

Southern Wisconsin Forest Health Update

Wisconsin DNR, Forest Health Protection Unit

August 12th, 2015 Vol. 12 No. 3

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Articles in this newsletter were written by Mark Guthmiller, Regional Forest Health Specialist, unless otherwise noted.

Emerald Ash Borer– Bill McNee

Adult EAB activity peaking

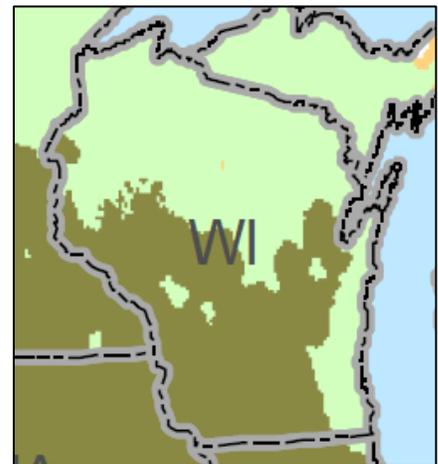
EAB adults are currently at peak activity (light green on the map). Adult emergence is now over in most of northern Illinois and parts of southern Wisconsin (dark green on map). June and July are usually the peak flight months in the southern counties, although adults may be present into the fall months.

Aerial survey results

Recent aerial surveys showed an increased area of southeast Wisconsin where dead and thinning ash can be continuously seen from the air. Symptoms of EAB are now fairly continuous in southern Milwaukee County, Racine County, Kenosha County, most of Walworth County and parts of southeast Waukesha County, eastern Jefferson and eastern Rock County. Farther north, the infestation area around Newburg has also expanded into additional parts of Ozaukee and Washington Counties.

New EAB detections

Since the last Southern District pest update was sent out in May, three new counties had the first detections of EAB. In Lafayette County, EAB at Yellowstone Lake State Park, in the Town of Fayette, four adult EAB beetles were detected on a DNR placed trap. Richland and Marquette Counties also had first detections of EAB. These detections included adult beetle catches on a WI DATCP placed trap in the Town of Dayton, Richland County, and a contracted USDA APHIS trap placed in the Town of Montello, Marquette County. Richland County was previously quarantined prior to this confirmation and a new quarantine will be put in place for Marquette County. For a map of quarantined counties visit: www.emeraldashborer.wi.gov and click on the **Regulations** tab.



Map of predicted EAB adult emergence as of August 3rd. Light green areas are predicted to be in the peak EAB emergence period and dark green areas are finished with adult emergence. Map by USDA APHIS.

There have also been a number of new municipal detections in counties with previous EAB detections:

- Dane County: City of Verona, Town of Dunkirk
- Fond du Lac County: Town of Lamartine, Town of Eldorado
- Grant County: Town of Wyalusing
- Washington County: Village of Germantown
- Waukesha County: Town of Delafield, Town of Mukwonago

A complete list of municipal detections can be found online at:

<http://datcpservices.wisconsin.gov/eab/articleassets/ConfirmedEABFindsinWisconsin.pdf>.

When to report EAB- by Mark Guthmiller

As EAB establishment is becoming more common in southern Wisconsin, not all detections need to be reported to WI DNR or WI DATCP. All new county detections should be reported. In addition, WI DNR continues to track the first EAB detection in a new municipality (Township, Village, and City) of already confirmed counties. Sending in pictures of suspect galleries, exit holes, larvae or adult beetles to help facilitate such confirmations is greatly appreciated. If you get a report of suspect EAB in a new unconfirmed county please send reports to the EAB hotline at 1-800-462-2803. To determine if a municipality or county is already confirmed visit the link above to see a complete listing of confirmed municipalities.

Wasp releases

This summer we have continued to do introductions of the natural enemy wasps, *Tetrastichus planipennis* and *Oobius agrili*, in southern Wisconsin. The *Tetrastichus* wasps attack EAB larvae beneath the bark, and the *Oobius* wasps attack EAB eggs on the bark surface. These

introductions are being done to help slow the spread and buildup of EAB populations, and to help delay tree mortality. The tiny wasps do not sting or bite, and the public is unlikely to know they are present. The wasps have now been introduced at eleven sites in southern

Wisconsin and at one site in western Wisconsin. Jefferson, Rock and Waukesha Counties had their first wasp releases

this summer. Several thousand wasps were released at each of the sites. The parasitoids were produced and supplied from, the United States Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) Plant Protection and Quarantine (PPQ) EAB Parasitoid Rearing Facility in Brighton, MI. For parasitoid information please call 866-322-4512.



