

Outreach Highlights

Missouri Invasive Forest Pest Council



Communication

- Periodic emails to ~100 stakeholders
- MDA Inspectors inform exporters & nursery/greenhouse operators
- MDC Foresters inform the general public
- State Parks display info at campgrounds



treepests.missouri.edu



Tree Pests

An information service from the Missouri Invasive Forest Pest Council

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Overview

- [+ Emerald ash borer](#)
- [+ Thousand cankers disease](#)
- [+ Asian longhorned beetle](#)
- [+ Pine shoot beetle](#)
- [+ Gypsy moth](#)

[Other tree pests](#)

Tree Pests

Tree Pests is a collaborative effort of several state and federal agencies to keep citizens informed of the latest invasive insect and disease threats to Missouri's trees. Whether it is a single tree in your yard or acres of woodlands on your property, this site is for you.

Do you know that humans are a primary way these invasive pests are spread? It's true! Whether through moving firewood or wood to make furniture and crafts, we enable these hitchhiking freeloaders to spread from infected areas to noninfected ones. The "Slow the spread" Web pages for each pest contain the latest tips on how you can help us in the fight against these invasive threats.

EAB update

Texas recently announced they are the 26th state to confirm the presence of

Track Missouri EAB activity

- [• Degree days emergence and peak activity \(PDF\)](#)

Slow the spread

- [• Don't move firewood website](#)

Frequently asked questions

facebook



Missouri Dept. of Conservation

July 11, 2016 · 🌐

MDC encourages campers to not move firewood! Learn more below or visit MDC's website at <https://mdc.mo.gov/.../.../invasive-tree-pests/emerald-ash-borer>. -- Lucas@MDC



MDC warning campers to be cautious when it comes to firewood
Tree killing pests travel in firewood.

KFVS



Missouri Dept. of Conservation

August 18, 2016 · 🌐

The Missouri Department of Agriculture confirmed earlier this month that emerald ash borer, an insect that kills ash trees, was found for the first time in Franklin County. MDC foresters say home and landowners in Franklin County need to make plans now to protect or replace their ash trees. Learn more below. -- Lucas@MDC



Missouri Dept. of Conservation

February 26, 2016 · 🌐

INVASIVE SPECIES ALERT! The Emerald Ash Borer (EAB) is an invasive wood-boring insect that infests and kills North American ash trees – including in Missouri! Help slow the spread of this killer by not moving firewood. Woodpeckers love to dine on tasty EAB larvae below the bark of ash trees, so you can help us find EAB by keeping an eye out for woodpecker damage on ash trees. If you see an ash tree that may have EAB, report it to www.extension.missouri.edu/treepests/EABbeforereport.aspx. Learn more about EAB in Missouri at www.mdc.mo.gov/node/5326. -- Joe@MDC





MISSOURI DEPARTMENT *of* CONSERVATION

Serving Nature and You.

Forest Health
email list
~5,000
members

MO Tree Health News: June 10, 2016

Emerald Ash Borers Detected in More Missouri Counties

Emerald ash borer (EAB) infestations have been detected for the first time in 12 Missouri counties this spring. In southeastern Missouri, EAB was detected in Carter, Dent, Iron, Phelps, Ripley, Shannon, Stoddard, St. Francois, St. Genevieve, and Texas counties. The addition of these counties to previously known infestations results in a contiguous block of

EAB was also detected for the first time this spring in five Missouri counties and five Kansas counties with EAB. Other infestations are present in the St. Louis area. Missouri is now known to have EAB infestations across Missouri.



MISSOURI DEPARTMENT *of* CONSERVATION

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MO Tree Health News: July 12, 2016

Watch for thousand cankers disease: A threat to black walnut trees!

Thousand cankers disease, also known as TCD, has not yet been detected in Missouri. However, this disease could easily hitchhike a ride on infested walnut wood used for woodworking or firewood. To learn more about TCD, visit treepests.missouri.edu.

Mid-July through early August is the best time to watch for possible symptoms of TCD. Look for areas where several walnut trees have leaves on upper branches that turn yellow, wilt, die, and remain attached to twigs. New sprouts may grow from the trunk giving the tree a bushy appearance below dead branches. Similar symptoms may be due to other factors, such as recent drought.

