Northeastern Wisconsin Forest Health Update

Wisconsin DNR – Division of Forestry

March 18, 2013

Topics covered this month:

Insects:
Emerald ash borer
EAB Michigan hotline deactivated
Flatheaded appletree borer in ash
Green bug (green lacewing)
Gypsy moth
Snowfleas
Ticks
Winter cutworm

Diseases:
Beech bark disease
Broom rust on fir
Butternut canker
Chestnut blight article
Thousand cankers disease

Other:
Dwarf mistletoe
Forest Health Staffing Changes
Gov. delivery subscriber lists
Porcupine and squirrel damage

Insects

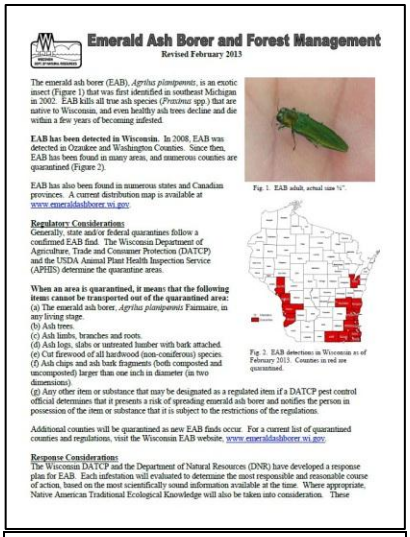
*information and photos in this document from Linda Williams unless otherwise noted.

Emerald Ash Borer – from Bill McNee. Late winter is a great time to observe woodpecker flecking and potentially find new EAB infestations or expansions of known infestations. Several new or suspected infestations have recently been found in southeast Wisconsin, and a number of infestations have also seen an expansion of the known-infested area. Unfortunately, EAB populations in the southeast counties appear to be exploding and EAB impacts are likely to follow.

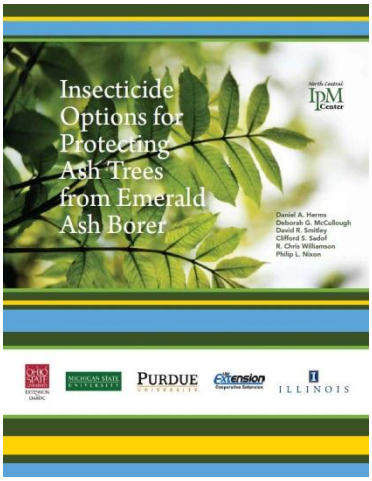
The DNR silviculture team has revised our EAB silviculture recommendations, to reflect the dwindling of large-scale trapping projects. The new recommendations are available

Woodpecker flecking on an EAB-infested tree. Photo by Bill McNee.

at:
http://datcpservices.wisconsin.gov/eab/articleassets/Management_Guidelines_for_Wisconsin_Forests.pdf. Active management should be considered if a property is in a quarantined county, or outside of one but still within 15 miles of a known infestation. In addition, the DNR Urban Forestry program has updated its recommendations for community-based EAB detection efforts. The document can be found online at: http://dnr.wi.gov/topic/UrbanForests/documents/EABToolBox/EAB-OptionsForLocalDetectionEfforts.pdf.



Revised EAB silvicultural guidelines (Feb 2013).

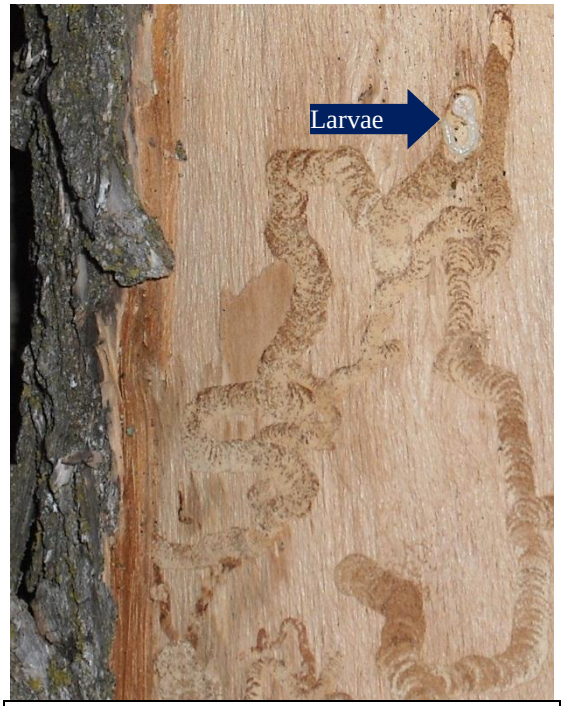


'Insecticide Options for Emerald Ash Borer' brochure.

