



Central States Forest Health Watch



Current forest health information for land managers in Illinois, Indiana, Iowa and Missouri

May 30, 2008

This collaborative effort of the USDA Forest Service Northeastern Area, Missouri Department of Conservation, and Indiana, Iowa and Illinois Departments of Natural Resources provides technical updates twice a year on forest health issues of regional interest. Useful information can also be found in previous editions, which are available on the www at <http://na.fs.fed.us/fhp/fhw/csfhw/>.

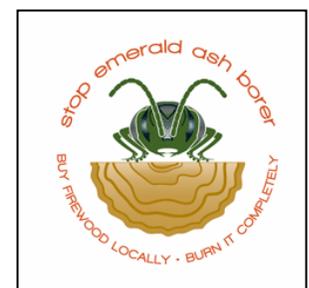
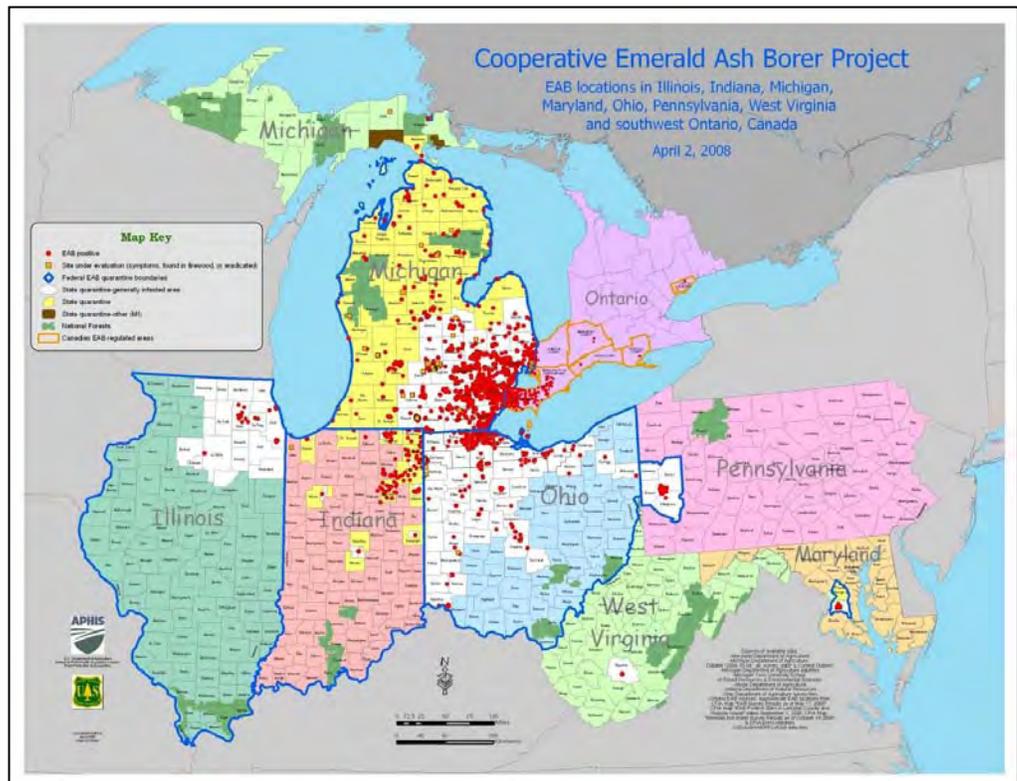
Important Regional Forest Health Issues

Nonnative insects and pathogens continue to be highly significant forest health issues in our region. In this edition you will find updates on Emerald Ash Borer, Gypsy Moth, and Sudden Oak Death.

Emerald Ash Borer (EAB)

In October of 2007, West Virginia became the seventh state known to have EAB populations. A trap-tree was found infested in Fayette County. This is in south central West Virginia, a long distance from the nearest known EAB populations in Ohio and Pennsylvania. The beetles most likely arrived in infested firewood brought into a local campground.

