**COMMONLY ASKED QUESTIONS AND ANSWERS**
**ABOUT PROPOSED CRITICAL HABITAT DESIGNATION**
**FOR THE SALT CREEK TIGER BEETLE**

***Where does the Service propose to designate critical habitat?***

The Service is proposing to designate 1,642 acres of critical habitat in Lancaster and Saunders counties, Nebraska. Three of the four areas proposed for designation hade beetle populations at the time of listing in 2005, and still do; a fourth area had a beetle population last observed in 1998:

The Arbor Lake population (167 acres of proposed critical habitat) occupies a saline wetland and stream complex. It is the largest remaining beetle population, averaging 310 beetles per year (1991 to 2007 surveys). The 2005 survey count was 115 beetles, the lowest count in the past 12 years. The survey count in 2006 was 345 beetles; in 2007, survey count was 198 beetles.

The Roper population (284 acres of proposed critical habitat) occupies a saline wetland and stream complex located about one mile downstream of the Arbor Lake population. It is the second largest population, averaging 107 beetles per year (1994 to 2007 surveys). The 2005 survey count was 22 beetles; the lowest number since monitoring began. The survey count in 2006 was 97 beetles; in 2007, the survey count was 32 beetles.

The Upper Little Salt Creek-North population (295 acres of proposed critical habitat) exists on a saline wetland and stream complex about 4.5 miles upstream of the Arbor Lake population. It is the smallest population, averaging 18 beetles per year (1991 to 2007 surveys). The 2005 survey documented 16 beetles. The 2006 survey count was 24 beetles; in 2007, the survey count was 33.

In addition to the above three occupied areas, the Jack Sinn-Rock Creek area has been identified as essential to the conservation of the beetle, and is included in the proposed critical habitat area (896 acres). The Jack Sinn-Rock Creek area is a large area of suitable habitat that is located in a separate watershed from the currently-occupied units, which are in the Little Salt Creek watershed. This provides essential redundancy in the event of a catastrophic event. Redundancy is necessary because the extant populations are all on Little Salt Creek, and 89 percent of remaining individuals are located within one mile of each other. A catastrophic weather event (e.g., heavy rainfall that results in flooding) or upstream human activities (e.g., toxic spills, pesticide runoff) could extirpate all populations on a single stream. The Jack Sinn population was extirpated as a result of a series of weather events in the mid-1980s and early 1990s. Survey information documented occupation of the Jack Sinn-Rock Creek Unit by the beetles in 1998, and it represents the best remaining suitable habitat to support additional populations of beetle.

***What does a critical habitat designation mean?***

Critical habitat is a term in the Endangered Species Act (ESA). It identifies geographic areas that contain features essential for the conservation of a threatened or endangered species and may require special management or protection. Critical habitat often results in an emphasis on conservation actions, including increased land management activities and funding, to support species recovery. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. It does not allow government or public access to private lands. Federal agencies are required to consult with the Service on

actions they carry out, fund or authorize that might affect critical habitat.

***What criteria does the Service use to determine critical habitat?***
The Service used the best scientific data available in determining areas that contain the features essential to the conservation of the Salt Creek tiger beetle. The Service is proposing critical habitat designation in three areas within the geographical area occupied by the species at the time of listing in 2005, as well as a specific area (Jack Sinn-Rock Creek) known to be occupied as recently as 1998, because we have determined that this area has features that are essential to the conservation of the species and it provides essential redundancy in populations. Population estimates are all extremely low, and the species is at a high risk of extinction and is highly susceptible to stochastic events. The three currently occupied areas are within one mile of each other on the same stream, Little Salt Creek. The risk of extinction of the species due to a single human or natural event is greatly increased by this close proximity. Therefore, we believe reintroducing the beetle to the recently-occupied area on Jack Sinn-Rock Creek will be necessary to provide for the conservation of species.

The Salt Creek tiger beetle has one of the most restricted ranges of any insect in the United States. The currently occupied habitat for the species is highly limited and isolated. Surveys conducted over a 15-year period establish that the Salt Creek tiger beetle is an extremely rare insect, numbering only in the hundreds and confined to an extremely small range.

***How will designating critical habitat for the Salt Creek tiger beetle 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. 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 to evaluate the potential impact to the beetle and the need for possible alternatives to prevent any adverse impacts.

***Why did the U.S. Fish and Wildlife Service 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 six to three populations, since 1991. 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 beetle prone to chance extinction from catastrophic environmental events, floods, drought, predation and parasites, and less able to colonize areas that were previously occupied.

***Is habitat a factor in the beetle's decline?***
Yes. Since the late 1800s, more than 90 percent of the saline wetlands have been destroyed or severely degraded through commercial, residential, industrial and agricultural development and transportation projects. Eastern Nebraska saline wetlands are considered critically imperiled in Nebraska.

***How many Salt Creek tiger beetles are there?***
Intensive visual surveys conducted from 1991 through 2005 found six populations of Salt Creek tiger beetle. Today, only three of these six populations are thought to still exist. The 2007 surveys revealed that the Salt Creek tiger beetle numbers about 263 individuals.

***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 ESA. Between 1989 and 1992, the northeastern beach tiger beetle 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?***
Considered one of the rarest insects in the United States, the Salt Creek tiger beetle was listed as endangered under the ESA in October 2005.

The Salt Creek tiger beetle was also listed as endangered under Nebraska's endangered species act in March 2000. 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.

***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. In addition, the City of Lincoln, Lancaster County, Nebraska Game and Parks Commission, Lower Platte South Natural Resources District and The Nature Conservancy have formed the Saline Wetland Conservation Partnership (SWCP). The SWCP has developed a plan that focuses on the conservation of saline wetlands in Lancaster and Saunders counties. Although not specifically focused on the protection and management of the Salt Creek tiger beetle, the SWCP's efforts will benefit the species and contribute to its recovery. To date, the SWCP, including Federal funds from section 6 of the Act, has acquired five parcels of land containing saline wetlands.

***What does the Salt Creek tiger beetle look like?***
The Salt Creek tiger beetle 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 top and bottom.

***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 County. It is found along mud banks of streams and seeps, and in association with saline wetlands and exposed mud flats of saline wetlands.

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.

***What kind of beetle is the Salt Creek tiger beetle?***
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).

***Do other species inhabit the saline wetlands in Nebraska?***
Throughout 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.

***What does the Service consider in an Economic Analysis?***
The ESA requires the Service to address how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on small entities and other various private, commercial, and industrial interests. This information can be used by decision-makers to assess whether the effects of the designation might unduly burden a particular group or economic sector. The draft economic analysis also looks retrospectively at costs that have been incurred since the date the Salt Creek tiger beetle was listed in 2005, and considers those costs that may occur in the 20 years following a designation of critical habitat.

Pre-designation (2005-2007) costs associated with species conservation activities are estimated at $2.6 million in 2007 dollars. Potential post-designation economic costs are estimated to be $18.6 million to $23.1 million over 20 years. The annual costs are expected to range from $1.3

to $2 million.