

COMMONLY ASKED QUESTIONS AND ANSWERS ABOUT THE SALT CREEK TIGER BEETLE

What does the Salt Creek tiger beetle look like?

The Salt Creek tiger beetle (*Cicindela nevadica lincolniana*) is metallic brown to dark olive green above with a metallic dark green underside. This insect measures about 0.5 inch in total length. It is distinguished from other tiger beetles by its distinctive form and the color pattern on its dorsal and ventral surfaces.

Where does it live?

The Salt Creek tiger beetle is confined to eastern Nebraska saline wetlands and associated streams and tributaries of Salt Creek in the northern third of Lancaster County. The insect is believed to have disappeared from the southern margin of Saunders Counties. It is found along mud banks of streams and seeps, and in association with saline wetlands and exposed mud flats of saline wetlands.

Why does the U.S. Fish and Wildlife Service believe it needs to list this beetle as endangered?

The Salt Creek tiger beetle occurs in only a small area in eastern Nebraska and is considered the rarest insect in Nebraska. Intensive surveys for the Salt Creek tiger beetle document the loss of half of the remaining populations, from 6 to 3 populations, since 1991. Visual surveys suggest that Salt Creek tiger beetles number less than a thousand individuals. The remaining populations of Salt Creek tiger beetles are under imminent threat of extinction from: the destruction of its remaining habitat caused by past and ongoing residential, commercial, and industrial development and infrastructure in northern Lancaster County and Lincoln, Nebraska; increased freshwater runoff and sediment deposition from developed areas resulting in the reduction of salt concentrations and vegetative encroachment; bank sloughing from incised streams that were channelized; unregulated bank stabilization projects; pollution; pesticide application or runoff; cattle grazing and cultivation; artificial lighting, and inadequate regulatory mechanisms and reduced regulatory jurisdiction. Occupied barren salt flats and saline stream edge habitats of the two largest Salt Creek tiger beetle populations are small in size and in close proximity to each other, making the subspecies prone to chance extinction from catastrophic environmental events, floods, drought, predation and parasites, and less able to colonize areas previously occupied.

What kind of beetle is the Salt Creek tiger beetle?

One of 32 species and subspecies of tiger beetles in Nebraska, the Salt Creek tiger beetle is an active, ground-dwelling, predatory insect that captures smaller or similar-sized arthropods in a “tiger-like” manner by grasping its prey with its mandibles (mouthparts). There are more than 100 species and subspecies of tiger beetles in the United States.

Where does the Salt Creek tiger beetle live in eastern Nebraska?

Salt Creek tiger beetle larvae live in permanent burrows in the ground and are voracious predators, fastening themselves by means of abdominal hooks near the tops of their burrows and rapidly extending from them to seize passing invertebrate prey. The adult Salt Creek tiger beetle has a two-year life cycle and spends 11 months of the year underground, surfacing for only about six weeks, from around mid-June through July. Adults are found in the moist, muddy areas

within just a few yards of wetland and stream edges. They have adapted to brief periods of high water inundation and highly saline conditions.

Is habitat a factor in the beetle’s decline?

Yes. Since the late 1800s, over 90 percent of these wetlands have been destroyed or severely degraded through commercial, residential, industrial and agricultural development and transportation projects. Only 122 acres of barren salt flat and saline stream edge habitat of the Salt Creek tiger beetle remain in the eastern Nebraska Saline Wetland Complex, of which merely 15 acres can be considered “not highly degraded.” It is these remaining 15 acres of “not highly degraded” barren salt flats and saline stream edges that are believed to provide suitable habitat for the three remaining population of Salt Creek tiger beetles. Eastern Nebraska saline wetlands are considered critically imperiled in Nebraska.

Do other species inhabit the saline wetlands in Nebraska?

