

Northeast Wisconsin Forest Health Update

February 16, 2012

Topics covered this month:

Insects:

Emerald ash borer
Gypsy moth
Hemlock woolly adelgid
Parasitic fly found in honeybees in CA

Other:

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One cool tree!

Diseases:

Annosum
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Chestnut blight
Diplodia in state nurseries
Lyme disease risk map updated
Thousand cankers disease on butternut

Insects

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

Emerald Ash Borer – from Bill McNee. The City of Oak Creek (Milwaukee County) will be hosting an EAB Risk Management workshop for local government officials on Wednesday, February 22. If you have questions or would like to register, contact Oak Creek's City Forester, Rebecca Lane, at: rlane@oakcreekwi.org. DNR's Forest Health or Urban Forestry staff can also email the workshop invitation to you.

A new journal article, 'An Economic Analysis of Emerald Ash Borer Management Options,' found that the retention of ash trees using insecticide treatments typically retained greater urban forest value than other management strategies. Read more at: http://www.sciencedaily.com/releases/2012/02/120209172924.htm?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+sciencedaily+%28ScienceDaily%3A+Latest+Science+News%29.

So far in 2012, EAB has only been detected in one county nationwide. EAB was detected in Sevier County, Tennessee (east of Knoxville).

Gypsy Moth – from Bill McNee. Mild winter temperatures forecast an abundance of insects in 2012, and a warm spring and summer is likely to start a rebound of the gypsy moth populations in Wisconsin. Populations are currently low across the state. If there are groups interested in aerial spraying this spring, an applicator list and guide to aerial spraying are available online at www.gypsymoth.wi.gov.

Between now and April, scrape off egg masses within reach and drown them in soapy water to help reduce this year's gypsy moth population. Once temperatures are above 40° and there is no immediate danger of freezing, one of several egg mass oil products can be applied to suffocate the eggs as an alternative to scraping. Visit www.gypsymoth.wi.gov for more information.

Many readers will remember that the man who brought the gypsy moth to Massachusetts, Etienne Trouvelot, was also a talented astronomer. The New York public library system has released some of his astronomy drawings from the late 1800s, available at: <http://flavorwire.com/253592/beautiful-victorian-era-illustrations-of-space>.

Hemlock woolly adelgid – from Bill McNee. Hemlock woolly adelgid has been detected in Ohio for the first time. It is likely that the insect spread naturally from West Virginia, as the pest typically spreads 15-20 miles per year. Eastern North America's first find of this exotic species was in Virginia in 1951, and the pest is now found from Georgia to Maine. The Ohio infestation appears to be in its early stages, and the current plan is to cut down and burn trees known to be infested. Read more at:

<http://www.cantonrep.com/newsnow/x1087084098/Ohio-to-cut-burn-trees-with-hemlock-killing-bug>.

Hemlock woolly adelgid has not been found in Wisconsin, although the insect has been found at several locations in Lower Michigan. If you see white wool at the base of hemlock needles, contact a DNR Forest Health specialist.



White wool at the base of hemlock needles indicates infestation by hemlock woolly adelgid.

Parasitic fly found in honeybees in CA – researchers in California recently reported a parasitic fly infesting honeybees. This fly apparently is a pest of bumblebees but has not previously been a problem in honeybees. When the flies parasitize a honeybee it causes the bee to act in an erratic manor, including flying away from the hive to die. You can read the full article at <http://news.yahoo.com/study-parasitic-fly-could-explain-bee-die-off-184352975.html>

Diseases

Annosum – do you or any of your employees/staff need to take the certified pesticide applicator exam so that you can legally treat stumps to prevent annosum infections? See the next section for more information on a live lecture classroom session for the Forestry category. Also check out the section below regarding the Cellu-Treat label.

Black knot on cherry – I've been seeing weeping, sapflow, and gummy deposits (right) on black knot cankers of black cherry this winter. Black knot is a fungal disease of black cherry, causing malformed, lumpy areas on branches, and occasionally infections will occur on the main stem, growing for decades to produce very large burls while the tree continues to live.

A few years ago Kyoko Scanlon, DNR Forest Pathologist, was asked about management of stands with black knot on the main stem of trees. Below are her comments:

Kyoko was asked about management of these trees that have black knot burls on the main stems, below are her recommendations (underlining emphasis is mine).

