

**DRAFT**

**ENVIRONMENTAL ASSESSMENT**

**DESIGNATION OF CRITICAL HABITAT  
FOR THE  
SALT CREEK TIGER BEETLE  
(*Cicindela nevadica lincolniana*)**

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## **1.0 PURPOSE FOR THE PROPOSED ACTION**

The purpose of the proposed action is to designate critical habitat for the Salt Creek tiger beetle (*Cicindela nevadica lincolniana*) by utilizing provisions of the Endangered Species Act of 1973, as amended (Act). The purpose of the Act is to conserve the ecosystems upon which endangered and threatened species depend. Critical habitat designation identifies areas essential to the survival and recovery of the Salt Creek tiger beetle, and describes physical and biological features within critical habitat that require special management considerations to achieve conservation of the Salt Creek tiger beetle.

## **2.0 NEED FOR THE ACTION**

The need for this action is to comply with section 4 of the Act, which requires that critical habitat be designated for endangered and threatened species unless such designation is not prudent. We, the Fish and Wildlife Service (USFWS), published the final rule (70 FR 58335) on October 6, 2005, listing the Salt Creek tiger beetle, an endemic to the eastern Nebraska saline wetland complex, as endangered.

The final listing rule for the Salt Creek tiger beetle indicated that designation of critical habitat was prudent and determinable. However, because of the critically imperiled status of the Salt Creek tiger beetle, limited financial and personnel resources available to work on this taxon, and the Service's belief that listing confers greater protection to a species than does critical habitat, a higher priority was assigned to promptly publishing the final listing rule than to proposing and designating critical habitat, as allowed pursuant to section 4(b)(6)(C)(i).

When the range of a species includes States within the Tenth Circuit, pursuant to the Tenth Circuit ruling in Catron County Board of Commissioners v. U.S. Fish and Wildlife Service, 75 F.3d 1429 (10th Cir. 1996), we will complete an analysis pursuant to the National Environmental Policy Act (NEPA) on critical habitat designations. The range of the Salt Creek tiger beetle includes the State of Nebraska, which is within the Tenth Circuit.

Critical habitat is one of several provisions of the Act that aids in protecting the habitat of listed species until populations have recovered and threats have been minimized so that the species can be removed from the list of threatened and endangered species. Critical habitat designation is intended to assist in achieving long-term protection and recovery of the Salt Creek tiger beetle and the ecosystem upon which it depends. Section 7(a)(2) of the Act requires consultation for Federal actions that may affect critical habitat to avoid destruction or adverse modification of this habitat. Further explanation of critical habitat and its implementation are provided below.

### **2.1 Background**

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 prey with its

mandibles (mouthparts). Salt Creek tiger beetle larvae live in permanent burrows in the ground, however they are known to relocate and dig new burrows a few centimeters from their original burrow (W. Allgeier, University of Nebraska-Lincoln (UNL) pers. comm. 2005). The larvae are voracious predators, fastening themselves by means of abdominal hooks to the tops of their burrows and rapidly extending outward to seize passing prey.

The Salt Creek tiger beetle is metallic brown to dark olive green above, with a metallic dark green underside, and measures 1.3 centimeters (cm) (0.5 inch (in)) in total length. It is distinguished from other tiger beetles by its distinctive form and the color pattern on its dorsal and ventral surfaces. The elytra (wing covers) are metallic brown or dark olive green, and the head and pronotum (body segment behind the head) are dark brown (Carter 1989).

Allgeier et al. (2004) and Spomer et al. (2004) indicate that the Salt Creek tiger beetle has a 2-year life cycle, not uncommon for tiger beetles. Adults are first observed as early as the end of May or as late as mid-June, and disappear by mid to late July. Their numbers peak about two weeks after the first individuals appear and begin to feed and mate. After mating, the male rides atop the female, presumably preventing her from re-mating (a behavior known as mate-guarding). Females lay their eggs along sloping banks of creeks in areas where the salt layer is exposed in the soil horizon, in barren salt flats of saline wetlands, or along saline stream edges that are found in close association with water, near a seep or stream. Researchers from UNL speculate that, during the night, female Salt Creek tiger beetles lay about 50 eggs (Farrar 2003).

Spomer and Higley (2001) and Spomer et al. (2004) describe the life cycle of the Salt Creek tiger beetle in detail through egg, larval, and adult stages. A brief summary is as follows. After the egg hatches from a burrow where the female previously deposited an egg, the young larva digs a burrow and uses its head to scoop out soil. The larva takes these small mud clods to the burrow entrance and flips them outside the hole. Larval burrows can occur throughout a saline streambank and on barren salt flats of saline wetlands.

The small larva waits at the top of its burrow and ambushes prey that passes too near the burrow entrance. Once it has captured its prey, the larva pulls it into the burrow with the aid of three hooks on the dorsum of the fifth abdominal segment. These hooks also function to prevent the larva from being pulled from its burrow by larger prey or predators. The larva will plug its burrow and retreat inside during periods of high water, very hot weather, or very dry conditions. As the larva grows, it molts to a larger instar (a life stage between molts), enlarging and lengthening its burrow. The Salt Creek tiger beetle has three instars. It probably overwinters as a third instar, pupates in May, and emerges as an adult. Before pupation, the larva seals its burrow entrance and digs a side chamber about 5 to 8 cm (2 to 3 in) below the soil surface. After the adult emerges from the pupa, it remains in the chamber until its cuticle hardens.

Eighty-five species and more than 200 subspecies of tiger beetles in the genus *Cicindela* are known from the United States (Boyd et al. 1982; Freitag 1999). The Salt Creek tiger

beetle is 1 of 32 species and subspecies of tiger beetles that have been recorded in Nebraska (Spomer et al. 1997; Ratcliffe and Spomer 2002; Allgeier et al 2003; Spomer et al. 2004).

Originally, the Salt Creek tiger beetle was described by Casey (1916) as a separate species, *C. lincolniana*. Willis (1967) identified *C. n. lincolniana* as a subspecies of *C. nevadica* which evolved from *C. n. knausii*; this is the currently accepted taxonomic classification. The evolution of *C. n. lincolniana* was a result of its isolation from the gene pool sometime after the Kansan, but possibly during the Yarmouthian, glaciation. There also are spatial separations between *C. n. knausii* and *C. n. lincolniana*. *C. n. knausii* has been collected in Sheridan and Garden Counties in the Nebraska Sandhills, a distance of several hundred miles from the saline wetlands and associated streams of eastern Nebraska that provide habitat for the *C. n. lincolniana*. Busby (2003) examined populations of *C. nevadica* in north-central Kansas that were among the closest known populations of those of *C. n. lincolniana* in Lancaster County to determine sub-specific affinities of those populations based on external morphology. Busby (2003) concluded that *C. n. lincolniana* is distinctive from other populations of *C. nevadica* in the central Great Plains.

### **Distribution and Status**

The Salt Creek tiger beetle has very narrow habitat requirements, occurring only in saline wetlands on exposed saline mud flats or along mud banks of streams and seeps that contain salt deposits and are sparsely vegetated (Carter 1989; Spomer and Higley 1993; LaGrange 1997; Nebraska Game and Parks Commission (NGPC) 1999; Spomer et al. 2004). Larvae have been found only on moist, salt-encrusted banks of Little Salt Creek in northern Lancaster County (Spomer et al. (2004). The density of larval burrows decreases as vegetative cover increases (S. Spomer, UNL, pers. comm. 2002). Spomer et al. (2004) indicates that adults show little flexibility in habitat preference. The earliest-emerging adults sometimes move from creek banks to the salt flats, presumably to hunt for prey. A week or two into emergence, however, this behavior stops and adults are found almost exclusively in the wetter areas, like the creek edge or seeps along the creek (Spomer et al. 2004). Spomer et al. (2004) states that during peak emergence, adults often wander from their emergence sites, presumably looking for new areas to colonize or search for prey. It is during this time that adults often appear on sand/gravel bars, or on less saline soils along the stream. Salt Creek tiger beetles require these open, barren areas for construction of larval burrows, thermoregulation, foraging, and dispersal corridors (Spomer and Higley 1993; L. Higley, UNL, pers. comm. 2002; S. Spomer, pers. comm.. 2002).

