



FOREST HEALTH REVIEW

November 2010



A 25-acre southern pine beetle spot on the Eastern Shore of Virginia in Accomack County.
Photo by Skip Jones, consulting forester

IN THIS ISSUE...

RESEARCH ON BIOLOGICAL CONTROL OF TREE-OF-HEAVEN UPDATES:

- Weather
- Fall Webworm Outbreak
- Gypsy Moth
- Pine Bark Beetles
- SPB Prevention Program

- Emerald Ash Borer (EAB)
- Thousand Cankers Disease (TCD)
- Biological Control of HWA at Sandy Point and Channels State Forests
- Brown Marmorated Stink Bug (BMSB)
- Weed Control Work on State Forests
- Virginia Assoc. of Forest Health Professionals (VAFHP) - What's This?

GREETINGS

This year has been the usual mix of good news and bad news. The good news is that recorded gypsy moth defoliation was down to zero for the first time in six years, and I expect that to hold at least through next year. In addition, southern pine beetle spots have remained pretty low in Virginia and across the South. We are now more than 15 years in Virginia without a significant southern pine beetle outbreak in the pine growing areas of the Piedmont and Coastal Plain. On the other hand, drought and hot temperatures have likely led to elevated reporting of Ips and turpentine beetle infestations over the past few months.

As for bad news, the emerald ash borer continues to spread, although not unexpectedly. The surprise of the year has been the discovery near Knoxville, TN, of a significant area of thousand cankers disease, which slowly kills black walnut. For many folks, this is a new, emerging problem to be added to an ever-growing list. This issue will cover all of these topics and more. We also have a guest article by Amy Snyder, a graduate student at Virginia Tech, who is working on some exciting new research related to biological control of tree-of-heaven, along with some information on how you can get involved with the effort. As always, I hope you find the content useful and informative.

Chris Asaro, forest health specialist, Headquarters

(434) 977-6555; chris.asaro@dof.virginia.gov



RESEARCH ON BIOLOGICAL CONTROL OF TREE-OF-HEAVEN

by Amy Snyder, Department of Entomology, Virginia Tech

Tree-of-heaven (*Ailanthus altissima*) is a widespread invasive weed found throughout much of the continental United States. The species was imported as a shade tree indirectly from Europe in the late 18th century and, later, directly from its native habitat in China. This tree is widely known for its ability to withstand environmental pollutants, poor soils and water stress, but nearly every part of this tree produces a strong, unpleasant odor. Tree-of-heaven (TOH) is a serious threat to native ecosystems because it is a strong competitor and produces allelopathic chemicals that inhibit the growth of native hardwood and coniferous trees. In addition, few herbivores significantly impact its health and reproduction.

TOH is a fast-growing, prolific tree reaching heights of up to 27 meters in its 75- to 80-year life span. Mature TOH can produce up to 300,000 samara seeds per year, which are ideally shaped for wind dispersal. TOH also spreads vigorously through asexual sprouting from roots and stumps, often resulting in dense thicket growth. TOH produces weak, lightweight wood making it unsuitable for timber and prone to breaking from heavy winds or snow accumulation. TOH can often be seen growing along roadsides, newly harvested forest areas, agricultural land and other disrupted habitats. In Virginia, it is dominant along I-81 and Route 29 and is widely distributed even in protected areas, such as Shenandoah National Park. Many natural resource professionals and landowners rate TOH as the worst forest weed in Virginia. While herbicides can be used to kill TOH, this is not practical on a large scale. These are some of the reasons why finding a biological control agent for TOH is a priority, and a fungus with the scientific name *Verticillium albo-atrum* seems to have the most potential for this.

www.dof.virginia.gov

Continued on page 3

RESEARCH ON BIOLOGICAL CONTROL OF TREE-OF-HEAVEN, FROM PAGE 2

Verticillium albo-atrum forms durable resting structures known as melanized hyphae, which can remain dormant in the soil for nine months to four years, depending on conditions. Germination occurs when fungal propagules come in contact with host root exudates and can enter through root tips, older roots or xylem through mechanical injury. Once the host plant is penetrated, the fungal pathogen is restricted to the xylem and spreads through vessel end plates. Here, fungal propagules accumulate and release enzymes, which allow the fungi to lyse (tear apart) the host cell walls and expose food reserves. This fungal development stimulates the host plant to produce gums, which clog the xylem, resulting in wilt symptoms.

