# ALERT!

*Protect our Forests and Trees.*

*Help Stop the Movement of Exotic Pests.*

## DO NOT MOVE FIREWOOD!

Exotic pests like the emerald ash borer can be spread when infested firewood is transported to new areas.

- Use LOCAL firewood
- Do not bring firewood from home
- If you have already transported firewood, do not take it home, do not leave it - BURN IT!

# REPORT!

If you think you have found emerald ash borer, report it by contacting:

PA Department of Agriculture:
717-772-5228

PA Department of Conservation and Natural Resources (DCNR)

Penn State Cooperative Extension:
or
United States Department of Agriculture

OR
Report your sighting by e-mail at:

**Badbug@state.pa.us**

Pennsylvania Department of AGRICULTURE

DCNR
PA Department of Conservation and Natural Resources

PENNSTATE
College of Agricultural Sciences
Penn State Cooperative Extension

USDA United States Department of Agriculture

# *What is the* Emerald Ash Borer?

USDA Forest Service
**Northeastern Area**
State and Private Forestry
NA-PR-05-04

# The emerald ash borer,

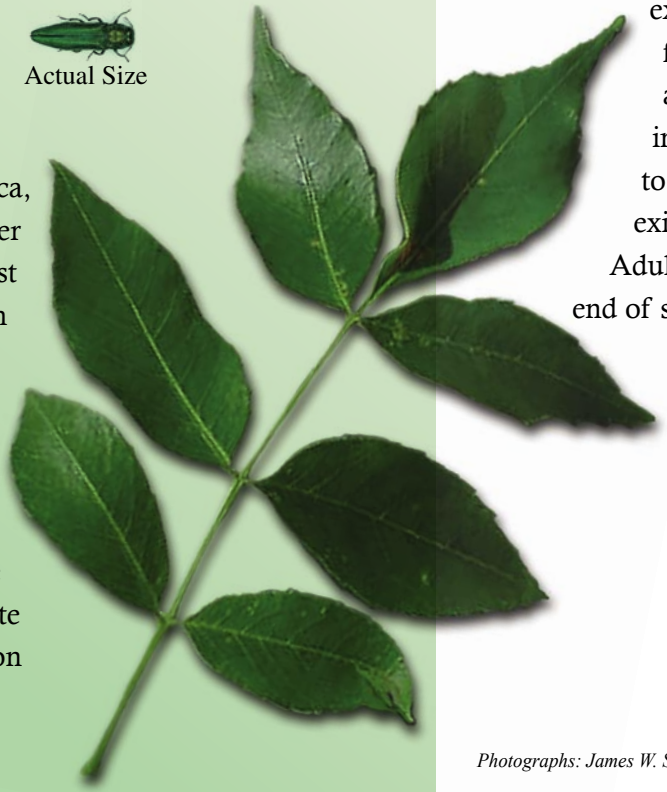
*Agrilus planipennis* Fairmaire, a beetle native to Asia, was first detected in Michigan in 2002. Evidence suggests that the beetle was established in Michigan for a number of years prior to its discovery. Emerald ash borer has since been detected in Ohio, Indiana, Virginia, Maryland, and Ontario, Canada. In addition to spreading by natural means, emerald ash borer can be transported to new areas in infested firewood, timber, and nursery stock. The beetle is responsible for the loss of more than 7 million ash trees in Michigan alone.



Actual Size

# Host:

In North America, emerald ash borer is known to infest all species of ash (*Fraxinus* spp.). Ash can be recognized by the presence of compound leaves which are arranged opposite of one another on the branches.



Larva

S-Shaped Galleries

# Biology:

Eggs are laid between layers of bark and in bark crevices. Larvae hatch in about one week and bore into the tree where they feed on the inner bark and phloem, creating "S"-shaped galleries. The larvae go through three feeding stages, and then excavate a pupal chamber in the fall, where they will overwinter as prepupae. Pupation occurs in late spring, and adults begin to emerge through "D"-shaped exit holes in May and early June. Adults will remain active until the end of summer.

D-Shaped Emergence Hole

*Photographs: James W. Smith, David Cappaert, www.invasive.org and PA DCNR.*

# Signs and Symptoms:

New infestations are difficult to detect, as damage to the tree may not be apparent for up to three years. Signs of older infestation can include branch dieback in the upper crown, excessive epicormic branching on the tree trunk, vertical bark slits and woodpecker damage.

Dieback

Epicormic branching

Bark Slits

Woodpecker Damage

# Other Stressors:

Ash may also be stressed by drought, diseases such as ash yellows, and by native insects like the redheaded ash borer, *Neoclytus acuminatus*, (Fabricius) which creates a round emergence hole.

Redheaded Ash Borer