Southern Region Forest Health Update

Wisconsin DNR, Forest Health Protection Unit

September 21st, 2012 Vol. 9 No. 5

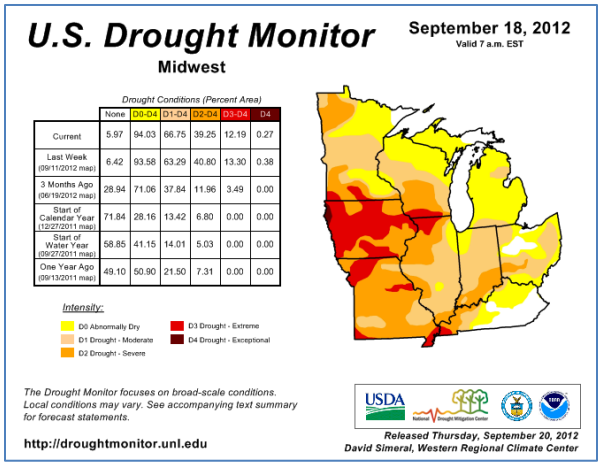
Topics in this update

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

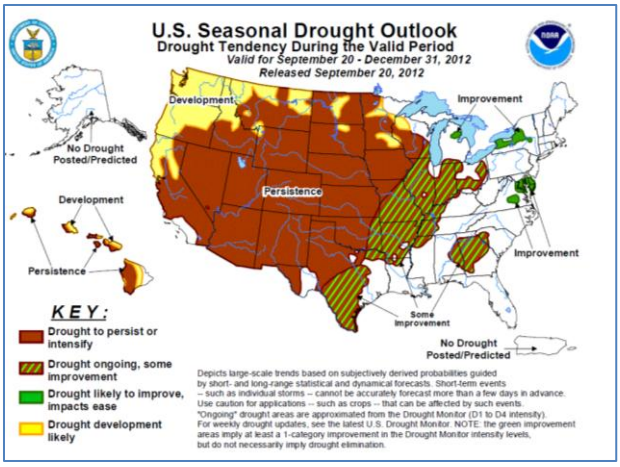
Drought

Current Status and Outlook

While conditions improved slightly in the last few weeks we continue to experience severe to extreme drought levels in much of southern Wisconsin. The outlook for this part of the state for the next couple months suggests ongoing drought conditions with some improvement in the very southeast corner. As we go into fall the stress to the trees has started to show up and reports of damage have been coming up.



U.S. Drought Monitor weekly update: http://www.droughtmonitor.unl.edu/DM_midwest.htm



NOAA Outlook suggests continued drought with some improvement in SE WI: http://www.cpc.ncep.noaa.gov/

Recent Observations and Reports

One of the first major observed and reported symptoms of drought stress showed up on maples. The Baraboo hills of Sauk County was most heavily impacted with some areas having much of the lower canopy sapling and pole trees completely browned up by late July. Leaves in the lower canopy appeared to brown up first and worked its way up the canopy. Larger mature trees were also impacted. Reports of similar browning in maples, as well as ash in some places, came in form counties such as Grant, Iowa, and Lafayette Counties. I would suspect this is true through many parts of southern Wisconsin. Prognosis for these maples and ash is uncertain and we will have to wait until next season to see if they put out a new flush of leaves. One sample from a browning sugar maple did not confirm any pathogens in culture. However incubated root samples did show the presence of fusarium. This however, might be functioning as a sabrobe (see article on boxelder below).

Drought stressed maples browning up in late July

Oaks and hickory were also observed browing up early, especially in areas with shallow soils and rocky bluffs. For matue trees I would not rule these out yet and would expect them to refoliate next year. However they will be under stress making them susceptible to secondary insect and disease issues.

A report of scattered mature conifers browing up came in from Grant County. A subsequent survey indicated scattered white and red pine located on ridgetops and rocky outcroppings were browning up, many of these to the point they will not likely recover. These trees will also likely, if not already, become host trees for bark beetles going into next season.

Drought stressed oaks and hickory browning up in late July near the Sauk and Columbia Co border.

Scattered white pine in ridge tops and bluffs of Grant County observed browning up in September.

Reports and observations of new plantings have been mixed in terms of survival. A Grant County Christmas tree grower reported high mortality to his recent planted fir species that he attributed to root damage from high temps along with the dry conditions. This grower did however have pretty good success with his pine plantings where site and localized soil types played an important role in survival, along with care in planting. However some spring plantings elsewhere, such as a large planting in the Northern Unit of the Kettle Moraine state forest, experience high seedling mortality this season, especially to white pines. The damage was also associated with a couple species of bark beetles and weevils at one site. The hardwoods seemed to do much better than conifers in general.

White pine mortality in 2012 planting in eastern WI associated with drought, weevil, and bark beetle insect damage.

(Roger Bohringer, manager at Wilson nursery in Boscobel, sent me a report of his observations of 40 new plantings he monitored in southern WI where he also reported mixed success with seedling survival. Roger also sent some notes on tree seed observations this year.)

Effects of the 2012 Drought on New Tree Plantations – Roger Bohringer

I'm going out on a limb a bit, and assuming that all of you reading this are at least somewhat familiar with the parable of the sower. To paraphrase, the story tells about a man sowing grain. Some fell on the path and was lost, some on rocky ground where it grew but soon died, and some into the thorns where it was smothered by the weeds. Finally, some grain fell on good ground, and multiplied. This parable provides a pretty good summary of what I found after surveying 40 new tree plantings in Southern Wisconsin this summer. A lot of trees were planted, but only those that were handled and planted carefully and had the good fortune to land in deep soils made it through the summer.

