Southern Region Forest Health Update

Wisconsin DNR, Forest Health Protection Unit

November 23, 2013 Vol. 10 No. 7

Topics in this update

Articles in this newsletter were written by Mark Guthmiller, Regional Forest Health Specialist, unless otherwise noted.

Emerald Ash Borer– Bill McNee

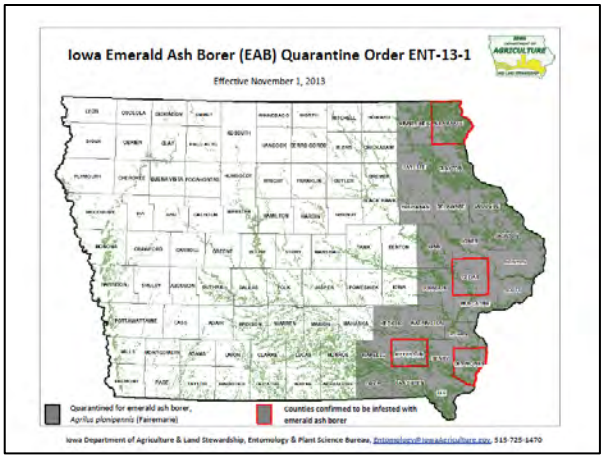
UW-Madison EAB Natural Enemy Research

Researchers from UW-Madison have found evidence of successful establishment of the EAB natural enemy wasp, *Tetrastichus planipennisi*, two years after it was released near Newburg in Ozaukee County. Forty specimens were recovered this fall at the release site, indicating that a reproducing population of wasps is present. This tiny, stingless wasp attacks EAB larvae beneath the bark. According to a US Forest Service researcher who spoke at a recent conference in Illinois, the *Tetrastichus* wasp readily establishes where it is introduced, and spreads quickly. In Michigan (where the wasp was released in 2007), they are finding that this wasp attacks about 20% of the EAB larvae present at a site, and that it is spreading about 6 miles per year.

Stingless *Tetrastichus* wasp introduced as a natural control against the emerald ash borer. Photo by Bill McNee.

The State of Iowa Expands EAB Quarantine

The state of Iowa currently has EAB confirmed in three counties. Earlier this month the state expanded the quarantine to include a total of 25 counties in the eastern fourth of the state. For more information visit: http://www.iowadnr.gov/Environment/Forestry/ForestHealth/EmeraldAshBorer.aspx



New Wisconsin Detections

New Wisconsin detections of EAB have dramatically slowed down since the summer, but they have not stopped. Since the last Southern District Pest Update, there have been three new community detections announced: Village of Saukville (Ozaukee County), Town of Dover (Racine County), and the City of Wauwatosa (Milwaukee County). A newly-updated, complete list of Wisconsin detections is available online at: http://datcpservices.wisconsin.gov/eab/articleassets/ConfirmedEABFindsInWisconsin.pdf.

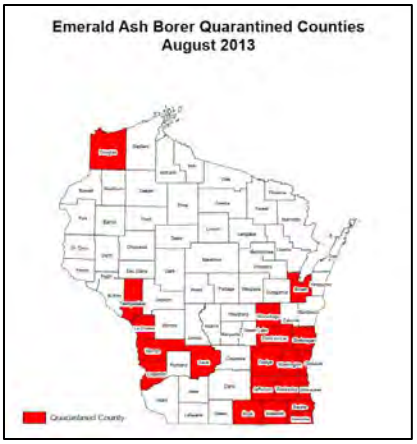
Keep an Eye Out for Woodpecker Activity

EAB larvae beneath the bark are now a good-sized meal for a woodpecker, so keep an eye out for signs of woodpecker activity on ash branches and tree trunks as the birds hunt for larvae. Woodpeckers pick away the rough outer bark over an EAB gallery, and then drill down through it to get the EAB larva. Our experience is that the activity is most apparent during the winter, but you may already start seeing it.

