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Stroll along a sandy riverbank in New Hampshire, and you might see a long-legged beetle running slightly ahead of you, stopping, then breaking into a run again. If you try to get a closer look, it will leap into the air and fly in a dizzying zigzag pattern. What sets this beetle apart from other insects is that it will then land several feet away – and face you.

Ranging from 9 to 19 millimeters long, this diminutive dynamo dynamics the tiger beetle. There are more than 2,000 different species found on nearly every land mass in the world.

New Hampshire is home to more than a dozen tiger beetle species. Their names often describe the habitats in which they thrive. For instance, the metallic blue-green White Mountain tiger beetle can be found running along the small sandbars of mountain brooks in the Presidential Range; the big sand tiger beetle scurries around large dunes; the cow path tiger beetle appears along grassy meadow lanes; and the common shore tiger beetle can be an everyday sighting at mudflats and rivers.

"The number of species is amazing. If you go along a river or wetland and you start looking, you'll start seeing the more common species everywhere," says Susi von Oettingen, an endangered species biologist with the US Fish and Wildlife Service.

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The colors and markings of each tiger beetle species can be as unique as their habitats. "They are like tiny jewels. Many of them are iridescent greens and metallic reds," says Pamela Hunt, a

senior conservation biologist with New Hampshire Audubon.

TINY TIGERS

The six-spotted tiger beetle is one beauty that many N.H. residents can see without leaving their backyards. This emerald-green beetle is a frequent visitor of gardens, where it feasts on ants, spiders, mites...nearly anything it can get its powerful jaws around. Like all tiger beetles, the six-spotted species earned the name "tiger" for how it catches a meal. "They see an ant or some other prey and they will run after it," says Hunt.

Even when a tiger beetle is only a few hours old, it is already on its way to becoming an excellent predator. After hatching from eggs, tiger beetles are in a larval form, and look more like grubs than beetles; these vulnerable larvae tunnel into the soil to keep safe from hungry birds and other insects and to protect themselves from intense heat, heavy rain, and even snow.

The tiger beetle spends nearly two years living here, so the burrow's entrance becomes a dinner table of sorts. With its head barely poking out above the soil, the larva uses hooks to anchor itself to the inside of the tunnel. When an unsuspecting small insect walks by, the tiger beetle larva pops up and snatches its meal with pincer-like mouthparts. If a larva senses a threat (such as a human) close by, it unhooks itself and drops farther into the tunnel. Researchers who study tiger beetle larvae will slide a long blade of grass down a hole to see if it's occupied. If there's a larva inside the tunnel, the blade of grass will begin to move as the larva tries to push it out.

Despite all their moxie, tiger beetles are no match for illegal off-road vehicles, river damming or overzealous beetle collectors. Because of all this human interference, many species of tiger beetles are under threat, including the cobblestone tiger beetle found in New Hampshire.

ISLAND DWELLER

The cobblestone tiger beetle holds two titles in the Granite State: official insect for the town of Plainfield and "state endangered" – a

designation made last year to reflect the species' increasingly imperiled condition.

As its name implies, the cobblestone tiger beetle lives amid rocks, but not just any area with stones will do. In New Hampshire and

Vermont, it can only be found on the cobbled edges of islands along the upper valley of the Connecticut River. Farther down the river, the cobblestone tiger beetle has been sighted in Massachusetts and Connecticut. Populations have been recorded in New York, New Jersey, Indiana, Ohio and Vermont.

"Around 1997, when my daughter was about 9 years old, we discovered a population along the Winooski River about a half-mile from our house," says John Leonard, senior lecturer at the University of Vermont, founding member of the Vermont Entomological Society and co-author of the field guide *Northeastern Tiger Beetles*.

For Leonard, it wasn't the cobblestone tiger beetle's olive-brown wing covers that caught his eye that day, but its bright red belly.

"The previous year we had been canoeing on the Winooski and I saw this flash of red and I thought, 'Wow, I wonder if it could actually be a cobblestone tiger beetle," says Leonard. "So the following year I decided to do a more extensive search with my daughter and we found them. It was the first documented location of a cobblestone tiger beetle in the Lake Champlain Basin."

The cobblestone tiger beetle also once occurred in Pennsylvania, West Virginia, Mississippi and Alabama, but river damming flooded the habitat and wiped out the species from those states.

"Because a large portion of the population is [now] in our region,

BI LINDA JAUCENIAN

TIGER BEETLES OF NEW HAMPSHIRE

Whether they are metallic green, shiny bronze, or matte black, all tiger beetles of the Granite State have white spots or patterns on their *elytra* (wing covers), which is one of the key factors in identifying each species. Both the common and scientific names are shown here, since the former sometimes varies. In all cases, the "C." refers to the genus name *Cicindela*, to which all New Hampshire tiger beetle species belong.