Saline wetlands in eastern Nebraska occur in swales and depressions within the floodplain of Salt Creek and its tributaries in northern Lancaster and southern Saunders Counties. LaGrange (1997) suggests that the saline wetlands of eastern Nebraska receive their salinity from groundwater passing through an underground rock formation containing salts deposited by an ancient sea that once covered Nebraska. Saline wetlands of eastern Nebraska are characterized by saline soils and halophytes (plants adapted to

saline conditions). They usually have a central area that is devoid of vegetation and, when dry, exhibit salt encrusted mudflats (barren salt flats) (LaGrange 1997). These saline wetlands are used by the Salt Creek tiger beetle and numerous other saline-adapted insects.

Six populations of Salt Creek tiger beetles, distributed along Oak, Little Salt, and Rock creeks, were known as recently as 1994, however, since then, half of these have disappeared. Only three populations of Salt Creek tiger beetles exist today; all of these populations are located along Little Salt Creek. Extensive loss of saline wetlands in the Eastern Nebraska Saline Wetland Complex has occurred since the late 1800s. Stream channel straightening projects in the early 1900s (Rus et al. 2003), and residential, commercial, industrial, infrastructure, and agricultural developments resulted in habitat degradation, loss, and fragmentation of saline streams and wetlands. These modifications have had a negative impact on the Salt Creek tiger beetle, an insect with specific habitat requirements. The two largest populations exist within 1-mile of each other in an area on the north side of Lincoln, Nebraska where extensive urban growth and development has and continues to occur. In 2004, the number of adult Salt Creek tiger beetles surveyed declined by 25 percent from 2003 (Spomer et al. 2004). In 2005, Steve Spomer (UNL, pers. comm. 2005) reported that 153 adult Salt Creek tiger beetles were found during the 2005 surveys, a 73 percent reduction from 2004 and the lowest count in the past 12 years. Additional information on the biology and status of the Salt Creek tiger beetle can be found in the October 6, 2005, final listing determination (70 FR 58335).

In January 2006, efforts were undertaken to develop a recovery outline for the Salt Creek tiger beetle, a precursor to a recovery plan. However, budget constraints and workload requirements prohibited progress on the recovery outline. An “official” draft recovery plan will be finalized in the near future, dependent on budgetary and workload constraints, and a public comment period opened for review of the draft.

## **2.2 Endangered Species Act**

### **2.2.1 Critical Habitat**

Critical habitat is defined in section 3(5)(A) of the Act as – (i) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. The term “conservation” as defined in section 3(3) of the Act, means “to use and the use of all methods and procedures which are necessary to bring an endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary” (i.e., the species is recovered and removed from the list of threatened and endangered species).

Section 4(b)(2) of the Act requires that we base critical habitat designation on the best scientific and commercial data available, taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. We may exclude areas from critical habitat designation if we determine that the benefits of exclusion outweigh the benefits of including the areas as critical habitat, provided the exclusion will not result in the extinction of the species. Within the geographic area occupied by the species, we will designate only areas currently known to be “essential to the conservation of the species.” Critical habitat should already have the features and habitat characteristics that are necessary to sustain the species. We will not speculate about what areas might be found to be essential if better information were available, or what areas may become essential over time. If information available at the time of designation does not show that an area provides essential support for a species at any phase of its life cycle, then the area should not be included in the critical habitat designation. Within the geographic area occupied by the species, we will not designate areas that do not now have the primary constituent elements, as defined at 50 CFR 424.12(b), that provide essential life cycle needs for the species.

Habitat is often dynamic, and species may move from one area to another over time. Furthermore, we recognize designation of critical habitat may not include all habitat eventually determined as necessary to recover the species. For these reasons, areas outside the critical habitat designation will continue to be subject to conservation actions that may be implemented under section 7(a)(1) and the regulatory protections afforded by section 7(a)(2) jeopardy standard and the section 9 take prohibition, as determined on the basis of the best available information at the time of the action. We specifically anticipate that federally-funded or assisted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans, or other species conservation planning efforts if new information available to planning efforts calls for a different outcome.

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12 in determining which areas to propose as critical habitat, we are required to base critical habitat determinations on the best scientific and commercial data available and to consider physical and biological features (primary constituent elements) that are essential to the conservation of the species, and that may require special management considerations or protection. These include, but are not limited to--(1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing (or development) of offspring; and (5) habitats protected from disturbance or that are representative of the historic geographical and ecological distributions of a species.

### **2.2.2 Section 7 Consultation**

Section 7(a)(2) of the Act requires every Federal agency, in consultation with and with the assistance of the Secretary, to insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. In fulfilling these requirements, each agency is to use the best scientific and commercial data available. This section of the Act sets out the consultation process, which is further implemented by regulation (50 CFR 402).

Each Federal agency is to review its actions at the earliest possible time to determine whether any action may affect listed species or critical habitat. If the action may affect a listed species or critical habitat, consultation with the Service is needed.

Informal consultation is an optional process that includes all discussions and correspondence between the Service and a Federal agency or designated non-Federal representative, designed to assist the Federal agency in determining whether formal consultation or a conference is required. If during consultation it is determined by the Federal agency, with the written concurrence of the Service, that the action is not likely to adversely affect listed species or critical habitat, the consultation process is terminated, and no further action is necessary. During informal consultation, the Service may suggest modifications to the action that the Federal agency and any applicant could implement to avoid the likelihood of adverse effects to listed species or critical habitat.

If the proposed action is likely to adversely affect a listed species or designated critical habitat, formal consultation with the Service is required. Formal consultation is a process between the Service and a Federal agency or applicant that--(1) determines whether a proposed Federal action is likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat; (2) begins with a Federal agency's request and submittal of a complete initiation package; and (3) concludes with the issuance of a biological opinion and incidental take statement by the Service.

With the request to initiate formal consultation, the Federal agency is to include--(1) a description of the proposed action; (2) a description of the area that may be affected; (3) a description of any listed species or critical habitat that may be affected; (4) a description of the manner in which the listed species or critical habitat may be affected and an analysis of cumulative effects; (5) relevant reports including any environmental impact statement, environmental assessment, or biological assessment; and (6) any other relevant and available information.

Formal consultation concludes 90 days after its initiation. Within 45 days after concluding formal consultation, the Service is to deliver a biological opinion to the Federal agency and any applicant. The biological opinion will include the Service's opinion on whether the action is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat. If the action is likely to jeopardize the continued existence of a listed species or result in the

destruction or adverse modification of critical habitat, the biological opinion will include a reasonable and prudent alternative, if any exist. A reasonable and prudent alternative is a recommended alternative action that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that is economically and technologically feasible, and that would avoid the likelihood of jeopardizing the continued existence of the listed species or the destruction or adverse modification of designated critical habitat.

