

## **A DISCOVERY REGARDING THE DEATH OF ASH TREES IN THE PLYMOUTH AREA**

As you are probably aware, we have seen a significant amount of dying ash trees in the Plymouth, Canton, Northville area. This prompted an investigation by a number of agencies and parties into what the cause may be. The problem was first diagnosed as an Ash Decline. Ash Decline was a “catch-all” term for the many different problems associated with the ash tree until a more specific diagnosis could be made. We have been working with several agencies including working with Dr. Roberts of the Michigan State University Extension Office, [www.msue.mus.edu/reg-se/roberts/ash/index.html](http://www.msue.mus.edu/reg-se/roberts/ash/index.html) to determine the problem and, most importantly, if there is any remedy available. We are all now a step closer to this goal

During the investigation a beetle-like insect was found among many of the affected trees. The insect (a borer) was inspected by the Michigan State University Extension Service. The entomologists were unable to determine the species of the borer. The insect was then sent to the Smithsonian laboratories where identification still could not be achieved. Consequently, the insect was sent to entomologists across the world. Finally, experts in Eastern Europe identified the borer as *Agrilus planipennis*, or the Emerald Ash Borer, a native of China, Korea, Japan and other Asian countries. This is the first time this beetle has been found in the United States.

*Agrilus planipennis*, common name Emerald Ash Borer, is a very aggressive feeder of the Ash tree. As a result, the Michigan Department of Agriculture along with the Federal Department of Agriculture has issued an Internal Quarantine of all ash wood in Wayne, Oakland, Macomb, Washtenaw and Livingston counties.

The Internal Quarantine means that no Ash Tree wood can leave the quarantined area unless it has been chipped into one inch or less size pieces.

The current situation is very, fluid and dynamic. New information is being delivered and assessed daily. The following information is intended to be of assistance to each of you but will continue to evolve as the scientists find out more about this insect to determine what can be done for treatment and/or preventing further spread of this problem.

### **THE EMERALD ASH BORER**



The emerald ash borer has a one year life cycle. The adult borer, pictured here, is dark metallic green in color,  $\frac{3}{4}$  inch in length and  $\frac{1}{16}$  of an inch wide. The adults begin emerging from the ash trees in late May with peak emergence in mid-June. The adults begin to lay eggs soon after emerging. After the eggs have hatched, the borer

goes through several larval stages, overwinters as a larva inside the tree, then pupates in late spring.

Damage to the ash trees occur when larvae feed on the phloem of the tree. The resulting s-shaped tunnels are pictured below.



The end result of the tunneling effectively cuts off the nutrients to the upper half of the tree ultimately resulting in the death of the tree.

### **IDENTIFICATION OF AN IMPAIRED TREE**

Trees that have been attacked or are being attacked by the Emerald Ash Borer can exhibit the following symptoms. Please see page six (6) for photographs depicting some of the symptoms listed below:

- Initial thinning and yellowing of foliage.
- Epicormic shoots-a proliferation of suckers may develop from the trunk area of the tree and can grow as long as 4 feet in one season, but are not always present on infected trees.
- Woodpecker injury-woodpeckers feed on the borers.
- Tunneling beneath the bark-s-shaped tunneling can be seen beneath the bark.
- D-shaped emergence holes-trees affected by the borer will exhibit D-shaped emergence holes on the trunk or branches. The more severely affected the tree, the greater the number of emergence holes.

### **REMOVAL OF DEAD TREES**

According to the Michigan Department of Agriculture and other experts, trees which have died from the Emerald Ash Borer in southeast Michigan should be cut down and destroyed. The experts have concluded to date that trees that exhibit over 40-50% decline cannot be saved and should be removed and destroyed. The best time for removal is between the months of September through April when the insect is in its larval stage.

#### **Ash Trees in the Right of Way**

Wayne County is marking trees in the road right of way that are 50 % or more dead and greater than 6 inches in diameter for removal. The right of way is the area located between your sidewalk, or your front property line if you do not have a sidewalk, and the curb or edge of the road in front of your house. The County will be removing these trees during the winter months and will handle the disposal of the wood. If the tree is 6 inches or less the removal will be the responsibility of the homeowner. Please see the next section for information on handling after removal.

### **Ash Trees on Private Property**

Removal of dead trees on private property is the property owners responsibility. If you hire a company to remove the tree for you ask them to handle the disposal. All nurseries and tree companies should have been contacted by the Michigan Department of Agriculture.

If you plan on removing the tree yourself, currently, the experts state the commercial composting facilities offer an acceptable and effective method of disposal that will prevent the spreading of the insect. Tree limbs and branches should be put to the curb based on the current compost guidelines:

- Limbs and branches cannot exceed 3 feet in length.
- Branches and trunk materials cannot be larger than 6 inches in diameter.
- Bundle smaller branches and tie with twine or rope (no wire) and insure the bundles weigh 50 pounds or less.
- If you will have a large amount of compostable material to the curb on any one collection please call the Solid Waste Department ahead of time at 734-453-8131 ext. 33.
- **PLEASE NOTE: The week ending November 29, 2002 is the last week for curbside compost collection. If you remove a tree after November 29, 2002 you can store the wood on your property until curbside collection resumes the week beginning March 31, 2003.**

The composting process is acceptable because it will effectively destroy the larva. The procedure includes chipping of the materials and then high intensity heating during the actual composting process.

