



## **Mid-Atlantic Region Forest Health Summary - July 2012**

Delaware, New Jersey, Maryland, Ohio, Pennsylvania, West Virginia, District of Columbia

The Mid-Atlantic Region Forest Health Summaries are assembled to provide forest health information and resources of regional interest to U.S. Forest Service Morgantown Field Office cooperators. Information is obtained from State news releases, Web sites, and forest health specialists within the States. The U.S. Forest Service Morgantown Field Office serves a six-state area that includes the District of Columbia. This Field Office is one of three within the region served by the Northeastern Area State and Private Forestry.

### **Featured Project Briefs posted on the NA S&PF Web site:**

<http://www.na.fs.fed.us/ra/specialinitiatives/specialinitiatives.shtm>

The Northeastern Area's Featured Projects Briefs highlight efforts to monitor, manage, protect, and better use America's forests. They give examples of how the Northeastern Area State and Private Forestry provides cutting edge technical and financial assistance to State and other partners to help manage forests. Forest Health Project Briefs, which can be viewed at the Web link above, include the following:

- Asian Longhorned Beetle Eradication: New Infestation Threatens Ohio Forests
- Emerald Ash Borer
- Hemlock Woolly Adelgid Initiative: Protecting Hemlocks in the East
- National Gypsy Moth Management Program
- Oak Wilt in the Northeast
- Southern Pine Beetle in New Jersey
- Thousand Cankers Disease of Black Walnut
- Urban Forest Health Monitoring: Assessing Threats from Invasive Pests in Urban Forests

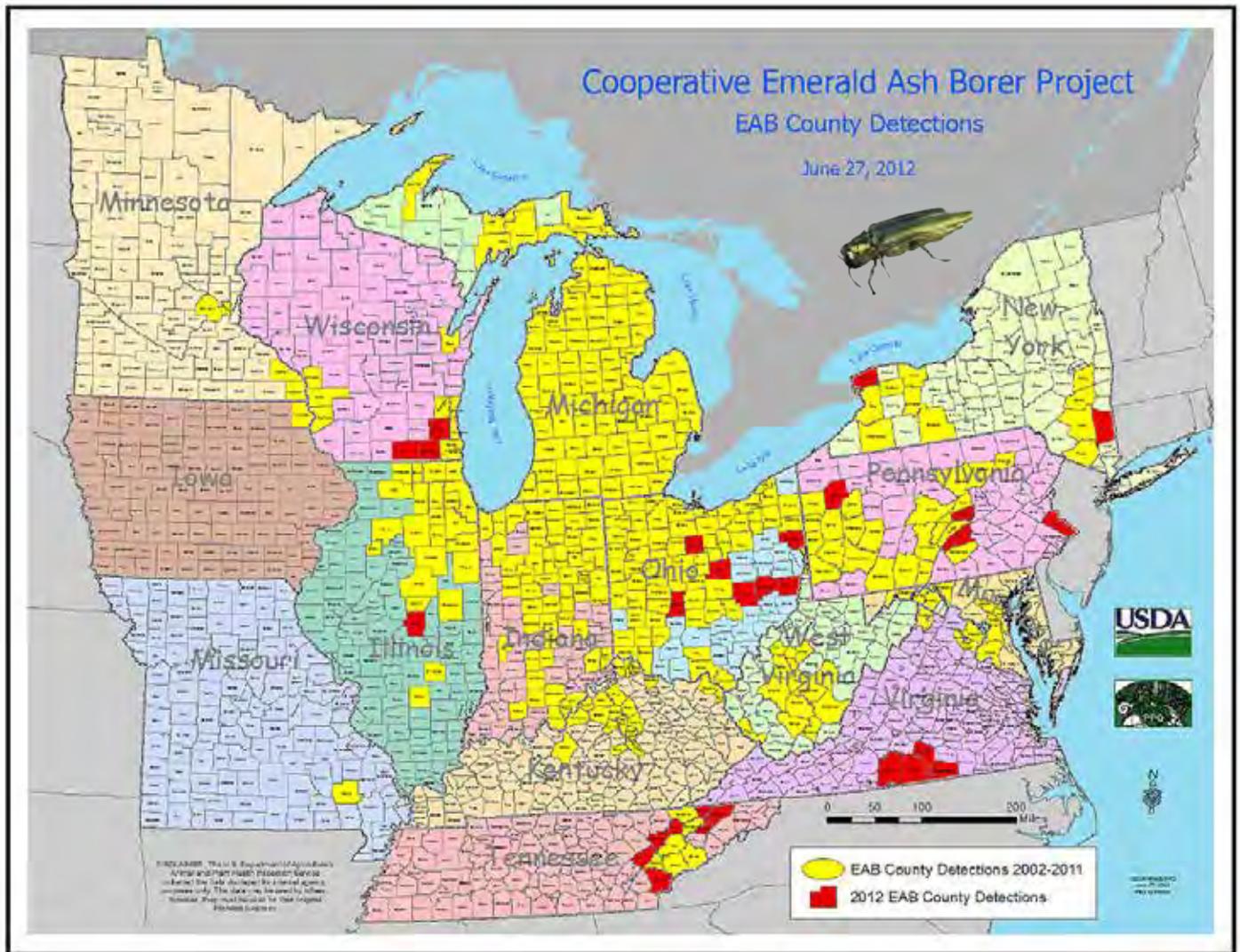
### **Informational resources worth checking out:**

The Ohio State University Extension Web site Buckeye Yard & Garden onLine: <http://bygl.osu.edu/>

Turcotte, Richard M.; Elliott, Thomas R.; Fajvan, Mary Ann; Park, Yong-Lak; Snider, Daniel A.; Tobin, Patrick C. 2012. Effects of ice storm damage on hardwood survival and growth in Ohio. Northern Journal of Applied Forestry. 29(2): 53-59. <http://www.ingentaconnect.com/content/saf/njaf/2012/00000029/00000002/art00001>. (30 July 2012).

This study investigated the effects of ice storm damage on growth and mortality of five tree species from three forest stands in the Wayne National Forest in Ohio.