Additionally, in those cases where the Service concludes that an action (or the implementation of any reasonable and prudent alternatives) and the resultant incidental take of listed species will not violate section 7(a)(2), the Service will provide with the biological opinion a statement concerning incidental take that--(1) specifies the impact of the take on the species; (2) specifies the reasonable and prudent measures to minimize the impact; (3) sets forth terms and conditions that must be complied with by the Federal agency or any applicant to implement the reasonable and prudent measures; and (4) specifies procedures to handle any individuals actually taken. Reasonable and prudent measures, along with the terms and conditions that implement them, cannot alter the basic design, location, scope, duration, or timing of the actions and may involve only minor changes. Any "taking" covered in the incidental take statement and in compliance with the terms and conditions of the statement is not prohibited taking under the Act and no other authorization or permit under the Act is required.

### **2.2.3 Technical Assistance**

Although it is not defined in the regulations, technical assistance includes those parts of the informal consultation that provide information to agencies, applicants, and/or consultants, but specifically stops short of concurrence on "may effect" determinations. The term is used to differentiate "informal" consultation (where a concurrence with an agency, applicant, or consultant on "may effect" is provided) and the provision of information. This differentiation is primarily made for record-keeping purposes.

A telephoned or written inquiry about the presence or absence of listed and/or proposed species in a project area usually initiates informal consultation and frequently generates technical assistance. Service biologists may respond in different ways:

- a) If species are not likely to be present, the consultation requirement is met and the Service may advise the agency, applicant or consultant.
- b) If historical records or habitat similarities suggest the species may be in the area, then some survey work may be recommended to make a more precise determination.
- c) If the species is definitely in the project area, but the Service determines it will not be adversely affected, the Service may notify the agency of that finding.

Technical assistance from the Service may take a variety of forms. It can include information on candidate species as well as names of contacts having information on

State listed species. The Service may provide correspondence to State agencies or other Service offices to alert them to a project.

As a part of technical assistance, the Service may recommend:

- a) That the action agency conduct additional studies on the species' distribution in the area affected by the action, or
- b) That the action agency monitor impacts of the action on aspects of the species' life cycle. Monitoring may be recommended when incidental take is not anticipated, but might possibly occur, thus triggering the need for project changes or formal consultation.

#### **2.2.4 Section 9 Prohibitions**

Section 9 of the Act prohibits “take” of endangered species of fish and wildlife. The Service has issued regulations (50 CFR 17.31) that generally apply to threatened wildlife, the take prohibitions that section 9 of the Act establishes with respect to endangered wildlife. Take is defined in section 3 of the Act as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by the Service as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering (50 CFR 17.3). Incidental take is the take of listed fish and wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or applicant (50 CFR 402.02).

#### **2.2.5 Section 10 Permits/Habitat Conservation Plans**

Under section 10(a)(1)(B) of the Act, permits can be issued for any taking otherwise prohibited under section 9 if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. The applicant for the permit must submit a “habitat conservation plan” that specifies, among other things, the impacts that are likely to result from the taking and the measures the permit applicant will undertake to minimize and mitigate such impacts. When processing a section 10(a)(1)(B) permit application, the Service must complete an intra-Service consultation under section 7 of the Act to ensure the issuance of the permit is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat.

### **3.0 DESCRIPTION OF ALTERNATIVES**

The Service considered three alternatives, including the No Action Alternative. The Action Alternatives are all based on some measure of critical habitat designation. The

Action Alternatives vary by the extent of geographic range presently occupied, and the area proposed for critical habitat designation.

### **3.1 Alternatives Considered**

Each Action Alternative includes designation of critical habitat in areas believed to contain the physical and biological features upon which the Salt Creek tiger beetle depends. The Act refers to these essential habitat features as “primary constituent elements.” Primary constituent elements, habitat features that provide for the physiological, behavioral, and ecological requirements essential for the conservation of the species, are described at 50 CFR 424.12, and include, but are not limited to, the following: space for individual and population growth and for normal behavior; food, water, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing of offspring; and habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of the species.

We determined the primary constituent elements for the Salt Creek tiger beetle from research and survey observations published in peer reviewed articles and unpublished reports across the range of the tiger beetle. We also solicited information from knowledgeable biologists and reviewed the available information pertaining to habitat requirements of the Salt Creek tiger beetle.

The primary constituent elements for the Salt Creek tiger beetle include:

- a) Moist, barren salt flats with Salmo and Saltillo soils or Lamo, Gibbon-Saltine, Obert, and Zoe soils with Salmo and Saltillo inclusions; soil electroconductivity of 2,016.0 mS/m and 2,992.2 mS/m; and soil moisture of 43.5 percent and 51.7 percent;
- b) Evaporation resulting in exposed salt on soil surfaces;
- c) A natural hydrologic regime resulting in annual high flows in saline streams in the early spring and summer, and natural elevation changes in groundwater levels;
- d) Non-vegetated streambanks and mid-channel areas, located adjacent to and between contiguous saline stream edges and barren salt flats in saline and freshwater wetlands, that are not more than 4 mi (6 km) apart;
- e) Presence of abundant and diverse flying and non-flying invertebrate prey species belonging to the orders Coleoptera, Orthoptera, Hemiptera, Hymenoptera, Odonata, Diptera, or Lepidoptera;

This proposed designation is designed for the conservation of areas containing primary constituent elements necessary to support the life history functions that are the basis for the critical habitat proposal. Because not all life history functions require all the primary

constituent elements, not all proposed critical habitat will contain all of the primary constituent elements.

### **3.2 Alternative A - No Action**

Pursuant to NEPA and its implementing regulations (40 CFR 1502.14), we are required to consider the No Action Alternative. The No Action Alternative would basically maintain the status quo and there would be no designation of critical habitat for the Salt Creek tiger beetle. This alternative serves to delineate the existing environment and conditions that result from the listing of the species, without designation of critical habitat. Since the listing of the species as endangered, the Salt Creek tiger beetle has been protected under section 7 of the Act by prohibiting Federal agencies from implementing actions that would jeopardize the continued existence of the species. This protection under the Act is considered the baseline against which we evaluate the action alternatives described below. In addition, the No Action Alternative would ignore the legal requirement to designate critical habitat, where it is prudent and determinable.

### **3.3 Action Alternatives**

#### **3.3.1 Alternative B**

This alternative action would designate critical habitat as described in the proposed rule in the Federal Register on **Month, Day, 2007 (## FR #####)**. This alternative proposes the designation of four units as critical habitat for the Salt Creek tiger beetle. The critical habitat areas described below constitute our best assessment of areas determined to be occupied at the time of listing and that contain the primary constituent elements and may require special management. One additional area that was not occupied at the time of listing, but found to be essential to the conservation of the Salt Creek tiger beetle, is also included in this proposed alternative. The four areas proposed to be designated as critical habitat are: (1) Upper Little Salt Creek North; (2) Little Salt Creek-Arbor Lake; (3) Little Salt Creek-Roper; and (4) Jack Sinn-Rock Creek. Table 1 provides approximate areas (acre (ac)/hectare (ha)) of these units determined to meet the definition of critical habitat for the Salt Creek tiger beetle, and information about unit occupancy.

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for the Salt Creek tiger beetle, below.

Unit 1: Upper Little Salt Creek-North, Lancaster County, Nebraska.

Unit 1 consists of 295 ac (119.4 ha) of occupied Salt Creek tiger beetle habitat located approximately 5.5 mi (8.8 km) north of the Interstate 80 and North 27th Street interchange in Lincoln, Nebraska, and 4.5 mi (7.2 km) upstream from Unit 2 (Little Salt Creek-Arbor Lake). Unit 1 provides habitat for the third largest extant (i.e., existing) population of Salt Creek tiger beetles and consists of a saline stream and wetland complex extending along the floodplain of Little Salt Creek. The unit has all of the primary constituent elements required by the Salt Creek tiger beetle. The area is located

away from commercial and residential developments associated with the City of Lincoln, Nebraska. Recently, a large tract of land was acquired in this area by the NGPC. Other large tracts of land within this unit consist of saline wetland and stream complex habitats, located along Little Salt Creek, and owned by The Nature Conservancy. Special management is required to minimize and avoid impacts from livestock overgrazing, stream entrenchment resulting from the downstream channelization of Little Salt Creek, and ditching used to drain adjacent saline wetlands. Bank sloughing in response to stream entrenchment has likely covered over saline habitats located along the banks of Little Salt Creek.

