

Southern Region Forest Health Update

Wisconsin DNR, Forest Health Protection Unit
December 23rd, 2010 Vol. 7 No. 8

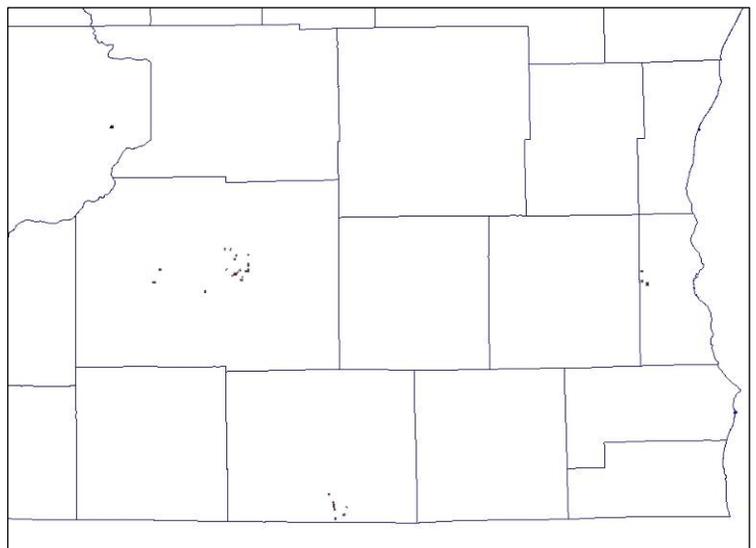
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Mark Guthmiller (Southern Region Forest Health Specialist)
Articles in this newsletter were written by Mark unless otherwise noted

Gypsy Moth Suppression Program Update (Mark Guthmiller and Bill McNee)

The application deadline for the 2011 gypsy moth suppression program was December 3rd. For southern Wisconsin we received requests for treatment from Dane, Milwaukee, and Rock County along with Devils Lake State Park in Sauk County. Statewide we received requests for treatment in eight counties for a total of 2,991 acres. This is down from last years request for treatment of 5,347 acres in 11 counties. Although we had a record year for defoliation at approximately 347,000 acres statewide, the wet spring weather and caterpillar disease caused a large crash in the gypsy moth population, reducing the request and need for suppression treatments in many parts of the state.

