

National Pest Alert



Woodboring Insects

Distribution

Woodboring insects attack a wide range of economically important trees and shrubs throughout the United States. Awareness of the problem has been growing because of reports of the economic and aesthetic damage caused by several invasive species, including the Asian longhorned beetle and the emerald ash borer. However, a large number of woodborers native to the United States have not received the attention they deserve relative to the yearly damage and economic losses they inflict on many crops.

Identification and Life Cycle

Insect borers are a diverse group that spans four taxonomic orders and more than 20 families. In order of importance, Coleoptera, Lepidoptera, Hymenoptera, and Diptera are the core woodborer orders. Important families include metallic woodboring beetles (Buprestidae), longhorned beetles (Cerambycidae), bark and ambrosia beetles (Scolytidae), and clearwing moths (Sesiidae). Thousands of North American woodboring insect species have been named, and a variety of host plants, including hardwoods and conifers, are susceptible to their attack.

Insect borers feed predominately on subcortical tissues, which consist primarily of the inner bark, phloem, and immature xylem. Woodboring larvae cause extensive galleries or tunnels that can run throughout the vascular tissue of the host trees. Insect borer damage results from the girdling and destruction of vascular plant tissue, weakening of trunks and branches as well as the creation of wounds that allow entry of diseases. In addition, many adult borers feed on foliage, needles, stems, and shoots, floral resources, or sap of host trees, creating further damage. Insect borers that attack lumber, fiber,



Metallic wood borer adults may be very colorful or blend in with the tree bark.



Round headed borer adults may be brightly colored or drab and have short or long antenna.

or other wood products are well known. However, crops such as apples, peaches, pecan, pear, plum, persimmon, nursery and landscape ornamentals, Christmas trees, and cane berries are chronically attacked by insect borers. Trees of some crops are often attacked in different tissues by several different woodborers at the same time.

Detection and Damage

Insect borers can be broken down into two general categories based on the condition of the host plant at the time of larval colonization. These categories include primary invaders, which attack apparently healthy trees, and secondary invaders, which attack stressed, dying, or dead trees. It is often difficult to detect woodborers in newly infested trees. Damage is usually not seen until after at least a year, when exit holes created by adults are visible on the branches and trunks of host trees. Holes are generally round, oval, or semicircular and are found in a random pattern on the plant. Often sawdust-like frass can be seen associated with these exit holes. Over time, foliage may wilt, and the tree canopy may increasingly become sparse as branches die. New shoots also may arise on the trunk of trees at the margin of live and dead tissue. Under intense pressure, the tree will eventually die.

Economic damage caused by wood-boring pests includes drastic

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decreases in the number of fruit-and nut-bearing branches in orchards and groves, stunted and deformed trees within hardwood plantations, and aesthetic damage to ornamental and landscape trees and shrubs. Sometimes, these pests have destroyed entire forests, urban landscapes, plantations, and orchards. In addition, rising costs associated with preventing insect borer-related problems, combined with cheaper imports, have threatened the production and value of many U.S. fruit and nut crops.



Adult clear wing moths are strong fliers and often mimic bees and wasps in color and behavior.



Woodborer damage is often extensive and usually occurs in the structural parts of the host plant.

Management

Preventative measures such as proper horticultural practices and removal of infested, dying, or dead plants and plant parts are simple steps for controlling many insect borer pests. Although chemical control methods can be expensive and environmentally unfriendly, few chemical pesticides are available with acceptable efficacy against woodborers. EPA decisions related to the Food Quality Protection Act will likely reduce the number available even more. Even when chemical tools are available, proper timing of chemical treatments to match the seasonal occurrence of the most susceptible stage of the target insect borer is often ineffective, difficult, or unknown. Research involving reduced-risk insecticides and biological control is ongoing as a means for reducing environmental concerns and management costs. Simple actions such as restricting firewood transport across potential infestation sites, or identifying and reporting insect borer species discovered, can be effective methods in reducing the spread and severity of insect borer damage. Woodborers are responsible for millions of



Woodborer larvae are white and grublike but have different mouthparts and legs.

dollars in damages and losses to U.S. crops each year and these chronic urban, forest, and agricultural pests will require much more attention if their impacts are to be mitigated.

For more information on woodboring insects, please visit

<http://www.ncipmc.org/alerts/woodboring/>

This publication was produced and distributed by USDA–CSREES Integrated Pest Management Centers in cooperation with the National Plant Diagnostic Network and the 1862 Land Grant Universities.

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