

**Marple Tree Commission
Emerald Ash Borer (EAB)**

by

**Jim Elliott, Research, Pictures, Power Point Design &
Editing**

Neil Lipson, Research & Pictures

Contributors: Marianne Price, Liz Ball & Rick Ray

**The Emerald Ash Borer is moving across the US
destroying about 98% of
the Ash trees in its path!**



What happens after initial infestation?

All ash trees are expected to die in an area within a maximum of 10 years but in many cases the loss will be within 3 to 5 years. Control measures can slow it, to some degree and an additional year should be added to the time for it to move through a county. It can't be stopped!

Homeowners will have to bear the brunt of the cost for either treating mature trees or the even higher cost of removing them once they die. This can cost between \$2000 and \$4000 dollars, depending on tree size and access to one's property.

Healthy trees can be saved!

Healthy trees can be treated with an insecticide. This treatment can cost as little \$100.00 per year per tree depending on the number of ash trees and their size.

Refer to [EAB Insecticide Options—PDF File](#).

What is the life cycle of the emerald ash borer?

Emerald ash borer life cycles can occur over one or five years. Adult beetles are typically bright metallic green and about 1/3 inch long. A typical female can live around six weeks and lay approximately 40 to 70 eggs, but females that live longer can lay up to 200 eggs.



Emerald Ash Borer



Bug in Hand!