Woodpecker 'flecking' on an EAB-infested tree in Fredonia (Ozaukee County), and EAB larval galleries beneath the bark of that tree. Photos by Bill McNee

WI DATCP New EAB Regulatory Guide

The Wisconsin EAB Program has produced a new EAB guide, "The Detailed Guide to Wisconsin's Regulations on Transport, Utilization and Disposal of Ash Wood," that replaces several outdated publications. It can be found online at: http://datcpservices.wisconsin.gov/eab/articleassets/Guide%20to%20WI%20ash%20wood%20transport%20utilization%20and%20disposal%20regs.pdf



WI DATCP Log Transport Policy

WI DATCP has clarified its policy on log transport out of an EAB-quarantined area. Ash logs are regulated by the EAB quarantine, but non-ash logs are not regulated and have no EAB quarantine restrictions.

- All non-ash timbers greater than 4 ft. in length that will be transported out of an EAB quarantine are considered logs for regulatory purposes, even if the eventual intended use may be split firewood. At that size, identification to species is relatively easy.

- Note that the gypsy moth quarantine throws a broader net, since all logs and firewood coming out of a gypsy moth quarantine area are regulated, regardless of species or firewood intentions.

- Note that all hardwood firewood is still regulated by the EAB quarantine.

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- Bill McNee

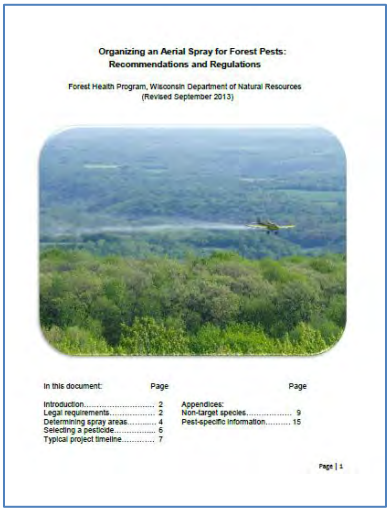
If you haven't done so yet, now is the time for landowners and managers to look for gypsy moth egg masses to predict the pest's population size and potential damage to trees next year. For more information on how to do egg mass surveys, visit www.gypsymoth.wi.gov. Information on oiling or removing egg masses is also available at this website. Populations appear to be relatively low in southern Wisconsin with a couple isolated locations where moderate egg masses were observed in southern Dane and northern Rock Counties.

Gypsy moth egg masses. Photo by Bill McNee

Applications to the 2013-14 DNR gypsy moth suppression program must be postmarked by Friday, December 6 of this year.

Applications are available online at: http://dnr.wi.gov/topic/ForestHealth/documents/2400131.pdf. A list of local gypsy moth contacts can be found at www.gypsymoth.wi.gov. If you decide to participate in the suppression program to spray in 2014, please let Mark Guthmiller or Bill McNee know in advance of the December deadline (mark.guthmiller@wisconsin.gov or bill.mcnee@wisconsin.gov). If an area is thinking of participating in the DNR suppression program to spray in 2014, oil the masses or wait until this December to remove them so that surveyors can determine if an area should be sprayed.

If you decide to do privately-organized spraying, a newly-revised guide to organizing aerial spraying and a list of for-hire aerial applicators are available at www.gypsymoth.wi.gov. The December 6 deadline does not apply to privately-organized spraying.



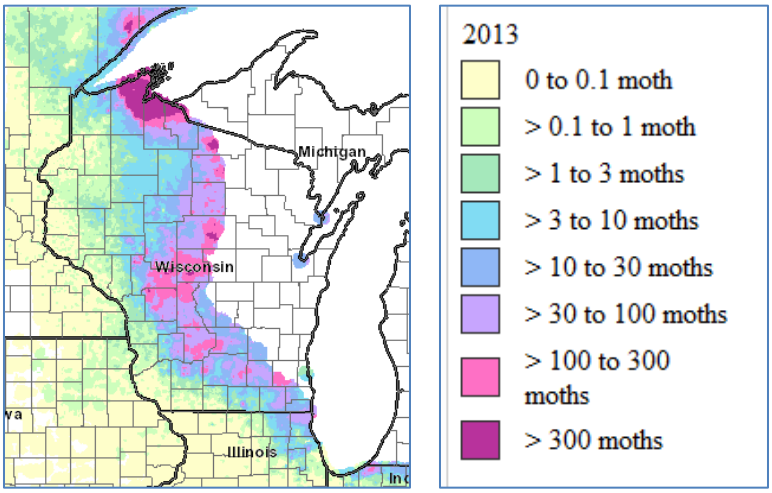
Organizing an Aerial Spray for Forest Pests:
Recommendations and Regulations

