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May 15, 2009

## *Emerald Ash Borer Edition*

### **EAB infestation found within 1 mile of Minnesota's border**

By Mark Abrahamson  
Invasive Species Abatement Program, MN Dept. of Agriculture

Emerald ash borer (EAB) is now known to be present just outside the Minnesota border in Vernon County, Wisconsin. This infestation became known in early April when a citizen in Victory, Wisconsin reported dying ash trees to Wisconsin officials. See map on next page. Since the initial discovery, infested trees have been confirmed two miles to the south of Victory, two miles to the north and 1.5 miles to the east. The original detection in Victory was approximately 1 mile south of the Minnesota border, the northernmost infested trees that have been discovered since are 0.1 mile from the Minnesota border.

The southeastern corner of Minnesota is comprised of the Upper Mississippi River Wildlife and Fish Refuge which is three miles wide at the Iowa border and composed of riverway, sloughs and forested islands. The nearest land accessible by foot is off of Hwy 26 which runs along the Minnesota "shore" to the west of the refuge. In the week following the detection of EAB in Victory, staff from Minnesota Departments of Agriculture (MDA) and Natural Resources, as well as from USDA APHIS Plant Protection and Quarantine conducted visual checks and sampled declining ash in the river valley west of Highway 26. No EAB were found through this work, though only heavily infested trees can typically be found through visual inspection. Considering that this area is three miles from the nearest known infested trees in Wisconsin, it is likely that infested trees cannot yet be detected visually in this area. Additional surveys utilizing detection trees and purple traps will be implemented in the area (as well as elsewhere throughout the state) this summer.

However, due to the proximity of the infestation in Wisconsin, an emergency state quarantine was declared on Houston County by the MDA on April 22 and was followed by a federal quarantine on April 28. There are two reasons for declaring the quarantine in advance of finding EAB in Houston County:

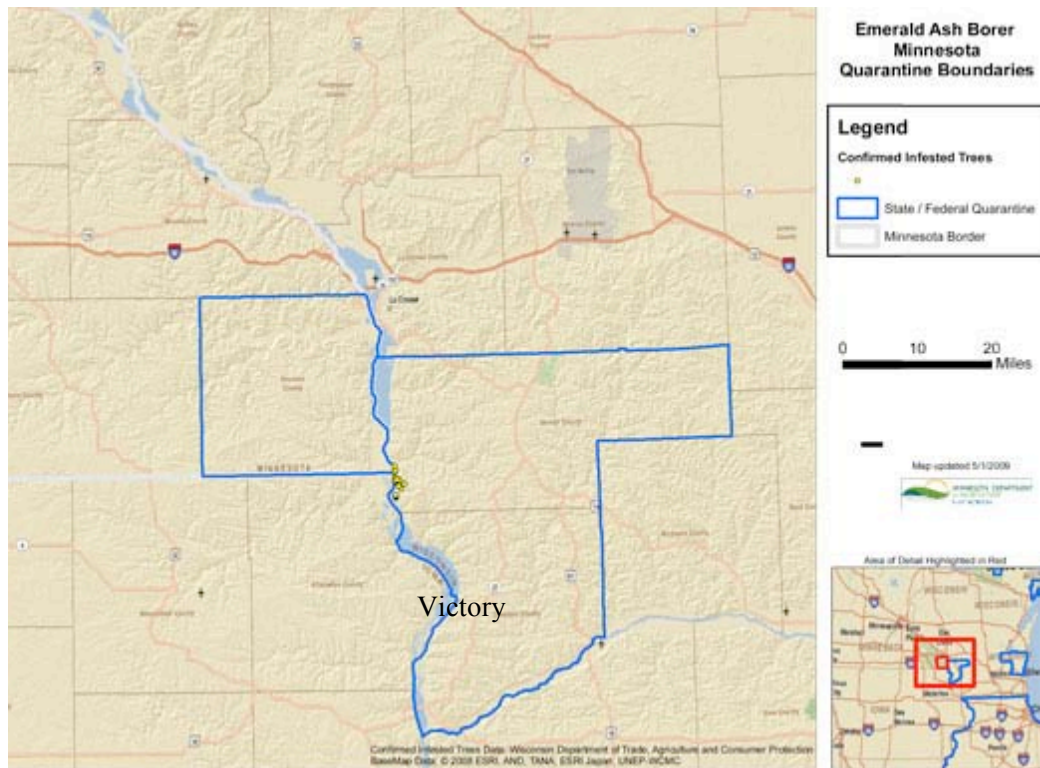
1) The lesson learned from EAB infestations elsewhere is that trees that can be recognized as infested are only the tip of the iceberg and that many additional trees over a wider area are also infested but cannot yet be recognized as such. Therefore we have to assume this infestation extends into Houston County.

