A SERIOUS THREAT TO YOUR ASH TREES

THE EMERALD ASH BORER

Presented by:

Your Trees Our Passion ~ Since 1983

Stein Tree Service

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WHAT IS THE EMERALD ASH BORER?

Emerald ash borer (EAB) is becoming a more common term in our communities, as procedures are put into place in Pennsylvania communities, like other US communities, to combat its threat. Stein Tree offers some information to inform homeowners of the potential threat and enable you to prepare and protect your ash trees.

The emerald ash borer (Agrilus planipennis) is a destructive, invasive beetle that began its journey across the US in 2002, when the insect was accidentally transported into Michigan. Originally from northeast Asia (including Korea, China, Japan, and Russia), this wood boring pest has destroyed millions of ash trees and spread to 31 states, as well as Quebec and Ontario in Canada.

The emerald ash borer prefers ash trees and in its native area, usually only attacks vulnerable trees. In the United States, the insect seems to have no proclivity towards only weakened trees. These trees play an important role in the economics of our region, since ash is used heavily in the manufacture of baseball bats, furniture, baskets and more. Ecologically, the destruction of so many ash trees is devastating and will remain a threat to our communities, as the ash tree has been commonly planted in yards and along streets for many years because of its hardiness and beauty.

"WIDESPREAD TREE MORTALITY"

An article by Houping Liu in the **Journal of Integrated Pest Management** predicts that in regions with heavy infestations, the rate of ash tree mortality could be 99% in coming years. Lui also notes studies showing that emerald ash borer has caused more economical damage in the US than the chestnut blight and Dutch elm disease, “due to widespread tree mortality, associated cost of quarantine regulations, and impact on related industries, homeowners, and communities.”

EAB INFESTATION

Recently EAB has also been seen to infest olive trees, specifically the white fringetree, widening its potential for destruction. The emerald ash borer was first discovered in Pennsylvania in 2007, and since that time has destroyed many trees. For example, the Penn State University Park, which had a research plot of over 2000 ash trees, has been devastated. According to The Morning Call, the Director of The Arboretum at Penn State has declared:

"We have about 15 trees remaining that show little or no die-back from emerald ash borer. They look pretty healthy, and we know that most of them have been attacked because they have exit holes where the adults have emerged after feeding on the inner bark."

The State of Pennsylvania, as well as most other impacted or at risk states, have developed a plan for the control of the emerald ash borer as well as the preservation of the ash tree. Homeowners are urged to do their part to help protect the ash tree population.

EMERALD ASH BORER HISTORY

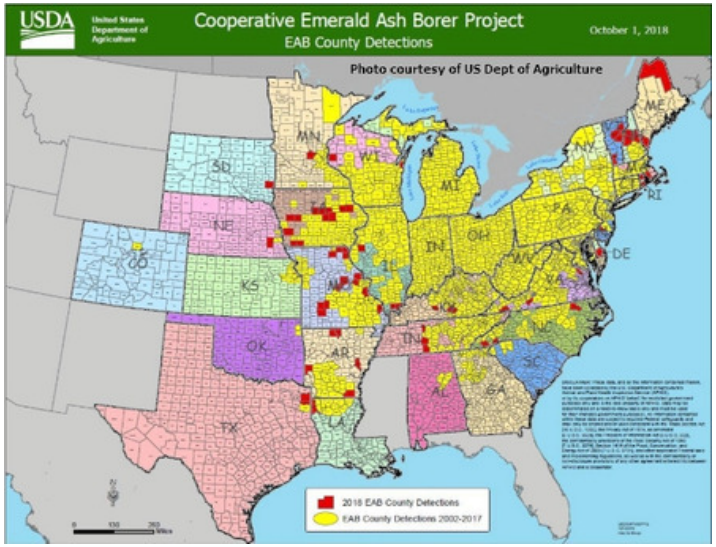
The jewel toned **emerald ash borer** may look pretty, but the insect has carved a path of destruction across the country. Despite long term efforts by state agencies to prevent further spread, this invasive insect was recently spotted in the local area. Following is a short history and information about the life cycle of this non-native pest.

Where did the Emerald Ash Borer Come From?

The emerald ash borer originates in Eastern Asia where its population is kept in check by local predators. Many believe the emerald ash borer was introduced to America through wooden packing material brought over on ships.

