph, and storms raced across the counties at speeds of 55 mph. At least seven tornadoes were reported in Fluvanna, Appomattox, Mecklenburg, Waverly and the Middle Peninsula/Northern Neck area. Tornadoes can devastate forestland by bending, breaking and uprooting trees, and damaged trees that survive become more susceptible to disease and insect pests. Flooding and hail that often accompany tornadoes can also lead to long-term forest health problems. Roots in flooded soils are deprived of oxygen and begin to die back. While most of the damage will be obvious immediately following the storm, some trees may decline slowly, and mortality may be gradual over the next few years. Tom Zaebst, assistant manager of state forests, and Mike Womack, forest manager at Appomattox-Buckingham State Forest (ABSF), describe the process of evaluating damage and salvaging timber in the ABSF following the Feb. 24th tornado. We appreciate them taking the time to share their experience with us.

Lori: How did the tornado impact ABSF?

Tom: The tornado hit ABSF with substantial force, traveling from the southwest to the northeast. At the entry onto the forest, the impact corridor was about 1,000 feet wide and generally tapered down as it proceeded across the forest, ending up about 120 feet wide at its exit. Altogether, 2.9 miles of the state forest had a total of 172 acres of timber downed. The strong winds did tend to throw trees rather than break them off. If there has been a silver lining to this misfortune, it is that the timber remained mostly intact and readily salvageable.

The tornado behavior was somewhat interesting in that it hugged the ground, dropping down into the creek bottoms and destroying some of the biggest, oldest and most beautiful trees on the forest. Mother Nature does not respect the state forest streamside management zones. The storm did weaken as it traversed the forest – changing from knocking every tree down to toppling only the biggest in spots.

Lori: How did you map and evaluate the damage?

Mike: On Feb. 25th, I surveyed damage from the roads to get an idea for location of damage, but it was too windy that day for an on-the-ground survey. I started lining up loggers on the 25th for salvage operations. I contacted state forest staff Shannon Lewis, Tom Zaebst and Gary Heiser to assist with an on-the-ground survey

starting Monday, Feb. 29th. We paired up and walked down both sides of the tornado path across the forest and mapped the edge of the damaged timber. I flew a few days later with Rick Butler, VDOF forester in Appomattox, for an aerial survey of both state forest and private lands and mapped the damage path from the air. I also met with Irena Frentz from DCR and Holliday Lake State Park staff to survey timber damage on park property.

Lori: What has the clean-up/salvage process been like?

Tom: The real work began in evaluating how to salvage the wind-thrown timber. Coordinating logging contractors, adjacent landowners and accessing some of the most remote parts of the forest was a demanding task – all while racing against time. The longer the timber lays dead the less it is worth. Additional work was required to harvest the remaining portions of stands where most of the stand was destroyed. In other areas, timber harvest was carried to natural stand breaks, such as ridge tops or drainages to clean up impacted stands.

Mike Womack administered the salvage operations. The State Forest contracted three loggers, operating concurrently, to capture as much salvage as possible. Mike also administered salvage on Holliday Lake State Park, saving its staff much time and trouble.

Mike: We contracted with three local logging crews. Two happened to be just finishing up cutting tracts on ABSF they had purchased and moved right over to doing salvage. We used three loggers who had different markets/specialties: one was a hardwood logger, one a pine pulpwood and one who usually cuts a mix. So, we put them each in areas that best suited their skills. This was important in being able to move the products quickly and getting good prices- especially for the grade hardwood.

We installed a culvert for an entrance and improved some entrances with gravel to be able to access the salvage areas. We also had to push one road to access a salvage area. We had wood moving within two weeks and finished up in September. The following is a rough estimate of acres harvested in the salvage operation: 225 acres harvested (105 acres pine and 120 acres hardwood). Approximately 15 acres of downed timber was left in drainages too steep to access. We also assisted Holliday Lake State Park in salvaging 11 acres of downed timber.

The loggers had the most difficult part. There was a lot of dangerous chainsaw work cutting the downed trees, and it was time consuming with the skidder to untangle the wood and get it skidded to the deck. A lot of the wood had to be pulled up by cable out of drains/steep slopes to where they could pick it up with the grapple. Thankfully, there were no serious injuries. The reforestation plan is to plant 115 acres in loblolly pine, 30 acres in shortleaf pine and the remainder of salvage areas as natural hardwood and pine regeneration.

Continued on page 7

TORNADO, CONTINUED



Photo taken from an aerial survey showing down trees along the tornado path.



Tornado damage in Appomattox-Buckingham State Forest.