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2) EAB adults are known to be capable of flying up to 4-5 miles. While most adults seem to not move very far before infesting a tree, a portion of the population likely does fly some distance before infesting a tree. Houston County is well within the flight distance for EAB from known infested trees to enter Minnesota.

Items prohibited from leaving the quarantined area without approval from state and federal authorities include: ash trees, ash logs, ash branches, ash chips and hardwood firewood. It is inevitable that EAB will impact Houston County and southeastern Minnesota. However, it is important to keep this new discovery in perspective. EAB didn't get to Victory on its own. Victory is a recreation area, with a lot of camping and seasonal homes, and it is likely that EAB was introduced to the area via infested firewood. Likewise, it is probable that similar infestations are simmering undiscovered elsewhere in Minnesota and other states; and that new infestations are being created when infested firewood is moved unknowingly to uninfested areas.



Our best defense against EAB is to delay its inevitable spread across Minnesota for as long as possible and the best way to do that is to make it move on its own.

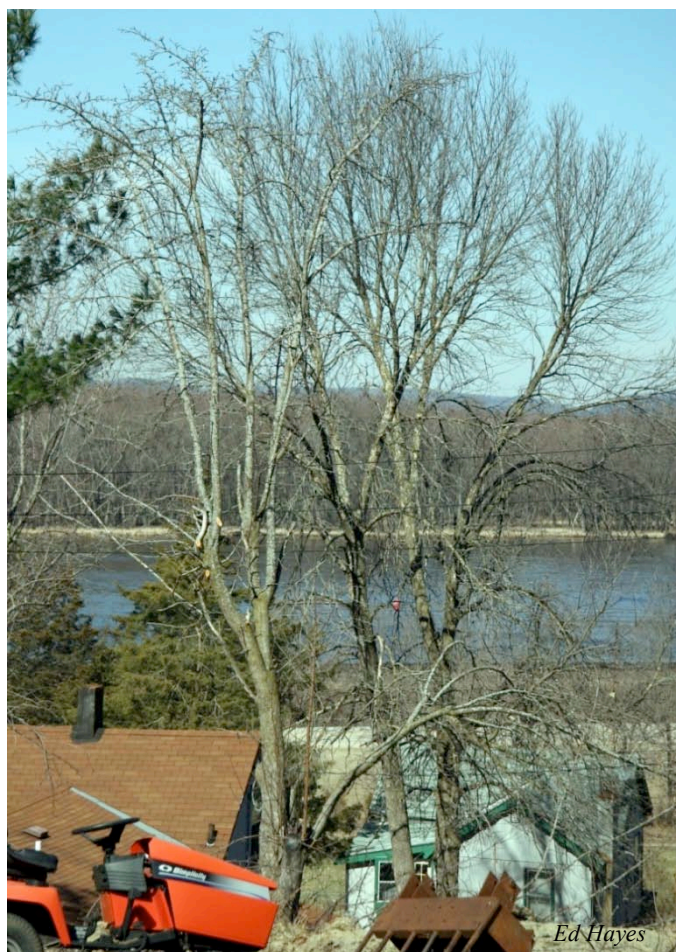
## EAB photo essay

Victory, Wisconsin is a small river town about 30 miles south of La Crosse on the Mississippi River. Victory is just about straight east of New Albin, Iowa. The two towns are separated by the river and large islands of river bottom forests. In Victory there are several suburban yards with ash trees like these that are heavily infested with EAB.

Note what appear to be light areas on the stems of the ash trees' mid-crown. These are areas where the bark has been removed by wood peckers hunting for EAB larvae to feed on.



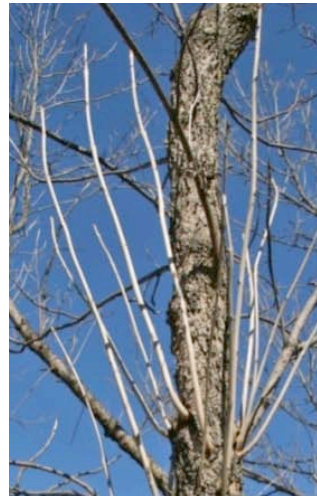
*Ed Hayes*



*Ed Hayes*



A typical pattern of epicormic shoots/water-sprouts that have developed on stressed ash trees as they are infested by EAB over multiple years. A profusion of epicormic branches are produced near the lowest point of the infestation each year. The ash in Victory lost the top 1/3 of the crown first followed by a progression of infestations and epicormic shoot formations down the stem. Additional epicormics may be produced at the root collar.



