

Northeast Wisconsin Forest Pest Update

September 15, 2009

Topics covered this month:

Insects:

Barklice
Cecropia moth caterpillar
Cherry scallop shell moth
Dogwood sawfly
Emerald ash borer
Gypsy moth
Japanese beetle on buckthorn
Mites on oak
Oak galls
Sawfly on cottonwood
Sawflies unknown
Two lined chestnut borer
Willow flea weevil

Diseases:

Ash yellows
Fir-fern needle rust
Hickory mortality
Verticillium wilt

Other:

Ash bark splitting
Ash turning yellow early

Insects

Barklice – barklice have begun congregating this year with the first reports coming in from Manitowoc County. Barklice are not true lice, that's just their common name. They do not bite and they do not carry diseases. Barklice feed on bark, under dead bark, on lichens, on fungi, and in bird nests. I'm not sure why they are found in large groups, maybe they are just gregarious and like to hang out as a group (immature barklice at right). As with many soft-bodied insects, a soaking of soapy water will kill these little critters. Or let them live, look close, and enjoy the little stripes on their abdomens, they don't really do any damage, so enjoy!



Cecropia moth caterpillar – I found this large spiky caterpillar on buckthorn. I'm not sure if they actually feed on buckthorn, this caterpillar may have been simply looking for a place to spin its cocoon.



Cherry scallop shell moth – webbed leaves on wild black cherry understory in Oconto County were the work of cherry scallop shell moth (*Hydria prunoviorata*). Moths emerge in June to lay eggs. The caterpillars feed in groups and tie leaves together, feeding within the webbed leaves (right) which provide protection from predators. After feeding is done for the season, the larvae drop to the ground to pupate and overwinter. Wild black cherry that has been defoliated by cherry scallop shell moth may be at higher risk for attack by the Peach Bark Beetle, *Phloeotribus*



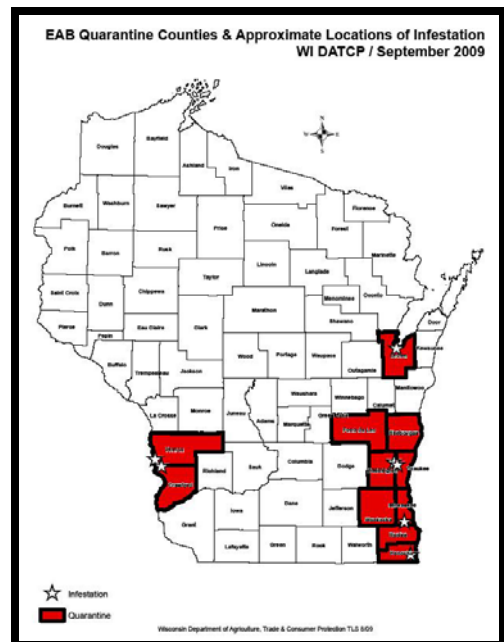
liminaris. This bark beetle infests Prunus species that are under stress. For more info on cherry scallop shell moth (and pictures of the adults for which the species gets its name) check out http://www.na.fs.fed.us/spfo/pubs/pest_al/cssm/cherry_scallop_shell_moth.htm and for more info on peach bark beetle check out the Wisconsin pest alert written by Mark Guthmiller and Dave Hall at <http://www.dnr.state.wi.us/forestry/Fh/PDF/BlackCherryPest2.pdf>

Dogwood sawfly – dogwood sawfly larvae (*Macremphytus tarsatus*), which were found near the border of Brown and Oconto Counties, can be a significant pest of dogwood. Dogwood sawfly changes color as the caterpillars grow. Newly hatched larvae are transparent yellow, slightly older larvae will have a dusty or fuzzy white coating, and older larvae will be black on top with yellow undersides (right). But even the first instars can skeletonize leaves. Larger instars can consume entire leaves, leaving only the tougher leaf midribs. Adults are a sawfly, resembling a fly or wasp.