Appomattox-Buckingham State Forest

February 24th, 2016 Tornado Impact



The tornado hit ABSF with substantial force, traveling from southwest to the northeast. At the entry onto the forest, the impact corridor was about 1,000 feet wide, and generally tapered down as it proceeded across the forest, ending up about 120 feet wide at its exit. Altogether, 2.9 miles of the state forest had a total of 172 acres of timber downed. The strong winds did tend to throw trees rather than break them off.

Mike Womack, forest manager for the ABSF, had the tornado's impact GPS mapped within days and salvage loggers on the ground within two weeks. As can be seen in the imagery above, salvage turned into clearn-up harvest where only a small portion of the original stand remained intact.

Legend



0 0.25 0.5 0.75 1 Miles
TZ-2016

LATE SEASON NATIVE DEFOLIATORS

Late this summer into early fall, we noticed a significant occurrence of late season, native defoliators. The damage is unsightly and noticed by many foresters and members of the public, but these insects aren't particularly destructive to the trees on which they feed. Three species were particularly active this season: orange-striped oakworm, fall webworm and variable oakleaf caterpillar. Both the orange-striped oakworm and variable oakleaf caterpillar feed on oaks and closely related species, but the fall webworm is a generalist that feeds on more than 100 species of deciduous tree species.

The orange-striped oakworm can be distinguished from other caterpillars by the eight orange stripes that run across the length of its black body. It also has long black horns originating on its thorax. This species has only one generation per year.

Variable oakleaf caterpillar can be quite variable in color, ranging from a green, dull-red or brown body, depending on age of the caterpillar, but all color morphs have two white lines running down their backs. Heads are large and have two bands running down laterally, the inner one dark and the other whitish in color. When disturbed, this species can release formic acid! This species can have two generations per year here in the South. We visited a variable oakleaf caterpillar infestation at Chesterfield State Forest this past summer with Rich Reuse of the VDOF Five Forks Work Area to see (and hear) these caterpillars in action. In times of heavy defoliation, you can hear what sounds like rain in the forest, but is actually insect frass (excrement) falling down from the trees as the insects feed.

The fall webworm in Virginia has a reddish head with orange dots running in rows along the body. Caterpillars are covered in dense white hairs that arise in clumps along the body. This defoliator tends to have one to two generations per year here in Virginia. No formal observations were recorded by foresters, but the impacts and signs of this species were evident statewide.

*Fall webworm
silken tents*



The important thing to note with all late season native defoliators is that though their damage is unsightly and looks destructive to the trees, they are not a particularly large threat to the trees they feed on since the trees will simply lose those leaves shortly afterwards anyway. There is not a large amount of energy expended by the trees since they will not produce a new flush of leaves so late in the season. When dealing with late season native defoliators, we generally don't recommend treatment. These sporadic cyclical outbreaks and defoliation events can be alarming, but usually not something that will cause long-term damage.



*Variable
oakleaf
caterpillar at
Chesterfield
State Forest*

*Orange-
striped
oakworms at
the Augusta
Nursery*



RHODODENDRON DIEBACK

Dying rhododendron isn't typically a news-worthy event, but the widespread mortality of *Rhododendron maximum* (rosebay rhododendron) in parts of western and central Virginia is significant. Large stretches of dead and declining rhododendron line the Blue Ridge Parkway and surrounding areas in Floyd and Patrick counties. Dennis Anderson, senior area forester of the VDOF New River Work Area, has observed this rhododendron mortality for the past eight years and continues to get calls from worried landowners. It is unsightly and worrisome to tourists traveling along the Parkway, residents of the area and forest health professionals.

Last year, the Virginia Tech Plant Disease Clinic organized a trip to observe the damage and to collect samples in Floyd and Patrick counties. Notable observations and results include the following: decay fungi (not rhododendron pathogens), presence of ring nematodes, possible vole tunnels and signs of a wood-boring insect that was later identified as a secondary pest. These results revealed several agents that may affect weak or declining plants, but a single damaging agent that would attack and kill healthy rhododendron plants was not identified. *Phytophthora* root rot and *Botryosphaeria* dieback, two common causes of rhododendron dieback in the nursery and landscape, respectively, were not found on the samples collected and were ruled out as possible causes.

