

Birds

RESOURCE BRIEF

Importance

The National Park Service's mission is to manage park resources "unimpaired for future generations." Protecting and managing some of our nation's most significant natural resources requires basic knowledge of the condition of ecosystems and species that occur in national parks. Landbirds are a conspicuous component of many ecosystems and have high body temperatures, rapid metabolisms, and occupy high trophic levels. As such, changes in landbird populations may be indicators of changes in the biotic or abiotic components of the environment upon which they depend. Relative to other vertebrates, landbirds are also highly detectable and can be efficiently surveyed with the use of numerous standardized methods.



NPS PHOTO

Burrowing Owls

Status and Trends

With the exception of some pilot efforts at PECO in 2008, SOPN began monitoring birds in 2009. This effort is part of a collaboration among the Southern Plains, Sonoran Desert, and Chihuahuan Desert Networks. The overall goal of our bird monitoring program is to detect biologically significant changes in population parameters over time. Details of our approach can be found in Powell et al. 2010. At SAND, we surveyed each of 3 transects (Fig. 1) two times during the breeding season (Table 1). The specific objectives of our efforts are:

1. To estimate the proportion of sites occupied for most species in most parks. Occupancy is a measure of presence or absence of a species in space that, when evaluated across time, indicates changes in the distribution of a species.

Table 1. Sampling dates at Sand Creek Massacre NHS

Location Name	Visit 1	Visit 2
CWOOD	6/13/2009	6/18/2009
GRASS	6/12/2009	6/17/2009
SAGE	6/13/2009	6/19/2009

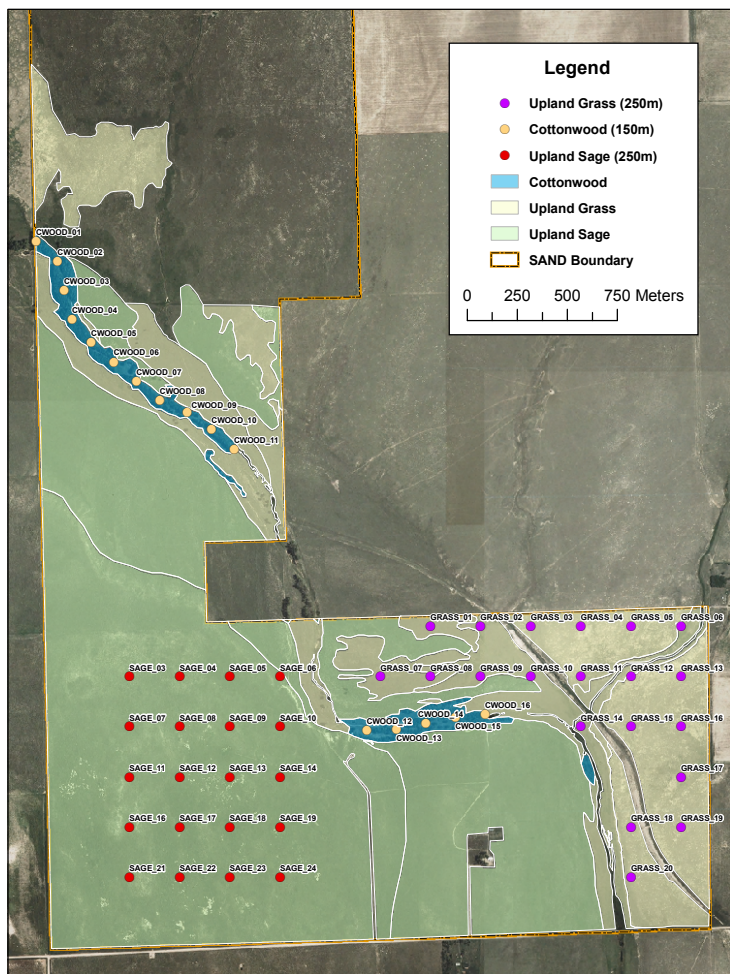


Figure 1. Bird sampling locations at Sand Creek Massacre NHS

2.

Table 2. The bird species, species ID Code, and number of detections of birds during the 2009 survey at Sand Creek Massacre National Historic Site.

Species	Species Code	No. Detections	Species	Species Code	No. Detections
American Goldfinch	AMGO	5	Grasshopper Sparrow	GRSP	111
American Kestrel	AMKE	1	Horned Lark	HOLA	172
American Robin	AMRO	1	House Wren	HOWR	23
Baltimore Oriole	BAOR	2	Killdeer	KILL	15
Barn Swallow	BARS	8	Lark Sparrow	LASP	22
Brown-Headed Cowbird	BHCO	13	Mallard	MALL	3
Blue Grosbeak	BLGR	1	Mourning Dove	MODO	259
Blue Jay	BLJA	2	Mountain Plover	MOPL	3
Brown Thrasher	BRTH	2	Northern Flicker	NOFL	14
Bullock's Oriole	BUOR	64	Northern Mockingbird	NOMO	26
Burrowing Owl	BUOW	5	Orchard Oriole	OROR	20
Cassin's Sparrow	CASP	195	Red-Headed Woodpecker	RHWO	12
Chipping Sparrow	CHSP	1	Ring-Necked Pheasant	RNEP	5
Common Grackle	COGR	14	Red-Tailed Hawk	RTHA	6
Common Nighthawk	CONI	14	Red-Winged Blackbird	RWBL	36
Common Yellowthroat	COYE	1	Swainson's Hawk		3
Dickcissel	DICK	14	Warbling Vireo	WAVI	3
Downy Woodpecker	DOWO	2	Western Kingbird	WEKI	140
Eastern Bluebird	EABL	2	Western Meadowlark	WEME	180
Eastern Kingbird	EAKI	5	Western Wood-Pewee	WEWP	10
European Starling	EUST	7	Yellow-Billed Cuckoo	YBCU	1
Great Blue Heron	GBHE	1	Yellow Warbler	YWAR	39
Great Horned Owl	GHOW	1		Total	1464

To estimate parameters related to community dynamics, particularly species richness and species composition. Monitoring the richness and composition of native communities can provide valuable insights about changes in the overall health of the system of concern.

3. To estimate density of the most-common species.

It is important to note that our objectives focus on long-term changes and trends, which requires a minimum number of years before meaningful estimates related to trend are feasible. Consequently, it is neither practical or feasible to conduct comprehensive analyses for each objective on an annual basis. For annual resource briefs, such as this one, will provide a basic data summary. At a more reasonable frequency of every 5 years, we will provide a comprehensive synthesis report that

will go into much greater depth, including analyses for all objectives and interpretations that consider our results in broader ecological context.

During our 2009 surveys, we had 1464 detections of birds of 45 species. Mourning doves were the most commonly detected species, but of particular note were the high numbers of Cassin's Sparrows and Meadowlarks.