

Northeast Wisconsin Forest Pest Update

July 15, 2010

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Arborvitae leafminer
Asian longhorned Beetle
Beech scale survey
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Climate change info in Statewide Forest Assessment
Deer damage in Door Co.

Insects

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

Arborvitae Leafminer - brown foliage on northern white cedar may indicate a leafminer infestation. Although there are other reasons why cedar can have brown foliage I'm seeing a lot of damage from Arborvitae leafminer. This tiny caterpillar mines the leaves of northern white cedar, leaving



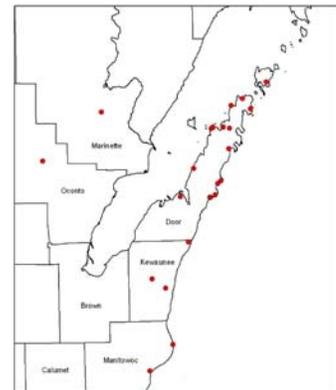
a dead portion wherever they have fed. Adults are a tiny silvery grey moth (left) that is out during June and July. They mate and lay eggs which hatch and the tiny larvae begin mining inside the leaf. They will mine through the rest of the summer and fall. They will continue feeding



in the spring before they pupate, then later chew their way out of the leaf, leaving a tiny round exit hole. According to a Minnesota bulletin <http://www.entomology.umn.edu/cues/web/064arborvitaefleafminer.pdf> the damage is usually most severe on the south sides of trees. Control can be achieved for select trees by using a systemic insecticide, or in forested settings you can wait for the many parasitoids to take control of the population. Reports, photos, and samples, have come from Brown, Door, Oconto, and Marinette Counties.

Asian Longhorned Beetle (ALB) – from Bill McNee. ALB has been discovered in Boston, Massachusetts, in trees bordering a hospital parking lot across the street from the country's oldest public arboretum. Groundskeeping staff noticed signs of sawdust created by tunneling beetles. So far approximately 50 ALB life stages have been found. ALB infests many species of hardwoods, including maples, and would be very destructive if it escaped into New England's hardwood forests.

Beech Scale Survey – surveys continue for the exotic scale, *Cryptococcus fagisuga*, that is associated with beech bark disease. The latest map at right shows dots where scale has been found and samples were confirmed by Phil Pellitteri, UW Entomologist. Map has been updated through June 28, 2010. The only area that currently has extremely high populations of scale and beech mortality has already begun is east of Sturgeon Bay in Door County where beech bark disease was first identified in August 2009. Other areas have low, very low, and extremely low populations of the exotic scale. More information on beech bark disease can be found at <http://na.fs.fed.us/spfo/pubs/fidls/beechnbark/fidl-beech.htm>



Emerald Ash Borer (EAB) – from Bill McNee. The city of Cudahy in Milwaukee County is the latest Wisconsin community to have an EAB detection. In late June, one adult beetle was found on a trap located east of the Milwaukee airport. Several beetles were also caught on a trap south of the Milwaukee airport, in Oak Creek. This Oak Creek trap is about 3 miles from the known infestation area in Oak Creek/Franklin and about 2 miles from the Cudahy detection site. These detections are located within an existing quarantine area.

The known size of the western Wisconsin infestation at Victory has also been increased with new trap catches and finds of infested trees. This infestation is currently known to be about 8 miles long and 4 miles wide. If interested in maps of any of these detection sites, email Bill McNee (bill.mcnee@wisconsin.gov).

If you see a purple EAB detection trap lying on the ground, please email the WI Dept. of Agriculture, Trade and Consumer Protection so that they can put the traps back up. Downed traps are put back up as quickly as possible. The email address to report a fallen trap is:

DATCPEmeraldAshBorer@wisconsin.gov

An EAB training session will be held in De Soto (Crawford/Vernon Counties) on July 22. The session will cover the biology and management of EAB, and will have field visits to look at infested trees as well as the management of lowland and upland forest stands. For more information, contact Greg Edge, DNR La Crosse Area Forestry Leader (608-785-9011, gregory.edge@wisconsin.gov).



Purple panel trap.
Photo by Renee Pinski.

