

Northeastern Wisconsin Forest Health Update

Wisconsin DNR – Division of Forestry

August 15, 2014

Topics covered this month:

Insects:

Aspen blotch miner
Cherry scallop shell moth
EAB info
EAB new finds in WI
Eastern larch beetle
Fall webworm
Felt mites
Larch casebearer
Oak twig pruner
Spruce budworm
Spruce spider mite

Other:

Fishing spiders

Of Historical Interest:

60 years ago - 1954 –

- Cherry scallop shell moth
- Saddle prominent

25 years ago - 1989 –

- Larch sawfly
- Yellow birch dieback – unknown

Diseases:

Armillaria root rot killing understory
white pine
Needle rusts in the north:
Balsam fir needle rust
Spruce needle rust
Oak wilt

Insects

Aspen blotch miner – For the 3rd year in a row, damage from this late



Aspen blotch miner defoliation.

season defoliator is showing up in Oconto, Marinette, Florence, Forest, Oneida, and Vilas Counties. The damage makes the crowns of the trees off-color and thin. The defoliation can be severe but aspen generally handles the defoliation well, so although it can

look bad the effects on the overall health of the trees seems to be negligible. Moths emerge in August and spend the winter in a protected place. Larvae spend their entire life feeding within the leaf and pupate within the area that they mined out.



Aspen blotch miner damage. Top of leaf (above), and underside of leaf (below).



Cherry scallop shell moth – significant webbing and damage is showing up in some areas of Marinette and Shawano Counties on wild black cherry. Understory trees are most affected but the occasional overstory tree is defoliated as well. Moths emerge in June to lay eggs. The caterpillars feed in groups and tie leaves together, feeding within the webbed leaves which provide protection from predators. These webbed leaves eventually turn brown. After feeding is done for the season, the larvae drop to the ground to pupate and overwinter. Mature black cherry that has been defoliated by cherry scallop shell moth may be at higher risk for attack by Peach Bark Beetle, *Phloeotribus liminaris*, especially if these were mature trees that didn't leaf out well this spring (see my June pest update

<http://dnr.wi.gov/topic/ForestHealth/documents/2014/ForestHealthNE-Jun14.pdf>).



Cherry scallop shell moth caterpillars (above) and webbed together leaves (right).

EAB info – the document at right is available to help you determine what quarantines are where (gypsy moth and/or EAB), and where wood can/can't be moved. The colors are just for categories and red does not denote “the worst”, nor green “the least”, they’re just colors that were used. You can download it at <http://datcpservices.wisconsin.gov/eab/article.jsp?topicid=23> at the bottom of the page click on “Firewood Movement in Wisconsin pdf”

Gypsy Moth and Emerald Ash Borer Quarantine Counties

- Non Quarantine
- Gypsy Moth and EAB Quarantine
- Gypsy Moth Quarantine
- EAB Quarantine

Firewood Movement in Wisconsin

Two quarantines affect firewood movement by the public: one for the gypsy moth and one for emerald ash borer.

Loggers, timber haulers, and sawmills are regulated. The inspections and certifications they receive to move hardwood firewood ARE NOT available to the general public.

PERMITTED	NOT PERMITTED
Within Yellow	Green to Any Color
Yellow to Green	Red to White or Yellow
Within Green	Yellow to White or Red
Within Red	
Within White	
White to Any Color	
Red to a connected green	

Firewood on state properties

- DATCP-certified firewood can be used at any WI State Park.
- You can bring firewood to state campgrounds if it was harvested within 10 miles and obeys the permitted list above.
- Firewood from quarantined areas in other states is not allowed into non-quarantined counties of Wisconsin.
- If you are driving with firewood between two permitted areas but through a RED or GREEN quarantine area, limit your stops to the amount of time it takes to refuel your vehicle.

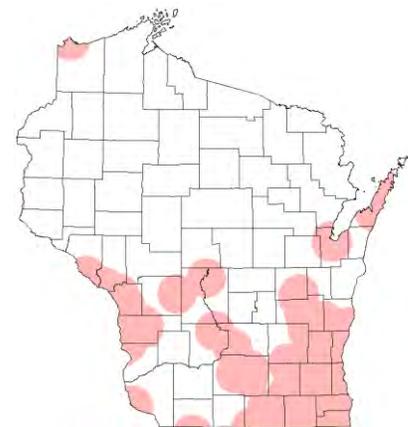
If visiting a private, county, or municipal campground, call ahead to your destination for specific firewood policy information.

This map is current as of August 6, 2014.

