



Central States Forest Health Watch



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

November 28, 2005

About This Newsletter...

This collaborative effort of the USDA Forest Service Northeastern Area, Missouri Department of Conservation, and Indiana, Iowa and Illinois Departments of Natural Resources will provide updates three times per year (Spring, Summer, Autumn) on forest health issues of regional interest.

Important Regional Forest Health Issues

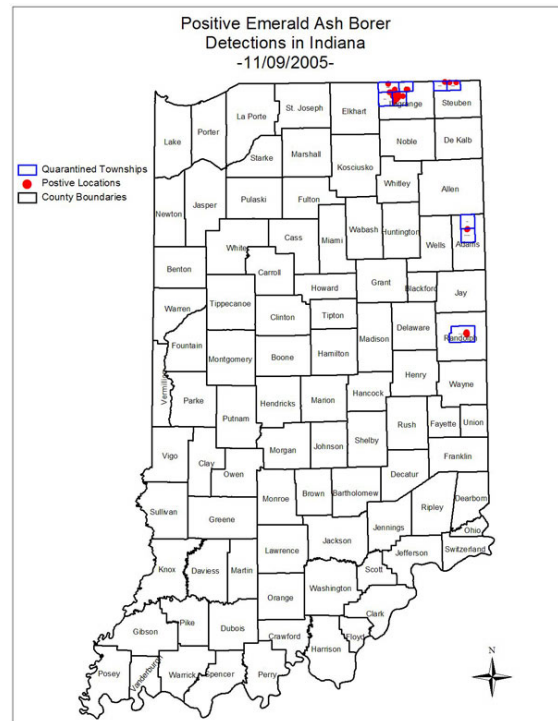
Our most significant regional forest health issues continue to be exotic forest pests. In this edition, you will find updates on emerald ash borer, sudden oak death, and gypsy moth.

Emerald Ash Borer (EAB)

EAB was recently confirmed at a location near Decatur in Adams County, Indiana. The Decatur site is approximately nine miles west of the Ohio border and 20 miles south of Fort Wayne. DNR personnel and others have begun surveying the area around the new find to determine the number of ash trees in the immediate vicinity, and the extent of the infestation. These steps are in preparation for the removal of all ash trees within a half-mile radius of the infestation. That removal will likely take place at the end of this year.

Jodie Ellis, the exotic insects education coordinator at Purdue University said it's possible that the Decatur site is three to five years old. "This find is not evidence that emerald ash borer is spreading throughout Indiana," she said. "What it means is that this particular pocket of infestation has probably been there for a while and is just now getting big enough to be detected. This infestation probably occurred before EAB was first found in Detroit and is most likely the result of the unintentional movement of EAB-infested firewood, logs, or nursery stock." Ellis said it's hard to pinpoint where exactly EAB is in the state because it often takes two to three years for ash trees to show symptoms of EAB infestations.

Homeowners can play a part in slowing the spread of the EAB. "We rely on local residents, foresters, loggers, tree removal or trimming crews and others to report possibly infected sites," State Entomologist Bob Waltz said. "The public also can help us stop the spread of this insect by not moving firewood and by burning all campfire wood when they are visiting campgrounds," Waltz said.



For emerald ash borer status in Indiana
For emerald ash borer status in Ohio
For emerald ash borer status in Michigan

<http://www.entm.purdue.edu/EAB/>
<http://ashalert.osu.edu/>
<http://www.emeraldashborer.info/index.cfm>

The following table summarizes 2005 EAB activities in Illinois, Iowa and Missouri.