EAB and gypsy moth treatment scams – on July 1, 2010, a press released was sent out regarding EAB and gypsy moth identification and control scams. Read the full press release at http://datcp.state.wi.us/press_release/result.jsp?prid=2525 If someone stops at your house and informs you that your trees are infested, or dead, because of EAB or gypsy moth, it's a good idea to get a second opinion. Additionally, if someone stops by to offer their services to cure, or guarantee protection, of your trees, please get a second opinion or do some additional research for yourself. The press release has some great tips to follow and when in doubt you can call the Wisconsin EAB Hotline at 1-800-462-2803, or the Wisconsin Gypsy Moth Hotline at 1-800-642-6684.

Earwigs - lots of questions about this insect lately. Populations are high this year in many areas of northeast Wisconsin. Earwigs feed on flowers and foliage of herbaceous plant but they are also scavengers, eating decaying plant material. If you have mulched flowerbeds around your house you may be providing good habitat for earwigs. If you don't want to spray a pesticide to control the earwigs I've heard that you can roll up a newspaper and place it in the flowerbeds, the earwigs will climb inside to hide and you simply pick up the newspaper and throw it away. The myth about earwigs crawling in people's ears then burrowing into their brains to drive them mad is truly just a myth. And although I'm sure you're not looking for a reason to like earwigs they are an insect that takes very good care of their young, compared to many insects that simply lay the eggs and then leave them to their own defenses. UW Extension has information on control options at <http://www.entomology.wisc.edu/diaglab/3-6-08Updates/earwig.pdf>



Photo from Forestry Images by Whitney Cranshaw.

Felt mites on birch – *Eriophyes longisetosus*, one of the “felt mites” forms a red lumpy matting on the upper surface of birch leaves. The feeding of the mites causes the plant to produce short hairs which create the felt-like covering. A few other mite species cause similar galls, but the coverings can be paler and/or located on the underside of leaves. The photo at right shows a variety of infestation levels, which have been reported in Brown County.



Photo by Chris Clark.

Forest Tent Caterpillar in Waupaca Co – forest tent caterpillar severely defoliated some forested areas east of the city of Waupaca. This defoliation looks nearly identical to the gypsy moth defoliation that was seen in many other parts of the region this year. Upon closer examination you will find the cream- to yellow-colored cocoons which indicate forest tent caterpillar. The moths will be emerging soon, or perhaps already are, and they will mate and lay eggs which are small dark brown hard frothy masses that encircle twig tips. These egg masses (left)



Forest tent caterpillar cocoon in a rolled leaf.

closely resemble the egg masses of Eastern tent caterpillar.

Giant Ichneumon – a sample of these insects came to me from Oconto County. They arrived in the mail, in a standard envelope, and after going through the mail machines they were mostly a bag of assorted parts by the time they arrived on my desk. Luckily these insects are still easy to identify even as pieces-of-parts. These parasitic wasps use their long thread-like ovipositors, sometimes up to 3 inches long, to lay eggs deep in the wood of trees where woodborers are feeding. The wasp egg hatches, bores into the woodborer larvae, and eventually will kill its host. Although they may look like large dangerous wasps they are just interested in parasitizing other insects.



Giant ichneumon, ovipositor inserted into tree.

Gypsy Moth – from Bill McNee. Earlier this spring and summer we saw a surge in the caterpillar numbers due to the warm and dry spring. Since then, the wet weather conditions have caused a massive die-off of the caterpillars from *Entomophaga* fungal disease and NPV viral disease (right). Caterpillars killed by the fungus hang vertically, head down. Those killed by the virus hang in an inverted 'V' orientation.

Hardwood trees that were defoliated by gypsy moth caterpillars over the past few weeks have been re-foliating (producing new leaves). Healthy hardwoods will usually re-foliate within a few weeks. If a defoliated tree hasn't yet re-foliated it may be waiting until next year or it may be dead. The last month's rains will help in reducing tree stress.



Female laying egg mass. Photo by Bill McNee.

By mid-July the male moth flight should be peaking or in decline. Female moths are now laying eggs across northeast Wisconsin. I've received a few reports of noticeable egg laying (left) occurring in the areas where heavy caterpillar mortality was seen. Reports received to date indicate that the egg mass numbers will not be nearly as high as they were a year ago. There continues to be considerable interest in aerial spraying in the spring of 2011.



Dead gypsy moth caterpillars. Photo by Bill McNee.

Aerial defoliation surveys were conducted in late June and found large amounts of defoliation in Langlade, Marinette, Menominee, Oconto and Shawano Counties. The preliminary statewide defoliation total is 348,000 polygon acres. Oconto County is this year's leader, with 146,000 polygon acres. Marinette County is the runner-up with 123,000 polygon acres.