In the upcoming weeks, property owners and local governments in quarantined counties should consider making arrangements for spring insecticide treatments of their high-value landscape ash. A detailed brochure is available online at: https://datcpservices.wisconsin.gov/eab/articleassets/InsecticideOptionsForProtectingTreesFromEAB.pdf. The current recommendation is to consider treating high-value trees with insecticide if within 15 miles of a known EAB infestation. The Wisconsin Arborist Association has a list of certified arborists available at www.waa-isa.org. Additional businesses offering insecticide treatments may be found in the phone book under 'Tree Service.' Homeowners can also purchase insecticides (some applied as a soil drench) at garden centers and large retailers.

EAB Michigan hotline deactivated – for those of you working in the northern counties bordering the UP, if you have previously referred Michigan landowners to the Michigan EAB hotline, it has now been deactivated. According to the MI Dept. Of Ag., there is no funding available for EAB so the Michigan phone line has been deactivated.

Flatheaded appletree borer – this insect, despite its name, is commonly found attacking stressed ash trees. Flatheaded appletree borer (*Chrysobothris femorata*) is a native insect that can attack a number of different hosts when the trees are put under stress. They make winding galleries under the bark which are more nebulous or blob-shaped than the crisp S-shaped tunneling that EAB creates. When adult flatheaded appletree borers exit the tree they leave a nice large oval hole, and the larvae has a very distinctive enlarged head, unlike EAB. If you've ever seen the oval exit holes on a tree but were



Flatheaded appletree borer galleries, and one larvae. Photo by Tom Flick.

unsure if the exit hole was oval or D-shaped try this helpful hint – shave off some of the outer layers of bark so that you're looking at a nice flat surface of the exit hole, this should make it more clear what shape the hole is.

Green bug – St. Patrick's Day was this past Sunday (March 17, 2013), so I thought I would highlight a green bug for you, the Green Lacewing. Lacewings are in the Order Neuroptera, which includes other cool critters like dobsonflies, fishflies, alderflies, mantidflies, and ant lions! Adult lacewings are very delicate looking, which belies their aggressive nature during other parts of their life cycle. Immature lacewings are often called Aphid Lions, because they can devour so many aphids, but they also eat other forest pests, like scales, immature leaf beetles, some caterpillars, leafhoppers, thrips, and other small insects. So they're truly one of the good guys; they help keep insect populations in check. Adult lacewings lay their eggs on the end of a thread-like stalk, which makes them easy to identify. So the next time you see these critters chowing down on aphids or crawling on your tree, just leave them, they may look scary but they're very beneficial.

Adult lacewing.

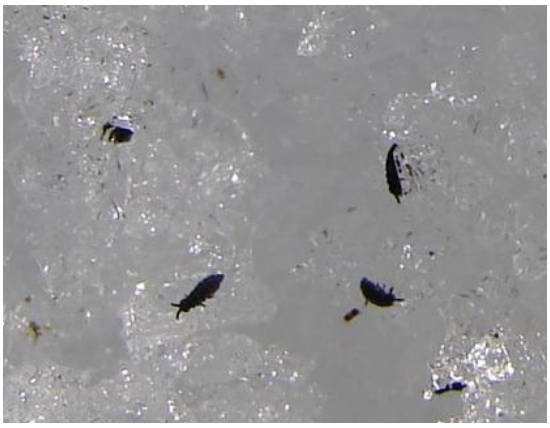
Lacewing larvae with an aphid pierced by its mandibles. Photo from bugwood.org

Lacewing eggs on stalks.

Gypsy Moth – from Bill McNee. DNR Forest Health has updated its list of aerial applicators that can be hired to do aerial spraying for gypsy moth or other forest pests. It can be found online at: http://gypsymoth.wi.gov/documents/AerialApplicators.pdf It will be about a month until gypsy moth egg masses start hatching in southern Wisconsin. Property owners who are interested in reducing gypsy moth populations should consider oiling or removing reachable egg masses well before then. Horticultural oils that suffocate the eggs are available at many garden centers and large retailers. In general, these are applied when temperatures are above 40^{o} and freezing is not imminent. If removing egg masses, scrape them into a can of soapy water and then let them soak for a few days before discarding in the trash. Additional management options for homeowners and woodlot owners are available at www.gypsymoth.wi.gov.