Unit 2: Little Salt Creek-Arbor Lake, Lancaster County, Nebraska.

Unit 2 consists of 167 ac (67.6 ha) of occupied Salt Creek tiger beetle habitat located approximately 1 mi (1.6 km) north of the Interstate 80 and North 27th Street interchange on the northern city limits of Lincoln, Nebraska. This unit provides habitat for the largest population of Salt Creek tiger beetles and contains all of the requisite primary constituent elements. The abundance of Salt Creek tiger beetles in this unit is supported by a large, relatively intact saline wetland and stream complex located within the Little Salt Creek floodplain. Special management is required to reduce surface runoff and sedimentation from adjacent development activities, to reduce bank sloughing, and to address severe channel entrenchment of Little Salt Creek resulting in drainage of adjacent saline wetlands.

Unit 3: Little Salt Creek-Roper, Lancaster County, Nebraska.

Unit 3 consists of 284 ac (114.9 ha) of occupied Salt Creek tiger beetle habitat located immediately south of the Interstate 80 and North 27th Street Interchange, approximately 1 mi (1.6 km) downstream of Unit 2 (Little Salt Creek-Arbor Lake). Unit 3 consists of a saline stream and wetland complex along the floodplain of Little Salt Creek, contains all of the requisite primary constituent elements, and supports the second largest population of Salt Creek tiger beetles. Special management is required to reduce surface water runoff and sediment transport from adjacent development activities, and to reduce channelization, stream entrenchment, and bank sloughing.

Unit 4: Jack Sinn-Rock Creek, Lancaster and Saunders Counties, Nebraska.

Unit 4 consists of 896 ac (362.7 ha) of unoccupied Salt Creek tiger beetle habitat located approximately 3 mi (4.8 km) southeast of the City of Ceresco, Nebraska, and east of Highway 77. The Jack Sinn-Rock Creek Unit was occupied by the Salt Creek tiger beetle as recently as 1998. This area consists of a saline stream and wetland complex along the floodplain of Rock Creek and contains all of the requisite primary constituent elements. The Jack Sinn-Rock Creek Unit provides suitable habitat for the Salt Creek tiger beetle that could be enhanced through special management actions designed to address hydrology and sediment problems. Specifically, special management would reduce

surface water runoff and sediment transport from adjacent agricultural land, and reduce channelization, stream entrenchment, and bank sloughing.

We have concluded that designation of the currently-unoccupied Jack Sinn-Rock Creek Unit is essential for the conservation of the Salt Creek tiger beetle. It is uncertain what event caused the disappearance of the Salt Creek tiger beetle in the Jack Sinn-Rock Creek Unit as recently as 1998. However, local extirpations caused by habitat deterioration and stochastic weather events are frequent for insects (such as the Salt Creek tiger beetle) whose life histories are characterized by short generation time, small body size, high rates of population increase, and high habitat specificity (Murphy et al. 1990; Ruggerio et al. 1994). Only recently unoccupied by the Salt Creek tiger beetle, the Jack Sinn-Rock Creek Unit provides suitable habitat that could be restored relatively easily through hydrologic and sediment manipulation.

When developing conservation strategies for such species, the scientific community has stressed that greater emphasis should be placed on the maintenance of multiple metapopulations as opposed to just protecting single reservoir metapopulations (Murphy et al. 1990). Thus, we conclude that establishment of multiple populations on individual stream systems would spread risk and enable repopulation following localized extinctions. Our conclusion supporting the need for multiple populations is comparable to conservation strategies utilized for other listed invertebrate species (Murphy et al. 1990). Our conclusion that populations should be distributed among separate stream systems addresses risks of adverse habitat impacts and weather events on a few populations located in close proximity to each other. The recovery plan for the Puritan tiger beetle (*C. puritana*) states that multiple metapopulations (consisting of several subpopulations) need to be protected to sustain the species (USFWS 1993).

### **3.3.2 Alternative C**

This alternative action proposes the designation of three units as critical habitat for the Salt Creek tiger beetle. The critical habitat units would be identical as that described in Alternative B, but with the exception that the Jack Sinn-Rock Creek Unit no longer would be proposed as critical habitat. The three areas that would be proposed as critical habitat would be: (1) Upper Little Salt Creek North, (2) Little Salt Creek-Arbor Lake, and (3) Little Salt Creek-Roper. Table 1 provides approximate areas (ac/ha) of these units determined to meet the definition of critical habitat for the Salt Creek tiger beetle.

### **3.3.3 TABLE 1. Critical Habitat Units**

Critical Habitat Units Proposed for the Salt Creek tiger beetle (area estimates reflect all land within critical habitat unit boundaries). Upper Little Salt Creek-North, Little Salt Creek-Arbor Lake, and Little Salt Creek-Roper are occupied by the Salt Creek tiger beetle. Jack Sinn-Rock Creek was previously occupied by the Salt Creek tiger beetle as recently as 1998. TABLE 1 does not include the No Action Alternative, since no areas would be designated as critical habitat.

Critical Habitat Unit	State Ownership Acres (Ha)	Private Ownership Acres (Ha)	Total Acres (Ha)
1. Upper Little Salt Creek North	29 (11.7)	266 (107.7)	295 (119.4)
2. Little Salt Creek-Arbor Lake	0 (0)	167 (67.6)	167 (67.6)
3. Little Salt Creek-Roper	8 (3.2)	276 (111.7)	284 (114.9)
4. Jack Sinn-Rock Creek	396 (160.3)	500 (202.4)	896 (362.7)
Total	433 (175.2)	1,209 (489.4)	1,642 (664.6)

EXCLUSIONS FROM DESIGNATION OF CRITICAL HABITAT

The fiscal year 2004 Defense authorization bill amended section 4(a)(3) of the Act to allow the Secretary of the Department of the Interior to exempt defense sites from critical habitat designations if an adequate natural resources plan is in place. The law says the Interior Secretary “shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense . . . that are subject to an integrated natural resources management plan . . . if the Secretary determines in writing that such a plan provides a benefit to the species for which critical habitat is proposed for designation.”

The Sikes Act Improvement Act of 1997 requires each military installation that includes land and water suitable for the conservation and management of natural resources to complete, an Integrated Natural Resource Management Plan (INRMP). An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found there. Each INRMP includes an assessment of the ecological needs on the installation, including needs to provide for the conservation of listed species; a statement of goals and priorities; a detailed description of management actions to be implemented to provide for these ecological needs; and a monitoring and adaptive management plan. The Service consults with the military on the development and implementation of INRMPs for installations with listed species. There are no proposed critical habitat units for the Salt Creek tiger beetle located on military installations.

EXCLUSIONS UNDER SECTION 4(B)(2) OF THE ACT

The economic analysis, along with the analysis of other relevant beneficial and detrimental impacts, serves as the basis of our analysis under section 4(b)(2) and our

determination of exclusions from critical habitat. In our evaluation of potential critical habitat sites, we conducted an analysis of the economic impacts and other relevant impacts of designating critical habitat. Economic factors included--(1) costs to us and Federal action agencies from increased workload to conduct consultations under section 7 of the Act and technical assistance associated with critical habitat; (2) costs of modifying projects, activities, or land uses resulting from consultations involving critical habitat; (3) costs of delays from increased consultations involving critical habitat; (4) costs of reduced property values or income resulting from increased regulation of critical habitat designation; and (5) potential offsetting economic benefits associated with critical habitat, including educational benefits.