Honeylocust plant bug – this spring numerous reports of moderate to severe damage from honeylocust plant bug filtered in to me from around the region. These small insects feed on newly emerged honeylocust leaves by inserting their mouthparts into the leaf and sucking the juices. This feeding damage causes small, discolored spots on the leaves and can cause the leaves to be deformed. Heavy feeding can cause the leaves to be severely deformed or to drop prematurely. Trees that are severely defoliated by honeylocust plant bug will attempt to refoliate.



Honeylocust plant bug damage. Photo from Forestry Images by Whitney Cranshaw.

June beetle defoliation – Todd Lanigan, WCR Forest Pest Specialist, and I visited a site in eastern Portage County where oak was defoliated. Red oak was preferred over white oak and other species in this mixed hardwood stand were not defoliated at all. The oaks in this stand had been defoliated quite rapidly, and experienced a similar defoliation last year. I suspect that adult June beetles were to blame (right). No insects or diseases could be found during the site visit but the rapid defoliation, preference for red oak, lack of feeding on anything else, and lack of insect or disease presence, seems to point to adult June beetles. Adult June beetles emerge after dark on warm spring nights, feed during the night, then burrow into the soil and leaf litter before dawn, spending the day hidden from all. This forest was next to a cattle pasture heavy to sod which is a favorite place for June beetles to lay their eggs and for the white grubs to complete development. Since I was there too late to find any adults, and I have never seen June beetle defoliation at this level in a forest setting, this is just my best guess as to the cause of defoliation. Larval surveys later in the year may shed some light on the matter but the very wet year that we've had may promote milky spore disease which could kill many of the larvae, causing the population to crash naturally.



Kermes scale – reports of Kermes scale, *Kermes pubescens*, on swamp, burr, and white oaks have been filtering in from around the region. Kermes scale saliva will cause branch tip dieback on white oaks (swamp, burr, white) which may be mistaken for anthracnose or botryosphaeria canker. The adult Kermes scales are round, relatively hard, globose, and about the size of a marble (right). They resemble a gall more than a scale.



Longhorned beetles – These beetles were collected in the Green Bay area on oaks. This beetle is *Sarosestes fulminans*, sorry, it doesn't have a common name. This beetle has great coloration with that nice black "eye" on its back. Larvae feed primarily on oak; they usually attack freshly dead trees, boring under the bark and into the wood. They take 1-2 years to complete development (literature varies).



Metallic woodborer – this beetle, *Dicerca divaricata*, was found on a maple tree near Wausau. The following lighthearted information was gleaned from The Fifth Annual Report of the Entomologist of the State Experiment Station of the University of Minnesota To The Governor For The Year 1899: this beetle is fairly abundant in Minnesota. Such beetles are found not very often, however, sunning themselves during June, July, and August, on the trunks and limbs of old cherry and plum trees; or they are found running up and down the trunks enjoying the sunshine.



Photo by R.J. Wickham.

This borer does affect other species than listed above including maple, oak, elm, and others, and prefers to lay its eggs on trees that are under stress. The next time you see this insect you may want to watch it to see if it runs up and down the trunk enjoying the sunshine as it clearly did in 1899. 😊

Tortoise beetle – a tortoise beetle was brought in to me from Shawano County. Adults and larvae feed on leaves but are generally not a significant pest on trees. These beetles have several interesting traits compared to other insects. The larvae have spikes on their body and they can impale their shed skins and feces on these spikes to make themselves unpalatable to other insects that might want to eat them. The adults also have a unique trait; they are usually a metallic color, but when the adult dies this metallic color fades rather than staying bright metallic as many other insects do.



Adult and immature tortoise beetle. Photo from Forestry Images by Whitney Cranshaw.

Woolly Elm Aphid - The woolly elm aphid causes elm leaves to distort and curl. This species has two generations each spring on its primary host, American elm. Both generations feed within the curled leaves. The sample at right was from a Liberty elm in Door County. In early summer, winged females are produced that fly to the aphid's secondary host, juneberry (*Amelanchier* sp.), where they give birth to live young. All aphids produced on juneberry migrate to the roots where they feed for approximately two months. In the early fall, winged females are produced which fly back to elm where they produce males and females, which then mate. Females lay a single large egg in a bark crack and then die. Woolly elm aphids seldom cause significant injury to mature hosts, although large numbers can damage shrubs that are less than 3 years old. Treatment on elms is usually of minimal value by the time the leaf curling had already occurred and it would not correct the damaged leaves.



