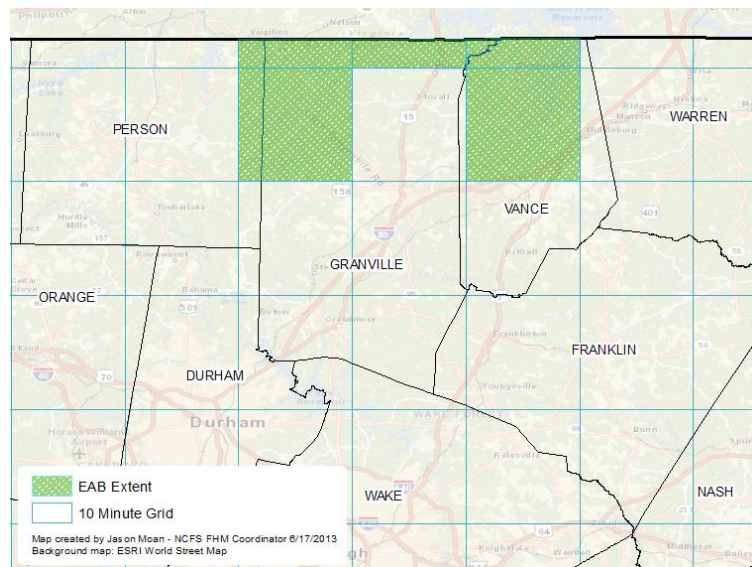


Emerald ash borer confirmed in North Carolina!

The emerald ash borer (*Agrilus planipennis*) was recently found in declining ash trees in northern Granville County, North Carolina during routine trapping surveys for the pest. Additional surveying found signs of emerald ash borer activity in the bordering counties of Person and Vance. The find in Granville County marks the first time the emerald ash borer (EAB) has been found in North Carolina, though multiple adjacent counties in Virginia are known to be infested. Emerald ash borer is also present in several Tennessee counties bordering North Carolina. Though ash is a relatively minor component in the forests of North Carolina, there are an estimated 258 million ash trees in forests statewide and unknown numbers of ash planted in urban areas. Of the 258 million trees, more than 60 percent are green ash (*Fraxinus pennsylvanica*), a species preferred by the EAB.



**Current extent of
emerald ash borer in North Carolina**

This non-native pest was first observed killing ash trees in the U.S. near Detroit, Michigan in 2002 and is now found in numerous central and eastern states as well as eastern provinces of Canada. Since it was initially identified in the U.S., the EAB has killed tens of millions of ash trees across the areas where it is found. The cost of treatment, removal, and/or replacement of these trees, especially in the urban environment, can reach into the billions of dollars.

How will I recognize emerald ash borer?

The symptoms of EAB attack are more easily noticed than finding the actual beetle itself. When ash trees become infested, the crowns begin to thin from the top down and lose their leaves. In addition, increased woodpecker activity may be observed and epicormic sprouts may form along the trunk of the tree. The infested trees have an overall look of decline and the trees may be infested for multiple years before the symptoms appear.

There are a few native pests that can cause some or all of these symptoms, so it is important to take a closer look if you have an EAB-suspect tree. If the trees are infested by EAB, there are different signs to look for depending on the time of year. Generally, EAB overwinter as larvae and begin pupation in late April or early May; therefore, during winter and early spring months, look for evidence of larvae or pupae in the phloem tissue just under the bark. Adults begin emerging in May to June and can be found throughout the summer months. The adults are very small, 1/4 to 1/2 inch long, slender, and are a metallic green. When the adult beetles emerge from the tree, they create 1/8 inch “D” shaped exit holes, one of the most indicative signs of EAB infestation. The larvae are about 1 to 1¼ inch long, flattened, and have characteristic “bell-shaped” body segments. They create serpentine feeding galleries that can be found under the bark of infested trees; these galleries are sometimes exposed by vertical splits in the bark. Photos of the signs and symptoms of this pest can be found at the end of this document.

How does it spread?

EAB can spread naturally by flying to new ash trees as adults, but this dispersal is limited. The more worrisome mechanism by which EAB spreads long distances is through human assistance. Emerald ash borer can be present in many types of living and/or dead ash material including nursery stock, unprocessed logs, green lumber, and perhaps most importantly, firewood. Though natural spread is occurring around infested areas, new EAB infestations have appeared sometimes hundreds of miles from the closest known infestations. Many of these new infestations have been found in campgrounds or other recreational sites, leading researchers to conclude that firewood movement was the source of the introductions. We can help minimize the spread of the EAB by promoting the use of local firewood at our parks and campgrounds whenever possible.

Can it be managed?

Currently, little can be done to protect or save trees from the EAB in a forest environment. 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.

The best option for forest trees and low-value landscape 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.

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 is being done?

After EAB was found in the state for the first time, an evaluation determined that it is in the best interest of the state and its ash resources to try to limit the spread of this pest as much as possible. Movement of ash trees and plant parts including nursery stock, firewood, logs, stumps, roots, and branches can potentially spread EAB to new areas of the state. Ash trees can be harvested in a quarantined area as long all parts of the tree stay within the quarantined area. That means harvested materials can only be left on site or transported to locations inside of the quarantined boundaries unless accompanied by a North Carolina Department of Agriculture and Consumer Services Compliance Agreement. This applies to both diseased and healthy trees. Harvested ash wood can freely move from a non-quarantined area *into* the quarantine boundaries. For more information on the EAB quarantine, see the contact information at the end of this document.