For the counties south of a line running roughly from La Crosse to Sheboygan, it was definitely not a year to take short-cuts anywhere in the planting process. Some people did their homework, got their site prep done, did everything just right, and still had failed plantings due to the lack of rain. As any farmer can tell you, some things are just beyond our control. Conifers, with their shallower, fibrous root systems, and typical sandy planting sites seemed to be especially hard hit. Also, those shallow soiled, rocky humps found in most southern Wisconsin fields seemed to die regardless of what species was planted. Even the alfalfa with its huge tap root couldn't find enough water on the humps this year. Surprisingly though, even in the height of the drought in early August, I was still finding some new plantings that looked relatively good after over a month with no rain. They weren't growing much, and many had some scorched leaves, but they were hanging in there. After digging lots of dead seedlings, and a few healthy ones, it became obvious that any seedling that was over root pruned, J-rooted, too shallow, poorly handled, in a poorly packed furrow, herbicide burned, or just plain poor quality didn't stand much of a chance. A tree may survive one or two of these stressors in a 'normal' year, but not in a summer like 2012.

All was not gloom and doom however. Despite the harsh conditions, I did find some plantings with 90% survival or better even in the heart of the drought area. There may have been a hearty dose of good luck involved, but there was also a lot of hard work and attention to detail in the planning and planting process. To

those landowners, foresters, and contractors who managed to pull off a successful planting despite the drought: Congratulations on a job well done. To those who weren't so lucky- there's always next year!

Tree Seed Observations- Roger Bohringer

Acorn drop began 3-4 weeks ahead of schedule this year. There are huge crops of white oak and sugar maple in SW WI, despite the early bloom and late frosts. Lots of aborted maple seed is falling now, but I think there is a tremendous amount of good seed on the trees yet. Red oak seems to be very abundant in the north, but less so here. You've mentioned the heavy white pine crop in some areas (hardly any here at the nursery), and you've probably noticed the huge white spruce cone crop this year. Walnut seems pretty spotty, and I haven't noticed or heard much about shagbark hickory. I did notice lots of bitternut hickory aborting this summer in the peak of the drought, throughout the southern counties.

Emergency Funds Available to Replace Drought-killed Tree Seedlings- by Carol Nielsen, Private Forestry Specialist

Landowners who have experienced a significant loss (>25%) this year in trees planted in 2008 through 2012 may be eligible to receive a grant for replanting the trees lost. The DNR Forester must verify that the loss is directly related to the 2012 drought. Grants awarded will cover up to 50% of the costs for preparing the site and replanting trees where the DNR Forester has determined there is a need. More details can be found by contacting your local forester or visiting this website:
http://dnr.wi.gov/news/Weekly/Article_Lookup.asp?id=2267

Other Drought Stories- We are not alone!

ILLINOIS

Tales from the worst US drought in decades: Hauling water, drooping trees, creative forecasts

http://www.washingtonpost.com/national/energy-environment/tales-from-the-worst-us-drought-in-decades-hauling-water-drooping-trees-creative-forecasts/2012/08/11/61f99570-e3c8-11e1-89f7-76e23a982d06_story.html

INDIANA

Trees are suffering from dry conditions, too

http://www.thestarpress.com/article/20120807/LIFESTYLE/308070023/Trees-suffering-from-dry-conditions-too?odyssey=nav%7Chead

MISSOURI

Joplin's New Trees Struggle To Survive Amid Drought

http://www.npr.org/2012/08/11/158610662/joplins-new-trees-struggle-to-survive-amid-drought

Gypsy Moth – Bill McNee

As of mid-September, the flight of male gypsy moths is finished in all of Wisconsin. Trappers from the Dept. of Agriculture, Trade and Consumer Protection (DATCP) are currently taking down traps. So far, Ashland and Bayfield Counties in the far north are catching far more moths than any other counties, and have caught about 40% of all moths trapped in Wisconsin this year (~160,000 from all counties). Western Wisconsin counties that are not quarantined continue to have low trap catches.

Egg laying is now complete, and egg mass surveys can begin 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.

Applications to the 2012-13 DNR gypsy moth suppression program are due by Friday, December 7 of this year, and the application form will soon be available. A list of county and municipal gypsy moth contacts is available at www.gypsymoth.wi.gov. If you decide to participate in the suppression program to spray in 2013, 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 2013, oil the masses or wait until this December to remove them so that surveyors can determine if an area should be sprayed.

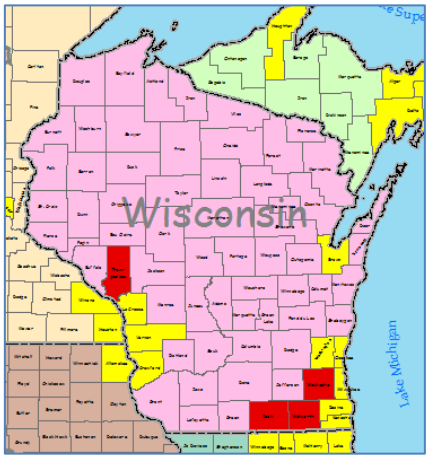
Gypsy moth egg masses. Photo by Bill McNee.

