

Roundheaded Wood Borers (Longhorned Beetles)

White, splinter-like boring frass under bark

Name and Description—[Coleoptera: Cerambycidae]

Roundheaded wood borer beetles attack stressed, dying, or dead trees. There are many species all belonging to the beetle family Cerambycidae. Adult roundheaded wood borers are small to relatively large beetles (1/4-2 1/2 inches [6-64 mm]) and often have long antennae. The long antennae give them the name longhorned beetles (fig. 1). Larvae are white, legless grubs similar to bark beetle larvae, but the body shape is elongate, and the head area is primarily mouthparts without the more defined head capsule seen on bark beetle larvae (fig. 2).

One common group of longhorned beetles is the pine sawyers, *Monochamus* spp. Eggs are laid in egg niches chewed by the females, and larvae bore into sapwood and heartwood. Adults are large (1 inch, 25 mm long) with large antennae (fig. 1) and can be mistaken for the similar-appearing exotic Asian longhorned hardwood beetle (not established in this Region). Distinctive spots and antennal patterns can be used to identify the species. Pine sawyers are also responsible for spreading the pinewood nematode that causes pine wilt, a fatal disease of Scots, Austrian, and other non-native pines, that is currently affecting these species in the Midwest.

Hosts—Most western conifers; also found in hardwoods

Life Cycle—The life cycle frequently spans 1-3 years, but some species can take many more years to complete development. Roundheaded wood borer adults attack spring through fall, depending on species. Eggs are laid in the outer layers of the bark or by first chewing a slit (referred to as an egg niche) in the inner bark and depositing eggs into the moist inner layers of the bark. Larvae develop under the bark in the cambium. Several species also tunnel into the sapwood and heartwood. Most overwinter as larvae under the bark.

Damage—Roundheaded wood borer beetles attack weakened, dying, recently cut, and fire damaged or killed trees and can attack freshly cut timber before it is dried. Larvae that tunnel into the sapwood and heartwood can frequently damage logs and wood products. Adults aid in wood decomposition by introducing yeasts, bacteria, and wood-rotting fungi that lead to tree rot and checking in the wood. In some instances, these processes can occur within a couple of years. The most obvious sign of a roundheaded wood borer beetle attack is the egg niches that some beetles chew on the outer bark or the white, splinter-like boring frass that can be found under the bark (fig. 3). Larvae produce wide tunnels that meander under the bark. Holes that penetrate into the wood are most likely due to wood borer larvae. Emerging adults leave broadly oval to circular, cleanly cut exit holes (fig. 4).

Management—Because roundheaded beetles do not attack healthy trees, management should focus on preventing attacks on recently dead or felled



Figure 1. Adult pine sawyer, *Monochamus clamator*. Photo: Sheryl Costello, USDA Forest Service.



Figure 2. Roundheaded wood borer larva. Photo: Sheryl Costello, USDA Forest Service.



Figure 3. White, splinter-like boring frass produced by roundheaded wood borers when feeding. Photo: Sheryl Costello, USDA Forest Service.

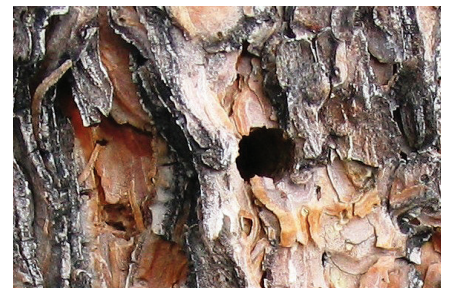


Figure 4. Exit holes of adult flatheaded wood borer. Photo: Hannes Lemme, Germany, Bugwood.org.

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trees. Removing and processing wood quickly is the best way to prevent damage. Management can also be done through proper handling of wood products. Proper handling methods can include milling or debarking susceptible logs prior to the attack period and storing logs in an area safe from attack.

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3. Furniss, R.L.; Carolin, V.M. 1977. Western forest insects. Misc. Publ. 1339. Washington, DC: U.S. Department of Agriculture, Forest Service. 654 p.