### **TREATMENT**

According to the experts there are some insecticide treatments which may help prevent further decline of the ash trees or aid in recovery of those trees that have not been severely affected.

It has been noted that **insecticide injections** could be an effective method during the summer months, however, please seek the assistance of a commercial tree company.

Please keep in mind that these treatments are recommended based on best projections formulated using current known facts. The borer is a new species to this country and there has not yet been much success in discovering research on the borer from its native home.

**Homeowners are advised to seek out assistance from a commercial nursery or tree care company to determine the potential for treating their infected ash trees.**

## **FREQUENTLY ASKED QUESTIONS**

### **What types of trees does the Emerald Ash Borer affect?**

To the best of our knowledge it has only been found on ash trees, hence its name. Trees in wood lots as well as landscaped areas are affected. For the most part, affected trees appear to be at least 2 inches in diameter and larger.

### **Where did this Emerald Ash Borer come from?**

At this point no one knows specifically how it arrived in Michigan. It is an exotic pest species. The natural range of *Agrilus planipennis*, or the Emerald Ash Borer, is eastern Russia, Northern China, Japan, and Korea.

### **Where has it been found?**

To date, infested trees have only been found in Livingston, Macomb, Oakland, Washtenaw and Wayne Counties. Additional infestations may be possible in adjacent parts of the state.

### **What symptoms does a tree infested with the borer exhibit?**

Infested trees exhibit top-down dieback typical of other phloem borers such as the Two-lined Chestnut Borer or Bronze Birch Borer. It has been observed that one-third to one-half of the branches may die in one year. Most of the canopy will be dead in two years. Affected trees may have vertical splits in the bark 2-4 inches long. Often dense sprouting of shoots can be found arising from the trunk or roots. Although difficult to see, the adult beetles make a "D"-shaped exit hole in the bark, roughly 1/16 inch in diameter.

### **What do Emerald Ash Borers look like?**

The adult beetle is dark metallic green in color, 3/4 inch in length and 1/16 inch wide.

### **What is the life cycle of this borer?**

The beetle appears to have a one-year life cycle. Adults begin emerging in late May with peak emergence in mid-June. Egg laying occurs soon after adult emergence. After hatching, the borer goes through several larval stages, overwinters as a larva, then pupates in late spring.

### **How is this pest spread?**

The ash borer can be spread through movement of infested trees or in logs and firewood. The borer is a good flier, although it is doubtful that it could fly long distances. Most likely, local spread would occur by movement of infested material and adult flight, while long distance spread would occur due to movement of infested material or other human activities.

### **How long has the Emerald Ash Borer been in Michigan?**

No one knows for sure. Experts feel that it may have been in the Detroit area as long as five years, based on the age of trees affected and when tree dieback was first observed.

### **What other insects may attack ash trees?**

It is not uncommon for diseased or dying trees to be attacked by secondary borers once the tree is weakened. Some of the secondary pests attacking ash include larvae of various native cerambycid beetles, clearwing moths or even certain Diptera species.

### **Does it only attack dying or stressed trees?**

While many of the trees affected by this ash borer appear to have been stressed by drought, disease or poor soil, in many instances healthy trees were also infested and killed by the borer.

**What is being done on a statewide basis about this new pest?**

An Emerald Ash Borer Task Force has been formed to address and respond to managing this pest and related issues. Task Force members include the Michigan Department of Agriculture, the Michigan Department of Natural Resources, Michigan State University, Michigan Technological University, the U.S. Department of Agriculture’s Animal and Plant Health Inspection Service and Forest Service, plus county and municipal officials.

**CONTACT INFORMATION**

As stated earlier, the discovery of the emerald ash tree borer as the cause of the Ash Decline in this area is very recent, and considering that this borer is a new species to the United States, the information concerning the borer is subject to change. Changes and further information can be obtained at:

**Dr. David Roberts, Michigan State University Extension**

[www.msue.msu.edu/reg\\_se/roberts/ash/index.html](http://www.msue.msu.edu/reg_se/roberts/ash/index.html)

**Michigan Department of Agriculture**

[www.michigan.gov/mda](http://www.michigan.gov/mda)

keyword: emerald ash borer

**United States Department of Agriculture**

<http://www.na.fs.fed.us/spfo/eab/pubs/pa/emeraldashborer.pdf>

**Region VII (Macomb, Oakland, Wayne Counties**

**Michigan Department of Agriculture**

**Pesticide and Plant Pest Management Division**

Kendra Anderson, Regional Supervisor

26400 Lahser Road – Suite 415

Southfield, MI 48934

248-356-1701

**Emerald Ash Borer Hotline**

1-866-325-0023

## PHOTOGRAPHS



**ASH TREES IN VARIOUS STATES OF DECLINE**



**ADULT BORERS**



**ADULT BORER**



**INITIAL THINNING**



**EPICORMIC SHOOTS**



**S-SHAPED TUNNELS**