

Emerald Ash Borer

Order: Coleoptera

Family: Buprestidae

Scientific name: *Agrilus planipennis*

Background: EAB probably arrived from Asia in solid wood packing materials such as cargo pallets. It was discovered in southeastern Michigan in 2002, northern Ohio and Maryland in 2003, and northern Indiana in 2004. So far it has killed at least 8-10 million ash trees in Michigan, Ohio and Indiana (most in southern Michigan). Currently, Ohio is under a federal quarantine to prevent movement of ash material to uninfested states. An intrastate quarantine remains in effect so ash firewood and other regulated ash articles are prohibited from being moved from quarantined counties into non-quarantined counties. As of December, 2009 67 counties (**Adams, Ashland, Ashtabula, Auglaize, Allen, Brown, Butler, Champaign, Clark, Clermont, Clinton, Coshocton, Crawford, Cuyahoga, Darke, Defiance, Delaware, Erie, Fairfield, Fayette, Franklin, Fulton, Geauga, Greene, Hamilton, Hancock, Hardin, Henry, Highland, Holmes, Huron, Knox, Lake, Licking, Logan, Lorain, Lucas, Madison, Mahoning, Marion, Medina, Mercer, Miami, Montgomery, Morrow, Ottawa, Paulding, Pickaway, Pike, Portage, Preble, Putnam, Richland, Ross, Sandusky, Scioto, Seneca, Shelby, Summit, Trumbull, Union, Van Wert, Warren, Wayne, Williams, Wood, Wyandot**) are under quarantine. Eradication efforts have been abandoned. EAB is an aggressive pest that kills healthy trees (as opposed to trees already in a state of decline) in as little as two years after infestation. It apparently only attacks ash (*Fraxinus* spp.) and all 16 native ash species are probably susceptible, although Chinese scientists report that EAB can also attack trees in the genus *Ulmus* (elm), *Juglans* (walnut and butternut), and *Pterocarya* (wingnut). Healthy ash trees of any size (from as little as 5 cm in diameter) can be affected.

Life cycle: The beetle appears to have a one year life cycle in north America. Mating occurs during the first 7-10 days after emergence, with females mating multiple times. Each female lays an average of 77 eggs in bark crevices from late May through July, and these hatch in 7 to 9 days. Larvae tunnel in the cambial layer feeding on the phloem and outer sapwood (forming S-shaped galleries), and move into the sapwood as they increase in size. Larvae feed aggressively until cooler fall temperatures arrive, and then over winter in the tree. Pupation occurs in late April to June. The pupal chamber is constructed by tunneling into the sapwood at a shallow angle. Newly-formed adults remain in their pupal chambers for 8-15 days, then bore through the bark to the outside. Adults emerge in mid-May through D-shaped exit holes, peaking in late June and may continue emerging as late as mid to late July. Adults prefer clear, calm days and the warm, sunny sides of the trees. Adult females live approximately 22 days; whereas males live an average of 13 days.



adult beetles

adult next to exit hole

larva

Symptoms

- Initial thinning or yellowing of the foliage (general or limited to certain branches).



Symptoms

- Epicormic shoots below dead portions of trunk or branches may or may not be present on declining trees (below left).



- Woodpecker injury--woodpeckers strip away small patches of bark, so that they can extract the borers (above right).
- D-shaped emergence holes, about 3 mm in diameter, are probably present in multiple year infestations (below left).



- Larval galleries--typical galleries meander, bending suddenly, and are packed with frass (above right).

If you suspect you have EAB in your ash tree(s) call:
1-888-OHIO-EAB