

Wood Borers :

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A Field Guide to Diseases & Insect Pests of Northern & Central Rocky Mountain Conifers



Roundheaded borers

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Family: Cerambycidae

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Hosts-- Most western conifers

Distribution-- Throughout the range of their hosts.

Damage-- Most western species feed first in the cambium region of their hosts, then extend their tunnels into the sapwood, and occasionally the heartwood, often making large, extensive galleries. Some species that mine extensively beneath the bark may be tree killers, but none are considered major forest pests. Typically, only weakened or recently cut or killed trees are attacked.

Identification-- Roundheaded wood borer adults are often large, many being over 1 inch long, sometimes colorful beetles with antennae generally longer than the body, hence their alternate name "longhorned beetles." (fig. 95). Larvae are the destructive stage and the ones most often encountered. They are generally fleshy, cylindrical, elongate grubs (fig. 96). They are often "roundish" at the head end, the first few segments of the thorax behind the head being more round and plump than following segments—characteristics from which the name "roundheaded" borer is derived. Some may be flattened towards the anterior end and may be confused with flathead borer larvae. They are most commonly distinguished from the latter by having a hardened plate only on top of the first body segment behind the head (thorax). Most flathead larvae have a plate on both the top and bottom of the first segment behind the head.

Similar damages-- Often found in trees killed by bark beetles, small wood borer larvae may be confused with other beetle larvae. Their body size and shape (fig. 94b), and gallery patterns will distinguish them. To distinguish roundheaded borer damage from that caused by flatheaded borers, look for large, coarse, excelsior-like boring residue, very loosely packed in galleries. Flatheaded galleries are tightly packed with fine boring dust.



Figure 95. Roundheaded borer adult beetles have antennae that are longer than the body.

References-- [3, 22](#)

[Management Guide for Roundheaded Borers \(sawyer beetles\)](#)



b.



a.

Figures 96a and b. Roundheaded borer larvae have rounded "heads" and produce rounded feeding galleries.



Metallic Wood Borers From page 69

Family: Buprestidae

Hosts-- Most western conifers

Distribution-- Throughout the range of their hosts

Damage-- A few species of metallic wood borers attack and kill apparently healthy trees, but most infest weakened, dead, or recently felled trees. Larvae mine first in the cambium region of the trunk, branches, or roots of host trees; then penetrate the sapwood of the tree—often mining it extensively.

Identification-- Adult beetles are flattened, compact, and often brightly colored beetles—most of which have a metallic luster (fig. 97). The antennae are much shorter than the body, and are often inconspicuous. Larvae are most often encountered in host trees. They are long, legless, and typically shaped like a "horseshoe nail"—from which the name "flatheaded" borer is derived (fig. 98). The head is small and the next body segment (thorax) is much broader than following ones, and usually has a hardened plate on both top and bottom of this segment. The presence of hardened plates on both top and bottom of the body segment directly behind the head will distinguish them from the similar roundheaded borers, which are more rounded and have a plate only on the top of the thorax.

Similar damages-- Damage and larvae may be confused with that of roundheaded borers, but in addition to differences in larval characteristics (fig. 94c), there is usually a distinct difference in gallery patterns and boring dust. Winding galleries are typically tightly packed with fine boring dust, often similar in pattern to fingerprints.

References-- [3.22](#)

Management Guide for Metallic Wood Borers:

[Flatheaded Fir Borer](#)
[Flatheaded Pine Borer](#)



a.



b.

Figures 97a., and b. Adult metallic wood borer beetles have metallic coloration and antennae that are shorter than the body.

Figure 98. Flatheaded borer larvae have flattened "heads" that are usually much broader than the body. Feeding galleries are flattened, like the larvae, and are tightly packed with fine boring dust.



Ambrosia Beetles From page 70

Family: Scolytidae (commonly: *Trypodendron*, *Gnathotricus*, and *Xyleborus*)

Family: Platypodidae: (*Platypus*)

Hosts-- Most western conifers

Distribution-- Throughout the range of their hosts

Damage-- Small-diameter (one-sixteenth inch or less) holes are bored straight into tree, perpendicular to bole. Galleries in the sapwood, or heartwood, damage wood. Fungi introduced, on which larvae feed, often produces degrading amounts of stain. Species in the genus *Platypus* often bore into heartwood; the genera in the family Scolytidae are for the most part confined to the sapwood. Weakened, dying, recently cut or killed trees are attacked. Freshly cut lumber may be attacked before it is dried. Damage may be especially prevalent in log decks at mill yards.