Other relevant impacts included--(1) the willingness of landowners and land managers to work with natural resource agencies and participate in voluntary conservation activities that directly benefit the Salt Creek tiger beetle and other threatened or endangered species, including such cooperative partnerships as Safe Harbor Agreements; (2) the implementation of various cooperative conservation measures agreed to through various State and local partnerships; (3) management or regulatory flexibility, such as the establishment of nonessential experimental populations under section 10(j) of the Act, to recover the Salt Creek tiger beetle through reintroductions; and (4) opportunities and interest of landowners to participate in various incentive and assistance programs offered by the Service and other Federal, State, and local agencies that restore habitat containing the Salt Creek tiger beetle.

### **ENTRIX Economic Analysis**

The draft economic analysis addressed 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 the energy industry. 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. Finally, the draft economic analysis 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 (2007-2026) costs are estimated to range between \$21.6 and \$25.7 million in undiscounted 2007 dollars. In discounted terms, potential post-designation economic costs are estimated to be \$20.0 to \$23.1 million (using a 3 percent discount rate) and \$18.6 to \$20.8 million (using a 7 percent discount rate). In annualized terms, potential post-designation costs are expected to range from \$1.3 to \$1.6 million (annualized at 3 percent) and \$1.8 to \$2.0 million (annualized at 7 percent).

## **4.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT**

The geographic area for Alternative B includes 1,642 acres (664.6 ha) of proposed critical habitat for the Salt Creek tiger beetle. The proposed critical habitat is located in and along Little Salt and Rock creeks in Lancaster and Saunders Counties in Nebraska. The geographic area for Alternative C includes 746 acres (301.9 ha) of proposed critical habitat. This proposed critical habitat under Alternative C is located in Lancaster County in Nebraska in and along Little Salt Creek only.

### **4.1 Physical Environment**

Areas proposed as critical habitat in Alternative B and C occurs within the eastern Nebraska saline wetlands complex (LaGrange 1997). Areas proposed for designation include saline wetlands that occur in swales and depressions and portions of Little Salt and Rock creeks. Saline wetlands receive their salinity from groundwater inflow that passes through an underground rock formation containing salts deposited by an ancient sea that once covered Nebraska (LaGrange 1997).

The landscapes within the eastern Nebraska saline wetland complex are predominantly a mosaic of cropland and pasture. Little row crop agriculture has occurred in the floodplain areas located along Little Salt and Rock creeks given that high salinity of the soils inhibits row crop agriculture. Urban development has occurred in some areas located on the lower reaches of Little Salt Creek, near the City of Lincoln, Nebraska.

### **4.2 Fish and Wildlife**

The federally endangered least tern (*Sterna antillarum*) and threatened piping plover (*Charadrius melodus*) could occasionally use saline wetland habitat within the overall range of the Proposed Action. Additionally, the Saltwort (*Salicornia rubra*), a State-listed (as threatened) plant species is found within portions of the Proposed Action area.

In addition, many species of birds, waterfowl, fishes, mammals, amphibians, reptiles and insects also use habitat within the Proposed Action area.

### **4.3 Human Environment**

A variety of human activities and land uses occur throughout or adjacent to the areas proposed for designation as critical habitat in Lancaster and Saunders Counties. Uses and activities include farming, including row crop agriculture and livestock grazing; urban development (especially in the lower reaches of Little Salt Creek); transportation infrastructure, including road and bridge construction and maintenance; utility infrastructure; dam construction and rehabilitation; streambank stabilization and channelization; and a variety of conservation and recreational activities. Private and State lands are included in the proposed action area.

The designation of critical habitat directly affects only Federal Agencies. The Act requires Federal Agencies to ensure that actions they fund, authorize, or carry out do not destroy or adversely modify critical habitat to the extent that the action appreciably diminishes the value of the critical habitat for the survival and recovery of the species. Individuals, organizations, States, local and Tribal governments, and other non-Federal entities are only affected by the designation of critical habitat if their actions occur on Federal lands, require a Federal permit, license, or other authorization, or involve Federal funding (for example, Department of the Army (DA) permits under section 404 of the Clean Water Act from the U.S. Army Corps of Engineers (Corps), funding of activities by the Natural Resource Conservation Service (NRCS), funding of transportation infrastructure by the Federal Highway Administration (FHWA)), and funding of activities by the USFWS.

#### **4.4 Tribal Lands**

We have identified no tribal lands that will be designated as proposed critical habitat. Additionally, there are no tribal lands located adjacent to the area proposed for critical habitat designation.

### **5.0 ENVIRONMENTAL CONSEQUENCES**

This section reviews the expected environmental consequences of designating critical habitat for the Salt Creek tiger beetle under each of the Action Alternatives and the environmental consequences of the No Action Alternative. The impacts of critical habitat designation involve evaluating the “without critical habitat” baseline versus the “with critical habitat” scenario. Impacts of a designation equal the difference, or the increment, between the two scenarios. Measured differences between the baseline and the scenario in which critical habitat is designated may include, but are not limited to, changes in land use, environmental quality, property values, or time and effort expended on consultations and other activities by Federal landowners, Federal action agencies, and in some instances, State and local governments and private third parties. These incremental changes may be either positive or negative.

In accordance with section 7(a)(2) of the Act, Federal agencies are required to review actions they authorize, fund, or carry out to determine the effects of proposed actions on federally listed species. If the Federal agency determines that its action may adversely affect a listed species, it must enter into formal consultation with the Service. This consultation results in a biological opinion issued by the Service as to whether the proposed action is likely to jeopardize the continued existence of the species, which is prohibited under the Act.

A similar process would be required if critical habitat is designated. While reviewing their actions to determine the effect on the listed species, Federal agencies also would review their action for the effects on critical habitat and would enter into section 7 consultations with us on actions they determine may affect critical habitat. If the proposed action was determined to be likely to adversely affect the species or the critical

habitat, the consultation would result in a biological opinion as to whether the proposed action is likely to destroy or adversely modify designated critical habitat, which also is prohibited under the Act.

Activities that would destroy or adversely modify critical habitat are defined as those actions that “appreciably diminish the value of critical habitat for both the survival and recovery” of the species (50 CFR 401.02). Activities that would jeopardize the continued existence of a species are defined as those actions that “reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery” of the listed species (50 CFR 402.02). Given the similarity of these definitions, activities that would likely destroy or adversely modify critical habitat would almost always result in jeopardy to the species.

Federal agencies have been required to ensure that their actions do not jeopardize the continued existence of the Salt Creek tiger beetle since its listing in 2005. In Fiscal Years 2005 through 2007, we conducted five informal section 7 consultations with other Federal agencies to ensure that their actions were not likely to jeopardize the continued existence of the Salt Creek tiger beetle. The prohibition against adverse modification of critical habitat is not expected to impose any additional restrictions to those that currently exist in areas with the Salt Creek tiger beetle, or in areas where it recently existed (Jack Sinn-Rock Creek). However, we do realize that some Federal agencies have not fully recognized their responsibilities under the Act and may not have been initiating section 7 consultation and may now recognize their need to do so.