A cautionary note:

Epicormic branches can also be produced by other agents that severely stress the tree. Finding D-shaped exit holes or EAB galleries confirms the presence of EAB.

The distinctive S-shaped (serpentine) galleries under the bark on the surface of the wood are also diagnostic of EAB infestations. See the single gallery at the center/ bottom of the photo on the right. These feeding galleries zig-zag back and forth, becoming progressively larger as the larva grows. The galleries are packed with fine frass from the larval feeding.

Below. Under the bark and in the phloem, the mirror image of the S-shaped galleries packed with frass galleries are easy to see.



*Ed Hayes*



*Ed Hayes*

# The Basics

## Big trouble for ash trees

By Mary Hoff

DNR, Minnesota Conservation Volunteer

Editor's note: This article appeared in the May-June issue of the *Volunteer*. At the time of publication, the EAB infestation in Victory, Wisconsin had not been discovered. This article is used with permission.

Jacob Ryg has seen plenty of tree troubles as the city forester in Rochester. But the one that really has him quaking in his boots is the one he hasn't seen—yet.

“It's an environmental disaster, in my opinion,” he says. “When it hits Minnesota, we're going to have a huge problem.”

The trouble Ryg is talking about is the emerald ash borer, an invasive insect from Asia first discovered in Michigan seven years ago. Larvae of this shiny beetle tunnel beneath ash tree bark, gnawing away at living tissue until they kill the trees—without fail.

No one has yet found emerald ash borer in Minnesota. But with the assistance of people who inadvertently move larvae-infested wood or trees from one place to another, the insect is spreading rapidly around the Midwest. Experts agree it's only a matter of time before the beetle shows up here too.

For Ryg, that's bad news. One-fourth of the trees lining his city's streets and peppering its parks are ash. When emerald ash borer arrives, Rochester not only will lose the beauty and shade those 17,000-plus trees provide but also will have to foot a monumental bill for removing dead trees and planting new ones.

Multiply that by the entire state, and Minnesota has trouble many times over. Some 3 million ash trees grace lawns and boulevards of our cities and towns. Ash trees are a common component of farmland windbreaks, shelterbelts, and lowlands across southern Minnesota. They are a prominent feature of northern forests. Statewide, 937 million white, green, and black ash trees are vulnerable to emerald ash borer.

“The insect is a tremendous tree-killer,” says Steve Katovich, forest entomologist with the U.S. Forest Service Forest Health Protection unit in St. Paul. When ash borers invade an ash stand, tree mortality approaches 100 percent, as abundant beetle larvae munch their way en masse around the insides of trees, girdling and killing them within one to three years. More than 30 million American and Canadian trees already have died as a result.

By taking care not to transport emerald ash borers, Minnesotans can help stave off these invaders as long as possible. Then foresters will have time to plant trees today that can stand in for fallen ash tomorrow. And researchers will gain time to investigate treatments. The sooner we act, the better off Minnesota's streets and forests will be when this ash-eating insect finally invades.

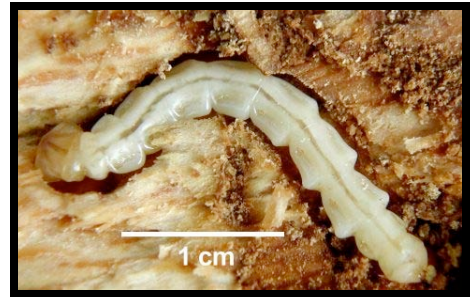
### Discreet and devastating

For decades ash trees (*Fraxinus* spp.) have been mainstays of the upper Midwestern landscape. Planted in abundance in the wake of the 1970s Dutch elm disease epidemic, they are fast-growing, adaptable, and relatively invulnerable to the various traumas that try trees.

Or so we thought.

In 2002 Michigan State University scientists studied tiny insects that were emerging from beneath the bark of sickly ash trees in southeastern Michigan. The size of a grain of wild rice with the green sheen of a hummingbird, these insects

Emerald ash borer starts out as a flat, rust-colored egg, just a smidge bigger than the period at the end of this sentence. A single female will lay 80 or so at a time on the bark of an ash tree in summer.



A lanky white larva emerges, burrows into the bark, and begins eating the inner bark and new sapwood. In the process, it cuts off the conduits that carry water and nutrients from roots to leaves and sun-made sugars from leaves to the rest of the tree.



In spring the larva morphs into a pupa. In early summer the pupa develops into an adult beetle. Two to three weeks later, the insect bores out of the bark, leaving a telltale D-shaped escape hole. The emerald-colored adult flies off to mate and begin the cycle again.



