

White Pine Weevil and Lodgepole Pine Terminal Weevil

Drooping, dying leaders on spruce and pines

Name and Description—*Pissodes* spp. [Coleoptera: Curculionidae]

White pine weevil—*P. strobi* (Peck)

Lodgepole terminal weevil—*P. terminalis* Hopping

White pine weevil (*P. strobi*) and lodgepole terminal weevil (*P. terminalis*) infest terminals on spruce and lodgepole pine. Adults are rough-surfaced, brown to black beetles that usually have spots and patches of white, yellow, or brown scales and are about 1/4 inch (6 mm) long (fig. 1). The head is prolonged into a slender beak or snout used for feeding. Larvae are small, white, legless grubs and resemble bark beetle larvae (fig. 2).

Hosts—White pine weevil: Engelmann and blue spruce and, occasionally, lodgepole pine

Lodgepole terminal weevil: lodgepole pine

Life Cycle—There is one generation per year. The adults emerge in April and May and make feeding punctures on terminal growth of the preceding year. Eggs are laid in May or June, and the developing larvae feed first in the cambium region and later mine and pupate in the pith. Larvae girdle and kill the terminals. White pine weevil larvae kill the terminals once the current year's growth has begun to elongate, resulting in the death of 2 years of growth, compared to lodgepole terminal weevils that only kill the current year's growth. Starting in August, adults emerge and feed on needles, buds, and twigs. Adults overwinter in forest litter; larvae and pupae overwinter in infested terminals.

Damage—Larvae attack and kill or seriously injure current and previous year's terminal shoots of young trees. This causes tops to die and leads to reduced height growth, forked tops, and crooked stems. Open-grown, even-aged stands of young spruce and lodgepole pine are highly susceptible. The first sign of attack occurs in the spring when copious resin flow from small punctures near the top of the leader can be seen. The leader begins to droop in midsummer and is brittle and brown by fall (fig. 3). Large holes made by emerging beetles may be visible on the dead leader in late summer and fall. One of the diagnostic characteristics of terminal weevils is the construction of chip cocoons. Chip cocoons are the oval, pupal cells that have been surrounded with shredded wood fiber and are constructed partly in the bark but mostly in the sapwood (fig. 4). These chip cocoons remain in the wood long after the beetles emerge.

Management—Severe problems with this insect are rare in forested areas in the Rocky Mountain Region, and direct control is not often warranted. However, damage is sometimes significant in landscape situations, and it is possible to apply insecticides during the spring when adults are active and laying eggs. Only the upper areas of the



Figure 1. White pine weevil adult, *Pissodes strobi*. Photo: E. Bradford Walker, Vermont Department of Forests, Parks and Recreation, Bugwood.org.



Figure 2. Lodgepole terminal weevil larva, *Pissodes terminalis*. Photo: Intermountain Region, Ogden Archive, USDA Forest Service, Bugwood.org.



Figure 3. White pine weevil damage. Photo: Scott Tunnock, USDA Forest Service, Bugwood.org.

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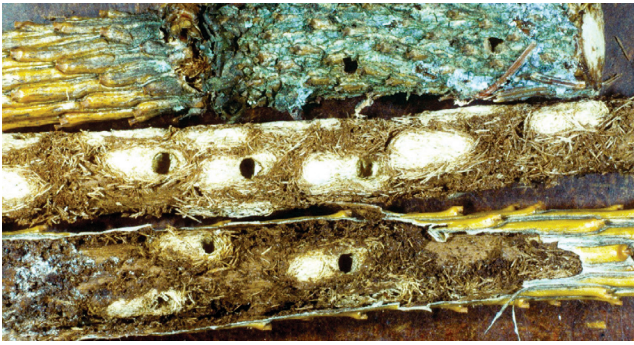


Figure 4. Pupal cells or "chip cocoons." Photo: Ladd Livingston, Idaho Department of Lands, Bugwood.org.

spruce or lodgepole pine tree need to be treated. Focus should be placed on trees growing in open-grown, even-aged stands.

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