Oobius release vials (left) and Tetrastichus wood "emergence bolts" (right). Photo by Mark Guthmiller



Tetrastichus wasp released to help fight EAB. Photo by Bill McNee.

Gypsy Moth– Bill McNee

Gypsy moth nuisance reports and defoliation

As of late July, adult moths are present in southern Wisconsin and as far north as the Eau Claire area. There were an increased number of nuisance caterpillar reports compared to last year, but known defoliation was limited to a handful of individual trees and no defoliation was observed during recent aerial surveys. There were some reports of caterpillars killed by diseases, but no massive die-off. This summer has not been especially wet, which means that there would have been average or below-average mortality from the *Entomophaga* fungal disease.

What this means for egg mass numbers this fall is yet to be known, although at present we are predicting that scattered areas will qualify for the DNR gypsy moth suppression program to spray in 2016. DNR expects to offer the suppression program for the 2015-16 program year if there is interest, and is planning to have at least one spray training session this fall for local governments interested in participating. Aerial applicators can also be hired for privately-organized spraying.



Male (brown) and female (white) adult gypsy moths. Photo from www.forestryimages.org.

Gypsy moth populations in the eastern US had an unexpected resurgence this summer, and large areas of nuisance caterpillars and heavy defoliation were reported in Maryland, Pennsylvania, Connecticut and Massachusetts. If the eastern states are having a large regional outbreak, other states may find increased detections of the insect due to increased transport of the gypsy moth egg masses.

Silver Maple Heavy Seed Crop and Thin Canopy

Numerous reports and observations of silver maple with heavy seed crop and thin canopies were common throughout much of southern and central Wisconsin this spring and early summer. This phenomenon was observed over a broad region from South Dakota, Minnesota, parts of Wisconsin down to Ohio. Part of the issue was a very heavy seed bumper crop along with possibly some freeze injury to leaves as the trees were breaking bud. Bumper seed crops occur periodically but also after major stress events such as drought or severe cold injury. So there could be a few factors involved. This phenomenon was most noticeable on silver maples but other maples and elms had similar issues in southern Wisconsin. It may take a couple years to see the trees fully rebound.

Common Pine Shoot Beetle

While evaluating a red pine plantation in Green County earlier this summer, a number of adult beetles were collected from the trunk of one recent killed red pine. In addition to the unknown beetles, the pine engraver, turpentine beetle, *Leptographium* root rot, and *Diplodia* shoot blight were present and likely the main reason for a couple small areas of pine mortality. Collected samples of the unknown beetles were submitted to UW Extension Entomology Department for further identification and they appear to be those of the common pine shoot beetle, *Tomicus piniperda*. Thanks to P.J. Liesch for his assistance with identification of this beetle.



Young (teneral) beetles identified as likely the common pine shoot beetle, *Tomicus piniperda*.

While the common pine shoot beetle has been detected previously in Wisconsin, and is considered a Christmas tree pest, this was the first time I have encountered this beetle in red pine. It prompted a second visit to see if I could actually find any shoot damage but I was only able to detect *Diplodia* shoot blight and one hollowed out shoot by the red pine shoot moth, *Dioryctria resinosella*. The red pine shoot moth larva was still present and heavily parasitized. So I suspect these common pine shoot beetles may have come in from some nearby Scotch pine, the preferred host, and were utilizing the recent pine engraver killed red pine as brood material. Common pine shoot beetle is a regulated pest and all of Wisconsin is quarantined. While intrastate (within state) movement of suspect infested pine is permitted, movement outside of the federal quarantine may be prohibited. Contact a USDA APHIS inspector regarding issues related to this quarantine. For more information on the common pine shoot beetle visit:

<http://www.invasivespeciesinfo.gov/animals/psb.shtml>



These long vertical egg laying galleries where the beetles were collected from match those of other recorded pictures of galleries for the common pine shoot beetle.

Walnut Twig Beetle Survey

DNR Forest Insect and Disease specialist, Scott Schumacher, continues to check a network of 35 traps set to monitor for walnut twig beetle. The traps were set in southern locations on state and county properties. Two collections have occurred with a final collection and take down planned for later this month. Walnut twig beetle is associated with vectoring the fungus (*Geosmithia morbida*), the complex that makes up “thousand cankers disease”. To date neither the beetle nor the fungus has been detected in Wisconsin. Screening of collected samples will occur into the fall.