Shadow of Bore Attacking Top of Tree



Bore on Top of a Leaf



Bore Shredding Leaf



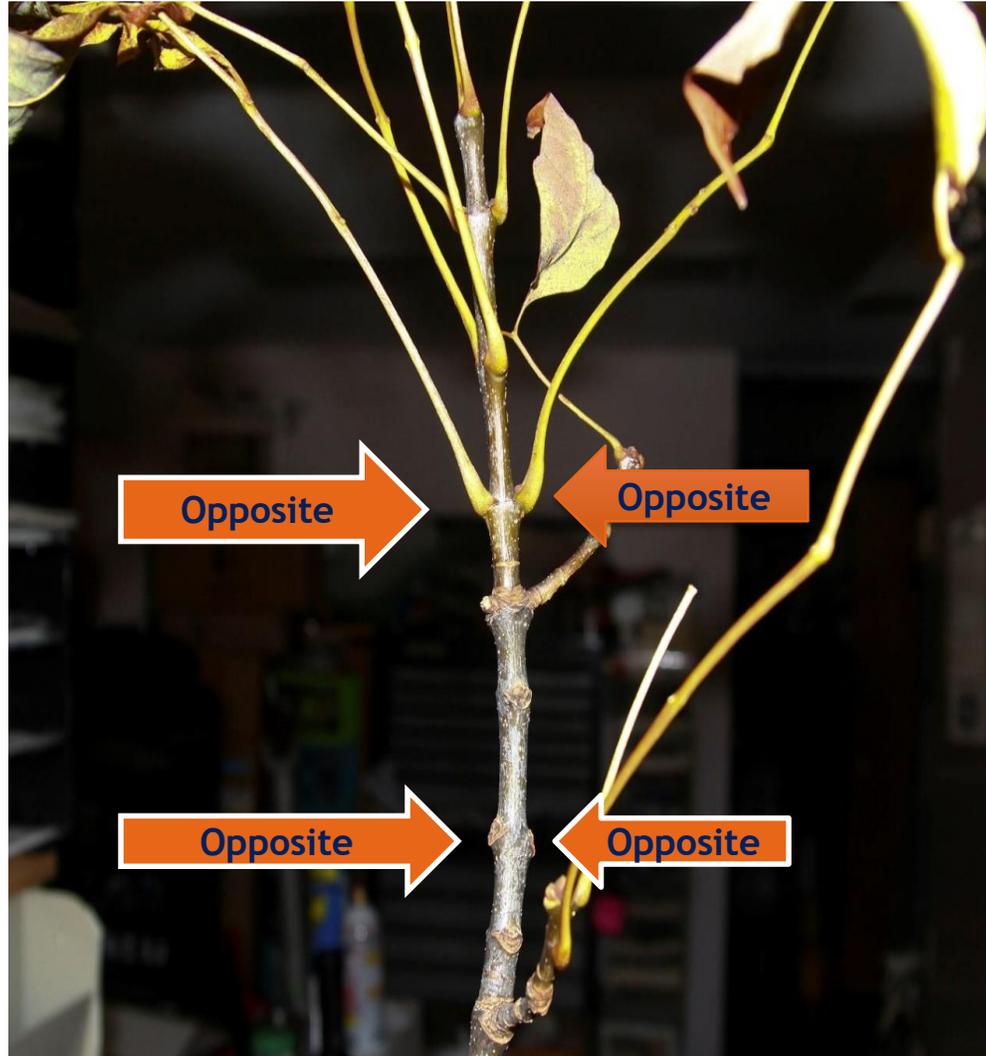
How to Identify an Ash Tree

Ash trees are fairly easy to identify because they are one of the few tree species that have opposite leaves and opposite branches—meaning that the leaves occur directly across from each other along the stem and twigs grow directly across from each other on the branches.

This can be seen in the next several slides.

*Other trees with opposite leaves and branches are maple, dogwood and horse chestnut.

