

Birds

2010

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 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 Carlsbad Caverns National Park (NP), we sampled 9 transects/grids, 8 in grassland and 1 in riparian habitat



Black-throated sparrow

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(Figures 1 and 2) one or two times during the breeding season (from June 2-30). 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

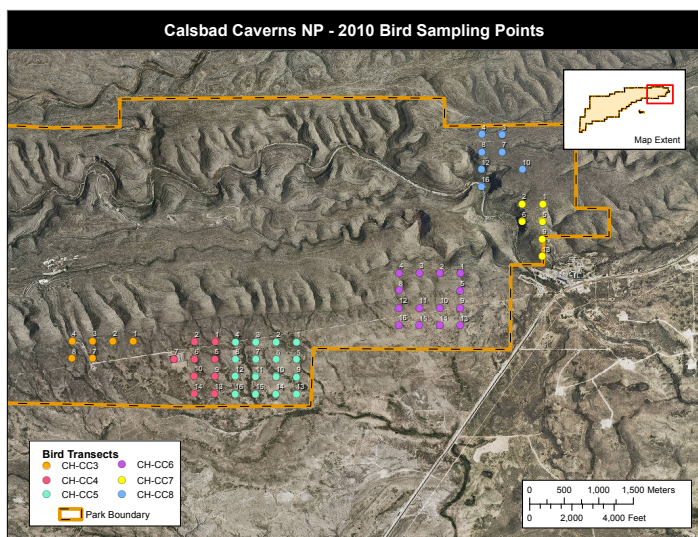


Figure 1. Bird sampling locations at Carlsbad Caverns NP - East.

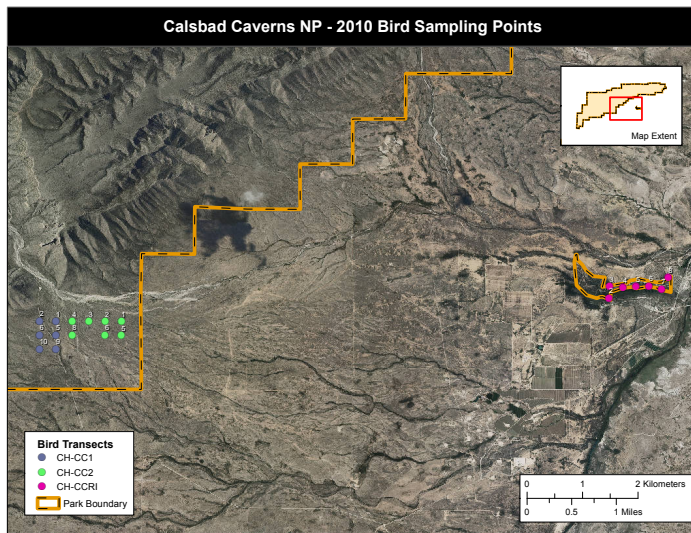


Figure 2. Bird sampling locations at Carlsbad Caverns NP - West.

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, 827 birds of 46 species were counted at Carlsbad Caverns NP. There were five times as many survey points in grassland habitat compared to riparian habitat, and more individual birds (591 vs. 236) and species (34 vs. 26) were detected in grassland areas. Overall, black-throated sparrow was the most commonly counted species (18%). Blue grosbeak (8%), turkey vulture (8%), Cassin's sparrow (7%), northern mocking bird (7%), and rufous-crowned sparrow (5%) were also common.

Bird activity at Carlsbad Caverns NP lasted for only a short period of time each day. The habitat grades from grasslands below the plateau to very sparse desert scrub on top. Rufous-crowned and Cassin's sparrows were abundant, as were the typical mix of desert scrub birds, including black-throated sparrow, blue grosbeak, and pyrrhuloxia. We also detected a black-chinned sparrow, which is known to occur at other parks in the CHDN but was only detected at one other park in 2010 (Guadalupe Mountains NP). Cave swallow, known to occur at only one other park in the CHDN (Big Bend NP), was only observed at Carlsbad Caverns NP in 2010. Additionally, the gray hawk, known to occur elsewhere in the network, was observed only (during surveys) at Carlsbad Caverns; although state-listed as threatened in Texas, the species is not state-listed in New Mexico. Species detected only on grass-

land transects included black-throated sparrow, Cassin's sparrow, scaled quail, canyon towhee, and Scott's oriole, while those detected only on the riparian transect included yellow-breasted chat, Cassin's kingbird, lesser goldfinch, Bell's vireo, and indigo bunting.

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>)



Northern mockingbird

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