

Northeast Wisconsin Forest Health Update

September 15, 2011

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Insects

*information and photos in this document from Linda Williams unless otherwise noted.

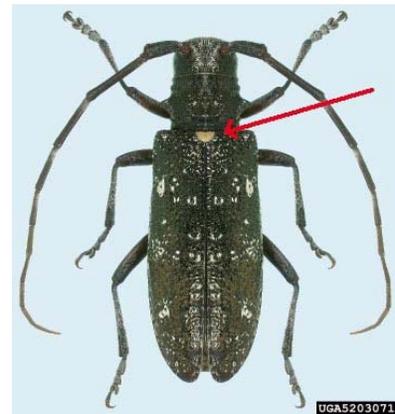
Asian Longhorned Beetle – from Bill McNee. After twelve years of battling the Asian Longhorned Beetle (ALB) in Islip, New York (located on central Long Island), this infestation has been declared eradicated. This insect is more than an inch in length, does not fly very far, and leaves noticeable signs of infestation. Eradication is often feasible, and several other areas in and around New York City are likely to be successful eradications as well. For more information, read this: http://www.nyfb.org/resources/topic_detail.cfm?ID=406.

ALB infestations have not been found in Wisconsin.

A recent study conducted in Massachusetts has argued that hardwood trees are more resilient to ALB infestation than previously believed, although they would eventually succumb to infestation. Many trees were found to be heavily infested but still growing and retaining green crowns. This study is the first to show that ALB can thrive in natural forested settings as well as

open-grown urban trees. For more information, read the article at:
<http://telegram.com/article/20110831/NEWS/108319913/1160/SPECIALSECTIONS04&source=rss>

ALB Lookalikes Native to Wisconsin – from Bill McNee. An APHIS outreach effort this summer generated numerous reports here in Wisconsin. To date those reports turned out to be the white-spotted sawyer (right), a native woodborer of stressed and recent dead pines. Here are links to ALB identification and how to distinguish ALB from the native lookalikes (most notably the whitespotted pine sawyer). ALB is glossy, has banded antennae, and lacks a white dot where the wing covers meet.
http://www.na.fs.fed.us/pubs/palerts/alb/alb_pa.pdf
http://massnrc.org/pests/blog/uploaded_images/ALBvsPinesawyer-715980.jpg
<http://www.uvm.edu/albeetle/identification/index.html>



White-spotted sawyer. Photo from forestryimages.org

Butterflies of Wisconsin website – check out <http://wisconsinbutterflies.org/butterfly> for a spot to identify butterflies that you find here in Wisconsin. Click on the category, then when you find the butterfly you have just click on that photo for more information and additional photos.

Dragonflies – although not a forest pest, these pictures were taken by Mike Schuessler, DNR Forester, Waupaca County. These were taken on a cool morning when the dragonflies were quite unable to fly away.



Photo by Mike Schuessler.

Dragonflies are excellent predators, both as adults and as nymphs. Adult dragonflies lay their eggs in water, and nymphs (immature dragonflies) live under water for up to 4 years, until ready to emerge as adults.



Photo by Mike Schuessler.

The nymphs crawl out of the water on some foliage or twigs and shed their skin, emerging as an adult dragonfly complete with wings. Adults live about 2 months. We have a number of rare/endangered dragonflies in Wisconsin. The following tidbit is from the Hines Emerald website http://www.hinesdragonfly.org/new_page_2.htm : Dragonflies can do everything a helicopter can do, and much more quickly. They hover, fly backward, do loops, barrel rolls, and execute very tight turns. A hovering dragonfly can accelerate to top speed in a fraction of a second.

Although the ones in the photos were definitely on “pause” mode.

Dogwood sawfly – dogwood sawfly larvae (*Macremphytus tarsatus*), which were found in Oconto County, can be a significant pest of dogwood, although the damage occurs late in the year so the effects on plant health are minimal. Dogwood sawflies change color as the caterpillars grow. Newly hatched larvae are transparent yellow, slightly older larvae will have a dusty or fuzzy white coating (right), and older larvae will be black on top with yellow undersides (left).



But even the first instars can skeletonize leaves. Larger larvae can consume entire leaves, leaving only the tougher leaf midribs. Adults are a sawfly, resembling a fly or wasp.