It is difficult to differentiate between consultations that result from the listing of the Salt Creek beetle (i.e., jeopardy to the species) and consultations that result from the presence of critical habitat (i.e., destruction or adverse modification of critical habitat). The Economic Analysis (ENTRIX 2007) quantifies the potential impacts associated with all future section 7 consultations in or near proposed critical habitats. As a result, the analysis results in an over-estimation of the impacts of the proposed critical habitat, in that it likely overstates the impacts of regulatory activity attributable to critical habitat designation. The following discussion will disclose the potential impacts associated with all future section 7 consultations in or near critical habitat, and also will describe how much of this cost is attributable to critical habitat designation.

Individuals, organizations, States, local and Tribal governments, and other non-Federal entities are only affected by the designation of critical habitat if their actions occur on Federal lands, require a Federal permit, license, or other authorization, or involve Federal funding (e.g., DA permits from the Corps, funding of activities by the NRCS, funding of transportation infrastructure by the FHWA).

Potential environmental consequences that may result from implementation of the No Action and Action Alternatives are discussed below. All impacts are expected to be indirect, as critical habitat designation does not in itself directly result in any alteration of the environment.

As required by NEPA, this document is in part intended to disclose the programmatic goals and objectives of the Act. The goals and objectives of the Act are to conserve threatened and endangered species and the ecosystems upon which they depend, and to carry out applicable treaties and conventions.

## **5.1 Physical Environment**

None of the alternatives will impact the physical environment.

## **5.2 Fish, Wildlife, and Plants**

### **5.2.1 Salt Creek Tiger Beetle**

The No Action Alternative would have no impacts on the Salt Creek tiger beetle because the protections resulting from its listing in 2005 and the associated requirements of section 7 of the Act are already in place and protections associated with a critical habitat designation would be duplicative.

All Action Alternatives would have similar effects on the Salt Creek tiger beetle, in that there may be minimal additional impacts beyond those already considered in section 7 consultation since the 2005 listing. Although surveys document the disappearance of the Salt Creek tiger beetle at the Jack Sinn-Rock Creek Units since 1998, section 7 consultations continue in this area with Federal agencies, most notably the NRCS. Benefits to the Salt Creek tiger beetle that may accrue from designation of critical habitat, under any of the Action Alternatives, would be the requirement under section 7 of the Act that Federal agencies review their actions to assess their effects on critical habitat. Designation of critical habitat also may provide some benefits by alerting Federal agencies to situations when section 7 consultation is required. Another potential benefit is that critical habitat may help to focus Federal, State, and private conservation and management efforts by identifying the areas of most importance to a species. Critical habitat also allows for long-term project planning, in relation to species conservation.

Designating critical habitat does not, in itself, lead to the recovery of a listed species. The designation does not establish a reserve, create a management plan, establish numerical population goals, prescribe specific management practices (inside or outside of critical habitat), or directly affect areas not designated as critical habitat. Specific management recommendations for areas designated as critical habitat are most appropriately addressed in recovery and management plans, and through section 7 consultation and section 10 permits.

### **5.2.2 Other Fish, Wildlife, and Plant Species**

The No Action Alternative would have no significant impacts on fish, wildlife, or plants beyond those protections already in place as a result of listing of the Salt Creek tiger beetle in 2005 and associated requirements of section 7 of the Act.

All Action Alternatives would have similar effects on fish, wildlife, and plants, in that there may be minimal additional impacts beyond those already considered in section 7 consultation since the 2005 listing. However, these additional impacts would be most widespread under Alternative B, as it would designate the most critical habitat over the widest area. The objective of designating critical habitat is to protect features essential to the conservation of the species for which the habitat is designated.

Fish, wildlife, and plants may indirectly benefit as a result of ecosystem protections provided through conservation of the Salt Creek tiger beetle and the associated requirements of section 7(a)(2) of the Act. As a result of critical habitat designation, Federal agencies may be able to prioritize landowner incentive programs such as the Wildlife Habitat Incentives Program or Environmental Quality Incentives Program enrollment, riparian easements, and private landowner agreements that benefit the Salt Creek tiger beetle, as well as other fish, wildlife, and plant species. Critical habitat designation also may assist State and Federal agencies in prioritizing their conservation and land-managing programs.

### **5.3 Human Environment**

As discussed above, individuals, organizations, States, local governments, and other non-Federal entities are only affected by the designation of critical habitat if their actions occur on Federal lands, require a Federal permit, license, or authorization, or involve Federal funding. Since 2005, Federal agencies have been required to consider the effects of their actions on the Salt Creek tiger beetle and consult with the Service as appropriate. While a similar process is required for critical habitat, analysis of effects to critical habitat is not expected to cause large increases in the number or complexity of consultations. Additionally, we realize that some Federal agencies have not fully recognized their responsibilities under the Act and may not have been initiating section 7 consultation. Those agencies may now recognize their need to do so, resulting in a small increase in consultations.

We recognize a perception may exist within some segments of the public that any of the action alternatives designating critical habitat will severely limit property rights; critical habitat designation has no effect on private actions on private land that do not involve Federal approval or action. We recognize that there are private actions on private lands that involve Federal actions; however, there should already be section 7 consultations taking place in these situations.

Differentiating between consultations that result from listing of the Salt Creek tiger beetle and consultations that result from the presence of critical habitat is difficult. Therefore, the following discussion will disclose the potential impacts associated with all future section 7 consultations in or near critical habitat units, as provided in the Economic Analysis and will describe how much of this cost is likely attributable to a critical habitat designation (ENTRIX 2007). Unless otherwise cited, the following information is taken from the Economic Analysis of Critical Habitat Designation for the Salt Creek tiger

beetle (Economic Analysis) (ENTRIX 2007). The section 7 costs related below also include associated technical assistance costs.

#### **5.4 Farming and Ranching**

The No Action Alternative would have no impacts on agricultural activities, including farming and grazing, beyond those already resulting from the 2005 listing of the Salt Creek tiger beetle and the associated requirements of section 7 of the Act.

For Alternatives B and C, agricultural activities will be affected by critical habitat only minimally, because they typically do not involve a Federal nexus, as most are not authorized, permitted, or funded by a Federal agency. However, there are some Federal agricultural programs that may create a Federal nexus with agricultural activity in critical habitat areas. These programs include--(1) agricultural operation improvements funded through programs of the Farm Service Agency (FSA) and the NRCS, and (2) conservation activities, such as riparian improvement projects, funded by FSA and/or NRCS through programs such as the Environmental Quality Incentives Program (EQIP) and the Wetland Reserve Program. Impacts to agricultural activities result from administrative costs associated with the consultation process, costs of project delays, and costs of project modifications to protect habitat. However, there is a great deal of uncertainty regarding the nature and cost of project modifications that may be requested by the Service in consultations on federally-funded operational improvement and conservation activities. For Alternatives B and C, the maximum total section 7 consultation costs associated with agricultural activities affecting proposed critical habitat for the Salt Creek tiger beetle are estimated at \$96,000-\$280,000 over the next 20 years. These costs would be borne by the Service, Federal action agencies, and private landowners.

As discussed previously, only a small portion of the total future section 7 consultation cost results from designation of critical habitat. This is particularly true of agricultural activities, since these types of activities do not typically result in “adverse modification” of critical habitat. Adverse modification is defined as “a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species.” Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical.

#### **5.5 Transportation and Utilities**

The No Action Alternative would have no impacts on transportation, including road and bridge construction and maintenance, and utilities beyond those already resulting from the 2005 listing of the Salt Creek tiger beetle and the associated requirements of section 7 of the Act.

For all action alternatives, there is the potential for a significant number of road and bridge construction and maintenance activities within critical habitat over the next 10

years. The projects may include construction and maintenance of Federal, State, county, township, and private roads and bridges. The typical Federal connections for these activities are either funding from the FHWA or a DA permit under the Corps for projects involving placement of fill material into a water of the United States.