Hickory Brooms

Rock County forester, Nick Koltz, contacted me last winter regarding an observed odd growth on a shagbark hickory in Rock County. The odd growth, located about 20 feet up the main trunk, had a swelling gall-like growth where it attached to the trunk with a proliferation of dense shoot clusters. A site visit was arranged this growing season and a number of these growths were observed on about five mature shagbark hickory trees in the general area of the woodlot. Additional broom-like growths were observed further out on the branches as well. Samples were collected for further testing.

The initial appearance was that of a possible phytoplasma disease. There is a phytoplasma bunch disease of pecan which can also impact shagbark hickory and other trees in the genus *Carya*. There were also a number of ash trees with symptoms indicative for ash yellows, another phytoplasma disease. The ash had various levels of decline and some mortality while the shagbark hickory have had these growths for many years according to the landowner, and so far, overall crown health has not been impacted. There are different groups of phytoplasmas, which is the case between the phytoplasma that affects ash and the one that causes bunch disease in hickory.

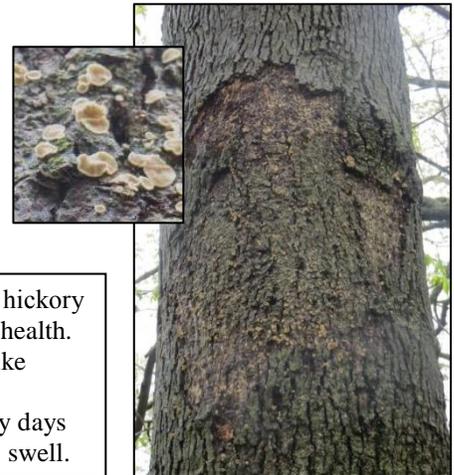
Besides possible phytoplasma infection in the shagbark hickory, there are a couple leaf spot fungi that can apparently cause brooming. *Articularia* leaf spot and *Microstroma* leaf spot both have *Carya* listed as a possible host. Both these leaf spot fungi can apparently cause witches brooms, as well as a white leaf mold on shagbark hickory. Indeed, the sample from Rock County had what appeared to be a white mold like growth on stems and leaves. So for now, the cause of the unique broom growths on these hickories remains unknown as we pursue evaluations. I would be interested in any other reports of similar growths on hickory or other hardwoods in southern Wisconsin.



From left to right: Shagbark hickory with strange growth and broom on main trunk, branch with broom like shoots and browning leaves, mildew like growth on stem (also noticed on leaves).

Smooth Patch on Hickory

Another first for me was seeing what appeared to be smooth patch on hickory. This is a common bark fungus, especially on white oak that causes a smooth look to the main trunk. These fungi are saprobic in nature on both white oak and hickory, and not causing any tree health concerns.



Suspect “smooth patch” on hickory which does not impact tree health. Small cream colored disc-like fruiting (left) which can be observed especially on rainy days when the fruiting structures swell.

Hickory Pouch Gall

Hickory pouch gall, caused by an aphid like insect called phylloxera, causes green pouch gall growths on hickory twigs. The stems and leaves with pouch galls turn black and fall to the ground. Pouch galls were observed in a couple locations in southern Wisconsin again this year. Severe infections by this phylloxera insect can cause some minor branch dieback. For yard trees, one can rake and destroy the dropped galled leaves in the fall, which may help reduce numbers next year.



Newly forming pouch gall (left) and old pouch gall (right) may be observe on leaves and stems in early to mid-summer.

Jumping Oak Gall

Small cynipid wasps cause little circular galls on the underside of oak leaves. The upper side of the leaves have coalescing circular spots and if severe, the leaves may start to curl. White and swamp white oaks often can have large numbers of these galls causing premature browning and leaf drop. Populations can fluctuate dramatically and be severe for a couple of years then disappear, likely due to parasitoids. If severe browning and defoliation occurs due to jumping oak gall, a healthy tree will push a new flush of leaves. Already stressed trees may see some injury by secondary pests. Reports and observations indicated a second year of fair numbers of these wasps. Watering severely impacted yard trees during extended dry periods would be recommended.



Severely infested swamp white oak with browning spots, curling leaves, and a new flush of leaves, caused by jumping oak gall.

