

Content taken from Manitoba Government website:

http://www.gov.mb.ca/conservation/forestry/health/eab_2014.html

Emerald Ash Borer in Manitoba

Emerald ash borer (EAB), *Agrilus planipennis*, is a highly destructive invasive wood boring beetle that kills ash trees. Originating from parts of Asia, this insect kills trees when the larvae feed in the nutrient conducting vessels of ash trees.

Emerald ash borer (EAB) was first detected in North America in 2002 in Ontario and Michigan. It is thought that EAB was introduced through ash packing material used in shipments from China. Since then, it has spread to several other states and to Quebec.

This highly destructive pest continues to spread throughout North America through the movement of nursery stock and raw-untreated ash wood, particularly firewood. Millions of ash trees have been killed in Ontario and the U.S. Native to eastern Asia (China, Korea, Japan, Russia, Mongolia), EAB is well suited to Manitoba's climate and could establish a population here.

Since EAB is very hard to detect in the early stages, it often goes unnoticed until it is too late. For this reason, EAB has been difficult to control and manage. Prevention measures and early detection are the best defense against this devastating invasive forest pest.



Emerald Ash Borer

(David Cappaert, Michigan State University, Bugwood.org)

Hosts

EAB only attacks ash trees (*Fraxinus* species). Mountain ash is not a true ash tree and is not susceptible to EAB. All North American species of ash are vulnerable to EAB. In Manitoba there are two native species of ash; green and black ash.

Manchurian ash and cultivars of green, black and Manchurian ash have been planted in many communities that are also vulnerable to EAB.



Ash trees

(David Cappaert, Michigan State University, Bugwood.org)

Ash Tree Identification

Click [here](#) for information about identifying ash trees.

Life Cycle

EAB has a one to two year life cycle depending on infestation levels and climate conditions. The larvae overwinter under the bark of ash trees and pupate in early spring (mid-April) with adult emergence in late May to the end of June.

The adults feed on ash foliage for two to four weeks that is characterized by a notched feeding pattern on the leaves. This stage is not damaging to the trees. After this period, from the end of June until the end of August, the adult female lays up to 300 individual eggs (average 75) on the bark of ash trees or in bark crevices.

The larvae bore directly into the bark after hatching and begin feeding just under the bark in the phloem (food conducting tissue) of the tree creating s-shaped galleries. This is the damaging stage of the insect as the flow of nutrients in the tree is disrupted by the larval feeding.

Description



Adult emerald ash borer

(Pennsylvania Dept. of Conservation and Natural Resources Forestry Archive Bugwood.org)

The average length for an adult emerald ash borer is 7.5 to 13.5 mm long and 4 mm (1/6 in) wide. The larvae are approximately 1 mm in diameter and 26 to 32 mm long, and are a creamy white color.



Larvae

(Pennsylvania Dept. of Conservation and Natural Resources Forestry Archive Bugwood.org)



Prepupae

(David Cappaert, Michigan State University, Bugwood.org)



Pupae

(David Cappaert, Michigan State University, Bugwood.org)

Damage

EAB larvae feed on the phloem of trees just under the bark and disrupt the flow of nutrients in the tree resulting in the tree's death. It takes one to four years of infestation to kill the tree.

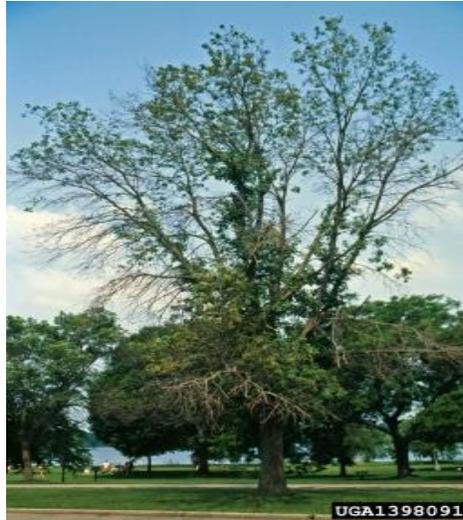
At low levels, the EAB is hard to detect, but after the population builds, ash trees start dying. In places like Michigan where the population of EAB went undetected for many years, millions of ash trees have been killed by this pest..



Trees damaged by EAB feeding.

(David Cappaert, Michigan State University, Bugwood.org)

Symptoms



Thinning and dieback of crown.
(Steven Katovich, USDA Forest Service, Bugwood.org)



Vertical cracks, caused by larval activity under the bark.
(David R. McKay, USDA APHIS PPQ, Bugwood.org)



Woodpecker damage, caused by woodpeckers seeking larvae under the bark.
(Jim Tresouthick, Village of Homewood, Bugwood.org)



Epicormic shoots, shoot development beneath larval activity as tree attempts to survive.
(Joseph O'Brien, USDA Forest Service, Bugwood.org)



D-shaped exit holes, caused by the emergence of the adult stage of EAB.
(Daniel Herms, The Ohio State University, Bugwood.org)



Larval galleries under bark.
(James W. Smith, USDA APHIS PPQ, Bugwood.org)

Control

Sanitation/Quarantines:

- EAB populations are controlled by removing and destroying infested trees.
- Movement restrictions have been put in place in Ontario and Quebec on ash material by the federal government.
- Quarantines could be established in Manitoba if EAB were detected here.

Chemical:

- There are insecticides approved for use in Canada for the management of EAB, but it is not recommended that ash trees be chemically treated at this time, since EAB has not yet been found in Manitoba.

Biological:

- Parasitoids: Non-stinging wasps have been released in Canada and the U.S. that are the natural enemies of EAB in its native habitat.
- Fungus: Research is being conducted on control methods using a fungal pathogen that kills EAB.

Where is EAB now?

EAB has been found in Ontario and Quebec and much of the north-eastern U.S., including Minnesota and Wisconsin. The closest infestation to Manitoba is in Superior, Wisconsin, which is only 400 kilometers from the Manitoba border.

Visit these pages for maps of EAB infestations and quarantines:

[Areas Regulated for the Emerald Ash Borer in Canada](#)

[Emerald Ash Borer in North America](#)

EAB Look-alikes



Monitoring

The province is monitoring for emerald ash borer in several locations in southern Manitoba using baited sticky green prism traps. Visual surveys are also being conducted at trap sites.

No EAB have been found in Manitoba to date.



Sticky trap in ash tree

You can help

While EAB was likely introduced through packing material from Asia, it continues to be spread in North America through the movement of ash firewood and other ash products. **New** If you think you have found infested trees or ash material, please try our new [Got a Sick Tree?](#) questionnaire or call the Provincial Tree Line: 204-945-7866.

PLEASE DO NOT MOVE FIREWOOD!

Do not move firewood long distances. Buy it locally and leave it where you bought it.

Be vigilant. Learn about the signs and symptoms of EAB and report symptomatic ash trees or ash tree products to Manitoba Conservation's tree care line at 945-7866.

Tell others. An informed public is the first line of defense against this destructive pest.