Verticillium wilt symptoms include yellowing, gradual wilting of leaflets and leaves, defoliation and abnormal branch death in irregular patterns. As necrosis occurs, brownish streaks appear in the xylem of the affected branches, roots and stems. It is characteristic of this pathogen to cause wilt to an entire TOH stand quickly, rather than to only a few trees within a healthy stand.

V. albo-atrum has been a well-known vascular wilt pathogen of TOH in Virginia, Pennsylvania and New York since the early 1950s and has been recently responsible for acute TOH decline in south-central Pennsylvania. Dr. Don Davis from the Pennsylvania State University first noticed a severe dieback of TOH in 2000, and from 2000-2008 more than 10,000 canopy TOH died as a result of *V. albo-atrum*. When *V. albo-atrum* is inoculated into the stem of potted TOH greenhouse seedlings and forest canopy TOH, 100 percent mortality resulted in nine weeks and 20 weeks respectfully. Currently, Dr. Davis' PhD candidate, Matt Kasson, is working on the genetic background and host-specificity testing of this pathogen to see if the fungus is specific to TOH and safe to release as a biological control agent. Thus far, more than 50 plant species have been tested for *V. albo-atrum* infection and all have been found non-symptomatic, providing evidence that this fungus may be specific to TOH.

Southerners familiar with this rampant tree are excited about this potential biological herbicide. However, before testing can occur, the fungus must be found and identified as naturally-occurring on TOH within the state. A preliminary survey in southwest Virginia was conducted in 2009; two infested stands were found not far from Virginia Tech. This discovery provides confidence that we will be able to find it in other southeastern locations as well.

Starting in June 2011, with cooperative efforts from Virginia Tech and state forestry departments in Virginia, South Carolina and North Carolina, there will be a multi-state survey conducted to document naturally-occurring *V. albo-atrum* infestations within TOH stands. The survey will include initial sampling from symptomatic stands in VA, SC and NC to locate isolated pockets of infestation. During the following year, 2012, a systematic survey will be conducted to identify the spatial distribution of each pocket. By understanding the natural distribution and location of *V. albo-atrum* on TOH, we can better understand this pathogen's potential as a biological control agent.

The initial survey will be conducted by visual observation on all the major roads in VA, SC and NC to locate sites. This portion of the project is a large undertaking and some sites



Figure 1. Death and decline of a TOH stand infested with *V. albo-atrum* (left) compared to a healthy stand (right).

Continued on page 12

“Wisdom denotes pursuing the best ends by the best means.”

Francis Hutcheson, 1725

UPDATES

WEATHER

Hot, dry weather predominated throughout most of the spring and summer. By the end of September, many areas had seen little or no rain for more than a month until a tropical system moved up the coast and blanketed the eastern two thirds of the Commonwealth with up to 10 inches of rain. The southwest missed out on this system but had been receiving more rain than the rest of the state prior.

Table 1 presents the percent of normal monthly precipitation and average degrees above (+) or below (-) monthly average temperature for each of nine geographic regions in Virginia (defined below). For monthly temperatures, a "0" indicates average.

Table 1

	SW	CW	NW	NP	CP	SP	NCP	SCP	ES
APRIL Precip	50 to 90%	25 to 50%	25 to 50%	25 to 50%	25 to 50%	25 to 50%	25 to 50%	25 to 50%	5 to 25%
APRIL Temp	+2 to +6	+2 to +7	+2 to +6	+4 to +8	+4 to +8	+2 to +8	+2 to +6	+2 to +5	+4 to +6
MAY Precip	75 to 125%	75 to 125%	75 to 125%	100 to 150%	75 to 100%	100 to 150%	50 to 100%	100 to 125%	75 to 125%
MAY Temp	+2 to +4	+2 to +4	0 to +4	+2 to +4	+2 to +6	+2 to +6	+2 to +6	0 to +6	+2 to +4
JUNE Precip	70 to 200%	50 to 70%	50 to 70%	10 to 50%	50 to 100%	50 to 100%	25 to 70%	50 to 100%	25 to 100%
JUNE Temp	+2 to +6	+4 to +8	+3 to +6	+4 to +8	+4 to +8	+4 to +8	+4 to +8	+4 to +8	+6 to +8
JULY Precip	50 to 130%	70 to 150%	50 to 70%	50 to 150%	25 to 70%	70 to 90%	25 to 50%	25 to 130%	5 to 50%
JULY Temp	-2 to +3	+1 to +4	+2 to +5	+4 to +5	+3 to +5	+2 to +5	+3 to +5	+3 to +5	+4 to +5
AUG Precip	90 to 150%	70 to 150%	50 to 130%	90 to 130%	70 to 200%	150 to 300%	50 to 130%	50 to 130%	70 to 110%
AUG Temp	-2 to +6	0 to +4	0 to +4	+2 to +4	+2 to +6	+2 to +4	0 to +4	+2 to +4	+2 to +4
SEPT Precip	70 to 100%	90 to 150%	70 to 100%	90 to 130%	90 to 150%	110 to 200%	50 to 150%	150 to 350%	70 to 150%
SEPT Temp	-1 to +3	0 to +5	+2 to +5	+3 to +5	+3 to +5	+1 to +5	+4 to +5	+2 to +5	+2 to +4