Property owners looking to hire a business to do insecticide treatments this spring should contact them soon. The Wisconsin Arborist Association has a list of certified arborists available at www.waa-isa.org. Additional businesses offering insecticide treatments may be found in the phone book under 'Tree Service.' Homeowners can also purchase insecticides (some applied as a soil drench) at garden centers and large retailers. For larger areas, a guide to organizing aerial spraying and a list of for-hire aerial applicators is available on the state's gypsy moth website, www.gypsymoth.wi.gov.

Snow fleas – I've had a few reports coming in of snowfleas congregating on the snow. Days of bright sunshine can bring out the snow fleas which will look like pepper or ashes on the surface of the snow, except that they move and jump! In the photo at right you can see the dark snow fleas crawling on ice crystals … they're not very big! Snow fleas are not really fleas at all and they do not bite people or pets, but they may jump on you. These tiny, black, jumping insects are actually called Collembola, or springtails, and they eat decaying plant matter. They are present during the entire year, but are most noticeable when they appear on the snow. The Ecological Society of America did a nice article on them a couple years ago http://www.esa.org/esablog/research/snow-fleas-helpful-winter-critters-2/



Snowfleas amongst ice crystals.

Ticks– if the snow would ever melt we'd have some ticks! I figure before the next pest update the ticks should be out so I thought I'd better mention them now. If you need Tick ID Cards, you can order them (from 50 – 5,000+ cards) from Gunderson Lutheran at http://www.gundluth.org/?id=3933&sid=1 If you need just a couple let me know and I'll send them to you. The tick ID card has changed from past years (click on link above to see the card) but still shows the size and photos of deer ticks and wood ticks.

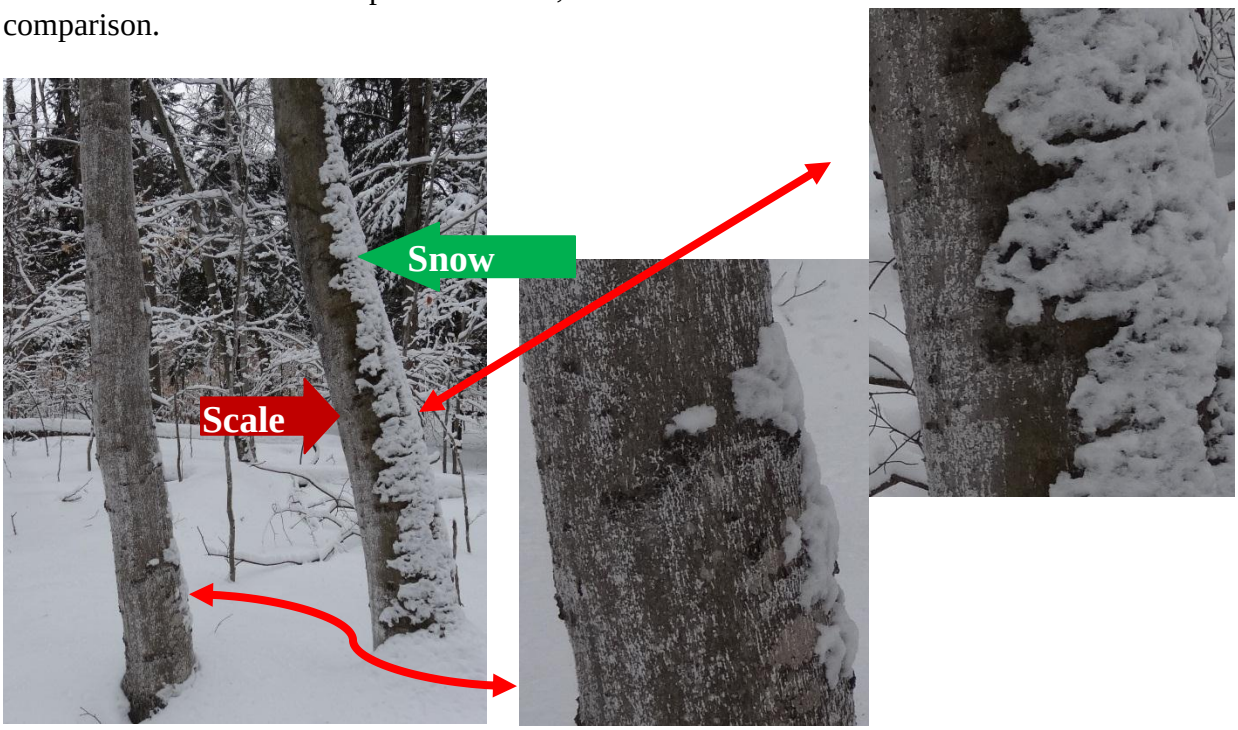
Winter Cutworm – so far this winter I have only had a couple reports of winter cutworm, all from Brown County (same as last year actually). These large hairless caterpillars can sometimes be found in large numbers crawling on the snow in late winter. Winter cutworm (*Noctua pronuba*) is a European species that has been in Wisconsin since 1997 and is primarily an agricultural and garden pest. It overwinters as large caterpillars that produce their own antifreeze-like chemical which allows them to be active anytime during the winter when the temperatures get above freezing. Phil Pellitteri (UW Extension Entomologist) says that although they will not harm turf they can feed on lots of things including flowers and garden plants. For more information on winter cutworm including pictures of the adult moths (large yellow underwing) check out http://www.cals.uidaho.edu/edcomm/pdf/CIS/CIS1172.pdf