Trees can survive for two to three years until borers finally push them past their tipping point. Enough larvae, enough serpentine trails, and the flow of water and nutrients inside the tree is completely severed. Twigs, branches, and ultimately the whole tree dies.

were nothing they had ever seen before. Entomologists at the Smithsonian Institution in Washington, D.C., were equally baffled. It wasn't until an eastern European expert got hold of a specimen that its true identity emerged: an Asian insect known in English only by its scientific name, *Agilus planipennis*. This foreign species had likely hitched a ride from China to Michigan sometime in the 1990s in wooden crates or pallets carrying imported goods. The scientists proposed the name "emerald ash borer" in recognition of its jewel-like appearance and its behavior.

But this species was no jewel. Discreet as they are devastating, these deadly invaders lurked beneath the bark of ash trees for years, eating them alive from inside, before anyone detected their presence. As a result, by the time Michigan figured out what the problem was, the problem wasn't just Michigan's anymore. Inadvertently aided by humans hauling infested firewood and shipping infested saplings, emerald ash borers were already hopperscotching across states.

In 2003 foresters found the insects in Ohio. The following year ash borers showed up in Indiana. They popped up in Illinois and Maryland in 2006, Pennsylvania and West Virginia in 2007. Last summer they were detected for the first time in Missouri and Virginia—and Wisconsin.

### Lost goods and services

Emerald ash borer is not known to be in Minnesota as of this writing. But all it will take is one person bringing larvae-riddled firewood home from the family farm by Milwaukee or bringing an infested sapling dug from a friend's yard near Chicago, and then our emerald ash borer-free days will be gone forever.

"We know it will be here eventually," says Mark Abrahamson, emerald ash borer program coordinator for the Minnesota Department of Agriculture and head of the state's emerald ash borer readiness team.

When the borers do arrive, they'll have plenty to eat. White ash grows in southeastern Minnesota. Green ash grows statewide, especially along streams. Green ash was widely planted for shelterbelts in rural areas, as well as for shade trees in yards and along boulevards in cities and suburbs. Black ash trees are a major component of the hardwood stands lining northern wetlands. Together, these trees create a web of corridors the borer can use to spread.

When ash borer adults emerge from a tree, they usually only fly a couple of hundred yards to another tree to lay eggs. Though they don't fly far, they do fly in abundance, and there is little tree experts think they can do to stop its inexorable spread.

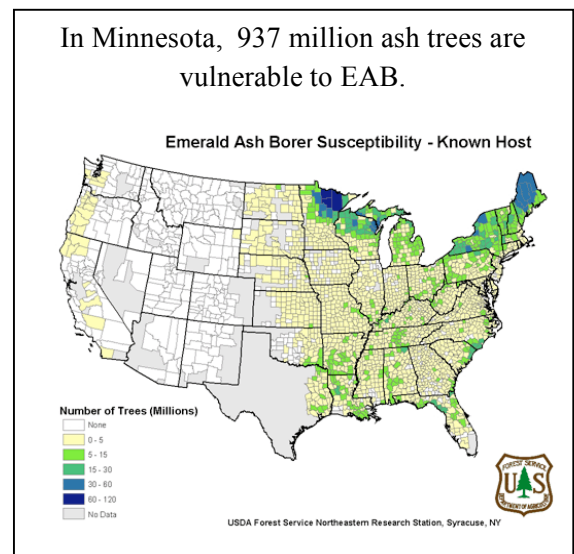
"I don't know if there's really any comparison," says University of Minnesota entomologist Jeffrey Hahn. "The closest probably is Dutch elm disease. ... This has a potential to certainly be more injurious, more devastating than that."

Odds are Minnesota will lose most, if not all, of its ash trees. We'll also lose the goods and services these trees provide. For example, city trees bestow beauty, cut energy costs, and absorb and filter storm water—services estimated to be worth over \$290 million to Minnesota communities each year. Minnesota ash trees typically supply between 30,000 and 40,000 cords of wood each year, mainly for pulp and paper, but also for firewood and specialty products such as cabinets, furniture, and veneer.

Unique characteristics of black ash have made it a staple of the traditional American Indian basket-making industry, which has already lost access to wood in infested areas. "If and when emerald ash borer gets to the remaining stands, the material will be very rare or nonexistent in some areas," says U.S. Bureau of Indian Affairs forester and basket maker Michael Benedict. "That would have a big impact on the ash basket making that's been with a lot of the tribes for thousands of years. That would pretty much end that particular art form."



