



MEMORANDUM

TO: Mayor Laurel Prussing and Members of the City Council
FROM: Michael J. Brunk, City Arborist
DATE: September 30, 2010
RE: Emerald Ash Borer in Champaign County

Introduction

The Emerald Ash Borer (EAB) has been found in the Rantoul area. This means Champaign County is now under Illinois Department of Agriculture intra-state quarantine restrictions. This quarantine prohibits the removal of EAB related items from the quarantined area. These items include the Emerald Ash Borer, ash trees, ash limbs and branches, ash bark, ash logs containing bark and or the outer one inch of sapwood, any items made of ash wood, and any other article, product or means of conveyance determined by the Illinois Department of Agriculture to present a risk of spreading the beetle infestation. I have attached a flyer to this packet that describes the EAB, its origin and why we are concerned.



Facts

- EAB was discovered in Detroit in 2002 and since spread to Ontario Canada, Ohio, Indiana, Maryland, Illinois, West Virginia, Pennsylvania, Missouri, Virginia, Wisconsin, Minnesota, New York, Kentucky, Iowa and Tennessee.
- On the North American continent it only attacks ash trees and is equally attracted to healthy as well as declining ash trees.
- All ash trees, green, white, and black, etc. are vulnerable except the Mountain Ash which is not a true ash tree.
- Has killed millions of ash trees across the Midwest and Canada.
- Can kill an ash tree in 1 to 3 years.
- Does not presently have a natural predator in the United States.
- Is spreading across the Midwest by people moving firewood from place to place. Insect only travels ½ mile per year on its own.
- Tree removal is recommended as the most effective way to eliminate this exotic pest and prevent the species further spread.

EAB has caused substantial economic impacts on infested communities due to tree removal costs. The insect has killed tens of millions of ash trees in Michigan alone. Arborists realize that ash trees do not hold deadwood very long and that dead and or even declining ash trees are a public liability that needs expedient abatement before they

harm person or property. As a result aggressive tree removal programs were enacted in infested communities. The programs were costly and required municipal forestry departments to drop most of everything they do to focus on ash tree removals. Some communities with longstanding forestry programs were more prepared than others. Tree diversity was their first and foremost defense. Tree inventories and established tree maintenance programs also streamlined removal efforts and reduced costs for infested communities. Urbana like other down state communities has had eight years to plan for this infestation from the initial discovery in 2002.

In fact the City of Urbana started preparing to defend against such tree devastation in 1975 when it hired its first Community Arborist, Bruno Schielzeth. Bruno started the Urbana community down the path of tree diversity as a way to protect the community from another massive tree loss event such as the Dutch Elm Disease. These efforts, followed by Urbana's next four Arborists, led the City to be one of the most diverse community forests in the Midwest with more than 150 species that make up no more than 10% of the street tree population. Tree diversity limits our exposure to EAB.

Other forestry management decisions also helped Urbana to be prepared for this infestation. In 1997 Urbana's tree inventory located 733 ash trees out of 13,000 parkway trees. This was 5.6% of parkway tree population. Most Illinois communities are made up of over 20% ash.

During the late nineties Urbana greatly reduced ash tree as a choice for new tree plantings due to concerns about the long term viability of ash trees in urban areas. New ash tree plantings were limited to 26 trees from 1997-2000 with the year 2000 as the last year ash trees were planted. This move coupled with removing 128 dead severely declining ash trees from 1997-2007 brought our ash tree population down to 606. Two years later in 2002 EAB was discovered in Detroit Michigan.

In 2006 EAB was discovered in Illinois and in 2010 it has finally reached Champaign County.

EAB Community Action Plan

The Illinois Department of Agriculture has created an EAB Action Plan to help guide Illinois communities through EAB infestation in an attempt to reduce injury, damage and cost. The main components of the plan are:

- Complete an inventory of all ash Trees
- Complete and follow the states EAB Compliance Agreement
- Aggressively cull all declining or poorly located ash trees
- Work with local tree care professionals to become compliant with state
- Establish a formal plan to record ash tree removals and replanting
- Develop a communication action plan to inform and educate the community once the insect is discovered in the community

Urbana's EAB Action Plan

Urbana initiated its EAB action plan in 2007.