Winter cutworm, crawling over centimeters.

Diseases

Beech bark disease – last month I included some beech bark disease information in the pest update. Since then I've had a couple folks ask if beech bark disease is something that will be

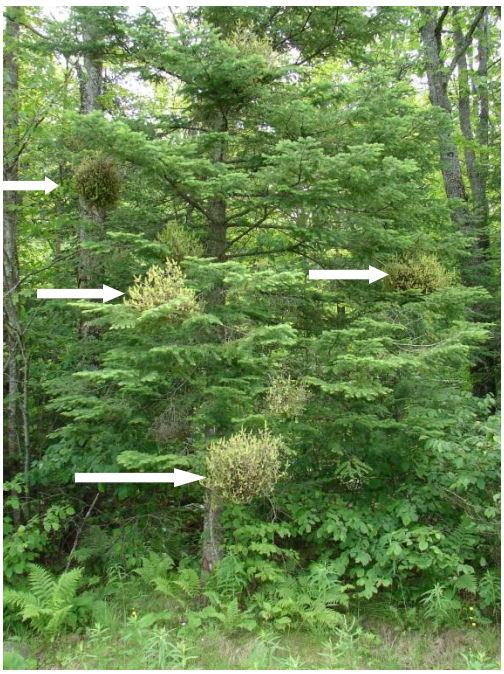
easier to identify when there is no snow on the ground, with the thought being that the trees that are "white with scale" will just blend in with the snow. The pics below are what you'll see in the winter. These were taken near the entrance to Whitefish Dunes State Park. In case you're still debating which is which, I've identified the snow and the scale for you. ☺ I will admit it is probably easier when there is no snow, but it's not particularly difficult in the winter once you know what to look for. The pictures below, with snow on one side of the tree allows for a nice comparison.



Beech with high populations of scale insects. Portions of each tree are cropped out and blown up to the right.

Broom rust on fir – the fungus *Melampsorella caryophyllacearum* forms perennial brooms on fir trees. These brooms can get quite large and can form anywhere in the crown of the tree. Only current year needles will be present, and they will become infected and drop early, leaving a broom with bare branches that looks dead, but new foliage will

Rust pustules erupting from the undersurface of current year needles within the broom.



Multiple witches brooms (pale ball-shaped clusters of branches) caused by fir broom rust fungus.

emerge the next spring. During the spring, brooms start out pale green, a result of needle chlorosis, then appear orange in mid-summer when the aecia are formed and erupt from the undersides of needles. Needles in the broom will drop before fall, leaving a ball of twisted dense branches (photo at right). Trees with multiple brooms will have reduced growth rates, and may eventually decline and die. All rust fungi require secondary hosts to complete their life cycle, this one requires chickweed. The brooms of this fungus can look very similar to the brooms caused by dwarf mistletoe on spruce. More info on dwarf mistletoe is provided in the "Other" section of this forest health update.

This specimen was in a native species planting display. The dead branches are the Fir Broom Rust brooms that have shed their needles but are not dead.