The deadly *emerald ash borer*, native to eastern Asia, is coming to Minnesota. The bug lays its eggs on the bark of ash trees. The larva bores into live wood and emerges as an adult, leaving a D-shaped exit hole in the dying tree. Photo from Bugwood.com



Most worrisome for University of Minnesota forest ecologist Lee Frelich is the impending loss of hundreds of millions of black ash trees that line wetlands in forest north of Hinckley. When the beetles destroy those trees, Frelich says, they will forever change the face of wetlands in northern forests—habitat for wildflowers, butterflies, songbirds, herons, owls, woodpeckers, moose. “Black ash swamps are ... a unique habitat for plants and birds and so on that otherwise wouldn’t be there,” he says. “We might lose that whole forest type.”

### Slow- the- Spread

With the inescapable arrival of emerald ash borer, it’s tempting to throw up our hands in despair. But action today could dramatically alter the outcome tomorrow for our state’s urban forests and rural woodlands alike.

“The biggest issue right now is to keep it out of here,” says Katovich. Fending off emerald ash borer as long as possible, he says, will give municipalities, homeowners, and forest managers time to plant other tree species and get them growing before the ash disappear. And it will give scientists more time to identify and perfect strategies for protecting ash trees, such as introducing parasitic wasps that help keep emerald ash borer in check in Asia or perfecting pesticides that could be used on a limited basis to save particularly valuable individual trees.

“We’re hoping by the time it gets here we are able to take advantage of all the research that’s going on,” says Department of Natural Resources Forestry entomologist Val Cervenka. “The longer it takes [to arrive], the longer we have to pull together our resources and implement our plans for response.”

To limit the insect advance, the U.S. Department of Agriculture has placed restrictions on moving firewood, ash trees, and ash tree parts from infested areas. Chippewa and Superior national forests have banned transportation of firewood from out of state, and Voyageurs National Park and some counties are allowing only DNR-approved wood within their boundaries. In 2007 the state Legislature made it illegal to bring firewood onto state land unless purchased from a DNR-approved vendor.

“The best option to slow the spread is to really limit that artificial movement,” Abrahamson says. “Emerald ash borer on its own is going to move only a short distance each year.”

### Find it fast

Once emerald ash borer does arrive, Katovich says, the sooner we detect its presence, the better.

“If we don’t find it for a number of years, that allows it to get really well established,” he says. “We might actually have a chance to do something if we find a smaller spot relatively soon. ... If it’s very, very early, we can still try to eliminate it.”

In cities and near campgrounds and nurseries, forest managers have been stripping a circle of bark from selected ash trees (borers like stressed trees best) and watching them for signs of infestation. In strategic parts of the state, emerald ash borer surveillance teams have also hung hundreds of sticky purple traps (borers like purple too), which are baited with a chemical that smells like sick ash trees.

Across Minnesota, more than 800 state-certified tree inspectors and several hundred tree care and woodland advisors are watching for the pest. In addition, the DNR, the Department of Agriculture, and the University of Minnesota have trained a statewide network of over 300 “first detectors” to look for signs of emerald ash borer. They also respond to calls from citizens reporting sightings or signs of emerald ash borer to the Arrest the Pest hotline.

### What next?

Forest managers are still strategizing the best way to get ready for the invasion. Some are in favor of stepping up harvest of marketable ash trees. Others worry that large-scale cutting of black ash would disrupt the hydrology of the wetlands in which they thrive.

“The concern is swamping these areas by suddenly removing the tree cover that is acting like a water pump,” observes Alan Jones, DNR Forestry silviculture, lands, and roads supervisor.

The DNR is developing a Preparedness Plan so the agency can respond in a timely and appropriate manner. “Our state nurseries are no longer growing ash,” Jones says. When ash stands come up for harvest as part of a normal logging cycle, the woods likely

### What can I do?

Use only local firewood. To avoid being an insect taxi, buy or cut firewood where you’ll burn it. For vendors, go to [www.mndnr.gov/firewood\\_vendors/vendors/list.html](http://www.mndnr.gov/firewood_vendors/vendors/list.html).

**Watch.** If you see an ash tree with D-shaped exit holes or lots of dead branches and sprouts from the trunk, call Arrest the Pest, 651-201-6684 or 888-545-6684.

**Don’t panic.** If you want advice on your ash trees, choose an International Society of Arboriculture (ISA)-certified arborist or tree inspector.

**Do ponder.** Consider planting saplings of another species that can take over if you eventually lose your ash trees. See [www.mndnr.gov/forestry/nurseries/choosing.html](http://www.mndnr.gov/forestry/nurseries/choosing.html) and [www.mndnr.gov/grants/forestmgmt/stewardship.html](http://www.mndnr.gov/grants/forestmgmt/stewardship.html).

**Save seeds.** Scientists are collecting ash seeds for the National Center for Genetic Resources Preservation in Colorado. To learn how you can help, go to [www.ashseed.org](http://www.ashseed.org).

**Spread the warning.** Share this story with friends and neighbors. Find it online at [www.mndnr.gov/magazine](http://www.mndnr.gov/magazine).