SW = Southwest (Cumberland Gap to Abingdon
to Blacksburg and Galax)

CW = Central West (Roanoke to Staunton)

NW = Northwest (Staunton to Winchester)

NP = Northern Piedmont (Loudoun/DC to Greene/Spotsylvania)

CP = Central Piedmont (Albemarle/Goochland to Bedford/Nottoway)

SP = Southern Piedmont (Campbell/Lunenburg to Henry/Mecklenburg)

NCP = North Coastal Plain (King George/Northumberland to
Chesterfield/Newport News)

SCP = South Coastal Plan (Dinwiddie/Brunswick to Virginia Beach)

ES = Eastern Shore

*"A generous and elevated mind is
distinguished by nothing more certainly than
an eminent degree of curiosity."*

Samuel Johnson, 1791

FALL WEBWORM OUTBREAK

For the second year in a row, an unusually large and severe outbreak of fall webworm has occurred along Skyline Drive in Shenandoah National Park. I wrote in detail about this phenomenon last year in the November 2009 issue. This outbreak is mostly affecting black cherry, which is very abundant in that area. Also affected are apple, hickory and basswood. Hickory is probably more preferred in general but there seems to be much less of it in this area compared to cherry. While the infestation is not as severe as last year, it is still pretty impressive to see all that webbing covering trees. In addition, while fall webworm typically is not lethal to trees, in this case, the severity of the outbreak and the location on high altitude, rough terrain and perhaps the influence of drought have taken a toll on many cherries. Mortality of black cherry is scattered but significant. Typically, during major outbreaks of native defoliators, natural enemies and diseases quickly build up in a year or two and cause a crash in the defoliator population. I suspect the outbreak will run its course this year, and we will see relatively little activity from fall webworm next year.



Scattered black cherry mortality and decline dot the landscape near Big Meadows in Shenandoah National Park due to a two-year fall webworm infestation.

GYPSY MOTH

For the first time in six years, we have reported zero defoliated acres from gypsy moth. The wet spring of 2009 and the resultant impact of *Entomophaga maimaiga* decimated gypsy moth populations across the Commonwealth. So few egg masses were laid in 2009, the populations were virtually undetectable this year. While we are experiencing a pretty bad drought this year, the spring of 2010 was reasonably wet, although not nearly as much as during 2009. It will likely take at least a couple dry springs in a row for gypsy moth populations to surge back to damaging levels again.



Dead oak trees litter the landscape on Poor Mountain, an area near Roanoke that experienced severe gypsy moth defoliation from 2005-2008.

That said, we are still assessing the mortality left in the wake of the last round of defoliation. As I've mentioned in previous issues, one of the worst hit areas was Poor Mountain to the southwest of Roanoke. This area received four to five years of heavy defoliation (since 2005), resulting in widespread oak mortality. I had an opportunity to visit this area on the ground this past spring with Chris Thomsen, Bob Boeren and Jon Willoughby. The loss of trees attributable to one insect was the most catastrophic I've ever seen in the Commonwealth. In many places, striped maple or tree-of-heaven was growing in very thick. Unfortunately, this is the new reality for forest management: once the canopy is lost, whether through harvesting or natural disaster, invasive plants lurking in the shaded understory and suddenly released must be aggressively managed if one has any hope of successful reforestation to a desirable condition. If not, our future forests will be less desirable and valuable economically, recreationally and aesthetically.



Chris Thomsen, assistant regional forester; Bob Boeren, forester, and Jon Willoughby, forest technician, examine heavy striped maple regeneration following heavy over-story oak mortality on Poor Mountain due to the gypsy moth.

“A sharp tongue is the only edged tool that grows keener with constant use.”