Opposite Branches on all Ash Trees

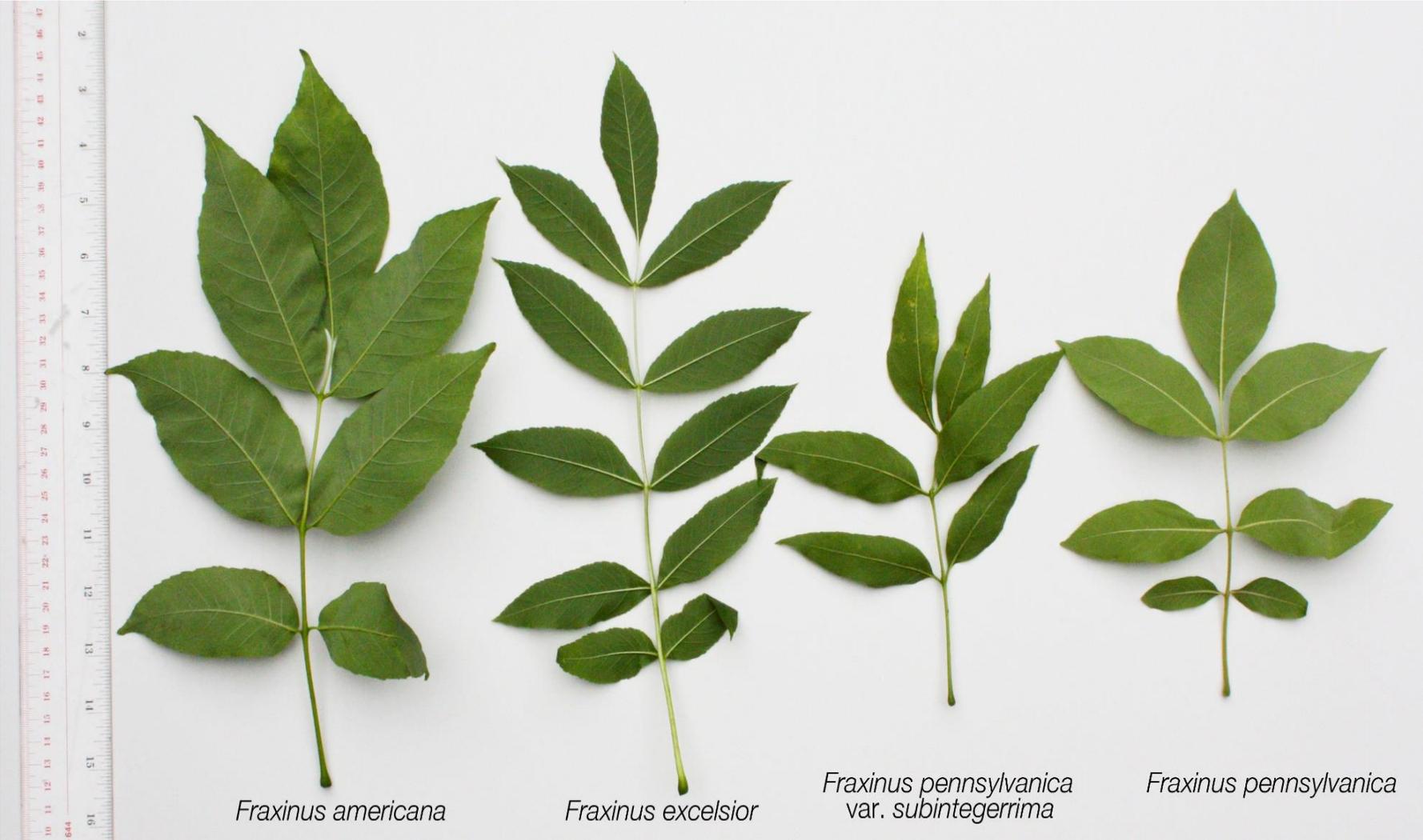


Compound Leaves

A leaf that has more than one leaflet. All leaflets are attached to a single leaf stem.



