

Northeastern Wisconsin Forest Health Update

Wisconsin DNR – Division of Forestry

February 12, 2016

Topics covered this month:

Insects:

Christmas bugs
EAB new finds in WI
EAB – MI EAB quarantine in UP expanded
Gypsy moth
WI Pollinator Protection Plan
Snow fleas

Other:

Amur cork tree invasive species
Gall vs. burl
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WI DNR Forest Health annual report available

Diseases:

Annosum – Sporax no longer available
Annosum – identified in Marathon County
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25 years ago - 1991 –
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Winter injury
50 years ago - 1966 –
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Two lined chestnut borer

Insects

Christmas bugs – Christmas this year netted me a disappointingly low number of insect/disease reports. One lady called saying that aphids had emerged from her Christmas tree, and one gentleman called with a report of a spider that he's sure came in with the Christmas tree. Slim pickings. So it was with great joy that I opened my mail to find a Christmas card with gypsy moth caterpillars on the front from the Forest Entomology lab at the University of Minnesota. I will admit that this is the first time I've seen gypsy moth caterpillars on a Christmas card, and somehow I don't think it would be a big seller if it was available in stores, but I thoroughly enjoyed it.



Christmas card with gypsy moth caterpillars!

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:

- none

New finds in Counties already Quarantined:

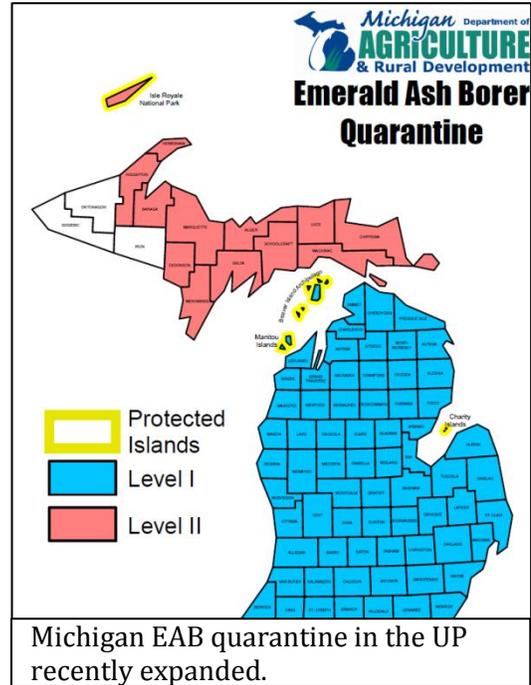
- Dane County – Village of Deerfield
- Milwaukee County – Village of Fox Point



States shown in green have at least one EAB infestation.

Other EAB news –

MI EAB quarantine in UP expanded - The EAB quarantine in the UP has been expanded to include some counties bordering Wisconsin. The MI Department of Agriculture & Rural Development announced on Feb 10, 2016, that Baraga, Dickinson, Marquette, and Menominee Counties were being added to the EAB quarantine based on summer trap catches of beetles in Marquette and Dickinson Counties. The positive trap in Dickinson County was near Norway, MI. Michigan has 2 different quarantines in place, with a Level 1 quarantine (blue) in the Lower Peninsula, and a Level 2 (pink) quarantine in the affected counties in the UP. Because of this tiered quarantine there is still a ban on moving non-certified hardwood firewood across the Mackinac Bridge, and violators can still face fines of \$1,000 - \$250,000 and jail time up to 5 years.



Michigan EAB quarantine in the UP recently expanded.

Gypsy moth – now through spring is a good time to oil or remove gypsy moth egg masses. Information on oiling or removing egg masses is available at www.gypsymoth.wi.gov When you're searching for egg masses to scrape or oil, be sure to look in all the protected places (see photos).



This tree had dried grass around its base, and after clearing the dried grass you can see that there are A LOT of gypsy moth egg masses on this tree.

WI Pollinator Protection Plan for review – Wisconsin’s Pollinator Protection Plan is now available for public review and comment until Feb. 19. With this plan, Wisconsin joins a growing number of states that either have a pollinator plan in place or are working on one. Our plan was developed by DATCP and the UW-Madison Entomology Dept. with input from a wide range of stakeholder groups. It recommends best management practices for beekeepers, gardeners and homeowners, farmers, and anyone with land that can provide habitat for pollinators. The BMPs are entirely voluntary. Check out the [Pollinator Protection Plan](#) and offer your feedback if you’d like. The website includes links directly to BMPs so you don’t have to read the whole document if you only want info on the BMPs for Gardens and Lawns, or perhaps you only want info on the BMPs for Beekeeping. And remember, honeybees aren’t the only pollinators. In Wisconsin pollinators include more than 400 species of wild native bees, other insects like beetles, flies, moths, and butterflies, and even some birds and bats. Do you know how much of the food you eat requires pollinators? Check out the [Plan](#) to see how you can help our pollinators.

