



Photo by David Cappaert, Michigan State University, www.bugwood.org.

The emerald ash borer, originally from Asia, was first discovered in Michigan in 2002 and quickly spread to other areas. This insect has killed more than 40 million healthy ash trees around the United States.



Photo by David Cappaert, Michigan State University, www.bugwood.org.

Emerald ash borer eggs hatch into white segmented grubs that chew through the tree until they mature into adult beetles. When the beetle reaches the surface of the bark, it leaves behind a D-shaped hole.

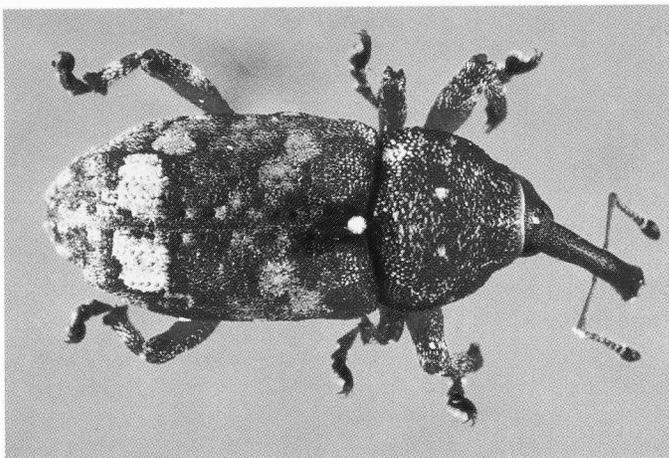


Photo by Gerald J. Lenhard, Louisiana State University, www.bugwood.org.

Tree weevils, such as the Eastern pine weevil, attack young trees in the winter when the trees are stressed. The weevils' larvae, also grubs, tunnel into the tree the way bark beetles do.

Dealing with Tree-Killing Insects

Protect local forests by preventing the spread of invasive insects

By Dr. Stephanie Smith

Have you ever gone to a tree removal service's boneyard and bought a log to use for woodworking projects? Have you bought firewood and moved it from your home to your camping site? If so, you may have helped an invasive insect species spread.

An invasive species is a type of plant or animal that comes from another area and starts to make itself at home. Fire ants, the scourge of the South, arrived in dirt used as ballast on a ship. Kudzu, the "vine that ate the South," was introduced to stop soil erosion. These plants and animals thrive in their new areas because they have no natural enemies there.

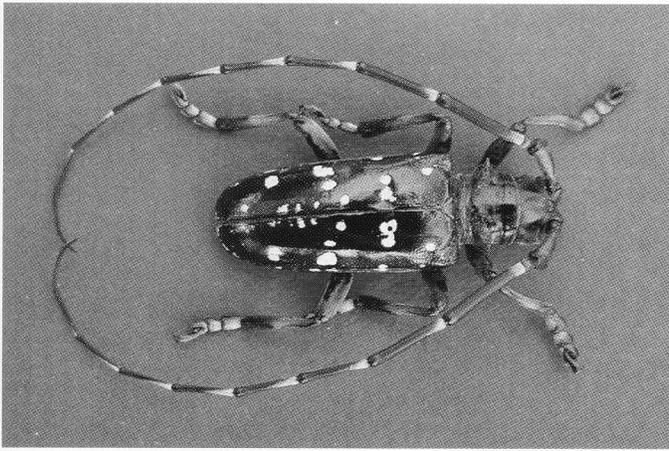
Invasive insects usually kill trees by girdling them, a process in which the insects or their larvae bore through the sapwood areas where food and water are transported, preventing the flow of nutrients through the tree. It is usually best to assume any tree removed by a tree service is infested with insect pests and should be treated accordingly.

The insect pests that attack lumber can be divided into two categories: primary invaders and secondary invaders. Primary invaders, which include the emerald ash borer and boring beetles, attack and kill healthy trees. Secondary invaders are drawn to trees already diseased or stressed by weather conditions. Secondary invaders include many species, such as bark beetles, tree weevils, and moth caterpillars. If an infestation of secondary invaders gets out of hand, these species will attack healthy trees.