Opposite & Compound Leaves on all Types of Ash



Fraxinus americana

Fraxinus excelsior

Fraxinus pennsylvanica
var. *subintegerrima*

Fraxinus pennsylvanica

Bud & Leaflets on a Ash Branch



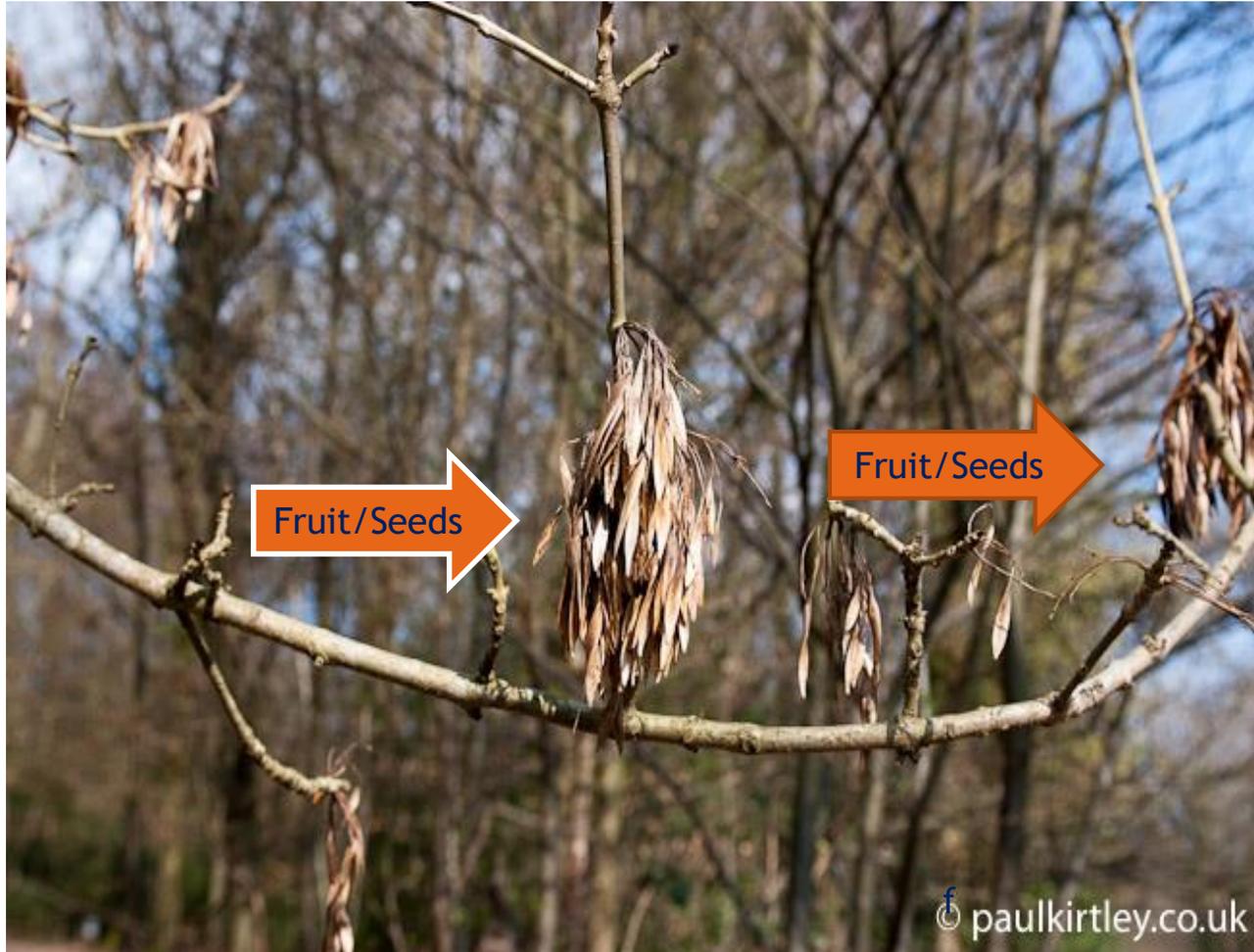
Upturned Branches of Ash



Sooty Black Buds of Ash



Winter Branch



Young Tree Bark



Slightly Fissured Ash—Light Colored Bark— Harmless Lichen Growth



Typical Ash Tree Bark



Mature Fissure Bark



Healthy Ash Tree at Veterans Park



Tall Forest Ash Reaches for the Sky



**Healthy
Ash Tree**



**Infected
Ash Tree**



Borer on Tree

Diamond Shaped Entry Hole



Woodpeckers Eat Larvae Under The Bark

Woodpeckers eat emerald ash borer larvae that are under the bark. This usually happens higher in the tree where the emerald ash borer prefers to attack first. If there are large numbers of larvae under the bark the woodpecker damage can make it look like strips of bark have been pulled off of the tree. This is called “flecking.”



Larval Galleries/Bark Splits from EAB

Vertical splits in the bark are caused due to callus tissue that develops around larval galleries. Larval galleries can often be seen beneath bark splits.



EAB Larval Galleries



Crown/Canopy Dieback from EAB

Dieback of the upper and outer foliage crown/canopy begins after multiple years of EAB larval feeding. Trees start to show dead throughout the crown/canopy, beginning at the top. Larval feeding disrupts nutrient and water flow to the upper crown/canopy, resulting in leaf loss. Leaves at the top of the tree may be thin and foliage discolored.



Purple Trap Used to Identify Presence of EAB in Some Counties



What are the Common Myths about EAB?

- ▶ **Myth 1—We can't do anything about EAB anyway; we might as well let it spread.**

Truth: EAB is a devastating pest; our choices now for ash trees near an outbreak are either treat or remove. Slowing the actual spread of EAB may mean economic viability for cities/townships that are affected. If nothing is done to slow the spread, EAB can kill all area ash trees in a very short time. Slowing the spread means a city or township can spend \$1M a year on ash tree removal for eight years, instead of spending \$8M in one year for all dead trees. Spreading the costs over many years is easier on any city or township budget and taxpayers. Another reason is to buy time to let the science catch up: detection methods are improving and more is being learned about EAB weaknesses. Additional research is needed, but it takes time. While it's unlikely there will be a silver bullet, scientists may find enough weaknesses in EAB that we may be able to save the ash tree species in the US.