Recommendations

- We haven't found an article that clarifies exactly how far the spore dispersal occurs. However, since this is a native pathogen that is common in Wisconsin, harvesting infected trees to the point less than the minimum stocking level for the purpose of sanitation is not recommended.
- Since the pathogen spreads at a slow rate, it will take years for the pathogen at the tip of branches to reach the main stem, if it ever does. Lower branches with black knots may be likely to be shaded out before the pathogen reaches the main stem. Thus a vigorous tree with a few black knots should not be considered high risk of failure. However, a tree with many black knots may indicate that the tree is more susceptible to the disease. Such a tree should be selected against during normal forest management operations.
- There were many papers that mentioned the dieback and mortality of branches due to black knots, but so far we found few articles that mention the effect of a knot on the main stem on the health of a tree. West Virginia Univ. bulletin (West Virginia Univ, Agricultural Exp. St. Bulletin 615, 1973) mentioned that "black knot cankers on the main stem are possibly detrimental to water and food conduction when encompassing a large percentage of the bole". However, based on the mechanics of gall (knot) formation (the amount of new xylem and phloem produced, the proportion of parenchyma in the xylem, and the size of parenchyma cells become abnormally large), we tend to believe that galls on a main stem will not increase the risk of mortality significantly. Thus, the existence of galls on the main stem should not be the sole reason to select against. Other factors such as crop tree release, vigor, stem form, should also be considered for selection.
- Based on the study in the West Virginia Univ. Bulletin, dissected cankers were disfigured with sound tissue plus some ingrown bark, abnormal growth with little decay. Black knot should be considered defects due to the abnormal growth pattern.



Cross section of a large black knot burl, showing sound wood with some ingrown bark.

Chestnut blight – American chestnut trees were planted in Wisconsin at the time of settlement by many landowners, and occasionally foresters today will come upon some stray American chestnut trees within a stand, although most chestnut were killed by chestnut blight, which is caused by the fungus *Cryphonectria parasitica*. A recent article in the Milwaukee Journal Sentinel highlights an outlier stand of chestnut located near West Salem, Wisconsin, and the status of chestnut blight in the stand as well as some research that is occurring in the stand to use biological control (a virus) to help the trees survive the fungus that causes chestnut blight. The virus, called a hypovirus, affects the fungus so that the fungus is cannot act so aggressively within the tree, allowing the tree to survive infection by chestnut blight. Check out the article at <http://www.jsonline.com/news/wisconsin/chestnut-trees-may-get-a-dose-of-good-health-pg3i8e4-136488753.html>



American chestnut leaves and male catkins.

Diplodia in state nurseries – from Kyoko Scanlon and Kristen Peterson. Over the past six years, the state nurseries have implemented an aggressive management plan to monitor and control Diplodia shoot blight and canker, caused by the fungus, *Diplodia pinea*. Some evidence suggests the presence of this fungus, coupled with increased seedling stress, could lead to seedling mortality. Recent research revealed that the fungus could persist in or on the seedlings without showing symptoms and become active once a tree is stressed (primarily due to moisture deficit). To limit seedling exposure to the fungus and subsequent infection, nursery and pathology staff devised a series of management actions: removal of all mature red pine found in and around the nurseries, increased applications of fungicides, and annual testing of nursery stock. These measures have helped limit the exposure and subsequent infection of red pine seedlings.

Table 1. Results of Diplodia testing on asymptomatic 2-0 and 3-0 red pine seedlings from Wisconsin state nurseries

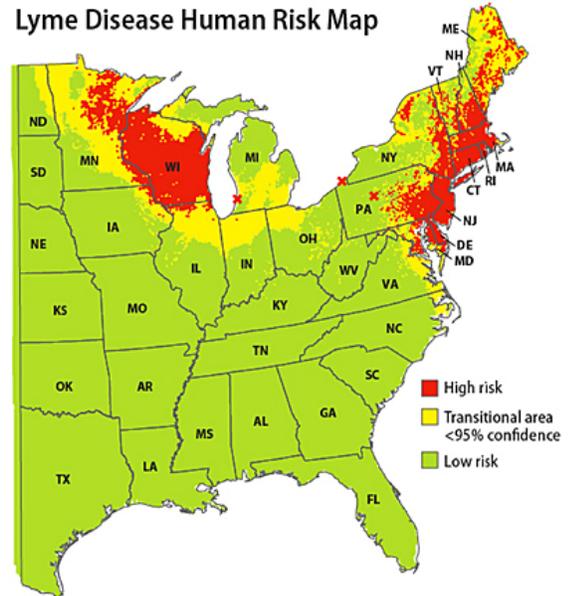
Nursery	Total number seedlings tested 2011	Total positive for Diplodia 2011	Percent positive for Diplodia 2011	Percent positive for Diplodia 2010
Hayward	209	19	9.09%	3.03%
Griffith	160	11	6.86%	3.85%
Wilson	219	0	0%	0%