## EMERALD ASH BORER (EAB)



EAB status as of June 27, 2012

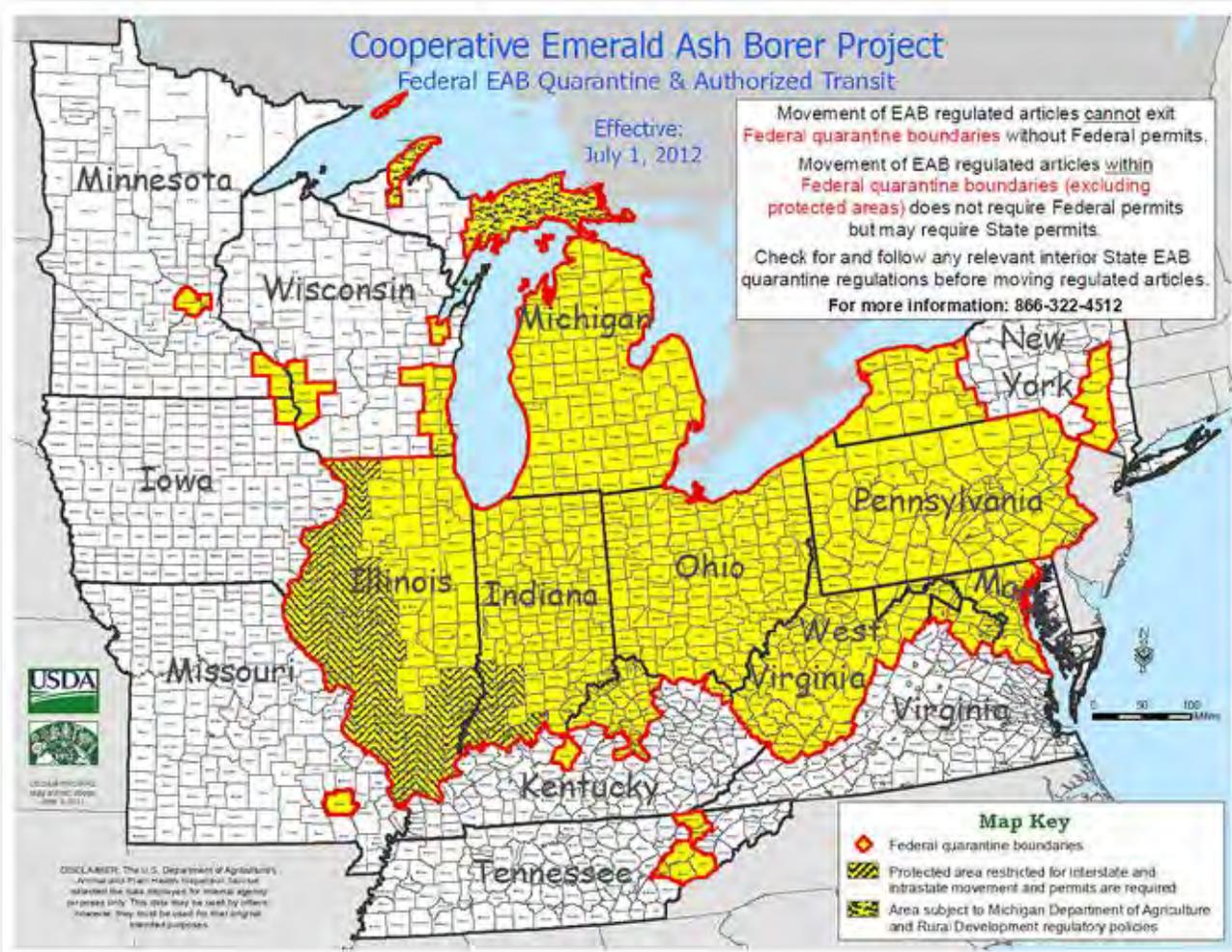
A good resource for EAB information is the emerald ash borer Web site that is part of a multinational effort in Michigan, Illinois, Indiana, Iowa, Kentucky, Maryland, Minnesota, Missouri, New York, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, Wisconsin, Ontario, and Quebec. (<http://www.emeraldashborer.info/>)

Webinars are one of many resource types found on this Web site. One such Webinar is the "Spring Tune Up on EAB Information" presented by Cliff Sadof of Purdue University and recorded May 24, 2012. This session of the EAB University information Webinars will bring the participant up-to-date on the latest on EAB and what can be expected from this pest. ([http://www.emeraldashborer.info/eab\\_university\\_ondemand.cfm](http://www.emeraldashborer.info/eab_university_ondemand.cfm))

Another resource on this Web site is the “Insecticide Options for Protecting Ash Trees from Emerald Ash Borer” bulletin. Many homeowners, arborists, and tree care professionals want to protect valuable ash trees from EAB. Scientists have learned much about this insect and methods to protect ash trees since 2002. This bulletin is designed to answer frequently asked questions and provide the most current information on insecticide options for controlling EAB.

[http://www.emeraldashborer.info/files/Multistate\\_EAB\\_Insecticide\\_Fact\\_Sheet.pdf](http://www.emeraldashborer.info/files/Multistate_EAB_Insecticide_Fact_Sheet.pdf)

Effective July 1, 2012, the Animal and Plant Health Inspection Service is modifying its emerald ash borer regulatory policy to allow the unrestricted movement of regulated articles within contiguous regulated boundaries, with the exception of movements to protected areas in the noninfested counties in Illinois and Indiana (see map below). Historically, APHIS treated EAB regulatory areas in different States individually. Under APHIS' new policy, contiguous regulatory areas that cross State borders and are not associated with the identified protected areas in Illinois and Indiana will be treated as a single regulated area. The movement of regulated articles to the protected areas in Illinois and Indiana require a limited permit or Federal certificate. Companies and individuals should check for and follow any relevant State EAB quarantine regulations. APHIS is taking this action in response to an improved understanding of the U.S. distribution of EAB and known patterns of movement of regulated articles. These changes will allow for the best use of available resources by maximizing the protection APHIS provides to noninfested areas of the United States, while reducing the complexity of the requirements for affected stakeholders.