Because firewood has been implicated in the movement of EAB to many new locations, state and federal agencies are conducting an intensive effort to prevent the movement of firewood over long distances. The simple act of transporting firewood from a back yard to a campground or cabin a few hundred miles away could lead to the long distance movement of a very serious forest pest. State Parks and many federal campgrounds in Wisconsin and Minnesota have restrictions on out-of-state firewood. Campers heading “up North” should be aware that transport of firewood as well as logs could lead to confiscation of their wood and expensive citations. Anyone using or purchasing firewood is encouraged to obtain wood from local sources.



On April 15th, a “Firewood Forum” for state agencies and other cooperators was held in New Jersey to facilitate the exchange of information for establishing policies and resources for communicating to the public. Resources from this forum will soon be posted through a link on the Forest Service ‘firewood

webpage' at <http://na.fs.fed.us/firewood/>. Many other tools for communicating about firewood movement and invasive insects and diseases are already available at this site.

In many states quarantines and regulations are now in place that limit firewood and log movement. As an example, the transport of all hardwood firewood, not just ash firewood, outside of Lower Michigan is prohibited by a federal and state quarantine. State agencies are in the process of determining what restrictions they can legally apply and practically enforce in order to protect their forests from accidental importation of pests from other locations.

Surveys of varying intensity are currently underway to detect infestations of emerald ash borer. Many states continue to conduct visual surveys looking for signs of EAB infestation. These surveys are often targeted at trees with declining health at high risk sites (e.g. locations receiving firewood, ash nursery stock and logs). Suspect ash trees are closely examined to determine whether EAB is present.

Detection surveys, which require a more intense effort than visual surveys, use strategically-placed 'detection trees' to attract EAB which might be present in the surrounding landscape. Detection trees are established by girdling (removing a portion of bark around the trunk) ash trees to stress the trees and make them attractive to emerald ash borer adults. Several months after girdling, the trees are cut and the bark peeled off and examined carefully for the tell-tale tunnels formed by EAB larvae. In Iowa, large potted ash trees are also moved to sites and used as detection trees.

USDA-APHIS Plant Protection & Quarantine is setting out a new type of EAB trap in about 47 states this year. A 100-mile wide band of more intensive trapping is being done around known EAB populations. The trap's purple color and a lure of Manuka oil (a plant volatile) are used to attract EAB adults. Beetles are caught in the trap's sticky surface. This is a different approach than pheromone traps (e.g., gypsy moth traps), because no pheromone has yet been identified for EAB. Indiana and Illinois are within the 100-mile wide band mentioned above and both states will have grids of the purple traps deployed this summer. Traps are also being placed at various sites across Missouri and Iowa. Hopefully this year's survey will provide an indicator of how effective this new tool is in detecting EAB populations.

A new pesticide (emamectin benzoate) has been registered for special use in treating ash trees to prevent EAB. Trials at Michigan State University in 2007 showed complete mortality of adult EAB that fed on leaves of treated trees and dramatic reduction of EAB larvae in stems of treated trees. The product will be sold as Tree-äge™ (pronounced "triage") and should be available for use this spring. At this time, registration has only been approved for use in Michigan, Indiana, Ohio, Illinois, and West Virginia. This is a systemic insecticide that is applied by trained, certified arborists and landscapers as a trunk injection at the base of an ash tree. It should be emphasized that there is no need to apply any insecticide treatments for EAB in states or areas where EAB populations have not been found. Such treatments at this time are a waste of material, make unnecessary injection wounds that may serve as entry sites for other pest organisms, and place additional insecticides into the environment.