Since 2006, nursery and forest health staff have tested asymptomatic red pine seedlings for *Diplodia* infection. Details of the test can be found in the 2007 Forest Health Annual Report. In 2011, the forest health lab processed 588 asymptomatic healthy 2-0 and 3-0 red pine seedlings to detect the presence of the pathogen. Samples were collected from all three state nurseries (Table 1).

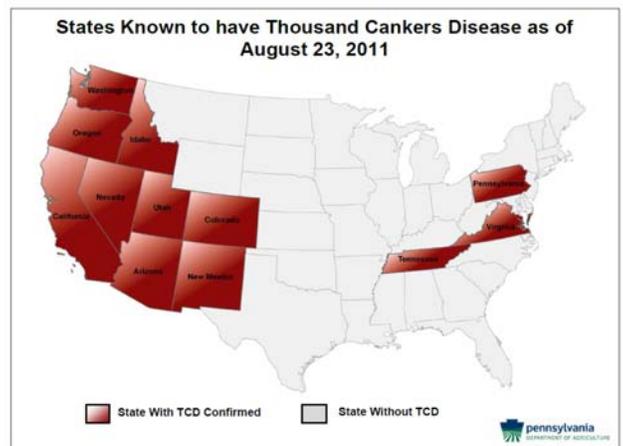
In 2011, all three state nurseries had a *Diplodia* infection rate below the 10 percent tolerance level that has been used for management purposes. The overall asymptomatic infection rate has been below 10% at all three state nurseries for the last four years. Testing for *Diplodia* will be conducted at all three nurseries in 2012.

Lyme disease risk map updated – typically this “disease” section is for tree diseases, but recently research was released about the incidence and risk of lyme disease in humans. The entire article can be found at <http://www.ajtmh.org/content/86/2/320.full> Lyme disease is caused by *Borrelia burgdorferi*, a tick-borne spirochete. In the eastern United States the vector is the black legged tick, or deer tick, *Ixodes scapularis*. Humans are incidental tick hosts, the preferred hosts for the ticks are deer and mice. The map that was released shows the risk of lyme disease and you’ll notice that much of Wisconsin is high risk. The researchers collected thousands of deer ticks and tested them for lyme disease, the map is based on that information as well as the density of ticks present (not all areas of the US have high populations of deer ticks). Previous risk maps were based mostly on physician reports which can be misleading, but this newest map is based on the tick and the spirochete presence to gauge risk.

Lyme Disease Human Risk Map



Thousand Cankers Disease on Butternut - Oregon State University’s diagnostic lab recently released the news they had confirmed the first case of thousand cankers disease on butternut. The trees, located in the state of Oregon, were confirmed to be butternut, and not a hybrid, through genetic testing. Although most of our butternut here in Wisconsin are probably dying from Butternut Canker (*Sirococcus clavigignenti-juglandacearum*) please keep your eyes open for Thousand Cankers Disease as well. Thousand Cankers Disease has primarily been reported on black walnut and has been found in the west, as well as 3 states in the east.



Thousand Cankers Disease has not been found in Wisconsin at this time. Lesions, or cankers, develop when many tiny walnut twig beetles tunnel through the bark of the tree, and introduce a fungus, *Geosmithia morbida* which causes cankers (dead spots) wherever the beetles enter the tree. The number of cankers per tree can number in the thousands, thus the name Thousand Cankers Disease. The tree’s foliage will turn yellow and thin, and eventually the walnut tree dies. There are no known pesticides that will control this disease. For more information about Thousand Canker Disease, including signs and symptoms visit: <http://www.thousandcankerdisease.com/> If you suspect you have thousand cankers disease please contact your forest health specialist.

Other/Misc.

Cedar bark stripping – in the December pest update I asked if any of you had seen cedar bark stripping and several of you replied, with photos and locations, thank you! Here are a couple of the photos that came in. If you have seen this and have photos of this, or could get photos please let us know. We just want to document this issue, even though we are currently unsure of the exact cause (there are many possibilities) or even whether it is an “old” problem or a current issue (see the December pest update for more information). If you have stands with this kind of damage could please send me the following information:

1. LOCATION (legal or lat./long. is fine):
2. PERCENT OF CEDARS AFFECTED IN STAND (rough visual estimate is fine):
3. OLD (i.e. tree is trying to grow over wound) OR NEW DAMAGE:



Photo by Annie Maina.