Washington Irving, 1820

UPDATES

PINE BARK BEETLES

The southern pine beetle continues to be relatively quiet across Virginia as in the rest of the South. There are still the occasional large spots that appear, but overall these spots do not seem to develop into full-scale outbreaks at the county or regional level. One particularly impressive outbreak occurred this summer in Accomack County on the Eastern Shore. The core area was about 25 acres with multiple, smaller infestations surrounding this area in a very large pine stand that was thousands of acres in size. This area is being actively managed and monitored by consulting foresters to limit the spread of the beetle. Although other spots in the vicinity have appeared, a flight this summer along the whole Eastern Shore revealed relatively little activity. This all validates, once again, the results of our spring trapping survey, which suggested low and stable or slightly increasing populations of southern pine beetle across Virginia this year.



A well-managed pine stand in Southampton County, VA.

On the other hand, the drought gripping much of the state since mid-summer is taking a toll on the health of many pine stands suffering from scattered Ips and turpentine beetle infestations. An increasing number of calls and IFRIS entries from our foresters in August and September about scattered pockets of dead pines here and there would

*“The greatest pleasure I know
is to do a good action by stealth,
and to have it found out by accident.”*

Charles Lamb, 1834

6

seem to confirm this.

During prolonged droughts, Ips and turpentine beetles can actually cause a lot of damage. Even though individual spots from these pests don't typically get that large or spread quickly, there can be so many of them that a forest manager may just decide to clear-cut the stand.

SPB PREVENTION PROGRAM

Last spring, with the arrival of a generous new grant from the USDA Forest Service, we were able to re-open our pre-commercial thinning (PCT) cost-share program after closing it down temporarily last November to avoid over-committing the remaining funding. This new grant will, hopefully, keep us going for a while without cessation. However, the rate of applications for the last couple of years has gone up significantly, so large sums of money don't last as long as they once did. It's a testament to the excellent job our foresters are doing in promoting the program and reassuring landowners that PCT is good silviculture and worth doing, even if bark beetles are never a problem for a particular stand. Since 2005, we've cost-shared almost 30,000 acres worth of PCT jobs and are still going strong.

Our logger incentive program, open since July 1, 2009, has been very popular and has been recognized by the USDA Forest Service as a job-creating or job-retaining program. We certainly hope this is true. To date, almost 1,500 acres of first commercial thinnings on pine tracts less than 40 acres have been subsidized by this program. Tracts of this size are often not profitable for a logging crew to reach due to high transportation costs.

