



Emerald Ash Borer

FAQs

General Information

Help slow the spread of EAB. Know the signs and symptoms of EAB and most importantly, burn firewood where you get it.

1. What is emerald ash borer (EAB)?

EAB is an exotic, invasive, wood-boring beetle that infests and kills ash trees in forests and urban areas.

2. What does EAB look like?

The adult beetle is dark metallic green with a bullet shaped body that is one-half inch long and one-eighth inch wide. EAB larvae (immature stage) are flat, creamy-white grubs with distinct bell-shaped body segments. Adult beetles are usually seen from mid-May through July on or near ash trees; larvae are found under the bark of ash trees during the remaining months of the year.

3. Where did EAB come from?

The native range of EAB is eastern Russia, northern China and Korea.

4. How does EAB spread?

EAB adults generally fly less than a half mile to mate and lay eggs on ash trees, making the natural spread of this pest relatively slow. Humans, however, can easily move EAB long distances in a short period of time. EAB can hitchhike under the bark of ash firewood, ash nursery stock, and ash logs and lumber, emerging from these materials to start an infestation in a new area.

5. When was EAB first discovered in the USA? How did it get there?

EAB was discovered infesting and killing ash trees in the Detroit, Michigan area in 2002, but researchers estimate it may have been in that area for ten years prior to the initial detection. EAB was likely introduced to the US in ash wood used for packing and crating goods imported from China.

6. Where and when was EAB found in Missouri? How did it get here?

EAB was detected in Missouri in July of 2008. It was found near Lake Wappapello at the US Army Corps of Engineers' Greenville Recreation Area in Wayne County. EAB was likely introduced to Missouri by a camper bringing infested ash firewood from another state.

7. Where is EAB now?

Visit eab.missouri.edu to view a current map of Missouri counties.

8. What is being done about EAB in Missouri?

Several state and federal agencies are responding to the EAB threat. Field surveys are done annually to look for new EAB infestations. A statewide quarantine has been put in place to help slow the spread of EAB. The quarantine prohibits movement of hardwood firewood, ash trees, untreated ash material (chips, logs, etc.), and EAB itself from Missouri. Information about how to respond to EAB and the risks of firewood movement is being publicized to communities, industries and the general public. Cost-share funds are provided to communities to help them prepare for EAB's arrival. Stingless wasps that parasitize and kill EAB eggs and larvae are being released at several locations to establish them as biological controls to help reduce EAB populations.

9. How can I help slow the spread of EAB?

Don't move firewood! Inform your friends and neighbors of the risks of moving firewood. If EAB hasn't been found in your county, keep an eye out for it on ash trees and report any possible sightings to officials. Once EAB is known to be in your county, consult the [EAB Management Guide for Missouri Homeowners](#) for advice on managing this destructive insect on your ash trees.

10. Does EAB have any natural enemies?

In North America, EAB is frequently eaten by woodpeckers. There are also a few species of tiny, stingless wasps that parasitize EAB eggs and larvae. These wasps have been released in a few locations where EAB has been detected to help reduce EAB populations. For more information on EAB biological control, visit agriculture.mo.gov/plants/pests/emeraldash.php.

11. Where can I get more information?

Visit eab.missouri.edu or call the EAB Hotline at 1-866-716-9974 for more information related to EAB in Missouri. Other websites with valuable information include emeraldashborer.info and dontmovefirewood.org.

To report a possible EAB infestation: 1-866-716-9974

www.eab.missouri.edu



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EAB & Ash Trees

1. How does EAB kill an ash tree?

EAB kills an ash tree by disrupting the tree's ability to transport nutrients and water. EAB larvae tunnel just under the bark, creating tight S-shaped galleries (tunnels) as they feed. As the EAB population builds within the tree, the larval tunneling eventually girdles the tree and it dies.

2. How do I identify an ash tree?

To identify an ash, look first at the twigs. Ash twigs are arranged in an opposite pattern, with the leaves, buds and twigs directly opposite one another on a branch. In addition, ash twigs are very stout and the leaves are compound with 5-11 leaflets. The bark of older ash trees often resembles a diamond pattern. Visit eab.missouri.edu for photos.

3. Which ash trees are susceptible?

All ash trees in the genus *Fraxinus* are susceptible to EAB. This includes commonly planted green and white ash and their cultivars, such as 'Autumn Purple'. In areas where EAB populations are high, this pest has also recently been observed attacking fringe tree (*Chionanthus virginicus*), a small flowering tree closely related to ash.