Butternut canker – a few years ago the scientific name of Butternut Canker changed, it was previously *Sirococcus clavigignenti-juglandacearum*, but is now *Ophiognomonia clavigignenti-juglandacearum.* Butternut Canker is a fungus (thought to be exotic) that causes oblong dark sunken dead areas (cankers) which can be found anywhere on the tree, and are often found at the base of trees. The disease first showed up in Wisconsin in 1967. Since then the disease has moved through the butternut population, eliminating many of the trees but leaving a few that are resistant to the disease. If you find these resistant trees, encourage the landowners to promote regeneration by creating small canopy opening around that butternut tree. There is current research going on regarding the resistance in pure butternut and butternut hybrids which still shows that some resistance is present, albeit a low percentage of the population. There is no cure for this disease but cankered trees usually die slowly, taking 10 or more years to succumb to the disease.

How do you know if a tree could be resistant? A butternut tree is considered healthy if:

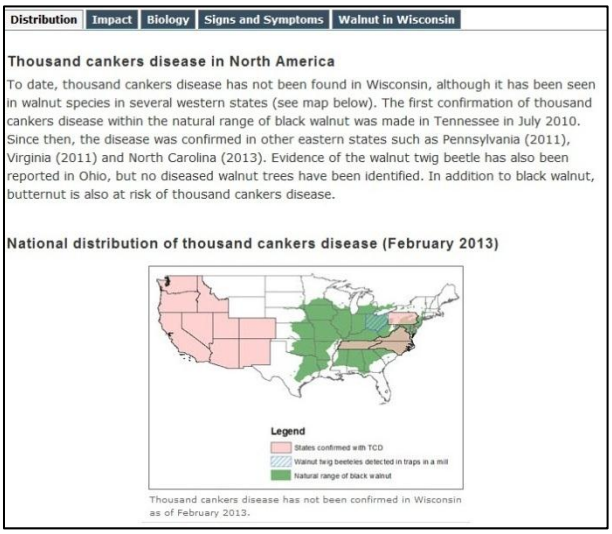
- at least 70% of the crown is alive
- and no more than 20% of the circumference of the tree is cankered for any given section of the main stem.
- A few cankers are ok but should be small in size and they may appear as if the tree is trying to grow over the canker.
- Resistant trees will seem to be healthy and fairly canker free while neighboring trees within the same stand are heavily cankered.

For more information, including management options check out http://council.wisconsinforestry.org/invasives/pdf/Insects%20and%20Diseases/BMP%20Butternutcanker.pdf or the forest service document http://www.na.fs.fed.us/spfo/pubs/howtos/ht_but/ht_but.htm

Chestnut blight article – National Geographic recently posted an article which includes a nice summary of how Chestnut blight came into the US and its impact on the forests, including some great photos. You have to page down through a few initial paragraphs to get to the chestnut

blight section; check it out http://phenomena.nationalgeographic.com/2013/03/11/resurrecting-a-forest/?utm_source=Facebook&utm_medium=Social&utm_content=link_fb20130318ph-trees&utm_campaign=Content

Thousand cankers disease – even though northeastern Wisconsin is well outside the native range of black walnut, I know that a lot of you run into the occasional stand with black walnut as a component, where the landowners of the past thought it a great idea to plant walnuts in with a mixed species stand. If you spot declining walnut in northeastern Wisconsin, it's possible that it's just growing poorly outside of its native range. But please help us watch for Thousand Cankers Disease (which has not yet been reported in Wisconsin). The WI DNR Thousand Cankers Disease webpage has been recently updated http://dnr.wi.gov/topic/ForestHealth/ThousandCankers.html/ and revisions include a new map, signs/symptoms, and a revised factsheet/report form.



Other/Misc.

Dwarf mistletoe – Eastern Spruce Dwarf Mistletoe is a parasitic flowering plant that can be very damaging to black spruce, although it can also attack other spruces. It has small flowering shoots that emerge from the spruce branches but it does not photosynthesize; being a parasitic plant it gets all of its nutrients from the tree. Flowering takes place from late March through June. The seeds that are produced are sticky and are forcibly ejected in August or September. Most seeds only travel about 10 feet but they can travel further. The sticky seeds land on a needle of a nearby tree and slide to the base of the needle where they can grow into the twig. For the first few years the infection is not noticeable but after a few years a compact mass of branches called a witches broom will begin to form.

Damage from this parasite is due to the mistletoe using the water and nutrients that the tree needs, slowly starving the tree


Dwarf mistletoe shoots emerging from spruce twigs.


