



GUADALUPE MOUNTAINS

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 re-



Spotted towhee

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view). At Guadalupe Mountains National Park (NP), we sampled 9 transects/grids (8 in grassland and 1 in riparian habitat; Figure 1) one or two times during the breeding season (June 16 to 29). 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.

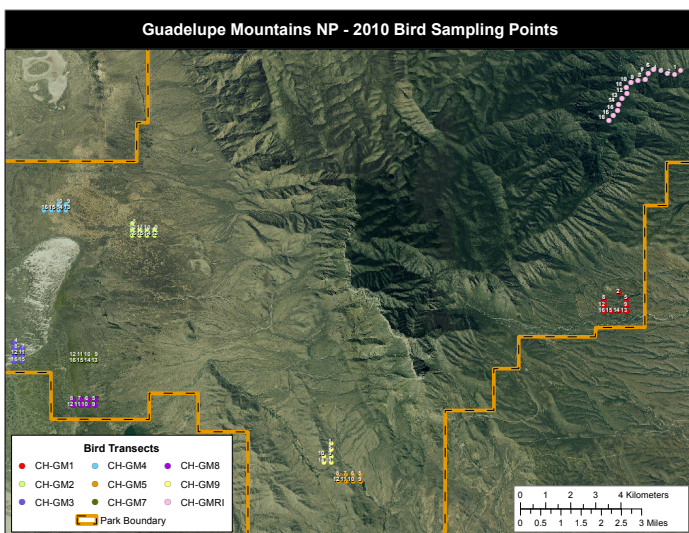


Figure 1. Bird sampling locations at Guadalupe Mountains NP.

Results and Discussion

During 2010, 741 birds of 56 species were counted at Guadalupe Mountains NP. Although there were nearly twice as many survey points in grassland habitat than riparian habitat, about the same number of individuals and species were recorded in each habitat class. Black-throated sparrow was the most commonly counted species (12%) overall. Other common species included spotted towhee (6%), cactus wren (5%), Scott's oriole (4%), rufous-crowned sparrow (4%), northern mockingbird (4%), plumbeous vireo (4%), violet-green swallow (4%), and mourning dove (4%).

Seven of the eight grassland transects in Guadalupe Mountains NP were located in a flat salt basin to the west of the mountains. This area had large swaths of sand dunes and a mix of creosote scrub and grasslands. Common bird species in this area included black-throated sparrow, blue grosbeak, Cassin's sparrow, lesser nighthawk, loggerhead shrike, and pyrrhuloxia. The main highlight here was a pair of burrowing owls in a patch of quartz dunes and grassland. The remaining grassland transect was similar to much of the habitat at Big Bend NP, with very similar birds. The most conspicuous species was the rufous-crowned sparrow. Ash-throated flycatcher, black-throated sparrow, and blue grosbeak were also abundant.

The riparian transect at the park was located in a deep canyon draining from the highest part of the range. There was only intermittent water flow and very little sediment deposited, so most of the vegetation was more characteristic of grasslands at higher elevations than riparian areas in the Chihuahuan Desert. Open woodlands of oak, bigtooth maple, and ponderosa pine formed the primary habitat here. The most common species were Bewick's wren, black-headed grosbeak, broad-tailed hummingbird, blue-gray gnatcatcher, rufous-crowned sparrow, spotted towhee, western tanager, western wood-pewee, and white-winged dove. Some highlights included black-chinned sparrow, golden eagle, hepatic tanager, peregrine falcon (a state-listed species), and yellow-breasted chat. This was probably the most diverse survey area in the CHDN in terms of birds and vegetation.

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>).



PHOTO: © ROBERT BENNETTS

Burrowing owl

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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>)