Over the past century, more than 230 species of birds, especially migratory waterfowl and shorebirds, have been reported using eastern Nebraska saline wetlands. These birds include the listed least tern and piping plover and the peregrine falcon, which used to be Federally listed. Eastern Saline Wetlands are home to several saline plants that are found nowhere else in Nebraska, including saltwort, a plant that grows in extremely aquatic saline habitats and is listed as endangered under the Nebraska Nongame and Endangered Species Conservation Act. The vegetative community of the eastern Nebraska saline wetlands is considered to be some of the most limited and endangered in the State.

How many Salt Creek tiger beetles are there?

Intensive visual surveys conducted from 1991 through 2004 found six populations of Salt Creek tiger beetle. Today, only three of these six populations are thought to still exist. Over this period, the number of individuals has varied widely, but it has averaged 438 annually.

Deleted: 2003

Deleted: 439

How does the number of Salt Creek tiger beetles compare with other tiger beetle species?

Most healthy, viable populations of tiger beetles number in the hundreds of thousands or even millions. The northeastern beach tiger beetle (*C. dorsalis dorsalis*) and puritan tiger beetle (*C. puritana*) are listed as threatened under the Endangered Species Act. Between 1989 and 1992, the northeastern beach tiger beetle *Cicindela* was found at 65 sites in Maryland and Virginia. Population estimates ranged from 9,846 to 17,480 beetles annually. Throughout Maryland, there was an average of 6,389 puritan tiger beetles found annually during surveys conducted in 1989, 1991, 1992, and 1993.

Is the Salt Creek tiger beetle already protected?

The Salt Creek tiger beetle is listed as endangered under Nebraska’s endangered species act. Under this law, State agencies must ensure that the actions they authorize, fund, or carry out do not jeopardize the continued existence of endangered and threatened species.

In 2000, the Service designated the Salt Creek tiger beetle as a candidate species. However, a candidate species does not receive any Federal protection. Candidate status merely indicates that the species is in some trouble and its status needs to be evaluated periodically. As threats to this beetle now appear to be substantial and immediate, the Service believes it needs to immediately place the species on the Federal list of endangered species.

How will listing the Salt Creek tiger beetle as endangered affect the community?

Proposed projects and activities that occur on private lands and do not require any Federal action (e.g., permits, funds, authorization, etc.) will not be affected by this Federal listing activity. However, ongoing and future projects involving any Federal action that may either directly or indirectly impact the Salt Creek tiger beetle or its habitat would require consultation with the Service pursuant to section 7 of the Federal Endangered Species Act to evaluate the potential impact to the beetle and the need for possible alternatives to prevent any adverse impacts. In addition, if any activity or proposed project would result in “take” of the Salt Creek tiger beetle or the destruction or adverse modification of habitat occupied by the beetle, provisions under section 9 of the Federal Endangered Species Act would be triggered. The definition of take under the Act is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.”

What is presently being done to conserve the Salt Creek tiger beetle?

The Service and the Nebraska Game and Parks Commission have funded a two-year study with the University of Nebraska to acquire more information and expand the level of knowledge about the biology of the Salt Creek tiger beetle and its habitat requirements. The Service also has participated in several local conservation planning efforts designed to protect the beetle and its habitat. To date, none of these plans have been finalized or implemented. In addition, the City of Lincoln received a \$750,000 Nebraska Environmental Trust Fund grant to be used over a three-year period to acquire and protect eastern Nebraska saline wetlands, including Salt Creek tiger beetle habitat.

How does the Service determine whether a species needs to be listed under the Federal Endangered Species?

Under section 4 of the Federal Endangered Species Act, species are determined to be threatened or endangered because of one or more of the following five factors: (1) present or threatened destruction of habitat; (2) over utilization; (3) disease or predation; (4) inadequacy of existing regulations for protection; and (5) other natural or human-made factors (e.g., catastrophic environmental events such as floods and drought, electric light insect traps, pesticides). The Salt Creek tiger beetle is threatened by habitat destruction, inadequate protection from other Federal, State or local laws, and other natural or human-made factors.