How do we know where it is?

There are formal surveys for EAB occurring in our state, but the more people we have looking for this pest, the better our chances for quickly finding it when it moves into a new area. In other states, many new infestations of non-native pests have been spotted by informed resource professionals and concerned citizens. A map of the current affected counties can be found at the end of this document.

Each year, the USDA - Animal and Plant Health Inspection Service conducts an EAB detection trapping program along with state cooperators including our agency and the N.C. Department of Agriculture and Consumer Services - Plant Industry Division. The traps are very noticeable and you may see them in various locations



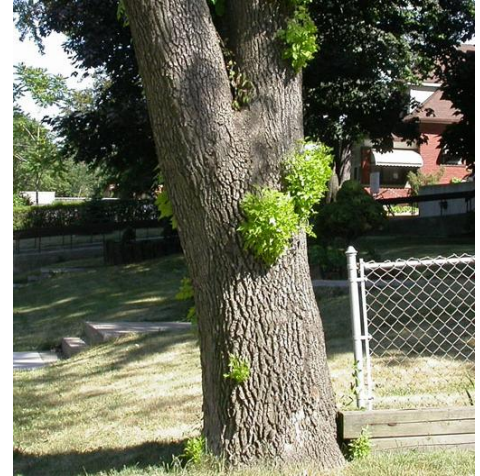
across the state. They are purple, three-sided, about 3 feet tall, and each side is about one foot wide (shown above right). These purple traps, which are covered with a sticky material, are hung about 20 feet high on or near ash trees throughout the summer months to attract dispersing adult EAB beetles.

What to do if you suspect emerald ash borer

Because state and federal agricultural and forestry agencies are tracking the spread and potential impacts of emerald ash borer, confirmation of any new records of this pest must be made according to strict guidelines. Report the location and descriptions of any ash trees suspected of being infested with EAB to: **1-800-206-9333** or **newpest@ncagr.gov**

SAMPLES SHOULD ONLY BE COLLECTED AND
TRANSPORTED BY TRAINED PERSONNEL

Signs and Symptoms of EAB



Epicormic sprouting

E. Czerwinski
Ontario Ministry of Natural Resources
Bugwood.org



Declining ash tree

Photo taken near Frankfort, Kentucky



“D”-shaped exit hole

Photo taken near
Frankfort, Kentucky



Serpentine feeding galleries

Photo taken in Granville Co, NC



Adult beetle (~1/2 inch long)

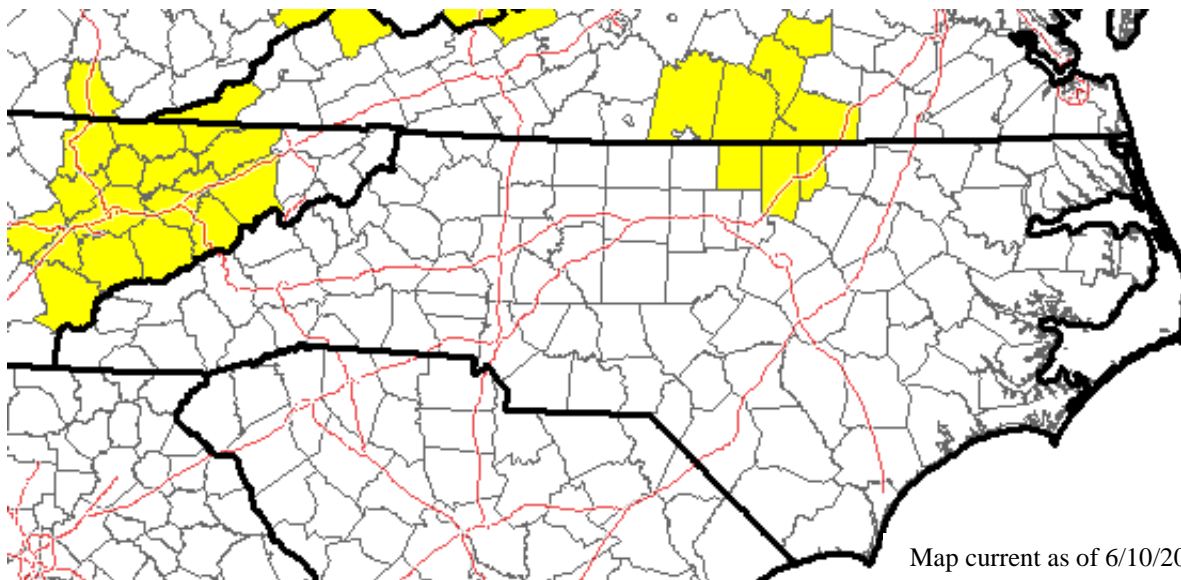
D. Cappaert, Michigan State University
Bugwood.org



EAB Larva (~1 inch long) Notice bell-shaped body segments

Photo taken near Frankfort, Kentucky

Current range of emerald ash borer in and near North Carolina (shown in yellow)



Additional Information

For additional information, please visit these links:

Emerald ash borer FAQ - http://www.ncforestservice.gov/forest_health/fh_eabfaq.htm

Emerald ash borer - www.emeraldashborer.info

Firewood movement - www.dontmovefirewood.org/

For other non-native forest pests of concern to North Carolinians, please visit

http://www.ncforestservice.gov/forest_health/fh_firewood.htm

For information about EAB in North Carolina, contact NCFS Forest Health Branch staff

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

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

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

Rob Trickel, *Forest Health Branch 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

