

Emerald Ash Borer

Agrilus planipennis



What are invasive species?

Invasive species (IS) are species that are introduced to an area outside of their native range and have the ability to outcompete native species. IS can be introduced intentionally or unintentionally.

Why are invasive species a problem?

Once they establish, invasive plants can reproduce quickly because they have no natural predators or pathogens to keep them in check, and they often become the dominant species in an ecosystem. This can have devastating effects on the environment. IS can displace native plants by monopolizing space, light, water and other resources needed for growth. They can completely alter native plant communities and drastically lower biodiversity. IS can also adversely affect the economy and human health, and interfere with recreational activities.

INTRODUCTION

The emerald ash borer (EAB) is an invasive beetle that attacks and kills all species of ash trees, except mountain ash which is not a true ash. EAB was brought to North America from Asia. It was first detected near Detroit, MI and in Windsor, ON in 2002. It likely arrived in wood packaging material in the early '90's. Since then it has spread to NB (closest, Moncton), NS, ON, and QC. EAB has not yet been detected on PEI.

“Typically, within six years of an infestation arriving in a woodlot, more than 99% of the ash trees have been killed. This extensive mortality increases the likelihood of invasion of forests by invasive plants, and poses a significant challenge to affected urban centres.”

<http://www.nrcan.gc.ca/forests/insects-diseases/13377>

IDENTIFICATION

The emerald ash borer life cycle can occur over one or two years, depending on the time of year the eggs are laid, the health of the tree and the temperature. Adult beetles are typically bright metallic green and about 8.5 mm (0.33 in) long and 1.6 mm (0.063 in) wide. Underneath the elytra (hardened forewing), the upper side of the abdomen is a coppery-red color. In the spring, adults begin to emerge from the trees and feed on the ash leaves for one week before mating.



Adult feeding



Wood boring larva

A typical female can live around six weeks and lay approximately 40–70 eggs, however, females that live longer can lay up to 200 eggs. The eggs are difficult to see as they are deposited between bark crevices or under bark scales on the trunks and

branches of host trees. After two weeks the eggs hatch and the larvae chew through the bark to the phloem and cambium where they feed and develop. As they feed, the larvae create long serpentine galleries under the bark, cutting off the flow of nutrients in the tree and eventually killing it. Mature larvae excavate chambers in the sapwood or outer bark where they fold into a J-shape and pupate over winter, emerging as adults in late May/early June.

To exit the tree, adults chew holes from their chamber through the bark, which leaves a characteristic D-shaped exit hole. Immature larvae can overwinter in their larval gallery, but can require an additional summer of feeding before emerging as adults the following spring.



Serpentine galleries



D-shaped exit hole



How can you help?

Here are a few things you can do to help stop the introduction and spread of alien invasive species:

- Learn more about invasive species on PEI, including how to identify species of concern
- Plant resistant species
- Increase biodiversity
- Monitor your trees, shrubs and herbaceous plants for signs of insect activity
- Don't move firewood. Buy locally and burn on site. Pests in firewood can destroy our forests.

- Report a sighting

How to report:

Record any invasive species sightings at:

<https://www.eddmaps.org/report/>

OR:

<https://www.inaturalist.org>

OR contact:

peiinvasives@gmail.com



SYMPTOMS

New infestations of EAB are difficult to detect. Generally, by the time the tree is showing symptoms and signs of stress, it is heavily infested. Symptoms the tree can exhibit are: premature yellowing and wilting of the leaves, loss of leaves, notched leaves from adult feeding, dead branches, thinning of the tree canopy, cracks in the bark over larval galleries, pinkish-brown dry bark over larval galleries, epicormic shoots (suckers/water sprouts) and heavy seed production. Woodpecker activity may indicate that a tree has an insect infestation when other symptoms are also observed.

NOTE: Symptoms can look very similar to those caused by other pests or environmental conditions.

If an infestation is suspected based on the above symptoms, peel away a section of bark to expose the serpentine larval galleries and look for D-shaped exit holes.

REPORTING AND MANAGEMENT

EAB is a devastating insect pest in areas where ash trees are present. It is important to report your sighting immediately and have an expert verify the presence of EAB. If you are not in one of the areas regulated for the emerald ash borer and you suspect signs of infestation on your ash trees, **contact a local Canadian Food Inspection Agency (CFIA) office.**

- Remove and dispose of dead and dying ash trees.
- Keep your trees healthy as they are less susceptible to insect pests and diseases.

REGULATION AND PREVENTION

- People artificially spread EAB, knowingly or unknowingly, by moving infested ash wood. Help prevent the spread of EAB by not moving ash materials.
- Federal regulatory measures **prohibit the movement** of specific materials including any ash material and firewood of all species from **specific areas of Canada**. Anyone violating these restrictions is subject to a fine and/or prosecution. [Areas regulated for the emerald ash borer - Canadian Food Inspection Agency](#)
- The most effective and cost efficient way to avoid infestations of invasive species is to learn about potential invaders and be on the look out for them before they get a chance to become established.
- To learn about how you can get involved in preventing invasives on PEI, contact the PEI Invasive Species Council at: peiinvasives@gmail.com.



Bark cracks



Epicormic shoots



Thinning tree canopy

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