Signs and Symptoms of EAB Infestation

SIGNS

D-shaped emergence holes: Adult EAB emerge from under the bark and create a D-shaped hole measuring about ⅛ inch in diameter.

S-shaped larval galleries: EAB larvae wind back and forth as they feed under the bark of an infected tree. This feeding pattern creates s-shaped larval galleries packed with sawdust.

Larvae: EAB larvae are cream-colored flatworms that have pincher-like appendages at the end of their abdomen. Mature larvae reach 1½ inches in length.

Adults: Adult EAB beetles are metallic green in color and are ⅜-½ inches long. Adults have flat stomachs and round backs.

SYMPTOMS

Crown dieback: EAB causes dieback of the upper and outer tree crown. Trees begin to show dead branches and leaves throughout the canopy, beginning at the top. Foliage at the top of the tree is thin and discolored.

Sprouting: EAB often causes epicormic sprouting at the base and/or on the main stem of the infected tree. Infected trees often begin to sprout new shoots just below where the larvae are feeding.

Bark splits: Infected ash trees often develop callus tissue where EAB larvae are feeding. The callus tissue causes the bark to form vertical splits or fissures. Larval galleries can often be seen beneath the bark splits.

Woodpecker feeding: Woodpeckers frequently feed on EAB larvae located under the bark of infected ash trees. Woodpeckers are typically seen feeding high in the crown where EAB infestation begins.

What you can do to minimize the devastating effects the EAB is having on American Indian traditions and forests.

- Teach your children about your traditions
- Watch for signs and symptoms of EAB
- Report suspected infestations to tribal, state, or federal natural resource managers and tribal leaders
- Collect and store ash seeds with your tribe
- Don't move firewood
- Work with your tribe to develop a comprehensive EAB and invasive species management plan

Identifying Ash Trees

Ridged Bark: On mature trees, the bark is tight with diamond-shaped ridges. On young trees, the bark is smooth.

Compound, Opposite Leaves: A leaf has 5 to 11 leaflets with either smooth or toothed margins. Leaflets are opposite with one at the top.

Seeds: When present, seeds usually hang in clusters and are dry and shaped like oars.

Opposite Branches: Branches and buds are directly across from each other rather than staggered.

For more information about emerald ash borer, visit:

www.emeraldashborer.info
www.sustainabledevelopmentinstitute.org
www.na.fs.fed.us/fhp/eab
www.nrs.fs.fed.us/disturbance/invasive_species/eab/
www.emeraldashborer.wi.gov
www.blackash.org

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Emerald Ash Borer Impacts on American Indian Communities

Emerald Ash Borer Threatens American Indian Traditions

Emerald ash borer (EAB) infestation is a major concern for American Indian people. Many American Indian cultures and traditions rely on ash trees for the wood needed for making baskets, lacrosse sticks, pipe stems, flutes, and medicinal remedies. The ash tree is a central figure in some traditional and religious stories told by several American Indian tribes.

The emerald ash borer is an invasive insect that is striking at the core of many American Indian traditions and cultures. Will these traditions be something that American Indian children will only be able to read about in books? Will their knowledge of ash trees and basket making be limited some day to story telling? Or can something be done to prevent the loss of ash trees to this insect? The EAB has already had devastating impacts on ash trees on several American Indian reservations in the Midwest, and it will likely affect all communities, forests, and reservations where ash trees are found.

TRADITIONAL BASKET WEAVING: Dozens of American Indian tribes and cultural groups, including the Abnaki, Ojibwa, Malecite, Mezkwaki, Potawatomi, Penobscot, Mohawk, and others, use black ash trees to make baskets. EAB infestations are making it more difficult for basket weavers to find healthy, basket-quality trees. The scarcity of trees, combined with the fact that fewer people are making baskets, threatens this centuries-old cultural and economic tradition.

PIPES AND FLUTES: American Indian pipe stems and flutes are carved from many kinds of trees, including black ash. Pipes are often used for ceremonies and special events. American Indian pipe stem carvers craft some of their most beautiful pipe stems from black ash trees. EAB threatens this tradition by decreasing the availability of ash trees that can be used for pipe stems.

MEDICINAL REMEDIES: American Indian tribes in the Eastern United States use different parts of ash trees to make medicinal cures for various maladies. Some tribes use ash sap to treat external skin growths. Other tribes value an extract of ash leaves as an antiseptic for use after childbirth. Some tribes use a tea made from ash bark to treat itching scalp and sores. Ash seeds have been used as an aphrodisiac, a diuretic, an appetite stimulant, and a remedy for fevers. EAB threatens the availability of these traditional medicines and any new medicinal discoveries that may come from ash trees in the future.

LACROSSE: Lacrosse games are ceremonial in origin and bring tribes and families together. Today, lacrosse is played by thousands of people around the world. Traditional lacrosse sticks are crafted from ash wood, making ash trees an irreplaceable component of American Indian lacrosse sticks.

What is Emerald Ash Borer?

Emerald ash borer (EAB), *Agrilus planipennis*, is an exotic beetle that was discovered in southeastern Michigan near Detroit in the summer of 2002. EAB probably arrived in the United States on solid wood packing materials carried in cargo ships or airplanes originating in its native Asia.

Since it was first discovered, this insect has been found in Ontario, Ohio, Indiana, Maryland, Illinois, Pennsylvania, West Virginia, Wisconsin, Missouri, Virginia, Minnesota, and New York.

How Does the Emerald Ash Borer Affect Ash Trees?

The adult beetles feed on ash foliage but cause little damage. The larvae, however, tunnel under the bark of an ash tree and feed on the inner bark, disrupting the flow of water and nutrients between the tree's roots and crown.

EAB larval feeding makes the tree's crown thinner and the branches die back, and eventually causes the tree to die. EAB larvae can usually kill ash trees within 2 to 4 years, but a heavy infestation could kill a tree in as little as one year.

EAB is known to infest all ash species, including green ash (*Fraxinus pennsylvanica*), white ash (*F. americana*), black ash (*F. nigra*), blue ash (*F. quadrangulata*), and all horticultural cultivars of these species. EAB has killed over 20 million ash trees throughout North America since its discovery.

How does EAB Spread?

EAB moves short distances by flying and longer distances by hitching a ride in infested ash trees or ash wood products that are moved by people. Adults don't fly far from where they emerge, depending on the availability of food (ash trees). EAB is most commonly spread long distances by people moving infested firewood, nursery stock, or ash logs.