THE EMERALD ASH BORER'S HISTORY IN AMERICA

Since the insect was first noticed near Detroit in 2002, the emerald ash borer has destroyed millions of ash trees across the country. The spread began slowly, but has escalated in recent years.



2002 - Confirmed in Michigan and Windsor, Ontario
2003 - Ohio
2004 - Northern Indiana
2006 - Northern Illinois and Maryland
2007 - Pennsylvania and West Virginia
2008 - Wisconsin, Missouri, and Virginia
2009 - Minnesota, New York, Iowa, and Kentucky
2010 - Tennessee
2012 - Connecticut, Kansas, and Massachusetts
2013 - New Hampshire, North Carolina, Georgia, and Colorado
2014 - New Jersey and Arkansas
2015 - Louisiana
2016 - Texas, Nebraska, Delaware, Oklahoma, and Alabama

SIGNS OF EMERALD ASH BORER INFESTATION

Your beloved ash trees could be suffering from something besides Emerald Ash Borer (EAB), but you want to be safe! If your trees are showing two or more of the symptoms below, chances are good that the EAB has arrived.

Work with a certified arborist for early EAB detection for improved chances of a successful treatment and to stop the spread of this destructive wood-boring beetle.

SYMPTOMS OF EAB INFESTATION

Look for these telltale signs your ash tree is suffering from EAB infestation. In order to properly identify the presence of this Asian native, look for a combination of two or more symptoms.

- Epicormic Sprouting – as a defense mechanism, your trees will try to ensure survival when sick or stressed. Signs of new growth at the base of the tree or on the trunk—often just below where larvae are feeding, are indicative of infestation.
- Splitting Bark – feeding EAB larval galleries will develop surrounding callous tissue, causing vertical splits to the bark. When the split bark is pulled away, these larval galleries can be seen.
- Crown Dieback – as a result of multiple years of EAB infestation, the larvae will disrupt the delivery of nutrients and water flow to the upper canopy, resulting in dieback of the upper and outer crown.
- Woodpecker Feeding – woodpeckers love to feed on EAB larvae underneath the bark. With excessive feeding on large numbers of larvae, the damages will look like strips of the tree's bark have been removed.
- D-shaped holes in bark – emergence holes are made as the larvae mature into adult beetles and emerge from underneath the bark.

CALL STEIN TREE FOR EARLY DETECTION AND TREATMENT OF EMERALD ASH BORER IN PA OR DE

As the EAB continues to spread throughout the country, causing devastating damages to ash trees, work with a certified arborist for early detection and EAB treatment.

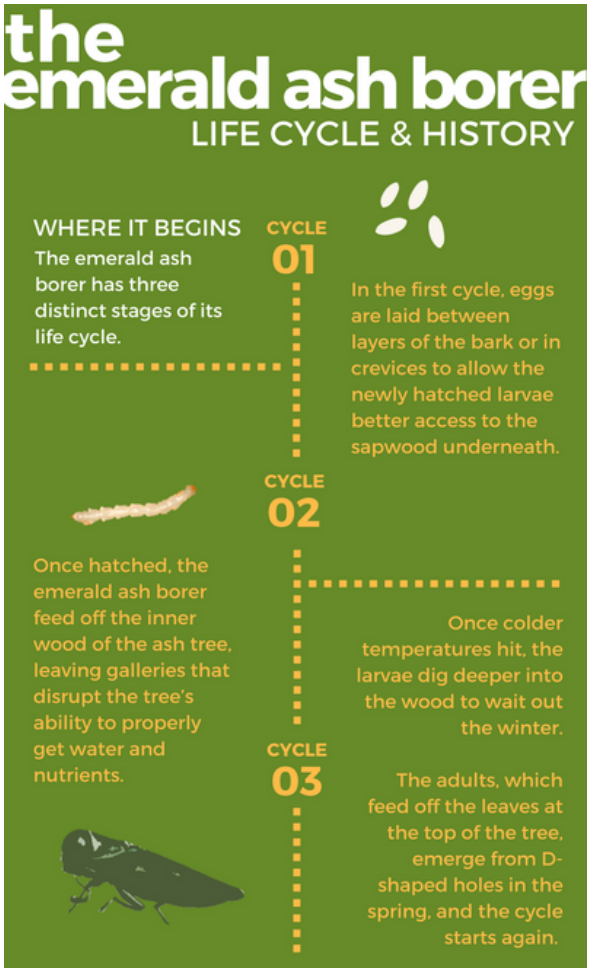
If you suspect your trees have been invaded by the Emerald Ash Borer, you may be able to save them with the use of pesticides and other treatment techniques.