Phytoplasma (Yellows) Sampling

This is the time of year where we pool efforts to sample various tree species to test for phytoplasma diseases known as “yellows”. This has been an ongoing effort for a number of years. Samples are sent to a private lab for special testing. While ash yellows is fairly common in southern Wisconsin, we have started to detect phytoplasma in walnut and butternut. Other tree species are also known to be infected with phytoplasma. In ash, we see a slow decline in tree health and eventual mortality over a number of years. At this point, we don’t have any observational data on impacts to walnut and butternut trees but something we hope to be able to evaluate and monitor in the future.



Classic ash yellows “broom” with stunted and chlorotic leaves.

FSC highly hazardous pesticide list – Taken from Linda Williams, Northeastern Forest Health Update, June 26th, 2015

The 2015 list (FSC highly hazardous pesticide list) is now active, but, until June 30, 2016, the use of pesticides that have been dropped from the old version of the HHP list, like most 2-4 D formulations, dicamba, hexazinone and simazine, will still be allowed. Prohibition on newly added pesticides such as borax, imidacloprid, emamectin benzoate, picloram and rotenone will not be required until next summer, June 30, 2016. With other states, Wisconsin is working on a derogation (exception) for use of emamectin benzoate for EAB treatment. For those of you treating cut pine stumps to prevent annosum, although borax was added it does not match the formulations in Cellu-Treat® or Sporang® so we are ok with those treatments as well.

For more information on herbicides for forest management and FSC pesticide listing visit:

<http://dnr.wi.gov/topic/foresthealth/herbicides.html>

Miscellaneous Topics and Observations

Forest Health Newsletter Survey Note- Colleen Robinson Klug

Thank you for your input! Earlier this year we asked you to complete a survey to provide feedback regarding the Forest Health Regional Newsletter updates you receive. The information you shared was extremely valuable to our team. As we continue to explore how to best serve you with these publications, we are

carefully considering your input and the options available. We do not intend to change the way you receive these newsletters, or their format or frequency this year. We just wanted to send a belated and heartfelt thank you for sharing your time and thoughts with us.

Stay tuned for more information about any improvements to your Forest Health Regional Newsletter Updates this winter.

Viburnum Leaf Beetle University of Wisconsin Pest Alert: Extension entomologist, PJ Liesch recently created a new pest alert document on the viburnum leaf beetle, a beetle native to Europe. The viburnum leaf beetle can cause significant defoliation to a number of species of viburnums. The viburnum leaf beetle has mainly been observed in northern Milwaukee and Ozaukee Counties. For more information visit:

<http://hort.uwex.edu/files/2015/06/Viburnum-Leaf-Beetle.pdf>

30171262
UW Extension
University of Wisconsin-Extension
Provided to you by:
Viburnum Leaf Beetle
P.J. Liesch, UW Insect Diagnostics Lab
The viburnum leaf beetle (VLB), *Parthenoclypeus vitacea*, is an invasive insect that feeds exclusively on and can significantly damage viburnum species. VLB is native to Europe and was first reported in Canada in 1947. The first report of VLB in the United States was in New York State in 1996. VLB is now found scattered across much of the northeastern US. In Wisconsin, an isolated infestation of VLB was discovered in Ozaukee County in 2009, but was successfully eradicated. In 2014, VLB was detected on a mature viburnum bush in northern Milwaukee County and other nearby infestations were detected in June 2015. At present, all active infestations of VLB in Wisconsin are in northern Milwaukee County and southern Ozaukee County.
Viburnum leaf beetles: adult (left) and larvae (right) (Photos courtesy of Peter Miles, David Griesbach, Department of Horticulture, University of Wisconsin-Madison)
Appearance: Adult VLB's are approximately 1/2 inch long and yellowish-brown in color. VLB larvae can be up to 1/2 inch long and range in color from yellowish-green to light brown with a series of black spots and dashes on their bodies.
Symptoms and Effects: VLB larvae chew holes in viburnum leaves in the spring creating a lace-like (i.e., skeletonized) pattern. VLB larvae feed individually or in small groups and can cause significant damage to viburnum shrubs. This damage can resemble the feeding damage of Japanese beetles (see University of Wisconsin Garden Facts #971000 "Japanese Beetles"). In late June and early July, VLB adults begin to feed, chewing oblong holes in leaves. Severe VLB infestations can cause complete defoliation of a viburnum shrub, which weakens the plant over time and can eventually lead to death.
Life Cycle: There is only one generation of VLB per year. VLB's overwinter as eggs and development from eggs to adults takes approximately eight weeks. Larvae typically appear in early to mid-May and feed for several weeks, passing through three stages (instars) as they grow. In early to mid-June, larvae pupate in the soil and adults emerge by late June or early July. VLB females lay eggs during the summer and into October. They chew small pits in twigs, deposit five to eight eggs into each pit, and then cover the pits with tiny pieces of chewed wood to protect the eggs. Each female can deposit up to 500 eggs. Eggs remain in place through the winter until they hatch the following spring.
Revised: June 26, 2015
University of Wisconsin Pest Alert



