



White Sands National Monument

2011 Landbird Monitoring

Birds are a conspicuous component of many ecosystems. Changes in bird populations may be indicators of changes in the biotic or abiotic components of the environment upon which they depend. Birds select habitat based on the presence of behavioral cues triggered by the environment. In some environments, especially those that vary unpredictably, monitoring birds is strengthened by concurrent monitoring of a broad suite of environmental parameters that may assist with understanding changes in the bird community relative to other environmental factors.

The Chihuahuan Desert Inventory & Monitoring Network (CHDN) began monitoring birds in Spring 2010, after a pilot season in 2009. This effort is part of a collaboration among the Chihuahuan Desert, Sonoran Desert, and Southern Plains Networks. The overall goal of our bird monitoring program is to detect biologically significant changes in population parameters over time. We have selected three primary monitoring objectives that are complementary and together provide a comprehensive assessment of changing bird populations and communities; they are: (1) occupancy—the measure of presence or absence of a species; (2) species richness and composition—the number and kinds of species; and (3) density—the number of species in a sampled area—of the most common species. The source of information for this brief is White and Valentine-Darby (2102).

Methods

We used point-transect surveys to estimate and monitor landbird population parameters. The primary monitoring objectives focus on long-term changes and trends, so monitoring must be conducted for a number of years before meaningful estimates related to trends are feasible. Consequently, it is neither practical nor useful to conduct comprehensive analyses for each objective on an annual basis. Instead, we will provide annual, basic data summaries and a comprehensive synthesis report once every five years; the synthesis report will include analyses for all objectives and interpretations in a broader ecological context.

We sampled in two habitat classes, grassland and riparian, in the CHDN. During May of 2011, we sampled ten grids at White Sands National Monument (NM; e.g., Figure 1). We conducted 111 point counts on the ten grids—all in grassland habitat. Each point was surveyed once.



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Horned Lark (*Eremophila alpestris*) was one of the most commonly counted species at White Sands NM in 2011.

In addition to the ten grids surveyed, we conducted an area search of the cottonwood grove near the visitor center. To conduct the search, we slowly walked the entire length of the cottonwood corridor, recording all species we detected and the number of each species detected. Once we reached the end of the corridor, we turned around and walked back along the corridor, looking for any species we may have missed the first time through. To avoid double counting of birds, we did not count any individuals on the way back, unless we encountered a new species. We started the survey one half hour before sunrise and finished at 8 am when we arrived back at the starting point.

Results

During 2011, 630 birds of 51 species were counted at White Sands NM. Bird activity was relatively low at the park, especially out on the gypsum dunes. The most commonly counted species was Black-throated Sparrow (23%). Northern Mockingbird (12%), Western Kingbird (9%), Horned Lark (6%), Cassin's Sparrow (5%), and Eastern Meadowlark (4%) were also common. One new species, Bell's Vireo, was detected at the park in 2011.

Accessing the Data

The Rocky Mountain Bird Observatory (RMBO), our primary cooperator for this project, manages the bird monitoring

data. Other networks using RMBO also use this service and have found it to be efficient and effective. This enables CHDN data to be stored in the same database as that of several other networks and organizations, which in turn allows for a more comprehensive regional assessment. CHDN and its parks will have easy access to the data upon completion of the new Avian Data Center, expected in summer 2012. To access the data, go to <http://www.rmbo.org/public/monitoring>.

Contact

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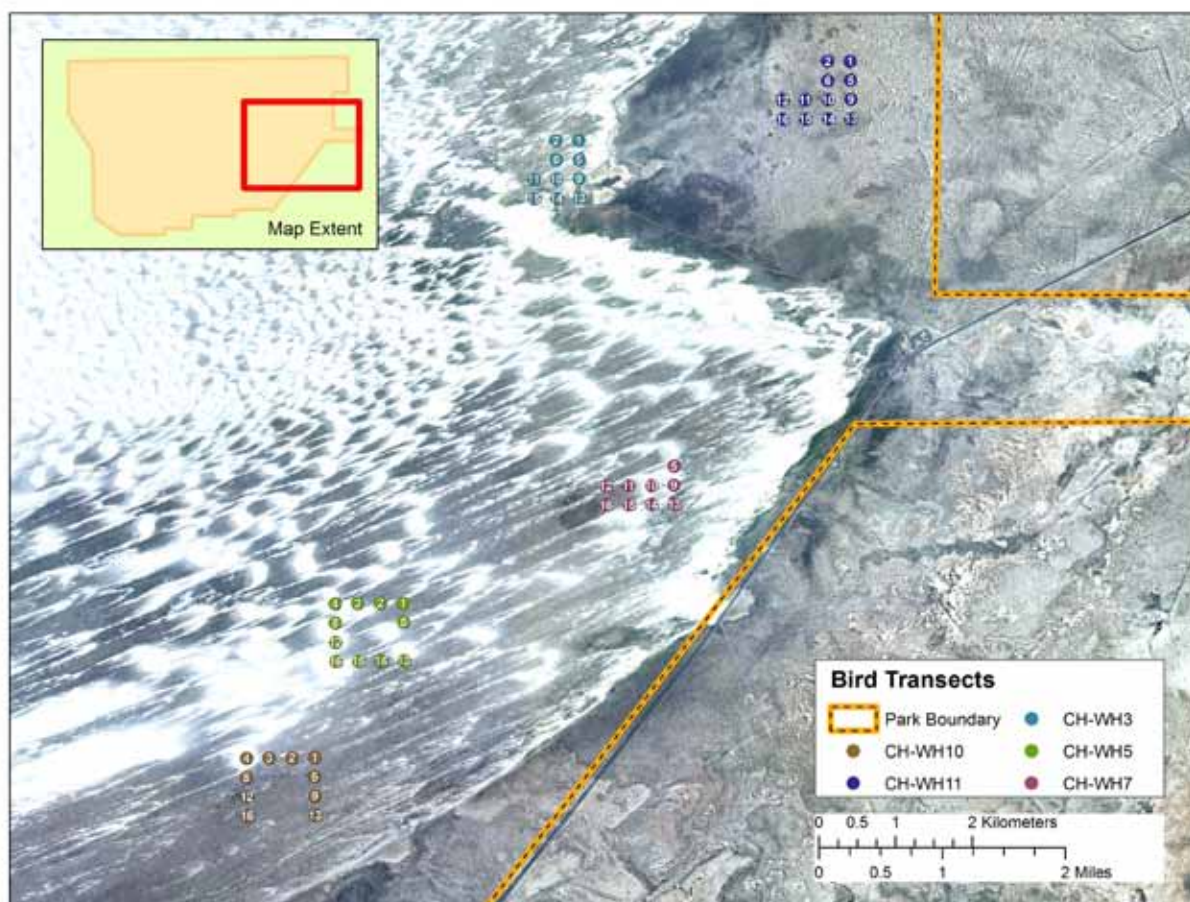


Figure 3.5.1. Point locations targeted for annual sampling at White Sands NM, East.

Information source:

White, C., and P. Valentine-Darby. 2012. Landbird monitoring in the Chihuahuan Desert Network: 2011 annual report. Natural Resource Technical Report NPS/CHDN/NRTR—2012/559. National Park Service, Fort Collins, Colorado.