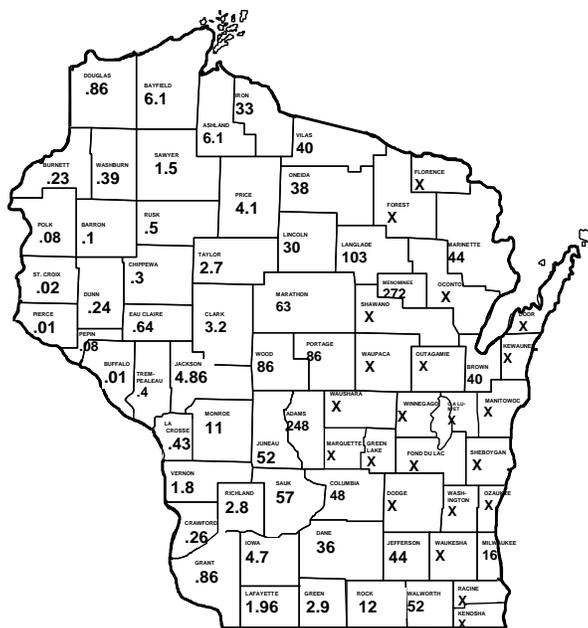


2011 Proposed Gypsy Moth Treatment Areas in SOR

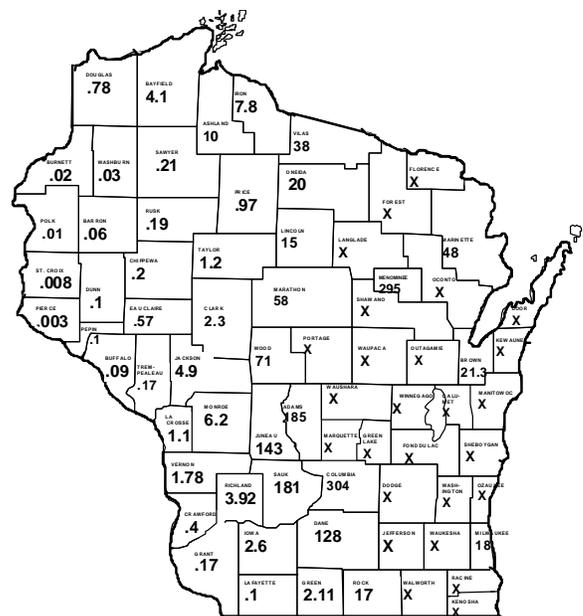
In Dane County approximately 916 acres, in 15 targeted areas, are proposed for treatment including the city of Madison, city of Monona, and town of Middleton. In Milwaukee County, approximately 250 acres are proposed for spraying at the Milwaukee Zoo and two neighborhoods in Wauwatosa. In Rock County approximately 360 acres, in 5 targeted areas, are proposed for treatment including the city of Beloit, Beloit College, and town of Beloit. In Sauk County, Devils Lake State Park is proposing one treatment block of approximately 120 acres at the south beach recreation area. Maps of proposed spray areas will be available at www.gypsy moth.wi.gov in mid-January.

Gypsy Moth Trap Catch Data (WI DATCP Data)

Wisconsin Department of Agriculture is the lead agency on trap detection monitoring for gypsy moth and they still trap a good portion of western WI. Unlike the DNR suppression program that focuses mainly on egg mass densities for predicting treatment needs, Wisconsin Department of Agriculture uses trap catch data in new establishing areas to help determine treatment blocks. Approximately 142,000 male moths were trapped this year, up by about 10,000 from last year. Although there was an over-all increase in moths caught, many counties in the south central part of Wisconsin saw a reduction or little change in moths per trap caught. Moth per trap data is a better indicator than total moths per county in evaluating population trends. WI DATCP “Slow the Spread” treatment blocks will be posted later in the new-year at the website mentioned above.



Moths per Trap 2010



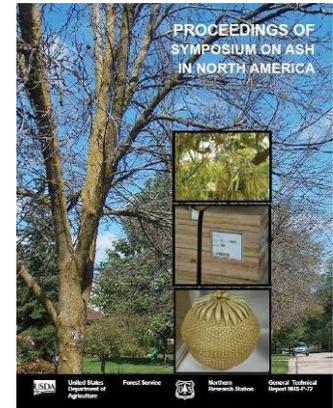
Moths per Trap 2009

EAB Update (Bill McNee)

In case you missed it, the Urban Natural Resources Institute recently held a webcast featuring innovative methods for managing EAB in Oakville, Ontario, Canada. This webcast can be seen by visiting: <http://www.unri.org/webcasts/archive/december-2010/#video>. It's an hour and 15 minutes in length. ISA continuing education credit can be obtained if the webcast is watched and quiz taken before the end of December.