Photo by Bill Ruff.

Diseases

Hickory mortality in Marinette County – I visited a site with hickory mortality in Marinette County. This appeared to be the same hickory mortality that I've seen around the region. The trees are attacked by our native hickory bark beetle, at least one fungus seems to move into those areas where the bark beetles are attacking, crown decline begins, the tree sprouts epicormic branches in an attempt to stay alive, small bleeding spots may show up along the stem indicating

cankers, the epicormic branches rapidly wilt and die and the tree is dead. This process, once started, seems to take 1-3 years on average, but this is just an observation. This site was slightly different than other sites I've visited in that the trees were fairly open grown and had live branches extending quite a ways down the trunk of the tree. In this case the trees did not produce epicormic branches but instead relied on the lower branches to remain alive after the crown had died. Info on some of the research findings of the US Forest Service researchers can be found at <http://nrs.fs.fed.us/pubs/gtr/gtr-p-24%20papers/52juzwik-p-24.pdf> (2006 results) http://fhm.fs.fed.us/posters/posters08/hickory_decline.pdf (2007 results)

Dr. Juzwik, who has been researching this issue, sent a partial summary of her 2009 research which I included in my December 2009 pest update, and have cut and pasted here:

Conclusions to Date

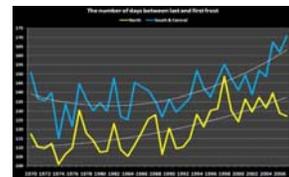
Of the three most commonly observed scenarios associated with hickory decline/dieback and mortality of hickory, the relatively rapid crown decline associated with *S. quadrispinosus* and diffuse stem cankers was most prevalent based on field surveys conducted in six states. Coalescing larval galleries is not what is killing the affected hickory. Rather, it appears that either the coalescing of hundreds of stem lesions or cankers associated with beetle attacks is the cause. Preliminary results show *C. smalleyi* and *F. solani* are causes of these cankers. Other, as yet undetected, fungi may be involved. Further work is underway to test this hypothesis. However, control of hickory bark beetle is the key to managing hickory decline. Survey data suggests that reducing density of bitternut hickory in a stand may greatly reduce tree decline and mortality during bark beetle outbreaks. Sanitation is also recommended, but is difficult for landowners to accomplish.

Dr. Juzwik's research will continue in 2010.

Thousand Canker Disease of Walnut – a pest alert for this new disease which affects walnut can be found at http://na.fs.fed.us/pubs/palerts/cankers_disease/thousand_cankers_disease_low_res.pdf For a high resolution version for printing go to <http://www.na.fs.fed.us/pubs/detail.cfm?id=5225> This disease has not been found in Wisconsin yet but is spreading through the southwestern US, killing walnut as it goes. This disease is a combination of a fungus and the walnut twig beetle which is native to AZ, CA, and NM, but is now being found in many other states. Check out the pest alert and if you think you've seen this problem follow the recommendations at the bottom of the pest alert under the Survey and Samples section.

Other/Misc.

Climate change info in Statewide Forest Assessment – there is some absolutely fascinating information in the Data & Analysis section of the Statewide Forest Assessment which can be found at <http://dnr.wi.gov/forestry/assessment/strategy/assess.htm> I'm sure there is fascinating info in other parts as well, but I found the climate change info to be very interesting, including graphics showing the changes in days between first and last frost (at right) for northern and southern Wisconsin which can be found on page 6, of section 7 which covers



Source: Wisconsin State Climatologist, from Wisconsin Statewide Forestry Assessment.

potentially damaging agents <http://dnr.wi.gov/forestry/assessment/strategy/data.asp?d=07> There are other graphics showing projected temperature changes, actual temperature changes, and drought severity information. I hope you can take some time to check out this section, and others, of the Statewide Forest Assessment.

Deer damage – the photos below were taken in Door County. The deer damage appears to be significant and so it was surprising upon closer examination that these trees still had some green material present and were not technically dead yet. Nearby spruce was also fed upon.



Severely defoliated northern white cedar with close-up of foliage – not dead yet!



Nearby spruce also feed on by deer.

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.