Emerald Ash Borer (EAB) – Bill McNee

Since the last pest update there are four new Wisconsin EAB finds to report:

- Village of Brown Deer, Milwaukee County
- Town of Fredonia, Ozaukee County (about 3 miles from earlier finds in the Town)
- Perrot State Park, Trempealeau County
- Village of Clinton, Rock County

For a complete list of municipalities where EAB has been detected visit: http://datcpservices.wisconsin.gov/eab/articleassets/EAB_Infested_Wisconsin_Communities.pdf

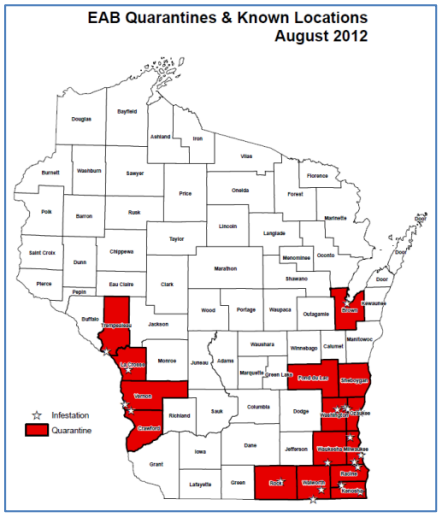


Counties in red had first EAB detections in 2012.

Trempealeau County in western Wisconsin has been added to the Wisconsin EAB quarantine area, following a detection of EAB at Perrot State Park in mid-August. The pest has been found across the Mississippi River in Minnesota, and there appears to be a widespread infestation in the Mississippi River valley of western Wisconsin and adjacent states. EAB flight is now over in Wisconsin and any remaining traps can be taken down for the year.

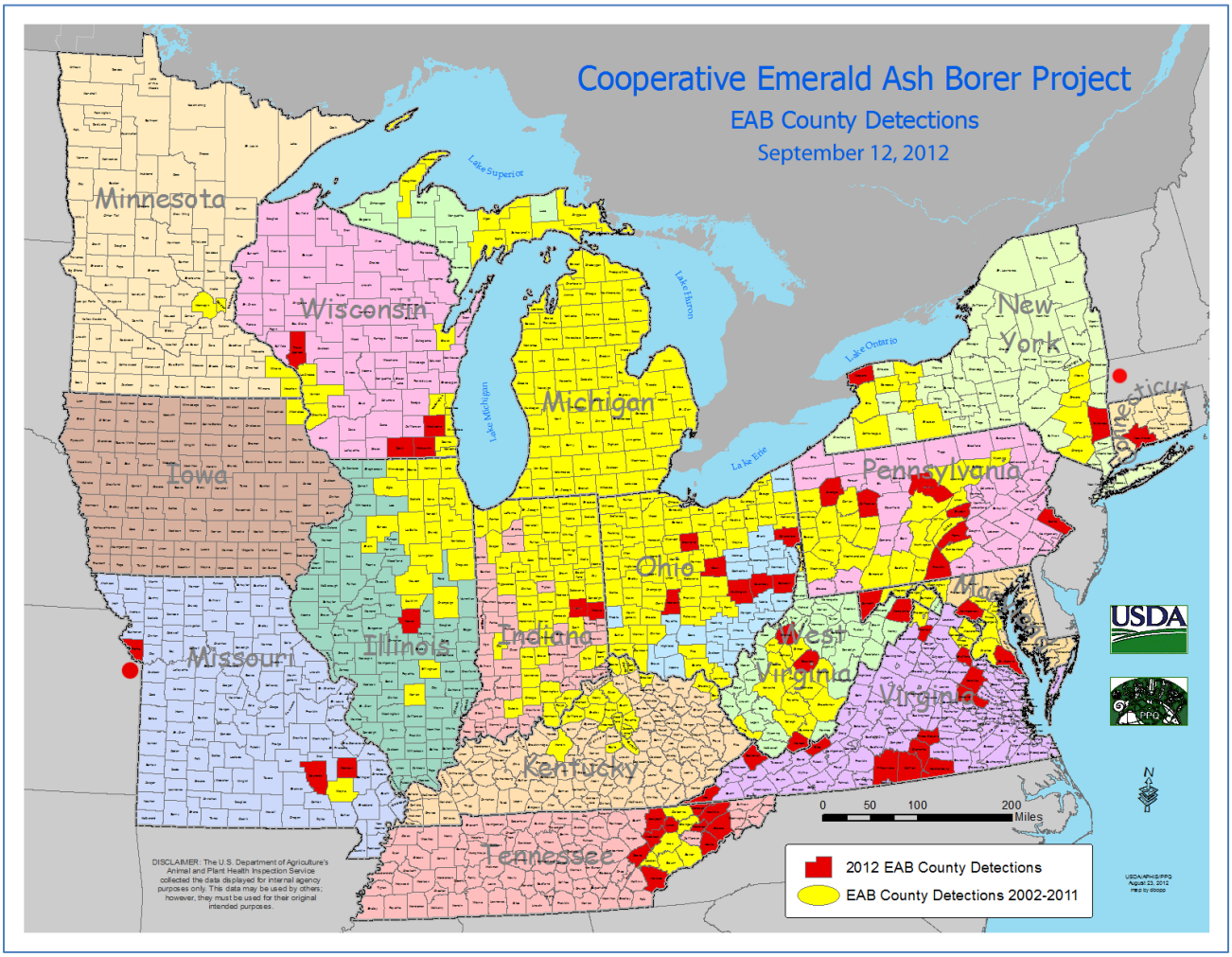
Sign up for automatic EAB news updates at: http://datcp.wi.gov/Gov_Delivery/EAB/index.aspx.