Dense clusters of branches (witches brooms) will remain alive on the tree even as the rest of the crown declines.

to death. Trees infested with mistletoe will have reduced growth rates, reduced cone/seed production, be more susceptible to drought and attack by insects and fungi, and can lead to mortality.

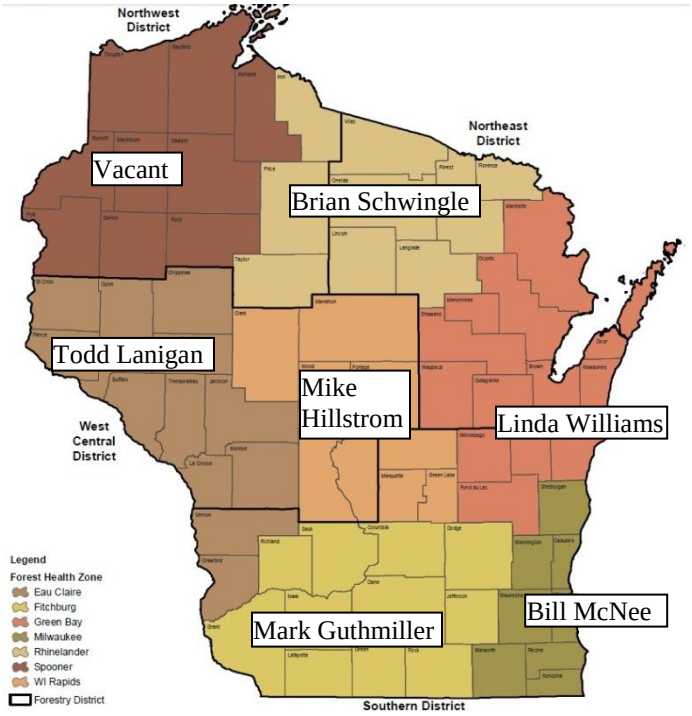
Management generally involves trying to eradicate the dwarf mistletoe from a stand by removing all infected trees and a buffer around them, including any regeneration that is occurring in the infected areas of the stand.

Forest Health Staffing Changes – *NOTE – forest health did not change to the new District structure.

Bill McNee has accepted a new DNR Forest Health position in Plymouth (Sheboygan County) effective Monday, March 25. He will become the primary DNR contact for forest health in 8 southeast counties (Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington and Waukesha).

Linda Williams will be the primary DNR contact for all forest health work in the northeast, including gypsy moth and emerald ash borer. Her coverage area will continue to be the 13 counties shown in orange.

In south central counties, Mark Guthmiller remains the primary DNR forest health contact.



Gov Delivery subscriber lists – did you know that you can sign up to receive communication on a whole variety of topics from the WI DNR? Forestry topics include annosum root rot, burn permits, and other forestry topics, and if you page down to the bottom of the list you'll see some invasive species lists you can sign up for. To sign up:

1. visit dnr.wi.gov and scroll down to the very bottom of the page
2. click on the red envelope in the lower right hand corner near the words "Subscribe to DNR updates"
3. enter the email address where you'd like to receive messages that are sent to this list serve
    a. if you are already a subscriber to any DNR gov delivery list serve with that email address you'll get to change your subscriber preferences next, which includes adding topics you'd like to receive information about. If, in the past, you opted to protect your user preferences with a password, you'll need to enter that first.
    b. If you are not already subscribed to any DNR gov delivery list serve with that email address, follow the prompts to sign up for topics you are interested in

and create settings for the frequency with which these messages will be sent to your inbox, etc…

Porcupine and squirrel damage – I'm starting to notice porcupine and squirrel damage around the region as the winter goes on. On sunny days the pale wood where the bark has been stripped off really stands out in the woods. Squirrels, as well as porcupines, chew the bark off branches in the crowns of trees, which can girdle and kill branches. Branches that are not completely girdled will continue to grow and callus tissue will begin to grow over the wound created by the feeding. Crown decline, and branch mortality related to this damage may show up over the next growing season or two.


Porcupine feeding damage.

So how do you know what has been eating the bark off your trees? The size of the tooth marks is the key. For a gray squirrel the incisor widths vary from 1.3 -1.7 mm, for a porcupine its nearly 3x's that, or about 3.6-4.8 mm.

Rabbits, mice, and voles can cause damage similar to that of squirrels and porcupines but the damage will be located near the base of the tree instead of in the crown. With the heavy amount of snow we've had this year it wouldn't surprise me to find mouse/vole damage at the base of trees once the snow melts.

Contact Us

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.