Impacts to road and bridge construction and maintenance activities result from administrative costs associated with the consultation process, costs of project delays, and costs of project modifications to protect habitat.

Only a small portion of the future total section 7 consultation cost results from designation of critical habitat. This is especially true of road and bridge construction and maintenance activities, since these types of activities are typically of limited scope and duration. Road and bridge construction can be designed to minimize habitat disturbance, maintain habitat connectivity, and provide for free movement through the area. Maintenance activities alone are likely to have only minimal impacts to habitat.

It may be perceived that designation of critical habitat, as prescribed in the Action Alternatives, limit timeframes and thus, increase the number of construction and maintenance delays for on-the-ground construction and maintenance activities for roads and bridges. This is an inaccurate perception, because prescribed timeframes are the purview of already existing section 7 requirements.

For all action alternatives, utility projects anticipated for proposed critical habitat include sewer pipelines, water transmission mains, petroleum and natural gas pipelines, fiber optic cable installation, and other services related to development. Impacts to utility projects result from administrative costs associated with the consultation process, costs of project delays, and costs of project modifications to protect habitat.

Utility projects are typically of limited scope and associated disturbance is of a temporary nature. These projects can be designed to minimize habitat disturbance and, with appropriate habitat reclamation after project completion, the projects will maintain habitat connectivity and provide free movement through the area. Maintenance activities are likely to have only minimal impacts to habitat. Therefore, only a very small portion of the future total section 7 consultation costs result from a critical habitat designation.

For Alternative B and C, maximum total section 7 consultation costs associated with road and bridge construction and maintenance, and utility, activities affecting proposed critical habitat for the Salt Creek tiger beetle are estimated at \$850,000-\$922,000 over the next 20 years. These costs would be borne by the Service, Federal action agencies, and private landowners.

## **5.6 Bank Stabilization and Channelization**

The No Action Alternative would have no impacts on bank stabilization beyond those already resulting from the 2005 listing of the Salt Creek tiger beetle and the associated requirements of section 7 of the Act.

For all action alternatives, bank stabilization projects anticipated for proposed critical habitat may include projects implemented to stabilize streambanks, alignment and channelization for flood management and agricultural land protection. Impacts to bank stabilization projects result from administrative costs associated with the consultation process, costs of project delays, and costs of project modifications to protect habitat.

Only a small portion of the future total section 7 consultation cost associated with bank stabilization projects results from designation of critical habitat. Bank stabilization projects are typically designed in a manner that minimizes habitat disturbance, maintains habitat connectivity, and provides for free movement through the area.

### **5.7 Recreation and Conservation**

The No Action Alternative would have no impacts on recreation and conservation actions beyond those already resulting from the 2005 listing of the Salt Creek tiger beetle and the associated requirements of section 7 of the Act.

For all action alternatives, recreation and conservation projects anticipated for proposed critical habitat may include recreation management on Federal lands and conservation projects funded through the Service and other Federal agencies, including the development of conservation and species management plans.

Impacts to recreation and conservation projects result from administrative costs associated with the consultation process.

### **5.8 Dam Construction and Rehabilitation**

The No Action Alternative would have no impacts on dam construction and rehabilitation beyond those already resulting from the 2005 listing of the Salt Creek tiger beetle and the associated requirements of section 7 of the Act.

For all action alternatives, dam construction and rehabilitation projects anticipated for proposed critical habitat may include projects implemented to prevent or reduce flooding for community and agricultural land protection.

Impacts to these projects result from administrative costs associated with the consultation process, costs of project delays, and costs of project modifications to protect habitat.

## **5.9 Water Quality Activities**

The No Action Alternative would have no impacts on water quality activities beyond those already resulting from the 2005 listing of the Salt Creek tiger beetle and the associated requirements of section 7 of the Act.

For all action alternatives, water quality activities anticipated for proposed critical habitat may include section 401 water quality certification and National Pollutant Discharge Elimination System permits for municipalities and confined animal feeding operations.

Impacts to these water quality activities result from administrative costs associated with the consultation process, costs of project delays, and costs of project modifications to protect habitat.

## **5.10 Estimated Costs for Conservation**

For Alternative B and C, maximum total section 7 consultation costs associated with bank stabilization and channelization, water quality, dam construction and rehabilitation, and recreation and conservation activities affecting proposed critical habitat for the Salt Creek tiger beetle are estimated at \$3,804,000-\$6,593,000 over the next 20 years. These costs would be borne by the Service, Federal action agencies, and private landowners.

## **5.11 Archeological and Cultural Resources**

The No Action Alternative would have no impacts on archaeological and cultural areas beyond those already resulting from the 2005 listing of Salt Creek tiger beetle and the associated requirements of section 7 of the Act. All of the action alternatives would have similar effects on archeological and cultural sites, in that there are not likely to be any additional impacts beyond what we have already considered in section 7 consultation since the 2005 listing. While designation of critical habitat is expected to have no direct impacts on these resources, an indirect beneficial effect may be the potential increased protection of these sites and resources within critical habitat if a Federal action is proposed.

## **5.12 Environmental Justice**

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629 (1994), directs Federal Agencies to incorporate environmental justice into their decision making process. Federal Agencies are directed to identify and address as appropriate, any disproportionately high and adverse environmental effects of their programs, policies, and activities on minority or low-income populations. This assessment has not identified any adverse or beneficial effects unique to minority or low-income human populations in the affected areas.

### 5.13 Cumulative Impact

Designation of critical habitat for the Salt Creek tiger beetle will add minimal incremental impacts when added to other past, present, and reasonably foreseeable future actions.

We expect the impacts to be relatively small because in addition to the Salt Creek tiger beetle, several other Federally listed species also may occur in the area. These include the interior least tern, piping plover, and bald eagle. Federal Agencies are required to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of the listed species, or destroy or adversely modify designated critical habitat in accordance with section 7(a)(2) of the Act. Additionally, a State-listed plant, saltwort also occurs in the area proposed for critical habitat designation. The saltwort is protected by the Nebraska Nongame and Endangered Species Conservation Act. State agencies are required to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of State-listed species.

Activities that adversely modify critical habitat are defined as those actions that “appreciably diminish the value of critical habitat for both the survival and recovery” of the species (50 CFR 401.02). Activities that jeopardize a species are defined as those actions that “reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery” of the listed species (50 CFR 402.02). According to these definitions, activities that destroy or adversely modify critical habitat would almost always jeopardize the species. Therefore, designation of critical habitat has rarely resulted in greater protection than that afforded under section 7 by the listing of a species. Section 7 consultations apply only to actions with Federal involvement (i.e., activities authorized, funded, or conducted by Federal agencies), and do not impact activities strictly under State or private authority. In practice, the designation of critical habitat for the Salt Creek tiger beetle will likely provide little additional benefits to the species because there are functioning program activities already alerting Federal agencies and the public of endangered species concerns. However, we recognize that Federal agencies may not carry out their section 7 responsibilities in all cases.

Section 4(B)(2) of the Act requires us to designate critical habitat on the basis of the best scientific and commercial information available and to consider the economic and other relevant impacts of designating a particular area as critical habitat. We may exclude areas from critical habitat upon a determination that the benefits of such exclusions outweigh the benefits of specifying such areas as part of critical habitat. We cannot exclude such areas from critical habitat if such an exclusion would result in the extinction of the species concerned.