Also check out the New York Invasive Species Web site for Emerald Ash Borer and Look-Alikes (<http://www.nyis.info/index.php?action=identification>).

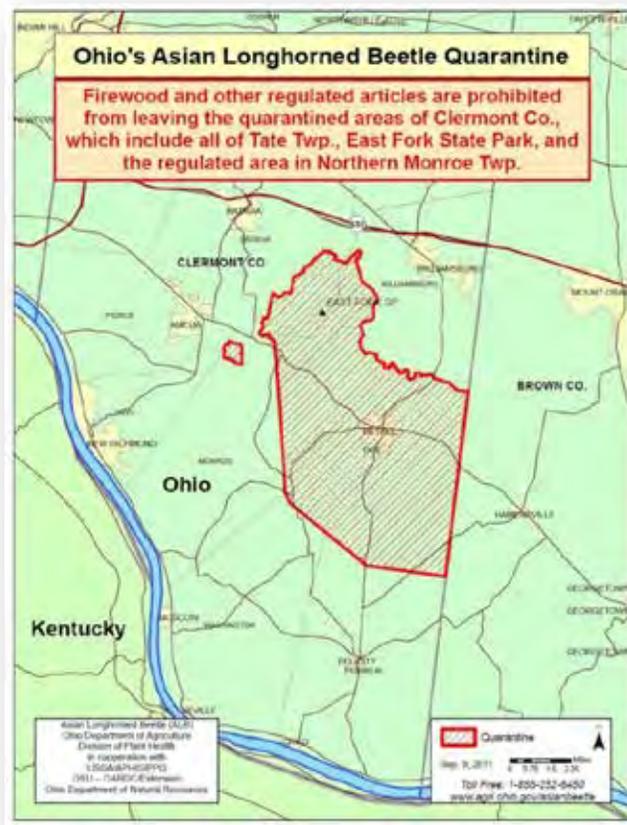
## ASIAN LONGHORNED BEETLE (ALB)

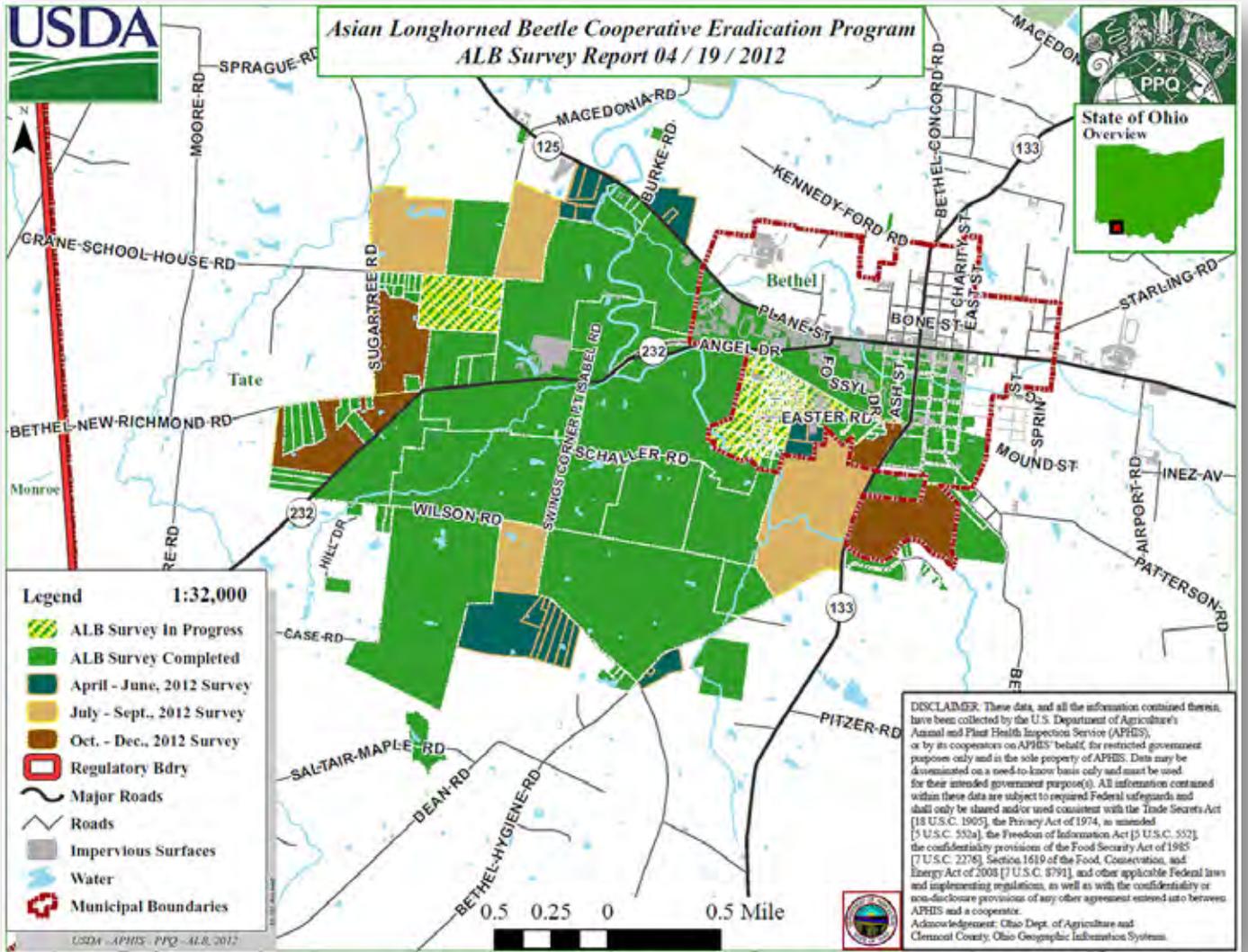
For the latest on ALB information, visit the new APHIS Web site, Beetle Busters (<http://www.beetlebusters.info/>).