Suspicious beetles or symptomatic trees should be reported to the EAB hotline, 1-800-462-2803, or emailed to: DATCPEmeraldAshBorer@wisconsin.gov.



Counties currently quarantined for EAB are shown in red.

EAB has now been found as far away as Kansas and Massachusetts. In late August an infestation was located in Kansas City, Kansas, close to a recent find of EAB near Kansas City, Missouri. Massachusetts' first detection in the town of Dalton was announced on September 12. Kansas is the 17th state and Massachusetts is the 18th state to find EAB. So far in 2012 there have been 58 new county detections nationwide, two counties more than were found in all of 2011.



Counties in red had first EAB detections in 2012. Counties in yellow had first EAB detections in 2011 or earlier. Map is modified from a map by USDA APHIS

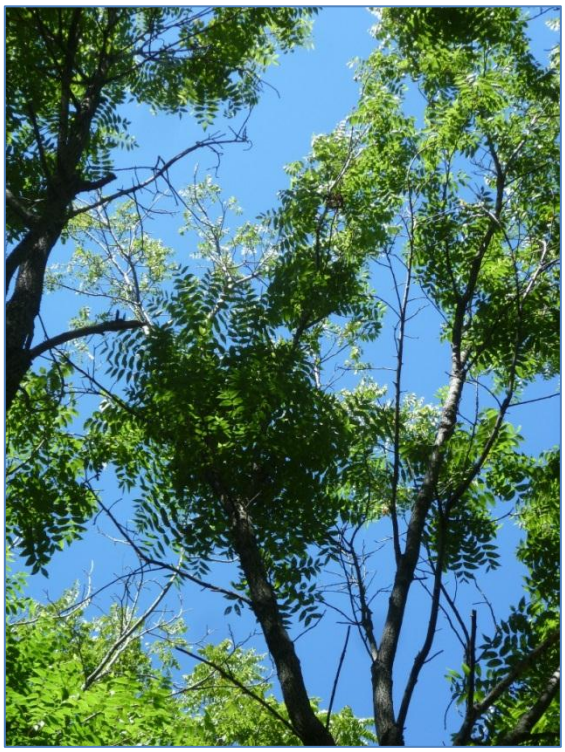
Working Dogs for Conservation: Minnesota's ash borer detection dogs

A few months ago we reported that a group of dogs were being trained to sniff out EAB infestations. They recently completed their training and have now been tested at a wood yard in Winona, Minnesota. The dogs successfully found samples of EAB-infested wood hidden in wood and brush piles. Watch the dogs in action at: http://kaaltv.com/article/stories/S2756313.shtml?cat=10217. According to media reports, the federal funding used to train the dogs has run out and it will take additional funding sources to put the dogs into active service. (thanks to Vicki Hugill for also sharing information on this pilot project)

http://www.mda.state.mn.us/en/news/releases/2012/nr-2012-09-06-eabdog.aspx

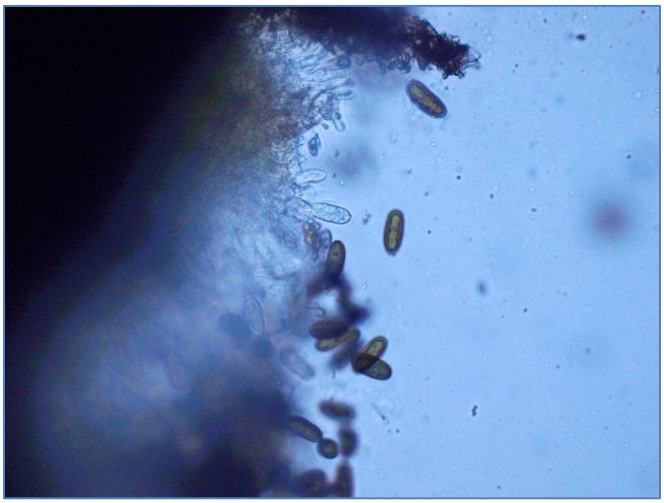
Sapsucker Injury and Associated Diplodia Canker to Walnut

As part of surveys related to "thousand cankers disease" of walnut we encountered a couple sites this summer that had sapsucker injury to black walnut which was causing dieback in the canopy. At one site in Richland County, prolific epicormic branching formed just below the peck holes making it difficult to see the damage from the ground. Additional lab work indicated some possible pathogenic canker fungi may also be present. I suspect *Diplodia mutila* as the main canker pathogen. Whether the sapsuckers were attracted to fungal canker areas or whether the sapsucker injury was a port of entry for the fungi is uncertain, although I suspect the later.



Sapsucker injury to black walnut branches

Profuse epicormic sprouting below sapsucker injury.