A second site visit was arranged in September 2016. VDOF staff from the Piedmont and New River work areas, the Virginia Tech Plant Disease Clinic and Nematode Assay Clinic, and a couple of residents, including a retired forest pathologist, all convened along the Blue Ridge Parkway near Meadows of Dan. As expected, rhododendron mortality was visible along both sides of the Parkway. Further exploration of the area revealed large expanses of dead/declining plants, sometimes next to healthy plants. Many plants were in early stages of decline with wilted foliage. The surface layer beneath the rhododendron was thick organic matter with circular tunnels



Dead rhododendron along the Blue Ridge Parkway near Mabry Mill



Left to right: retired forest pathologist Edward Barnard, Mary Ann Hansen with the Virginia Tech Plant Disease Clinic, resident Ralph Lutts and VDOF employees Jason McGhee, Kevin Keith, Dennis Anderson and Chris Thomsen



Wilted foliage on a dying rhododendron

that we hypothesize were constructed by voles. White mycelium was observed under the bark at the base of a few dead rhododendron plants. This can be a sign of *Armillaria*, a fungus that commonly decays roots of forest trees that are stressed by some other factor. Soil samples were collected, and ring nematodes were later identified by the Virginia Tech Nematode Assay Clinic. In a previous study that investigated declining rhododendron in the Great Smoky Mountains (Baird et al., 2014), nematode species were believed to form a disease complex with select fungi, but that has not been confirmed at our sites.

The present conundrum surrounding this 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. Future research is necessary to rule out possible disease and insect factors; confirm vole damage and what effect voles could have, and consider other abiotic factors, such as weather events and rainfall patterns. Additionally, we hope to learn more about the role of *Rhododendron maximum* in the

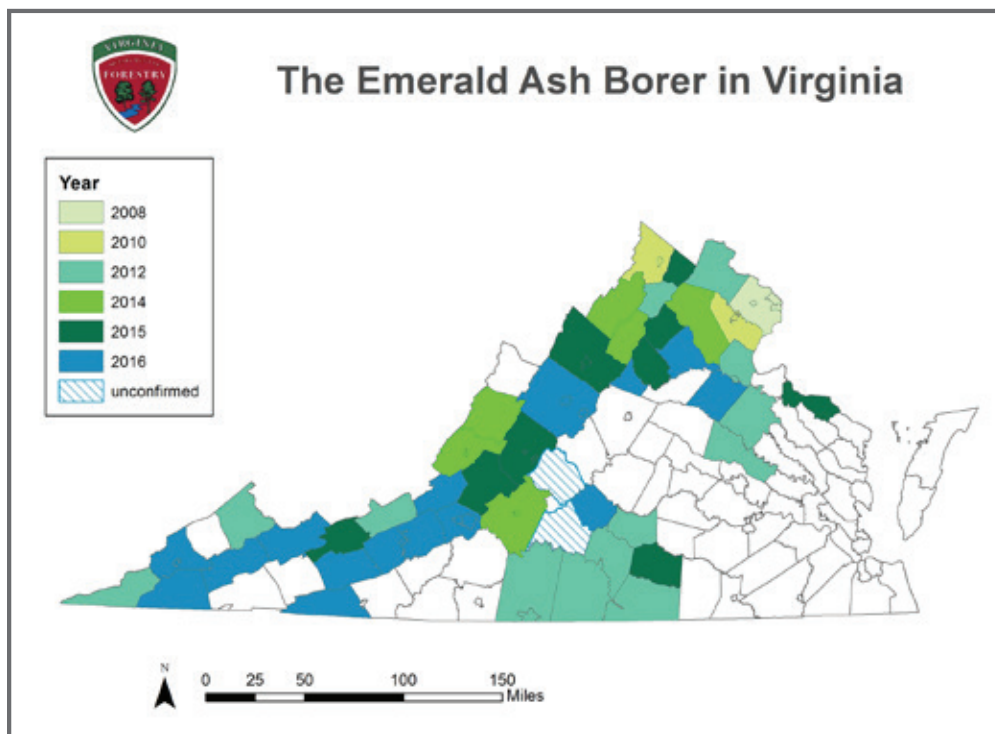
succession of our forests. This species is normally a riparian species that grows best in full shade. Historical changes in the forest canopy or expansion of the species into marginal areas may affect the survival of this species. *Rhododendron catawbiense*, a species adapted to drier sites than *R. maximum*, is not affected by this die-off, to our knowledge. Perhaps this is a natural part of successional change in the southern Appalachian forest. Even so, the great expanses of dead plants are troublesome, and we encourage you to contact the VDOF forest health program if you see sizeable patches of dead/declining rhododendron in Virginia.

EMERALD ASH BORER

While the emerald ash borer is no longer new to Virginia, it was a new arrival to 15 counties in 2016 – bringing the total number of confirmed counties to 46. The majority of the newly confirmed counties tended to be clustered in the southwestern part of the state (Wise, Scott, Russell, Tazewell, Craig, 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 larval EAB has been collected and confirmed by the Virginia State Entomologist. This year, we had 50 new points entered into VDOF's Integrated Forest Resource Inventory System (IFRIS), some of these in previously confirmed locations and others the first confirmation for that area.