**ALB in Ohio:** Infested tree removals in Clermont County began on November 14, 2011. Ground and tree-climbing survey crews continue to conduct delimiting surveys, inspecting all host trees throughout the regulated areas in Clermont County. Staff survey for the presence of ALB by examining individual host trees for signs of beetle damage. The following numbers pertain to the infested tree removals and surveys currently being conducted:

- 8,466: Number of ALB-infested trees removed as of 7/14/12 (since removals starting on 11/14/11)
- 8,646: Number of ALB-infested trees confirmed as of 7/14/12 (since detection on 6/17/11)
- 144,553: Number of trees surveyed as of 7/14/12 (since surveys began on 7/1/11)
- 56 Square miles are under regulation (see “Regulated Area” map below)

*Information provided by Ivich Fraser, Entomologist, U.S. Forest Service, MFO*

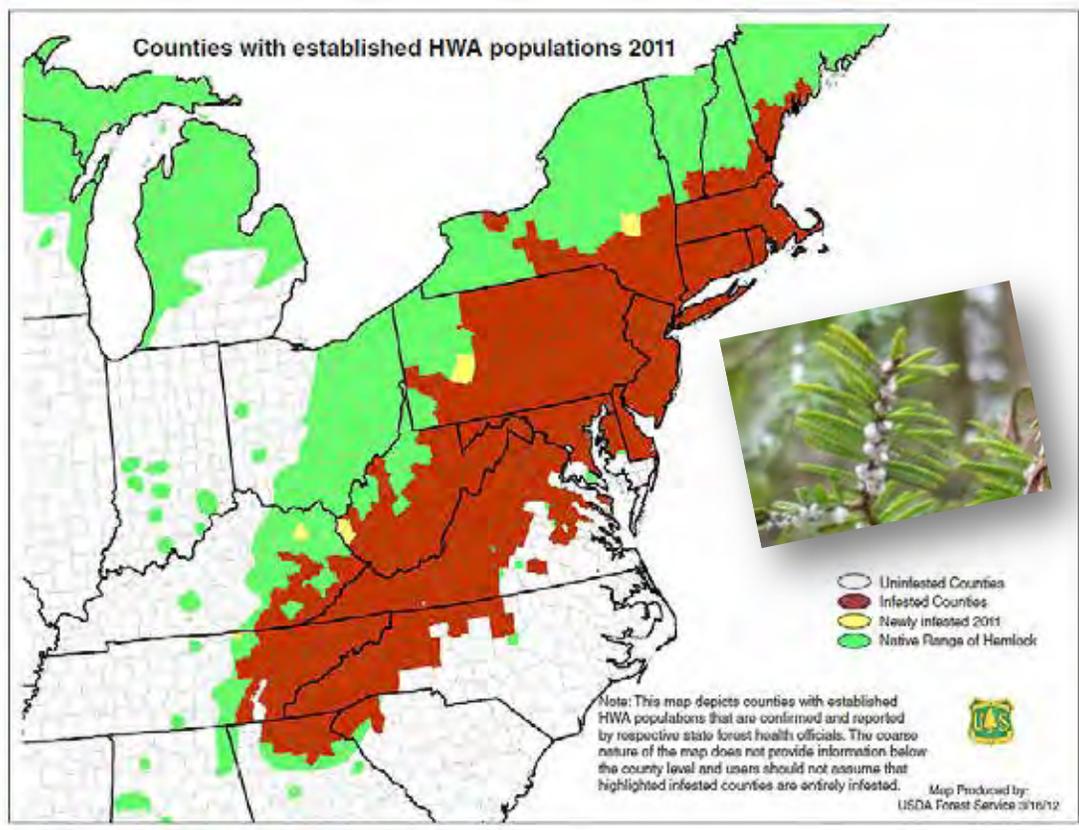




Asian Longhorned Beetle Survey Map, Bethel, OH (04/19/2012)



## HEMLOCK WOOLLY ADELGID (HWA)



**HWA in Ohio 2012:** An infestation was confirmed in Washington County after citizens reported suspicious hemlocks to State officials from the Ohio Department of Agriculture (ODA) and the Ohio Department of Natural Resources. At this time, 404 hemlocks out of approximately 1,025 hemlocks surveyed were found infested. Further surveys will be conducted in the surrounding areas to determine the scope of the infestation. HWA is primarily transmitted by wind and birds. Officials believe the finding in Ohio is the result of natural spread from nearby areas where the pest is established.

This is the second time HWA has been detected in a naturally occurring stand of hemlock in Ohio. In January an infestation was found in eight hemlocks in Shade River State Forest in Meigs County.

At this time, the ODA will move to expand its hemlock quarantine to include Washington and Meigs counties. Ohio's updated quarantine, enforced by the ODA's Plant Health Division, would add the two infested Ohio counties and 30 counties in the other infested States.

Ohio regulations that cover the transportation of hemlock materials restrict any hemlock plant material from counties known to be infested from entering noninfested counties in Ohio. Hemlock materials grown in noninfested counties in quarantined States must be inspected and shipped with a phytosanitary certificate, which verifies that the material is free of HWA, before it can enter Ohio.

For more information about the HWA and Ohio's quarantine, visit [www.agri.ohio.gov](http://www.agri.ohio.gov).

**Maryland:** The Maryland Department of Agriculture's Forest Pest Management Section, supported by about 60 volunteers with the Maryland Department of Natural Resources Park Service's Maryland Conservation Corps, inoculated more than 4,000 old-growth hemlock trees in New Germany State Park in Garrett County from the hemlock woolly

adelgid in May 2012. Usually, 40 to 80 percent of these pests die during the winter; however, the warm winter killed less than 10 percent this year.

**Pennsylvania and West Virginia:** Spring/summer 2012 treatments began across the States of PA and WV. An update on total trees treated will be provided in the next edition of this summary.

