



Guadalupe Mountains National Park

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 (2012).

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 2011, we sampled a total of ten transects/grids at Guadalupe Mountains National Park (NP; Figure 1). We conducted 98 point counts on nine grids in grassland habitat and 27 point counts on one transect in



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Several Bullock's Oriole (*Icterus bullockii*) were detected at Guadalupe Mountains NP in 2011.

riparian habitat, for a total of 125 point counts at the park in 2011. The grassland grids were surveyed once, while the riparian transect was surveyed twice.

Results

During 2011, 1,073 birds of 89 species were counted at Guadalupe Mountains NP. Black-throated Sparrow was the most commonly counted species (8%). Other common species included Turkey Vulture (6%), Lark Bunting (5%), Brewer's Sparrow (5%), Scott's Oriole (4%), Scaled Quail (3%), and Rufous-crowned Sparrow (3%). Two new species were detected at the park in 2011: Bell's Vireo and Cave Swallow.

Many interesting species were recorded in McKittrick Canyon, including Bell's Vireo, Bullock's Oriole, Cassin's Vireo, Cave Swallow, Cooper's Hawk, Great Horned Owl, Hermit Warbler, Northern Waterthrush, and Yellow Warbler. Bird activity was otherwise moderate overall, including such species as Ash-throated Flycatcher, Scaled Quail, Black-throated Sparrow, Golden Eagle, and Horned Lark. Many of the randomly located grids were located near or on sand dunes, creosote flats, and basically a salt desert environment.

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>.

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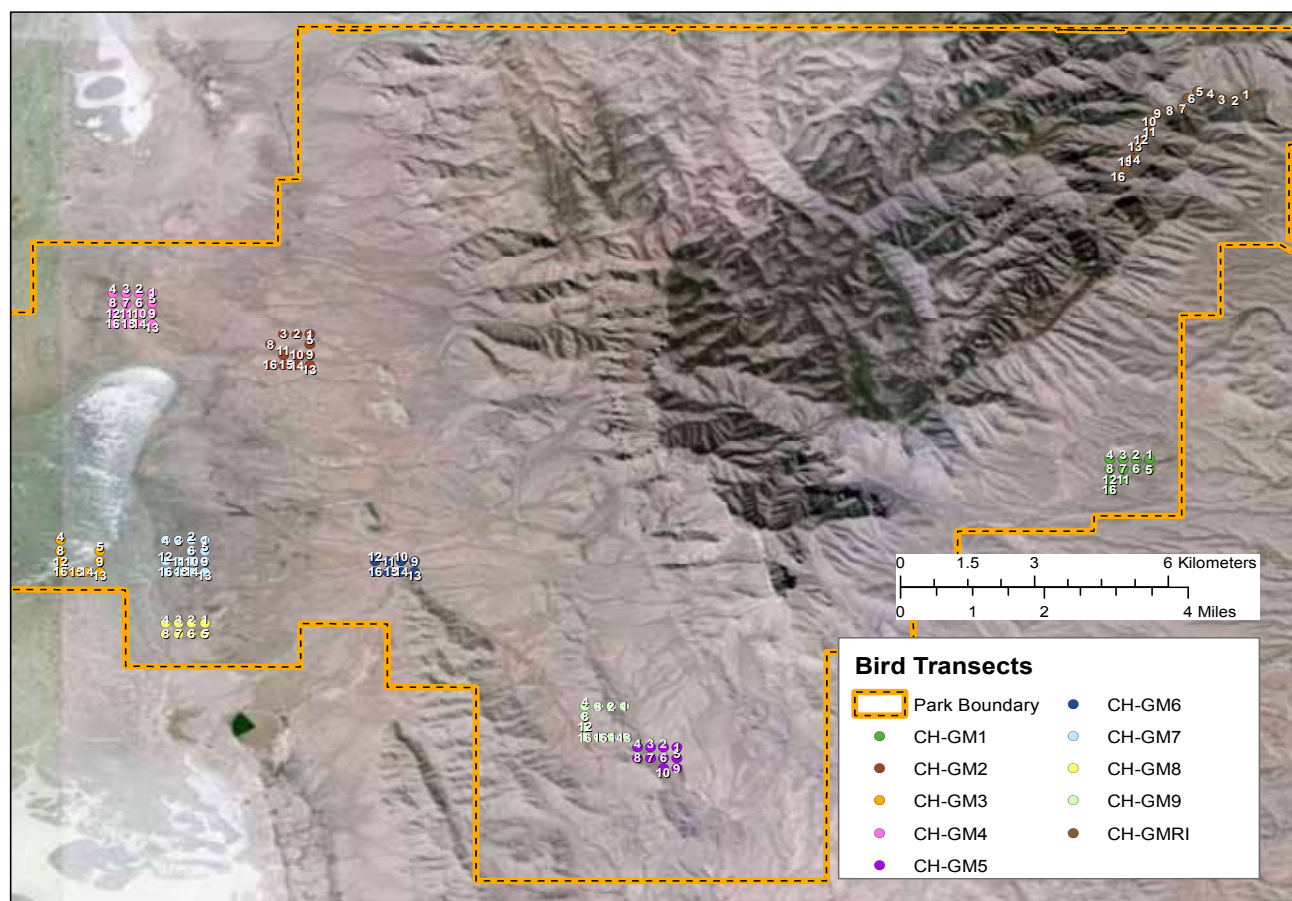


Figure 1. Point locations targeted for annual sampling at Guadalupe Mountains NP.