Contact Stein Tree Service today to speak with our certified arborists for answers to all your Emerald Ash Borer questions and to schedule your free consultation in Delaware or Pennsylvania!

INSPECTING FOR EMERALD ASH BORER: LEARN THE EAB LIFE CYCLES

Inspecting for **emerald ash borer (EAB)** is important for residents of Pennsylvania and Delaware if you have ash or fringetrees in your yard. A professional knows just what to look for, but homeowners should proactively inspect trees throughout the year for signs of illness or infestation.

Unsure what to look for? Well the **signs of EAB** could vary from season to season based on the emerald ash borer lifecycle, though once damage has occurred, you should be able to see the evidence. The emerald ash borer has three distinct life cycle phases. Stein Tree offers a look at the three seasonal phases.



EAB SEASONAL PHASES

Spring

Adults emerge from winter slumber in the spring about ½ an inch long. Their exit leaves D shaped holes in the bark of the tree. The adult beetles begin consuming the canopy leaves, which could begin to show signs of thinning.

Summer

During warm summer months, the emerald ash borer mates and lays eggs between the layers of outer bark and in crevices of the tree. The eggs hatch within about two weeks and the larvae begin tunneling through the bark to feed on the phloem, the tissue that conducts nutrients to all parts of the tree.

Winter

Fully grown larvae spend the winter wrapped in a pupation cell, before emerging as adults in spring. Younger larvae spend the winter months feeding in galleries within the tree. The galleries are one of the most destructive aspects of the emerald ash borer's impact, and eventually lead to the tree's death due to lack of ability to circulate nutrients and water.

HELP FROM CERTIFIED ARBORISTS

The emerald ash borer has been devastating to the nation's ash tree population. In order to protect our trees; we need to be aware of the signs, do regular inspections for infestation and general tree health, and take corrective measures when necessary. **Certified arborists** like those at Stein Tree Service are trained to know the signs, and we are certified to treat emerald ash borer.

Adult emerald ash borer beetles begin to appear in May with the heaviest emergence in late June. Homeowners should be alert for signs such as actual larvae or beetle presence, S-shaped galleries, or D-shaped exit holes. Also, having inspection performed by a tree care specialist trained to look for the specific signs could save your trees. Often by the time homeowners notice tree dieback, too much damage has occurred for the tree to be treated effectively.

Call Stein Tree Service for Emerald Ash Borer Treatment in Delaware and Pennsylvania

The treatment of emerald ash borer is regulated and companies must be certified to perform the treatment. Stein Tree Service is licensed to perform inspections and treat for emerald ash borer in Delaware and Pennsylvania. Our professional tree care specialists are passionate about helping trees thrive. Call us today for information about our tree care services or to schedule a free consultation.

WHICH TREES ARE AT RISK?

The emerald ash borer prefers ash trees and in its native environment, usually only attacks vulnerable trees. In the US, the insect has attacked both healthy and weakened trees with no discernable preference.

Recently, emerald ash borer has been found infesting another type of tree with a similar size and biological composition. The white fringetree, also known as Chionanthus virginicus, is a relatively small tree that blooms with white flowers in the spring.

The tree, sometimes known as “old man’s beard,” has been noted in some studies to be more resistant to EAB than the ash tree. Emerald ash borer seems less likely to destroy the entire tree, but homeowners should still be proactive in checking for signs of emerald ash borer.

EAB TREATMENT

Four basic categories of Insecticides for effective treatment of EAB exist:

1. systemic insecticides sprayed on the lower trunks of trees
2. systemic insecticides applied as trunk injections
3. systemic insecticides that are applied as injections or drenches in the soil surrounding the tree
4. protective cover sprays that are applied to the trunk, main branches, and leaves.

If a chemical option is used, care for ash trees differs from that of fringetrees, because fringetrees are insect-pollinated, and the imidacloprid often used is dangerous to bees. Depending on the value of the tree to the surrounding landscape, you may choose to try treatment. Chemical treatments have shown a high level of effectiveness, but re-treatment may be necessary to prevent re-infestation.

Imidacloprid and emamectin benzoate are the most common chemicals used for treatment of EAB, but as mentioned, imidacloprid is contra-indicated and even unlawful for treatment of insect-pollinated trees.