Canker like injury under sapsucker peck holes

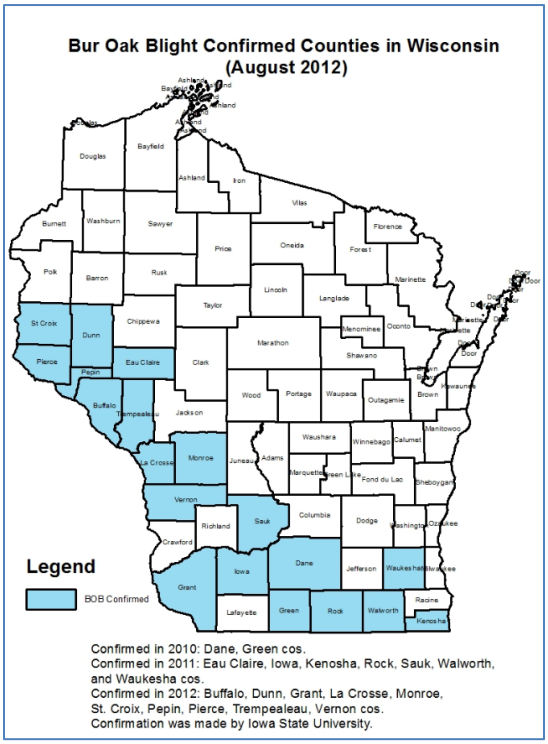
Fruiting spores of suspect canker pathogen Diplodia sp.

Bur Oak Blight – Kyoko Scanlon

I received an update on the distribution of Bur Oak Blight (BOB) in Wisconsin from Iowa State University. They recently collected samples from bur oaks in Wisconsin and confirmed BOB in 10 new counties. These are Buffalo, Dunn, Grant, La Crosse, Monroe, St. Croix, Pepin, Pierce, Trempealeau, and Vernon cos. Attached is an updated county distribution list. Currently, BOB is confirmed in 19 counties in WI – Buffalo, Dane, Dunn, Eau Claire, Grant, Green, Iowa, Kenosha, La Crosse, Monroe, Rock, Sauk, St. Croix, Pepin, Pierce, Trempealeau, Vernon, Walworth, and Waukesha cos. Probably the disease has been in Wisconsin for a while.

August and September are good time to collect samples to identify BOB. If you find suspicious trees from unconfirmed counties, please send us samples. Although Iowa State University has found BOB only on bur oaks, we have observed similar dieback/mortality also on white oaks. Please feel free to send us samples of symptomatic oaks of other species as well as bur oaks.

More information about BOB is found at http://na.fs.fed.us/pubs/palerts/bur_oak_blight/bob_print.pdf.



Current updated map showing counties confirmed with bur oak blight.

Oak Flagging – Brian Schwingle

(Note: I added Brian's article from his newsletter as this has also been common in northern parts of southern district)

There are long stretches of road throughout northern and central Wisconsin where the oaks have scattered dead branches. In Vilas Co., the cause is a fungal pathogen. The suspect is *Botryosphaeria*. Salt stress and freeze damage likely promoted this disease. For ornamental oak owners, a big task with potentially little pay-off would be to prune off (and rake up) infected branchlets and destroy. See http://hyg.ipm.illinois.edu/pastpest/200213b.html for more information.

An oak with flagging branches likely caused by stress and Botryosphaeria fungus. Photo by Brian Schwingle.

Eastern Pine Shoot Borer

A couple sites visited this summer that had some minor to moderate eastern pine shoot borer injury to white pine. The pith tunneling and oval exit hole is indicative of this species aiding in identification from other pith boring insects.

Damage to white pine shoot by eastern pine shoot borer.

Tunneling damage in pith of white pine shoot.

For more information on eastern pine shoot borer:
http://ento.psu.edu/extension/christmas-trees/information/pest-fact-sheets/eastern-pine-shoot-borer-eucosma-gloriola-heinric

http://bugs.osu.edu/~bugdoc/Shetlar/factsheet/christmasstree/eastern_pine_shoot_borer.htm

Kermes Scale on Oak

It has been awhile since I have seen problems with Kermes scale and it does look similar, from a distance, to *Botryosphaeria* shoot blight mentioned in Brian's article. Recently, LaCrosse County DNR forester, Adam Zirbel reported seeing this critter quite a bit during CRP re-enrollment inspections. I thought others may be seeing similar issues on red oak as well so am including information on this scale. If you need a hard copy hand out let me know and I can email you the document version originally written by retired forest entomologist, Dave Hall.

(By Dave Hall, 9/2000)

Female Kermes scales grow to a relatively large size and resemble twig galls; they are often called "gall-like scale" insects. The family *Kermesidae* is related to other families of scale insects that damage woody plants by feeding on sap.

In Wisconsin, the "pin-oak Kermes", *Allokermes galliformis*, attacks the shoots of planted red oaks when they are knee high to 15 feet tall. Mature red oaks are occasionally observed with minor infestations. The shoots often die or are weakened and break off later. Attacked saplings usually recover with a minimum of damage; very small trees are occasionally severely deformed by repeated shoot damage.

Most oak plantations suffer minor damage and the damage usually is confined to localized pockets. Occasionally, the insects cause severe damage to plantings stressed by dry soil or weed competition. Kermes scale damage to twigs combined with deer browsing can keep a plantation perpetually in a low, brushy condition but this is very rare. As the red oaks grow larger, they become less susceptible to attack and the scales disappear about the time of crown closure. To date, the majority of Kermes infestations have occurred in southern and central Wisconsin.