Snow fleas – every year we get some reports of these tiny native decomposers. Snow fleas are also called Springtails, or Collembola. During the winter they will sometimes congregate on top of the snow, looking much like pepper on the snow (except that they can jump). A recent report came in of a discovery of snow fleas in a punky stump of a tree that recently failed. In the photo at right you can see a large black congregation of hundreds of springtails at the top of this piece of wood, as well as scattered springtails across the rest of the piece of wood.

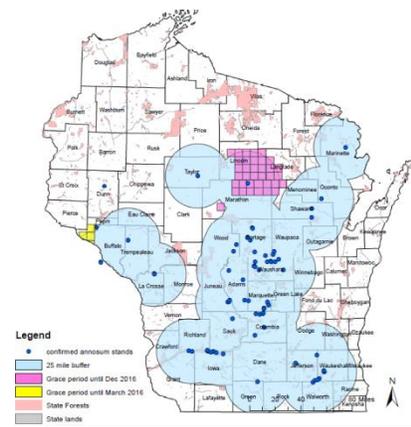


Springtails (Collembola, or Snow Fleas) congregating on a piece of wood.

Diseases

Annosum – Sporax no longer available – we have learned that Sporax is no longer being manufactured. Sporax is the powder formulation used for treating freshly cut stumps of pines to prevent annosum from infecting the fresh stumps. If you still have a supply of Sporax you can still use it, and if you can find any available for sale you can still purchase it. Kyoko Scanlon, WI DNR Forest Pathologist, contacted the company but they are not planning to manufacture it anymore. The [one-page factsheet](#) on annosum has been updated to reflect this.

Annosum – identified in Marathon County – in December 2015, annosum was found in a red pine plantation in Marathon County that had had several previous thinnings. This makes 25 counties in Wisconsin with known annosum infections. The Marathon County stand is approximately 35 miles and 40 miles from the closest two known annosum locations. Based on this find, the 25-mile buffer map was updated. Townships that are newly included (shown in pink)



Current 25-mile buffer map for annosum locations.

on the [map](#)) will have a one-year grace period for implementation of the annosum guide. If you know of, or suspect any additional locations that are not yet on the map, please contact your [regional forest health specialist](#).

Annosum – found in a spruce plantation – Mark Guthmiller and Kyoko Scanlon recently identified annosum in a spruce plantation in the Southern Unit of the Kettle Moraine State Forest. This is the first time that annosum has been found infesting a spruce plantation in Wisconsin.

In Mark's December pest update he said that upper and lower stem cankers were observed, as well as bark cracks and resin flow. A sample from a basal canker came back as positive for Annosum. Additional surveys in the summer and fall of 2015 found annosum fruiting bodies on white spruce stumps and declining trees. Molecular testing did confirm that this is *Heterobasidion irregulare* which is the species that infects pine in our state. After a recent name change, annosum is now also called Heterobasidion Root Disease, or HRD, so you may see any of those names as you're reading about this disease. To read Mark's full account of the stand, its history, and see the photos, check out his [December pest update](#).

Other/Misc.

Amur cork tree invasive species – a number of populations of Amur Cork Tree (*Phellodendron amurense*) have been identified in Adams, Columbia, and Dunn Counties, including DNR's MacKenzie Center. Amur cork tree is an NR40 Prohibited species. Mike Putnam, WI DNR Invasive Plants Program Specialist, said that we're working with local cooperators in each county on eradication and control efforts of the known infestations.

Identification – Amur cork tree has opposite branching, with pinnately compound leaves 11-14 inches long, with 7-11 leaflets per leaf. The bark is very corky, with almost a diamond pattern on larger trees. Peeling the bark will reveal a bright yellow cambium. They have male and female trees, and only the female trees are Prohibited under NR40. Some cultivars are specifically male and are not Prohibited. The flowers occur in 2-3" long clusters, and the berries form in this same 2-3" long cluster.

Problem – it is an aggressive invader that, according to Chris Gatzke with the Lower Chippewa Invasives Partnership, may be



Amur cork tree leaves. Photo from illinoiswildflowers.info



Corky, fissured bark of Amur Cork Tree. Photo by Chris Gaetzke.

outcompeting Buckthorn! Chris also noted that a large stump from a cut Amur cork tree was 30” in diameter, and according to the tree rings was only 30 years old! That’s some rapid growth!

