



EAB larva tunneling under bark



holes made from emerging adult beetles



EAB adult emerging

# *Tiny Beetle* BIG PROBLEM

DEC battles the emerald ash borer



adult emerald ash borer beetle

By Maria King

**W**e all knew and feared it was coming. It was only a matter of time. Then on June 15, 2009, two alert U.S. Department of Agriculture scientists stopped to inspect some suspicious-looking dying ash trees near a highway exit in Randolph, Cattaraugus County. Their suspicions were justified when they found tiny, glittering green beetles, which were immediately sent to a lab in Michigan for identification. Two days later, everyone's worst fears were confirmed and New York joined the growing list of states infested with the invasive ash tree killer, emerald ash borer (EAB).

A quarantine was quickly imposed, restricting the movement of ash trees, ash products, and firewood of all wood species from Cattaraugus and Chautauqua counties. Nevertheless, that initial find would be overshadowed only a year later, when six new infested counties were discovered in June of 2010. The quarantine expanded to 18 counties to include nearby "high risk" areas. As insect traps and visual surveys detected new infestations, it became clear: The summer of 2010 would be the summer of "the Emerald Plague."

Though look-alikes exist, no other insect in New York State is the exact color, size and bullet shape as EAB. At only one-half inch long, the tiny, metallic-green insect doesn't look like an insidious killer, but don't let its small size and flashy looks fool you—EABs will relentlessly attack a large, healthy ash tree, killing it in only two to three years. These tiny bugs have already killed millions of valuable ash trees in the United States since 2002, when they were first discovered

in Michigan. Officials believe this unwelcome guest was brought to the U.S. from Asia on infested ash wood used in shipping pallets.

As with most invasive species, EAB is not a pest on its native continent, Asia. This is because in Asia, the borer, its host trees, and predators have evolved together over time. Native predators control its population, and host trees

**DEC, along with other state and federal agencies, non-profits and universities, has been working over the past several years to fight emerald ash borer.**

have developed resistance to the insect. In North America, woodpeckers and certain wasps will prey on EAB, but not enough to control their populations. And our ash trees have no resistance to the insect, so there is essentially 100 percent mortality for infested trees.

All ash species are susceptible to EAB infestation. White, black and green ash are the most common species in New York State. In summer, each adult female beetle lays an average of 80 eggs on ash trees. After the eggs hatch, the larvae inflict their damage, tunneling beneath the bark of the "host" tree. Before long, these tunnels completely cut off the tree's flow of nutrients and water, essentially starving it to death.

### **Will ash be wiped out?**

Losing New York's 900 million ash trees would be a major environmental, economic and cultural blow to the state. Ash wood is used to produce a number of wood products, including cabinets, furniture, and handles for rakes and other tools. Ash is also the wood of choice for professional baseball bats, and Native Americans use black ash in

traditional basket making. In addition, a variety of wildlife feed on ash seeds. Should enough ash be killed that they can no longer be used for bats, maple would be the most likely replacement. Unfortunately, another deadly invasive insect, the Asian longhorned beetle, favors maple! So far, the Asian longhorned beetle has not been found in upstate New York's forests, but infes-

tations in the New York City area and Massachusetts are an ever-present threat to our hardwoods.

As with many tragedies, decimation of ash by EAB is not without irony. When Dutch elm disease destroyed the majestic elms once common along America's main streets, ash became a common replacement. So, some towns in other states have had to go through the painful removal of their valuable street and shade trees not once, but

Rob Cole



Checking an ash tree for signs of EAB damage.

twice within the past 50 or so years! This sudden loss of street trees left residents with treeless yards and cost property owners and local governments millions of dollars to remove the dead trees before broken limbs caused injuries.

As destructive as it is, EAB is not solely to blame for its ruinous reputation. Although it has wings, it is not a strong flier, and the vast area over which it has spread in less than a decade is mostly the result of the unwitting assistance of people. The main way the insect moves to new areas is on infested firewood. Nursery trees and logs have also been found to carry the pest, but not as often as firewood.

Because the borer's larvae live beneath the bark, they are very difficult to see on firewood. If this isn't bad enough, they can live for up to two years in a piece of infested wood. So, a person who moves infested firewood from one area to another could unknowingly be inviting ash-tree devastation into the woods near their home, hunting cabin, or favorite campground.

## Fighting Back

When EAB was first discovered, foresters tried to totally eradicate it by removing all ash trees within a half mile of infested trees. But all-out war proved too difficult and expensive, and so was replaced with a more measured

approach known as Slow Ash Mortality or SLAM. SLAM uses a veritable Swiss army knife of tools and techniques to slow the spread of EAB, including removing infested trees, more precisely defining infestation boundaries, and researching insecticides and biocontrols (organisms that kill pests). The hope is that current research will lead to new ways to suppress EAB populations, minimize their spread, and delay the death of ash trees. It is also hoped that SLAM will buy time for communities and forest owners to prepare for the EAB threat and potential financial impacts.

In conjunction with other state and federal agencies, non-profits and universities, DEC has been working over the past several years to fight emerald ash borer. In 2007, when the "Don't Move Firewood" campaign began, few had heard about EAB or understood why moving firewood could be a danger. Today, after seeing billboards, public service announcements, programs at campgrounds and parks, presentations to target groups, and exhibits at fairs and conferences, many New Yorkers know what EAB is and how they can help stop it from spreading.