Dead branch tips with scale

Adult female Kermes

Heavy Kermes damage

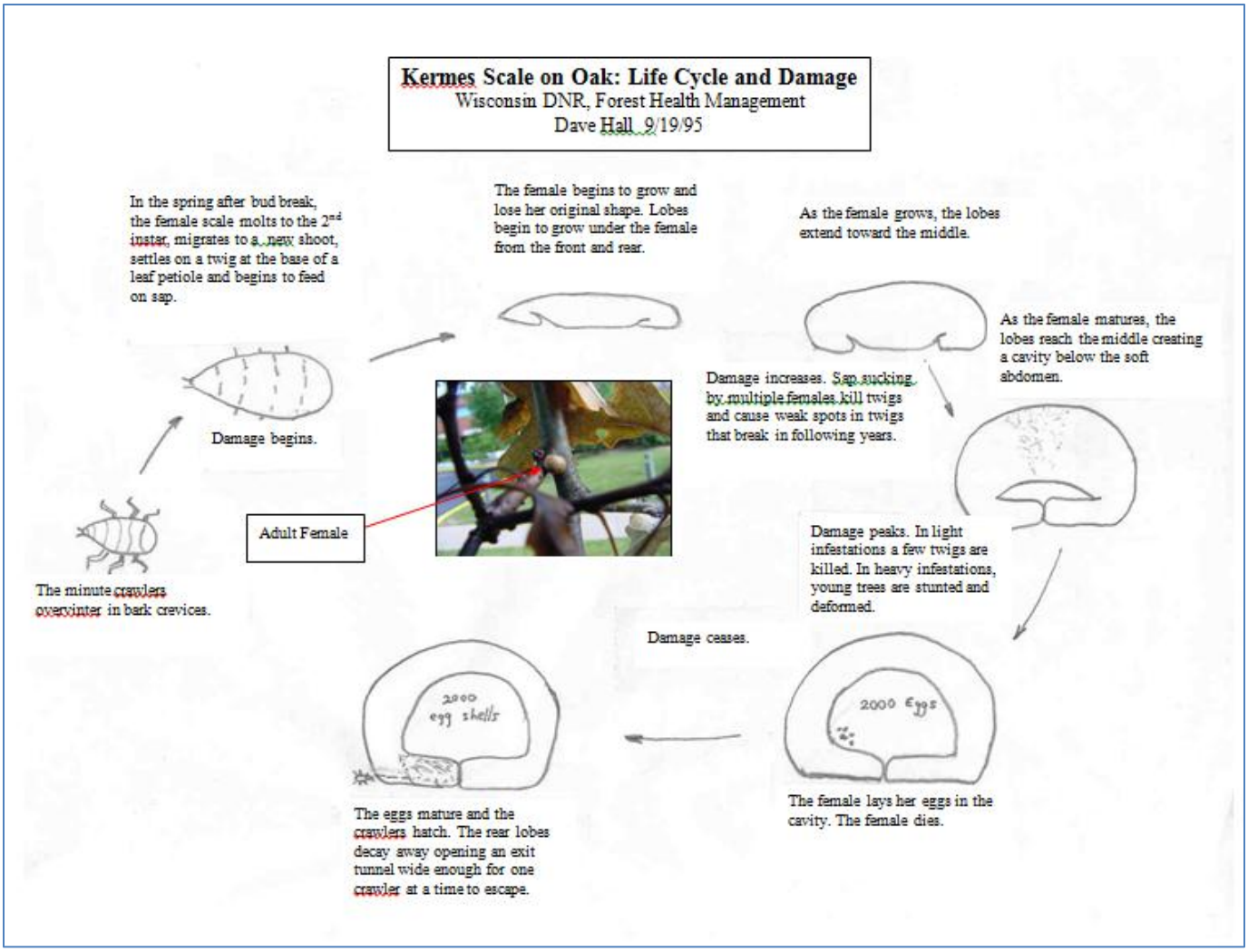
Management options

While direct control of the insect is seldom necessary, a couple of options are available:

- In small infestations, you can pick female scales off the twigs before the eggs hatch in August or September.
- In heavy, widespread infestations a contact insecticide can be applied in spring after females have moved to the shoots.

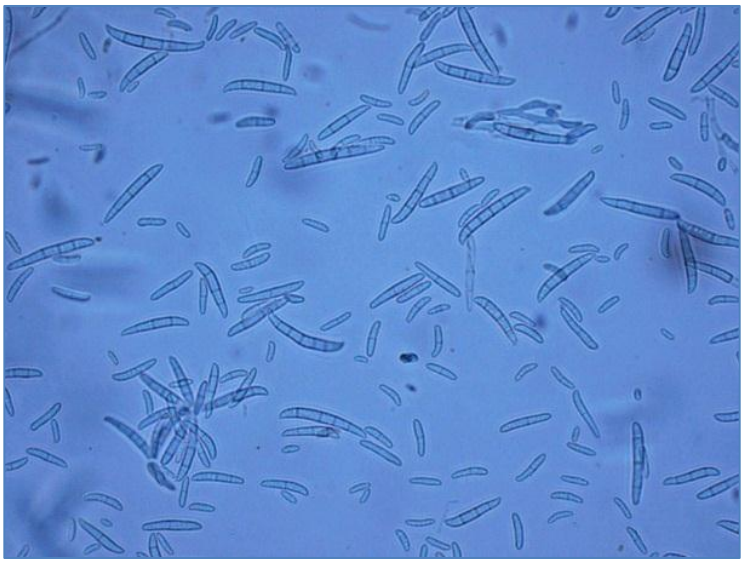
Damage can be avoided or minimized by applying some long-term silvicultural strategies:

- Stems that have been deformed can be removed during thinning operations.
- Plant mixed species when starting new plantations. Inclusion of a conifer such as white pine will shade out ground competition, create a cooler environment for the scale insects and force the oaks to grow straight.



