



Vermont Forest Health



Emerald Ash Borer: Information for Forest Landowners

Department of Forests, Parks & Recreation
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What is emerald ash borer?

Emerald ash borer (EAB) is an invasive beetle that kills North American ash trees. Native to China, eastern Russia, Japan, and Korea, it was found to be responsible for widespread ash mortality near Detroit, MI in 2002.

What kind of damage does it do?

EAB feeds on all species of ash. None of Vermont's native ash trees is resistant to the insect. Mountain-ash is not a host because it's not a true ash species.

It takes 3-5 years for infested trees to die. Ash mortality is widespread where the insect occurs. Healthy ash trees of all diameter size classes will be readily attacked by EAB.

EAB damages trees by boring through the inner bark. Heavy feeding by the immature, grub-like larvae blocks the movement of carbohydrates and water.

Branches smaller than 1" in diameter can be infested. Branches, including those at the base of the canopy, are often infested first.



Infested trees die in 3 - 5 years.

It has been found in Vermont

EAB was detected in Vermont in February 2018. With over 150 million ash trees accounting for approximately 5% of Vermont's trees, it will have a significant impact.

Vermont's EAB infestation was first identified in northern Orange County. A consulting forester submitted photos of ash trees with EAB symptoms on vtinvasives.org.

EAB is widespread in our region. It is known to be established in over 30 states, including New York, New Hampshire, and Massachusetts, and three Canadian provinces, including southern Quebec.



Larvae bore through the inner bark. (Photo: N. Siegert)

The beetles are capable fliers, and good at finding ash trees. When EAB first arrives in an area, the infestation may not be obvious. Within a few years, however, EAB population growth increases and leads to widespread ash decline and mortality.

Moving firewood is the #1 cause of spread. Other new infestations have been traced to shipments of nursery trees and logs. But all stages of the insect can travel 65 mph down the interstate inside infested wood!

EAB will survive Vermont's winters. It is a cold-hardy insect, native to areas with cold climates including northern China, Mongolia, and the Russian Far East. It has also become established in Canada and northern Michigan, which also have cold climates.

How can I tell if I have EAB?

Woodpecker damage to live trees may be the first sign that a tree is infested. When feeding on EAB, woodpeckers scrape off outer bark, leaving smooth, light colored patches. If the bark is removed, S-shaped galleries weaving back and forth on the surface of the wood may be visible. The D-shaped exit holes are good EAB indicators, but are only 1/4" long and can be difficult to see.

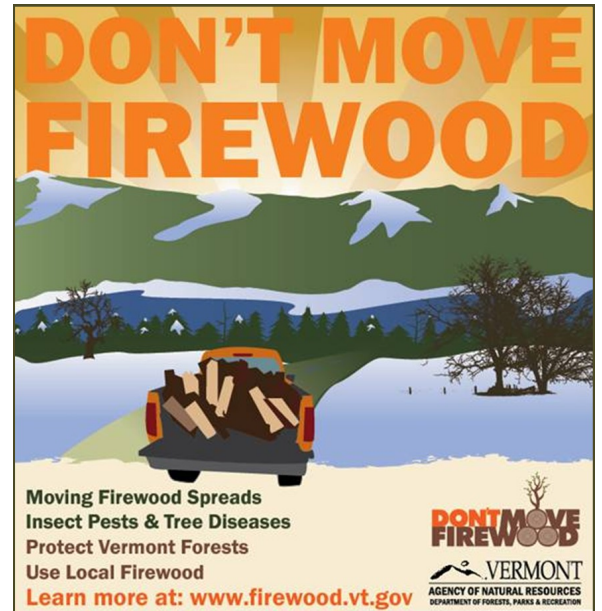


Woodpecker damage may be the first sign that a tree is infested with EAB.

We won't get rid of EAB by removing ash trees. This has been unsuccessfully attempted in previously infested states time and again. Even when all ash within 1½ miles of known infested trees were cut, the beetle was soon found beyond the treatment area.

Most ash trees in a stand can be killed by EAB within six years from initial infestation in the stand. In a forest setting, once trees die, additional sunlight reaches the forest floor. This stimulates the growth of young trees and other plants, including non-native invasive species if they are present. While they're standing, dead ash trees may provide feeding and cavity sites for wildlife, but they also create a hazardous situation for recreational users, loggers and firewood cutters.

Landowners will be able to sell ash logs, but there will be restrictions. When a new EAB infestation is detected, a quarantine zone is established. Under current rules, ash logs can be transported out of quarantine zones, but only to a sawmill with a "compliance agreement" to follow shipping restrictions. Compliance agreements have allowed sawmills to accept ash logs during the dormant season, provided they are debarked and sawn before spring when EAB emerges. No restrictions apply if your woodlot is outside the quarantine zone, or if both your woodlot and the destination sawmill are within it.



Firewood movement is the #1 cause of EAB spread.

Other health problems can kill ash trees in Vermont. Ash are susceptible to drought. An infectious disease called ash yellows is common in parts of the state and symptoms may be confused with EAB. Resources for identifying ash yellows can be found at <https://www.vtinvasives.org/invasive/ash-yellows>

Adult beetles are 1/2" long and metallic green. Under the wing covers, their abdomen is purple. Adult beetles are present between June and August. Information about lookalike insects is available at <https://vtinvasives.org/sites/default/files/images/VT%20EAB%20lookalikes.pdf>.

