Virginia Cooperative Extension

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Bark Beetles

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Order: Cleoptera

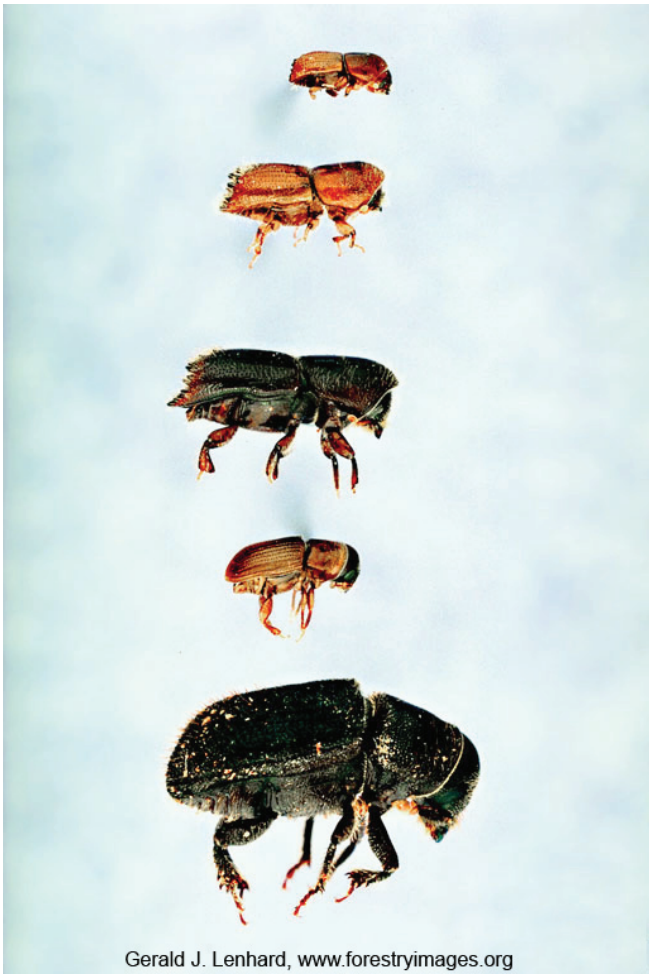
Family: Scolytidae

Species: Over 600 species in the family

Size: Adult beetles are between 1/8 and 1/3 inch long.

Color: Nearly all bark beetles are black or brown.

Description: Species identification is difficult because the adult beetles of the various species are very similar, cylindrical and hard-shelled.



Gerald J. Lenhard, www.forestryimages.org

Habitat: Bark beetles attack trees that are weakened or dying due to stress factors such as drought, disease, smog, mechanical injury, alteration of the water table, or root damage due to nearby construction. They are also attracted to recently cut wood which still has bark.

Life Cycle: Adult bark beetles bore through the bark to the cambium layer of suitable host trees. The female excavates a tunnel between the bark and wood along which she lays her eggs. Upon hatching, each grub burrows away from the egg tunnel and feeds on the live bark tissue (phloem) and outer cell layers of wood (xylem). The resulting network of egg and larval tunnels beneath the bark is called a gallery. The "shot hole" appearance of the bark in infested trees indicates that numerous beetles have matured, chewed exit holes, and flown off to find new breeding sites. From one to six generations per year are typical depending on the species.

Type of Damage: In pines, resin often oozes from the bark where beetles first attack, producing conspicuous pitch tubes. Some beetles become trapped in the pitch and die. A healthy tree produces enough pitch to prevent successful attack by many beetles, but sometimes bark beetles are able to overwhelm and kill healthy trees. This may happen to trees which are near heavily infested breeding sites. Once a bark beetle is successfully established in a tree, it emits a pheromone which attracts other beetles to the same tree. Bark beetles do not attack trees that are dead for more then a season and dried, nor dying or recently cut wood if the bark is removed. On healthy trees, bark beetles may attack individual twigs and branches that are dying from shading out or other causes. For example, some species breed only in the dead or dying twigs, branches, and limbs of pines. These bark beetles will not breed in live branches, and thus are not a progressive destructive threat to healthy parts of trees.

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Common Bark Beetles

Several of the most common bark beetles are listed below, along with characteristics which should help identify them. However, there are many other species that may be encountered in shade trees and wooded areas.

Ips Beetles. Bark beetles in the genus *Ips* are commonly called engraver beetles or simply Ips beetles. They can be distinguished from other bark beetles by the scooped-out posterior section of their bodies. *Ips* galleries, found in pines, have egg tunnels in the form of an H or a Y. Though capable of attacking the entire tree, Ips beetles are usually confined to the crown.

Southern Pine Beetle. One of the smaller bark beetles, the southern pine beetle is barely 3/16 inch long. Following long dry spells or poor forest management, outbreaks occur that rapidly kill large areas of pine forests. Southern pine beetles attack mainly the middle or upper part of the tree trunk. All ages and sizes of pine trees are potential hosts. Larval tunnels wind around in an unorganized pattern. Healthy, vigorous trees and proper forest management practices reduce the likelihood of outbreaks and tree losses.

Conifer Bark Beetles. A wide variety of bark beetles attack pines and other conifers. In general, they attack trees in decline and leave long meandering tunnels under the bark and small exit holes on the bark. Live trees moved and replanted are often attacked and may require an insecticide spray just after planting if the tree is moved in the spring or early summer.

Black Turpentine Beetle. This beetle is large for a bark beetle, about 1/3 inch long. It attacks pine trees at the base of the trunk, and may also breed in stumps. Black turpentine beetle grubs feed together and excavate large patches under the bark. A common characteristic of this beetle's attack is the presence of a glob of pitch, about 1/2 inch in diameter, at the exit hole. Sometimes there will be large numbers of white pitch globs on the dark bark.

Elm Bark Beetles. There are two species of bark beetles that attack elms. Both of them are capable of transmitting Dutch elm disease when they feed on healthy trees. The European elm bark beetle feeds in the crotches of one- to three-year-old-twigs; the native elm bark beetle feeds in the thick bark of trunks and limbs. Native elm bark beetles construct egg tunnels across the wood grain. Egg tunnels of the European elm bark beetle are parallel to the grain. Both make galleries and breed only in recently killed or dying elm wood three inches or larger in diameter.

Other common bark beetles include: the shothole borer which attacks fruit trees, wild cherry, serviceberry, and occasionally elm; the peach bark beetle in stone fruits, mountain ash, elm, and mulberry; *Pityogenes* spp. and *Pityophthorus* spp. in pines; *Phloeosinus* spp. in cypress and junipers; the ash bark beetle in ash; the birch bark beetle in birch, beech, wild cherry, and red gum; and the hickory bark beetle in hickory.

Control Methods

Similarities in their life cycles and in the injury they cause usually make bark beetle species determination unnecessary for making pest management decisions. Once infested, trees almost never recover and control efforts are usually futile.

Prevention (Non-chemical): Preventative measures include maintaining healthy, vigorous trees and eliminating beetle breeding sites, such as recently dead or cut trees, limbs, slash, and firewood with bark.

Treatment (Chemical): Apply residual insecticides to susceptible, but as yet uninfested trees, especially those under stress and therefore attractive to bark beetles. Treating infested materials before bark beetles emerge will kill them as they chew their exit holes. Check the *Pest Management Guide*, *Horticultural and Forest Crops*, Virginia Cooperative Extension publication 456-017, for current insecticide recommendations. Always read and follow the instructions on the pesticide label.