Nebraska Forest Service

Emerald Ash Borer

Frequently Asked Questions

Tree with thinning crown from emerald ash borer (EAB)

EAB adult (top) and larvae

What is Emerald Ash Borer?

Emerald ash borer (EAB) is a highly invasive, non-native insect that attacks and kills all species of North American ash trees, including white, green and black ash. EAB is native to Asia and was first detected in the U.S. in 2002 in the Detroit area. As of April 2014, EAB has **not** been found in Nebraska.

Why should I be concerned?

EAB is able to kill all ash trees, regardless of their health, age or size. It has killed more than 50 million ash trees already in the U.S. and will be a serious threat to Nebraska's 54 million ash trees when it arrives in the state.

What does EAB look like?

Adults are green beetles approximately one-half inch long with slender bodies (see above). Larvae are cream colored and up to 1 1/4 inch long. Larvae have brown heads and a 10-segmented body with bell-shaped segments near the back end.

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What are the symptoms of EAB?

Symptoms include canopy thinning and branch dieback, usually beginning in the top of the tree, sprouting from the base of the tree, bark splitting, zigzag tunnels below the bark, D-shaped exit holes 1/8-inch across, and bark stripping from woodpecker activity.

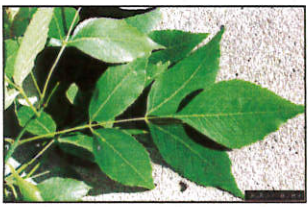
Sprouting from base (left), zigzag tunnel (center) and D-shaped exit hole

What trees does EAB attack?

EAB attacks and kills all species of North American ash, including white, green and black ash. Common cultivars of ash include Patmore, Marshall's Seedless and Autumn Purple ash. Mountain-ash is not affected because it is not a true ash.

How do I identify an ash tree?

Ash trees have an opposite leaf pattern, which means leaves, buds and stems are located directly across from each other. Ash leaves are compound and typically consist of 5-11 leaflets. When seeds are present, they are paddle-shaped and in clusters that stay on the tree until late fall or early winter.



Compound leaf of ash (left), opposite branching pattern (center) and paddle-shaped seeds in clusters

Are there any ash cultivars or varieties that are resistant to EAB?

Research so far suggests that no ash cultivars or varieties native to the U.S. are resistant to EAB, but research is continuing.

How does EAB spread?

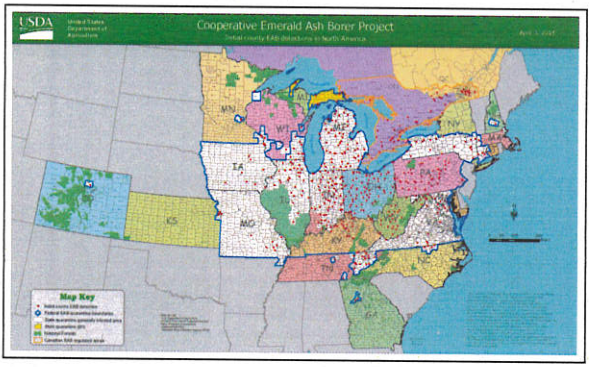
EAB spreads mostly through human-assisted movement, such as moving infested firewood and nursery stock. To prevent the spread, moving firewood and nursery stock out of infested areas is regulated by state and federal quarantines.

What can I do to avoid spreading EAB?

To avoid spreading EAB and other wood-infesting pests, collect or purchase firewood where you will burn it. Don't bring wood with you when you travel. Leave unburned wood at the campsite. For more information, visit dontmovefirewood.org.

Where has EAB been detected?

As of April 2014, EAB has been detected in 22 states in the U.S. and two Canadian provinces. The locations closest to Nebraska are in Colorado, Iowa, Kansas, Minnesota and Missouri.



States where emerald ash borer has been found

Should I treat my ash tree?

No treatment is needed until EAB has been detected within **15 miles** of your location. If your tree has EAB-like symptoms, such as canopy thinning, branch dieback or D-shaped exit holes, have a certified arborist examine the tree.

Generally ash trees are worth considering for treatments if they are within 15 miles of an infestation, are in good health, and are in a good location.

For more information about whether to treat a tree, see the publication *Emerald Ash Borer Guidelines for Nebraska Homeowners*. This and other publications and information about EAB can be found at nfs.unl.edu/EAB.

What are the treatments for EAB?

