



**Emerald
Ash Borer**

Commonly Asked Questions about the Emerald Ash Borer

- 1. Where did the emerald ash borer come from?** The natural range of *Agrilus planipennis*, or the emerald ash borer, is eastern Russia, northern China, Japan, and Korea. Before June of 2002, it had never been found in North America.
- 2. How did it get here?** We don't know for sure, but it most likely came in ash wood used for stabilizing cargo in ships or for packing or crating heavy consumer products.
- 3. What types of trees does the emerald ash borer attack?** In North America, it has only been found in ash trees. Trees in woodlots as well as landscaped areas are affected. Larval galleries have been found in trees or branches measuring as little as 1-inch in diameter. All species of North American ash appear to be susceptible.
- 4. Where has it been found?** In 2002, EAB was thought to occur in six counties in southeastern Michigan: Livingston, Macomb, Monroe, Oakland, Washtenaw and Wayne, and in Essex County Ontario. Our ability to detect and find EAB has substantially improved since then, however, and we now realize that a much greater area was infested than what was initially thought. Now there are only four counties in Michigan where EAB has not been detected. It has also been found in Indiana, Ohio, Illinois and Maryland, making EAB a national pest problem. Most of these infestations are not new (i.e., EAB has not spread this far in the past 5 years). We are simply getting better at finding infestations as survey methods improve. However, it is important to watch for signs and symptoms of EAB in non-quarantine areas where the beetle may have been accidentally transported in ash firewood.
- 5. What happens to infested ash trees?** The canopy of infested trees begins to thin above infested portions of the trunk and major branches because the borer destroys the water and nutrient conducting tissues under the bark. Heavily infested trees exhibit canopy die-back usually starting at the top of the tree. One-third to one-half of the branches may die in one year. Most of the canopy will be dead within 2 years of when symptoms are first observed. Sometimes ash trees push out sprouts from the trunk after the upper portions of the tree dies. Although difficult to see, the adult beetles leave a "D"-shaped exit hole in the bark, roughly 1/8 inch in diameter, when they emerge in June.
- 6. What do emerald ash borers look like?** The adult beetle is dark metallic green in color, 1/2 inch-long and 1/8 inch wide.
- 7. What is the life cycle of this borer?** Recent research shows that the beetle can have a one-, two-, or even three-year life cycle. Adults begin emerging in mid to late May with peak emergence in late June. Females usually begin laying eggs about 2 weeks after emergence. Eggs hatch in 1-2 weeks, and the tiny larvae bore through the bark and into the cambium – the area between the bark and wood where nutrient levels are high. The larvae feed under the bark for several weeks, usually from late July or early August through October. The larvae typically pass through four stages, eventually reaching a size of roughly 1 to 1.25 inches long. Most EAB larvae overwinter in a small chamber in the outer bark or in the outer inch of wood. Pupation

occurs in spring and the new generation of adults will emerge in May or early June, to begin the cycle again.

8. How is this pest spread? We know EAB adults can fly at least 1/2 mile from the tree where they emerge. Many infestations, however, were started when people moved infested ash nursery trees, logs, or firewood into uninfested areas. Shipments of ash nursery trees and ash logs with bark are now regulated, and transporting firewood outside of the quarantined areas is illegal, but transport of infested firewood remains a problem. *PLEASE – do not move any ash firewood or logs outside of the quarantined area.*

9. 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 for at least 12 years. The initial infestation probably started from a small number of beetles. Over the next few years, the population began to build and spread. By 2002, many trees in southeastern Michigan were dead or dying. In North America, native ash trees have little or no resistance to EAB and natural enemies have so far had little effect when EAB populations are high.

10. Does it only attack dying or stressed trees? Healthy ash trees are also susceptible, although beetles may prefer to lay eggs or feed on stressed trees. When EAB populations are high, small trees may die within 1-2 years of becoming infested and large trees can be killed in 3-4 years.

11. What is being done on a statewide basis about this new pest? The agencies listed below are working together to educate Michigan citizens about identification of ash trees and EAB, options for protecting valuable shade trees, and locations where dead or dying ash trees can be taken for disposal. State and federal agencies have programs in place to help restore the urban forest in cities that sustained heavy EAB damage. Research is underway to learn more about the biology of EAB, its rate of spread, methods for EAB detection, predators and other natural enemies that may attack EAB, and how insecticides can be used to protect trees in infested areas.

12. How big a problem is EAB? EAB is becoming an international problem, with infestations in Canada as well as Michigan, Ohio, Indiana, Illinois and Maryland, and eradicated infestations in Virginia. The scope of this problem could reach the billions of dollars nationwide if not dealt with. State and federal agencies have made this problem a priority. Homeowners can also help by carefully monitoring their ash trees for signs and symptoms of EAB throughout the year.

13. Who do I call to get more information on the Emerald Ash Borer or to report an infested tree? Contact your county Michigan State University Extension office, the nearest Michigan Department of Agriculture office, or the Michigan Department of Natural Resources. You may also contact the Emerald Ash Borer Hotline toll-free at 1-866-325-0023. More information is available at the following web sites:

www.emeraldashborer.info

www.michigan.gov/eab

www.na.fs.fed.us/spfo/eab/index.html

www.ncrs.fs.fed.us/4501/eab

www.aphis.usda.gov/ppq/ep/eab

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This fact sheet was updated by Dr. Deborah McCullough and Robin Osborne, Michigan State University Extension, May 2007.