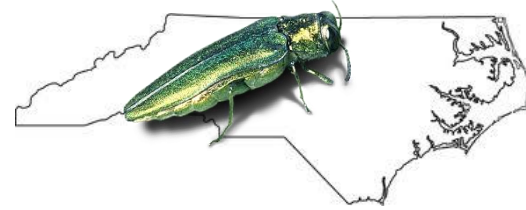


Emerald Ash Borer In North Carolina Frequently Asked Questions

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North Carolina Forest Service
Forest Health Program

What is the emerald ash borer?

The emerald ash borer (EAB) is a metallic green beetle that bores into ash trees, ultimately killing them. It is not native to the United States and was first found near Detroit, Michigan in 2002. The EAB is now found in 19 states and has already killed tens of millions of ash trees.

How does it kill a tree?

Adult beetles lay eggs on the bark of ash trees. When the eggs hatch, the larvae (immature beetles) bore into the bark and feed on the transportation tissues of the tree. This disrupts the movement of nutrients and water within the tree, girdling it and causing tree death.

What trees are affected?

All species of ash native to the United States are susceptible. The four species of ash native to North Carolina include white ash, green ash, Carolina ash, and pumpkin ash. Both healthy and unhealthy trees can be attacked. Mountain ash, which is not considered a true ash, is not susceptible to EAB.

Where is it from?

The beetle is native to parts of Asia, specifically China, Japan, Korea, and parts of eastern Russia. It is believed to have been transported to the United States in wood packing materials made of ash.

Where is the insect currently found in the U.S.?

The EAB was first found in the United States in June of 2002, near Detroit, Michigan. Since then, it has spread to [nearly 20 central and eastern U.S. states and parts of eastern Canada](#).

In early summer 2013, the emerald ash borer was found in Granville, Person, and Vance Counties in North Carolina.

How does EAB spread?

EAB can spread naturally by flying to new host trees upon emergence, but this dispersal is limited. The more threatening spread is that of long-distance dispersion, which can easily occur when a beetle is accidentally transported from an infested area to an uninfested area by the transportation of ash wood products by humans. The spread of EAB to Tennessee and Virginia, including detection sites in counties adjacent to North Carolina, is believed to have been accidentally facilitated by humans.

Will EAB kill all of the ash trees?

It is too early to tell, but many believe that mortality may be similar to what has been seen with hemlocks (affected by hemlock woolly adelgid) and American chestnuts (affected by Chestnut Blight). The EAB has already killed millions of ash trees in the United States and threatens to kill many more as its range expands. Research to manage the beetle is ongoing and the best management plan for now is to minimize its spread while seeking a permanent solution.

Why are ash trees important?

Ash wood is greatly valued for its strength and elasticity and is often used for baseball bats, bows, tool handles, and other products that require durability, strength, and resilience. Green ash is planted widely as a landscape tree in urban areas and is a valuable native component of wetland areas. Ash foliage and seeds are fed upon by numerous animals as well as butterfly and moth caterpillars.

How long does it take for a tree to die?

Within 2 years of observing symptoms, most of the crown of the tree will be dead. Complete tree death typically occurs within 5 years, but may take as few as 2-3 years.

What does a tree infested with the EAB look like?

Initially, the top of the crown begins to thin and partially die. Epicormic sprouting, or sprouting from the main stem of the tree, may occur. The presence of insects below the bark leads to increased woodpecker activity, which causes the tree to look like it is losing patches of bark. In severe cases, the bark of the tree may split in places where the larvae are feeding beneath.

Direct evidence of the beetle can also be seen. Small, 1/8" D-shaped exit holes, where adult beetles emerged from the tree, will occur wherever a beetle emerges. This may be above eye level, so it is important not to discount a symptomatic tree if no exit holes are observed. If the bark is peeled back, the galleries where larvae have fed may also be observed; they are meandering and are usually filled with frass (sawdust and insect excrement). Larvae may also be visible underneath the bark. The cream-colored larvae have bell-shaped segments and can be up to 1.25" in length.

What do the beetles look like and when can they be found?

Adult beetles are a striking metallic green color, about 1/2" long and 1/8" wide. If their wing covers are pried up, their bodies underneath are a metallic purplish-red color. In North Carolina, the adult EAB is expected to be active in the late spring, likely April through June. Emerald ash borer larvae may be found under the bark of the tree throughout the year.

What can be done about it?

Currently, little can be done to protect or save trees from the EAB in a forest environment. The best option for most ash trees is to quickly detect the presence of EAB in new areas and destroy affected tree materials. Cut down dead and dying ash trees and chip, burn, or bury the wood on the site, in accordance with all local regulations, to reduce the chance of other trees being attacked. The NCDA&CS has issued a quarantine to prevent the human-facilitated movement of EAB to new areas.