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Economic Costs of Invasive Forest Insects – from Bill McNee. A recent study estimated that non-native forest pests are costing the U.S. economy \$2.5 billion annually. About 2/3 of this cost is a direct financial expenditure by property owners and governments, and about 1/3 is due to decreased property/timber values. Phloem- and wood-borers such as Emerald Ash Borer and Asian Longhorned Beetle accounted for most of the expense. The study also estimates a 32% chance of a pest at least as damaging as EAB being introduced in the next 10 years.

For more information, read the article online at:

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0024587>.

Elm Sawfly – this insect was reported defoliating willow in Door County but is probably present in many other counties around NER. This large sawfly is the largest sawfly found in North America and has the disturbing habit of falling out of trees when you walk under the tree. Larvae grow 1 ½ - 2 inches long and are a bright yellow color with a black strip down their back, although occasionally the pink form is found. Adults are a large dark brown sawfly (left). Usually defoliation is localized to a single tree or group of trees, with willow being a favored host, but they will also feed on elm, birch, maple, and poplar. Spraying a general insecticide or soapy water should kill these sawflies if you think control is warranted but these late season defoliators rarely do serious damage to the trees that they defoliate.



Elm sawfly. Photo by Carolyn Rock.



Adult elm sawfly.

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Elm sawfly, yellow and pink forms. Photo by Chris Plzak.

Emerald Ash Borer – from Bill McNee. Emerald Ash Borer (EAB) was detected in La Crosse County on August 18. Six adult beetles were found on a trap east of the city of La Crosse in a rural residential area. No infested trees have yet been found. This detection is about 20 miles from the already-known infestation near the town of Victory. It is not known if this is an extension of that infestation or is a new, distinct infestation. A week later it was announced that Minnesota had found adult beetles at two sites on the west side of the Mississippi River, a few miles from La Crosse. La Crosse County is expected to be quarantined in the near future.

An updated map of EAB-quarantined counties has been produced, and is available at: http://datcpservices.wisconsin.gov/eab/articleassets/WI_EAB_Quarantines_and_Locations.pdf. Note: the La Crosse County quarantine is pending. Racine County is the other Wisconsin county to have a first EAB detection in 2011.

Adult EAB flight is now over in Wisconsin. Staff from DATCP have checked and taken down nearly all of the traps placed this spring. The last traps will be taken down by Sept 23. Double-decker EAB traps prepared by DNR staff on selected state parks and forests have also been checked and did not find any EAB.

Wisconsin EAB Quarantines & Locations
August 2011



Gypsy Moth – from Bill McNee. Trappers from the Dept. of Agriculture, Trade and Consumer Protection (DATCP) are currently taking down gypsy moth traps in the western half of Wisconsin. DATCP reports that “overall, numbers are on pace to be equal or above last year’s final catch total. Some counties are down but there are some places that have high counts. Ashland, Bayfield, Jackson Counties have doubled their catch numbers this year. Clark County has tripled its catch numbers from last year. The good news is that many counties in the southwest and a few in the northwest are lower this year.” Recently, DNR staff have been receiving reports of small defoliation-level infestations in Bayfield County in far northern Wisconsin.



Gypsy moth eggmasses.
Photo by Bill McNee.

Egg laying is now complete, so egg mass surveys can begin in order to predict gypsy moth populations in 2012. For more information on how to do egg mass surveys, visit

www.gypsymoth.wi.gov. Applications to the DNR gypsy moth suppression program are due by December 2, and the application forms will be available by the end of September.

Scientists recently identified a gene from the gypsy moth NPV virus that changes the behavior of infected caterpillars. The gene makes NPV-infected gypsy moth caterpillars climb up a tree before they die in order to enhance the spread of the virus. The gene produces a hormone that keeps the caterpillar eating and climbing. Caterpillars infected with a form of the virus without the gene did not climb (but still died). Read more at:

http://www.sciencenews.org/view/generic/id/334239/title/News_in_Brief_Genes_%2B_Cells.

Spider mites on ash – ash in many areas, but particularly lowland ash, suddenly turned a sickly yellow color at the end of August. Close inspection revealed a variety of leaf spots and anthracnose (below right), but the primary culprit in Oconto, Marinette, Brown, and Shawano Counties, seems to be spider mites. Mites have overlapping generations meaning egg, nymph, and adult forms may all be present at one time. Heavy infestations like this on yard trees can be sprayed, using a dormant oil, insecticidal soap, or a miticide (pesticide specific to mites) but many pesticides are effective only on nymphs or adults so a second application may be necessary 7 to 10 days after



Small yellow specks are spider mites. I admit this is one of the worst pics I've taken in a long time.

the first. Be sure to read the label to determine if a second application is necessary. In a forest setting reliance on nature and natural enemies is often the only means of control.