State	EAB Survey activities in 2005
IL	The Morton Arboretum conducted the 2005 Emerald Ash Borer Detection Survey in northeastern Illinois and developed outreach material for the general public and the firewood and wood product industry. The EAB survey followed USDA FS EAB Detection Survey Protocols. Sites were selected throughout the greater Chicago metropolitan area for trap tree placement. Some of the sites included were: firewood wholesalers/retailers/distributors, commercial developments/logistical centers/shipping container distribution facilities, commercial wood products and utilization firms that process species of ash, high use recreational and campground sites, and forest preserves and parks. To date, no EAB has been found in Illinois. Data is still being collected on trap trees and the results are being tabulated.
IA	The Iowa Department of Natural Resources Forestry Bureau in cooperation with Iowa State University Extension has been using protocols developed by the USDA Forest Service to monitor Iowa for signs of the emerald ash borer (EAB). This past year's activity included visual surveys of ash trees in towns located in all 99 counties, visual inspection of ash sawlogs at 43 sawmills and inspection of 49 sentinel/ "trap" trees. Results for 2005 in Iowa show that the emerald ash borer was not detected in any visual survey or trap tree survey.
MO	A visual detection survey for the emerald ash borer was conducted in Missouri (July-August 2005) by the Missouri Dept. of Agriculture and Missouri Dept. of Conservation. No evidence of emerald ash borers was found. The survey concentrated on high-use recreational sites and recent commercial and residential developments, particularly in the St. Louis area. Popular recreational sites such as the St. Louis Gateway Arch, Babler State Park, Lake of the Ozarks State Park and commercial campgrounds near Six Flags Amusement Park were included in the survey.

Gypsy Moth Activities

The tables below summarize the summer 2005 activities in the Central States.

States without established populations:			
	# traps set	Total moths captured	Comments
Iowa	4,996	4 (compared to 27 in 2004 and 159 in 2003)	USDA-APHIS, IDALS, IADNR, City Foresters, County Foresters, U.S. Army Corps of Engineers, and U.S. Fish and Wildlife Service collaborated to place traps concentrated in cities, campgrounds, and around nursery operations. Along the Mississippi River, a trap was placed every 1500 meters to form a line of detection. Nine cities were also put on a 1500 meter grid. The 2005 catch was only 4 single moths (one each in Winnebago, Scott, Johnson and Polk Counties). This is the lowest level in 16 years. There were no eradication treatment sites in 2005.
Missouri	11,500	10	Moths were caught in 10 traps from 8 counties: Camden, Clay, Crawford, Franklin, Greene, Jackson (2), Pettis (2), and Ste. Genevieve. All catches in 2005 were a single moth per trap. For the first time since 1979, NO moths were captured in St. Louis County.

In states with established populations, the state is generally divided into 3 zones. The "quarantine area" is the portion where gypsy moth is considered established. The "STS Action zone" is the portion of the state where treatment activities are undertaken to limit moth population, and thus "slow the spread" of gypsy moth. The remainder of the state is considered uninfested, and actions may be taken to eradicate any infestations that are found in those areas.

States with established populations:					
	Quarantine Area	Slow-The-Spread (STS) Actions	Counties with STS treatments	STS trapping results	Trapping trends outside quarantine and STS area
Illinois	One county (Lake) is generally infested and is under APHIS quarantine.	26,400 acres treated with mating disruption 3563 acres treated with Btk	Cook, DuPage, Kane, and Winnebago	13668 moths captured in the 6492 traps set in the 20 county STS trapping area	6,195 traps were set by APHIS in 85 counties in central and southern IL. A total of eight gypsy moths were caught, one in each of eight counties.

Indiana	Allen, DeKalb, Noble, Elkhart, La Grange, Porter and Steuben counties are under APHIS quarantine. Trap counts were above 2004 level, but still below 2003. No defoliation was observed.	14,923 acres on 9 sites with mating disruption; 8,231 acres on 15 sites with Btk. Delimit surveys of 4 of the Btk sites showed failure to partial success; these sites will be considered for treatment in 2006.	LaPorte, Kosciusko, Whitley, Allen, Porter, Noble, Marshall, St. Joseph, Elkhart, DeKalb, and La Grange.	9,290 moths were captured in the traps set in the STS Action area.	Traps set by APHIS & IDNR in the remainder of the state below the STS zone captured 2953 moths; However, 2830 of these were captured in a delimit survey around a known population in Scott County. The remaining 123 moths were captured in 33 counties. All positive traps in 2005 will be delimit trapped in 2006
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Sudden Oak Death

The 2005 sudden oak death survey has been completed in all 7 North Central states. The highest priority areas to sample were trace forward nurseries and retail outlets. 118 nursery perimeter plots were installed and 184 samples were collected. General forest plots with oaks and other potential herbaceous hosts are the highest priority forests to survey. 67 plots were installed and 97 samples collected. All samples were negative for SOD. Individual state results are in the table.