This invasive insect pest, originally from Asia, was first reported

in 2008 in Fairfax County. With its presence now confirmed in about 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 six new positive IDs within the Park, including our confirmed EAB point for the newly-added Augusta County. The forest health team at VDOF witnessed these insects mating and aggregating on ash at a private landowner's property in Rockbridge County in early June – characteristic timing for the adults to be active and laying eggs in bark crevices. Because of the nature of how these insects feed and impact ash trees, it is unfortunate that by the time symptoms of decline appear on the tree, the insects have already been active and feeding on the tree's vascular tissue for about three to five years. The signs of active EAB sites include crown decline, epicormic sprouting off the main trunk, D-shaped exit holes along the bark, evidence of woodpecker bark stripping and S-shaped galleries under the bark where larvae have been feeding.



FOREST HEALTH CALENDAR

Forest Health Concerns Throughout the Year

January

- Continue to survey for gypsy moth egg masses
- Begin to survey for fall cankerworm egg masses

April

- Fusiform rust fruiting bodies are evident
- Adult locust leafminers begin feeding
- Place southern pine beetle pheromone traps

July

- Adult yellow poplar weevil present and active
- Native defoliators, such as variable oakleaf caterpillar larvae, begin feeding
- Gypsy Moth adults present- females begin to lay eggs
- Be on the lookout for pine sawflies

October

- This is a good time to survey for gypsy moth egg masses
- Rake fallen leaves to prevent the spread of anthracnose
- Start looking for hemlock woolly adelgid egg masses
- Fall fire season Oct. 15 – Nov. 30

February

- Remove fall cankerworm bands from tree trunks
- Survey for eastern and forest tent caterpillar egg masses
- Spring Fire Season: Feb. 15 – Apr. 30

May

- Treatment for gypsy moth should be underway
- Anthracnose symptoms may appear on sycamore
- Defoliation by fall cankerworm should be evident

August

- Late season native defoliators, such as orange-striped oakworm, walnut caterpillar and oak skeletonizer, are present
- Fall webworm nests become evident on trees
- Symptoms of bacterial leaf scorch present on leaves

November

- HWA should be evident

March

- Eastern tent caterpillar should hatch around bud break
- Fall cankerworm eggs hatch in the spring

June

- Defoliation by gypsy moth larvae should be reaching a peak
- Peak adult emerald ash borer activity
- Locust leafminer larvae start feeding

September

- Migration time for monarch butterflies
- EAB larvae feed under the bark through the fall and stay here over winter

December

- Place fall cankerworm bands
- Vole activity/damage may increase under the protection of snow

FUSIFORM

Another side effect of the unusually wet spring we had in 2016 was a higher incidence of fusiform rust. We had reports of fusiform throughout the eastern region in April and May. King William and King and Queen counties had the most reports entered into Integrated Forest Resource Inventory System (IFRIS) followed by Lunenburg and Brunswick counties. These reports totaled almost 260 acres of fusiform incidence, though more localized incidents of it were seen statewide. While this is more fusiform than we have had reported in past years, this is still nothing large scale to worry about – simply a product of this year's weather events and something to keep an eye out for in future years. It is not uncommon to see signs of this fungus on pine trees, and the fungal activity increases in cool, wet springs. This condition is caused by the fungus *Cronartium fusiform*. It attacks many species of southern pines but is most damaging on slash and loblolly pines. This fungus requires two hosts to complete its life cycle – first starting on oaks and then moving to pines, where the most damage occurs. The movement between the two hosts is done by reproductive spores splashing from oak to pine, hence why it is more common in wet spring weather. The signs of fusiform present themselves on branches as swellings or galls and produce bright orange fruiting bodies in the spring. If these cankers are present on branches, they should not affect the tree's overall health. Cankers that develop on the main stem of pines however, can have negative impacts. Severe cases of fusiform are especially damaging to commercial pines, creating weak points in the structural composition of the trees, causing them to break. Fusiform also causes unsightly gnarls in the

timber, which may lower the value of the wood. There is really no control or management of this fungus, but, in some cases, pruning can be effective if the impacted tissue is away from the main stem of the tree. While this all sounds like doom and gloom, it is important to note that the largest incidence reported this year was 60 acres of scattered fusiform. Our intention here is not to suppose alarm but just point out the slight increase in occurrences and encourage increased vigilance this coming spring should we have another season with high precipitation.



Fusiform rust canker on loblolly pine.

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