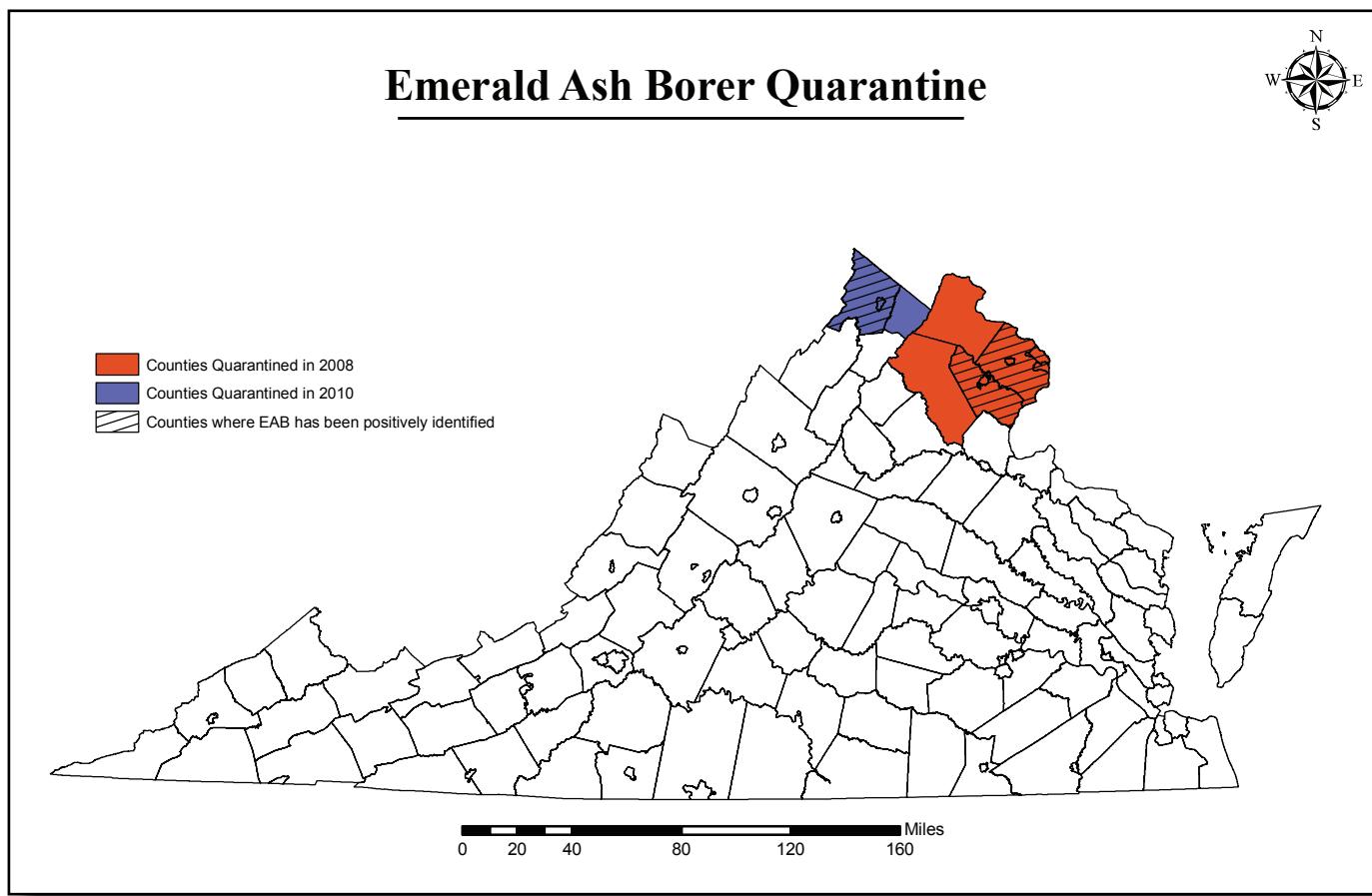


Dennis Gaston, eastern area state forest manager, wades through a stand of overstocked pine in need of pre-commercial thinning on Sandy Point State Forest.

EMERALD ASH BORER (EAB)

The emerald ash borer continues to spread, albeit not as quickly as might have been predicted based on spread rates in other parts of the country. With the widespread trapping effort by VDACS this year, it has been detected in two additional counties (Frederick and Prince William) in northern Virginia. Neither find was a surprise since the Frederick County find was close to Morgan County, WV, where an infestation has been known for two years. The new finds in Frederick County were near Route 522, which extends north into WV. The Prince William County find was near the northern end close to Fairfax County, where infestations were detected in 2008. Frederick County, Clarke County (where EAB has not been detected), and the city of Winchester have been added to the list of quarantined counties and municipalities, which include Loudoun, Fauquier, Fairfax, Prince William

and Arlington counties, as well as, the cities of Manassas, Manassas Park, Falls Church and Vienna (see map). It's interesting and surprising that EAB has not yet been detected in Loudoun or Fauquier counties given the close proximity to other infestations, although it's probably safe to assume an infestation of EAB is somewhere in those counties as yet undetected. The purple prism traps used to detect EAB, despite the thousands of them deployed, have a pretty limited range of attraction so they must be very near an infestation to catch any adult EAB. Furthermore, ash is significantly less abundant here than in the Mid-West so this may also inhibit easy dispersal of the pest. Finally, it is quite possible that the quarantines are having some impact in slowing down the movement of EAB, which is the best case scenario.



“Where observation is concerned, chance favors only the prepared mind.”

Louis Pasteur, 1854

UPDATES

THOUSAND CANKERS DISEASE (TCD)

The emails began circulating in early August: thousand cankers disease of black walnut was discovered in and around Knoxville, TN, the first confirmed find in the Eastern U.S. Further details in subsequent emails followed, and I made an effort to circulate them among our personnel to educate them about a new problem few outside forest pest circles had heard of in this part of the country. This disease, along with its vector, the walnut twig beetle, has been on our radar for the last couple of years. It was known as an emerging problem in western cities, where black walnut is not native but is widely planted as an urban tree. Some of these municipalities out West have witnessed the death of most planted walnut trees over a relatively short time frame. The fear was that it would not take much to accidentally introduce TCD to the Eastern U.S. and the native range of black walnut through firewood movement or some other means. As it soon became apparent this summer, this had already occurred some time ago. After close examination of the diseased trees in Knox County, it became apparent that this slow-acting disease may have been present in these trees for as long as 10 years. Therefore, many believe it is only a matter of time before it is found somewhere else in the East. Knox County is less than 50 miles from the state line of Virginia, so we may be facing a similar problem before long. If you come across a specimen of black walnut that you suspect may have the disease, the best route to take is to work through the local Virginia Cooperative Extension office. They will fill out a form and forward the specimen to the Plant Disease Clinic at Virginia Tech. The Clinic is well equipped and staffed with trained plant pathologists to make an accurate diagnosis of the disease. VDACS also has a state plant pathologist, Norman Dart, in Richmond who can also receive and diagnose samples. Likewise, any tiny beetles you find in diseased walnut that you suspect may be walnut twig beetle can be sent to the Insect ID Lab at Virginia Tech via the same process. Details on how to

properly collect and submit samples to Virginia Tech can be found at the following website: http://www.ppws.vt.edu/~clinic/submit_sample.php.