Conclusions from this and other national surveys are: 1. *P. ramorum* is likely not native to eastern US forests, 2. It has been widely introduced to nurseries, 3. *P. ramorum* is not yet widely established outside regulated area, even in proximity to nurseries receiving infected stock in high risk areas, 4. It has been detected in planted woody ornamentals (GA & SC), 5. It is present in forest environs of CA & OR only, 6. Early detection and aggressive eradication measures offer hope for limiting spread into North American forest ecosystems where *P. ramorum* does not yet occur.

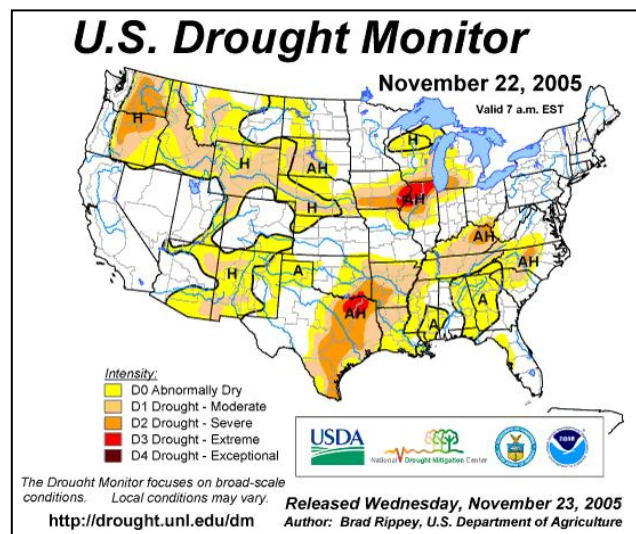
Surveys will be conducted at least 1 more year barring any unforeseen movement of the organism.

State	# of Nursery Perimeter Locations Sampled	# of Nursery Perimeter Samples Submitted	# of Nursery Perimeter Samples PCR (-) for Pr	# of Nursery Perimeter Samples PCR (+) for Pr	# of General Forest Locations Sampled	# General Forest Samples Submitted	# of General Forest Samples PCR (-) for Pr	# of General Forest Samples PCR (+) for Pr
IA	21	37	37	0	9	16	16	0
IL	7	21	16	0	3	4	4	0
IN	12	8	8	0	10	8	8	0
MI	8	20	20	0	22	38	38	0
MN	26	22	22	0	7	7	7	0
MO	22	22	22	0	8	4	4	0
WI	22	54	54	0	8	20	20	0

Weather Overview

A substantial band of severe to extreme drought currently stretches across the southern 1/2 of Iowa and the northern 1/2 of Illinois. In addition, conditions are abnormally dry across parts of northern Missouri and northern Indiana.

Forested areas that have been under drought for much of the 2005 growing season will be stressed and more vulnerable to other damage agents in 2006.



What Else Is Being Reported Across the Region...

Necrotic leaves were observed on many bur oak trees in Iowa this July and August. Many samples were submitted to the Plant Disease Clinic from Spirit Lake and Polk county areas. Samples were tested for oak wilt and bacterial leaf scorch, but results came back negative. Tubakia (*Actinopelte*) leaf spot fungus has been found on some leaf samples. Similar leaf symptoms were observed in east-central Iowa, but the leaf browning in that portion of the state can be attributed to summer long drought. Ganoderma root rot may be a contributing factor in decline of bur oak.

In St. Louis, Missouri, large older pin oaks have been declining. Some of the contributing factors may be armillaria root disease and improper pruning.