## GYPSY MOTH (GM)

**Maryland:** The 2012 Gypsy Moth Suppression Program has successfully completed aerial treatment of 2,530 acres in Garrett County with Btk (*Bacillus thuringiensis* var *kurstaki*), a bacterium found in soils worldwide that acts as a stomach poison when formulated as an insecticide.

**West Virginia:** The West Virginia Department of Agriculture (WVDA), in cooperation with the U.S Forest Service, successfully completed aerial treatment of approximately 38,550 acres in McDowell and Mercer Counties to slow the spread of gypsy moth to forested lands within West Virginia.

Mating disruption treatments took place as part of the WVDA's Gypsy Moth Slow the Spread Program (<http://www.gmsts.org/>). Tiny pheromone flakes (1/32" by 3/32" in size) were used for the treatments and were applied at 6 grams per acre. These tiny flakes are impregnated with a pheromone that mimics the scent of the female gypsy moth. Pheromone flakes act to disrupt gypsy moth mating by confusing the male gypsy moths, resulting in a reduction in the spread rate of the gypsy moth. The attractant is specific for gypsy moth and no other insects.

**Ohio:** As part of the Ohio Department of Agriculture Gypsy Moth Slow the Spread Program, mating disruption treatments successfully took place across the State on a total of 62,308 acres in Allen, Clark, Hardin, Hocking, Jackson, Logan, Madison, Paulding, Pickaway, and Vinton counties. A total of 454 acres were also treated with pheromone flakes on the Wayne National Forest. Also in Ohio, as part of the Slow the Spread Program, an additional 7,700 acres were treated with Btk, and 1,043 acres were treated with Gypchek (nucleopolyhedrosis virus). This gypsy moth virus is one of several naturally occurring infectious microorganisms that control gypsy moth.

## SOUTHERN PINE BEETLE (SPB)

**New Jersey and Ohio:** Trapping for SPB was continued this spring in NJ and OH. Some of the traps were relocated to better determine the range of SPB within these two States. In NJ, SPB was collected as far north as Earle Naval Weapons Station. Small spots have been located north of the Mullica River. Once these spots are identified as having SPB, the cut and leave technique is applied. In 2011 no SPB were collected in OH. However, in 2012, an additional lure, endo-brevicommin (the male SPB pheromone), was used with the usual frontalin lure (the female SPB pheromone) on the Wayne National Forest. Several SPB were collected.



Gypsy moth defoliation



Southern pine beetle damage signature

*Information provided by Bill Oldland, Entomologist, U.S. Forest Service, MFO*

The New Jersey Department of Environmental Protection (NJDEP) State Forestry Services conducts aerial surveys to detect new southern pine beetle infestations. The survey data is used to notify municipalities of infestations in their town. For infestations on NJDEP-owned properties, State Forestry Services marks and cuts the infested trees and a buffer before the beetles can spread and kill trees in new areas. As of July, the State Forestry Services is tracking about 1,500 SPB infestations of various sizes. Updates of these actions can be found at [http://www.state.nj.us/dep/parksandforests/forest/spb\\_updates.html](http://www.state.nj.us/dep/parksandforests/forest/spb_updates.html).

## THOUSAND CANKERS DISEASE (TCD)

The thousand cankers disease Web site (<http://www.thousandcankers.com/>) was collaboratively created by the Northeastern Area State and Private Forestry, the U.S. Forest Service Northern Research Station, the Purdue University Department of Forestry and Natural Resources, the Hardwood Tree Improvement and Regeneration Center, and the Walnut Council. The goal is to provide comprehensive, accurate, and timely information regarding issues related to the thousand cankers disease. The U.S. Forest Service provided support to create the site, and Purdue University administers it.

### Thousand Cankers Disease Project in Bucks County, PA:

Thousand cankers disease was discovered by a landowner in Bucks County, PA, and reported to the State in August 2011.

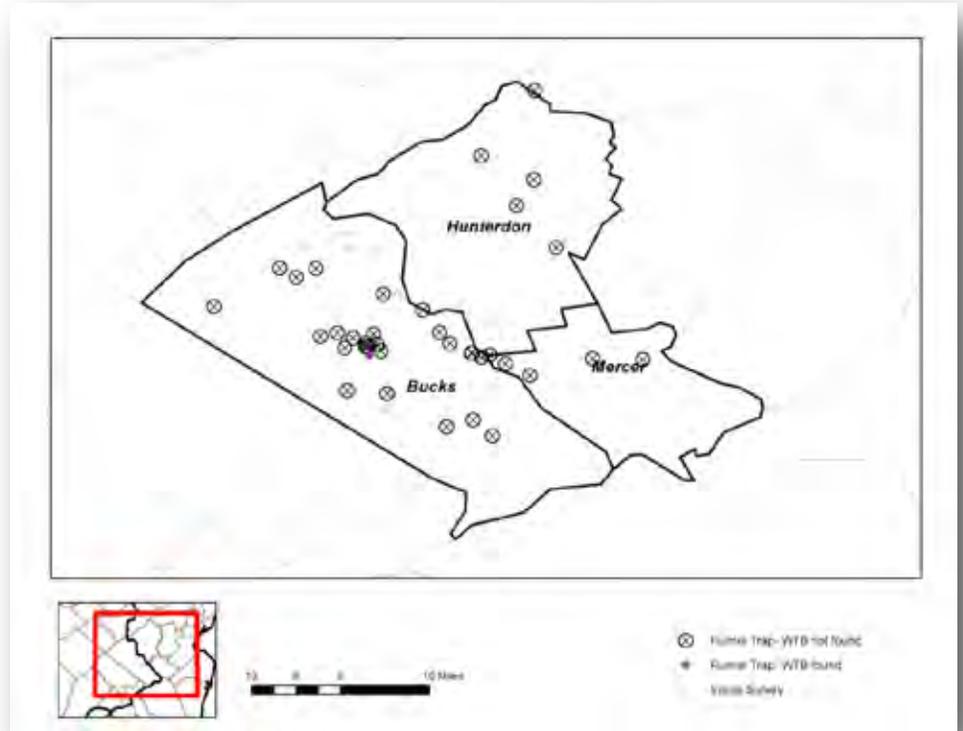
This disease is caused by the walnut twig beetle, *Pityophthorus juglandis*, and the fungus *Geosmithia morbida*. The fungus is transported to walnut trees, *Juglans* spp., on the body of the beetle and causes small annual cankers, hence the name thousand cankers. These cankers and the beetle galleries kill areas of the cambium. As more beetles attack the tree, the number of galleries and cankers increases until they girdle the twig and branch, which restricts nutrient movement and eventually leads to tree death. The beetle is native to the Southwestern United States and is considered an indigenous exotic; therefore, it is not currently regulated by APHIS. The beetle is currently found throughout the West and was also discovered recently in Tennessee (July 2010) and Virginia (June 2011).