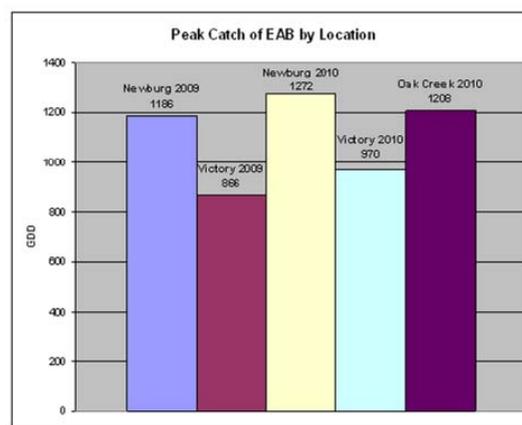
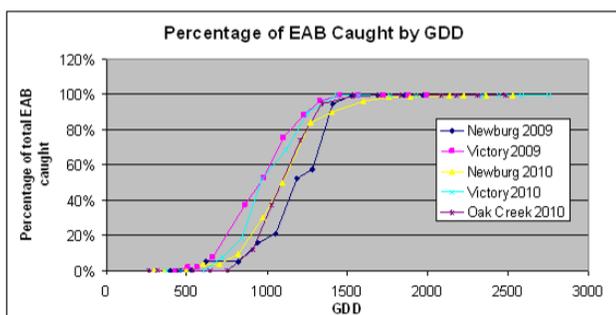
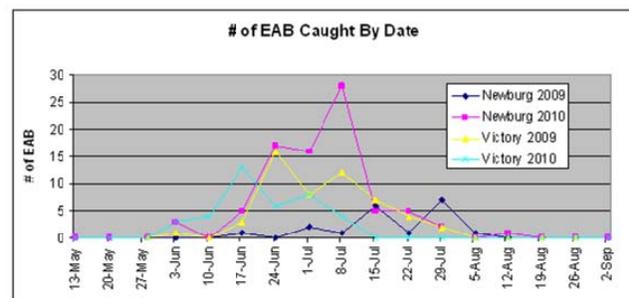
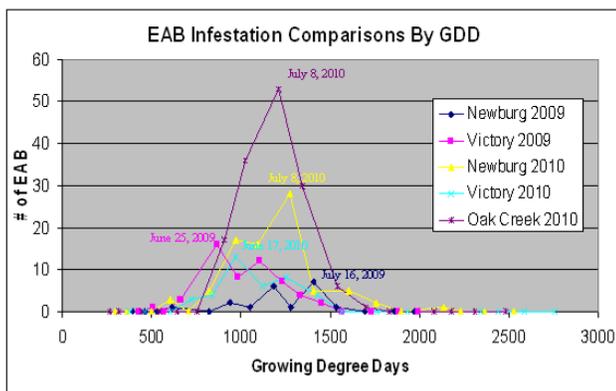
The 2010 Ash Symposium Proceedings have been released, and are available at: http://www.nrs.fs.fed.us/pubs/gtr/gtr_nrs-p-72.pdf. A study of the EAB aftermath forests has been included, and is available at: <http://www.nrs.fs.fed.us/pubs/gtr/gtr-p-72papers/11-knight-p-72.pdf>. These links contain very interesting information and is worth reading.

A kids EAB activity book has been produced, and is available at: <http://dnr.state.il.us/ORC/urbanforestry/ActivityBook-Maryland.pdf>. Kids can have fun while they learn about this pesky beetle and why they shouldn't move firewood!



EAB Beetle Emergence Data (WI DATCP data)

Jen Statz, WI DATCP, shared a summary of data on EAB adult emergence and peak flight obtained from the purple panel traps set in the known infested areas of Newburg, Oak Creek, and Victory, Wisconsin. The summary graphs compares data on beetle emergence vs. Growing Degree Days (GDD) in both 2009 & 2010. If you are having a hard time reading numbers, increase the percent view to easily read data electronically.



EAB Mechanized Harvest Trial in Oak Creek

During the week of November 8th, a demonstration project was conducted in Oak Creek to evaluate the use of field forestry harvesting equipment in an urban setting to remove infested ash or ash at risk from EAB. City forester, Rebecca Lane, with support from local officials, helped coordinate the effort. Forest Products Specialist, Terry Mace, and private consultant, Don Peterson, worked out the details of securing equipment and tracking data. Part of the effort was looking at logistics of maneuvering equipment in an urban area, tracking time standards of equipment use, and evaluating product cut for merchantability. A session was also held for other municipal staff to observe and hear about the project. At this time I don't have economic feasibility data to share from this demonstration but hopefully will have information in a future newsletter. It was definitely an interesting demonstration.



Processor easily cutting street tree ash



Processor working in a residential yard



Terry Mace and Rebecca Lane tracking equipment hours and monitoring operations



Bill McNee investigating tree for EAB



Forwarder used to haul logs and tops



Forwarder maneuvering urban traffic

Beech Bark Disease Update (Bill McNee)

Beech scale, the insect associated with beech bark disease, has been found in Mequon (Ozaukee County). The insect had previously been found elsewhere in Ozaukee County, and this is the southernmost detection of the insect in Wisconsin. Beech scale has also been found in Sheboygan and Washington Counties in the DNR Southern Region, and it is believed that a low-level infestation exists in the lakeshore counties. Door County remains the only Wisconsin county where beech bark disease (associated tree mortality) has been seen.

Keep an eye out for trees covered in white wool as shown in the picture. Contact a DNR Forest Health specialist or DNR Forester if a suspicious tree is seen.