Damage caused by twig girdlers and twig pruners (longhorned beetles) to oaks, hickories and other hardwoods was reported at slightly higher levels than usual across Missouri in September and October.

The exotic species of predatory itch mite (*Pyemotes herfsi*) discovered in the Midwest in 2004 was evident again this year in western Missouri and the St. Louis area on the east edge of the state. These mites are predaceous on gall midge larvae, particularly marginal fold galls on pin oaks, but will also readily bite humans causing severe itching. Many reports of people being bitten were received in September. Dispersal of itch mites from tree canopies at that time may be due in part to reduced available prey as midge larvae drop from oak leaves to overwintering sites in late summer. Reports of bites continued at somewhat lower levels through October and November. A new bulletin about the itch mite is available online from the University of Nebraska: <http://ianrpubs.unl.edu/insects/nf653.pdf>

Feature Topic: Winter Pruning for Tree Health

Pruning is a tree maintenance activity that is often best accomplished during the dormant season. In this edition's feature article, we will briefly explain the situations where you should consider pruning, and the reasons for choosing a particular time to prune. When you are ready to grab your tools and head into the cold, there are many good resources available that instruct on how to prune; we will give you some links to other documents to get that information.

Why Prune:

Reasons for pruning will vary, depending on whether you are managing forest trees or ornamental and shade trees. The main reasons to prune forest trees are related to value of the final wood product and health of the tree or stand. The main reasons to prune ornamental and shade trees are related human safety, tree health, and aesthetics.

In forest stands, competition for sunlight usually does a pretty good job of encouraging trees to prune lower branches, but we may want to speed up the process and encourage the development of clear wood by pruning off lower branches, at least for the first log or two. Avoid removing more than ¼ of the crown area in any given year, or you will begin to reduce tree growth.

There are several situations where pruning should be considered for tree health. These include:

- Pruning out broken and dead branches, allowing the tree to quickly close the wounds and minimize the entry of decay.
- Pruning out diseased branches, such as those affected by fire blight, black knot, or other canker fungi. Destroy the diseased tissue to get rid of source of the disease.
- Removal of insect infested branches. If you remove branches infested by wood boring insects, you should destroy the removed material before the insects can emerge to attack new branches.

- Thinning out crowded branches to improve air flow. This may be particularly important if you are having troubles with leaf or needle infecting fungi, like anthracnose on hardwoods or *Rhizosphaera* on spruce.
- To promote strong branch structure and thus reduce chances of future storm damage.
- Pruning off the lower branches of white pine reduces the opportunity for white pine blister rust to form lethal stem cankers. The white pine blister rust pathogen must infect white pine through live needles. It then grows into the branch, and on into the main stem, causing lethal cankers.

Pruning for the sake of human safety is often needed in recreational areas and urban landscapes. Dead, damaged, or broken branches and branches that are weakly attached must be removed before they fail and cause injury to people and or property. Pruning may also be needed to remove branches that interfere with visibility or other human needs. Pro-active pruning may prevent the development of structural problems, and ensure safe healthy trees in recreation areas and landscapes for many years.

Pruning for aesthetics may involve enhancing the natural form and character of the tree on the landscape, particularly open-grown trees that will do very little self-pruning. Pruning may also be done to stimulate flower production.

When to Prune:

The “best” time to prune is affected by tree physiology, insect and disease considerations, and logistical considerations. Let’s look at these three factors.

Tree physiology.... Conifers can be pruned any time of year, but pruning during dormant season may minimize resin flow from cut branches. For hardwood trees, you should avoid pruning when leaves are forming, because during that time the tree is allocating resources to forming springwood. You should also avoid pruning in the late summer/autumn when the leaves are abscising, because the tree is storing starch and growing roots. When hardwoods have been properly pruned during dormant season, they will adapt to the change in branches by adjusting the size and number of leaves the following season. Hardwood trees can generally be pruned at any time during the dormant season, but depending on the species, it may be best to prune on either the later or earlier end of the season. During the summer following proper dormant season pruning, trees will rapidly develop callus tissue around pruning cuts, particularly cuts made in late winter. For this reason, it is preferable to prune in late winter. However, in the spring, maples and birches which will have abundant sap flow from cuts made during late winter. This will not hurt the tree, but you may want to prune maples and birches earlier in winter to reduce the amount of sap flow. Another factor to consider is that cutting frozen branches causes slightly more damage than cutting unfrozen ones, so you may want to choose the warmer days during dormant season to be out pruning, rather than the REALLY cold ones.