To further combat EAB and other invasive forest pests and diseases, New York State created a regulation in June of 2009 restricting the movement of firewood. Since then, many other



The damage from EAB has caused some communities in other states to remove their beautiful street and shade trees.

states have followed suit. The regulation limits the movement of untreated firewood (firewood that has not been heat-treated to kill pests) to no more than 50 miles from its source. Untreated firewood from sources within New York State must be accompanied by a label, receipt or self-issued certificate stating its source. (You can find the Certificate of Source form on DEC's website.) In addition, untreated firewood cannot be moved into New York from other states. Firewood that is "heat-treated" as specified by the law—that is, to a minimum core temperature of 160°F for at least 75 minutes—can be moved into and around the state without restriction. This heating method kills any insects

## What is the Ash Tree?



USDA Forest Service

Branches and buds are directly across from, or opposite each other.



Paul Wray, Iowa State University

Bark has distinct pattern of diamond-shaped ridges.



Paul Wray, Iowa State University

Leaves are compound, and composed of 5 to 11 leaflets.

James Clayton



**Q:** What are those purple, wedge-shaped things hanging in the trees?

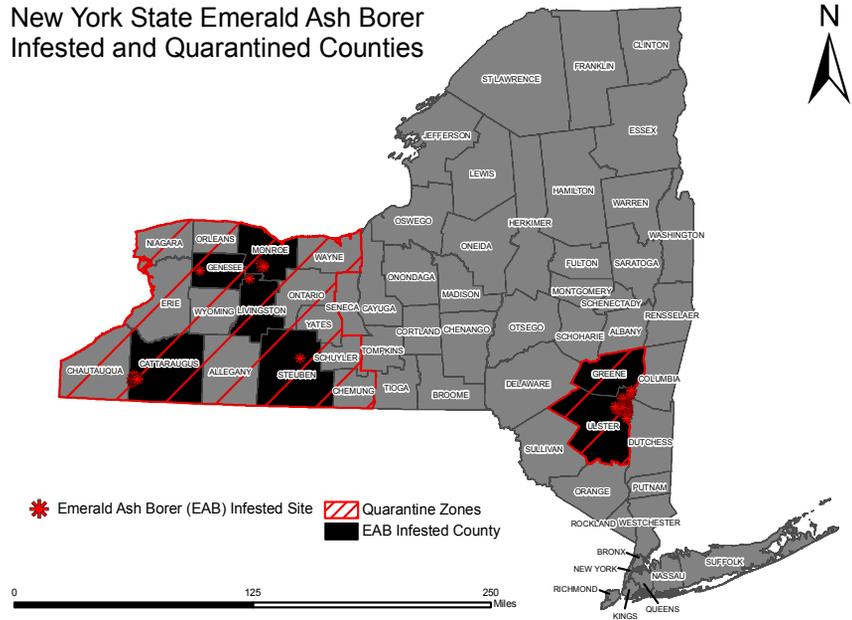
**A:** They are emerald ash borer traps, also known as “purple prism” traps. The traps are used for early detection and boundary marking of EAB infestations. Unfortunately, they don’t catch enough beetles to control populations, but their use in early detection is crucial, as the sooner an infestation is found the easier it is to manage.

Hung high in ash tree branches, the traps contain a lure which smells like a stressed ash tree. The lure, and the trap’s purple color, draw in the beetles, which get stuck in the very sticky glue that coats the outside of the trap. When the traps are inspected throughout the summer, any EABs, or look-alikes, are collected and sent to a lab for identification.

In 2010, all of the new infestations were first detected via the purple traps. More than 8,000 traps were set in New York State in 2010, primarily within a 100-mile radius of known EAB infestations and in high risk areas, such as campgrounds. Additional traps were hung for research purposes.

Don’t worry if you have purple prism traps on or near your property. It doesn’t necessarily mean that your area is under attack by EAB. It’s just a precaution. But if you do suspect you might have EAB, call the hotline number listed to the right.

## New York State Emerald Ash Borer Infested and Quarantined Counties



or diseases that may be inside the wood. Heat-treated firewood must include a label stating that it meets New York’s standards.

### Hope for the Future

With all the talk of EAB spreading and ash trees dying, it would be easy to give up. But there is hope. Research may provide us with a way to stop or more successfully control EAB. Communities can develop EAB response plans, so they can act at the first sign of an infestation. The public can become more aware of the health of their trees, and even survey for EAB damage and report their findings to DEC or Department of Agriculture and Markets. Concerned organizations can continue to spread the word and increase awareness. And of course, everyone can use local firewood, which supports the local economy and can slow the spread of EAB and other invasive insects and forest pathogens. It is only with constant vigilance that

James Clayton



DEC is working with other state and federal agencies, as well as non-profits and universities, to identify areas affected by EAB, and to battle its spread.

we can hope to minimize and perhaps one day eliminate the damage caused by EAB and other insidious invasive pests to the invaluable forests of New York.

**Maria King** is an outreach coordinator for the Division of Lands and Forests forest pest outreach program.

### Helpful Information:

DEC’s EAB page:

[www.dec.ny.gov/animals/7253.html](http://www.dec.ny.gov/animals/7253.html)

Nature Conservancy’s “Don’t Move Firewood:”

<http://dontmovefirewood.org>

EAB information by the USDA Forest Service and several universities: <http://emeraldashborer.info>

National EAB site:

[www.stopthebeetle.info](http://www.stopthebeetle.info)

New York State’s Toll-free Forest Pest and Firewood Hotline:

**1-866-640-0652**