EAB Talking Points

The Emerald Ash borer is a green metallic beetle about ½ inches in length and 1/8 inches in width. It has a flat back and a rounded belly.

The Emerald Ash Borer is a beetle that destroys the ash tree by cutting the plumbing of the tree. First, the female lays eggs in crevices of the bark. The eggs hatch and larvae chew through the bark and start burrowing in the cambium layer of the tree. They progress through four larval stages. In the process, EAB eat through the active phloem and xylem of the ash tree, effectively strangling the tree by depriving it of water and nutrients. Each female adult lays about 60-90 eggs (one at a time), so the infestation can progress rapidly once the beetle is established. Mated females have been shown to fly farther in flight mill studies than unmated females.

The larvae spend the winter beneath the bark and feed for a short time in early spring. Then EAB pupates (similar to caterpillar becoming a butterfly) and emerges as a beetle (usually late May through August) with peak emergence expected in June. Adults fly to the top of the ash tree and feed on the leaves; approximately two weeks later the beetles mate and begin the egg laying process. If an Ash tree is infested with EAB it will die within 2-4 years.

One of the reasons EAB has proliferated is because it is not native to North America, and its natural enemies (predators and parasitoids) were not brought from EAB's homeland at the time of initial introduction. ***All*** ash (*Fraxinus*) trees are susceptible to EAB, and EAB will infest ***any*** ash tree, but prefers damaged or stressed trees.

The Emerald Ash Borer was accidentally introduced into the United States. The theory is that it came from Asia on wooden crates carrying cargo. The first location of infestation was Detroit, Michigan, and although the beetle was discovered there in 2002 it is thought to have resided there for 10 or more years before it was finally identified. DNA testing has revealed that 3 distinct populations of EAB occur in the USA, possibly meaning that more than one accidental introduction of EAB to the US has occurred. Since that time the borer has made its way (or has been moved by man) throughout Michigan, and to Ohio, Virginia, Maryland, Indiana, Pennsylvania, West Virginia, Illinois, Missouri, Wisconsin, Kentucky and Minnesota. Although the borer is able to fly (estimates of 2 – 5 miles), it is moved long distances in infested logs, firewood and nursery stock.

Some telltale signs that EAB has infested an ash tree are: waterspouts; crown dieback; D-shaped exit holes in the bark (1/8 inches in width); S-shaped, frass-filled feeding paths under the bark; woodpecker holes; vertical splits in the bark over larval feeding areas; and notching on the edges (only) of leaves. Although these signs can be helpful diagnostic tools, they are by no means fool proof. All of these same signs can be made by native pests of ash trees.

In 2009 in Iowa, it is predicted that EAB beetles could have begun emerging in late May. The flight period is expected to last until early August.

Main methods of control include: 1) quarantining infested areas to control the movement of ash wood and nursery stock out of those areas; 2) cutting down and destroying (chipping or burning)

infested ash trees; 3) chemical controls with systemic insecticides as a preventive; and 4) release of 3 parasitoid wasps (biological control) in heavily infested states.

Treatment of ash trees is not recommended until EAB has been positively identified 15 – 20 miles away.

The impact of EAB is devastating. Not only is the replacement and removal of destroyed trees financially taxing, but the loss of such a large amount of trees has a severe environmental impact as well. There are approximately 88 million ash trees in Iowa, many of them in cities and neighborhoods. Loss of these ash trees may very well increase heating, cooling, and watering costs for residential areas. Iowa estimates the cost from EAB will exceed $5 billion.

Clayton County Specifics (June 2009)

DNR estimates there are up to as many as 6.6 million ash trees in Clayton County, this represents about 10% of the trees in the forested areas of this county (66 million trees total). Clayton County is one of the top counties in Iowa in acres of harvested timber.

The tree associated with the larva sample was located in the Clayton County Conservation Board campground located at Osborne Park. The campground at Osborne was closed in 2008 due to flooding damage. Since 1999 the campground has been closed 5 full seasons out of the 9 years due to flooding.

