

TIGER BEETLE

Cicindela spp. By Bryce Christiaens

While hiking in the Reservation Divide Roadless Area on a sunny day this past spring, I came to a place where the receding snow had left a bare strip of disturbed soil. Along the edge of the snow, brightly colored insects the size of grasshoppers flitted in front of me. They were tiger beetles. These particular insects were *Cicindela depressula*, one of 25 tiger beetle species in Montana. As a self-described Cicindelaophile, I was delighted to see the little insects.

DESCRIPTION Tiger beetles are easily recognizable by their bulging eyes and especially large mandibles (jaws). They range from $\frac{3}{8}$ to $\frac{5}{8}$ inch long. Adults of all species look similar, with long bodies and long thin legs, large heads, and markings of various shapes on the wing covers. Stacks of reflective plates layered over pigment create a metallic, iridescent sheen, especially on the underside of the body. The larvae are easily distinguished from those of other insects by the large, forward-facing hooks on their back. Entomologists differentiate tiger beetle species by the insects' different habitats, body shapes, and wing cover markings. Tiger beetles range in color from bright green to purple, blue, bronze, brown, and black.

DISTRIBUTION AND HABITAT Tiger beetles can be found practically everywhere in Montana, from the snowline along the Bitterroot Divide to the central prairies to the badlands of Makoshika. The insects prefer open habitat where they can run down prey. Sandy soils along rivers and lakes, open prairie, alkali flats, and disturbed areas provide sufficient hunting areas for tiger

beetles. Trails provide ideal habitat, so if you're hiking anywhere between May and September, you're bound to see tiger beetles along the path if you look closely.

BEHAVIOR Adult tiger beetles are active predators that rely on sight and speed to catch prey. When hunting, the beetles run in short spurts, stop to look for moving prey, and then sprint in that direction. The frequent pauses are needed because tiger beetles become blind while running. They actually move too fast for their eyes to gather enough photons to create an image of the prey. One species, *Cicindela tranquebarica*, can move at the amazing pace of 29 body lengths per second (that's 148 mph if you're a grizzly bear). During hot weather, tiger beetles ambush prey by waiting in shady spots and attacking passing flies, caterpillars, and other beetles. Tiger beetle larvae are also aggressive predators. The large-headed, hump-backed grubs flip backwards to capture other insects that stray too near, using the large hooks on their backs as anchors to pull them

selves and their prey into the safety of a burrow. Tiger beetles fly, but only to escape predators and not to pursue prey.

BREEDING Male tiger beetles mate with great ferocity. They attempt to copulate with any tiger beetle they meet but can hold on to females only. A female has an indentation on each side of her thorax (called a "coupling sulcus") that matches only the mandibles of the males of her species. Because males lack these grooves, another male will slip off. And a male of another tiger beetle species can't get his mandibles to "fit" the grooves on females of a different species long enough to mate. After mating, females deposit up to 15 eggs, one at a time, at different locations.

STATUS In Montana, two tiger beetles are potential species of concern. Only a few *Cicindela cuprascens* and *Cicindela limbata* have been found here. However, both species have healthy populations in neighboring states and provinces.

For a checklist of Montana's tiger beetles, visit the on-line field guide at <http://fieldguide.mt.gov>. For more information on tiger beetles, check out *Tiger Beetles of Alberta*, by John Acorn, and *A Field Guide to the Tiger Beetles of the United States and Canada*, by David L. Pearson, C. Barry Knisley, and Charles J. Kazilek. 🐞

Bryce Christiaens is an amateur entomologist and a farmer who grows native flowers in Arlee.



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