4. How important are ash trees to Missouri?

Ash trees make up about 3% of the forest trees in Missouri. Ash provide important habitat for native wildlife, and their seeds are eaten by a wide array of birds and small mammals. In urban areas, ash trees have been a popular choice for shade trees due to their large size and fast growth. Unfortunately, this means that in many communities 10-50% of the mature trees are ash. With the eventual arrival of EAB, many communities will be faced with the overwhelming monetary costs of either removing or treating ash trees with insecticide. In addition, losing large numbers of ash trees in a relatively short period of time drastically changes the appearance of neighborhoods and streets, driving down property values and increasing stormwater runoff and energy use.

Signs & Symptoms

1. What are the signs & symptoms of EAB?

EAB leaves two distinct signs on an infested ash tree: small D-shaped exit holes in the bark created by emerging adult beetles and tight S-shaped galleries (tunnels) under the bark made by feeding larvae. Symptoms seen on ash trees include sparse leaves or branch dieback in the upper part of the tree, new sprouts on the main branches or trunk, short vertical splits in the bark, and extensive woodpecker damage. Visit eab.missouri.edu for photos and more information.

2. Are dying ash trees always an indication of an EAB infestation?

Not necessarily. Ash trees are commonly affected by several diseases and native insects, especially if they have been stressed by drought, flooding, or mechanical damage. If you see several dying ash trees in an area, take a closer look for signs of D-shaped holes or woodpecker damage.

3. What should I do if I think I've discovered EAB in an ash tree?

If you live in a county where EAB has not been detected (see map at eab.missouri.edu), please report your find by calling the EAB Hotline at 1-866-716-9974 or by filling out the reporting form at eab.missouri.edu. If you live in a county known to have EAB, consult the [Emerald Ash Borer Management Guide for Missouri Homeowners](#) for more information on managing this pest.

Management

1. I have an ash tree. What should I do?

EAB will eventually be found throughout Missouri, killing most ash trees not protected with insecticide. However, not all ash trees are good candidates for treatments. The location, health, and form of a tree all play a role in the decision to either remove the tree or to protect it from EAB. It's important to remember that using insecticides to protect trees from EAB is a long-term commitment that requires periodic treatments over many years. Treatments aren't recommended until EAB has been found in your county or within 15 miles of your location (see map at eab.missouri.edu). For detailed information on insecticide treatments and a helpful decision guide, refer to the [Emerald Ash Borer Management Guide for Missouri Homeowners](#).



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Management

2. I have an ash tree infested with EAB. Who is responsible for removing my tree, and how should the infested material be handled?

Removals of infested ash trees growing on private property are the responsibility of the landowner. The owner isn't legally required to remove the tree, but ash trees killed by EAB are potentially very hazardous to people and property. In some situations, trees growing near a street may be the responsibility of the city or other local government; contact your city forester or local government to be sure. Dispose of infested trees at a local yard waste or mulch facility, or burn or use the wood as firewood on your property. Please report your EAB sighting to officials if EAB hasn't been detected in your county at eab.missouri.edu.

3. Should I cut the ash trees in my woods?

Most ash trees not protected with insecticide will eventually be killed by EAB. However, depending on your location, it may be years before EAB reaches your woods. If you would like to harvest and sell your ash trees, you can call your local Resource Forester with the Missouri Department of Conservation to get more information on forest management and timber harvesting practices. Find your forester by using the "Local Contact" box at mdc.mo.gov.

4. What species should I plant to replace my ash trees?

Select a diversity of trees species to reduce risks of future new pests. For information on tree selection, planting and care, visit mdc.mo.gov/node/3321.

Communities

1. What should my community do to prepare for EAB?

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2. EAB has not been found in my community, so why are healthy-looking ash trees being removed now?

Most communities use a variety of methods to manage EAB, including tree removals. If removals are taking place, your community has likely developed a long-term plan to manage EAB. This plan will help reduce your community's financial burden of tree treatments and removals by spreading the costs over several years. Contact your community's forester to discuss the details of their EAB management plan.

Firewood

1. Why shouldn't I move firewood?

Tree-killing insects and diseases can hitchhike in firewood, moving much farther with you in a single weekend than they could in years on their own. Once in a new location, these invasive pests can start new infestations that destroy forests, decrease property values, and become costly to manage.