New quarantine areas may be added at any time.
For updates visit <http://emeraldashborer.wi.gov>
or call 1-877-302-WOOD (9663).

The 10-mile radius maps for state properties have been updated with all the latest EAB finds. Check it out at <http://dnr.wi.gov/topic/Invasives/FirewoodMaps.html> just select the property of interest and a map will pop up with the 10-mile radius shown.

The map at right shows the 15-mile radius around all known infestations of emerald ash borer in Wisconsin. The Emerald Ash Borer and Forest Management document https://datcpservices.wisconsin.gov/eab/articleassets/Management_Guidelines_for_Wisconsin_Forests.pdf (revised May 2014), states that salvage and pre-salvage harvests are recommended within an EAB quarantined county and for all stands within 15 miles of a known infestation, even if currently located outside of a quarantined county. Ash trees should be considered high risk for EAB mortality within the next harvest cycle.



EAB known locations with 15-mile radius shown.

EAB new finds in WI - In the past month emerald ash borer has been identified in the following areas around the state:

New County Quarantines:

- Adams
- Buffalo
- Columbia
- Grant
- Green*
- Iowa*
- Juneau (quarantined due to its proximity to the Adams County find)
- Lafayette*
- Monroe
- Richland*



D-shaped exit holes (right) caused by EAB, and EAB adults (right).

*These counties were quarantined although EAB has not been confirmed in them yet. They are completely surrounded by counties where EAB has been confirmed and it is highly likely that EAB is already present as low-level infestations often go undetected for years.

New finds in Counties already Quarantined:

- Columbia County – Town of Dekorra
- Jefferson County -- Town of Palmyra, City of Fort Atkinson
- Kenosha County -- Villages of Paddock Lake and Silver Lake
- Monroe County – Village of Wyeville
- Ozaukee County – Village of Belgium
- Racine County -- Towns of Yorkville and Norway
- Sheboygan County** -- Town of Holland, Village of Random Lake
- Walworth County -- Towns of Darien, Geneva, Muskego, Richmond, Sharon, and Whitewater
- Vernon County -- Towns of Jefferson and Viroqua
- Washington County -- Towns of Hartford and Norway
- Waukesha County -- Town of Ottawa



**Although Sheboygan County was quarantined previously because of nearby infestations in neighboring counties, these are the first confirmations of EAB in the county

Eastern larch beetle – I’ve noticed just a few tamarack in Vilas and Oneida Counties that are turning yellow already, due to attack by eastern larch beetle. These were all trees that were defoliated by larch casebearer this spring, but in most cases these trees are near other trees that were attacked and killed last year by eastern larch beetle. Look for trees that are off-color, yellow/brown, or never reflushed after the defoliation this spring. Closer examination will usually find significant sapflow on the trunk of the tree, woodpecker activity starting at the top of the



Fully infested tree on right, didn't reflate after defoliation this spring by larch casebearer. Tree in foreground is off-color and infested with eastern larch beetle.

tree making the bark look very orange in color, and some small (1mm diameter) round exit holes in the bark. Peeling the bark should be relatively easy with a hatchet or knife, and you'll find the area under the bark riddled with galleries, larvae, pupae, and adults. The current problems with eastern larch beetle have been going on for a number of years and is a slow progressive issue once it shows up in a stand. The defoliation this spring may allow eastern larch beetle to attack more trees, we will continue to monitor this.



The tree above (solid yellow arrow) is infested with Eastern Larch Beetle. The woodpecker damage was the clue. Pictures below are from this tree.



Top - woodpecker damage, bark appears orangish.
 Above - small round exit holes of Eastern Larch Beetle
 Above Right - extensive damage under the bark
 Right - adult Eastern Larch Beetle at knife tip



Felt mites – Erineum galls or velvet galls are caused by felt mites (Eriophyid mites). The feeding by the mites causes the leaf to grow a fuzzy material over and around the mite that resembles felt. The mites then live comfortably within the “felt”, which is really just an abundance of leaf hairs that protects the mites while they continue feeding on the leaves. An interesting tidbit ... Eriophyid mites only have 2 pairs of legs (which you can see in the photo below). Damage is generally cosmetic.



Eriophyid mites have only 2 pairs of legs (above, small white things).



Velvet gall on box elder.
Photo by Bill McNee.



Erineum gall on Callery Pear, could be mistaken for a fungal leaf disease.