Prevention

In most cases, it is impossible to look at a piece of wood and detect an infestation. The best way to keep from spreading these pests is to buy only kiln-dried or fumigated wood from a commercial vendor. If you must use raw or green wood, check for entry and exit holes in the bark and wood. Remove the bark immediately to deprive the insects of an important hiding spot. Cut

Photo by Michael Bohne, www.bugwood.org



The Asian longhorned beetle is common to the Northeastern United States. This typical boring beetle has a lifecycle similar to the emerald ash borer, but the Asian longhorn beetle will attack any hardwood tree.

the wood into small enough pieces that you can detect pests before transporting it from the area where it was acquired. Obey quarantines and do not move wood from an infested area—even if the wood seems clear—without treating it for pests. There are hefty fines for removing wood from a quarantined area without an inspection and certification that the wood is pest-free.

Treatment

It is difficult for the average woodworker to kill these pests. An atmosphere-controlled fumigator, which is basically a room-sized pressure cooker, is needed to force toxic government-controlled pesticides deep into logs to kill all of the pests. Freezing will usually kill the pests, but you are limited to logs you can fit inside a freezer. Heating wood until the internal temperature is 140° to 150°F for two to four hours will also kill the pests, but it can be difficult to make sure the correct internal temperature is achieved. Drying the wood to less than 15% moisture content typically kills the pests, which is why kiln drying usually renders the wood pest-free.

If you find bugs in your locally harvested wood, your local U.S. Department of Agriculture extension agent will help you determine how to deal with the infestation. Do not just throw the wood away—this can release the insects to infest other nearby trees. If it's a dangerous species, such as the emerald ash borer, the USDA will probably dispose of the wood and may contact your supplier to dispose of any other wood from that tree.

For more information on invasive insect species, visit the USDA website at www.USDA.gov, or phone 202-720-2791.



Stephanie Suesan Smith has a Ph.D. in clinical psychology. She is also a master gardener and woodworker. You can see more of her writing at <http://stephaniesuesansmith.com>.



Photo by Thomas B. Denholm, New Jersey Department of Agriculture, www.bugwood.org

The larvae of the Asian longhorn beetle chew their way through any hardwood tree, which makes the spread of this pest even more devastating. Asian longhorned beetles leave behind a round hole when they exit the tree.

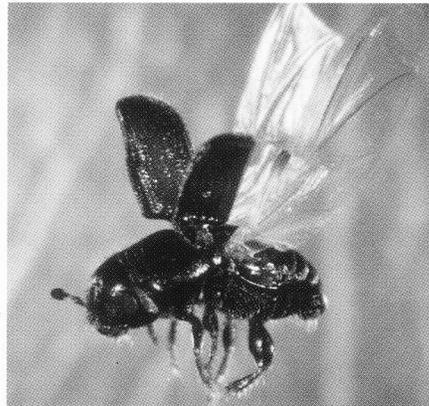


Photo by Erich G. Vallery, USDA Forest Service, www.bugwood.org

Bark beetles, such as this Southern pine beetle (left), burrow below the tree's bark, where they live and lay eggs, which hatch into cream-colored grubs (bottom) that also attack the tree.

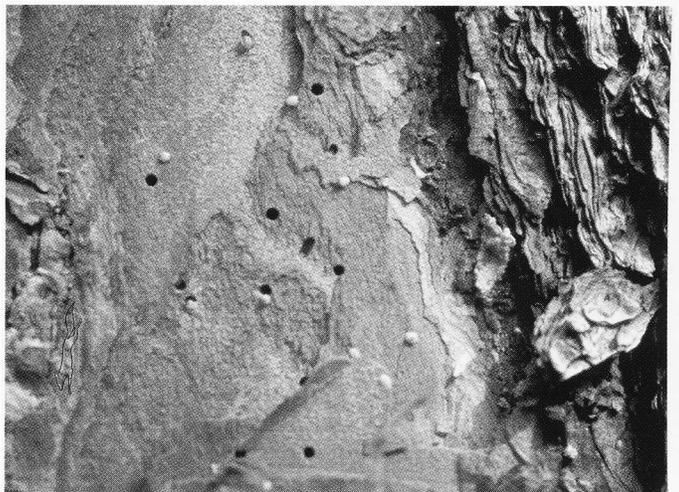


Photo by James R. Meeker, USDA Forest Service, www.bugwood.org