Emerald ash borer – from Bill McNee. In late August, EAB larvae were detected in several trees in the city of Franklin in southern Milwaukee County. As a result, Milwaukee, Racine and Waukesha Counties were added to the state emerald ash borer quarantine. Eleven of Wisconsin’s 72 counties are now quarantined for EAB.

Since Brown County was quarantined in August, we’ve been receiving many questions about the movement of ash materials through Brown County on their way to a non-quarantined county. Most of the questions have been firewood-related, but some are about ash logs or nursery stock. Here’s what the Wisconsin Dept. of Agriculture, Trade and Consumer Protection (DATCP) says: “All regulated (quarantined) material can move through a quarantined area without becoming quarantined if the driver only stops for fuel and food.”



For example, ash logs or hardwood firewood originating in Oconto County can legally be moved through Brown County on the way to Kewaunee County. The same products originating in Brown County, though, cannot leave Brown County without a permit (compliance agreement) from DATCP.

Long distance movement is not recommended because of the risk of moving EAB or another pest.

All of the purple EAB detection traps are down for the season. This year, the purple traps detected adult emerald ash borers in the cities of Green Bay and Kenosha, as well as expanding the known size of infestations at Newburg and Victory. Final examination of the traps should be completed shortly.

DATCP, DNR and municipal staff have conducted a total of 6 days of visual survey work in Green Bay, 3 days in Kenosha and 1 day in Franklin. No EAB-infested trees have yet been found in either Green Bay or Kenosha. Several suspect trees were marked in all three locations. Two trees were peeled in Green Bay but no EAB larvae were found.

Gypsy Moth – from Bill McNee. Gypsy moth adults are nearly gone from NER. As of late last week we were still receiving reports of adults flying along the Lake Michigan shoreline and in the far north. Usually they're finished flying by late August. The cooler summer weather is likely responsible for the delayed development this year. Trap catches are down from last year, most noticeably in western Wisconsin counties.

Now is the time to start looking for gypsy moth egg masses to predict the pest's population size and potential damage to trees next year. The egg masses are tan-colored, about the size of a nickel or quarter, and feel firm. Older egg masses that are soft and faded are not a concern because the eggs hatched this past spring. Most egg masses will be found on tree trunks and the undersides of branches, but they can also be found on buildings, firewood, vehicles, and other outdoor objects. Homeowners with egg masses on individual yard trees can help to reduce the population by removing egg masses within reach and drowning them in soapy water for two days, or by applying horticultural oil available at many garden centers and other retail outlets. The best time to oil egg masses is anytime after the first hard frost in fall through the first week in April, on a day with at least 40 degree temperatures.



New eggmass on left, old eggmass on right.

Homeowners in residential areas should report their gypsy moth problem to their community government or property owners association. Woodlot owners interested in the DNR aerial spray program should contact their town or county government directly. Infestations should be reported by the end of September if possible, as counties must apply to the DNR program by early December. Currently, northern Oconto County and central Marinette County are looking like the 2010 hotspots in NER.

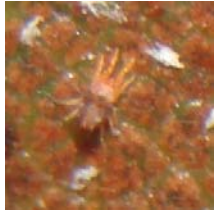
The annual NER training session for potential participants in the 2009-10 suppression spray program will be held Sept. 25 in Howard (Brown Co.) at the DNR office, beginning at 9:30. The address to map is 2984 Shawano Ave., Green Bay. If interested in attending, contact Bill McNee (bill.mcnee@wisconsin.gov). There are a few minor program changes from last year.

Japanese beetle on buckthorn – I stopped along a road to check on some defoliation and discovered that most of the defoliation was on the buckthorn along the road and that Japanese beetle was the pest. In this case one invasive pest (Japanese beetle) was defoliating another invasive pest (buckthorn), kudos to the Japanese beetle! Now if



we could just get them to feed exclusively on buckthorn we'd be all set!

