

Keep an Eye Out for the Emerald Ash Borer



David Cappaert, Michigan St. Univ., www.forestryimages.org

The Emerald Ash Borer (*Agrilus planipennis*), or EAB, is a very destructive, exotic wood-boring beetle native to Asia. It was first discovered in North America in July 2002, and has become established in Michigan, Ohio and Ontario (Canada). Millions of ash trees have been killed by the EAB in Michigan, and the discovery of infested nursery ash trees in other states indicates the potential for increased spread of this pest. **Your help is needed to detect possible infestations** so they can be quickly eradicated. This document will help you to identify the EAB, its host trees, and infestation symptoms.

Hosts: Ash trees (*Fraxinus* spp.) are the only known North American hosts of EAB. Ashes have pinnately compound leaves arranged **opposite** one another on the branch. Each leaf bears 5-9 leaflets. The fruit is a winged seed. Some ash species have bark with interlacing ridges that form a diamond-like pattern when mature. Non-hosts that could be confused with ash: Box-elder (*Acer negundo*) has pinnately compound leaves with opposite arrangement, but only 3-5 leaflets per leaf that are somewhat more coarsely toothed. Hickories (*Carya* spp.) and walnuts (*Juglans* spp.) have pinnately compound leaves with *alternate* arrangement. Buckeye (*Aesculus* spp.) leaves are arranged oppositely, but are *palmately* compound (leaflets radiate from a single point). Maple (*Acer* spp.) and dogwood (*Cornus* spp.) leaves are oppositely arranged but are simple rather than compound.



Credit: Kiffin Ayers, Florida DOACS-Div. of Forestry

Ash Leaf



Credit: Kiffin Ayers, Florida DOACS-Div. of Forestry

Opposite Leaves



Credit: Kiffin Ayers, Florida DOACS-Div. of Forestry

White Ash Bark

Adult Beetle: The adult emerald ash borer is only 7.5 to 13.5 mm (about ¼ to ½ inch) long. Color is bronze to golden green overall, with darker, metallic, emerald-green wing covers. Adults are active during summer months (in Michigan) and feed on ash foliage.



Credit: Howard Russell, Michigan St. Univ. www.na.fs.fed.us



Credit: David Roberts, Michigan St. Univ. www.msue.msu.edu



Credit: Ed Czenwinski, Ontario Min. of Natural Resources www.forestryimages.org

Larvae and Galleries: Larvae are 26-32 mm (1-1¼ inches) long when mature, white to cream-colored, somewhat flattened, have 10 abdominal segments, and a pair of pincer-like appendages on the last segment. They produce winding S-shaped feeding galleries in the inner bark and outer sapwood. Galleries become progressively larger and may be packed with fine, sawdust-like frass.



Credit: David Cappaert, Michigan St. Univ. www.forestryimages.org



Credit: Ed Czerwinski, Ontario Min. of Natural Resources, www.forestryimages.org



Credit: James Smith, USDA APHIS, PPQ www.forestryimages.org

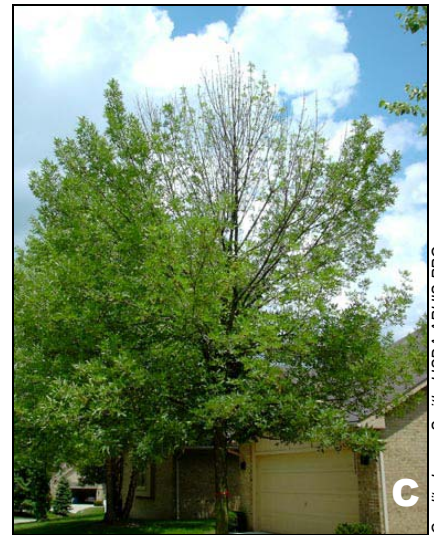
Signs and Symptoms of Infestation: The following signs and symptoms are general, but may indicate an EAB infestation: **"D-shaped"** adult **exit holes** 3-4 mm wide on the bark (A), **vertical splits** in the bark (B), crown and branch **dieback** (C, D), **Epicormic sprouting** on the trunk (E), **woodpecker damage** (F), and **sparse or discolored foliage**.



Credit: Deborah McCullough, Michigan St. Univ. www.na.fs.fed.us



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Reference: McCullough, D.G. and S.A. Katovich. 2004. Pest Alert: Emerald Ash Borer. NA-PR-02-04. USDA For. Serv., St. and Priv. For., NE Area, Newtown Square, PA.

If you detect or suspect an EAB infestation, contact:
 Florida Division of Forestry, Forest Health Section
 1911 SW 34th Street, Gainesville, FL 32608
 (Phone): 352-372-3505 xt.119 (Fax): 352-955-3295

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