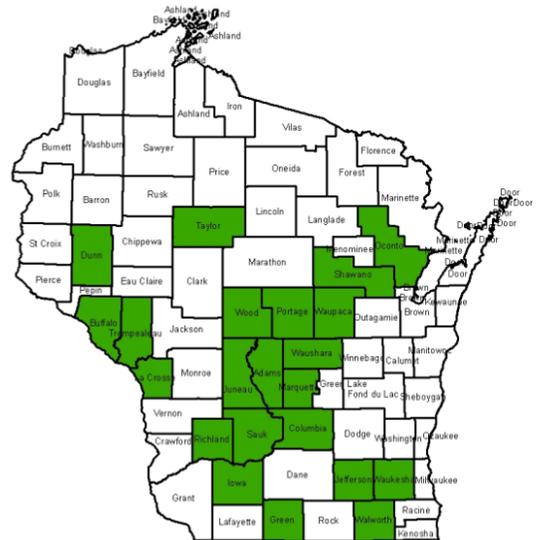
Beech Scale Wool

For more information on beech scale and beech bark disease, visit: <http://www.dnr.wi.gov/forestry/FH/bb.htm>.

Annosum Update

Annosum root rot is one of the major diseases of conifer plantations and infects freshly cut stumps or wounds. Fresh cut stumps from thinning and harvest operations are the primary way new infections start. Fruiting bodies in the area of the harvest produce spores that then are air disseminated and may land on and infect fresh stumps. Healthy trees with grafted roots to the infected stump roots eventually become infected by Annosum as it moves through the root system. This “root to root” transmission causes expanding pockets of mortality. Due to the random nature of spores landing on stumps, pockets of mortality may develop in random locations within a stand. Once annosum is present in the stand it can survive for decades in stump material making control almost impossible. However, treatment of stumps immediately after harvest can substantially reduce the risk of new infections. Annosum was first detected in Adams County in 1993 and has now been detected in 22 Counties. Recent information has been shared by DNR state forester, Paul Delong and DNR forest pathologist, Kyoko Scanlon regarding issues of stump treatment in winter. There are two primary products, Sporex (a powder application) and Cellu-Treat (a liquid application). Cellu-Treat is often preferred as it can be applied mechanically during the harvest, unfortunately it also freezes in cold weather. This problem has generated some temporary recommendations until this issue can be resolved. Below is detailed information shared by Kyoko Scanlon for folks dealing with this issue this winter.

For more information on annosum go to: <http://dnr.wi.gov/forestry/Fh/annosum/>



Old infected untreated stump

Annosum Winter Stump Treatments (Kyoko Scanlon)

Are you wondering about how treatments to prevent annosum root rot and cold weather get along with each other? Since outside temperatures have been below freezing, and this cold trend is expected to continue for a while, I decided to send you an update on where we are in dealing with fungicide applications in winter.

Currently, prevention is our best tool against annosum root rot. There are two products that can be used to apply fresh cut conifer stumps to prevent annosum root rot. One is Sporax. Sporax is a granular material, and can be used at low temperatures. The other is Cellu-Treat. Cellu-Treat is water soluble, and since it is used by mixing the chemical in water, yes, the solution will freeze below 32F. It has been suggested that addition of antifreeze lowers the freezing point of Cellu-Treat solution effectively. However, at this point, it is against the law to add any chemical to lower the freezing point of Cellu-Treat solution because such a use is not currently on the label of Cellu-Treat. The good news is that the manufacturer of Cellu-Treat, Nisus Corporation, has submitted a federal EPA label amendment to add antifreeze to Cellu-Treat solution in cold weather. The bad news is that the approval process usually takes about 6 months and the new label probably won't become available in time for this winter.

We also don't know if Cellu-Treat solution that is mixed with antifreeze will be as effective as Cellu-Treat solution itself. Dr. Glen Stanosz, Professor of University of Wisconsin-Madison has recently received a grant to investigate this issue, and we are hopeful that a new label and data that support the effectiveness and direct the practical use of additives will become available for the next winter, and this freezing issue we are facing this winter will not be a problem for next winter.

What can we do for this winter then? Many studies conducted outside Wisconsin consistently found that spore production and germination as well as mycelial growth stopped when temperatures went below freezing. We strongly believe that this time of the year is the low risk period for the introduction of annosum root rot. Unfortunately, we cannot say "no" risk at this point because we don't have data. Dr. Stanosz has been working on this aspect as well with a different grant. Again, we will be armed with data on the effect of low temperatures on the level of infection in the near future. With limited data available, there are several options that a landowner/forester/logger can decide from when considering whether to use preventative stump treatments during the winter.

