

Northeastern Wisconsin Forest Health Update

December 17, 2012

Topics covered this month:

Insects:

Christmas tree pests
Deer ticks
Don't Pack A Pest website
Emerald ash borer
Gypsy moth
Sawfly pupal case
Spruce spider mites
Walnut twig beetle found in Ohio

Diseases:

Annosum treatment suspended for winter
Water molds killing white pine and more

Other:

Drought – to tap or not to tap maples next spring?

Insects

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

Christmas tree pests – do you have a real tree up in your house this year? Did you look it over to see what pests may have come with it? This year I have a balsam fir in my house, which came with a nice assortment of galls from balsam gall midge, and just a bit of damage from balsam twig aphid. You may find scale insects, eggs laid on needles, and other galls like Eastern spruce gall adelgid, although many trees are fairly pest free so you may not have this kind of cool stuff decorating your tree.



Swellings on needles caused by balsam gall midge.

Deer ticks – I received several reports from hunters that they picked up ticks this year during the warm gun deer season. Just remember, if the temps are above freezing you may still pick up ticks so don't stop doing your tick checks too early.

Don't Pack A Pest website – have you checked out the Don't Pack A Pest website? <http://www.dontpackapest.com/> Learn more about what you can pack and what you should leave behind when travelling, and watch the video of Linus the beagle who sniffs out agricultural products that could bring insects or diseases into the country. Linus is such a happy worker in the video!

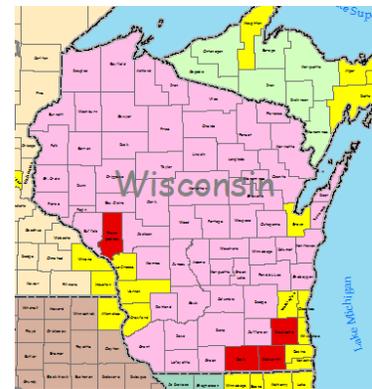
Emerald Ash Borer (EAB) – from Bill McNee. Recent studies in Minnesota conducted by the US Forest Service and University of Minnesota have found that the natural enemy wasps introduced to help control EAB are quite capable of surviving the winters in the Upper Midwest. The studies are finding that the natural enemies are actually more cold-tolerant than EAB is, and will be able to survive anywhere that EAB becomes established. Winter temperatures of Grand Rapids (in northern Minnesota) killed about 90% of EAB larvae.



Spathius agrili wasp, an introduced natural enemy of EAB. Actual size is less than 1/4". Photo by Bill McNee.

Researchers have also found that the wasps are capable of flying up to 5 miles in a single day. Thus, we should expect that they will do well and spread quickly in Wisconsin. For more information, visit: http://www.twincities.com/ci_22077752/researchers-turn-wasps-way-stop-emerald-ash-borer.

In the past few weeks EAB University (available online at www.emeraldashborer.info) has run two great webinars featuring case studies of EAB impacts in communities with advanced infestations – cities such as Detroit, Chicago and Fort Wayne. These presentations will show you what happens when most of your ash trees die within a few years, and why long-infested communities stress the importance of having a tree inventory and preparing for EAB ahead of time. Fortunately, nearly all Wisconsin communities don't yet have EAB or are in the early infestation stages, and have more management options available than the cities featured in the webinars. You may be able to see your community's fate if you aren't preparing for EAB impacts ahead of time!



Counties in red had first EAB detections in 2012. Counties in yellow had earlier detections. Map by USDA APHIS PPQ.

These webinars discuss some interesting consequences of EAB infestation that you may not have heard of before, such as:

- How much sidewalk damage occurs during large-scale tree removals
- Having to remove sprouts obstructing the sidewalks
- How many complaints abundant stumps generate
- Some people selling their homes because they are now exposed to full sunlight
- Increased storm damage in the future if EAB eats up your pruning budget

Sign up for automatic EAB news updates at: http://datcp.wi.gov/Gov_Delivery/EAB/index.aspx
Suspicious beetles or symptomatic trees should be reported to the EAB hotline, 1-800-462-2803, or emailed to: DATCPEmeraldAshBorer@wisconsin.gov

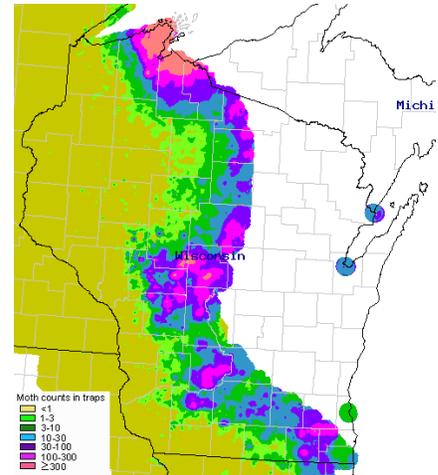
Gypsy Moth – from Bill McNee. The DNR gypsy moth suppression program did not receive any applications from eastern Wisconsin counties to spray in 2013. This is the first time this has happened since the program began in 2000. The only area that will be sprayed through the DNR in 2013 is at Governor Dodge State Park in Iowa County.