Growing season
updates on
pests of concern

Forest Health News

Visit mdc.mo.gov, search “forest health news”

NOVEMBER 2016



FROM THE
MISSOURI DEPARTMENT
OF CONSERVATION
FOREST HEALTH
PROGRAM

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Serving nature and you

Missouri Forest Health 2016 Update

Thousand Cankers Disease

Thousand cankers disease (TCD) remains a threat to eastern black walnut in Missouri. TCD is believed to occur primarily when the walnut twig beetle, *Pityophthorus juglandis*, attacks walnut trees, spreading the fungus *Geometricoporia morbidans* which causes small cankers in the phloem tissue under tree bark, eventually causing dieback and mortality.

TCD has not been detected in Missouri. However, there is concern that undetected TCD infestations could be present or that spread may occur when infected walnut wood is moved from other states, especially those where TCD has been detected. TCD has been detected in most western states, Maryland, North Carolina, Ohio, Pennsylvania, Tennessee, and Virginia. In Indiana and Michigan, walnut twig beetles have been detected in traps, but no trees positive for TCD have been found. In Illinois and a separate Indiana location, *G. morbidans* has been detected on other species of insects, but no walnut twig beetle or TCD positive trees have been found. The Missouri Department of Agriculture has enacted a quarantine prohibiting walnut wood products and all hardwood firewood from coming into Missouri from states where TCD has been detected.

In Missouri, TCD is unlikely to be detected until several years after introduction, making reports of walnut tree dieback and decline very important. See the Missouri Invasive Forest Pest Council website insects.missouri.edu for more information on what to look for and how to report a suspect tree. Missourians are encouraged to report suspect trees via the online reporting form at forest.mdc.mo.gov. Photos of suspect trees can also be emailed to forest.health@mdc.mo.gov as a first step in determining what trees should be visited by trained personnel.

Continued on page 2



Symptoms of TCD include vigorous sprouts below crown dieback. Multiple trees may be affected. Photo: Whitney Cronan, Colorado State University. Report.org

Ash Borers Detected in More Counties

(EAB), *Agrilus planipennis*, is an invasive beetle that has killed millions of ash trees in North America. EAB was first discovered in the Detroit, Michigan area in 2002, but EAB likely entered that region a decade or more earlier, having been introduced from China. EAB has now been detected in 30 US states and two Canadian provinces, ranging from Ontario to Texas and Colorado to North Carolina.

EAB was first detected in Missouri in 2008 in Wayne County, near Lake Wappapele. Now 36 Missouri counties are known to have EAB infestations. Fifteen of those county detections occurred during the southeastern part of the state include Carter, Dent, Iron, Phelps, Ripley, Shannon, Stoddard, St. Francois, St. Genevieve, and Texas counties. Closer to St. Louis, EAB was also detected in Franklin County, in the city of Sullivan. On the western side of Missouri, EAB was found for the first time in Cass, Clinton, DeKalb, and Ray counties this year.

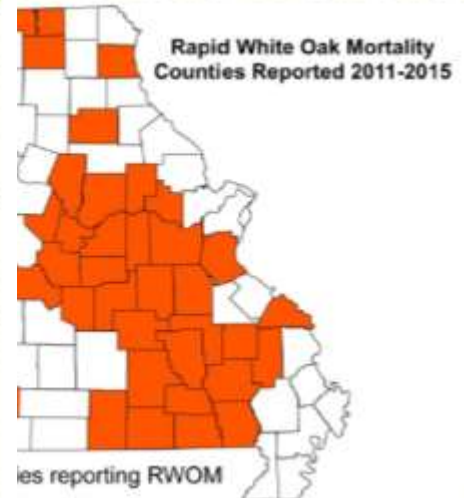


The Missouri Department of Agriculture, USDA APHIS PPQ, and University of Missouri Extension are currently conducting surveys in 43 counties throughout the state. EAB was captured on traps in two new counties, DeKalb and Franklin.

EAB spreads slowly on their own to new areas, but the spread over long distances is by hitchhiking on vehicles. To prevent the spread of EAB and other invasive forest pests, don't transport firewood to the location you plan to burn it on site, if permitted.

To protect healthy, high-value ash trees from EAB, visit www.mdc.mo.gov for more information. For more information on EAB, visit www.mdc.mo.gov or to report possible EAB, visit eab.missouri.edu.

EAB infestation activity leads to bark blanding, which can be a sign of EAB. Photo: MDC



Extreme RWOM in a forest stand in Missouri.

but still limited. RWOM stands but is common. Management is necessary to maintain forest health and to prevent RWOM from spreading to other areas.