***Costs are determined by the number of ash trees in a city/township.**

Myths Continued

- ▶ **Myth 2—EAB has no impact on human health, it just kills trees.**

Truth: EAB-killed trees dry out quickly and become hazard trees in less time than a normal tree death. Hazard trees are trees that can be dangerous because of the possibility of their falling over or large branches breaking off, with a potential to cause personal injury to people and property. In addition, a recent study by the US Forest Service found that the decrease in tree numbers due to EAB in the Detroit, Michigan area (where EAB started) caused an increase in human mortality related to cardio-vascular and respiratory systems.

What the Homeowner Needs to do!

- ▶ Identify any Ash trees on your property.
- ▶ If you have an Ash tree, determine if it is healthy.
- ▶ Does the tree make a significant impact on your property either in terms of its appearance and/or the shade it provides for certain areas of your property?
- ▶ Compare the cost of saving it to the cost of taking it down—(either way, you are going to have to spend a significant amount of money).
- ▶ Make a decision promptly.
- ▶ Whatever you decide, be advised that all dying *ash trees are extremely brittle. They pose a significant danger to your property and to people. They must be removed!*

Who can I contact?

If you have questions/concerns about any of the steps facing homeowners the following persons are available for consultation:

Jim Elliott: Chair MTC; H 610.353.1759; C 215.360.7772

Rick Ray: Horticulturist MTC; H 610.328.6181; C 610.405.8305

Bartlett Tree Experts: Call: 1.877.227.8538 or visit www.bartlett.com ask for Mark Shaw.

Contacts Continued

- ▶ Davey Tree Service: www.davey.com
- ▶ John B Ward Company: www.johnbward.com
- ▶ McFarland: www.macfarland@macfarlandtree.com
- ▶ Shreiner Tree Care: www.shreinertreecare.com
- ▶ Al Cherry Tree Service: www.alcherrytreeservice.com
- ▶ Sav A Tree: www.savatree.com