Fall webworm – webs are popping up all around the state and populations seem highest in the northern counties. Fall webworm does most of its damage later in the season, when the tree is preparing for fall, and it will not kill the tree. It can be an ugly messy web nest that the insects create but again, it will not kill the tree. If it’s just too ugly to look at I recommend tearing it down with a rake and soaking the whole thing in a bucket of soapy water. There is no need to prune out portions of your tree just to get rid of the webs. Pruning out the branch that the web is on actually does more damage to the tree than the caterpillars themselves would do, likewise, burning them out with a flamethrower is considered overkill.



Fall webworm web nests (above), caterpillars are hairy (right).



Larch casebearer –larch casebearer defoliated thousands of acres of tamarack this spring in eastern Price County, Lincoln, Langlade, Oneida, Vilas, and Forest Counties, and scattered

patches in Marinette County. Those defoliated stands are now refoliating as the aerial pictures below show.



Same stand, slightly different angle. Pic on left taken June 11, pic on right taken July 17, 2014. Photos by Ron Eckstein.

Unfortunately, many of these stands are starting to be defoliated again by the tiny larch casebearer caterpillars that recently hatched. They mine the needles, giving the tree a frosted or scorched appearance with the needle tips being dead. The caterpillars feed until winter and overwinter as a 3rd instar caterpillar, ready to do more defoliation next spring.

Repeated defoliation can weaken the tree making it susceptible to attack by Eastern Larch Beetle. In areas where Eastern Larch Beetle was already active we're already seeing additional mortality.



Tips of needles being mined by 1st and 2nd instar larch casebearer caterpillars.

Oak twig pruner – damage is being reported from oak twig pruner in the central part of the state on Northern Red Oak. I've seen it in Shawano County. This insect is a beetle as an adult, but it's the larvae that does the damage. Boring down the center of the twig, it feeds from the branch tip in towards the main stem, until it completes development, at which time it chews a ring of wood out to the bark, leaving only the bark holding the branch in place on the tree. During the next windy day the ring of bark holding the branch breaks and the branch drops to the ground. The larvae pupate in the twig and overwinter there, emerging in the spring as adult beetles. Homeowners can pick up the dropped twigs and dispose of them to reduce the populations of the insect.



Northern red oak twigs that fell to the ground, damaged by oak twig pruner.

Spruce budworm - defoliation from spruce budworm on spruce and balsam fir was mapped aerially in Florence, and Marinette Counties where the damage was most severe.

Spruce budworm is a native insect that periodically has outbreaks that can cause extensive tree dieback and mortality. Regional budworm outbreaks occur every 30-50 years and can last 10-15 years. The last major outbreak in northern WI lasted about 10 years from 1970 to 1980.

Balsam fir is the species most heavily damaged by spruce budworm and repeated defoliation can cause top dieback and mortality, although it is reported to be able to handle 4-6 years of heavy defoliation on the current years foliage before the trees will start to die.

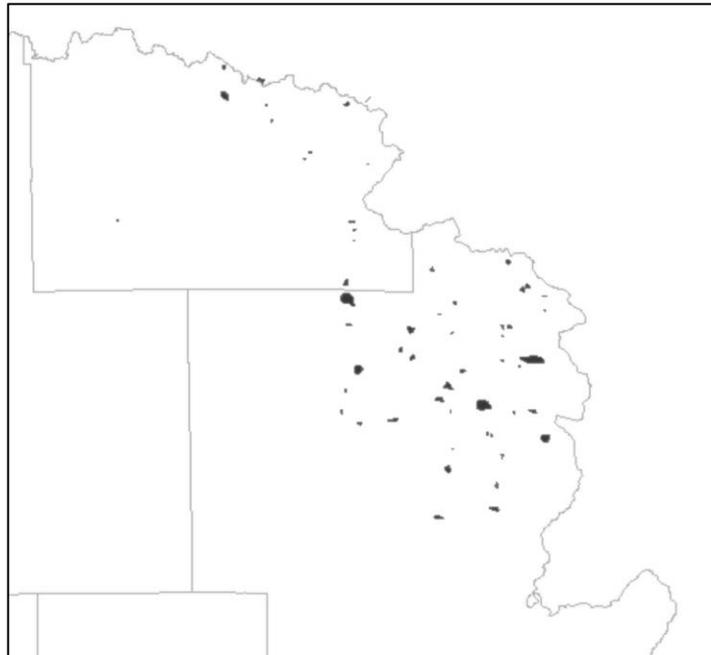
Monitor stands for decline. Trees with more than 75% needle loss are not likely to recover. Stands that have had heavy defoliation for 3 years in a row may need to be considered for salvage. Older stands, or stressed stands, may decline more rapidly.