RWOM stands but is common. Management is necessary to maintain forest health and to prevent RWOM from spreading to other areas.

RWOM pocket of Pea Ridge Conservation Area in east central MO. Photo: MDC

Help us better predict and manage locations with RWOM.

Events

- **Missouri Landscape & Nursery Association meetings**
- **Western Nursery & Landscape Association annual trade show**
- **MO Soil & Water Conservation District mtgs**
- **MO Community Forestry Council conference**
- **South Farm Showcase**
- **Presentations to local arborist, woodworking, & Master Gardener groups**

The Woodworking Show: KC & St. Louis





Thousand Cankers Disease KILLS Black Walnut Trees

What is TCD?

Thousand cankers disease (TCD) is fatal to black walnut trees. It's caused by the walnut twig beetle and an associated fungus. The name 'thousand cankers' is due to the numerous cankers surrounding multiple beetle entry points on branches and main stems.



The twig beetle is the size of the needle of a pin.

TAKE PRECAUTIONS NOW!

Help stop the spread of this killer.

• Don't move walnut trees or extracted walnut wood into Missouri.

• Don't move firewood.

• Investigate TCD infestations.

• Take action! If you believe your walnut tree has TCD, contact your local Missouri Department of Conservation Forester.

Signs & Symptoms



Midsummer yellowing and wilting of leaves; limbs die back



Dead limbs with attached leaves, sprouts from trunk or roots



Cankers form and beetles tunnel under bark of affected limbs

TCD has not been detected within nut shells or meat, nor does it affect the value of the wood.



First Detector Training



First Detector Workshops!

- Free to the public
- Invasive tree pests
 - Emerald ash borer
 - Thousand cankers disease
 - Asian longhorned beetle
 - Gypsy moth
 - *Sirex* woodwasp



Alien Invaders booth at State Fair





Public Outreach Campaign

- Focused on increasing awareness of firewood pests
- Funded by USDA APHIS Farm Bill
- ~30k brochures distributed
- Magazine ads & editorials
 - *Rural Missouri*
 - *Outdoor Guide*
 - *Missouri Life*
- Billboards this spring

MOVING FIREWOOD TRANSPORTS TREE-KILLING INSECTS AND DISEASES



Tree-killing pests hitchhike on firewood - spreading insects and diseases that destroy our street trees, forests and natural areas.

Protect your favorite places from this threat:

- Buy locally harvested firewood.
- Tell your friends not to move firewood.
- Ask a park ranger or campground host about where to get local firewood when you travel.
- Use firewood from nearby sources to heat your home or cabin.

BUY IT WHERE YOU BURN IT.

**DONTMOVE
FIREWOOD.org**



Forest insects and diseases kill thousands of trees every day.

Prevention is the key. Don't move firewood when you travel, camp, or visit another state.

* Actual size



emerald ash borer
Agrilus planipennis



Asian longhorned beetle
Anoplophora glabripennis



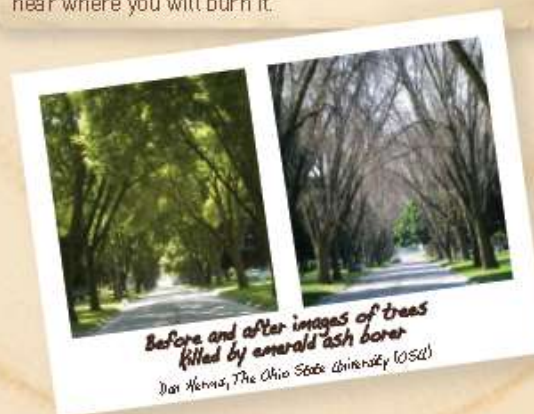
grey moth caterpillar
Lymantria dispar



walden bark beetle
Pityophtora juglandis

PHOTO CREDIT: Emerald ash borer: University of Minnesota; Asian longhorned beetle: University of Minnesota; Grey moth caterpillar: University of Minnesota; Walden bark beetle: University of Minnesota. All images are for informational purposes only. Do not use for commercial purposes without permission.

Keep your backyard, campgrounds, and favorite places safe from these insects and diseases — buy firewood near where you will burn it.



**DONTMOVE
FIREWOOD.org**

extension.missouri.edu/treepests

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Learn more at
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