BIOLOGICAL CONTROL OF HWA AT SANDY POINT AND CHANNELS STATE FORESTS

In past issues, I've written about the release and subsequent monitoring of the HWA predator *Laricobius nigrinus* at James River State Park in 2005 to protect the remnant population of hemlocks present on and near the bluffs overlooking the James River. It came to my attention this year that two of our state forests might also be suitable candidates for a similar effort. The Channels State Forest, which is situated in the Clinch River Basin in Washington County, contains many natural stands of hemlock and is right in the heart of the hemlock's range. This is also an area where HWA has not yet had a long presence compared to other parts of the Commonwealth, and many hemlock stands are still in reasonably good condition. The other location was more of a surprise to me: Sandy Point State Forest in King William County. It was earlier this year that Dave Slack and Dennis Gaston brought to my attention a remnant stand of hemlock along a creek emanating from the Mattaponi River. While I have heard of these isolated hemlock populations existing in the Coastal Plain in areas far removed from the core range, I had never seen one until this year. While the hemlock



A mixed beech-hemlock stand on Sandy Point State Forest near the Mattaponi River, King William County, VA.

"It is impossible to enjoy idling thoroughly unless one has plenty of work to do."

Jerome K. Jerome, 1886

population at James River State Park is similarly isolated, it is only about 20 miles or so from the core range of hemlock, as opposed to 120 miles and a much milder climate at Sandy Point. Walking towards this population through a typical flatwoods stand of loblolly pine, you would never guess it was there until you stumble upon it. The ground suddenly grades steeply downward towards a creek, and you enter a shady forest stand with abundant beech trees and, yes, a very viable stand of hemlocks from small saplings to large trees up to 12 to 18 inches in diameter.

I plan on visiting the Channels and Sandy Point this fall with Scott Salom to evaluate potential release sites and options. Scott is a professor of forest entomology at Virginia Tech whose lab has pioneered the rearing and release of *Laricobius nigrinus* across the range of HWA. They are working on rearing and releasing a new species of *Laricobius* from Japan that looks even more promising than *L. nigrinus*, although it is not yet ready for distribution. While it is difficult to say, at present, whether the beetles have been successful at limiting the impact of HWA, this effort remains our best hope of doing so.

BROWN MARMORATED STINK BUG (BMSB)

The BMSB problem was first discovered in the U.S. near Allentown, PA, in 1998 but probably existed at least several years earlier. Since BMSB is native to China, Japan and Korea, they likely arrived through shipping from one of those countries. Since their arrival, they have spread to more than 20 states including most of the East Coast states. These insects become household pests during the fall through winter as days become shorter and nighttime temperatures drop. While they don't bite or get into stored food, their large numbers and foul smell when disturbed can be a considerable nuisance. In this respect, they present a very similar problem as the multi-colored Asian lady beetle, which, strangely enough, has been noticeably less abundant the last year or two. Unlike the lady beetles or lady bugs, however, which are predators of other pest insects, such as aphids, BMSB is becoming an important pest of a number of fruit and vegetable crops. Their piercing-sucking mouthparts can cause blemishing and tissue distortion of fruits and vegetables, in some cases making the crop difficult to sell.

Here in Charlottesville, I first noticed these buggers last year as they began to invade our office building and calls began coming in from homeowners dealing with them for the first time. This year, the problem seems to be noticeably worse than last year. The stairwell near my side of the building at HQ often has dozens of them on the walls and ceiling, and there is a noticeable stench as they are probably disturbed

repeatedly due to the human traffic coming through all day long. Like the lady bugs, they seem to prefer south or west-facing sides of buildings and bright surfaces. They are more active during sunny, warm weather. Although they spend the winter indoors, they often find hiding places and may go unnoticed until warm conditions raise their activity levels and they begin to walk and fly about more noticeably.

While some angry calls continue to come in, the best we can tell folks is to vacuum liberally, caulk all obvious entry points and/or seal your home as best you can, and avoid using pesticides in interior parts of the house, which won't solve the problem and will only expose people to insecticides unnecessarily. In this respect, BMSB is a mirror image of the lady bug problem.

