

Rare Species Inventory of Sand Creek Massacre National Historic Site Preliminary Results

Introduction

Sand Creek Massacre National Historic Site (SAND) was authorized in 2000 with a commissioned area of 12,500 acres. The current established boundary of SAND encompasses approximately 2,400 acres. The National Park Service and the SOPN are soliciting proposals to survey the land within the current established boundary for the occurrence of rare species with potential, or that are known, to inhabit SAND. The objectives of the project proposed here is to identify the location, quality, and abundance of several listed and/or endemic species of conservation priority at SAND (Table 1).

Table 1. Priority species for consideration in the Sand Creek Rare Species Inventory.

Species	Common Name
<i>Ambrosia linearis</i>	plains ambrosia
<i>Athene cunicularia</i>	burrowing owl
<i>Buteo regalis</i>	ferruginous hawk
<i>Charadrius montanus</i>	mountain plover
<i>Cynomys ludovicianus</i>	black-tailed prairie dog
<i>Etheostoma cragini</i>	Arkansas darter
<i>Phrynosoma cornutum</i>	Texas horned lizard
<i>Tympanuchus pallidicinctus</i>	lesser prairie chicken
<i>Vulpes velox</i>	swift fox

Results

A total of 29 person days were spent at SAND spread across the months of May, June, and July. Approximately five additional days in late August or early September will be used to survey for the Plains ambrosia (*Ambrosia linearis*) and the Showy prairie gentian (*Eustoma russellianum*).

The threatened, endangered and species of conservation concern recorded from SAND are listed in Table 2. Black-tailed prairie dog colonies occupied 16.6 hectares of the northwest corner of SAND and 75.7 hectares of the site's southeast corner (Figure 1). Densities of those portions of each colony within the boundary of SAND were estimated as 33 prairie dogs/hectare and 49 prairie dogs/hectare, respectively. In addition, burrowing owls (*Athene cunicularia*) were observed on the southern colony and mountain plover (*Charadrius montanus*) were observed just offsite on the north prairie dog colony on private land (Figure 1). Additional species of conservation concern recorded from SAND during the survey included the northern harrier (*Circus cyaneus*) northern leopard frog (*Rana pipiens*), northern shrike (*Lanius ludovicianus*), red-headed woodpecker (*Melanerpes erythrocephalus*), scaled quail (*Callipepla squamata*), Swainson's hawk (*Buteo swainsoni*), and white-faced ibis (*Plegadis chilis*) (Table 2) (Figure 1).

Table 2. Endangered, threatened, and species of conservation concern recorded from SAND.

Species	Common Name	Abundance /Density ¹	Heritage Status	Federal and State Status ²	PIF and SCP Status ³
Endangered, Threatened, and Species of Conservation Concern					
<i>Athene cunicularia</i>	burrowing owl	18	G4S4B	FS, ST	

Species	Common Name	Abundance /Density ¹	Heritage Status	Federal and State Status ²	PIF and SCP Status ³
<i>Charadrius montanus</i>	mountain plover	4	G2S2B	FS, BLM, SC	SCP highly imperiled
<i>Cynomys ludovicianus</i>	black-tailed prairie dog north colony south colony	33/ha 49/ha	G4S3	FS, SC	
Other Species of Conservation Concern					
<i>Buteo swainsoni</i>	Swainson's hawk	8	G5S5B		PIF watch list species
<i>Callipepla squamata</i>	scaled quail	2	G5S4		PIF watch list species
<i>Circus cyaneus</i>	northern harrier	2	G5S3B	FS	
<i>Lanius ludovicianus</i>	northern shrike	data not yet synthesized	G5S5	FS	PIF stewardship species
<i>Melanerpes erythrocephalus</i>	red-headed woodpecker	1	G5S3B		PIF watch list species
<i>Plegadis chilis</i>	white-faced ibis	1	G5S2B	BLM	
<i>Rana pipiens</i>	northern leopard frog	10	G5S3	FS, BLM, SC	

¹ Abundance: total number of animals observed without accounting for double counting; density was calculated only for the black-tailed prairie dogs.

² FS = Forest Service sensitive species, BLM = Bureau of Land Management sensitive species, ST = State of Colorado threatened, SC = State of Colorado special concern.

³ PIF: the Partners in Flight Landbird Conservation Plan lists species of landbirds of continental importance that deserve special attention; watch listed species are most in need of conservation action and stewardship species are birds with restricted distributions that merit special attentions for conservation action within their core ranges.

³ SCP: the Shorebird Conservation Plan lists U. S. and Canadian shorebird populations that most urgently need conservation action; highly imperiled shorebirds are all species listed as threatened or endangered nationally, plus all species with significant population declines and either low populations or some other high risk factor.

In additional numerous other animals were observed and a full account of those species will be made in the 2006 final report.

Species that were not recorded, but which were surveyed for extensively were the Arkansas darter (*Etheostoma cragini*), ferruginous hawk (*Buteo regalis*), lesser prairie chicken (*Tympanuchus pallidicinctus*), swift fox (*Vulpes velox*), and Texas horned lizard (*Phrynosoma cornutum*). Areas that appear suitable for lesser prairie chicken leking sites do exist on SAND (Figure 1). In addition, ferruginous hawk surveys should be conducted during the winter when over-wintering birds focus their foraging activities on prairie dog towns. Surveying during the winter might verify the occurrence of ferruginous hawks at SAND. Also, track plate surveys are recommended for assessing the occurrences of swift fox at SAND, with the placement of one transect each in the north and south prairie dog colonies. It is recommended that track plate surveys be conducted during the summer of 2006.

Figure 1. Distribution of Endangered, Threatened, and Species of Special Concern at SAND