A Tree Not Like the Rest:
Here in the woods
A tree not like the rest
A strange deformity
I doubt caused by a pest

The mystery remains for one to diagnose

I know not the cause
But thought I would share for each to take pause

SOD Forest Health Assistance

Wisconsin DNR, Forest Health Protection Unit

August 2015

Contacts for DNR staff, municipal foresters, and forestry cooperators

<p>Mark Guthmiller Forest Health Specialist Wisconsin DNR 3911 Fish Hatchery Road Fitchburg, WI 53711 Phone: (608) 275-3223 Email: Mark.Guthmiller@wisconsin.gov Columbia, Dane, Dodge, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, and Sauk</p>	<p>Bill McNee Forest Health Specialist Wisconsin DNR 1155 Pilgrim Rd. Plymouth, WI 53073 Phone: 920-893-8543 Email: Bill.McNee@wisconsin.gov Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, and Waukesha</p>
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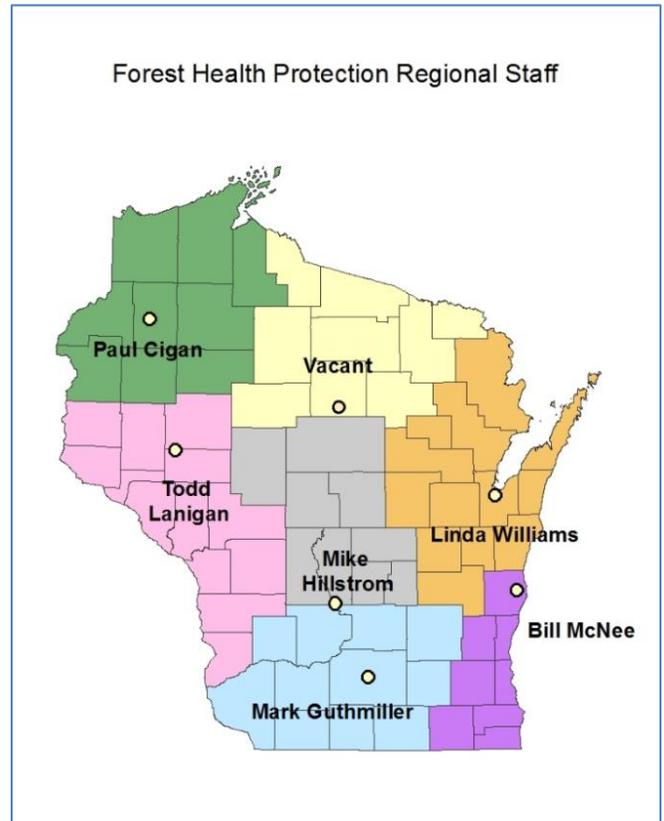
For a statewide forest health staff list:
<http://dnr.wi.gov/topic/ForestHealth/staff.html>

Additional Program Web-based Resources:
 WI DNR Forest Health web site:
<http://dnr.wi.gov/topic/ForestHealth/>

Report Emerald Ash Borer in Unconfirmed Counties:
 by phone 1-800-462-2803
 by email: DATCPEmeraldAshBorer@wisconsin.gov
 visit the website: <http://emeraldashborer.wi.gov>

Report Gypsy Moth:
 by phone at 1-800-642-6684
 by email: dnrfrgypsymoth@wisconsin.gov
 visit the website: <http://gypsymoth.wi.gov>
(It is also recommended to report gypsy moth to your local government)

Please direct public inquiries regarding yard tree concerns to UW county or state extension offices: <http://www.uwex.edu/ces/cty/>



[Pesticide use: Pesticide recommendations contained in this newsletter are provided only as a guide. You, the applicator, are responsible for using pesticides according to the manufacturer's current label directions. Read and follow label directions and be aware of any state or local laws regarding pesticide use.]