 Big Sand (C. formosa) – Topping out at 18 millimeters, this is the largest tiger beetle in New England; found in sand dunes. It is almost black with wide white markings.



• Common Claybank (C. limbalis) – Varies from bright red to bronze; found on steep, clay soil.

it is a high responsibility," Hunt says. "Cobblestone tiger beetles are very habitat-specific, so it would behoove us to keep an eye on these habitats and make sure we don't lose them."

Such was the fate for the puritan tiger beetle in N.H. Once a resident of beaches along the Connecticut

Tiger beetles are easy to identify, so it's fun to go looking for them in different habitats. Use the photos on this page and see how many you can find this year. River in Claremont, this beetle no longer exists in the state. Damming in the early 1900s destroyed the habitat of what is now considered the rarest tiger beetle of New England. Because the cobblestone tiger beetle also lives at the water's edge, the

N.H. Wildlife Action Plan proposes strategies that consider dam activity, water levels and flows. In the 1980s, the cobblestone tiger beetle also could have become history in New Hampshire, had two hydroelectric power plants along the Connecticut River been approved. Luckily for the beetle, Atlantic salmon share the same river; the power plants were voted down in an effort to protect this fish from disappearing from New England waters.

For many biologists, it is no surprise that another animal saved the day for the lowly beetle. Soon after starting his research on the tiger beetle 14 years ago for the US Fish and Wildlife Service, biologist and professional falconer Chris Davis found himself admiring these beetles for one of the same reasons he is intrigued by birds of prey—both are predators.

"As humans, we have a fondness for the soft, fuzzy, feathery, [and] doe-eyed," says Davis. "I understand someone saying, 'It's just a beetle,' but it's also an opportunity to learn."

DRIVE TO **S**URVIVE

Most tiger beetle populations tend to be healthier in areas with less impact from human activity. Biologists generally agree that people walking on the beach isn't

- Punctured (C. punctulata) Black to brown; produces a fruity odor when handled; found on dry, hard-packed soil of urban areas, including medians of busy roads and sidewalks.
- Oblique-lined (C. tranquebarica)

 Dark bronze; found on gravel or dirt roads and beaches.
- Six-spotted (C. sexguttata) This iridescent green beetle is often the first one to be identified by those new to the hobby of finding tiger beetles; found in woods, dirt roads, trails, gardens.









• **Cobblestone** (*C. marginipennis*) – Olive



• Common Shore or Bronzed (C. repanda) – This



a major threat to tiger beetles, but people driving cars and off-road recreational vehicles onto beetle habitat can suffocate larvae in their burrows. Because many tiger beetle species can take two years to reach breeding age, a generation of beetles can be wiped out by a single car spinning its tires.

Even when people are aware of tiger beetles, sometimes they can almost be loved to death. Insatiable collectors can dwindle populations. Fortunately, the endangered status of the cobblestone tiger beetle makes it illegal for them to be killed or removed from their habitats; and the hobby of netting beetles and placing them in killing jars filled with ethyl acetate is falling out of fashion. Many are discovering that digital photography is a great way to "capture" a tiger beetle.

These beetle-maniacs also are some of the biggest proponents of protecting the environments where tiger beetles exist.

"In general, when you see tiger beetles in nature, it is a sign of a place that is relatively undisturbed by people," Leonard says. "People like to have these wild places to see and visit, and a tiger beetle population is an indicator of such places."

For those new to the world of tiger beetles, taking the time to look for them is more than just a chance to find a brightly colored insect in a diverse habitat; it also can be an opportunity to find yourself.

"Working with tiger beetles is a whole other level of activity that you don't have an insight into until you slow down and just look," explains Davis. "It is a time to go out to the beach and take the time to focus. Once you do, there is so much to see. I often describe the process that we do [netting and cataloguing] as a combination of hunting and meditating." W

Linda Saucerman is a freelance writer from Dover, N.H., who specializes in environmental journalism

and travel writing. She wrote about bobcats in the Nov./Dec. 2008 issue of New Hampshire Wildlife Journal.

• Smooth or Festive (C. scutellaris)



- **Twelve-spotted** (C. doudecimguttata)



NOT PICTURED...

- and thorax (area between head and abdomen), found
- Boreal Long-lipped (C. longilabris) Matte black with
- **Patterned Green or Northern Barrens** (C. patruela)
- White Mountain or Appalachian (C. ancocisonensis)

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