Forest Health Program, Wisconsin Department of Natural Resources
(Revised September 2013)

Newly-revised guide to organizing an aerial spray for

WI DATCP Gypsy Moth Trapping Results

The Wisconsin Dept. of Agriculture, Trade and Consumer Protection (DATCP) has released its final data from the 2013 gypsy moth trapping project. DATCP caught 353,000 moths this year, almost double the number trapped last year (note: the number of traps changes annually). The highest numbers of moths were caught in these counties: Bayfield (78,000 moths), Ashland (42,000) and Jackson (35,000). The fully-trapped counties with the highest number of moths per trap were: Ashland (194 moths per trap), Wood (148), Bayfield (147) and Iron (142). Far northern Wisconsin is the area of the state where gypsy moth has spread fastest over the last 5 years. Northeast Minnesota has also seen a rapid increase in moth catches in recent years.



Map of 2013 gypsy moth trap catches in the DATCP trapping program. Areas in white were not trapped. Map produced by the Gypsy Moth Slow-The-Spread Project.

Gypsy Moth and NR40 Invasive Species Rule

In non-quarantined counties of western Wisconsin, the European gypsy moth is listed as a "Restricted" species in Administrative Rule NR 40, meaning that movement of the life stages is not permitted in these counties. If you are in a non-quarantined county (a white county on the map), you may encounter gypsy moth life stages and must take precautions to avoid moving them – recognize gypsy moth life stages, remove them from outdoor articles before moving the articles, and destroy any life stages found. More information on NR40 precautions is available online at http://dnr.wi.gov/topic/ForestHealth/documents/ReasonablePrecautions.pdf.

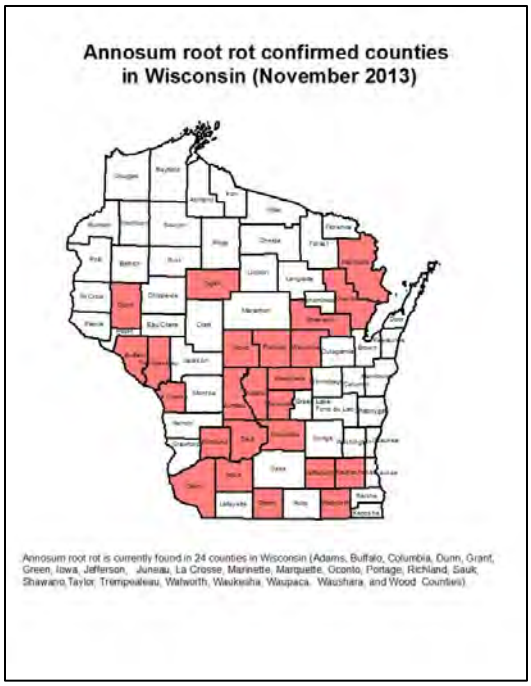
Counties quarantined for gypsy moth are shown in red.