On the biological control front, a new natural enemy of EAB was discovered last year in Michigan. A tiny wasp, *Atanycolus hicoriae* (Braconidae), was found parasitizing EAB larvae in high numbers in Michigan. The current speculation is that this is a native wasp that is taking advantage of a new potential host (EAB). Researchers will be carefully studying the role of this wasp as a natural enemy and its potential for use as an applied biological control agent. In 2007, researchers also released three species of Asian parasitic wasps in Michigan to test their effectiveness as biological controls. Results of those tests are not yet available.

http://www.mlive.com/flintjournal/index.ssf/2008/02/genesee_county_may_hold_key_to.html

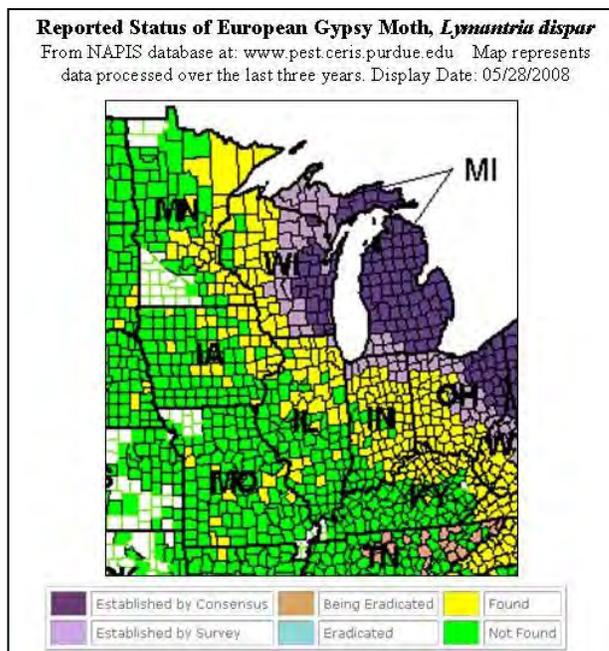
The following website provides general information on EAB and links to specific information on the infestations in Michigan, Ohio, **Indiana, Illinois** and Maryland: <http://www.emeraldashborer.info/index.cfm>

For information on EAB trapping, readiness plans, and other information in **Iowa**, visit <http://www.extension.iastate.edu/pme/EmeraldAshBorer.html>

For EAB information in **Missouri**, visit: <http://mdc.mo.gov/forest/health/ashborer/>
(Thanks to Rob Lawrence, MO Dept of Conservation, and Steve Katovich, USDA Forest Service, for this information.)

Gypsy Moth Activities – Spring 2008

Gypsy moth (GM) continues to expand westward, with significant populations now established in eastern Wisconsin, northern Indiana and northeastern Illinois. The map at the right shows where GM has been trapped in the past 3 years. Iowa and Missouri have had some catches of GM in pheromone traps, but are still considered to be without established populations. In areas where gypsy moth is established, suppression treatment activities may be undertaken to limit damage. In areas near the leading edge of the GM, treatment activities may be undertaken to reduce populations in order to ‘slow the spread’ of the advancing front. In areas that are generally uninfested, eradication treatments are taken to eliminate these outlying populations.



States without established populations:		
	Treatment Activities	Trapping Activities
Iowa	None	A joint effort of IA DNR Bureau of Forestry, USDA APHIS, IDALS, and City Foresters will place approximately 5,000 gypsy moth detection traps across the state.
Missouri	None	MO Dept. of Agriculture, MO Dept. of Conservation, USDA APHIS, U.S. Dept. of Defense and MO National Guard will cooperate to set out over 9,000 detection traps in Missouri. Delimit trapping will be done in 4 counties where gypsy moths were captured last year (Greene, Jackson, St. Louis, & Stone).
States with established populations:		
	Planned Treatment Activities	Trapping Activities
Illinois	Aerial spray of Btk on 4 sites (approx. 2400 acres) in northeastern Illinois. The intent of the treatment of these sites is to slow the spread of gypsy moth by eliminating reproducing populations on the treatment sites. There are no applications of pheromone flakes planned this year.	STS monitoring traps will be placed in the northern ¼ of the state. USDA APHIS traditionally places detection traps in the portion of the state not covered by the STS program and delimit traps in areas where moths were caught the previous year.
Indiana	Aerial spray of Btk on approx 7,406 acres (13 sites) and pheromone flakes on approx 6907 acres (1 site). The intent of these treatments is to slow the spread of gypsy moth in northern Indiana. Two eradication sites (547 acres) are being treated with Btk in central and southern IN. The Hoosier National Forest also has an eradication site (1861 acres) to be treated with pheromone flakes.	Over 17,000 traps will be placed on 2K, 3K & 5K grids over the entire state. Delimit surveys are planned for all positive sites in front of the generally infested area using 250M, 500M or 1K grids.

