

# EMERALD ASH BORER



**DETECTION FIELD GUIDE**

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EAB is well established across most of the state and, unless treated, most unhealthy ash observed is currently or most likely will be attacked by EAB. The other pests or pathogens listed in this document are primarily to inform those who have treated their ash, but they still observe problems.

# ASH ID: GREEN, WHITE AND BLACK

Ash trees (*Fraxinus* species) are easily identified if several simple factors are understood. Ash is unique from other trees because of its opposite branching structure, compound leaves and bunched samaras (fruits), according to the following pictures.



Remember, mountain ash (*Sorbus*) is not a true ash (*Fraxinus*), and is not affected by the Emerald Ash Borer.

# EAB SIGNS AND SYMPTOMS: WOODPECKERS



Woodpeckers eat larvae that are under the bark. This usually happens higher in the tree where EAB attacks 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.”



# EAB SIGNS AND SYMPTOMS: S-GALLERIES



As larvae feed under the bark they wind back and forth, creating galleries that are packed with frass (larva poop) and sawdust and follow a serpentine pattern.

# EAB SIGNS AND SYMPTOMS: EXIT HOLES



As adults emerge from under the bark they create a D-shaped hole that is about 1/8 inch in diameter.



# EAB SIGNS AND SYMPTOMS: EPICORMIC GROWTH



When trees are stressed or sick, they will try to grow new branches and leaves wherever they still can. Trees may have new growth at the base of the tree and on the trunk, often just below where the larvae are feeding.

# EAB SIGNS AND SYMPTOMS: CANOPY DIEBACK



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



# OTHER PESTS AND PATHOGENS: LOOK-ALIKE DAMAGE

## Ash yellows (*Candidatus phytoplasma fraxini*)



### **Distinguished from EAB by:**

Exhibits decline with witches-brooms of branches emerging from the trunk or branches of ash trees. These brooms are usually short, highly branched and exhibit yellowish, sickly foliage.

# OTHER PESTS AND PATHOGENS: LOOK-ALIKE DAMAGE

## Eastern ash bark beetle (*Hylesinus aculeatus*)



**Distinguished from EAB by:**  
Round exit holes and no S-shaped galleries.

# OTHER PESTS AND PATHOGENS: LOOK-ALIKE DAMAGE

## Redheaded Ash Borer (*Neoclytus acuminatus*)



**Distinguished from EAB by:**  
Round exit holes and wandering galleries  
rather than S-shaped.

# OTHER PESTS AND PATHOGENS: LOOK-ALIKE DAMAGE

## Banded ash borer (*Neoclytus caprea*)



James Solomon, USDA Forest Service, Bugwood.org



Whitney Cranshaw, Colorado State University, Bugwood.org

### **Distinguished from EAB by:**

Does not attack healthy trees. Larvae tunnel deep into wood. Round exit holes.

## OTHER PESTS AND PATHOGENS: LOOK-ALIKE DAMAGE

### Ash/Lilac Borer - Banded Clearwing (*Podosesia syringae*)



**Distinguished from EAB by:**

Round exit holes. Frass is expelled from tree (look for build-up on ground). Pupal cases remain upon emergence.

# OTHER PESTS AND PATHOGENS: LOOK-ALIKE DAMAGE

## Ash cambium miner (*Phytobia* spp.)



James Solomon, USDA Forest Service, Bugwood.org

### **Distinguished from EAB by:**

Galleries are thin and tend to be oriented vertically up-and-down the tree, thus not girdling it.

# OTHER PESTS AND PATHOGENS: LOOK-ALIKE DAMAGE

## Ash anthracnose (*Gnomoniella fraxini*)



Joseph OBrien, USDA Forest Service, Bugwood.org



Joseph OBrien, USDA Forest Service, Bugwood.org

### **Distinguished from EAB by:**

Dark brown to black water soaked blotches on leaves and young shoots. Leaves are often distorted and curled around the infected area of the leaf.