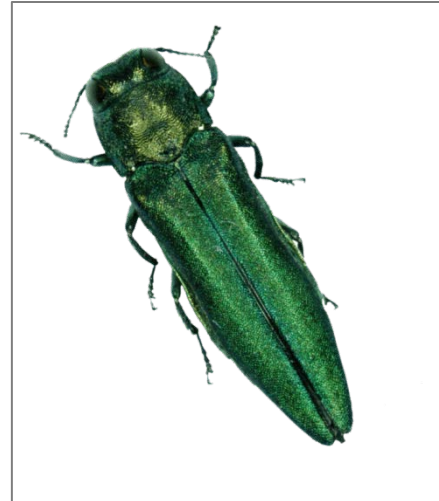


Emerald Ash Borer: A Threat to Colorado's Urban Forests

Emerald Ash Borer (EAB) was first identified in Michigan in 2002; since then it has spread to 22 states, including Colorado. It was introduced from East Asia likely through infested shipping or packing material. The most likely route of introduction to Colorado was probably in firewood or nursery stock. EAB impacts all species of ash (*Fraxinus* spp.), white, purple, green and their cultivars. Colorado has many ash in the urban forest (we estimate about 15% of trees are ash). Boulder has approximately 98,000 public and private ash trees. The Denver Metro area has an estimated 1.45 million ash trees. Some neighborhoods and developments may be up to 80% ash.



Emerald ash borer. Photo credit: Pennsylvania Department of Conservation and Natural Resources - Forestry Archive

What does EAB do?

- Kills ash trees!
- Larvae feed under the bark, eventually girdling the tree and cutting off nutrients.
- Trees are killed within 2-4 years of first symptoms, even previously health trees.
- Trees of all size can be attacked, from 1/2 inch saplings to largest mature trees.
- This insect is very difficult to detect because it is under the bark and the adults are only around from May to September.

Movement

Infestations result from movement of infested ash trees and wood. It does not fly far on its own. Some of the items it moves on or in:

- Firewood
- Packing material/industrial wood material
- Live plant material (nursery stock etc)
- Ash wood such as logs, branches, chips, etc.

Potential Impacts of Emerald Ash Borer to Colorado Communities

- Green and White Ash widely planted in Colorado over past 50 years
- Ash comprises 15%-80% of community trees depending on location
- Ash is still planted extensively due to tolerance of urban growing conditions, it is fast growing and has nice fall color
- Green ash is also naturalized along creeks and ditches throughout Eastern Colorado and parts of the Front Range. It has been found along Boulder Creek.

**Total ash tree population for Metro Denver is estimated to be 1.45 Million trees
Boulder has an approximately 98,000 ash trees**

In the greater Denver Metropolitan area in direct economic impact could be:

- Removal of public and private trees approximately \$435 Million total
- To replace those trees could cost approximately \$580 Million total
- Treatment costs are unknown but could be around \$36 million per year for at least the next 10 years (Calculation: Treat 10% of trees, most high valued, average 25 DBH, \$10 per inch (145,000 trees X 25 inches X \$10 = \$36.25 million))

Benefits provided by Colorado's Urban Forests

- Increased property values (4-7%) may lead to increased tax revenue
- Urban tree cover increases property value in Denver Metro Area an estimated \$435 Million
- Reduced cooling expenses
- Estimated \$27 Million in reduced energy costs for Denver Metro area
- Trees attract businesses and people to an area
- Reduced storm water costs
- Carbon sequestration

Current Issues/Problems

- We do not know the extent of the infestation and it is difficult to detect
- EAB populations may expand exponentially
- Ash trees will most likely die if not treated with pesticides yearly and will need to have annual pesticide treatments for remaining life of tree
- When left untreated, entire ash populations in Midwest communities were beyond treatment in 10 years
- Standing dead ash trees present a potential liability to communities
- Will have to deal with how and where to dispose of dead ash tree material

CDA's Role

The Colorado Department of Agriculture is focused on detecting, controlling, and preventing the human spread of the emerald ash borer (EAB) beetle. The pest was just confirmed in Colorado but may have been here for a year or two. CDA will work with the affected community, the city, county, other state agencies, the USDA and US Forest Service to develop detect, control and minimize the impact of the beetle.