If you think you might have EAB, report it. Collect and/or photograph any suspect insects. Go to vtinvasives.org and click the "REPORT IT" link. Or you can call your closest FPR office at the number at the end of this document, or the EAB hotline at 1-866-322-4512.

What will happen now that EAB has been found in Vermont?

Management decisions will depend on the size and location of the infested area. Locations of infested areas will be updated on an ongoing basis at vtinvasives.org.



Consider how your response to EAB will affect your long-term management goals.

consulting forester if you have questions. If you wish to change your planned activities, treatment schedule, or management objectives your consulting forester may be able to amend your forest management plan. Remember that the county forester needs to approve any changes before the management activity begins.

Where sawtimber trees are killed by EAB, it will constitute a loss of potential revenue for landowners. For some, this loss could be significant. Landowners should consider this in the context of other management objectives. During scheduled harvests, you can take steps to limit your exposure to loss. Reduce the percentage of ash if it exceeds 20%. Review your diameter target (how big to grow trees before cutting them) with your forester, discussing site quality, tree condition, and markets. To keep from degrading your woodlot, regenerate and retain good quality trees of a variety of species.

If you're growing trees for timber income, don't cut immature ash too early. If the trees are too small to yield high value sawlogs, you may get a better return if you allow them to grow. They will increase in volume, and may improve in grade, which will lead to a better return.

If you decide to cut, plan to leave scattered ash trees in the woods. The last trees standing will be the last to produce seed. Hope for the survival of ash species will depend on fresh seeds to start a new generation of ash trees.

Reassess your plan if EAB is detected in or near your county. Keep abreast of news about the insect. The threat of imminent tree mortality increases when EAB is within 10 miles of your property.

"Trap trees" can indicate whether or not your woodlot is infested. By monitoring your own trees for EAB, you will know when the risk of mortality becomes urgent. To find out how to use the girdled trap tree technique, ask your consulting forester, or contact one of the offices at the end of this document. Vermont officials have no plans to remove infested trees on private land.

Should I cut my ash trees now?

Not necessarily. The answer depends on a lot of variables. However, you should plan for EAB now if you have ash. It may take a while to carry out any plan, especially on large ownerships. Know what's at risk: how much ash you have, its size and quality, where it's located. Think about what you want from your forest in the long term, and how your response to EAB will fit in to achieving your goals. For some, doing nothing may be a viable approach.

The closer your trees are to the infestation, the sooner they are likely to be affected. Expect that the edge of a known infestation will naturally expand about 1–2 miles every year. Consider the ecological, aesthetic, and economic value of your ash, your tolerance of risk, and your objectives for ownership. Stay abreast of new information to avoid short-sighted decisions. Visit www.vtinvasives.org for the latest news on EAB.

Work with a licensed forester to protect your interests and your forest. Studies have shown that woodland owners who use professional forestry services before they cut make more money and are more satisfied with the results than owners who sell timber on their own. For more information, see the "Working With Foresters and Loggers" guidance from the Landowner Guides to a Successful Timber Harvest at vtcutwithconfidence.com.

If your land is enrolled in the Use Value Appraisal program, you must follow your approved forest management plan or an approved amendment. Contact your county forester or



Compliance agreements have allowed sawmills to import ash logs from quarantined areas if they are transported and sawn between late fall and early spring.

What else can I do?

Spread the Don't Move Firewood message in your town.

Visitors who bring infested firewood to second homes or campgrounds near you put your trees at risk. Talk with neighbors and campground owners. Post leaflets, available through the contacts below, in your community. Vermont has a [firewood quarantine](#) which prohibits the importation of untreated firewood into Vermont.

Know when EAB arrives near you by supporting detection efforts. Help spread the word in your community; a variety of outreach materials are available. Participate in more formal monitoring efforts through <http://vtinvasives.org/>.

Think big. Take action. Encourage your town to plan ahead for EAB. By addressing issues before EAB arrives, the loss associated with an infestation can be spread over a longer period of time. Neighboring communities can coordinate to share resources and reduce costs. See <https://vtcommunityforestry.org/community-planning/tree-pests> for more information.



Hope for the survival of ash species depends on fresh seeds to start a new generation.

Is there any hope?

We've only known about EAB since 2002. Our knowledge about the insect is rapidly expanding. Substantial research efforts are underway to improve insect management and tree survival.

Scientists are investigating natural enemies of EAB. Parasites and predators can potentially reduce EAB populations. Several parasites from Asia have been approved, released, and have become established in the US. As these efforts continue, the threat of EAB may be diminished, and the next generation of ash may survive.

Healthy ash trees of all sizes are still growing in infested states. White ash is thought to be particularly genetically diverse. Occasional ash trees have survived on sites with heavy mortality, suggesting that they may have some genetic tolerance to the insect.

For more information:

VT Division of Forestry: www.vtforest.com
Vermont Invasive Pests: vtinvasives.org/gallery-of-forest-pests
EAB Website: www.emeraldashborer.info/



**For more information,
contact your
County Forester or:**

Windsor & Windham Counties.....	Springfield (802) 289-0613
Bennington & Rutland Counties.....	Rutland (802) 786-0060
Addison, Chittenden, Franklin & Grand Isle Counties.....	Essex Junction (802) 879-6565
Lamoille, Orange & Washington Counties	Barre (802) 476-0170
Caledonia, Orleans & Essex Counties	St. Johnsbury (802) 751-0110

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