- ✓ Utilize existing tree inventory to inspect all existing ash trees annually
- ✓ Educate forestry and landscape staff on EAB
- ✓ Bring the Landscape Recycling Center into state compliance prior to quarantine
- ✓ Have the forestry program become compliant
- ✓ Prioritize the removal of a minimum of 50 declining or poorly located ash trees per year
- ✓ Increase tree planting program to include replacement for all ash tree removals
- ✓ Educate the public on tree planting alternatives to ash
- ✓ Educate the public on EAB, what it is, what to do and how to do it
- ✓ Enhance private ash Tree inspection
- ✓ Expedite private ash tree removals through local ordinance and or state public nuisance mandate

Our first step was to inventory our ash trees. Utilizing our tree inventory staff inspected all the City's ash trees and noted their condition in the summer of 2007. We inspect the remaining ash trees annually each summer. We compiled a list of the worst 100 or so ash trees and presented an ash tree removal program to the Urbana Tree

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Commission. The Urbana Tree Commission recognized the removal program as a cost savings tool for the City and approved the plan by a unanimous vote.

In 2008 and 2009 110 declining ash trees were targeted for removal. These trees had structural defects, were in a state of decline and or were located under utility lines. After the 2008 and 2009 removals our ash street tree population had been reduced to 496. In the winter of 2010/11 (year 3 of the ash tree removal program) we have targeted 55 declining or poorly located ash trees for removal. This will reduce our City ash tree inventory to 441 trees or 3.4%.

To date we are not removing healthy, well located ash trees. Our goal is to get our ash street trees down to between 200- 300 trees before the insect gets a foothold in the community.

Manageable Ash Tree Population

We think that if we were to get our ash street tree population down to between 200-300 trees that we could manage an EAB infestation with minimal effect on our Tree Management program. In other words we could schedule in the time for ash tree removals and keep our tree maintenance, planting, inspection, intersection clearance and other components of the program intact with existing staff. The alternative to being proactive would be to wait until EAB is found within the community and remove trees as they die. Reactive management can be costly. To hire a contractor to do this work would cost the City \$70,000 for every 100 trees needed to be removed based on an average cost of \$700 per tree which is conservative. Urbana's total liability for 500 trees would be \$350,000. For reference the City of Champaign is estimated to have 2100 City ash trees. Their ash tree removal liability is around \$1.5 million. There are some Illinois communities that are over 50% ash Trees.

By reducing our ash tree numbers in a proactive approach we will reduce the fiscal impact of EAB on our community. By reducing our ash tree population in a controlled time period we hope to better absorb the cost of removals within present budget limits. The program will also limit the ability of the insect to breed by reducing ash trees for the larvae to feed on. The infestation is slowed and public safety is enhanced by proactively removing trees before they fall apart.

Tree Planting and Replacement

The Arbor Division has been able to increase tree planting numbers and reduce cost at the same time by utilizing smaller trees that are grown in specialized root development bags to enhance growth and transplant tolerance. Trees are specially grown for root development utilizing a multi step growing process from the seedling stage to ground planting. Trees are ready for the City in late summer. We have tried a variety of these root grown trees around the community in difficult soils and adjacent to apartments with little to no care. We experienced 100% survival as compared to 60-70% survival of common balled and burlap trees. Planting labor was also dramatically reduced. The savings in labor and cost allow more time and funds to go towards tree maintenance and hazard tree removal. We intend to add all the ash tree removals that can be replanted to our planting lists each year in order to meet or exceed annual tree removals.

The net result of the increased planting efforts is to replace the ash tree removals within a year of removal, maintain tree planting numbers to match or better tree removals and continue to enhance our forest's diversity.

Why?

Everyday human activity facilitates the long distance spread of Emerald Ash Borer (EAB), exacerbating the extent and range of the infestation in North America. The movement of firewood and ash tree products has been found to advance the spread of EAB. Currently, EAB is responsible for the death and decline of more than 25 million ash trees in the United States.

EAB is an invasive species wood boring beetle, native to China and eastern Asia, which targets ash trees. EAB probably arrived in North America hidden in firewood or wood packing materials commonly used to ship consumer and other goods. It was first detected in July 2002 in southeastern Michigan and has since been found in Ohio, Indiana, Maryland, Virginia, West Virginia, Pennsylvania, Wisconsin, Missouri and Illinois.

For more information on EAB and APHIS' expanded quarantine, please visit www.aphis.usda.gov or 847-699-2400.