Spider mites on honey locust – yellowing honey locust in Brown and Outagamie Counties have



high populations of spider mites which are causing the leaves to yellow and drop prematurely. Damage early in the season can cause stress to the tree. Mite populations can build rapidly with the length of a generation being only 4 days during the warmer days of summer. To check



Orange dots are honeylocust spider mites.

for these mites, use a hand lens and check the underside of the leaflet. Check out Minnesota's fact sheet for more information including chemicals for control <http://www.entomology.umn.edu/cues/Web/151HoneylocustSpiderMite.pdf>

Unicorn caterpillar – this interesting caterpillar was found on an apple tree. Host plants include apple, elm, aspen, willow, hickory and other broadleaf trees and shrubs. The description in my book says this interesting tidbit about them: The caterpillars have midventral glands just behind the head, able to squirt formic and acetic acid several inches in a somewhat controlled direction. These glands can occupy a tenth of the caterpillar's volume. Some species also regurgitate possibly toxic gut contents.

That's one cool caterpillar!!



Unicorn caterpillar (head on left).
Photo by Ryan Brown.

Viceroy caterpillars – in last month's pest update I reported the following: there are lots of viceroy butterflies this year! The viceroy caterpillar looks a lot like bird droppings, which is one way to deter birds from eating it. These caterpillars will feed on willow, aspen, and cottonwood, but never in high enough numbers to be considered a pest.

This month I will correct that and say that I have actually seen viceroy caterpillar defoliation on willow that was fairly significant! I have now also seen moderate defoliation on young cottonwood. As the caterpillars grow their "bird dropping" shape and color changes. Below are some of the stages that you'll see.



Viceroy chrysalis.

Willow sawfly - these willow sawfly larvae (*Nematus ventralis*) are black with orange dots along their sides. They were defoliating black willow in Oconto County. Defoliation can be complete, with all leaves being consumed, but willow is often able to recover easily.



Diseases

Armillaria killing balsam fir – in Marinette and Shawano Counties I have examined a number of balsam fir, 6-15' tall, that have suddenly died. The culprit appears to be armillaria root rot.

This opportunistic fungus lives in the soil until a tree comes under stress at which point the fungus is able to attack and colonize the roots of the tree. Armillaria can infect many different species of trees, and trees of any age or size, but the end result is usually a slow decline and



Black shoestring rhizomorphs from Armillaria.

eventual death of the tree. To verify this disease on a declining tree just dig down to the roots and peel the bark off a root, or peel off the bark at



Armillaria under the bark of a red pine sapling.

the base of the tree to look for the white mycelial mat (above). You might also see the shoestring, or rhizomorph stage (left) on trees that have been dead for awhile, or you might even see the mushroom stage. Armillaria causes a white rot and eventually trees may break over at the base.

The most common question I get regarding armillaria is “how does the fungus know that the tree is under stress so that it can attack?”. Here’s the answer: when trees are under stress they

use up the stored starches in their roots, and have to resort to making glucose, this is a change that the fungus can detect. Additionally, the amino acid Asparagine increases within the tree during times of stress and this can be detected by the fungi. There are other physiological changes that occur in a tree when it is under stress but research seems to show that it is the presence of glucose and asparagine in the roots that stimulates armillaria to grow and invade the roots. Probably a more in-depth answer than you were looking for, but now you know!

Thousand Cankers Disease – modified from a DATCP press release. New DATCP regulations took effect August 1 to prohibit bringing potentially-infested items into Wisconsin from states known to harbor Thousand Cankers Disease (TCD). Regulated articles include all hardwood firewood, as well as nursery stock, unprocessed lumber and woodchips from *Juglans* species (butternut and black walnut). Importers can get exemptions from the rule if they can certify that the material they want to bring to Wisconsin has not been exposed to TCD or has been treated. Items such as treated lumber, furniture and food nuts are not regulated. The official DATCP news release can be read here: http://datcp.wi.gov/uploads/News_and_Events/pdf/ThousandCankersReg.pdf.

TCD has not been found in Wisconsin. Its name comes from lesions, or cankers, that develop when the walnut twig beetle tunnels through the tree, spreading a fungus, *Geosmithia morbida*. The tree’s foliage yellows and thins, and eventually the walnut tree dies. There are no known pesticides that will control this disease. It was first observed in New Mexico in the

1990s, and in 2010 was discovered in eastern Tennessee within the natural range of black walnut. So far this summer, TCD has been found in Virginia, Pennsylvania and in several additional counties in eastern Tennessee. For more information about TCD, visit: <http://www.thousandcankerdisease.com/>.