SECOND EDITION

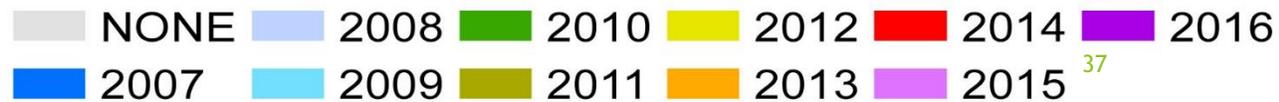
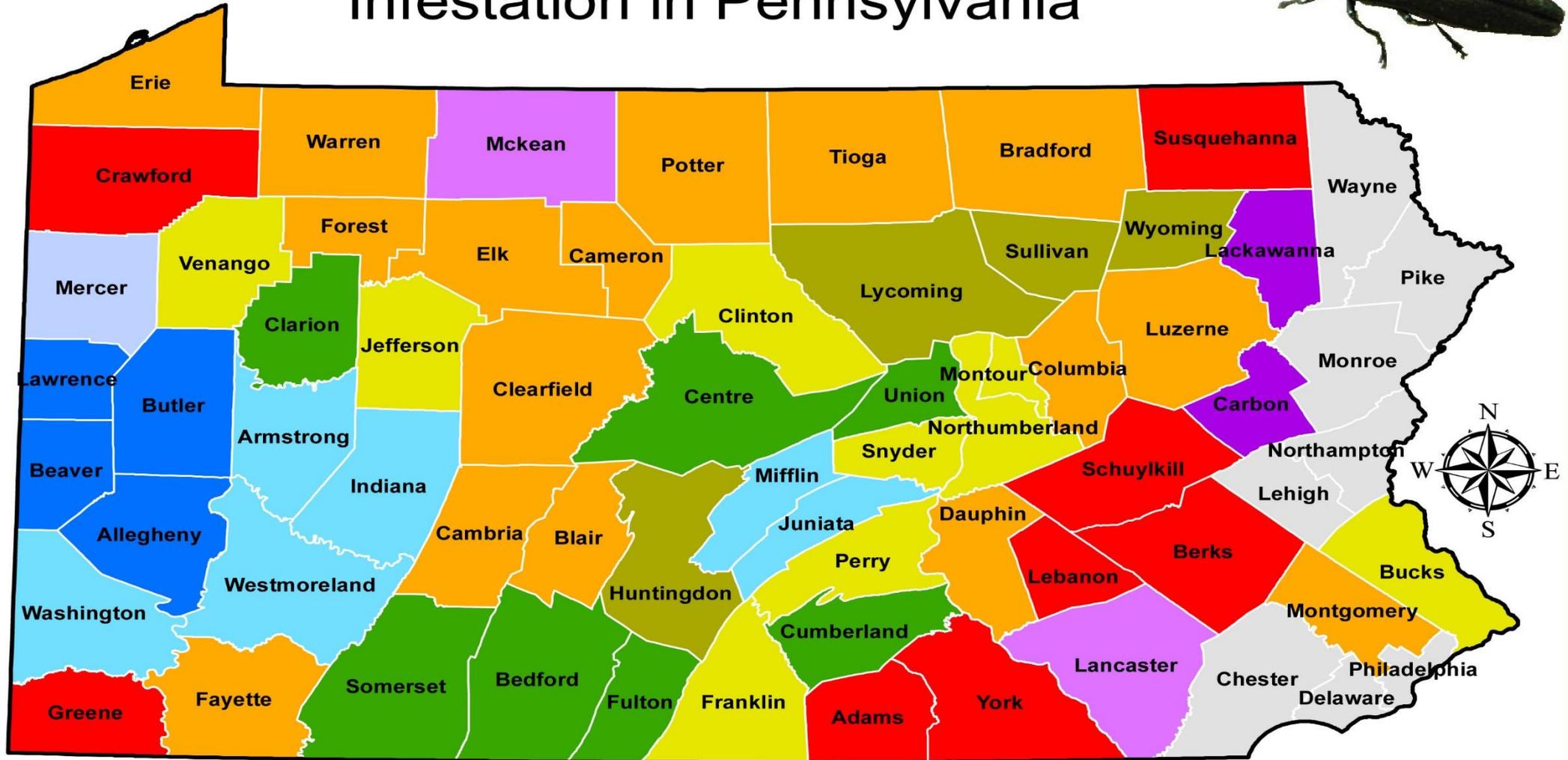
Insecticide Options for Protecting Ash Trees from Emerald Ash Borer



Daniel A. Herms,
Deborah G. McCullough,
David R. Smitley,
Clifford S. Sadof,
Whitney Cranshaw