'Sudden Oak Death'

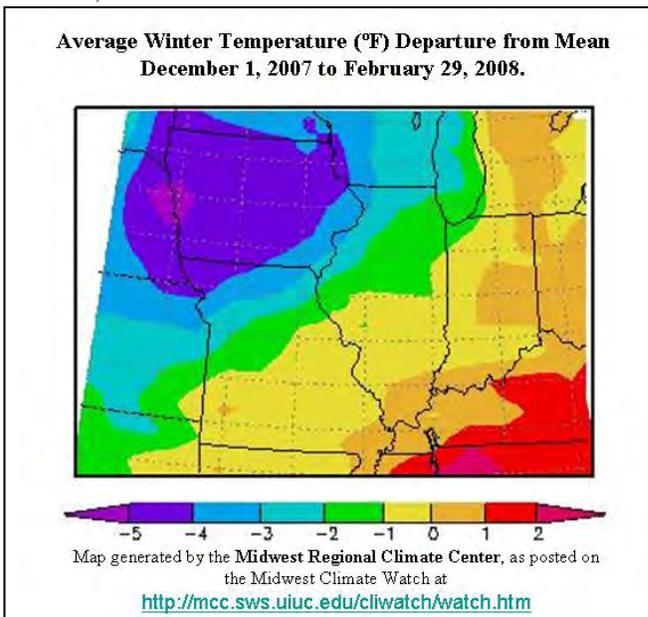
This year's cooperative detection surveys for *Phytophthora ramorum*, the pathogen that causes sudden oak death in forest and nursery environments, continues the use of baiting for the pathogen with rhododendron leaves suspended in streams or rivers. In the Midwestern states, 12 watersheds are being monitored, down from 16 in 2007: three watersheds in Missouri, six in Illinois, and three in Indiana. No positives were identified in the Midwest last year. Nationally, in 2007 and early 2008, *P. ramorum* was identified in watersheds not previously known to be infected in Washington, California, Oregon, and Mississippi. Steps are being taken to confirm and delimit the source of those infections. Nursery surveys are also conducted in selected nurseries that have received plant material of potential hosts.

(Thanks to Manfred Mielke, USDA Forest Service, for this information.)

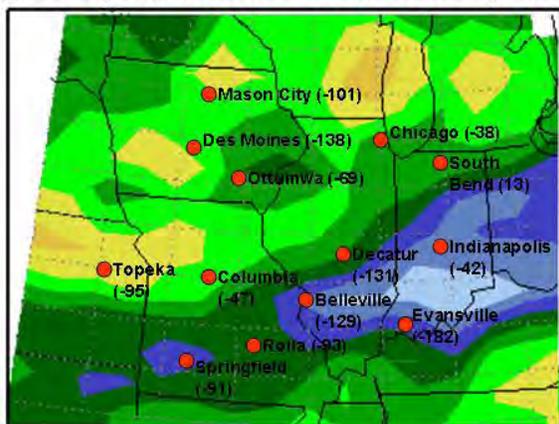
Weather Overview

All in all, it ended up to be a long, hard winter across the region. Iowa and the northern parts of Illinois and Missouri particularly felt the bite of cold, with below average temperatures during December, January and February. The prevailing storm paths throughout much of the winter resulted in snowfall well above normal across eastern Iowa and northern Illinois. Although this snow was inconvenient for two- and four-legged creatures, the biggest effects on trees were probably increased protection from the cold and available soil moisture. The locations that didn't get the cold and snow had their own worries; severe storms and tornados swept through Missouri, Indiana and Illinois in January.