Mites on oak – this young swamp white oak had a severe infestation of spider mites (left), causing the tops of the leaves to have a bronzed appearance along the main veins (right). When looking at the leaves with hand lens or under the microscope you could



see a very heavy infestation of mites. Mites have overlapping generations meaning egg nymph and adult forms may all be present at one time. Heavy infestations like this 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 the first. Be sure to read the label to determine if a second application is necessary.

Oak galls – quite a number of galls are showing up on oak this year, below is a selection of some of the more unique ones that I've been seeing in the region.



A warty gall on the underside of a leaf caused by a *Cincticornia* sp. of midge.



A woolly gall, probably *Andricus quercusflocci*, a cynipid wasp.



Unknown gall (close-up at right).



Sawfly on cottonwood – this sawfly was found defoliating cottonwood. My books tell me that *Nematus hudsoniimagnus* are sometimes found on poplar but their feeding is usually of little consequence. Although the larvae were defoliating entire leaves the overall damage to the tree was fairly minimal.



Sawflies, unknown – I recently found a couple of tiny sawflies that I have not identified. One was on ironwood (near right) and the other on willow (far right). Neither were doing any significant defoliation.



Two lined chestnut borer – although two lined chestnut borer usually attacks oak in this area it was recently found attacking ironwood. Two lined chestnut borer attacks trees that are under stress, either from drought, defoliation, or other damage to the roots or stem. The adult beetles lay their eggs on the bark of a tree, the eggs hatch and bore under the bark where the larvae feed in the cambium layer, effectively disrupting nutrient and water flow within the tree. Dieback and mortality associated with two lined chestnut borer can be easily confused with oak wilt, but the dieback associated with the insect often starts at the top of the tree with branch dieback, and

progresses downward, whereas the rapid mortality associated with oak wilt in the red oak family of oaks affects the entire tree all at once.

Willow flea weevil – significant defoliation of willow is occurring in Brown, Oconto, and



Shawano Counties is due to the tiny willow flea weevil. Damage is severe enough that the trees appear brown and “dried up” from a distance (right). Just 2mm long (left), the adults are black, small, and tend to “rain down” out of the tree onto your head when you disturb a branch. If I was someone who hated



insects I would have run screaming from these sites after having tiny bugs raining down



on me, getting in my hair and on my clothes. Defoliation starts with the immature stage of the weevil, a tiny grub

that feeds inside the leaves, mining out leaf material and leaving dead brown blotches. The larvae pupate and the adults emerge to feed on the leaves as well, leaving tiny round feeding marks (sun showing through these feeding spots in photo at above). The adults will overwinter and emerge in the spring to feed on the opening buds and new leaves so defoliation should be expected this coming spring.

Diseases

Ash yellows – from Kyoko Scanlon, DNR Forest Pathologist. Ash yellows is a disease that causes slow growth, branch dieback, and eventual mortality of ash. It is caused by a special type of bacteria - a bacterium without cell walls, called a phytoplasma. There is no known way to prevent or cure ash yellows. It is believed that this disease could kill a tree by itself or act with other stress causing agents, such as drought, root damage, and insect defoliation. Ash yellows has been reported only in North America. The disease is mainly observed in the northeastern and mid western states and southern most portion of Canada. Based on the survey conducted in 2009, ash yellows was confirmed in two additional Counties (Crawford and Walworth Cos.). In Wisconsin, ash yellows is currently found in 25 counties (Brown, Calumet, Chippewa, Columbia, Crawford, Dane, Dodge, Door, Grant, Jefferson, La Crosse, Manitowoc, Marathon, Milwaukee, Ozaukee, Pierce, Racine, Richland, Rock, Sauk, Shawano, Sheboygan, Taylor, Walworth, and Waukesha Cos.). As we continue the surveys, we have been realizing that ash yellows may be more widespread and causing more damage than previously believed.