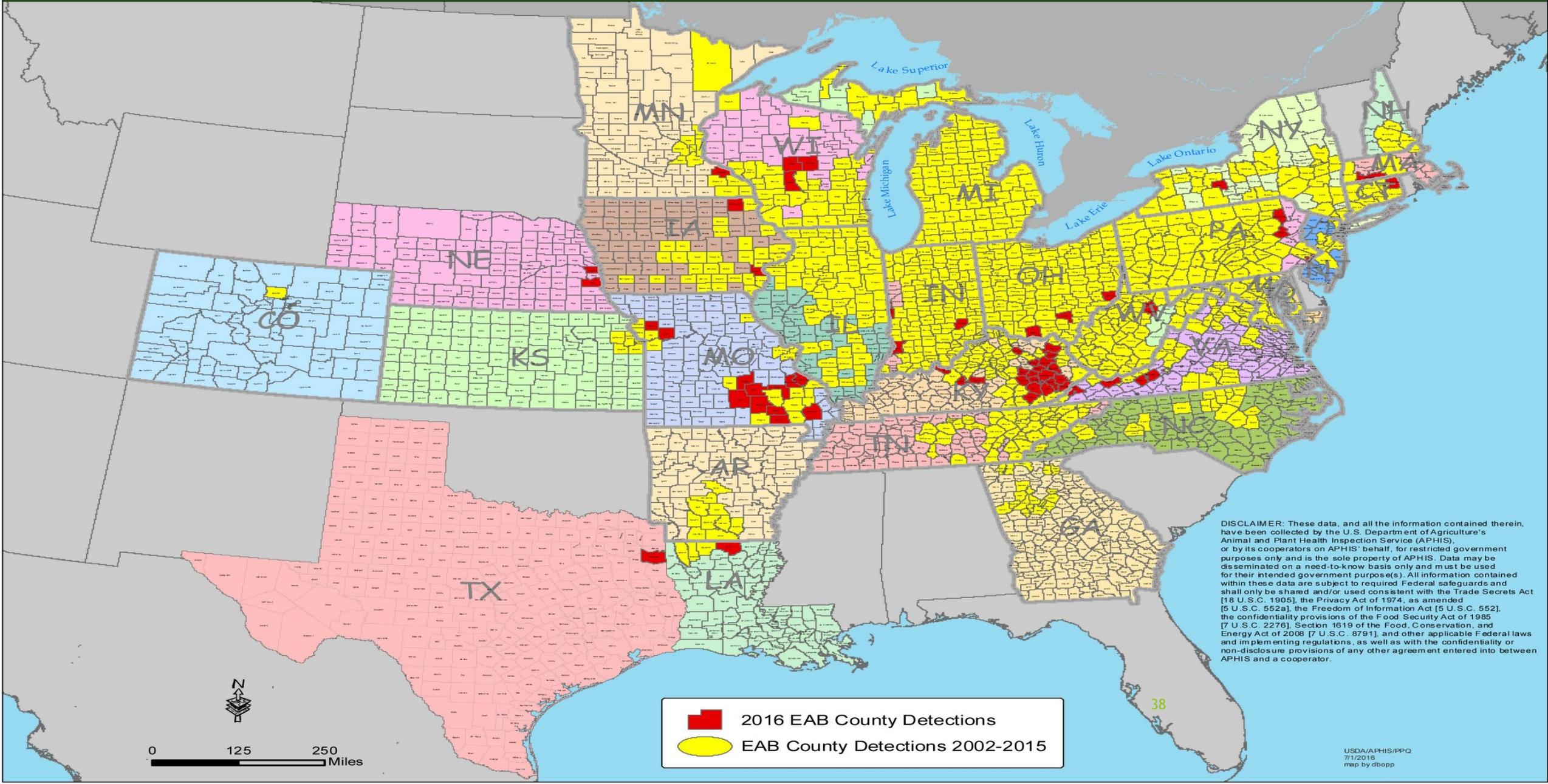
Emerald Ash Borer Infestation in Pennsylvania





Cooperative Emerald Ash Borer Project

EAB County Detections



DISCLAIMER: These data, and all the information contained therein, have been collected by the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS), or by its cooperators on APHIS' behalf, for restricted government purposes only and is the sole property of APHIS. Data may be disseminated on a need-to-know basis only and must be used for their intended government purpose(s). All information contained within these data are subject to required Federal safeguards and shall only be shared and/or used consistent with the Trade Secrets Act [18 U.S.C. 1905], the Privacy Act of 1974, as amended [5 U.S.C. 552a], the Freedom of Information Act [5 U.S.C. 552], the confidentiality provisions of the Food Security Act of 1985 [7 U.S.C. 2276], Section 1619 of the Food, Conservation, and Energy Act of 2008 [7 U.S.C. 8791], and other applicable Federal laws and implementing regulations, as well as with the confidentiality or non-disclosure provisions of any other agreement entered into between APHIS and a cooperator.

 2016 EAB County Detections

 EAB County Detections 2002-2015

Bibliography

www.emeraldashborer.info

[Paul Kirley.co.uk/2013/how-to-identify-an-ash-tree](http://PaulKirley.co.uk/2013/how-to-identify-an-ash-tree)

PA DCNR - EAB

*The above sites and others were used to prepare this power point.