1. Consider the use of Sporax. Sporax is a granular material that can be applied on fresh cut stumps to prevent annosum root rot. It will have to be applied manually.
2. Explore the possibility of adjusting lines and the solution tank to keep the Cellu-Treat solution from freezing. The manufacturer of Cellu-Treat has suggested that a heat element be used around a tank and wires be placed near hydraulic line. Unfortunately, at this point, such attempts have made only limited success.
3. Consider postponing the harvesting until the temperature increases above freezing (32F) when the solution will not freeze.
4. Consider risk and economical benefit analysis. As mentioned above, when the daytime temperature does not reach above freezing, it is considered very low risk for infection. Especially if there is over one foot of snow on the ground, the majority of the conks will be covered under the snow and will not disseminate spores. Can a landowner/property manager accept low to very low risk and harvest pines this time of the year? It is important that a landowner/property manager understands the risk and benefit to make a decision.

Recently, after analyzing the scientific data currently available and considering risk and economical benefit, the Chief State Forester, Paul DeLong, made a decision about treatment exemption under certain conditions in [certain state DNR timber sales for this winter only](#).

Waiver would apply only to:



- State DNR timber sales currently under contract or those proposed for sale that have provisions for annosum treatment.
- State DNR timber sales being actively harvested this winter
- State DNR timber sales that do not have active Annosum pockets (timber sales with active Annosum would still require treatment per the existing contract)
- Timber sales sold with the option of using Cellu-treat **OR** Sporax application (Timber sales bid out specifically requiring a hand application of Sporax will still require treatment prescribed in the contract)

Treatment is **not** required this winter if either one of the two combined weather conditions described below can be met:

Condition 1. High temperature on the day of harvest is less than 32 F AND the forecasted high temperatures for the next 10 days are not predicted to exceed 40 F.

Condition 2. Snow depth is more than 12" in woods AND the forecasted high temperatures for the next 10 days are not predicted to exceed 40 F.

Diplodia Test Results From DNR Tree Nurseries

Diplodia is a fungal disease that causes shoot blight, stem canker, and collar rot in conifers and proliferates when trees are under stress. It has been a concern in nurseries where spores rain down from nearby mature conifers onto new seedlings. After extensive management of windbreaks and regular fungicide treatments this disease has been greatly reduced from our state tree nurseries. Here are the results from this year's lab tests and shared by Kristin Peterson, program assistant with the tree improvement, nursery, and forest health programs.

Since testing/screening of red pine seedlings began in 2006, the overall asymptomatic infection rate for Diplodia has been consistently lower than the 10 percent threshold level since 2007 and lower than 5% for 2009 and 2010 in all three state nurseries.

Nursery	Total number of seedlings tested 2010	Total positive for Diplodia infection 2010	% positive for Diplodia infection 2010	% positive for Diplodia infection 2009
Hayward	198	6	3.03%	1.77%
Griffith	260	10	3.85%	4.68%
Wilson	89	0	0%	1.90%

Table 1. 2010 Diplodia asymptomatic seedling test of 2-0 and 3-0 red pine seedlings from State Nurseries



Out-planted red pine seedling that developed Diplodia collar rot



Professor Dr. Stanosz, UW Madison, demonstrates isolation technique

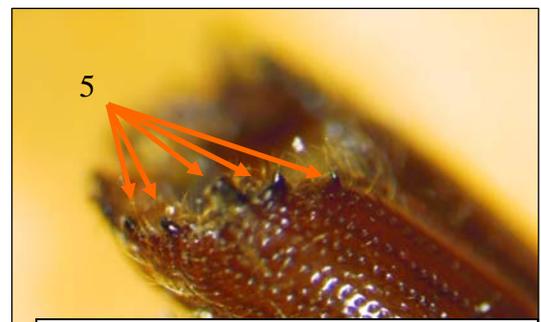
Red Pine Mortality, Southern Unit Kettle Moraine State Forest

A number of years ago I had looked at a couple pockets of dying conifers just off the Emma Carlin trailhead parking lot in the southern unit of the Kettle Moraine State Forest. While conducting some gypsy moth surveys this fall I stopped at this location and was surprised by the extent of pine mortality. It was no longer just expanding pockets but widespread dying of conifers in the localized area. Talking with forester, Mike Sieger, he pointed out a problem with a prolonged high water table in this area. This high water table had likely stressed many of the red pine in the area and made them susceptible to bark beetle and turpentine beetle attack. It would also explain the VERY STRONG putrid smell when I cut into some old dead pines, likely due to the anaerobic conditions. The smell was like dog poop and I even checked my boots at first!