SOME OF THE AVAILABLE INSECTICIDES FOR TREATMENT OF EMERALD ASH BORER ARE:

- ACECAP 97 Systemic Insecticide Tree Implants (acephate)
- Amdro Tree & Shrub Care Concentrate (imidacloprid)
- Astro (permethrin)
- Bayer Advanced Tree and Shrub Insect Control II (imidacloprid)
- Bayer Advanced Tree and Shrub Protect & Feed (imidacloprid)
- Bayer Advanced Tree and Shrub Protect & Feed II (imidacloprid + clothianidin)
- Compare N Save Systemic Tree & Shrub Insect Drench (imidacloprid)
- Ferti-lome Tree and Shrub Systemic Drench (imidacloprid)
- Monterey Once a Year Insect Control II (imidacloprid)
- Onyx (bifenthrin)
- Optrol (imidacloprid)
- Ortho Bug-B-Gone Year-Long Tree & Shrub Insect Control (imidacloprid)

Insecticides that can be safely sprayed on both types of tree are bifenthrin or permethrin. They must be applied at the right time because they target adult emerald ash borer primarily. Some treatment options are only allowed in certain states, so professional care is recommended. Even if the treatment is successful, once trees have been treated, they may require several years to recover and look healthy again

STEIN TREE SERVICE HAS CERTIFICATION THAT ALLOWS TREATMENT FOR EMERALD ASH BORER IN DELAWARE AND PENNSYLVANIA

Since 2016, when the first insect was discovered in Delaware, Stein Tree Service has been certified and licensed to purchase and use specialized chemicals to help battle the oncoming emerald ash borer infestation in the region. The emerald ash borer is a highly invasive pest that devastates the ash tree population in an area and upsets the forest's natural ecosystem.

Treating the emerald ash borer can be tricky as the pesticides used can potentially damage the surrounding environment if improperly applied. Proper certification and licensing is required for companies to purchase and use these pesticides. On October 16, 2016 Stein Tree Service's President and CEO, Jeff Stein, as well as one other employee, Christopher Griswold, obtained this certification and license by passing the State Pesticide Applicator's Exam. The new designation will allow Jeff, Chris, and those under their direct supervision to better serve their customers who will be affected by the infestation.

In an effort to protect the environment from contamination, Stein Tree Service uses a closed delivery system to prevent chemical spills or drifts. The product is injected directly into the trees, conforming with Jeff Stein's commitment to environmental protection.

HOW CAN I PREVENT THE SPREAD OF EMERALD ASH BORER?

Some states have quarantines in place to prevent the spread of the emerald ash borer, but in general, follow these guidelines:

- Buy and burn only local firewood. Eggs and larvae can be present in the wood.
- Ensure that you know the source of firewood that is given to you.
- Have ash and fringetrees inspected regularly.
- Educate others about emerald ash borer.
- Be aware of local policies and regulations regarding EAB and insecticides.
- If you remove a tree with emerald ash borer, follow guidelines or hire a professional certified in the treatment of EAB.

RAISE AWARENESS

Education is a key factor in preventing Emerald Ash Borer spread. Each year, a week is designated as National Invasive Species Week (NISAW). The week, set apart by the nonprofit of the same name, encourages awareness of invasive plants and insects, such as the emerald ash borer (EAB) that can negatively impact our plant life.

Events such as the NISAW help increase awareness of these dangerously destructive creatures, which is critical to saving affected trees and preventing the spread. The emerald ash borer can cause such damage to an ash tree as to completely destroy it within two years. The beetle consumes the nutrients of the tree, beginning with the inner wood under the bark as larvae, and then as adults, from the tree's canopy.

The NISAW encourages awareness of all types of invasive species, but the emerald ash borer is a definite local threat that homeowners should be aware of. Spring is a good time to schedule an inspection of the trees in your landscape to ensure that they are healthy and free of problematic issues.

In the event property owners notice signs of the emerald ash borer in Pennsylvania or Delaware, contact Stein Tree Service directly to schedule an evaluation and begin treatment to help prevent further spreading.

ABOUT STEIN TREE SERVICE

For over 30 years, Stein Tree Service has proudly offered expert tree care services. As ISA Board Certified Arborists and Tree Risk Assessors, Stein Tree Service can detect and address problems that affect the health and beauty of your trees and landscape.

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For more information, please visit: **www.SteinTree.com**