



HEMLOCK WOOLLY ADELGID DAMAGE

Three potentially devastating invasive insects – **the Asian longhorned beetle (ALB), Emerald ash borer (EAB), and Hemlock woolly adelgid (HWA)** – have been identified in Vermont or in neighboring regions and are heading our way. The sooner we find these insects the better our chances of slowing their spread and controlling infestations.

Let's keep these invaders out of our forests! What can we do?

- Use only local firewood
- Check that nursery trees have been certified free of invasive insects
- Learn to recognize invasive insects
- Monitor trees in your backyard, along streets, and in parks and forests
 - Inspect your hemlocks for HWA
 - Note signs of rapid decline in tree health and irregular growth
 - Search for exit holes, egg deposits
- Contact state agencies immediately if invasive insects are found or suspected 802-241-3606

What are invasive species?

These are plant and animal species that have moved outside their natural range – often due to human activities – and are able to spread rapidly in their non-native habitat with unexpected, negative results. This results in major changes to the structure and composition of our local ecosystems and loss of species diversity. Next to habitat loss, invasive species are the largest cause of species loss in the U.S. These disruptive effects are long-lasting or permanent.

How did these insects get here here?

The ALB and EAB (wood boring insects) arrived in wooden spools, pallets, and fill used to transport products imported from other countries. The HWA arrived from accidental introductions on Asian nursery stock.

Websites with more material and contact information:

ALB:<http://www.uvm.edu/~entlab/albeetle/faq.html>

EAB:<http://www.vtfpr.org/protection/eabupdate.cfm>

HWA:<http://www.vtfpr.org/protection/hwaupdate.cfm>

A PDF of this brochure can be downloaded from the following site:

<http://www.hartford-vt.org/content/conservation/>

CONSERVATION NOTES

INVASIVE INSECTS



EMERALD ASH BORER



HEMLOCK WOOLLY ADELGID



ASIAN LONGHORNED BEETLE

**HARTFORD
CONSERVATION
COMMISSION**

Emerald Ash Borer

(Agrilus planipennis)

The emerald ash borer (EAB) is a 3/8ths-5/8th-inch-long shiny, metallic-green beetle with a coppery red or purple abdomen.

The emerald ash borer's larvae feed under ash bark, creating twisted galleries and often splitting the bark. They leave distinctive D-shaped emergence holes. Infestations usually start in tree crowns and so are difficult to detect. In highly infested trees, damage is usually visible, whether by the presence of emergence holes, dying branches, or signs of woodpecker work on ash limbs. All native ash species are susceptible. The insect has spread on nursery stock, and, often, in firewood brought from infested areas. For that reason, it is recommended that you not move firewood from its source.

The EAB is a serious threat to the entire ash resource. Since 2002, it has killed more than 20 million ash trees in Michigan, Ohio, Illinois, and Indiana. Though rarely dominant, ash is an important component of many forest types and its seeds are important for many bird species.

Hemlock Woolly Adelgid

(Adelges tsugae)

The hemlock woolly adelgid (HWA) is only 1/32 of an inch long, and it hides out on the underside of hemlock twigs; it is best identified by the white, woolly fluff that covers its body.

The HWA feeds by sucking plant juices at bases of hemlock needles, causing them to dry out and fall off; this prevents the trees from producing new apical buds. It also depletes the tree of vital nutrients, making it susceptible to other stressors. Adelgids can kill a hemlock in three to five years. They are spread by wind and animals, and also via infested nursery stock.

The HWA has the potential to devastate stands of hemlock in northern New England, as it has already done in southern New England. An important forest tree, hemlock provides both food and cover for many wildlife species and valuable shade and soil protection along streams and rivers. Cold temperatures have thus far slowed its northward spread. Hemlock is extremely important to wildlife (it provides critical winter shelter for deer) and to water quality (it protects our streams and rivers from runoff and keeps them shady and cool for fish and other aquatic species).

Asian Longhorned Beetle

(Anoplophora glabripennis)

The Asian longhorned beetle (ALB) is an inch-long, bullet-shaped beetle with a shiny black back and irregular white spots; the male sports very long (longer than the body), antennae with white rings. It is often confused with the white-spotted pine sawyer, a native black beetle with long antennae that has a prominent white spot at the base of its wing covers (behind the head).

ALB attacks many hardwoods, including all species of maple, poplar, willow, elm, birch, and black locust. Its white, wormlike larvae tunnel into wood and disrupt water transport, killing the tree; adults leave round emergence holes 3/8-inch or larger in bark. Leaves yellowing and dropping is one sign of infestation. The ALB is usually spread in cut wood or on nursery stock, and adults can easily fly 200 meters.

Because it thrives on many host species and has no natural predators here, the ALB has the potential to spread throughout the Northeast and destroy millions of acres of hardwood forests. The United States Department of Agriculture estimates its effects on the lumber, maple syrup, tourism, and nursery industries could potentially add up to over \$41 billion in losses.

Photos: Forest: Will Blozan

Front: ALB, VT Agency of Agriculture

EAB and HWA, Ron Kelley, VT Dept of Forests, Parks & Recreation.

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