What To Do If You Observe A Violation Of The EAB Quarantine

1. Record vehicle information
 - Name/address/license plate #
 - Business/Carrier name
 - Location of sighting
 - Intended destination (if known)
 - Product's point of origin (if known)
 - Description of product
2. Report violation(s) during business hours, to:
 - Illinois Department of Agriculture at 800/641-3934
 - via fax 217/524-4882
 - USDA –APHIS at 847-699-2400

Illinois Department of Agriculture
Northern Office
2280 Bethany Road, Suite B
DeKalb, IL 60115
815/787-5476
815/787-5488 fax

AGR.EAB@ILLINOIS.GOV
www.IllinoisEAB.com

State of Illinois
Pat Quinn, Governor

Department of Agriculture
Thomas E. Jennings, Director



www.IllinoisEAB.com



Bureau of Environmental Programs
PO Box 19281 ~ Springfield, IL 62794-9281
800/641-3934 ~ TTY: 217/524-6858

Intra-state Quarantine Restrictions

There are specific areas in Illinois that are restricted by the Illinois Department of Agriculture from intrastate movement. For the most current list of quarantined areas please visit: www.IllinoisEAB.com

The state-issued quarantine prohibits the removal of the following items from their respective quarantined areas:

- The emerald ash borer in any living stage of development.
- Ash trees of any size.
- Ash limbs and branches.
- Any cut, non-coniferous (hardwood) firewood.
- Bark from ash trees and wood chips larger than one inch from ash trees.
- Ash logs and lumber with either the bark or the outer one inch of sapwood, or both, attached.
- Any item made from or containing the wood of the ash tree that is capable of spreading the emerald ash borer.
- Any other article, product or means of conveyance determined by the Illinois Department of Agriculture to present a risk of spreading the beetle infestation.

Anyone convicted of moving prohibited items from the quarantine areas without prior certification by an Illinois Department of Agriculture nursery inspector may be fined up to \$500.

Interstate Quarantine Restrictions

The USDA has issued a federal quarantine prohibiting the movement of regulated articles out of the state of Illinois. Regulated articles include ash nursery stock, ash material including logs, stumps, roots, branches, chips and all species of hardwood firewood. Due to the difficulty in distinguishing between hardwood firewood, all species including ash, oak, maple, hickory are prohibited from leaving the state.

Firewood commercially sold and transported out of Illinois must be certified by the USDA and appropriately labeled. Individuals interested in participating in interstate commerce involving ash wood products or firewood need to contact the U.S. Department of Agriculture's Animal and Plant Health Inspection Service 847-699-2400 to secure compliance documents and avoid penalties.



Firewood: Federal Regulations

- The EAB Federal Regulation governs interstate movement
- All hardwood species regulated
- No ash exclusion
- Treatment options
 - Removal of all bark and ½ inch of wood
 - Kiln Dried (Max. thickness of 3 inches)
 - Fumigated with MB
 - Heat Treated
- What to look for
 - USDA Shield or
 - PPQ Form 540
- All noncompliant material stays in IL
- Contact Information
 - Des Plaines: 847-699-2400





ash borer, an exotic pest that attacks ash trees exclusively.

(EAB) is a very small but very destructive beetle. Metallic green in color, it is about 1/2 inch in length and 1/8 inch wide. The beetle can easily fit on

the side of a pencil. From eastern Asia, the EAB probably arrived in North America hidden in wood packing used to ship consumer goods. Although no one can say for sure where it first appeared in southeastern Michigan, the Michigan Department of Natural Resources believes the beetle went there in 2002. It was first identified in 2002, based on its widespread destruction. EAB was officially declared a pest in the summer of 2002.

EAB is known to be responsible for the death of more than 15 million ash trees in Michigan and Detroit. EAB has also been found in communities in Ontario, Canada. A shipment of ash trees from Detroit, was found to be infested with EAB in 2002. Canadian officials estimate that between 100,000 and 200,000 ash

trees are infested and will die in Essex. The neighboring county, Chatham-Kent, has recently been declared to be infested with EAB.

Although large EAB infestations are concentrated in Michigan and parts of Canada, the States of Ohio, Maryland, Indiana, and Virginia have also found EAB in smaller, somewhat contained areas.

In terms of the range and extent of the EAB infestation in North America, the human element is of particular significance. Unknowingly, people's behaviors associated with everyday living and commerce have greatly contributed to the spread of the EAB. The movement of any ash tree products (e.g., branches, logs, woodchips, nursery stock, and firewood) advances the spread of EAB. Consider this: current research suggests that the natural spread or movement of the EAB is about 1/2 mile each year. If that estimate is accurate and the length of time EAB has been present is 12 years, at press time (April 2005) the generally infested area in Michigan* should cover about 113 square miles. But as of 2005, Michigan's generally infested area covers almost 13,000 square miles! Human behavior is a defining factor in the spread of EAB.

Scientifically Speaking

Entomologists from the United States and Canada have been studying the EAB to learn more about its biology and behavior. Because this pest has never been found anywhere in North America prior to the current infestation, this information is being continually updated.