Prolonged high water table stressing red pine

I wanted to share some of the findings at this site as the bark beetle attacks seemed interesting. We cut down one fading tree and found what I believe is eastern 5 spine engraver (southern pine engraver), *Ips grandicollis*. I did not find a single *Ips pini* (pine engraver) in the cut fading tree or in a number of the bases of older standing dead trees. In my younger days working with Dr. Ken Raffa, Professor of Forest Entomology, UW Madison, we most frequently would find a higher percentage of *Ips pini* than *Ips grandicollis* in funnel trap collections in bark beetle infested areas. In this case, the cut tree had eastern 5 spine beetles attacking both upper branches and lower bole but no attacks in the upper bole as I had expected. Although I have worked with bark beetles for many years and am familiar with galleries of *Ips pini*, I don't recall seeing the shape of these egg laying galleries observed for this suspected, *Ips grandicollis* species. But then again I have never really looked specifically for galleries of this particular species. I plan to continue to work at confirming the bark beetle species present just to make sure I haven't overlooked anything.



5 spines on wing elytra is indicative of eastern five spine engraver



Bark beetle galleries with larvae at base of red pine

In addition to the bark beetles, turpentine beetle was attacking some of the trees and as expected, *Leptographium* was recovered from these attack areas. *Leptographium* is the fungus associated with the red pine pocket mortality complex. The blue stain fungus, *Ceratocystis*, was also present as would also be expected. *Diplodia* was also observed on shoots and had prolific fruiting on a sample piece of bark. *Diplodia* is often associated with drought stressed conifers but it apparently does just fine with waterlogged stressed pine. A salvage harvest has been slated for this area.

Nectria Target Canker on Walnut

Green County DNR forester, Cory Secher, scores brownie points with the forest health specialist and picks a great winter day to take a look at some cankers on black walnut in the Town of Vermont in western Dane County. A high percent of black walnut (both pole to saw timber diameter) in a 5 acre area were exhibiting large canker like growths on all portions of the stem bole and large branches.

After looking at a number of trees, a few characteristic target cankers indicative of the Nectria fungus, *Nectria galligena*, were observed.

A couple sections from small trees

were taken back to the lab for diagnostic confirmation of the perennial nectria target canker. On one of the older cankers the diagnostic red lemon shaped perithecia were observed to confirm the disease. In addition, an unidentified species of scale was noted. At this time it is not known if the scale is directly associated with the nectria canker formation. It is possible that the sucking feeding wounds created by the scale may serve as a port of entry for the nectria fungus. At this site, symptoms were most prevalent in the lower to mid slope of a steep valley with an intermittent stream running through bottom of this area. This location could serve as a moist cold pocket and may attribute to prevalence of disease in this area. Cory did note similar canker symptoms on black walnut in another area nearby that was located on a ridge top. The literature mentions both cold pocket low spots and ridge tops with shallow soils as both conducive for this fungus. If others are seeing similar problems or other health issues on Walnut please contact a forest health specialist to report your observations.



Large callus wound wood from nectria fungus



Green County forester, Cory Secher, sampling cankered tree



Small red lemon shaped nectria fruiting bodies (Perithecia)