**5.14 TABLE 2. Summary of Environmental Consequences by Alternative**

<b>Impacts</b>	<b>Alternative A (No Action)</b>	<b>Alternative B (Selected Alternative)</b>	<b>Alternative C</b>
Salt Creek tiger beetle	No change to existing situation.	May be minimal beneficial impacts beyond those associated with the 2005 listing. For example, designation of critical habitat can help focus conservation activities for listed species.	May be minimal beneficial impacts beyond those associated with the 2005 listing. For example, designation of critical habitat can help focus conservation activities for listed species.
Fish, Wildlife, and Plants	No change to existing situation.	May be minimal beneficial impacts beyond those associated with the 2005 listing. For example, Federal Agencies may be able to prioritize landowner incentive programs such as Conservation Reserve Program enrollment, grassland easements, and private landowner agreements that benefit more species.	May be minimal beneficial impacts beyond those associated with the 2005 listing. For example, Federal Agencies may be able to prioritize landowner incentive programs such as Conservation Reserve Program enrollment, grassland easements, and private landowner agreements that benefit more species.
Agriculture and Ranching	No change to existing situation.	Total section 7 consultation costs -\$???	Total section 7 consultation costs-\$???
Transportation	No change to existing situation.	Total section 7 consultation costs -\$???	Total section 7 consultation costs-\$???
Utilities	No change to existing situation.	Total section 7 consultation costs -\$???	Total section 7 consultation costs-\$???
Streambank Stabilization and Channelization	No change to existing situation.	Total section 7 consultation costs -\$???	Total section 7 consultation costs-\$???
Recreation and Conservation	No change to existing situation.	Total section 7 consultation costs -\$???	Total section 7 consultation costs-\$???
Dam Construction and Rehabilitation	No change to existing situation.	Total section 7 consultation costs -\$???	Total section 7 consultation costs-\$???
Water Quality	No change to existing situation.	Total section 7 consultation costs -\$???	Total section 7 consultation costs-\$???
Archaeological and Cultural	No change to existing situation.	No likely additional impacts beyond those associated with the 2005 listing.	No likely additional impacts beyond those associated with the 2005 listing.
Environmental Justice	No change to existing situation.	No impacts.	No impacts.

## **6.0 COUNCIL ON ENVIRONMENTAL QUALITY ANALYSIS OF SIGNIFICANCE**

Under CEQ 40 CFR Part 1508.27, the determination of “significantly” requires consideration of both context and intensity.

### **6.1 Context**

Long-term impacts of the proposed action will not be national, but regional and mostly local in context; and any impacts that would occur are expected to be small.

### **6.2 Intensity**

Intensity is defined by CEQ as referring to the severity of impact. The following 10 points identified by CEQ were considered in evaluating intensity:

1. We foresee minimal additional negative impacts beyond what we have already considered in section 7 consultation since the 2005 listing. There may be perceived negative impacts, but we are carrying out a public outreach program that should address and minimize most of those misconceptions. There may be some beneficial impacts to the environment.
2. This designation will not have a discernable impact on human safety.
3. Although several areas designated as critical habitat are in proximity to historic and cultural sites, parklands, farmland, wetlands, and ecologically critical areas, minimal adverse impacts will occur to these areas; in fact, the ecologically critical areas are expected to only benefit from some of the perceptions attached to this designation.
4. There is a perception by some segments of the public that critical habitat designation will severely limit property rights; however, critical habitat designation has no effect on private actions on private land that do not involve Federal approval or action. Therefore, we conclude that this misconception will be clarified by the Final Rule and will result in this designation not being highly controversial.
5. The Service has designated critical habitat for other species in the recent past and we are familiar with the associated effects. Therefore, we anticipate minimal effects to the human environment and we are certain this action does not involve any unique or unknown risks.
6. This designation of critical habitat is not expected to set any precedents for future actions with significant effects or represent a decision in principle about a future consideration because critical habitat has been designated before for other species, as required by law.

7. This designation of critical habitat will be additive (cumulative) to critical habitat that has been, and will be, designated for other species. However, it is the Service's conclusion that the beneficial and adverse impacts of any and all critical habitat designations are small and, therefore, insignificant due to the existing impacts, both beneficial and adverse, already resulting from the listing of the species involved.
8. This designation will have minimal adverse effects to National Register of Historic Places or other cultural sites.
9. Most impacts from this designation of critical habitat will be beneficial to endangered and threatened species, particularly the Salt Creek tiger beetle. Designation of critical habitat can help focus conservation activities for listed species by identifying areas essential to conserve for the species. Designation of critical habitat also alerts the public, as well as land-managing agencies, to the importance of these areas. These benefits are minimal, as most occurred at the time of listing.
10. This designation of critical habitat will not violate any Federal, State, or local laws or requirements imposed for the protection of the environment.

## **7.0 CONTACTS AND COORDINATION WITH OTHERS**

This proposed critical habitat designation has and will continue to be coordinated through the State of Nebraska, Federal Agencies, and other Interested Parties through letters, post cards, formal and informal presentations, and telephone calls. The Service's Nebraska Field Office has contacted the Nebraska governor, congressional delegation, fish and wildlife agency, Lancaster and Saunders counties, and various interest groups. Contacts include: NGPC, Lower Platte South Natural Resource District, NRCS, U.S. Geological Survey, Corps, The Nature Conservancy, State Farm Bureau, State Livestock Associations, drainage districts, conservation districts, water development districts, and watershed districts.

### **7.1 Copy Recipients or Contacts**

The following is a list of individuals, organizations, and public agencies contacted concerning development of this Environmental Assessment and the proposed rule to designate critical habitat for the Salt Creek tiger beetle. Each of these entities also will be notified of the publication of the final rule:

#### Federal Agencies

Department of Defense

U.S. Army Corps of Engineers, Omaha District

Department of the Interior

Fish and Wildlife Service

Nebraska Private Lands Coordinator

Nebraska Law Enforcement Division

U.S. Geological Survey  
Nebraska Cooperative Fish and Wildlife Research Unit  
Department of Agriculture  
Natural Resources Conservation Service, Nebraska State Office  
Farm Service Agency  
Animal and Plant Health Inspection Service  
Department of Transportation  
Federal Highway Administration  
Federal Emergency Management Agency  
U.S. Environmental Protection Agency

Federal Congressional Delegation

Nebraska  
Office of Senator Chuck Hagel  
Office of Senator Ben Nelson  
Office of Representative Jeff Fortenbury  
Office of Representative Lee Terry  
Office of Representative Adrian Smith

State Agencies

Nebraska Department of Environmental Quality  
Nebraska Department of Natural Resources  
Nebraska Department of Roads  
Nebraska Game and Parks Commission

Governor

Nebraska – John Heineman

County Commissioners

Lancaster County Commissioners

City of Lincoln

Mayor- Colleen Seng  
City Council  
City of Lincoln and Lancaster County Planning Commission

Private Groups

American Farm Bureau  
Nebraska Farm Bureau  
American Rivers, Nebraska Field Office  
National Audubon Society  
Wachiska Chapter  
The Nature Conservancy  
Nebraska Chapter  
Nebraska Cattlemen Association

Sierra Club  
Nebraska Chapter  
The Wildlife Federation  
Nebraska Chapter  
The Wildlife Society  
Nebraska Chapter  
Saline Wetlands Conservation Partnership

## 8.0 LIST OF CONTRIBUTORS

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Grand Island, Nebraska

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Grand Island, Nebraska

Connie Young-Dubovsky, Fish and Wildlife Biologist  
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Denver, Colorado

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## **10.0 APPENDIX**

### **10.1 Legal Descriptions of Proposed Critical Habitat for the Salt Creek tiger beetle from Alternative B (selected alternative)**

## 10.2 Map of Designated Critical Habitat from Alternative B (Selected Alternative)