Spring was slow to arrive and moist throughout the region. Evidence of this can be seen in the graphic of March to May growing degree days and May precipitation. The index of coolness used here was a 'corn growing degree day' (GDD). This index is computed by subtracting a base temperature of 50°F from the average of the maximum and minimum temperatures for the day. Minimum temperatures less than 50°F are set to 50, and maximum temperatures greater than 86°F are set to 86. These substitutions are based on the observation that for corn (and presumably also for many other plants), no appreciable growth is detected with



Total Precipitation Percent of Mean, May 1 to May 20, 2008 and Departure from Normal Accumulated Growing Degree Days (base 50 degrees) for select cities for March 1 to May 17, 2008.



Precipitation map generated by the Midwest Regional Climate Center; City locations are approximate; Growing Degree Day information acquired from the National Weather Service (NOAA) website.

Comparison of actual vs normal Accumulated Degree Days (corn, base 50) During the Period of March 1 to May 17 for selected Cities across the Central States.

City, State	2008 accum. GDD	Norm. accum. GDD	Depart from normal
Mason City, IA	259	360	-101
Des Moines, IA	370	508	-138
Ottumwa, IA	385	454	-69
Chicago, IL	352	390	-38
Decatur, IL	445	576	-131
Belleville, IL (near St. Louis, MO)	538	667	-129
South Bend, IN	382	369	13
Indianapolis, IN	474	516	-42
Evansville, IN	584	766	-182
Columbia, MO	541	588	-47
Rolla, MO	567	654	-93
Springfield, MO	606	697	-91
Topeka, KS	539	634	-95

temperatures lower than 50 or greater than 86. The implication of this index for trees is that with a cool, wet spring, we can expect problems with **anthracnose and other leaf diseases** on our trees. Another implication of the delayed leaf-out is that much of the spraying of pre-emergent herbicides in agricultural fields was probably accomplished prior to white oaks and hackberry leafing out, so we may **not have high incidence of oak tatters and hackberry lace-leaf** this spring, if indeed herbicides are the primary cause of these problems. Precipitation data is from the "Midwest Climate Watch" at <http://mcc.sws.uiuc.edu/cliwatch/watch.htm#>. GDD data was obtained from the National Weather Service (NOAA) website.

What else is being reported across the Region

Asian Longhorned Beetle Eradicated in Chicago - Efforts have been underway for several years to eradicate populations of the Asian longhorned beetle (ALB) that became established in Chicago, New York, New Jersey and Toronto. This wood-boring beetle is capable of killing maples, willows, elms, and several other species of hardwood trees. Now almost 10 years after it was first detected, the U.S. Dept. of Agriculture, Illinois Dept. of Agriculture, and City of Chicago have officially declared ALB eradicated in Chicago after finding no evidence of it for four years. Eradication efforts continue for other known North American populations. Although eradication required a huge effort, it was possible because populations were detected when they were still small and isolated. Unlike the ALB, emerald ash borer is much more effective at dispersal and difficult to detect at low populations, so that was not detected until it had spread widely across several states.

<http://www.agr.state.il.us/newsrels/r0417081.html>

<http://www.na.fs.fed.us/fhp/alb>

Black Walnut Alert - Ned Tisserat, a pathologist and professor at Colorado State University, has issued a statement on a new potential threat to black walnut caused by a fungus tentatively identified as a *Geosmithia* spp. This fungus has not previously been reported as a plant pathogen, but has now been found associated with the walnut twig beetle and isolated from beetles, galleries, and cankers on black walnut. Black walnut trees along the front range of Colorado are being attacked by the walnut twig beetle (*Pityophthorus juglandis*), which seems to be expanding its geographic range. The beetle targets branches larger than 3" in diameter, carrying with it the canker-causing fungus. In addition, *Fusarium solani* has been isolated from stem cankers on declining trees, but not associated with the beetles or twig cankers. Dieback and mortality of black walnut have been reported from New Mexico, Utah, and the Willamette Valley, OR. It is unknown whether the walnut twig beetle, or any fungi associated with it, will expand into the native range of black walnut, but any observations of aggressive cankers or unexpected dieback or mortality in the Central States should be reported to your local forest health specialist. (Thanks to Bruce Moltzan, Missouri Dept of Conservation, for this information.)