Scientists have discovered that, in a temperate climate, the beetle can develop from egg to adult in as little as 1 year. From May to August, adults emerge from overwintering sites under bark and mate. Females lay eggs in bark crevices, and the eggs hatch in about 10 days. The eggs develop into wormlike larvae, which tunnel under the bark to feed and grow

* These calculations are based on the beetle's having appeared at only one point of introduction.

throughout the fall. This activity eventually kills the tree. Larvae lay dormant during the winter and emerge from trees in May as adults, leaving a unique D-shaped exit hole.

Here are some key discoveries about the EAB.

- On this continent, EAB attacks only ash trees (*Fraxinus* spp.), and all the ashes—green, white, and black, etc.—are at risk except the mountain ashes (*Sorbus* spp.), which are not a true ash.
- EAB is a good flyer but tends to fly only relatively short distances (about 1/2 mile).
- We cannot count on natural predation to control EAB: the beetle has no known predators in North America, although woodpeckers will eat them.
- EAB infestation is always fatal to ash trees. Infested trees will decline from the top down and will be dead in 1 to 3 years, even if the trees were healthy before being attacked by EAB.
- EAB is under a great deal of scientific scrutiny now. New information and discoveries will improve managers' ability to detect, control, and eradicate the beetle.

Signs and Symptoms

It is extremely difficult to determine whether an ash tree is infested or not infested with EAB because tree decline is usually gradual. Early symptoms of an infestation might include dead branches near the top of a tree or perhaps wild, leafy shoots growing out from its lower trunk. D-shaped exit holes and bark splits exposing S-shaped tunnels are significant signs of EAB.

If a tree is infested with the EAB, tree removal is recommended as the most effective way to eliminate these exotic pests and prevent the species' further spread. Considering the most current science, the U.S. Department of Agriculture's Animal and Plant Health Inspection Service recommends felling infested trees, chipping them, and burning the chips.

Treatment options may eventually be approved for some homeowners living in a generally infested area where suppression efforts are being used, with the understanding that treatments are not a cure. At best, a homeowner might only prolong a tree's decline. Every EAB-infested tree will die.

Because new treatment options and methods are expected to become available in the future, we encourage homeowners to talk to their local Extension Office or State department of agriculture for the most up-to-date information.



Figure 2—S-shaped tunnels, made by EAB larvae, riddle infested ash trees.



Figure 3—The D-shaped exit hole is a unique signature of the EAB.



Figure 4—Epicormic shoots are a telltale sign of a tree under stress.

The Cooperative Mix

Detection, control, and eradication of EAB is a huge undertaking. Cooperation between Federal and State government agencies, municipalities, universities, the greening industry, and the public at large is essential to eliminate this pest.

Here are some things you can do *now* to lessen the likelihood of EAB's becoming established in the United States.

- **Don't move firewood.** Humans unknowingly contribute to the spread of EAB when they move firewood. EAB larvae can survive hidden under the bark of firewood. Play it safe: don't move *any* firewood and you won't move *any* beetles.
- **Visually inspect your trees.** Early detection is a key factor. If trees display any sign or symptom of EAB infestation, contact your State agriculture agency.
- **Spread the word.** Talk to your neighbors, friends, and coworkers and get them onboard. Public awareness and education is an ongoing process; support the effort.
- **Know State and Federal regulations.** Make sure you understand the regulations that govern your own State and those States and Provinces you may visit.
- **Ask questions.** If you receive ash nursery stock, know its point of origin and your supplier. EAB larvae may be hiding under the tree bark.



Figure 6—The female beetle lays eggs in bark crevices of ash trees.

These Web sites offer more-detailed information about the EAB.

<http://www.aphis.usda.gov>

<http://www.na.fs.fed.us/spfo/eab>

<http://www.emeraldashborer.info>

Toll-free information line: 1-866-322-4512



Figure 5—EAB larvae can be transported to new locations while hidden under the bark of firewood.

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Cover photo: Bark's-eye view of the emerald ash borer, a foreign insect that attacks all species of ash trees except the mountain ash, which is not a true ash.

Photo credits: The cover photograph and figure 6 were taken by APHIS PPQ employee Dr. James E. Zaboltny. APHIS gratefully acknowledges the cooperation of Michigan State University's David Cappaert, who supplied the images used in figures 1 and 5. Those photographs are reproduced by permission. The images in figures 2, 3, and 4 were supplied by PPQ employees David R. McKay, Brian Sullivan, and James W. Smith, respectively.

Web sites: <http://www.aphis.usda.gov>
<http://www.na.fs.fed.us/spfo/eab>
<http://www.emeraldashborer.info>

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Emerald Ash Borer

The Green