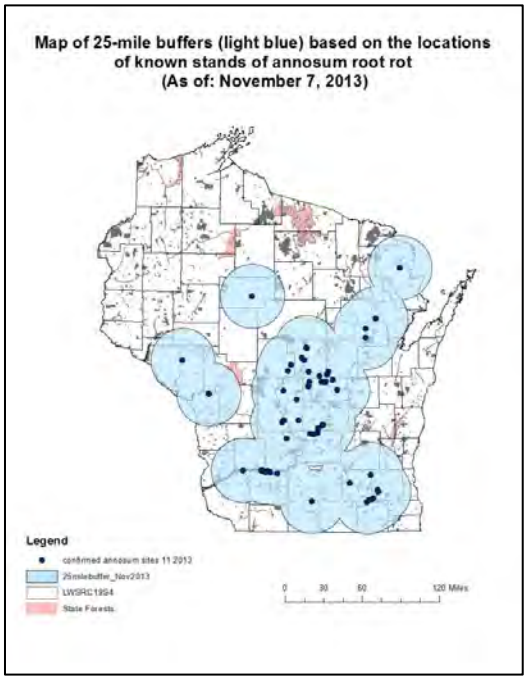
Annosum Root Rot Update

Annosum Confirmed in Grant County
Thanks to Kyoko Scanlon and Liz Wood, the WI DNR Forest Pest Lab confirmed annosum root rot from field samples for the first time in Grant County near Muscoda. The site had a few areas with developing conks on both stumps and dying trees. Further surveys are planned for this area. After first being detected in Adams County in 1993, annosum root rot is now found in 24 counties in Wisconsin (Adams, Buffalo, Columbia, Dunn, Grant, Green, Iowa, Jefferson, Juneau, La Crosse, Marinette, Marquette, Oconto, Portage, Richland, Sauk, Shawano, Taylor, Trempealeau, Walworth, Waukesha, Waupaca, Waushara, and Wood Counties).

Annosum conks (fruiting bodies) form at the base of the pine tree, often with old needles imbedded within the conk

Annosum root rot is a major forest pathogen especially of conifer plantations. For more information on this disease visit: http://dnr.wi.gov/topic/foresthealth/annosumrootrot.html (note: online map was not updated at time of this newsletter).



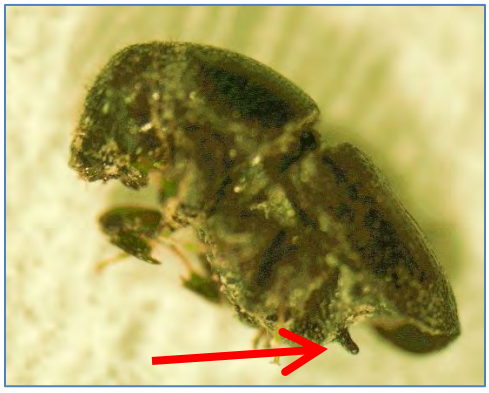


Map on left shows current counties where annosum has been confirmed. The map on the right is updated to show the 25 mile radius from a site detection. WI DNR state land managers need to follow the annosum treatment guide in that radius and have a one year grace period to implement the new guide from the point of a new detection.

Annosum Preventative Stump Treatment Product Update (Note from Mike Hillstrom, West Central region newsletter)
We recently learned that the Wilbur-Ellis distributers in Wisconsin are no longer stocking Sporax because of low sales. Although it may no longer be in stock, Sporax can still be ordered and picked up at the store to avoid shipping costs. The contact for purchasing Sporax is Tom Buckburger (phone 715-572-0499). The cost of a 25-pound bag is currently $68.75.

Tamarack Mortality

Columbia County forester, Jim Bernett, has been observing tamarack mortality in his area and we spent a morning evaluating a couple trees. This area previously had a couple years of larch casebearer defoliation and no doubt stress from the drought last season. As anticipated, we did find eastern larch beetle in the lower bole. We also observed black stain fungi that was associated with the eastern larch beetle attack area. The black streaking was later confirmed in the lab to be a *Leptographium* species. *Leptographium* is the black stain fungus in the same genus as that associated with red pine pocket mortality. What role, if any, this fungus may be playing in the tamarack mortality is uncertain. One of the more interesting observations was extensive feeding damage on the lower branch limbs, similar to weevil feeding. Beetles were collected from the branch samples and appear to be the spruce engraver, *Scolytus piceae*. Larch is listed as a secondary host to Spruce for this engraver beetle. Note that there is a very similar engraver on western larch, the larch engraver, *Scolytus larici.* The main difference being the positioning of the abdominal sternite projection (see red arrow below).
http://www.barkbeetles.info/us_canada_chklist_target_species.php?lookUp=1159&image=2201_scolytus_piceae_m_decliv_ld_edson&curPage=0



Upper left: Lower bole of larch attacked by eastern larch beetle with resin flow and black staining of inner wood **Upper right:** Conidiophores and spores of *Leptographium* sp.from black streaking of inner wood **Lower left:** branch feeding damage by the spruce engraver **Lower right:** Adult spruce engraver, *Scolytus piceae*.