Photo by Joe Schwantes

Cellu-treat label and antifreeze issue – recently Kyoko Scanlon, WI DNR Forest Pathologist, sent out the following clarifying information regarding the Cellu-treat label and adding antifreeze: we have been notified that in order to use Cellu-Treat that has an old label, you need to have a "supplemental label", not a new label. At this point, there is no "supplemental label" for Cellu-Treat, there is just the new label. Consequently, under the current law, you will need to have a Cellu-Treat product that has a new label attached if you'd like to mix Cellu-Treat with propylene glycol. I talked with Dr. Jeff Lloyd of Nisus Corporation. A newly purchased product from Nisus will have a new label. I also talked with Mr. Bill Page of Servco FS and Mr Rick Schulte of Crop Protection Services. They are the distributors of Cellu-Treat in Wisconsin. They are aware of the issue, and they will work with you to make sure that you will receive the right product. If you still have some Cellu-Treat with an old label, you can still use it as long as you use it without adding propylene glycol. To purchase Cellu-Treat with a new label, please contact the following companies.

Nisus Corporation: <http://cellutreat.com> or 1-800-264-0870

Crop Production Services (contact: Rick Schulte): 715-335-4900

Servco FS (contact: Bill Page): 715-627-4844 or 800-807-9900

Certified pesticide applicator training classroom session – there will be a one-day classroom training in Weston on March 30 (keep in mind it's still beneficial to have read the training manual BEFORE the class). Registration for the training session is \$25, plus a training manual (\$45). A certification exam will be offered at the end of the training.

Also, there is a new DVD available! You can watch recorded lectures comfortably at home. These lectures are very similar to what were presented at the training in 2011. The DVD is divided into 10 topics. You can start with any topic that you are interested in. Topics include; pesticide laws and regulations, pesticide and personal safety, pesticide use/classification/formulations, equipment options and calibration, and more. The cost of the DVD is \$10 plus handling (total \$10.55).

You can go online at <http://ipcm.wisc.edu/pat/>, contacting the PAT office at 608-262-7588, or contacting your county Extension office to register for the training, purchase a DVD/training manual, and for more information.

Forest Health program annual report - The DNR Forest Health Program's 2011 Annual Report is now available online. Read or download it at:

<http://www.dnr.wi.gov/topic/ForestHealth/documents/AnnualReport2011.pdf>

Forest Health Website Changes - We are in the process of making some structural changes to the DNR forest health website. You may be noticing changes for a while as we finalize the new format. Check it out! If you are having a hard time finding a frequently used web page let us know. Here is the link:

<http://www.dnr.wi.gov/topic/ForestHealth/>

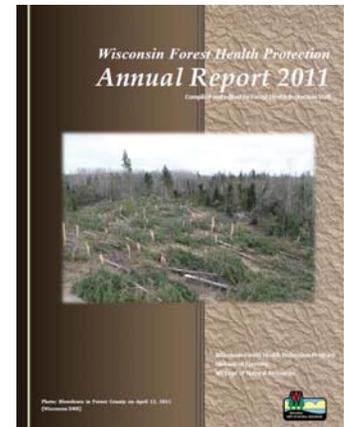
Link to the forest health staff map

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

Michigan's 2011 annual forest health report – if you'd like to know what forest health problems our neighboring state has been seeing this past year you can check out Michigan's Forest Health Highlights for 2011 at

http://www.michigan.gov/documents/dnr/2011Forest_Health_Report_371826_7.pdf

One cool tree – came across this in a woodlot recently. The tree at right was clearly the “cool tree” in the stand, with his snazzy shades on. Too bad it was a box elder ☺



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/>

Northeast Region Pest Update produced by:

Linda Williams

Forest Health Specialist

Wisconsin Department of Natural Resources - Northeast Region

Linda.Williams@wi.gov

<http://dnr.wi.gov/forestry/fh/>

For more information contact:

Bill McNee

NER Gypsy Moth Suppression Coordinator

920-662-5430

Bill.McNee@wi.gov

Linda Williams

NER Forest Health Specialist

920-662-5172

Linda.Williams@wi.gov

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.