Willow rust – willow trees in numerous counties, including Oconto, Marinette, Brown, and Shawano, are turning off color, or even have leaves that are browning, due to willow rust (*Melampsora* sp.), which is showing up as yellow pustules on the undersides of the leaves. Rust fungi require two separate hosts to complete their life cycle. Of the *Melampsora* species that infect willow, there is one that uses larch as the alternate host (known as larch-willow rust), and one that uses balsam fir (known as fir-willow rust). Although defoliation can occur early enough, and severely enough in the season to affect the growth rates of willow, the rapid growth that this species normally exhibits usually means that no treatment is necessary. In landscape settings, raking up the leaves as they fall and disposing of them can help minimize infections the following year.



Other/Misc.

Browning and yellowing of trees – a variety of trees are browning, bronzing, or yellowing right now, some of which are highlighted in this pest update. Some of the species affected include:

Ash – spider mites and leaf spots

Aspen – rust, leaf spots, bronzing

Beech – in areas with Beech Bark Disease the trees are yellowing

Birch – early leaf drop, defoliation by Japanese beetle

Black cherry – lace bug

Elm – dutch elm disease

Hawthorn – hawthorn rust

Honeylocust – spider mites

Maple – turning red due to moisture stress, sapstreak, girdling roots, or browning due to tar spot, and anthracnose

Oak – oak wilt

Oak – oak wilt



Imprelis herbicide FAQ website – DuPont has started a FAQ website regarding Imprelis and the damage to trees that it causes: <http://www.imprelis-facts.com/> click on the FAQ tab on the

top. There is also a hotline number for lawn care companies, property managers, and golf courses that have trees damaged by Imprelis.

Last month I reported that DuPont had voluntarily suspended sale of Imprelis herbicide (a broadleaf herbicide) on Aug. 4 and said it would begin a product recall and refund program by mid-August. Imprelis was sold only to commercial applicators and was not available over the counter. But it appears to have been widely used by some lawn care companies. The problem relates to how lawn application later affects conifers, causing severe symptoms and mortality and all sizes of trees.

Michigan State University has finalized details for testing for Imprelis residues. You can visit the MSU Diagnostic Lab website (<http://www.pestid.msu.edu/>) and use their submission form for sample submission. Simply indicate that you would like your sample to be tested for Imprelis. The lab will need about 50 g of needle tissue which translates into stuffing a one gallon zip lock bag with 4-6 inch long symptomatic branch tips from an affected tree. Pack the branch tips dry, NOT wrapped in moistened paper towels. Try to ship the branches via overnight mail, and definitely send the sample early in the week. Fresh samples are great, but samples can be frozen as well, if you need to collect a sample, but cannot mail it in right away. The cost for testing of out-of-state samples is \$200. The MSU lab will bill and takes checks and credit cards.

A “what can homeowners do” factsheet is available from MSU at http://news.msue.msu.edu/uploads/files/122/Imprelis%20homeowner%20factsheet_Bert%20Cregg.pdf and more information can be found on UW Extension’s website at <http://hort.uwex.edu/articles/potential-imprelis%C2%AE-herbicide-damage-conifers>

Spraying to prevent fall pests from entering your home - Preventative measures to keep ladybugs, box elder bugs, leaf-footed bugs, wasps, and cluster flies out of your home (either spraying or building them out of your house) must be done by the 2nd week of October with the



Leaf footed bug (L) and box elder bug (R).

prime period being the last week of September and the first week of October. After that time the ladybugs and other critters are probably already congregating in your house, or under the siding, or in the walls. UW Extension has a fact sheet about what can be done to prevent ladybugs from entering your house, including what you can spray on the outside of your house to repel them. These sprays will work to repel all



Multicolored asian ladybeetle.

those insects I listed above. Check it out at <http://hort.uwex.edu/articles/multicolored-asian-lady-beetle>

Report EAB:

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 dnrfrgyps moth@wisconsin.gov
visit the website <http://www.gyps moth.wi.gov/>

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Note: This pest update covers forest health issues occurring in Northeastern Wisconsin. This informal newsletter is created to provide up-to-date information to foresters, landowners, and others on forest health issues. If you have insect or disease issues to report in areas other than northeastern Wisconsin please report them to your local extension agent, state entomologist or pathologist, or area forest pest specialist.

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.