In February 2012, all walnut trees on the landowner's property were voluntarily removed. Fifty walnut trees were identified, felled, and burned. As part of this removal, the Pennsylvania State University, Pennsylvania Department of Agriculture, Pennsylvania Department of Conservation and Natural Resources, and the U.S. Forest Service collaboratively developed a project to document the movement of this disease complex in the area. The project will use dendrochronology methods and baited funnel traps to study the disease's establishment and spread. Dani Martin and Rick Turcotte from the U.S. Forest Service, Northeastern Area State and Private Forestry Morgantown Field Office participated in the study design, data collection, and pathogen isolation.



Since the spring of 2012, personnel from the Morgantown Field Office (MFO) have been contacting public agencies within Bucks County, Pennsylvania, and Mercer and Hunterdon Counties in New Jersey for permission to visit sites and assess walnut trees within the counties. To date, 27 different agencies, townships, and groups have been contacted. All have been interested and have allowed site visits. MFO personnel have visited 53 different sites and collected information on the presence of *Juglans* species. During the week of April 9, 13 baited walnut twig beetle funnel traps were deployed around the known thousand cankers disease areas and in the adjacent two counties in New Jersey. During the week of April 16, 20 traps were deployed as part of a project with the Pacific Southwest Research Station demonstrating the efficacy of the pheromone-baited traps. These traps will be serviced weekly or biweekly by a combination of personnel from the Pennsylvania Department of Conservation and Natural Resources and the U.S. Forest Service.

To date, only two traps outside the infection center have collected the walnut twig beetle. Ground surveys around the infection center have identified more infested walnut trees on adjacent properties. Based on these results, the MFO is planning on moving the traps within the three counties and concentrating surveys in the areas around the outbreak.



*Information provide by Rick Turcotte, Entomologist, U.S. Forest Service, MFO*

## SPRING CANKERWORMS

**Maryland:** An infestation of spring cankerworms was observed in Charles and St. Mary's Counties in southern Maryland; however, Maryland Department of Agriculture entomologists expect most trees to survive the defoliation without difficulty if they are not otherwise stressed. Cankerworms are native insects that have exhibited small 1- or 2-year outbreaks. In Maryland, the last one was in 2007 in Anne Arundel and Cecil Counties. The outbreaks are difficult to predict and more likely to be gone after the second year.



Spring Cankerworm

Spring cankerworm caterpillars reach one inch in length; their color varies from light green to dark brown with a single yellow stripe on each side, and they have two pairs of abdominal legs. Spring cankerworms emerge as adults in late winter/early spring, usually during warm spells in February or March. The wingless females are often mottled with grey or brown color and have a darker stripe down the back. The winged males are brownish-grey with three dark, irregular stripes across the front wings. The eggs are oval shaped; irregular clusters of about 50 eggs are attached under flaky bark or in cracks and crevices of tree trunks. After hatching in April and May, larvae rapidly feed on the leaves of trees in the red and white oak groups, maples, elms, hickories, ash, and cherry. By late June to early July, the larvae have matured; they then descend to the ground on silk threads. The larvae then burrow into the ground to a depth of 1 to 4 inches, spin a silken cocoon, and pupate. The pupae remain in the soil until late winter/early spring when they emerge as adults.

## WHITE OAK DECLINE

**West Virginia:** Extensive white oak decline and mortality have been observed in several areas of Wood County in West Virginia. The trees show evidence of jumping oak gall wasp, *Neuroterus* spp., on the leaves.

In 2010, there was a severe outbreak of jumping oak gall wasp in Cabell, Jackson, and Wayne Counties. In previous years, there have also been reports from other counties, including Harrison, Doddridge, Ritchie, Wood, Kanawha, Putnam, Roane, Gilmer, Wirt, Calhoun, Lewis, Braxton, and Clay.

The wasps lay eggs in the tissues of new oak leaves in the spring. Each gall contains a single immature wasp. The young galls look like small, green, flat buttons that turn brown as they mature. When mature, the galls fall off the foliage, leaving small pits in the underside of the leaves where they were attached. If there are numerous galls on the leaf, the entire leaf usually turns brown and falls off. After falling, the larvae inside the galls jump around like Mexican jumping beans, thus the common name. It is assumed this behavior helps the galls drop into cracks in the soil where the larvae can safely pupate inside them. Second generation adults overwinter inside the galls and will emerge the next spring. The wasps are very tiny (1.0-1.5 mm long) and do not sting.

White oak can usually withstand one or two defoliations. But with multiple years of defoliation, the trees will eventually become stressed and susceptible to secondary agents such as Armillaria root rot and Hypoxylon canker, along with other decay fungi and secondary insects such as wood boring insects, causing further decline of the trees and, eventually, death.

Surveys in West Virginia are underway to determine the extent of jumping oak gall wasp and oak decline.

**Ohio:** There have been several reports of jumping oak gall damage in central and southern Ohio.



White oak leaves damaged by jumping oak gall wasp  
(Photo: S. Madison)

Jumping Oak Gall Wasp Damage

## TULIPTREE SCALE

**West Virginia:** Tuliptree scale (*Toumeyella liriiodendra*) has been observed on yellow poplar in West Virginia this summer. Heavy scale populations can cause a shower of sticky sap “honeydew” to drip from the trees. The honeydew is actually the excrement of the female insects after feeding on tree sap. The substance is sugary and can attract ants and wasps. A black mold grows where the honeydew has landed if it is not washed away. Scale colors can vary greatly from grey/green to red/orange mottled with black.