A footnote to this story: As with the ladybug issue, VDOF and other natural resource agencies are once again on the receiving end of accusations by a small proportion of the public who believe that we are releasing BMSB from helicopters. I don't know how these rumors get started, but they are pervasive and can be applied to almost any natural resource agency in any state where you have a lady bug or stinkbug problem. I suppose stories like this have always been popular among a segment of the population. All we can do is politely inform the public otherwise and use the facts we have at our disposal to dispel these myths. However, there will always be some who hold onto these ideas no matter what we tell them.



*One of the symptoms
of an approaching nervous breakdown
is the belief that one's work is terribly important,
and that to take a holiday would bring all kinds of disaster.*

Bertrand Russell, 1930

UPDATES

WEED CONTROL WORK ON STATE FORESTS

Over the last few years, I have supported a number of chemical weed control and site restoration projects on some of our state forests, including the Lesesne, Paul, Whitney and Conway-Robinson. In some cases, following a harvest,



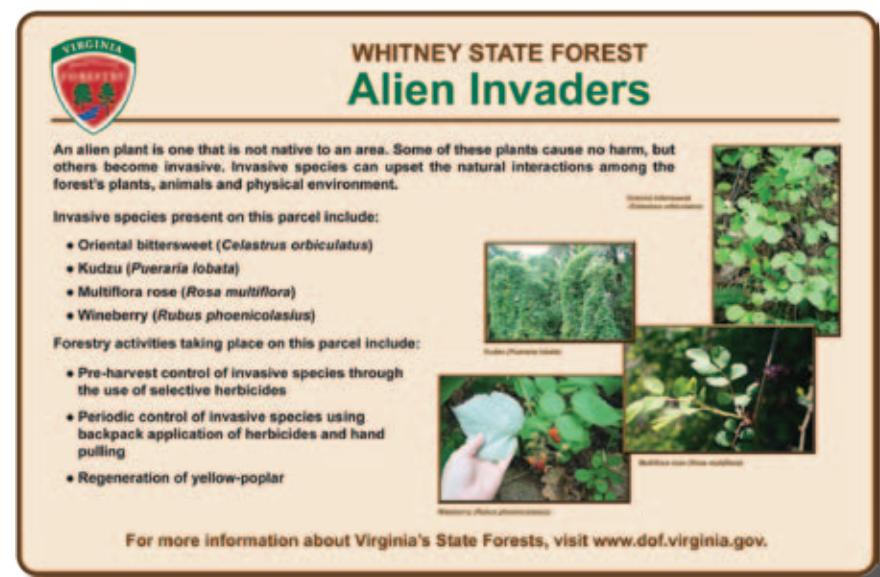
Tree-of-heaven sapling regenerating under a recently thinned pine stand on the Whitney State Forest, Fauquier County, VA.

a concerted effort to control invasive weeds is necessary to successfully establish a new planting. Aggressive follow-up efforts are often needed as well, since some of these plants, such as Ailanthus and oriental bittersweet, are particularly fast growing when suddenly exposed to full sunlight.

On the Lesesne, a large area of junk hardwoods with a heavy Ailanthus component was harvested and chemically treated to prevent Ailanthus resprouting. Shortleaf pine was planted to restore the site to a mixed pine-hardwood stand. On the Whitney, harvesting of mature loblolly and white pine stands exposed a heavy undergrowth of Ailanthus and oriental bittersweet, which will need to be aggressively controlled prior to a new planting. These

Oriental bittersweet vine regenerating under a recently thinned pine stand on the Whitney State Forest. If not aggressively controlled, bittersweet will cover the forest floor and prohibit future pine regeneration once the over-story pines are cut.

are just a few examples of the forest management challenges that lie ahead when non-native invasive weeds are in the mix. We also produced signs for these locations that provide background on the invasive weed problem; what was done there and why; the rationale behind clear-cutting as a silvicultural tool for pine; etc. We hope these sites can be used in perpetuity as educational tools for the landowning public on how to go about maintaining a healthy, useful and productive forest despite the ubiquitous nature of invasive plants across our landscape. I hope to be able to maintain such projects on our state forests across the Commonwealth from base USDA Forest Service funding into the future.