2. What does the statewide firewood quarantine mean in Missouri?

The current firewood quarantine restricts the movement of hardwood firewood out of Missouri. Firewood is free to move within the state, but officials strongly recommend not moving firewood more than 50 miles from where it was harvested to reduce the risk of spreading invasive pests. Contact the US Department of Agriculture APHIS PPQ office at (573) 893-6833 for further details of other regulated articles.

3. My firewood looks safe - there are no holes or bugs on it. Can I move it?

It's not a good idea to move firewood, even if it appears to be free of pests. Many invasive pests, including EAB, develop under the bark and are easily moved in firewood. Tiny insect eggs or microscopic fungal spores may be attached to bark cracks and crevices, waiting to be transported to a new location.

4. I understand that ash firewood can transport EAB, but what if my firewood is oak?

It's true that oak firewood doesn't contain EAB, but that doesn't mean other invasive forest pests can't be transported in oak firewood. For example, the tree-killing fungal disease oak wilt can be brought to new locations on oak firewood. In addition, your oak firewood may harbor pests that we don't even know are in Missouri, and you could be inadvertently spreading these pests to other oak forests in our state. It's just not worth the risk.

5. Is it okay to take firewood camping if it is dry and seasoned?

No. EAB has been known to emerge from ash firewood for at least two years after harvest. Other types of firewood may also harbor pests for long periods of time, even when the firewood is seasoned and dry.





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6. If I burn all my firewood completely during my weekend camping trip, can I bring it from far away?

Even if you plan to burn all of your firewood over a couple days, it's still not a good idea to bring wood from more than 50 miles away. Spring and summer are the most popular seasons for camping, and they are the riskiest times for transporting firewood from a pest perspective. Most pests are actively emerging from wood during the warm months, and moving firewood—even for just a few short days—can easily spread these invasive pests to new locations.

7. I brought firewood on a camping trip more than 50 miles away from where it was harvested. What should I do with it?

Have a bonfire, roast some marshmallows and burn the wood completely upon arriving at your campsite. Don't give pests time to leave your firewood and find new trees to infest!

8. I bought firewood near my campsite but I have some left over. What should I do with it?

The best option is to leave it at the campsite for the next camper, or share it with someone staying in that campground. Don't take the wood home with you and risk bringing invasive forest pests to your neighborhood.

9. Is any firewood considered "safe?"

Packaged, heat-treated firewood labeled with the USDA shield is safe to move and meets federal quarantine requirements. Any pests in heat-treated wood are killed during the heat treatment process, when internal temperatures of the wood are required to reach 140°F for 60 minutes.

10. Where can I purchase heat treated firewood in Missouri?

Most chain home improvement stores sell packaged, heat-treated wood, as well as many gas stations across Missouri. Heat-treated wood is pest-free but it can be expensive. Firewood harvested and purchased near your campground likely won't be heat treated, but it should be more affordable and still present a low risk of spreading pests.

Industry

1. Can the wood from EAB-infested ash trees be utilized for lumber?

Yes, but precautions should be taken to reduce the risk of spreading EAB to new locations in the state. When milling lumber, removal of the bark and an additional half inch of wood below the bark will remove EAB larvae contained within the logs. Burn or chip the discarded bark and outer wood layer to destroy the EAB larvae. Kiln-drying, heat treatment, and fumigation options are also available. For questions regarding treatment options, quarantines, and federal requirements for transporting ash lumber out of Missouri, contact the US Department of Agriculture APHIS PPQ office at (573)893-6833.

2. What does the statewide firewood quarantine in Missouri mean for industry?

All firewood may now move freely within the state of Missouri. The statewide EAB quarantine restricts hardwood firewood from leaving Missouri without a USDA compliance agreement. Some adjacent states are also quarantined for EAB and may allow movement between Missouri and those states. Contact the US Department of Agriculture APHIS PPQ office at (573)893-6833 for further details.

3. What federal quarantines are in place?

A federal quarantine for EAB is currently in place for the entire state of Missouri. Regulated articles include: ash nursery stock, any part of an ash tree (including logs, green lumber, waste, compost, chips, etc) and firewood cut from any species of hardwood.

4. What can sawmills do to slow the spread of EAB?

Sawmills should be familiar with the EAB federal quarantine and not ship any regulated articles to or through any areas of the country that are not under quarantine.

5. Who should I call for more information on regulations?

Contact the US Department of Agriculture APHIS PPQ office at (573)893-6833 for more information.



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