Extreme infestations can cause branch dieback and mortality in trees of up to 5 inches in diameter. Stressed trees increase tuliptree scale populations, so promoting plant health through proper watering, fertilization, and site improvements will decrease the likelihood of heavy scale infestation. However, overfertilization can also increase buildup of scale.

The tuliptree scale has many natural enemies, but these predators are not capable of keeping the tuliptree scale at suboutbreak levels all the time. If needed, yard trees may be treated to help control tuliptree scale. Use insecticides according to their labels.

Horticultural oils can be used to control scale. This is effective against the life stage that overwinters. Therefore, it must be done in early spring after danger of freezing has passed, but before the tree is putting on new growth.

Registered contact insecticides can be used against the crawlers of tuliptree scale, which are present from mid-August to mid-September. More than one application may be needed.

Systemic neonicotinoid insecticides can also reduce tuliptree scale populations when applied as a soil drench or soil injection. These are applied to the soil around the base of the tree, and are taken up by the roots. They can technically be applied anytime the ground is not frozen or waterlogged. However, fall applications are recommended. In addition, sufficient soil moisture usually increases the effectiveness, so some irrigation prior to application may be necessary.

For more information, contact the WVDA’s Plant Industries Division at 304-558-2212.

### **Ohio:**

Tuliptree scale has also been reported in forests and landscapes in Butler, Scioto, and Adams Counties in Ohio.



## ELM YELLOWS (EY)

Elm yellows (EY) is a lethal, systemic disease of native elms caused by the phytoplasma '*Candidatus Phytoplasma ulmi*.' Dramatic outbreaks of EY have occurred across the Eastern United States since the late 1800s. The disease is a threat to any native elm, including American elm (*Ulmus americana*), slippery or red elm (*Ulmus rubra*), winged elm (*Ulmus alata*), September elm (*Ulmus serotina*), cedar elm (*Ulmus crassifolia*), and the hybrid red × Siberian (*U. rubra* × *pumila*). Eurasian elms appear to be tolerant of the disease. EY is of particular interest because many Dutch elm disease-tolerant elms have been shown to be susceptible to EY. The disease is vectored by the whitebanded elm leafhopper (*Scaphoideus luteolus*) and possibly other insects.

Symptoms of infection by the EY phytoplasma occur in mid-July and include yellowing, drooping, and premature leaf drop. Symptoms occur throughout the entire crown. Exposure of the current year's phloem and cambial zone will reveal a butterscotch color accompanied by a wintergreen odor. While visual symptoms and the wintergreen odor are considered diagnostic for detecting this disease, molecular techniques are available for confirming the presence of the phytoplasma.

In the summer of 2012, pathologists at the MFO Field Office will be conducting a survey of elm trees in parks within a 50-mile radius of Washington, DC. This will include the C&O Canal, Monocacy National Battlefield, the Patuxent Wildlife Research Center, Rock Creek Park, Piscataway Park, and the Thomas Stone National Historic Site. Data on symptomatic trees will be recorded and samples will be collected and tested for detection of the EY phytoplasma using real time PCR.

*Information provided by Dani Martin, Plant Pathologist,  
U.S. Forest Service, MFO*



Yellowing and drooping of leaves on the branch at right, contrasted with normal foliage on the left.



Phloem symptoms in *Ulmus americana* from healthy (left) to diseased (middle and right).

## INVASIVE PLANTS

**EDDMapS – Early Detection and Distribution Mapping System:** EDDMapS is a Web-based mapping system for documenting invasive species distribution. It was launched in 2005 and now provides a picture of the distribution of invasive species across the United States and Canada. Some of its features include these:

- EDDMapS is fast and easy to use. It provides Web-based mapping of invasive species and helps facilitate Early Detection and Rapid Response through online data entry forms, photos, and e-mail alerts. Users (professionals and volunteers) document invasive plant occurrences (point location based).
- Now developing Mobile Applications (BUGWOODAPPS) for smartphones like iPhone, iPad, and Android, making it possible to report while in the field and making field guides readily available.
- Creating the app “Mid-Atlantic Early Detection Network” (MAEDN) for Delaware, Maryland, New Jersey, New York, Pennsylvania, Virginia, West Virginia, and DC. Can also record biocontrol releases.
- Future efforts involve creating tools for creating/using polygons and being able to upload/export shape files.
- Other initiatives/links to EDDMapS include the NE Plant Atlas, Mid-Atlantic Early Detection Network, and the Great Lakes Invasive Network.

EDDMapS Web site: <http://eddmaps.org/>

PowerPoint presentation about EDDMapS: <http://www.eddmaps.org/presentations/eddmaps-maedn2012.pptx>

**Cooperative Weed Management Areas (CWMA):** The Mid-Atlantic Invasive Plant Council (MAIPC) and Purdue University will be hosting two CWMA workshop opportunities to learn how to organize and support people working together to manage invasive plants or other exotic organisms to restore natural habitats. Training will provide the basics on how to establish a Cooperative Weed Management Area or similar group. In addition to basic training, presentations will be given by people who have successfully developed and implemented CWMA groups in the Eastern United States, followed by discussion of the challenges and rewards of these efforts. Training sessions are free. More information and registration is coming soon on the MAIPC Web site at <http://www.maipc.org/>.