More information on spruce budworm can be found here
<http://www.na.fs.fed.us/spfo/pubs/fidls/sbw/budworm.htm>

Spruce spider mite – these mites feed on the needles of spruce causing the needles to appear mottled and chlorotic. An article from Michigan State University (although geared towards Christmas trees) does a great job of outlining the lifecycle, damage, and control options

http://christmastree.for.msu.edu/pdf/pest_manage/Spruce_spider_mite_2012.pdf or check out the UW Extension document

<http://hort.uwex.edu/sites/default/files/Spruce%20Spider%20Mite.pdf> These mites do well in



Aerial survey of spruce budworm damage on spruce and balsam fir.



Messy defoliation caused by spruce budworm.



Spruce spider mite on top of 3 eggs.

temperatures below 78°F, and can complete their lifecycle in as little as 15 days, so populations can build rapidly. Predatory mite populations will usually build up to control these pest mites.



Mottling of needles due to spruce spider mite feeding.

Diseases

Armillaria root rot killing understory white pine – recently in Waupaca and Shawano Counties I found understory white pine that was being killed by armillaria root rot. These 5-8 foot tall white pines were in the understory of red pine stands. These stands had been stressed by the 2012 drought and are still recovering, so



armillaria probably got its start during the 2012 drought. Typically, when I see understory white pine that is dying, it's due to white pine blister rust basal cankers, but not these stands.



Above and left: Armillaria under the bark of understory white pine. White material is the mycelium of the fungus.

Needle rusts in the north -

Balsam fir needle rust – as I mentioned in last month's pest update, balsam fir in Florence, Forest, Oneida, and Vilas Counties appeared pale from a distance due to balsam fir needle rust. Balsam fir needle rust infects current year needles and produces white pustules that emerge from the lower surface of infected needles, those needles will then turn pale yellow, and this



White "fringe" emerging from the undersides of needles are the pustules that produce the spores of the rust fungus.

combination give the trees a pale cast. Balsam fir needle rust requires a fern as the second host. This fungus does well in years when we have a cool wet spring, like this year. Infected needles will drop prematurely leaving this years twigs a bit sparse on foliage.

Spruce needle rust – have you noticed current-year foliage on blue spruce that is looking pink or orange? How about black spruce or white spruce that appear yellowish from a distance? This is spruce needle rust, and symptoms can be worse at the top of the tree. Brian Schwingle reported it last year and it’s back again this year in several northern counties including Forest, Oneida, and Vilas. This fungus enjoys a moist spring, so this year it’s doing well. As a rust it has an alternate host, probably a shrub in the heath family like Labrador Tea. The infected needles will drop prematurely. No treatment “cure” is available for the already infected needles.



Pink/orange pustules emerging from blue spruce needles produce spores.



Spore-producing pustules erupting from black spruce needles.

Preventative fungicide treatments for yard trees could be done next spring and early

summer to protect new emerging needles. Repeated treatments are necessary as the fungicide must coat the needle to protect it and has to be reapplied after it washes off or weathers off. For more info and photos check out MN’s Forest Health Newsletter from 2011

<http://www.dnr.state.mn.us/fid/aug11/whatsup.html#spruce>



Pale looking balsam fir (above) with Balsam Fire Needle Rust, compared to an blue spruce infected with Spruce Needle Rust which appears pink or orange (right)



Oak wilt – symptoms of oak wilt are still going strong. Look for leaves that suddenly wilt and drop from the tree. Oak wilt is a non-curable fungal disease specific to oaks. Once a tree is infected with oak wilt the fungus will begin to spread outward from the roots of the infected tree through root grafts and into the roots of neighboring oaks. In this way pockets will continue to expand, and each year more oaks will die.

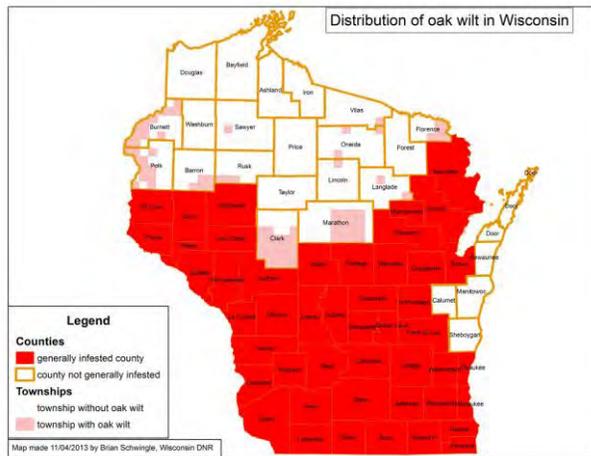
NOTE: To stop oak wilt you MUST do something about the root system. Simply cutting additional trees will NOT stop an oak wilt pocket because it doesn't address the root system. Want to discuss additional control alternatives besides the traditional trenching to cut the root grafts? Drop me an email or give me a call and we can discuss whether the use of herbicides to kill additional trees, or ripping stumps out of the ground would be a good solution for your oak wilt pocket.

