



Billbugs

O & T Guide [T-#02]

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Several species of broad-nosed weevils called billbugs damage both cool and warm season turf in New Mexico.

Metamorphosis: Complete

Mouth Parts: Chewing (larvae, adults)

Pest Stage: Larvae, adults (minor pests).

Scientifically: Billbugs are members of the insect order Coleoptera, Family Curculionidae.

Typical Life Cycle: Eggs are laid in small clutches in the bases of grass stems near the crowns of plants. They are rarely seen. → Hatching in about 2 weeks, the minute larvae feed within the grass stems briefly before burrowing down to feed on the grass crowns. Later, they move to the root zone in the soil, feeding on roots and rhizomes. Generally, larvae are abundant from mid-July to mid-August. → Larvae pupate in late summer in small chambers they create in the soil near infested grass roots, emerging as adults within a few weeks. → New adults are most abundant in late September and October when they are found in considerable numbers on driveways and sidewalks. Adult billbugs may chew on grass blades or cut notches in the margins but generally cause little turf damage in this stage. Adults overwinter in infested turf or sheltered areas nearby. In late winter or early spring, adults begin to walk about (adults are flightless), and are commonly observed wandering around on driveways and



Adult hunting billbug, *Sphenophorus venatus vestitus*. Photo: University of Georgia Archives, The University of Georgia, www.forestryimages.org.



Adult bluegrass billbug, *Sphenophorus parvulus*. Photo: Joseph Berger, , www.forestryimages.org.



Adult Denver billbug, *Sphenophorus cicastratus*. Photo: Whitney Cranshaw, Colorado State University, www.forestryimages.org.

sidewalks. When disturbed, adults become motionless, making them difficult to find in turf plots while scouting.

Most billbug species in New Mexico have one generation annually; a partial second generation may occur in some warmer areas.

Description of Life Stages:

Egg: minute, spherical, white

Larva: Larvae are C-shaped, off white, legless and up to 3/8” long at maturity. Their head capsules are yellow to brown and are slightly smaller than their rear ends.

Pupa: Pupae look like off-white mummies of the adults they will become. They are flatter on the underside and rounded above. Pupae do not feed and are mostly immobile. Most are about ¼-3/8 inch long.

Adults--- Adults are ¼ to ½” long and dark brown to black with narrow channels on their wing covers. What may appear as a pattern of gray, tan or even reddish dots on the wing covers and thorax of some beetles is actually soil dried in minute dimples in the beetle’s integument. The “bill” in billbugs refers to a short, broad “snout” on the head visible from above or the side. The chewing jaws are on the end of the snout.

Habitat and Hosts: Bluegrass billbugs, *Sphenophorus parvulus*, attack cool season Kentucky bluegrass and occasionally fescues and perennial ryegrass in New Mexico. Denver billbugs, *S. cicastratus*, can be found in Kentucky bluegrass turf in northern New Mexico as well as parts of the Rocky Mountains and northern High Plains. Hunting billbugs, *Sphenophorus venatus vestitus*, and Phoenix billbugs, *S. phoeniciensis*, are occasional pests of Bermudagrass and Zoysiagrass in southern

and eastern New Mexico. Although similar to the bluegrass billbug in damage done and life cycle, reproductive activities and developmental periods for these species are less coordinated and most stages can be found throughout the year.

Damage: Billbug larval damage to turf is similar to that caused by white grubs. Patches of grass begin to turn brown due to root damage. Affected turf is easily pulled out by hand with the stems breaking off at the crown. A good indication of billbug presence is a fine, white, sawdust-like material left by larvae feeding in the root zone. Also, look for the larger C-shaped, legless white larvae in the soil around the root zone, especially in spring. Adult billbugs chew small holes in grass blades. In severe infestations, the area around the holes may turn yellow, and the grass may have a speckled appearance.

IPM Notes: Beneficial nematodes or the botanical toxin rotenone may provide quick but expensive short term control of billbug larvae. Commercial formulations of milky spore disease (*Bacillus popilliae* from cultures) perform sporadically or not at all in the alkaline, hot, dry soils of the Southwest. Commercially available insecticides labeled for billbugs and other soil-dwelling turf pests such as white grubs can be effective.



Larva of the Denver billbug. Photo: Whitney Cranshaw, Colorado State University, www.forestryimages.org

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