Learn more at [www.emeraldashborer.info](http://www.emeraldashborer.info) and [www.mda.state.mn.us/plants/pestmanagement/eab.htm](http://www.mda.state.mn.us/plants/pestmanagement/eab.htm).

will be managed for other species.

What species would thrive where ash have sunk their roots for centuries?

“Therein lies the challenge,” Jones says. “We’re not sure yet. . . . There may not be real good, easy alternatives.”

For woodland owners, Abrahamson recommends a wait-and-see approach. “In the normal course of forest management you might want to, if it makes sense with your other goals, reduce your abundance of ash,” he says. “But I wouldn’t advise anyone making a radical change purely because they’re worried emerald ash borer is going to get into their wood lot.”

For municipalities, on the other hand, action is in order because thousands of lifeless, leafless, and dangerous dead ash will blow out routine maintenance budgets. Although emerald ash borer may take several years to finally kill a tree, once it does the tree branches and limbs dry quickly. Such brittle trees are much more dangerous for tree workers and nearby buildings, and removal costs skyrocket, DNR community forestry coordinator Ken Holman says.

Minneapolis forestry program manager Jim Hermann helps oversee 38,000 boulevard ash trees, which will cost an estimated \$27 million to remove and replant. He is looking at options for using cut ash, from burning it for energy to turning it into marketable products. In Rochester, Ryg stopped planting ash in 2002. Today, as he prepares for an ash-free future, he’s working hard to incorporate other lessons of the past.

“We learned from Dutch elm disease that we should plant multiple species, but we didn’t plant enough,” he says. “We replaced elm with five species. Now we’re going to 10 to 20 different species.” Maples, lindens, and honeylocust have all been overplanted in the city, and Ryg says he is hoping to diversify the city’s trees by planting unconventional species. Top on his list: Kentucky coffee trees, disease-resistant elms, and hackberry.

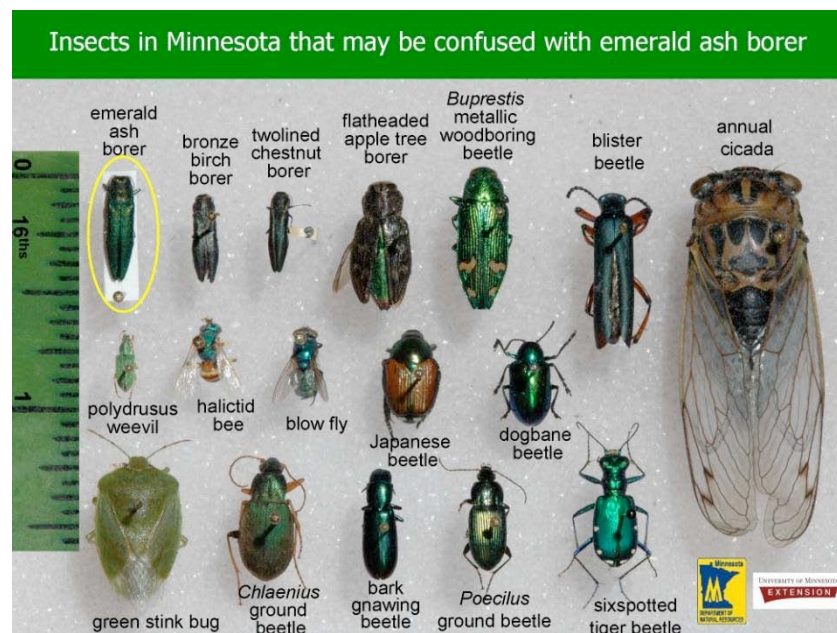
Abrahamson says that’s a good rule for the rest of us to live by as well. If your ash trees are healthy, he says, there’s no need to do anything now. But if they’re starting to fail, it might make sense to start replacing them with diversity in mind.

“Don’t think, ‘If I plant all maples I’m safe.’ The key is to plant a diversity of trees,” he says. “Everything has its bug that’s living in another country that could come here. The key is, plant lots of [different species of] trees.”

**"Arrest the Pest" Hotline**  
**651-201-6684 - Metro Area**  
**or**  
**1-888-545-6684 - Greater Minnesota**  
**Arrest.The.Pest@state.mn.us**

## EAB and other green insects found in Minnesota

You can find a color version of this image on [www.extension.umn.edu/distribution/horticulture/images/M1242-9-lg.jpg](http://www.extension.umn.edu/distribution/horticulture/images/M1242-9-lg.jpg)



# *Plans, Programs and Practices*

## **Easy guide for emerald ash borer regulations in Houston County**

By MN Dept. of Agriculture

### **Nurseries**

Ash nursery stock is prohibited from being distributed outside of the Emerald Ash Borer quarantine area.