Hackberry Engraver

Another first for me this year was observing the hackberry engraver, *Scolytus muticus*. In the world of little itty bitty brown bark beetles this species is huge! This engraver beetle was attacking a small hackberry at Nelson-Dewey State Park earlier this summer. In the USDA Forest Service Silvics manual it mentions this beetle usually attacks dead or dying trees but can attack live sapwood tissue. In addition, our pathology lab assistant was able to confirm *Botryosphaeria* canker. *Botryosphaeria* canker is an opportunistic fungus often associated with drought. I commonly observed this branch canker fungus on other host the last two years. I would attribute the drought as the initiator allowing both the fungus and the beetle to attack.
http://www.barkbeetles.info/z_chklist_target_species.php?lookUp=1149

Upper left: Entry/exit holes of the adult hackberry engraver **Upper right:** Extensive larval galleries under the bark **Lower left:** Adult hackberry engraver, *Scolytus muticus* **Lower right:** Green to black streaking of inner wood where the *Botryosphaeria* fungal species was isolated.

Hunters Heart and Ground Prunes

I just love these names! Another interesting observation this year was the Armillaria mycoparasite (maybe), *Entoloma arbortivum*. DNR forest pathologist, Kyoko Scanlon, had told me of this fungus a few years back. She reminded me again about such a mycoparasite again this year. With this fresh on my mind I ended up seeing it at three locations this fall. The parasitic relationship is quite complex and Tom Volk has a nice write up on some work he and others were involved with. For more information visit Toms web page: http://botit.botany.wisc.edu/toms_fungi/sep2006.html

White shriveled mushroom of ground prunes, *Entoloma arbortivum*.

Thousand Cankers Disease (TCD)

Two new counties were confirmed with TCD in Tennessee this fall. For more information on these detections visit: https://news.tn.gov/node/11641

Wisconsin Trapping Survey

We are still in the process of sample screening for walnut twig beetle, the primary vector of the thousand cankers fungus, *Geosmithia morbida*. So far no suspect beetles have been detected. For more information on thousand cankers disease visit: http://dnr.wi.gov/topic/ForestHealth/ThousandCankers.html

Current map showing states where TCD has been confirmed. Map created by Missouri Dept. of Agriculture

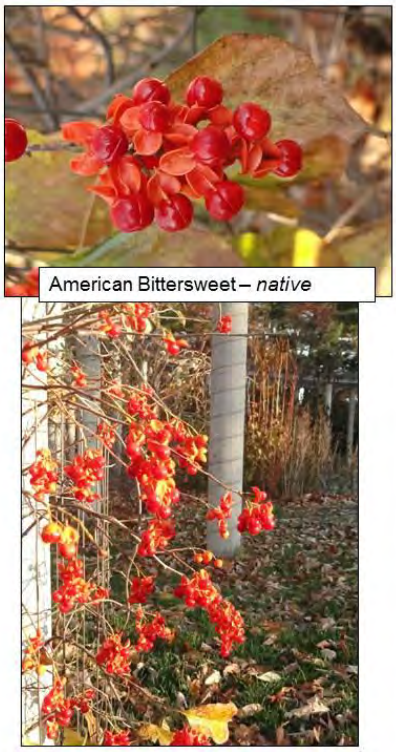
Oriental Bittersweet - Nisa Karimi

With the onset of fall come vibrant colors on the landscape, making it a good season to recognize invasive plants that may have gone unnoticed against the summer shades of green. One invasive vine that is becoming more abundant across the landscape is Oriental bittersweet (*Celastrus orbiculatus*).

Oriental bittersweet was introduced from Asia mainly for its ornamental value. This species is very similar in appearance to our native bittersweet but with a more aggressive growth form, originally making it an attractive option to quickly fill-in new landscaped areas. This species is also still used in dried floral arrangements. During fall these vines produce colorful fruits, an important diagnostic feature which also makes the vines easier to spot. Oriental bittersweet now dominates forests of Northeastern United States and is rapidly expanding its range across Wisconsin. To the untrained eye, a new population of this species may be misidentified as the native vine, American bittersweet (*Celastrus scandens*).