Oak wilt is not common in every county in Wisconsin, and in some of the northern counties it's only known to be in a few townships. In the map at right, the red counties are considered to have oak wilt present across the county. In other areas of the state, the pink shaded areas are where we know that we have oak wilt, but we are not aware of it in the remainder of the county. **If you know of oak wilt, or suspect oak wilt, in an area not already colored red or pink on the map at right, please let me (or the appropriate forest health specialist for that area) know so that we can update the map.** Keeping the map updated allows forest managers to make the best decisions to help minimize the risk of introduction of oak wilt to new areas.

A good brochure about oak wilt, including the biology of the disease and how it is spread, can be found at <http://learningstore.uwex.edu/assets/pdfs/G3590.pdf> or check out the oak wilt info on the DNR website at <http://dnr.wi.gov/topic/ForestHealth/OakWilt.html> which includes the online interactive guide for determining oak wilt risk related to harvesting oak stands.



Trees dying from oak wilt. Leaves rapidly wilt and drop from the tree in July/August.



Other/Misc.

Fishing spiders – last month I mentioned that I was getting a lot of reports and samples of fishing spiders, which are a very large spider, native to Wisconsin. Reports continue to roll in. Dark Fishing Spiders are the most common ones being reported. They often live next to water, and can catch small fish and tadpoles to eat, but they can range inland as well to hunt and lay their eggs. More info on Dark Fishing Spiders can be found at

<http://www.spiders.us/species/dolomedes-tenebrosus/>



Fishing spider (above) on a bluebird house. Close up (left) shows it is a female guarding an egg sac.

Of Historical Interest

60 years ago, in 1954 –

- Cherry Scallop Shell Moth – *Calocalpe undulate* (L) Heavy infestations were reported locally in Fond du Lac, Columbia and Portage Counties.
- Saddle Prominent – *Heterocampa guttivitta* (Wlkr.) Heavily defoliated a 20-acre tract of hard maple in Kewaunee County.

25 years ago, in 1989 –

- Larch sawfly – *Pristiphora erichsonii* (Hartig) Heavy defoliation of European larch was reported in Forest County. Very light populations were reported in Clark and Polk counties.
- Yellow Birch Dieback – Unknown. No progression of dieback was observed in Florence County, northeastern Wisconsin. Dieback present in 1988 seemed to be the same in 1989. A few scattered sawlog-sized trees died in Florence County.

Contact Us

Forest Health Staff - contact info for each Forest Health Specialist can be found our webpage at

<http://dnr.wi.gov/topic/ForestHealth/staff.html>

Report EAB:

by phone 1-800-462-2803

by email

DATCPEmeraldAshBorer@wisconsin.gov

visit the website

<http://emeraldashborer.wi.gov/>

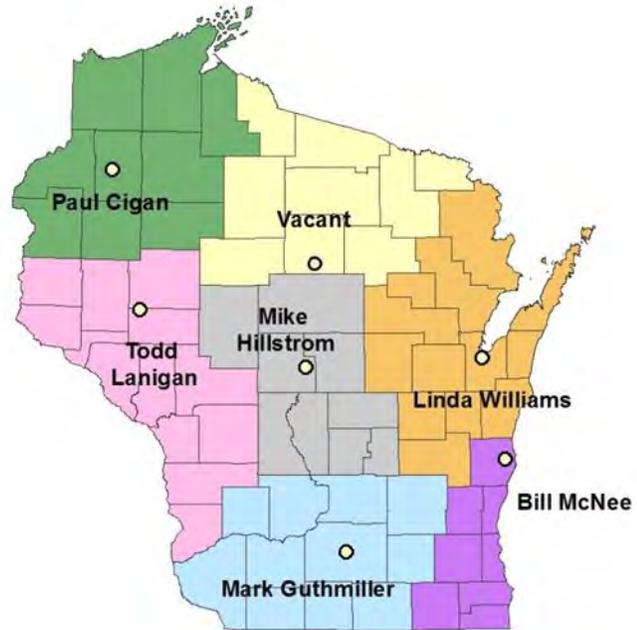
Report Gypsy Moth:

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.