

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.

Status and Trends

The Chihuahuan Desert Network (CHDN) began monitoring birds in Spring 2010, after a pilot season 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 Big Bend National Park (NP), we sampled 28 transects/grids, 20 in grassland and 8 riparian habitat (e.g.,

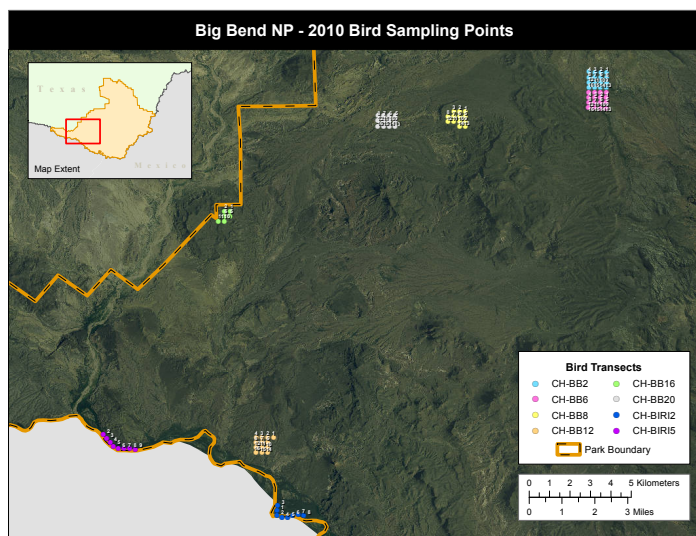


Figure 1. Bird sampling locations at Big Bend NP- West.

RESOURCE BRIEF



Cactus wren

PHOTO: © ROBERT SHANTZ

Figures 1-2), one time during the breeding season (from May 5 to June 11). 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

The 20 transects/grids sampled in grassland habitat had 6 to 16 survey points each, and the eight transects/grids sampled in riparian habitat had 6 to 8 points each, for a total sample of 309 points. During the 2010 sampling, 2,515 birds of 69 species were counted at Big Bend NP. Black-throated sparrow was the most commonly counted species (15%). Also common were cactus wren (9%), northern mockingbird (8%), pyrrhuloxia (8%), and Bell's vireo (6%). Other prominent species were yellow-breasted chat (4%) and blue grosbeak (4%). Big Bend NP had the highest number of species detected (69) among the CHDN parks. More species were detected in grassland habitat (55) than in riparian habitat (44).

This was the first park visited in the CHDN. For the first two weeks of sampling, bird activity on the grassland transects was quite high. Black-throated sparrow, cactus wren, northern mockingbird, and pyrrhuloxia made up the vast majority of breeding birds detected on these transects. We also observed ash-throated flycatcher, black-tailed gnatcatcher, blue grosbeak, lesser nighthawk, and Scott's oriole on almost all of the grassland transects. A few late migrants were detected during this early period, including Brewer's sparrow, chipping sparrow, lark bunting, northern harrier, and yellow-rumped warbler. Highlights for these grassland areas included two varied buntings, a pair of scissor-tailed flycatchers at the western fringes of their breeding range, and an unexpected abundance of birds (usually associated with riparian areas) in the vast arroyo systems of the flatter areas of the park. These species included Bell's vireo, orchard oriole, painted bunting, and yellow-breasted chat. After the first two weeks of surveying, day-time temperatures began to rise close to 115 degrees; we noted a significant drop in bird activity on the grassland transects at this time.

The riparian areas along the Rio Grande were characterized by large thickets of mesquite and tamarisk alternating with

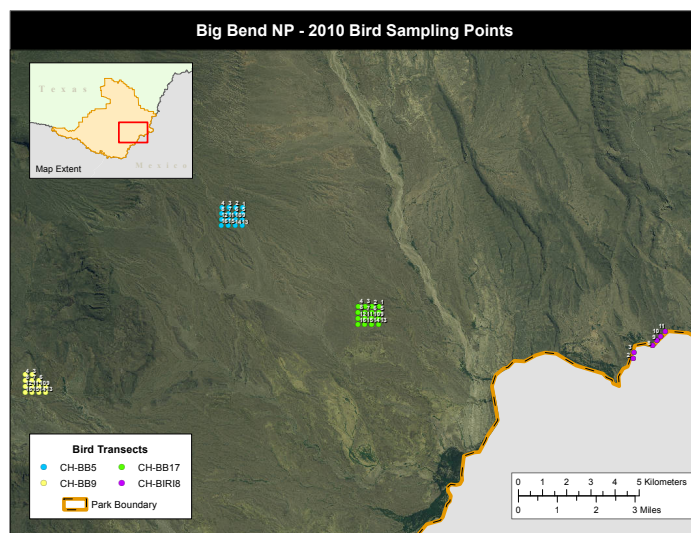


Figure 2. Bird sampling locations at Big Bend NP- East.

sandy washes and patches of tall, impenetrable phragmites. Bird activity in these areas was quite high for most of our time at the park despite the extreme heat. Common species included ash-throated flycatcher, Bell's vireo, blue grosbeak, brown-crested flycatcher, brown-headed cowbird, Carolina wren, common yellowthroat, northern cardinal, painted bunting, white-winged dove, and yellow-breasted chat. Highlights included a state-listed peregrine falcon near Mariscal Canyon, indigo bunting, vermilion flycatcher, and several singing male Lucy's warblers. Other interesting species found in the two riparian campgrounds (but not on surveys) included black vulture, common ground-dove, elf owl, golden-fronted woodpecker, gray hawk (state-listed as threatened), Inca dove, orchard oriole, and western wood-pewee. Many of the riparian transects were very hard to access, and we rarely were able to survey every point.

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>).

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Chihuahuan Desert Network website
(URL: <http://science.nature.nps.gov/im/units/CHDN/>)

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



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Peregrine falcon