Workshop dates:

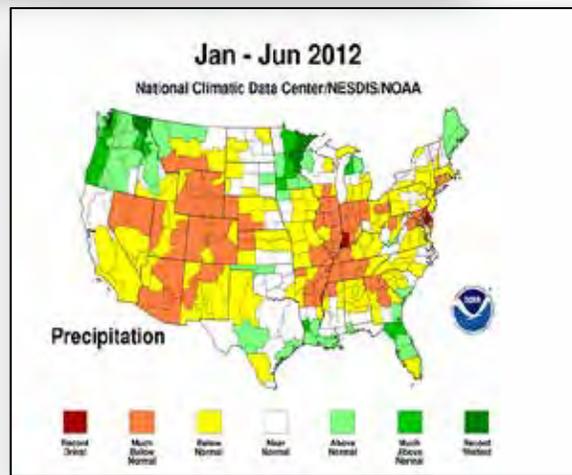
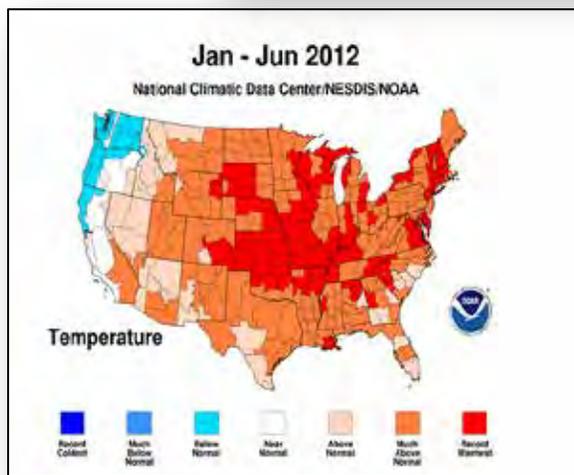
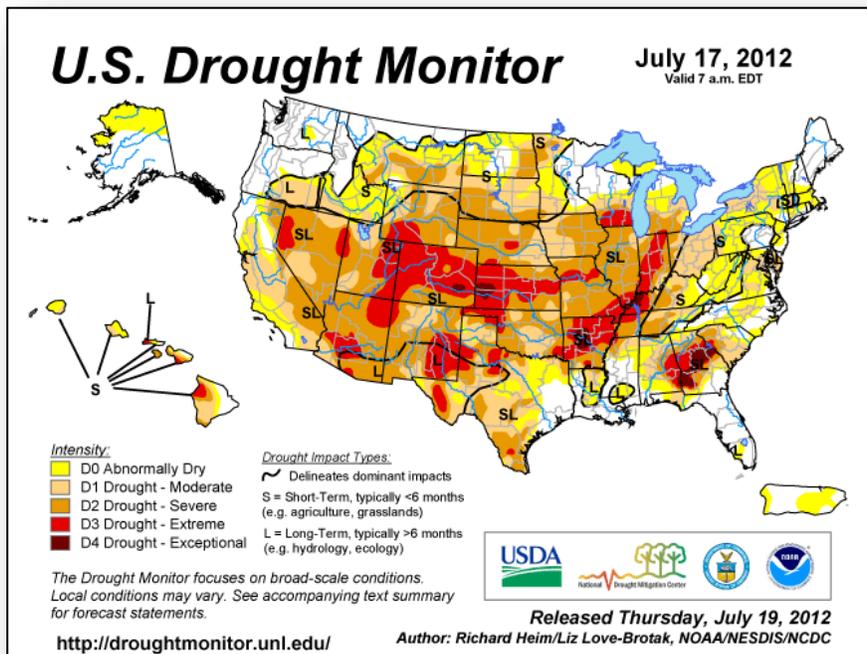
**Wednesday, November 7, 2012**

U.S. Fish and Wildlife Service  
National Conservation Training Center  
Shepherdstown, West Virginia

**Thursday, November 8, 2012**

Delaware National Estuarine Research Reserve  
St. Jones Reserve, Dover, Delaware

# WEATHER



Check out a 12-week animation of the U.S. drought monitor at [http://droughtmonitor.unl.edu/12\\_week.gif](http://droughtmonitor.unl.edu/12_week.gif).

## MISCELLANEOUS

### Tree Risk Assessment Workshops Held on the Allegheny and Monongahela National Forests:

A 2-day Tree Risk Assessment Workshop was conducted on the Allegheny National Forest November 8-9, 2011. The training was provided by plant pathologists Jill Pokorny and Joe O'Brien from the U.S. Forest Service Saint Paul Field Office in Minnesota along with Bill Jones, plant pathologist from the Asheville Field Office in North Carolina. Forty people representing the Allegheny National Forest, U.S. Forest Service Northern Research Station, Pennsylvania Department of Conservation and Natural Resources, and the New York Department of Conservation attended the workshop.

The workshop was also conducted on the Monongahela National Forest on May 1-2, 2012. The training was provided again by Bill Jones but with assistance from landscape architect Donna Murphy, plant pathologist Dani Martin, and entomologist Amy Hill from the Morgantown, WV, U.S. Forest Service Field Office. Recreation program manager Eric Sandeno and botanist Ron Polgar from the Monongahela National Forest assisted with the field activities. Fifty people attended the workshop representing the following agencies: Monongahela National Forest, U.S. Army Corps of Engineers, National Radio Astronomy Observatory, WV Department of Natural Resources State Parks, WV Department of Natural Resources Division of Forestry, U.S. Fish and Wildlife Service, The Nature Conservancy, the Cacapon Institute, and the Elkins City Parks and Recreation Department.

The 2-day workshops covered both classroom and field sessions. Topics included:

1. Legal issues for State and Federal agencies
2. Tree diseases, defects, and structural problems
3. Insects and their impact on tree risk
4. Prevention and correction of hazardous tree defects
5. How to conduct tree risk inspections
6. How to prioritize tree risk inspections and corrective actions
7. Total tree biopsy of defects



Tree Risk Assessment Workshop on the Allegheny National Forest, November 2011



Tree Risk Assessment Workshop on the Monongahela National Forest, May 2012

*Information provided by Rick Turcotte and Amy Hill, Entomologists, U.S. Forest Service, MFO*

**FOR MORE INFORMATION:**

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**New Jersey – Morgantown Forest Service Contact:**  
Bill Oldland: 304-285-1585

**Ohio – Morgantown Forest Service Contact:**  
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**West Virginia – Morgantown Forest Service Contact:**  
Amy Hill: 304-285-1565

**This newsletter and previous newsletters are available on the WWW at**  
<http://na.fs.fed.us/fhp/fhw/>