



BENTS OLD FORT

Birds 2010

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 have high body temperatures and rapid metabolisms, and they occupy high trophic levels. Therefore, they may be indicators of changes in the biotic or abiotic components of the environment upon which they depend. Landbirds are also a conspicuous component of many ecosystems, making them highly detectable and efficiently surveyed with the use of numerous standardized methods.

RESOURCE BRIEF



Western meadowlark

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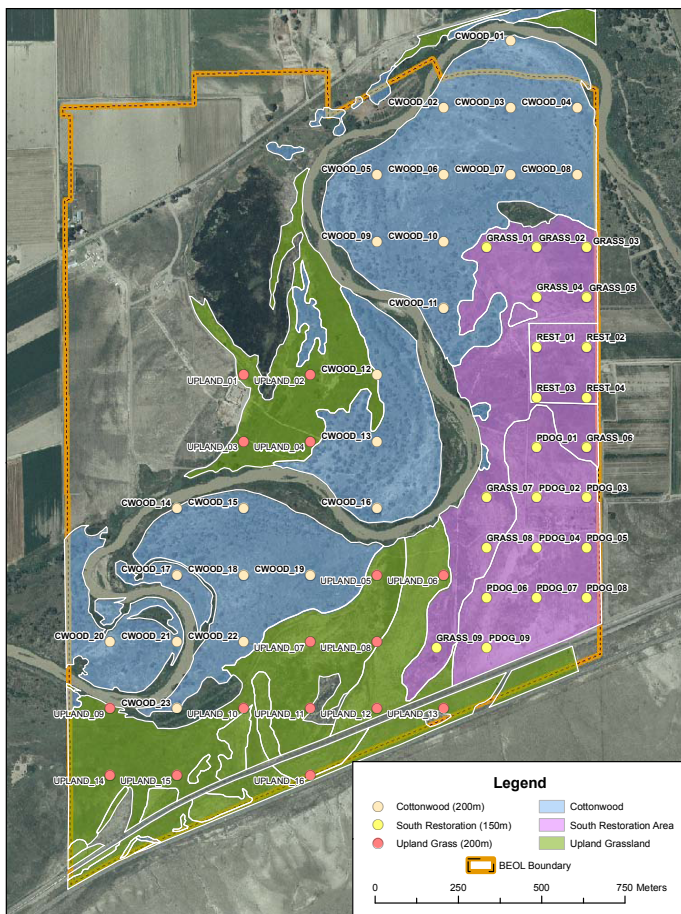


Figure 1. Bird sampling locations at Bent's Old Fort NHS.

Status and Trends

The Southern Plains Network (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 our monitoring protocol (in review). At Bent's Old Fort National Historic Site (NHS), we sampled five transects/grids (four in grassland and one in riparian habitat; Figure 1) three times (from June 9-19) during the breeding season. 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.
2. 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. It is neither practical nor useful to conduct

comprehensive analyses for each objective on an annual basis. Therefore, we will provide basic data summaries on an annual basis (in resource briefs such as this one), and, once every five years, a comprehensive synthesis report that will go into much greater depth, including analyses for all objectives and interpretations in a broader ecological context.

Results and Discussion

During 2010, 2,729 birds of 57 species were counted at Bent's Old Fort NHS. This was the highest number of birds counted (but not species) in any SOPN park in 2010. Mourning dove was the most commonly counted species (15%), followed by European starling (14%), western meadowlark (12%), and red-winged blackbird (12%). There were more survey points in grassland habitat than riparian habitat (114 compared to 69), and more species and birds were detected in grassland habitat (51 compared to 44 species, and 1,532 compared to 1,197 birds). However, there were a greater number of species and birds in riparian habitat per survey point. Six new species for the park were detected during the survey: Bell's vireo, Chihuahuan raven, chimney swift, great-tailed grackle, lesser goldfinch, and northern rough-winged swallow.

The cottonwood transect along the Arkansas River and the adjacent upland transect continue to yield the highest species diversity, including the four most abundant bird species in the park and prominent species such as American kestrel, blue grosbeak, brown-headed cowbird, common yellowthroat, eastern kingbird, house wren, northern flicker, northern mockingbird, and yellow warbler. Other interesting species were northern harrier, a singing dickcissel, and at least two calling black rail. The burrowing owl and great-crested flycatcher were notably absent in 2010, as both species were detected in 2009. There were no federally or state-listed species detected at the park in 2010, but the yellow-billed cuckoo is a species of special concern with the state, and the burrowing owl, detected in 2009, is state-threatened.

The Rocky Mountain Bird Observatory (RMBO), the NPS's primary cooperator for this project, manages the bird monitoring data. The data are available through the RMBO Avian Data Center (URL: <http://www.rmbo.org/public/monitoring/CountsEffort.aspx.4>).



PHOTO: © ROBERT SHANTZ

Red-winged blackbird

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Southern Plains Network website
(URL: <http://www.nature.nps.gov/im/units/SOPN>)

Learning Center of the American Southwest
(URL: <http://www.southwestlearning.org>)