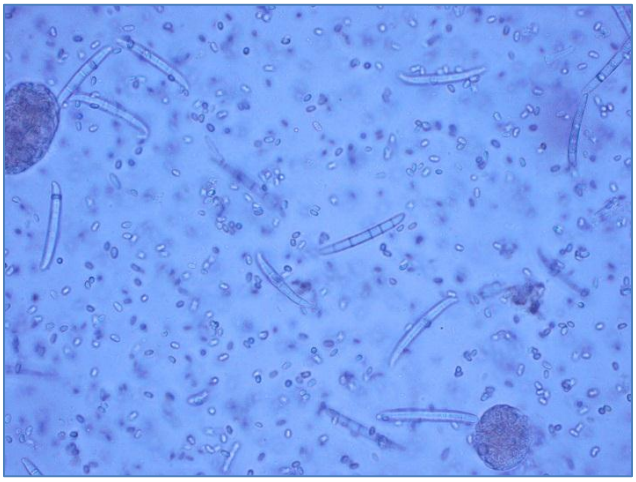
Boxelder Dieback and Suspect Fusarium

In my June newsletter I had a write up on boxelder dieback that I have been noticing throughout many parts of southern WI. There was both internal heartwood red staining and black streaking in the cambium. Lab cultures did not confirm an exact cause but I suspect it might be related to a *Fusarium* sp. I did incubate samples and found evidence of fusarium with typical spores. This fungus however can function as both a pathogen as well as a saprobe, so without direct culturing and conducting of Koch's postulates pathogenicity is not certain. I have on a couple occasions now found the presence of Fusarium spores associated with boxelder showing dieback symptoms. *Fusarium* is a very complex fungal genus with over 100 documented species and many sub species. There is one species that was listed as the cause of red stain in boxelder called *Fusarium reticulatum* Mont. var. *negundinis* (Note that



Fusarium macro condial spores observed from an incubated sample of boxelder.

scientific names continue to change as taxanomic techniques improve). I also mentioned in my previous article on boxelder that the association between fusarium and red stain in boxelder has not be directly correlated and may be just a reaction to any kind of wounding. For more information on this:
http://www.forestpathology.cfans.umn.edu/pdf/morse.pdf

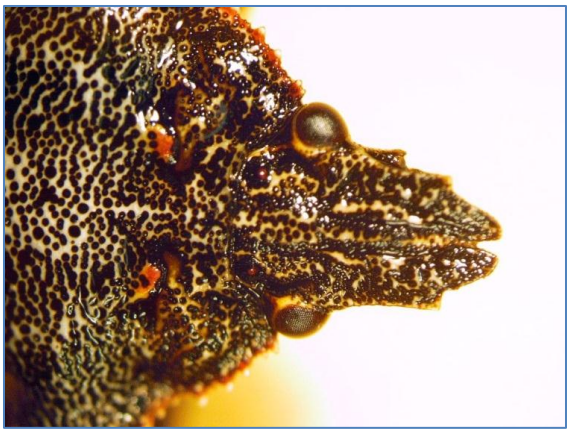


So what does this mean? Well, I think we need to continue to pay close attention to wilt symptoms in species of the Maple (*Acer*) family. Don't assume maples with wilt symptoms are always caused by Verticillium wilt without lab testing. We should continue to monitor maples for wilt issues and whether fusarium may be functioning as a potential wilt pathogen. According to a write up of fusarium wilts in "Diseases of Trees and Shrubs" by Sinclair and Lyon they mention that fusarium wilts are caused by host-specific populations of *Fusarium oxysporum*.

Fusarium sp. micro and macro condial spores observed from incubated sample of sugar maple with browning leaves from drought conditions.

And for those that truly have a love for boxelder, here is a great Q and A from North Dakota!
http://www.ext.nodak.edu/extnews/hortiscope/tree/bxelder.htm

Miscellaneous



Name that Beautiful Face
A face only its mother could love. Any idea what this is? See below for my answer:

Asian Needle Ant found in Wisconsin – Bill McNee

Wisconsin recently had its first find of another exotic species, the Asian Needle Ant, in a residential neighborhood of Reedsburg (Sauk County). The Midwest's first detection of this insect was found by a boy participating in the 'School of Ants' project (www.schoolofants.org), where volunteers collect ants and send them to a lab for identification. This Japanese insect has been present in the southeast US for decades, but recent surveys by volunteers also found the insect in Wisconsin, New York City, and Washington State. Unlike most other ant species, this species can invade undisturbed forests and tends to take over and displace the other ant species. Unfortunately, this ant also has a sting that commonly produces a strong allergic reaction.

For more information about the Asian Needle Ant, visit:
http://www.schoolofants.org/species/1157.

http://www.ces.ncsu.edu/depts/ent/notes/Other/note159/note159.html

Boxelder Bugs
It is that time of year when we have warm days and cool nights that we notice the aggregation habit of boxelder bugs. They show up almost anywhere and often are noticed on tree trunks, windows, or side of homes in massive numbers. This has been a particular good year for these bugs. While they are not harmful, many folks view them as a major nuisance. One interesting observation this year was a strong preference for mass aggregating on ash (which is one of the species they feed on so maybe not too surprising) while only a few individuals were noticed on the boxelder in the same area.