If you see any
– please report any amur cork trees that you see by [email](#) so that we can begin efforts to eradicate and control them.



Fruit cluster of Amur Cork Tree. From Lower Chippewa Invasives Partnership Facebook page.



Bright yellow cambium of Amur Cork Tree. Photo by Chris Gaetzke.

Gall vs Burl – have you ever wondered what the difference is between a gall and a burl? Or maybe you’ve heard folks use those words interchangeably to indicate any swelling on the tree.

In the insect/disease world a gall is caused by an insect or disease presence in the tree that causes the cells to grow in a predictable pattern (predictable for that particular insect or disease). One book indicates that a gall is a “highly organized” group of cells. Additionally, galls caused by fungi are often capable of eventually surrounding the branch or main stem and girdling the tree at that point.

A burl on the other hand, while it can be initiated by an insect or disease presence, it could also be initiated by an injury or genetic predisposition. Cells in burls are supposedly more “random” in nature, and often have many buds incorporated into the swelling; cross sections can show those buds as dark spots and the wood grain swirls around them. Galls caused by insects/diseases will generally not have a proliferation of buds, except when you’re dealing with bud mites, which do cause a massive proliferation of buds at the tips of branches. But back to burls ... burls, once started can continue to grow even if whatever started the burl is no longer present. For example, a wound or insect attack may have damaged cells to the point of random proliferation which begins to develop into a burl, and although the wound or insect may not be there anymore the cells that are producing the burl will continue to grow in a random pattern on their own, sort of like a cancer.



Black knot gall on black cherry.



Horned oak gall, caused by a cynipid wasp.

So maybe to sum it up we could say that a burl can be started by insects, diseases, injury, or genetics, and cells are random, while a gall is caused by an insect or disease and cells are organized to benefit the insect or disease. More research on burls may be needed.



Phomopsis galls on Northern red oak.



Burl.

Invasive species awareness week – Feb 21-27, 2016, is National Invasive Species Awareness week. We're not just talking insects and diseases here, we're talking all invasives, from plants to reptiles to birds, and everything in between. Check out the [National Invasive Species website](#) for things that you can do increase your awareness of invasive species, just click on the [toolkit](#) to see Nine ways you can help, and Ten Ways To Observe.

If you're a bird watcher you can help watch for EAB and Asian longhorned beetle as you're out birding. Check out the [Birdwatcher's Field Guide to Holes in Trees](#) put out by The Nature Conservancy.

WI DNR Forest Health Annual Report on web – the 2015 Forest Health Annual Report is now available [online](#). Check it out for info on annosum, jumping worms, insect & disease surveys at the DNR nurseries, spruce budworm, hail, frost, and many more forest health issues.

Of Historical Interest

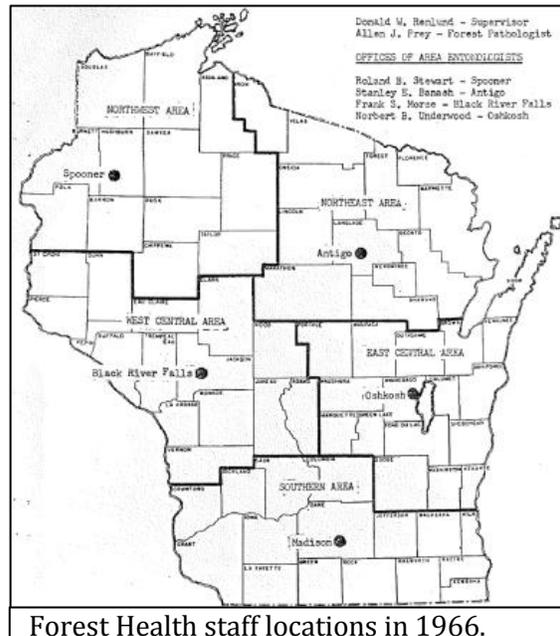
25 years ago, in 1991 –

- **Walkingstick** – *Diaperomera femorata* (Say). After several years of very low populations this late season defoliator has increased in numbers to cause heavy defoliation of northern pin oak in southern Marinette and northern Oconto Counties.
- **Winter injury** – Wisconsin had very cold temperatures (close to 0°F) the week of November 4, 1991. The cold temperatures froze the ground quite solid. During the week

of November 11, there were warm days with sunshine and warm winds. On November 16, several growers noticed Scotch pine and white spruce changing color. The current year's growth on the Scotch pine turned yellow, then brown, and the white spruce's current year's growth turned purple. The spruce rapidly lost their 1991 needles. The cold weather which froze the ground, followed by warm temperatures, sunshine, and warm winds, probably caused the trees to transpire when the water could not be replaced from the frozen ground. Discoloration of Scotch pine and white spruce was widespread in southern and central Wisconsin. Most of the trees examined still had green buds and twigs. The injured trees are expected to lose their discolored needles in the spring. If good snow cover occurs and the wide temperature fluctuations do not occur again before spring, the injured trees should bud out and continue to grow.