You can find more information about ash yellows from the websites below.

http://www.na.fs.fed.us/pubs/howtos/ht_ash/ash_yell.pdf - USDA Forest Service website

<http://wihort.uwex.edu/gardenfacts/XHT1079.pdf> - University of Wisconsin Garden Facts

The forest service factsheet recommends that trees with greater than 50% crown dieback be removed within 5 years and other affected ash during subsequent harvests.

Fir-Fern needle rust – a needle rust on understory balsam fir was observed in Door County. This rust causes pale pustules to erupt from the undersides of needles, causing the needle to turn yellow and eventually killing that needle. Check out this website for great photos and more information on fir-fern needle rust <http://www.plantpath.cornell.edu/trees/Firfern.html>

Hickory mortality – I’ve been to a couple areas recently with the classic signs of the hickory mortality complex that we’ve been seeing for the past few years, in both shagbark and bitternut hickory. The main culprits in the hickory mortality are hickory bark beetle and two *Ceratocystis* fungi as well as other assorted insect and disease organisms which play lesser roles.



The typical symptom is rapid mortality. Upon examination I usually find epicormic branches that emerged from the main stem only to wilt later, small bleeding cankers are usually present (right, showing canker), and the exit holes from hickory bark beetle are common. Secondary pests like pigeon tremex (below) are often found laying eggs on the dying or recently dead trees. Parasitic wasps (left) are also often seen on these trees,



laying eggs on the larvae that are already boring under the bark. A factsheet is available that outlines some of the current issues with hickory mortality and dieback <http://dnr.wi.gov/forestry/fh/pdf/HickoryMortalityFactsheet.pdf> The US Forest Service continues to do research on this topic, some results can be found here <http://fhm.fs.fed.us/em/funded/09/nc-em-07-01.pdf> which states: *Preliminary Finding* – In a field trial involving inoculation of pole-size bitternut hickory, cankers and sapwood discoloration associated with two *C. smalleyi* isolates were at least two times larger than bark necrosis associated with isolates of *C. caryae* and *F. solani* as well as the sterile agar control. Thus, *C. smalleyi* is the species most likely to contribute to bitternut hickory decline and death.



Verticillium wilt - the most eye-catching symptom of verticillium wilt is when the foliage on one or more branches wilts suddenly and quickly turns a nice tan/brown color. In northeastern Wisconsin I typically see the disease affecting maple and ash. On maple you will often find streaking or staining in the vascular tissue of the twigs and branches that have died from verticillium wilt (right), this streaking is rarely present on ash. Verticillium wilt is caused by the soil-borne fungi. The fungus persists in the soil indefinitely, waiting for an opportunity to enter a plant through a wound that is in contact with the soil. Over the last month I’ve had quite a number of phone calls, samples, and digital photos of trees with dead branches due to verticillium wilt with locations from Oconto County in the north to Fond du Lac County in the south. I’m unsure why there seems to be so much of it this



year, but even along roadsides and in some forested stands, which are usually much less affected than urban trees, I'm seeing the symptoms.

Other/Misc.

Ash bark splitting – young ash trees in the cities of Green Bay, Appleton, and Fond du Lac are all suffering the same symptoms of split bark and large dead areas



on the main stems. I have not been able to find any fungal or insect cause but have sent samples to Madison for testing. These bark splits can be found on all sides of trees, both on the main stem and on branches in the crown, and callus tissue has been growing for at least one year. No mechanical wounding appears to have occurred to any of the trees, there is no animal feeding damage, and there are a variety of ages that are affected, as well as a



variety of planting dates. If anyone else is seeing these symptoms, or have an idea of the possible cause, please let me know.

Ash turning yellow early – many ash trees around the region have turned a brilliant color of yellow, which is pretty, but earlier than expected. Closer examination reveals that the majority of these yellow trees produced a very heavy seed crop this year. I suspect that the heavy seed crop, and dry conditions this summer, put the trees under enough stress that they chose to drop their leaves early, thus the early fall color.

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 dnrfrgypsymoth@wisconsin.gov

visit the website <http://www.gypsymoth.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.