Identification-- Entrance points (pinholes) (fig. 99) are associated with piles of fine, granular, white boring dust in bark crevices of infested trees (fig. 100). Main entrance gallery of *Trypodendron* penetrates from 1 to 2 inches before branching along growth rings. Tunnels with brood chambers branch in a horizontal plane and cut across the grain of the wood. Holes and galleries are surrounded by a dark brown or black fungal stain. Adult ambrosia beetles are generally small, reddish brown to nearly black, cylindrical beetles from about one-eighth to three-sixteenths of an inch long. Larvae are small, white, legless grubs that resemble bark beetle larvae. Gallery patterns, adult shapes and sizes, and life cycles vary somewhat with genera. All feed on introduced fungi rather than wood, thus the derivation of their name.

Similar damage-- May be confused with bark beetles; however, ambrosia beetles bore straight into tree and produce fine, white boring dust in bark crevices. Bole (and especially wood, if bark is removed) has the appearance of having been shot with a shotgun loaded with small (#8) shot.

References-- [10](#), [22](#), [23](#)

[Management Guide for Ambrosia beetle](#)

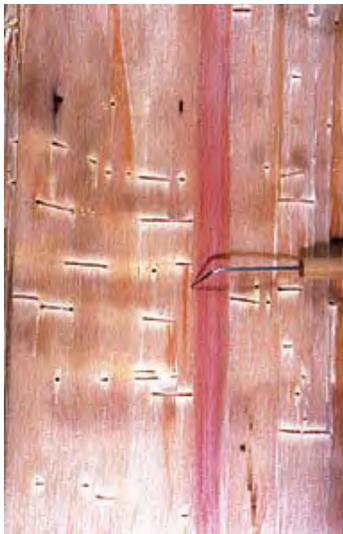


Figure 99. Entrance points of adult ambrosia beetle. Holes are stained by blue stain fungi.



Figure 100. Ambrosia beetles produce fine, white boring dust as they bore into the sapwood.



Wood Wasps (Horntails) From page 71

Family: Siricidae

Hosts-- Most western conifers

Distribution-- Throughout the range of their hosts

Damage-- Horntails develop in trees that are damaged by fire or other factors such as weather, insects, or mechanical means. They are especially prevalent in fire-damaged trees and may actually do more structural damage to infested logs and wood products than is usually ascribed to them. Their life cycle is long—perhaps 2 to 3 years in some cases—and mature adults often emerge from finished lumber or logs that have not been kiln-dried. Adults will not lay eggs in finished or seasoned wood, however. In other parts of the world, wood wasps have been known to attack and kill young trees. That type damage has not been recorded in western North America.

Identification-- Adults are large, thick-wasted cylindrical insects (fig. 101). Both sexes have a short hornlike process at the end of the abdomen. In addition, the female has a long, stinger-like ovipositor that extends straight back beyond the body. Adults are boldly colored blue, black, or reddish brown with a metallic sheen; often marked with ivory or yellow bands on the abdomen. Wings are often smoky colored.

Females are attracted to recently killed trees. During egg laying on recently damaged trees or stumps, their body position has earned them the fairly unflattering name of "stump humpers" (or words to that effect!). Larvae are cylindrical, yellowish white, with a small spine at the tail end (hence the name "horntail"). In profile, their body has a shallow "S" shape (fig. 102). They mine entirely within the wood, packing their circular galleries with fine boring dust. Considerable structural damage may be done by their large (up to one-quarter inch in diameter), meandering galleries.

Similar damage-- Damage may be mistaken for that of wood boring beetles. Shape of the gallery and/or the larva (fig. 94d) should distinguish from beetle-caused damage.

References-- [22](#)

[Management Guide for Wood Wasps](#)



Figure 101. Adult horntail wasp.



Figure 102. Horntail wasp larva.