

# A new resource to help manage billbugs in turfgrass

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Adult Rocky Mountain billbug, *Sphenophorus-cicatristriatus*. Credit: James Bradford

Billbugs, a type of weevil that is found from southern Canada to Mexico as well as parts of the Caribbean, are a major pest of turfgrass, a crop that brings in tens of billions of dollars in annual revenues. A new article

in the open-access *Journal of Integrated Pest Management* sheds light on how to manage this damaging insect.

"The information on billbugs is very regionally limited, so if you're living in a region where there hasn't been a lot of research done on billbugs, you may find that the fact sheets available to you are relying on information from another region that is not necessarily applicable," said co-author Madeleine Dupuy, a doctoral student at Utah State University.

At least 10 species of billbugs damage turfgrass in the United States, and Dupuy's article includes a table that lists the known host plants of common species of billbugs and the known ranges of billbugs in the U.S.

"Hopefully, this will make it easier for turfgrass managers to get answers about what species might be causing them problems," she said.

Billbugs feed on turfgrass and live within the plants for part of their lives. Females deposit one to three eggs in grass stems and sometimes in shoots, and the eggs hatch into larvae that feed on tissue inside the stem until they finally emerge and drop into the soil. Once in the soil, the larvae consume the roots and crowns, which can kill the grass plant. Feeding by larvae can leave behind unsightly patches of brown grass, which can be a major problem for managers of golf courses, sports fields, and sod farms.

The most common control measure for billbugs is the use of chemical insecticides, but they are not the only solution.

"There are other methods of cultural control and biological control that I think deserve a closer look," Dupuy said.

One alternative is to plant a turfgrass variety that does better against billbugs.

"If you have a problem with billbugs in one part of your golf course every year, you might consider overseeding that area with a resistant variety of turfgrass, such as a resistant Kentucky bluegrass cultivar, or an endophyte-enhanced rye grass or fescue," she said.

Another option for battling billbugs may be to encourage the growth of existing populations of natural billbug predators, such as ground beetles and wolf spiders.

"There is a diverse and well-documented predatory arthropod community inhabiting managed turfgrass, and some studies have shown these existing populations to have beneficial impacts on pest populations," Dupuy said. "In our studies using linear pitfall traps, we have seen adult billbugs wrapped up in spider's silk with their insides sucked out. We're not sure if this is opportunistic feeding—just because the spiders and billbugs are trapped together—or if the spiders are also feeding on billbug adults in the wild, but [wolf spiders](#) are definitely out there and they are abundant, so this may deserve more research."

To keep predator numbers high, she suggests planting strips of bunch grass and flowering plants, which provide habitat for predators.

"Flowering plants are also an excellent attraction for parasitoid hymenopterans, some of which are known to parasitize billbugs," Dupuy said.

**More information:** Madeleine M. Dupuy et al, Biology and Management of Billbugs (Coleoptera: Curculionidae) in Turfgrass, *Journal of Integrated Pest Management* (2016). [DOI: 10.1093/jipm/pmw004](https://doi.org/10.1093/jipm/pmw004)

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