

EMERALD ASH BORER

Question: My neighbor was telling me about this newly-discovered insect pest in Oregon that could potentially decimate Oregon ash tree populations. Is this true, and if so, can you tell me more about it?

Answer: Unfortunately, what your neighbor told you is true. The pest is a small metallic green beetle called the Emerald Ash Borer, or EAB (*Agrilus planipennis* Fairmaire). A native to eastern Asia, EAB was first detected in Detroit, Michigan, in 2002. Since then, this highly destructive forest pest has killed over 100 million ash trees in the eastern U.S. Likely introduced through international shipping of infested wood materials such as pallets, this borer has now spread to over 35 states and five Canadian provinces. And now it's been detected in Forest Grove on June 30 of this year.

All ash species, including Raywood and European ash, as well as American fringe trees (*Chionanthus virginicus*) and European olive trees are susceptible to the emerald ash borer, but especially our native Oregon ash. Oregon ash (*Fraxinus latifolia*), a key part of our riparian forests and wetlands, has the ability to stabilize soil, control sediment and moderate stream temperatures, thus is widely used for stream restoration. Should EAB cause widespread death to these trees, it could lead to drastic ecological changes in water quality and stream temperatures, affecting fish populations and riparian plant communities.

Adult beetles are only about 1/2 inch long, fitting into the size of a penny. They emerge May into July, laying their eggs in bark crevices. When the larvae hatch, they tunnel through just beneath the bark, consuming the inner phloem, cambium and outer xylem. Eventually their numbers can girdle and starve the tree, leading to its death. After four larval molts, the insect then pupates and overwinters.

What to look for when detecting



PHOTO COURTESY OF CITY OF LAFAYETTE, INDIANA

Two emerald ash borers are shown next to holes they created with a penny to indicate the size. The pest has killed more than 100 million ash trees in the eastern United States.



Bonnie Courter
Master Gardener

EAB's? Unfortunately most of the signs or symptoms of their presence occur well after they have left the tree. Look for "D-shaped" exit holes made by the emerging adults in the bark that are about 1/8" wide. If the bark of an affected tree is removed, you can witness squiggly-shaped galleries caused by hundreds and even thousands of larvae feeding on the cambium. After a number of years of repeated attacks, ash trees will show significant canopy dieback, often producing suckers along the trunk in their fight to survive. Because noticeable tree decline doesn't occur until 3-4 years after the beetle has left and dispersed to other trees, early detection if very difficult.

It's important to make sure the tree you're observing is an ash tree. Ash trees have compound leaves and opposite branching as well as

bark furrows that become diamond shaped as the trees age. Female trees will put out seeds in late summer/early fall which are paddle-shaped, hanging in branches. The leaves turn from green to bright yellow in the fall.

Once EAB is established in an area, there are no effective means of eradicating entire populations, but individual trees can be protected before the beetle arrives by using stem-injected or soil-drenched systemic insecticides. You can see a complete list of insecticides and their effectiveness by checking out the Oregon Statewide EAB Readiness and Response Plan, www.oregoneab.info.

Biological controls for EAB have seen some success back East by releasing tiny parasitic wasps that specifically target EAB, however it only helps reduce, not eliminate, EAB populations and their spread.

Another deterrent is to be sure not to transport ash firewood more than 30 miles from where it was harvested. Any ash firewood that has been recently cut and split should be covered by thick plastic for at least one

year. Also purchase locally sourced nursery stock when planting ash



PHOTO COURTESY OF UNIVERSITY OF MINNESOTA

Trails left behind by the emerald ash borer reveal some of the damage these pests leave behind.

tree varieties.

Oregon is being proactive to prepare for a possible spread of this pest. The Oregon Department of Forestry is collecting 1 million seeds of Oregon ash which are sent to researchers in Cottage Grove as well as the USDA Seed Lab in Ft. Collins, Colorado. They hope there will one day be tree breeding programs to develop Oregon ash that is resistant to EAB and can be used to restore affected areas.

Report any sightings of EAB to the Oregon Invasive Species Council hotline, oregoninvasivehotline.org/. Keep an eye on your ash trees, and if you think they are declining, check for this beetle. Surveys are being conducted presently, but it's not known yet if the infestation is spreading in Oregon. Educating the public can be a big help in reporting and identifying any presence of this insect.

Do you have a gardening or insect question? Contact the Douglas County Master Gardeners at douglasmg@oregonstate.edu or 541-672-4461 or visit 1134 SE Douglas Ave., Roseburg. Douglas County Master Gardeners are trained volunteers who help the OSU Extension Service serve the people of Douglas County.

An adult emerald ash borer is a highly destructive forest pest.

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