Canker on black walnut. (Photo courtesy N. Tisserat)

Widespread "browning" of bur oak foliage was documented in Wisconsin from 1999-2001. This damage was attributed to drought and to *Tubakia dryina*, a fungus that commonly causes late-season defoliation of red oak. Since that time, similar damage has been observed across much of the Midwest. The incidence of this problem has increased dramatically in central Iowa since 2004. Early research work at Iowa State University indicates that the fungus occurring on bur oak in Iowa is not *T. dryina*, but a different, unknown species of *Tubakia*. Dr. Tom Harrington has initiated a project at Iowa State to determine the source of primary inoculum that is infecting bur oak trees, and to determine the relationship between this fungus and other *Tubakia* species on oaks.

In **Southern Indiana**, **eastern tent caterpillar** is causing damage along fencerows, but not extending into the woodlands.

Other Resources and Sources of Information

Meet your Forest Health Specialists:

Iowa DNR: Aron Flickinger has transferred within the DNR to a new job as Special Projects Coordinator, and the new Forest Health Specialist is Tivon Feeley. Tivon worked for Iowa State University Forestry Extension for the past seven years. Prior to that, he worked as a diagnostician at the ISU Plant Disease and Insect Clinic. His graduate work was on insects that vector the ash yellows phytoplasma at ISU, under Dr. Woody Hart and Dr. Thomas Harrington. Tivon's office is in Des Moines, Iowa, and he can be reached at Tivon.Feeley@dnr.iowa.gov or (515) 281-4915.

Missouri Department of Conservation—Rob Lawrence continues as Forest Entomologist and Bruce Moltzan continues as Forest Pathologist for the MDC. They are both located in Columbia, Missouri. Rob can be reached at Robert.lawrence@mdc.mo.gov, or (573) 882-9909 (ext. 3303). Bruce can be reached at bruce.moltzan@mdc.mo.gov, or (573) 882-9909 (ext. 3311).

Illinois Department of Natural Resources—Tom Wilson is the primary Forest Health Program contact. However, a contract agreement between the IL DNR and the IL Southwestern RC&D will soon be awarded to provide significant additional forest health support. If a forest health question arises in Illinois contact Tom at tom.wilson@illinois.gov, or (618) 498-1627, and he will make sure that the request is addressed.

Indiana Department of Natural Resources—Phil Marshall continues to be the Forest Health Specialist in addition to his new role as State Entomologist. Phil can be contacted at pmarshall@dnr.in.gov, or (317) 232-4189. Indiana's Forest Entomologist position in the Division of Forestry is currently vacant; however Zack Smith continues to assist with gypsy moth trapping and some of the other duties.

Extension Plant Clinics are also a diagnostic resource in your state. Websites for the respective clinics are:

Iowa State University Plant and Insect Diagnostic Clinic: <http://www.plantpath.iastate.edu/pdc/>

University of Missouri Plant Diagnostic Clinic: <http://soilplantlab.missouri.edu/plant/>

University of Illinois Plant Clinic: <http://plantclinic.cropsci.uiuc.edu/index.html>

Purdue University Plant and Pest Diagnostic Lab: <http://www.btny.purdue.edu/Extension/PPDL.html>

The Northeastern Area of the Forest Service hosts a website with **Forest Service publications** on many important insect and disease problems: <http://na.fs.fed.us/pubs/index.shtm>

From October 6-9, 2008, Indiana will host the **North Central Forest Pest Workshop (NCFPW)** in Indianapolis. The NCFPW is an annual gathering of persons interested in forest health in the North Central portion of North America. It is usually attended by entomologists, plant pathologists, foresters, and other scientists and students. Each year it is held in a different location. This is the first time this workshop has been held in Indiana, and will provide a great opportunity for people from the Central States to participate. The theme this year will focus on Indiana's hardwood industry. Additional information will be posted on the NCFPW website (www.forestpathology.org/hosted/ncfpw/) as it becomes available:

This newsletter is also available on the WWW at:

<http://na.fs.fed.us/fhp/fhw/csfeh/>

		
		
Northeastern Area	Indiana	

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For More Information:

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