Wisconsin Arborist Association/ WI DNR Urban Forestry Winter Conference

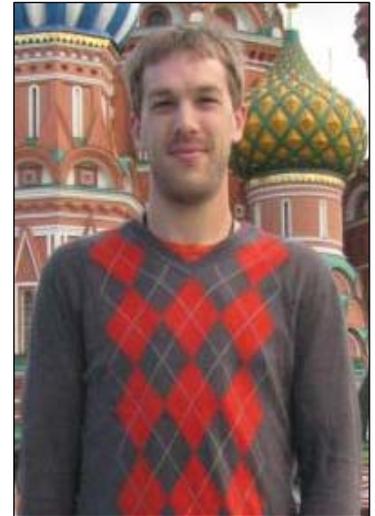
The Wisconsin Arborist Association/ WI DNR Urban Forestry annual conference is just around the corner (Jan. 30th- Feb. 1st, 2011) and will once again be held in Green Bay. The agenda and registration is now available. In addition to many wonderful speakers our forest health specialist, Linda Williams, is on the agenda and will cover top ten common tree pests. Bernadette Williams, with the DNR invasive species program, will also be talking on preventing introduction and spread of invasive species along with information on the Invasive Species rule NR 40. The DNR forest health program will also have a display set up with information on identification of thousand canker disease of walnut. Make sure to stop by and say hi! For information on the conference: <http://www.waa-isa.org/pdf/WAA2011AnnualConfer.pdf>

New Forest Health Specialist, WI Rapids

Mike Hillstrom, is a recent addition to the DNR forest health team. Please welcome Mike to his new position. Here are some notes sent about Mike from his supervisor, Pat Murphy:

Mike will be servicing a nine county area (Clark, Marathon, Wood, Portage, Juneau, Adams, Waushara, Marquette and Green Lake counties) and will be stationed at the Wisconsin Rapids Service Center.

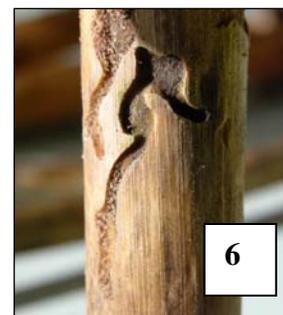
Mike received his BS (2003) and PhD (2009) at the University of Wisconsin-Madison in entomology. Most recently he has been doing post-doctoral research. Mike's PhD focused on the impacts of elevated CO₂ on forest insect communities. He has been enthusiastic about insects since a youth and during his college years was actively engaged in the Insect Ambassadors Outreach Program with local teachers, businesses and community members.



For a full list of forest health staff contacts go to: <http://dnr.wi.gov/forestry/FH/Staff/>

Game: Name that Gallery (“Celluglyphs”)

While looking at nuptial chamber galleries of bark beetles on branches of red pine (see article written above) I found some interesting shapes I will call “celluglyphs”. (Yeah, I get to coin my own word for 2010 too!) . We will see if we are on the same wave length. The answers (no incorrect ones by the way) will be at the end of the newsletter. Name that shape- Good luck!



Well, I think it is about time I get out of the office and take a break for the holidays! **Seasons Greetings!**

SOR Forest Health Assistance
Wisconsin DNR, Forest Health Protection Unit
September 2010 to September 2011

Contacts for DNR staff, municipal foresters, and forestry cooperators

For general forest health and municipal level urban forest health issues

Mark Guthmiller (SOR region: SCR & SER combined) 608-275-3223

For gypsy moth

Mark Guthmiller (SCR area) 608-275-3223
 Bill McNee (SER Team area) 920-662-5430
 Andrea Diss-Torrance (Statewide issues) 608-264-9247

For emerald ash borer

Mark Guthmiller (SCR Team areas) 608-275-3223
 Bill McNee (SER Team area) 920-662-5430

For beech bark disease/beech scale

Mark Guthmiller (SCR Team areas) 608-275-3223
 Bill McNee (SER Team area) 920-662-5430

Direct public inquiries regarding yard tree concerns to UW county or state extension offices 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://www.dnr.state.wi.us/forestry/fh/>
 Gypsy Moth web site: <http://www.gypsymoth.wi.gov>
 Emerald ash borer web site: <http://dnr.wi.gov/forestry/fh>
 Emerald ash borer cooperative state web site: <http://emeraldashborer.wi.gov/>

Note: Southern Region is composed of both SCR and SER Team Counties

SCR Team Counties: Columbia, Dane, Dodge, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock and Sauk

SER Team Counties: Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, and Waukesha

ANSWERS TO "CELLUGLYPHS" GAME: 1. flying bird 2. king cobra 3. angry goose
 4. rubber ducky floating on river 5. duck playing horse shoes 6. sea horse
 If you got 4 out of 6 correct you need to take a break also! See you next year!