Spring flowering trees and shrubs have a slightly different rule of thumb to follow: Trees and shrubs that flower in the summer and fall should always be pruned during the dormant season, but trees and shrubs that flower in early spring (redbud, dogwood, forsythia, lilac etc.) should be pruned immediately after flowering, as flower buds form on the new growth.

Disease and insect considerations... Many plant pathogens are dormant during winter, so there is reduced risk of spreading infectious diseases. Here are some specific diseases to consider:

- Wounded elm wood is known to attract the bark beetles that carry the spores of the fungus that causes Dutch elm disease, so elms should always be pruned during dormant season when the beetles are not active. If you must prune or wound elms during the growing season, treat the wounds with a wound dressing to mask the odor from the tree volatiles.
- Fresh wounds on oaks are known to attract sap-feeding beetles that carry the spores of the fungus that causes oak wilt disease, so oaks should always be pruned during dormant season. If you must prune or wound oaks during the growing season, treat the wounds immediately with a wound dressing to form a barrier to keep spores out of the open wounds.

- Walnut canker caused by *Fusarium* sp. is more likely to develop in wounds on black walnut during the growing season. Pruning of black walnut during the late dormant season minimizes the development of walnut canker.
- Fireblight is a bacterial disease that causes cankers and shoot death on many flowering trees (including varieties of crabapple, hawthorn, pear, mountain ash, flowering quince, and pyracantha). The bacterium can be spread by pruning, particularly during spring and summer; so you should always prune these flowering trees during dormant season.

Logistical considerations... Whereas you might prefer to sit huddled by the fire with a cup of warm cocoa, there are actually some very good operational reasons to get your pruning done during winter. These include:

- The structure of the tree is more clearly visible when leaves are off, so that you can easily see poor branch structure, dead or broken limbs, and other structural defects.
- If the ground is frozen, heavy equipment like bucket trucks can access sites without causing damage to the soil.
- During the “off-season”, qualified arborists and tree care people are more available to do this type of work.

How to Prune:

The mechanics of good pruning included knowing which branches to remove, where and how to make the cuts, and what tools to use. There are many good publications and articles to help you get this done; here are a few that are readily accessible on the www:

“How to Prune Trees”, by Peter Bedker, Joseph O’Brien, and Manfred Mielke. USDA Forest Service publication NA-FR-01-95. http://www.na.fs.fed.us/spfo/pubs/howtos/ht_prune/prun001.htm

“February and March are Prime Months to Prune Woody Ornamentals”, by Chris Starbuck. Missouri Environment and Garden Vol. 9, No. 2, February 2003. <http://agebb.missouri.edu/hort/meg/archives/v9n2/meg2.htm>

“Winter Pruning”, by Katie Himanga. Minnesota DNR Forest Insect and Disease Newsletter, October 1998. <http://www.dnr.state.mn.us/fid/october98/10019808.html>

Upcoming Opportunities, Other Resources and Sources of Information

Forest Health Highlights (with yearly forest health report for each state, usually updated in January): www.na.fs.fed.us/spfo/fhm/fhh/fhmusamap.htm

This newsletter is also available on the WWW at:

<http://na.fs.fed.us/spfo/pubs/newsletters/csfhw/index.shtm>

 					<p>For More Information:</p> <p>Forest Health Protection USDA Forest Service 1992 Folwell Avenue St. Paul, MN 55108 (651) 649-5029 lhaugen@fs.fed.us</p>
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