50 years ago, in 1966 –

- **Forest Health Staff in 1966** included Donald W. Renland (Supervisor), Allen J. Prey (Forest Pathologist), Roland B. Stewart (Spooner), Stanley E. Banash (Antigo), Frank S. Morse (Black River Falls), and Norbert B. Underwood (Oshkosh).
- **Two-Lined Chestnut Borer** – *Agrilus bilineatus* (Weber). Mortality of jack oak (*Quercus ellipsoidalis* E.J. Hill) [side note – jack oak is another name for Northern pin oak] has been observed in Menominee County during the past three years.



Forest Health staff locations in 1966.

Aerial and ground surveys made in 1966 showed extensive branch and tree mortality in the southeast corner of the county, an area of light, sandy soil, on which the oak has been repeatedly defoliated by walkingsticks in alternate years over a long period of time. Damage to oak occurred on over 1,700 acres of oak-aspens-jack pine forest type in Sections 1, 2, 3, 9, 10, 11, 12, 13 and 14 of T28N, R16E. Borer larvae, tentatively identified as the two-lined chestnut borer, were found in all trees examined. The pattern of mortality correlates closely with previous walkingstick defoliation. Oak wilt as a factor in the mortality was ruled out because symptoms appeared much later in the season, and the fungus was not isolated from any of the samples from which cultures were made.

Similar damage was observed on dry sites in Adams, Clark, Eau Claire, Jackson, Monroe and Wood Counties in the West Central Area. Symptoms and damage were apparent in August on 1 percent of the trees in scattered locations, and up to 50 percent of the trees over large parts of Adams and southeastern Wood Counties. Damage in the West Central Area was most severe in areas affected by drought in 1963 and 1964 and by repeated defoliation by the oak grasshopper, *Dendrotettix quercus* (Packard). The

damage was particularly evident along the paths of severe hailstorms which passed through Clark and Jackson Counties on June 20, 1964. Sample sections from Adams County trees produced numerous adult borers, tentatively identified as *Agrilus bilineatus* (Weber), 56 days after the winter-collected wood was moved into the greenhouse.

Black oaks were more heavily attacked than white oaks in Waushara and Marquette Counties, presumably by the same insect. Attacked trees had previously suffered from drought, wind damage, and late frost injury.

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>

Vacancy area coverage:

Oneida, Vilas, Forest, Florence Co's – Linda Williams

Lincoln, Langlade Co's – Mike Hillstrom

Price, Taylor Co's – Todd Lanigan

Iron County – Paul Cigan

Report EAB:

by phone 1-800-462-2803

by email

DATCPEmeraldAshBorer@wisconsin.gov

visit the website

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

Report Gypsy Moth:

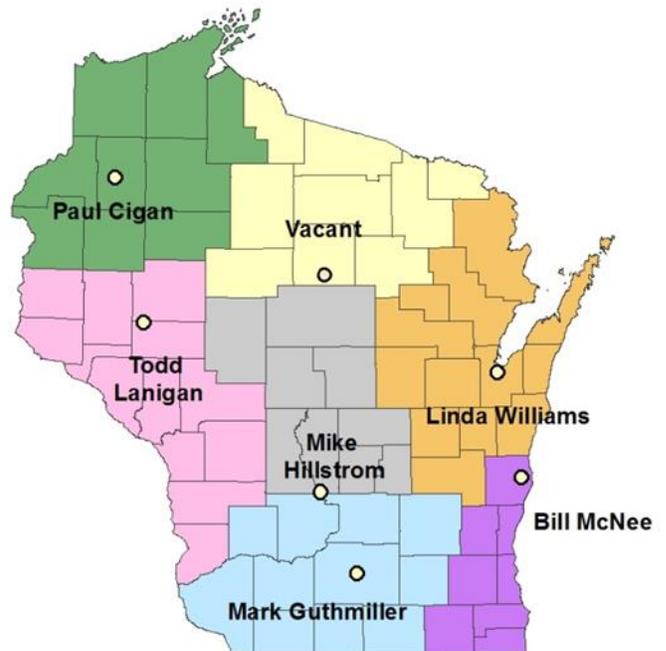
by phone at 1-800-642-6684

by email

dnrfrgypsymoth@wisconsin.gov

visit the website

<http://www.gypsymoth.wi.gov/>



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

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.