Immature boxelder bug nymphs. Photo by Harry Nunnemacher, Milwaukee

For more information see:
http://hort.uwex.edu/articles/boxelder-bugs

http://www.extension.umn.edu/distribution/horticulture/dg0998.html

Dryad's Saddle or Pheasants Back Mushroom
Kyoko Scanlon suspects this cool looking mushroom photo sent in by Columbia Co. forester, Jim Bernett, may be the Dryad's saddle. One more thing for Bernett to be watching for in the woods… little Dryad's running around! For more information:

http://en.wikipedia.org/wiki/Dryad%27s_Saddle

Suspect dryad's saddle mushroom sent in by Jim Bernett

GIS Technical Resource - ArcGIS Desktop Street View AddIn
For those of you who do GIS mapping work here is a neat "birds eye view" extension that links a point on your Arcmap to the google birds eye view. Urban forestry coordinator, Jeff Roe shared this with me recently and I will be looking at using it in the near future:
http://resources.arcgis.com/gallery/file/arcobjects-net-api/details?entryID=48F2BB6C-1422-2418-8822-C06E828584E8

Cleaning Out the Pool for the Season? Check your Filters!
Urban forestry assistant, Elizabeth Dierickx sent me this link to remind folks not to forget to check for Asian longhorn beetles when cleaning your pools for the season!
http://vtinvasives.org/news/check-your-pool-filter-asian-longhorned-beetle

Hungry Pests Website
Check out this USDA website forwarded to me by Carol Nielsen
http://www.hungrypests.com/index.php

Name That Beautiful Face Answer- Rough Stink Bug
This stink bug caught my attention and at first I worried it might be a marmorated stink bug. I believe it is the four-humped stink bug, *Brochymena quadripustulata*, or closely related species.

For more information on this group of stink bugs:
http://bugguide.net/node/view/566809/bgimage

http://www.biology.duke.edu/dukeinsects/Brochymena_quadripustulata.php

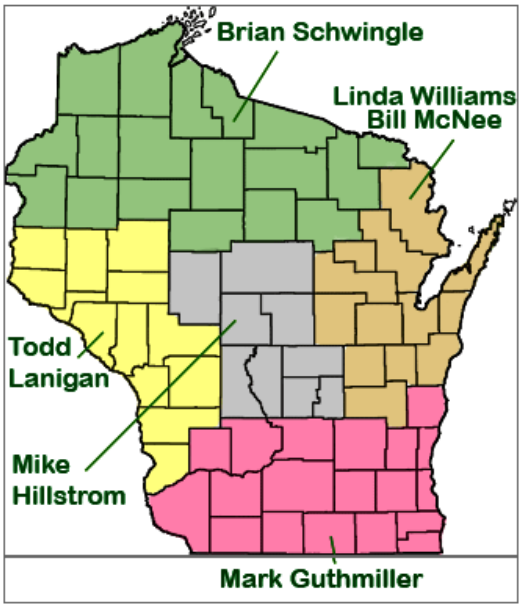
To compare this with the brown marmorated stink bug see:
http://njaes.rutgers.edu/stinkbug/identify.asp

A rough stink bug suspected to be the four-humped stink bug or closely related species.

Forest Health Staff Coverage
Although the statewide forestry program has switched from regions to districts, the forest health program is maintaining current county coverage as prior to the reorganization. Based on annual and developing workloads these boundaries may change. Our website and newsletters are the best place to monitor who you should contact for assistance with tree health issues.

Staff link: http://dnr.wi.gov/topic/ForestHealth/staff.html

Note that Bill McNee is currently assisting with coverage in southeastern WI for issues related to emerald ash borer, gypsy moth, and beech bark disease. See below for more information on forest health coverage and assistance.



SOR Forest Health Assistance
Wisconsin DNR, Forest Health Protection Unit
September 2011 to September 2012 (or further notice)

Contacts for DNR staff, municipal foresters, and forestry cooperators

For general forest health and municipal level urban forest health issues
Mark Guthmiller (Old SOR region: SCR & SER combined) 608-275-3223

For gypsy moth
Mark Guthmiller (Old SCR Team area) 608-275-3223
Bill McNee (Old SER Team area) 920-303-5421
Andrea Diss-Torrance (Statewide issues) 608-264-9247

For emerald ash borer
Mark Guthmiller (Old SCR Team area) 608-275-3223
Bill McNee (Old SER Team area) 920-662-5430

For beech bark disease/beech scale
Mark Guthmiller (Old SCR Team areas) 608-275-3223
Bill McNee (Old SER Team area) 920-662-5430

For invasive plants
Mark Guthmiller (Old SOR region: SCR & SER combined) 608-275-3223
Tom Boos (Statewide issues) 608-266-9276

Direct public inquiries regarding yard tree concerns to UW county or state extension offices:

UW Extension http://www.uwex.edu/ces/cty/
or
Emerald ash borer hotline 1-800-462-2803
Emerald ash borer e-mail DATCPEmeraldAshBorer@wi.gov
Gypsy moth hotline 1-800-642-MOTH

Additional Program Web-based Resources:
Forest Health web site: http://dnr.wi.gov/topic/ForestHealth/
Gypsy Moth web site: http://gypsymoth.wi.gov/
Emerald ash borer web site: http://dnr.wi.gov/topic/ForestHealth/EmeraldAshBorer.html
Emerald ash borer cooperative state web site: http://emeraldashborer.wi.gov/

Forestry is now structured under Districts but Forest Health coverage continues under old region boundaries:
Old SCR Team Counties: Columbia, Dane, Dodge, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock and Sauk
Old SER Team Counties: Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, and Waukesha