Timeline

- In 2008, 401 sentinel/trap trees were set by DNR in cooperation with the USDA Forest Service. A contractor was hired to debark those trap trees at the end of the growing season. Many larvae were collected by the contractor, put in vials and sent to the DNR Forestry Bureau. The larvae were all native borers and not EAB.
- Thursday, May 28, vial with larvae was spotted in DNR mailroom, a vial that was from one of the contractors hired by DNR to debark the sentinel trees. We are not sure what happened to this vial, from December to May, but the vial was clearly labeled by the contractor, and the contractor verified the number and description of the vial contents with his field notes. The suspect sample, as per protocol, was immediately sent to the USDA identifier.
    - The date on the vial indicates that the sample was collected December 6, 2008, by the contractor when he bark-peeled the tree.
    - Three larvae were in the vial, with two being native borers and the EAB.
- Friday, May 29, IDALS received word that the sample was highly likely to be an EAB, and the USDA identifier in Brighton, MI, sent it on to DC for final confirmation.
- Monday, June 1, IDALS and Iowa USDA officials received official confirmation that the submitted sample is a EAB larva.
- Tuesday, June 2, The Iowa EAB Team met and immediately began planning to ground truth the sample in Clayton County. USDA and DNR representatives traveled to the site in Clayton County where the trap trees was located in 2008. There were three trap trees there in 2008. After debarking in December 2008, the trees were cut down and set aside. The old trap trees were located, and there is an S-shaped gallery, which is typical of EAB feeding.
- Wednesday, June 3, two IDALS entomologists 100% debarking the two trap trees that were established in the immediate area in 2008 (as per SOPs, the contractors had cut five 'windows' in the bark and thus the tree had previously not been totally debarked). Other nearby ash trees were inspected at, but none exhibit EAB symptoms.
- Wednesday, June 3, IDALS and USDA agreed to not declare Iowa EAB-infested because of a lack of physical evidence of EAB living and reproducing in Iowa.

- IDALS has NO plans to establish a quarantine until physical evidence of EAB living and reproducing in Iowa is found.

While the events surrounding the vial are not typical, the upside is that whether the suspect larva would have been found in December 08 or May 09, this period of time did NOT allow a potential infestation to spread. Survey work will still occur in 2009.

Based upon degree date calculations, the earliest possible EAB beetle emergence is happening right now (beginning of June) in Northern Iowa. Peak emergence is expected in 3 to 4 weeks.

Allamakee County Specifics (April 2009)

DNR estimates there are up to as many as 5 million ash trees in Allamakee County, this represents about 5% of the trees in the forested areas of this county. Allamakee is the most forested county in Iowa with 42% of the land covered by trees (176,000 acres of forest). Iowa agencies in cooperation with USDA-APHIS and Forest Service will be working together to survey for EAB.

Victory, WI, Specifics (April 2009)

- State officials were made aware of the infestation by an observant property owner.
- Vernon County becomes the third infested county in Wisconsin. EAB was discovered in Ozaukee and Washington counties last summer (2008).
- Because of the proximity to property managed by state and federal entities, and the short distance to counties in Iowa and Minnesota, developing an area-specific response plan is being coordinated effort with multiple state and federal partners.
- (updated June 2009) Wisconsin has responded to the infestation by quarantining movement of hardwood firewood, ash nursery stock, ash timber or any other article that could spread EAB out of the infested area. The quarantine of Vernon and Crawford Counties was issued April 22 by the Wisconsin Department of Ag, Trade and Consumer Protection. A thorough survey of the area to determine the size of the infestation is going.
- (updated June 2009) The infestation is believed to have been in the Victory-area for 5 years. Woodpecker damage is evident, and indicative of an older, established EAB infestation.
- (updated June 2009) Via visual surveys, bark peeling and larval identification, the EAB infestation has been confirmed in the vicinity of Victory: 3 miles south, 2 miles north and 1.5 miles east.

Victory –Area Survey and Detection Update (June 2009)

- Since the April 2009 EAB detection in Victory, WI, Wisconsin, Minnesota and Iowa have launched a trapping program to refine survey data in the immediate area. Purple EAB traps have been placed in a grid-pattern, where land is accessible and contains ash trees. To date, hundreds of detection traps have been set between 3 and 8 miles radius of Victory (193 in Minnesota, 264 in Wisconsin and 125 in Iowa).
- Federal and state officials are planning to set additional delimit traps in Clayton County as soon as possible. Additional sentinel, or detection, trees are also being considered.