One treatment available for use by homeowners is a soil application of imidacloprid (such as Bayer Advanced 12-Month Tree and Shrub Insect Control*). The application should be made in May and is most effective on small trees, generally less than 15 inches in trunk diameter.

Tree care professionals are able to use additional products such as trunk injections and trunk and foliage sprays. Contact a certified arborist for these treatments.

For more information about treatments, see the publications *Emerald Ash Borer Guidelines for Nebraska Homeowners* and *Emerald Ash Borer Treatment Options* at nfs.unl.edu/EAB.

Should I remove my ash tree before it gets EAB?

If your tree is healthy and in a good location, there is no reason to remove it. If it is dying or diseased, it may be best to hire a certified arborist to look at the tree and determine whether it has EAB or another insect or disease problem.

Several native insects already in our area can attack ash trees. Canopy dieback and holes in the bark can be symptoms of these other insect pests. It is good to seek professional advice if you suspect your tree is infested.

Should I continue planting ash trees?

Ash has been a popular tree for landscape, agroforestry and conservation plantings for decades. This popularity has resulted in a tremendous number of ash trees being planted in Nebraska.

Because diversity is an important measure of the overall health of a community forest, it is important to plant a variety of trees. Based on this and the impending threat of EAB, planting ash trees is not recommended.

A number of other trees grow well in Nebraska. For recommendations about trees that would do well in your area, visit ReTree Nebraska at retreenebraska.org or contact your local NFS District Forester (nfs.unl.edu).

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* Other similar products may be available.
No endorsement or discrimination is implied.

What other insects attack ash trees?

Several species of native borers attack ash trees. The ash/lilac borer, banded ash clearwing and carpenterworm attack healthy ash trees. The redheaded ash borer, banded ash borer, flatheaded apple tree borer and eastern ash bark beetle attack stressed or dying ash trees.

For more information about these insects, see *Decline in Ash Trees: Borers and Bark Beetles - An Identification Guide* at nfs.unl.edu/EAB.

Ash/lilac borer larva (above), carpenterworm (upper right) and ash/lilac borer exit holes. Exit holes for these borers are round and 1/4-inch in diameter or larger.

What other insects look like EAB?

Many insects are frequently mistaken for EAB. The six-spotted tiger beetle, golden flatheaded borer, green June beetle and Japanese beetle are often mistaken for EAB. For more information about EAB look-alikes in Nebraska, see *Emerald Ash Borer Look-Alikes* at nfs.unl.edu/EAB.

Clockwise from left: Japanese beetle, six-spotted tiger beetle, golden flatheaded borer and green June beetle

What can be done with wood from trees killed by EAB?

Only limited options are available for treating infested ash wood to ensure EAB will not be spread through lumber or wood products. For more information contact the Nebraska Department of Agriculture at (402) 471-2351.

Who can I call if I think my tree has EAB?

If you think your ash tree has EAB, contact the Nebraska Department of Agriculture at **(402) 471-2351** or USDA APHIS at 402-896-8256.

Where can I find more information about EAB?

The following websites and publications have more information about EAB and related topics:

- **nfs.unl.edu/EAB** (Nebraska Forest Service)
  - Emerald Ash Borer Guidelines for Nebraska Homeowners
  - Emerald Ash Borer Treatment Options
  - Emerald Ash Borer: Readiness Planning for Nebraska Communities
  - Emerald Ash Borer Look-Alikes
  - Decline in Ash Trees: Borers and Bark Beetles - An Identification Guide
  - Decline in Ash Trees: Diseases & Environmental Stresses - An Identification Guide
  - How to Hire an Arborist
- **www.agr.ne.gov/plant/eab.html** (Nebraska Department of Agriculture)

Photo credits: EAB adult--Leah Bauer, USDA Forest Service, Northern Research Station, Bugwood.org; EAB larvae--www.emeraldashborer.info; sprouting from base--Penn. Dep. of Conservation and Natural Resources, Bugwood.org; zigzag tunnel, ash/lilac borer, Japanese beetle--David Cappaert, Michigan State Univ., Bugwood.org; ash leaf--Paul Wray, Iowa State Univ., Bugwood.org; carpenterworm--William H. Hoffard, USDA Forest Service, Bugwood.org; six-spotted tiger beetle--Aydin Örstan, snailstales.blogspot.com; golden flatheaded borer--www.whatsthatbug.com; green June beetle--Clemson Univ., USDA Coop. Extension Slide Series, Bugwood.org

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