



Maryland DNR Forest Service
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Forest Pests

Invasive Plants and Insects of Maryland

Invasive plants and insects can be problematic for forest landowners. From vines that take over disturbed areas, forest edges, and tree canopies to insects that defoliate and girdle trees, these pests not only decimate the natural ecosystem, they are difficult to control and can be expensive to eradicate. This informational sheet discusses the identification and guidelines for dealing with the insect commonly known as emerald ash borer.

Emerald Ash Borer (*Agrilus planipennis* (Fairmaire))



David Cappaert, Michigan State University, Bugwood.org

DESCRIPTION Emerald ash borer is a small green insect from the Beetle (*Coleoptera: Buprestidae*) family. Adults have large black eyes, a reddish-purple abdomen, and metallic emerald green wing covers. The adult beetle is considered bullet shaped and its length is only as long as half a penny. It has a one year life cycle that starts when adults lay eggs in the bark of the trees in the spring and early summer. The eggs hatch and the larvae tunnel into the trees in the fall and begin feeding on the tree. The following spring the larvae emerge from the tree as adults. Infested trees are essentially girdled and killed over time from the damage sustained from larval feeding.

ORIGIN & SPREAD In 2002, emerald ash borer was found feeding on ash trees (*Fraxinus* spp.) in Michigan. The exotic beetle likely arrived from Asia in shipping material. Since its arrival, emerald ash borer, or EAB, has impacted ash trees in Maryland and many other states. In the U.S., EAB has only been found to infest ash trees.



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Spread of the pest has been increased by people transporting ash wood products such as firewood and logs that contained the insect and they didn't know it. As a result, many states have quarantine orders. Quarantines do not allow ash wood products to leave the quarantine area and have seemed to slow the spread of the pest.

SIGNS & SYMPTOMS

Looking for signs and symptoms of EAB is easier than finding the small beetle itself. For forest landowners, it is important to know if and how many ash trees are on the property. If present, the overall health of the trees should be evaluated. Stressed trees will have canopy dieback (usually upper branches losing leaves) and epicormic branching (small branches sprouting directly from the trunk). Splits in the bark of the tree can possibly be covering up galleries where the larvae have been.

Increased woodpecker activity and damage can also be a sign of an infestation, as woodpeckers prefer to feed on EAB larvae.



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Emerald ash borer leaves behind two definitive signs when it has infested a tree. The first is D-shape exit holes. When larvae emerge as adults from the tree they leave a distinctive hole that looks like a sideways D. The second sign is how the larvae feed. After the larvae have tunneled into the tree, they start feeding on the tree in back and forth patterns referred to as serpentine or S-shaped galleries. These galleries can only be seen if you pull back the bark of the tree.



Pennsylvania DCNR, Forestry Archive, Bugwood.org

CONTROL OPTIONS

Several insecticides are available to control EAB for trees that are still healthy (less than 1/3 of crown affected), from soil injections or drenches to basal bark sprays or trunk injections (Herms et al. 2009). A soil drench product is available for general application by landowners, but the most effective products require a licensed professional. All must be applied strictly according to the pesticide label. Treatments are usually applied to urban trees because of cost and the need to repeat treatments every year or two. Silvicultural treatments can be used to reduce the ash component of a forest stand before trees are lost to EAB, and trees can be salvage harvested.

If emerald ash borer is found on your property, please contact the Maryland Department of Agriculture at 410-841-5920.

REFERENCES

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