Identification

When distinguishing the species, leaf shape can be one diagnostic feature. American bittersweet leaves are alternate and oval in shape coming to a distinct elongated tip. Leaves are twice as long as wide. Leaves of younger Oriental bittersweet appear similar, but as the vines mature the leaves widen becoming more round with a shortened leaf tip. To avoid confusion, always take note of the oldest leaves on the vine, usually those closest to the ground.


American Bittersweet – *native*


Oriental bittersweet – *restricted invasive*

Fruit color and arrangement on the stems are also key defining characteristics. American bittersweet fruits are borne in dense clusters on terminal ends (meaning they are found at the ends of the fruiting branches). Fruit husks are vibrant orange which split open at maturity to reveal red fleshy fruits. Oriental bittersweet's red interior fruits are enclosed in yellow-orange capsules. The clusters are smaller and sparser occurring in leaf axils (all along the stem where leaves are arranged).

Plants are sexed, with male and female reproductive parts occurring on separate plants. This means you can't always find plants with fruits. Observations from the field, confirmed by research, suggest that Oriental bittersweet is hybridizing with American bittersweet. This can make identification further challenging. However, if you find an alarming patch of bittersweet blanketing vegetation and densely climbing into the trees, chances are good that you've found the invasive Oriental bittersweet. American bittersweet, although it does have the ability to climb trees, is obviously less aggressive.

What can you do?

If you come across a population of Oriental bittersweet in the woods – REPORT IT! WDNR is interested in tracking this species expanding range. Please send a report online or by email to invasive.species@wisconsin.gov. Include the location and photographs of the population, including close-ups of leaf shape and fruits.

For more information visit the Wisconsin DNR website for photographs and links to more resources: Oriental bittersweet factsheet

Contact: Nisa Karimi, Invasive Plant Specialist with the WDNR
Nisa.karimi@wisconsin.gov, 608-267-0279

Miscellaneous Topics and Observations

Pecan weevil larvae emerging from hickory nuts.

Pecan Weevil of Hickory Nuts

I had a couple inquiries about hickory nuts with little holes in them this year. Based on a floor full of larvae from some hickory nuts brought in to the Dane County forester, Steve Holaday, I declare it was a good year for the pecan weevils. For more information on this critter visit: http://www2.ca.uky.edu/entomology/entfacts/ef206.asp

EAB-Ambrosia Beetle Connection

Minute pin holes of an unidentified woodborer observed on ash, sometimes with a single short horizontal gallery

I found this article particularly interesting, which suggests there may be a connection between emerald ash borer and increasing numbers of ambrosia beetles. This year while peeling declining or recent dead ash, I encountered small pin holes going into the sapwood at three different locations. After years of peeling ash looking for EAB, I have never seen these pin holes before. None of the sites were associated directly with EAB but rather declining ash from other causes, including a confirmed ash yellows site. It is worth noting that there are four species of ambrosia beetles listed with ash as a host in the US Forest Service publication "Guide to Insect Borers in North American Broadleaf Trees and Shrubs". The host range for these four species of ambrosia beetles is very large. It would be prudent to be aware of this potential secondary impact to both ash and other host species when assessing other forest health issues, especially in areas of heavy ash mortality. While most of the associated ambrosia fungi result in issues of lumber degrade, a few fungal species such as *Fusarium* can be more damaging. I am not sure what is attacking the ash in this picture with the shallow horizontal gallery in association to the pin hole. If anyone knows what this may be I would be interested in hearing from you. To read the article visit: http://bygl.osu.edu/content/eab-ambrosia-beetle-connection-0

White Pine Blister Rust Mutation

Researchers at Cornell and University of Connecticut have discovered white pine blister rust immune cultivars of currants infected with the blister rust fungus. Ribes (currants and gooseberries) are the alternate host of white pine blister rust. For more information: http://www.news.cornell.edu/stories/2013/11/mutated-white-pine-rust-threatens-northeast-trees