### **Mills & Loggers**

Ash logs cannot be moved out of the quarantine area during the adult flight period (roughly April 1 through September 30) unless fumigated or debarked. From October 1 through March 31, ash logs may be allowed to be moved to an approved mill outside of the quarantine area for processing by March 31. Bark and wood waste must be processed by March 31. These processes must be approved by state or federal agriculture agencies.

### **Firewood Producers & Users**

All hardwood firewood is prohibited from distribution outside the Emerald Ash Borer quarantine area unless it has been heat treated, fumigated or debarked (plus removal of ½ inch of wood). These processes must be approved by state or federal agriculture agencies. Firewood not for commercial sale (homeowner use) may be moved within the quarantine area but users should avoid moving firewood any distance from the area the wood originated from to reduce further spread of Emerald Ash Borer.

### **Green Lumber Manufacturers**

Ash lumber will need to be processed in an approved manner, such as complete removal of bark (plus ½ inch of wood), kiln drying by approved standards, or fumigation prior to distribution out of the quarantine area. All processes will need approval by state or federal agencies.

### **Pallet Producers**

Ash lumber (generated from ash from the quarantine area) used to make pallets will need to be processed in a manner approved by state or federal agencies.

### **Tree-Care Professionals**

Wood waste from pruning, storm damage, or removals is prohibited from being distributed outside the Emerald Ash Borer quarantine, and should not be moved from the point of action in order to reduce the spread of EAB. Locations for wood waste drop-off may be established in the near future.

If there are questions about quarantines, please contact MDA officials for more information.

## **FHU plans and activities**

We've observed that a tempered approach is best when developing strategies and management practices to deal with exotic pests. For emerald ash borer, it's also important to distinguish between ash trees that are within 12 miles of the EAB discovery and the rest of the ash trees in the county/ region/ state. When EAB is found in or established in a locality, land managers should employ slow-the-spread strategies (SLAM) that support the regulatory agencies' plans. Elsewhere forest management should prepare stands and municipalities by diversifying species and reducing the amount of EAB habitat, ash trees, given the long-term outlook for the spread and establishment of EAB.

In Minnesota, emerald ash borers have been on our radar since 2002, the year of their discovery in Detroit. In fact, EAB and its main vector, firewood, have been a major focus of our work during the last few years. Here are some of our Unit accomplishments and smattering of our on-going activities:

### **Prevention and detection**

- Provided information and testimony in order to pass a State statute and drafted a Commissioner's order to provide rules for use of recreational firewood on DNR lands.
- Initiated and maintained the DNR Firewood Vendor Approval system.
- In cooperation with MDA and University Extension, developed a network of volunteers, the First Detectors, who are trained to diagnose and report infestations of invasive species.

### **Information and education**

- Held an Ash Summit to discuss ecological and silvicultural challenges of managing ash within the Division of Forestry (DOF).
- Developed a methodology and funded a Resource Assessment survey of municipal trees to rapidly assess the species and condition of street trees in communities. Approximately 800 communities were surveyed statewide.
- Provided entomological training and silvicultural guidance at many venues statewide for DNR, county, tribal, municipal, private and recreational land managers.
- Developed an EAB webpage for the DNR website. We anticipate creating a MDA/DNR web portal for EAB information.

- Participated in an interagency science advisory group that developed management recommendations for private landowners.

#### Internal planning

- Along with other units in the DOF, prepared the Division's Invasive Species Guidelines in support of the DNR's Operational Order for Invasive Species.
- Developed the DNR Preparedness Plan that identifies specific activities for DNR disciplines during to accomplish in the next five years.

#### Cooperation

- In cooperation with the MDA, USFS, USDA-APHIS, University of Minnesota and others, developed an interagency plan, the Response Plan, which details the decision tree and processes to be followed in responding to an EAB introduction. ICS will be used to manage communications and coordinate the efforts.
- In cooperation with MDA, University Extension and private arborists, developed a centralized plan, the Readiness Plan, to delay the entry and establishment of EAB and to minimize the impact of EAB once it is established.

#### Response to EAB discovery in Victory, WI

- Participated in a life-stage/ symptom survey on the "Minnesota" side of the EAB discovery in Victory, Wisconsin as requested by MDA.
- Cooperation with regulatory agencies in tri-state area at levels outlined in EAB planning documents.

## Anticipated restrictions for recreational firewood on DNR lands

Our state forests, parks, wildlife management areas, and other DNR lands are vulnerable to invasion from nonnative forest pests such as emerald ash borer, sirex wood wasp, gypsy moth, and Asian long-horned beetle, as well as pathogens that cause Dutch elm disease, oak wilt, and sudden oak death.

