Flatheaded Wood Borers
(Metallic Wood Borers)

Oval exit holes on dead and dying trees

**Name and Description**—[Coleoptera: Buprestidae]

Flatheaded wood borer beetles attack stressed, dying, or dead trees. There are many species that belong to the beetle family Buprestidae. Adult flatheaded wood borers are small to relatively large beetles (1/4-2 1/2 inches [6-64 mm]) with small antennae and a characteristic oval body shape (figs. 1-2). Adult Buprestidae are called metallic wood borers because they are iridescent or metallic looking underneath and sometimes on top (fig. 2). Larvae are white, legless grubs similar to bark beetle larvae, but the body shape is elongate, and the head area is different than bark beetle larvae. The larval head is small, and the next body segment (thorax) is much broader than the following segments and usually has a hardened plate on the top and bottom, giving the appearance of a flat head (fig. 3). The larva can be distinguished from roundheaded wood borer larva by noting the flat head characteristic, which has been likened to a horseshoe nail.

**Hosts**—Most western conifers, also found in hardwoods

**Life Cycle**—The life cycles of different species varies from 1 to many years. Flatheaded wood borer adults attack spring through fall, depending on the attacking species. Eggs are laid in the outer layers of the bark. Larvae develop under the bark in the phloem. Several species also tunnel into the sapwood and heartwood. Most overwinter as larvae under the bark.

**Damage**—Flatheaded wood borer beetles attack weakened, dying, and recently cut or killed trees. They can also attack freshly cut timber before it is dried. Larvae that tunnel into 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 occur within a couple of years. The most obvious sign of a flatheaded wood borer attack is the wide, meandering galleries under the bark with tightly packed, fine boring dust. Holes that penetrate into the wood are most likely due to wood borer larvae. Emerging adults leave oval, cleanly cut exit holes (fig. 4).

**Management**—Because flatheaded beetles do not attack healthy conifers, management is focused on preventing attacks on recently dead or felled 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 include
milling or debarking susceptible logs prior to the attack period and storing logs in an area safe from attack.

**Melanophila spp.**—Several species of wood borers are attracted to fire. In fact, species of the genus *Melanophila* possess specific pit-sensing organs that detect infrared radiation produced by forest fires. As a result, these beetles are often seen by firefighters laying eggs on recently burned trees. Metallic wood borers can be responsible for biting firefighters. *Melanophila* spp. have been known to build up their numbers in fire-damaged hosts and emerge to attack adjacent, otherwise healthy, trees. Such “outbreaks” are generally short-lived.

**Emerald Ash Borer**—The emerald ash borer, *Agrilus planipennis* Fairmaire, is an exotic flatheaded borer that kills live ash trees but is not currently found in the Rocky Mountain Region (fig. 5). It was accidentally introduced into the Lake States and is responsible for killing millions of ash trees. The beetle can be found in live and recently dead ash trees. There is great potential for it to spread to other states by moving beetle-infested ash (e.g., moving infested firewood and nursery stock). Several native species resemble the emerald ash borer, and identification should be confirmed by a specialist.

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