Insecticide options are available for those wishing to protect high-value ornamental trees, an option which is not recommended until the beetle is known to be present within 15 miles. If a tree is already infested and if over half the crown is alive, insecticides may be used therapeutically to help trees recover. Recovery is slow and improvement in tree health might not be noticeable for one to two years. Re-treatment must take place every one to two years.

Communities should identify their ash resource with a public [tree inventory](#). Without a public tree inventory, it is difficult to evaluate how the EAB will affect your community.

What counties are quarantined and why?

As of June 2013, the EAB quarantine in North Carolina consisted Granville, Person and Vance counties. This means that any part of an ash tree, the insect itself, and all hardwood (deciduous) firewood cannot be

moved from a quarantined area into an area outside the quarantine. Firewood refers to wood that is cut to less than four feet in length.

The quarantine was established to prevent the spread of EAB to other, non-infested parts of the state, in an effort to protect ash resources elsewhere and minimize the impacted area.

How can moving firewood and other wood products spread the insect?

Beetles bore into ash wood as very small larvae, leaving no visible entry points. Therefore, it is difficult to tell if wood is infested with EAB before the adults emerge. Any beetle larvae living in wood can emerge during transport or at the final destination and attack trees in the new location. This is often done through the transportation of firewood and wood packing materials.

The primary focus right now is to prevent further spread of this insect, especially spread facilitated by humans. Don't move firewood or other unprocessed ash wood products out of areas where EAB has been detected and quarantined, or from areas where it is suspected to be present. A good rule of thumb is to burn firewood within 50 miles where it was cut.

With EAB spreading quickly, should landowners harvest all of their valuable ash timber now?

The natural spread of EAB is fairly slow, moving no more than 15-20 miles per year. If someone is growing ash on their property, they should monitor their trees for signs and symptoms of EAB. As long as trees are healthy and growing, and not under imminent threat from the insect, they should continue to be managed according to a forest management plan.

If ash trees are found to be infested, a salvage harvest should be considered. Emerald ash borer damage is primarily confined to the outer portions of the tree, so affected trees may still be valuable for lumber and other wood products if detected early and processed quickly.

For areas within the quarantine, all parts of any ash tree harvested must remain within the quarantined area. That means harvested materials can only be left on site or transported to locations inside of the quarantined boundaries. This applies to both infested and healthy trees. Harvested ash wood can freely move from a non-quarantined area into the quarantine boundaries.

How can one find out how much ash trees on his or her property are worth?

In a forest setting, a [consulting forester](#) can appraise tree and stand values and help with the marketing of your timber. Some consulting foresters work in urban areas and may be helpful in assessing the condition and value of yard trees.

For yard trees, assessing a value may be difficult. Landscape trees usually have more limbs and poorer form than those in a forest. They may also be damaged by lawnmowers, cars, nails and other urban stresses. Yard trees can also be expensive to remove due to nearby houses, roads, utilities, and other hazards. The cost of removing a yard tree may equal or exceed its value.

As long as they are healthy, urban trees' highest value are usually as shade trees. A consulting forester or [certified arborist](#) may help you assess the value of urban ash trees, determine a treatment plan, or recommend a buyer who will give you a fair assessment.

What should one do if he or she observes a dying ash tree and suspects the EAB?

- Please report the location and descriptions of potentially infested trees to 1-800-206-9333 or newpest@ncagr.gov.
- Contact your [county forest ranger](#) for diagnosis assistance and management advice. Local rangers will refer potentially infected trees to forest health or plant industry specialists.
- DO NOT COLLECT AND TRANSPORT WOOD SAMPLES THAT MAY BE INFESTED!

DON'T MOVE FIREWOOD



For information about Emerald Ash Borer in North Carolina, contact the NCFS Forest Health Branch

Brian Heath, *Forest Health Specialist – West*, brian.heath@ncagr.gov, (828) 413-2291

Kelly Oten, *Forest Health Specialist – East*, kelly.oten@ncagr.gov, (919) 609-1556

Jason Moan, *Forest Health Monitoring Coordinator*, Jason.moan@ncagr.gov, 919-553-6178, x223

Robert Trickel, *Forest Health Program Head*, rob.trickel@ncagr.gov, 919-857-4858

For regulatory or quarantine questions, contact Plant Industry Division

Phillip Wilson, *Plant Pest Administrator*, phil.wilson@ncagr.gov, (919) 707-3753



**Report New Infestations to: 1-800-206-9333 or to
newpest@ncagr.gov**



Clickable Related Links

Where in NC is the EAB now?

[NCFS: Forest Invasives Map](#)

For more general information on EAB:

[National EAB Information website](#)

[USFS: EAB Pest Alert](#)

[Virginia Tech: EAB Online Course](#)

For more information on transporting firewood:

[NCFS: Use Local Firewood](#)

[Don't Move Firewood](#)