Deer Camp and Firewood

Hunters heading out to deer camp are encouraged to buy firewood where they are hunting, or to purchase certified wood. This is important to avoid the spread of pests such as emerald ash borer (EAB) or gypsy moth into an uninfested area. It is also illegal to move firewood out of areas that are quarantined for either of those insect pests. A map showing the quarantined counties is available online at: http://datcpservices.wisconsin.gov/eab/articleassets/Firewood%20Movement%20in%20Wisconsin.pdf. Although firewood may be moved within a quarantine area, it is best to buy certified wood or buy it where you are camping.

Firewood tips

- Gather or buy your firewood at your destination.
- Use all the firewood you obtain and don't take any home with you.
- Consider buying certified firewood. A list is available at: http://datcp.wi.gov/uploads/Plants/pdf/CertifiedFirewoodDealers.pdf.
- If camping on DNR-managed land, firewood cannot come from more than 25 miles away unless it is certified.

And this year's winter forecast is….?? All I know is it was heading south!
http://www.almanac.com/content/predicting-winter-weather-woolly-bear-caterpillars

SOR Forest Health Assistance
Wisconsin DNR, Forest Health Protection Unit
November 2013

Contacts for DNR staff, municipal foresters, and forestry cooperators

Mark Guthmiller Forest Health Specialist Wisconsin DNR 3911 Fish Hatchery Road Fitchburg, WI 53711 Phone: (608) 275-3223 Email: Mark.Guthmiller@wisconsin.gov **Columbia, Dane, Dodge, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, and Sauk**	Bill McNee Forest Health Specialist Wisconsin DNR 1155 Pilgrim Rd. Plymouth, WI 53073 Phone: 920-893-8543 Email: Bill.McNee@wisconsin.gov **Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, and Waukesha**

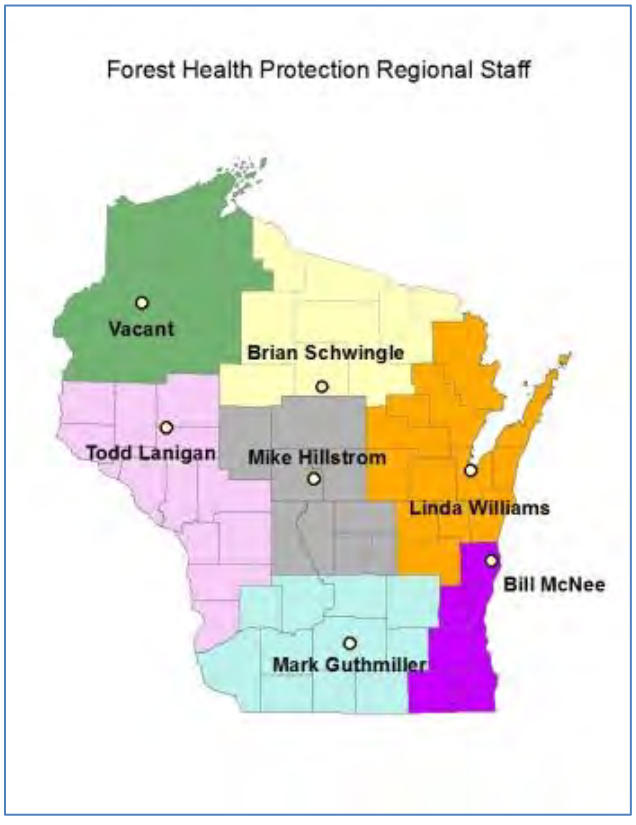
For a statewide forest health staff list:
http://dnr.wi.gov/topic/ForestHealth/staff.html

Additional Program Web-based Resources:
WI DNR Forest Health web site:
http://dnr.wi.gov/topic/ForestHealth/

Report Emerald Ash Borer:
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://gypsymoth.wi.gov
(It is also recommended to report gypsy moth to your local government)

Please direct public inquiries regarding yard tree concerns to UW county or state extension offices:
http://www.uwex.edu/ces/cty/



[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.]