The spread of these and other pests has been closely associated with the movement of firewood. Surveys indicate that approximately 50 percent of overnight visitors typically bring firewood to Minnesota state parks and state forest campgrounds, putting state lands at high risk for pest infestations.

Exotic forest pests can have dire consequences for Minnesota forests if they become established. For example, emerald ash borer has killed more than 40 million ash trees in Michigan since it became established there sometime in the 1990's. It is also responsible for the

mortality of millions of additional ash trees in Ohio, Indiana, Illinois, Maryland, Massachusetts, Missouri, Pennsylvania, West Virginia and Wisconsin.

Here in Minnesota, we have a lot to lose. MN has the third-largest volume of ash trees in the U.S., as well as extensive plantings of ash trees in urban settings.

#### *What can I do to help slow the spread of forest pests?*

- Don't transport wood from your home area to your lake cabin or other recreation sites around the state.
- Buy your firewood locally from someone who harvests Minnesota-grown trees.
- Remember that it's against the law to bring unapproved firewood onto DNR lands.

#### *Approved firewood:*

Only non-ash firewood will be allowed on land administered by the Commissioner of the DNR unless it complies with 2) b. or 3) below.

- 1) Firewood offered for sale by the Minnesota Department of Natural Resources (MN DNR).
- 2) Firewood offered for sale to the public by vendors who have successfully completed the DNR application process. Approved vendors must provide customers with a proof of purchase that includes the name of the vendor, date and quantity of wood purchased. The MN DNR requires that the firewood meets one of two conditions:
  - a) Non-ash wood originating on lands within Minnesota AND within 100 miles of the MN DNR land on which it is to be used, OR,
  - b) Wood originating from Minnesota that has been heat-treated in a kiln certified by the Minnesota Department of Agriculture.
- 3) Kiln-dried, untreated, unpainted/stained construction (dimension) lumber that is free of any metal or foreign substance. Pallet boards are not included in this category.
- 4) Wood originating from a quarantined county will be approved only for use in that county. Wood from counties contiguous to the quarantined county will be approved only for use in those counties.

#### *Unapproved firewood:*

You must surrender any unapproved firewood you bring with you, since it is against the law to bring it onto DNR lands. Please contact park staff, campground hosts, or see

posted instructions regarding bagging and surrender instructions.

Thanks for doing your part to save Minnesota's trees by leaving firewood at home. It's the right thing to do!

## First Detectors training

State and federal agencies have been proactive in developing strategies to minimize the impact of this insect when it is found in Minnesota. The University of Minnesota Extension Service, Minnesota Department of Agriculture, and the Minnesota Department of Natural

Resources have trained nearly 180 volunteers to help protect Minnesota's forests and landscapes by serving as "EAB First Detectors." The role of an EAB First Detector is to serve as a public contact for EAB information and to help resolve reports of potential EAB infestations in Minnesota. Volunteers attended a one-day training session.

In March 2008, volunteers attended training sessions on EAB in Andover, Cloquet, Fergus Falls, Mankato, Marshall and Rochester. In 2009, five training sessions were held in Farmington (2), Crookston, Lamberton and Winona. This year they were called Forest Pest Detector trainings and included gypsy moth, Asian longhorned beetle and Sirex woodwasp information.



## Tail-gate wraps

In collaboration with DNR I&E, the FHU developed tail-gate wraps (see above) which promote the message that the best firewood is local firewood. To begin, the wraps will be used on about 20 DNR vehicles. Several other agencies in the Lake States have adopted the image and will print them up as posters and tail-gate wraps with their own state's logo.

## Handy and helpful websites

Learn more at:

<http://www.dnr.state.mn.us/invasives/terrestrialanimals/eab/index.html>

<http://www.mda.state.mn.us/plants/pestmanagement/eab.htm>

<http://www.emeraldashborer.info>

This newsletter is developed as a service to forest managers and shade tree owners. The Forest Health Unit would appreciate comments concerning the newsletter and its contents. These can be directed to Jana Albers, Editor, 1201 E. Highway # 2, Grand Rapids, MN 55744.

To add, change or delete your name from our mailing list, please contact the editor. Thanks.

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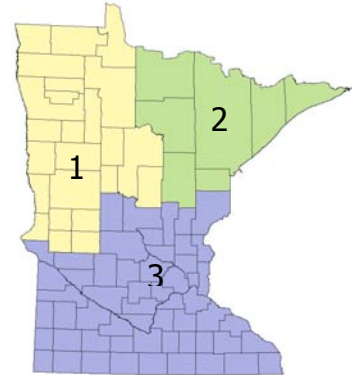
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