

## Attract Beneficial Ground Beetles with a Beetle Bank!

Lady beetles are the favored mascots for biological pest control in the garden; both larvae and adults have voracious appetites for aphids. However, there's another class of beetles that does even more heavy lifting in the garden: ground beetles. These dark-hued, seemingly stealthy creatures aren't emblazoned on t-shirts and rain boots like they're oh-so-cute cousins, but perhaps they should be!



Sturdy ground beetles have powerful mouth parts (mandibles) and prey on a wide range of pests, including aphids, mites, moth larvae, and slugs. Some also feed on seeds, including weed seeds. This varied diet makes ground beetles an important part of the garden ecosystem, helping keep pests and weeds in check.

Fortunately, there's a way to encourage these beneficial beetles to take up year-round residence in your garden and landscape — by building a *beetle bank*! Read on to learn more about ground beetles, as well as step-by-step instructions for building a beetle bank.

### What are Ground Beetles?

The term *ground beetle* is a general name given to beetles in the large Carabidae family, which includes up to 40,000 species worldwide, and more than 2300 species in the US alone.

The adult beetles hunt primarily on the soil surface, but they can be difficult to spot because they do most of their feeding at night. During the day, you might see one scurrying away when you lift up a planter or rock and disturb its daytime hiding place.

Ground beetles undergo *complete metamorphosis*, meaning they have four distinct life stages: egg, larva, pupa, and adult. After mating, the female lays her eggs on the soil. Once they hatch, the larvae burrow into the soil, where they feed on soil-dwelling pests, such as earwigs, cutworms, and borers. Once they've eaten their



Blue-margined ground beetle (*Pasimachus elongatus*). At top: close-up of mandibles. Image: Whitney Cranshaw, Colorado State University, Bugwood.org

fill, the larvae enter their pupa phase, during which they'll complete their transformation and emerge as adult beetles.

### What is a Beetle Bank?

A beetle bank is a specially designed area that attracts and supports ground beetles and other beneficial insects. Ideally, beetle banks are located near or among crop plantings, because beetles don't tend to travel far when foraging. Covered with tall grasses and native plants, the banks create a refuge by providing a safe area to hide and an insulated overwintering site.

### How to Build a Beetle Bank

Fall is an ideal time to build a beetle bank, although they can be constructed any time of year. While there's no single beetle bank "recipe;" here's one method:

1. Plan to make your beetle bank 2' to 6' wide and as long as you'd like.
2. Start by laying down some rotting logs and branches. This step is optional, but will help attract a wider variety of beetles and other beneficials.
3. Create a slightly raised, flat-topped ridge of soil, on its own or over the rotting wood.
4. Plant the area with a variety of plants, including native grasses such as bent grass and fescue. Include some clover and other nectar-producing plants, which will attract other types of beneficials.
5. In fall, cut the grasses back to about 8" high, leaving the trimmings in place to provide insulated winter cover for the beetles.
6. Add small piles of dead brush and leaves on the bank as additional hiding and overwintering sites.



*Festive tiger beetle (Cicindela scutellaris). Image: Whitney Cranshaw, Colorado State University, Bugwood.org.*



*Beautiful tiger beetle (Cicindela pulchra). Image: Whitney Cranshaw, Colorado State University, Bugwood.org.*

Beetles won't devour every pest in your garden – and you wouldn't want them to, because then they'd be out of food! But farm studies have shown that ground beetles can do a remarkable job of keeping pest populations in check to the extent that no pesticide sprays were needed.