The sign features the Virginia Forestry logo at the top left. The title "WHITNEY STATE FOREST Alien Invaders" is centered. Below the title, it says: "An alien plant is one that is not native to an area. Some of these plants cause no harm, but others become invasive. Invasive species can upset the natural interactions among the forest's plants, animals and physical environment." It lists "Invasive species present on this parcel include:" followed by a bulleted list: • Oriental bittersweet (*Celastrus orbiculatus*) • Kudzu (*Pueraria lobata*) • Multiflora rose (*Rosa multiflora*) • Wineberry (*Rubus phoenicolasius*). Below that, it says: "Forestry activities taking place on this parcel include:" followed by a bulleted list: • Pre-harvest control of invasive species through the use of selective herbicides • Periodic control of invasive species using backpack application of herbicides and hand pulling • Regeneration of yellow-poplar. At the bottom, it says: "For more information about Virginia's State Forests, visit www.dof.virginia.gov.

Educational signs installed at Whitney State Forest about invasive species.

“Change’ is scientific, ‘progress’ is ethical; change is indubitable, whereas progress is a matter of controversy.”

Bertrand Russell, 1950



VIRGINIA ASSOCIATION OF FOREST HEALTH PROFESSIONALS (VAFHP) – WHAT'S THIS?

While a number of you have attended this meeting in the past, many others are unfamiliar with it. The VAFHP began as the Association of Virginia Gypsy Moth Managers (AVGMM) in 1991, a relatively small group of county gypsy moth coordinators and other representatives in industry, government and academia with a primary interest in gypsy moth. This two-day meeting was typically held in Luray in February and generally consisted of 30 to 40 people. In part because many of the gypsy moth manager positions began to change and focus more on other pest issues, such as emerald ash borer and invasive plants, it was decided to make the meeting more inclusive of other forest health topics and to attract a larger audience. Beginning in 2007, the meeting morphed into the VAFHP and moved to Charlottesville, where it was held again in 2008. The last two meetings have been in Staunton. Meeting attendance during the last few years has hovered around 100 people or more.

Because this meeting offers full pesticide recertification credits, as well as ISA and SAF credits, it is popular among those VDOF foresters who know about it. I make an effort every year to support the costs of registration for 10 to 20 of our foresters to attend this meeting. Since I can pay registration but not lodging or per diem, it usually requires that the attending foresters are able to commute to the meeting. This means many folks in the south, southwest and eastern parts of Virginia have not had an opportunity to attend or may not have even been aware of it. As a recent member of the VAFHP steering committee, I have been pushing to have the meeting in alternate locations every couple years so that we cover other geographic locations within the Commonwealth – for example Fredericksburg, Williamsburg, Richmond, Portsmouth or Roanoke. I believe this would greatly increase the visibility of this group and make it a true statewide meeting. In addition, it would allow for a different group of foresters to attend the meeting for a change. Most who attend say they thoroughly enjoy the program, the catered lunch and the social interaction. More importantly, they learn a lot and get their recertification credits, too! Look for announcements soon regarding our upcoming meeting February 7-8, 2011, in Williamsburg. You can check out the website, still under development, at the following link: <http://www.vafhp.org/>.

*“Space isn’t remote at all.
It’s only an hour’s drive away if your car
could go straight upwards.”*

Fred Hoyle, 1970

RESEARCH ON BIOLOGICAL CONTROL OF TREE-OF-HEAVEN, FROM PAGE 3

could be easily overlooked. This is why I am asking for help to make this project as well known as possible. If you see any potentially infested sites in your area, please notify me as soon as possible.

Key symptoms to look for include:

1. Large areas of rapid, declining or dead TOH (Figure 1). Infection spreads quickly so you will most likely see many symptomatic trees instead of just a few.
2. Vascular discoloration (Figure 2). Use a knife to peel back the bark to reveal the xylem. An infected tree will have brown or brown-streaks compared to white or cream colored, healthy xylem.

If you locate a stand with these symptoms, please contact me. GPS locations or driving directions and pictures would be greatly appreciated. I appreciate all of the effort from everyone involved and thank you in advance for being part of this project.

Please contact:

Amy Snyder, MSLFS Candidate
311B Price Hall
Department of Entomology, Virginia Tech
Blacksburg, VA 24061
Phone: (540) 231-8945; Email: amys6@vt.edu



Figure 2. Vascular discoloration. Brown-streaked xylem, characteristic of *V. albo-atrum* infestation (left) compared to healthy, white xylem (right).



Virginia Department of Forestry
900 Natural Resources Drive, Suite 800
Charlottesville, Virginia 22903
Phone: (434) 977-6555
www.dof.virginia.gov

11/2010

This institution is an equal opportunity provider.

Virginia Department of Forestry
900 Natural Resources Drive, Suite 800
Charlottesville, VA 22903