Female gypsy moth lays an egg mass. Photo by Bill McNee.

Egg mass surveys can now be done in order to predict gypsy moth populations in 2013. For more information on how to do egg mass surveys, visit www.gypsymoth.wi.gov.

Information on oiling or removing egg masses is also available at this website, although with the freezing temperatures it's now best to wait until the winter is over before using an egg mass oil. If you decide to do privately-organized aerial spraying in 2013, a list of for-hire aerial applicators is available at the above website.



Map of 2012 gypsy moth trap catches in the DATCP trapping program. Areas in white are not trapped. Map produced by the Gypsy Moth Slow-The-Spread Project.

Sawfly pupal case – this sample, brought to me by John Lubbers, shows that insect sign can be used for other things besides the insect itself. The first picture shows how the sample arrived. Removing the item showed it to be a sunflower heart, stowed safely in the pupal case for later consumption, at least until John found it and removed it. Very cool though!



Spruce spider mites – an article in the Wisconsin Christmas Tree Producers Association Quarterly Journal, October 2012, outlines the life cycle and control options for spruce spider mites, tiny critters that can do significant damage. Written by Erin Lizotte, Dave

Smitley, and Jill O'Donnell, all with Michigan State University Extension, this article points out that the entire life cycle of a spruce spider mite can be completed in just 15 days and is temperature driven. Spruce spider mites can be active when temps are as low as 43 °F, although their life cycle slows down during the heat of the summer. Spruce spider mite populations tend to do well during dry periods, so for those with drought problems this past summer, spider mites may have also caused stress for your trees. Predatory mites are helpful in controlling spruce spider mite populations, or, a variety of pesticides can be effective if timed appropriately, although some of the pesticides will also affect the predatory mites.



Spruce spider mites and characteristic damage showing mottling of needles. Photo from www.forestryimages.org

Walnut Twig Beetle Found in Ohio – from Bill McNee. On December 13 it was announced that Walnut Twig Beetle, which is the vector of Thousand Cankers Disease (TCD) of walnut, had been detected around a wood-utilizing business in southwest Ohio near Cincinnati. So far, the fungus that causes TCD has not been found. More information can be found at:

<http://www.dispatch.com/content/stories/local/2012/12/11/twig-beetles-found-in-walnut-trees.html>. Ohio ranks in the top 3 states for the amount of walnut in its forests. TCD is believed to have originated in the southwestern US, and has been found in Pennsylvania, Tennessee and Virginia within the native range of eastern black walnut.



Walnut twig beetle, actual size is about 1/16". Photo from www.forestryimages.org

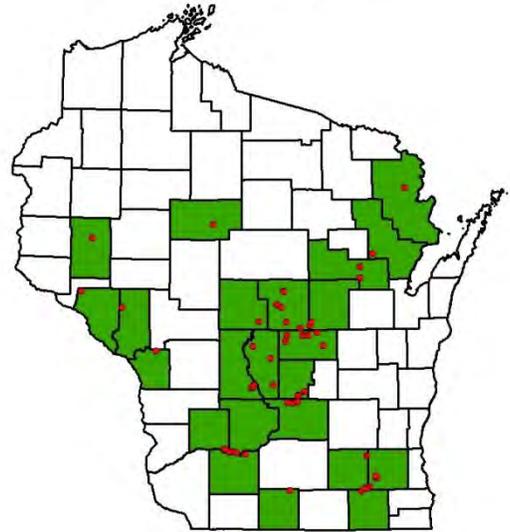
Diseases

Annosum treatment suspended for winter – in November, Paul Delong (WI DNR Division of Forestry Administrator), sent out an email suspending the requirement for treatment for annosum on affected State lands from December 1, 2012 through March 31, 2013. He also went on to say

**Annosum root rot confirmed stands in Wisconsin
(November 2012)**

that the discretion to deviate from the annosum guidelines will be left up to the property managers. A deviance form was distributed for use by foresters.

The map at right shows the known infected stands throughout the state. Since a thorough stand-by-stand evaluation of all conifer stands throughout the state has not been done this map only indicates the known sites. If you know of a stand where annosum is present/confirmed that is not on the map please contact your forest health specialist so we can get the map updated. This map helps everyone to manage stands and prevent this disease as best we can. For more information go to the WI DNR website at <http://dnr.wi.gov/topic/foresthealth/annosumrootrot.html>



Annosum root rot is currently found in 23 counties in Wisconsin (Adams, Buffalo, Columbia, Dunn, Green, Iowa, Jefferson, Juneau, La Crosse, Marinette, Marquette, Oconto, Portage, Richland, Sauk, Shawano, Taylor, Trempealeau, Walworth, Waukesha, Waupaca, Waushara, and Wood Counties)

Water molds killing white pine and more – after a recent round of emails with Brian Schwingle (DNR Forest Health Specialist, covering northern Wisconsin) regarding water molds and how the symptoms on white pine could easily be confused with other more common problems, I asked Brian if he would be willing to write up something for this newsletter. Brian loves water molds! Well, actually Brian just plain enjoys fungi, and water molds are a special group, so Brian agreed to write something, and here it is:

A conifer plantation with scattered, dying saplings is the norm rather than the exception in Wisconsin. I doubt anyone knows at what point the frequency of dying trees in a plantation in Wisconsin becomes unacceptable, but that point always exists. One of the causes of yellowing conifers can be.....(drum roll).....water molds! “What are water molds?” you ask. Water molds are fungal-like organisms, some of which are the most destructive forest pathogens in the world. Two of the most common water mold genera are *Phytophthora* and *Pythium*. As the common name implies, these pathogens reproduce abundantly in water-soaked conditions. Stressed conifers (including drought-stressed trees, ironically) are more susceptible to phytophthora/pythium infection. Firs seem to be the most susceptible conifer species to water molds in Wisconsin. However, I have also seen phytophthoras/pythiums killing spruce trees and white pines in three separate instances. The single white pine sapling plantation where I diagnosed these pathogens as killers was previously a



Symptoms of *Phytophthora* or *Pythium* infections in white pine. Yellowing foliage (above) and sunken bleeding area at root collar (photo below). Photos by Brian Schwingle.

Christmas tree plantation. I hypothesize transplanting fir trees introduced a pathogenic *Phytophthora* or *Pythium* species onto the site, and this pathogen persisted to the next planting and continued to cause disease on white pines.

For a rough field diagnosis of *Phytophthora* or *Pythium* infection, one first should rule-out more common causes of pine sapling death (e.g. Armillaria, bark beetles, weevils, white grubs, blister rust, etc.). Next, one should confirm the plantation was stressed prior to symptom development (e.g. flooded or drought-stressed). Aboveground symptoms are yellowing/dying trees that are loosely anchored in the soil and have bleeding lower trunks. Infected trees may also simply be stunted. Belowground symptoms are a discolored or water-soaked portion of root collar inner bark and sometimes wood (discoloration can range from butterscotch to black); root bark that easily slides off smaller root tips; and missing or rotted (blackened) fine roots.



I am unfamiliar with any pine plantations economically damaged by *Phytophthora* or *Pythium* in Wisconsin. However, it is theoretically possible. Diagnosis cannot be confirmed without microscopic work, which the DNR's Forest Health team can provide.

Other/Misc.

Drought – To Tap or Not To Tap Maples Next Spring? – reprinted from Mark Guthmiller's November forest health update.

I received a great question from a landowner wondering if they should avoid tapping maples next year due to the stress the trees were under from this season's drought. While we routinely talk about the concept of stacking of various stressors and risk for tree mortality, I had no idea what level of stress tapping a maple tree might create. I contacted Dr. Tim Perkins, research professor and director with the Proctor Maple Research Center at the University of Vermont. Dr. Perkins responded that tapping removes only a small percentage of starch reserves annually, at around 1-3%, which was encouraging news. Where we had early browning of maples in the Baraboo hills we also did not observe a re-flush of foliage by those maples suggesting preservation of



starch reserves. This is also encouraging news, at least for the larger trees. One should however take into account their individual situation such as local precipitation levels, recent stand history of pests, and general condition of their sugar bush before deciding to tap or not. Thanks to Dr. Perkins for this timely information. Here is his full reply:

Unfortunately, there aren't any real good answers. Drought will certainly impact the ability of trees to photosynthesize, and can therefore reduce carbohydrate reserves. Whether this has any significant short-term (next sugaring season) or long-term (mortality) impact depends upon a number of factors that vary tremendously from place to place. In general, if the trees were in good health before the drought (they are not affected by other short-term severe or moderate chronic stresses), they should weather a moderate drought without too much trouble. However if the drought is very extreme or prolonged, and there are other stresses involved, you can expect some dieback and mortality. Mortality probably won't be evident immediately (unless the drought is extraordinarily severe), but typically will take 3-5 years to manifest itself.

As far as tapping goes....again, it depends. Did the trees defoliate and then re-flush a new set of leaves? When did this occur? Reforming a new canopy can be quite demanding on the carbohydrate reserves of trees. If they re-flushed early, and moisture was adequate, they may have made enough sugar to be OK. If they re-flushed late, they may not have captured enough energy to offset the investment in a second set of leaves. Trees do however typically have fairly substantial carbon reserves (multi-year). As long as the trees are not small, they can draw upon these reserves to sustain them for a period of several years. Tapping removes only a very small part of this reserve (on the order of 1-3%), so it is unlikely it will play a major role in whether or not the tree lives or dies. The decision of whether to tap or not depends upon how important maple syrup production is to the livelihood of the producer, and the degree to which the trees were stressed.

Maple leaves will make sugars all summer long as long as the conditions are conducive (good moisture, adequate sun). They don't stop at any time of year until they senesce in the fall and start to change color.

Additional information on drought and maples from Ontario:
<http://www.omafra.gov.on.ca/english/crops/hort/mapledry.htm>

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 dnrfgypsymoth@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.