



Fort Davis National Historic Site

2012 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 (2013).

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 basic data summaries annually 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 2012, we sampled one grid at Fort Davis National Historic Site twice (NHS; Figure 1); we conducted a total of 51 point counts in the park.



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Two Acorn Woodpeckers (*Melanerpes formicivorus*) were counted at Fort Davis NHS in 2012.

Results

Fort Davis NHS is a small, historic park with point-count stations covering the entire property. It was surveyed over two days, and then replicated (over three days) for a total of five days' worth of survey effort. During 2012, 636 birds of 53 species were counted. Cassin's Kingbird had the highest number of individuals counted (9% of the total number of birds counted). The next species observed in the highest numbers were House Sparrow (7%), Black-throated Sparrow (6%), White-winged Dove (6%), Canyon Wren (6%), Rufous-crowned Sparrow (5%), Turkey Vulture (5%), and Ash-throated Flycatcher (5%).

Several Black-chinned Hummingbirds and one Broad-tailed Hummingbird were observed. Several species were observed only once or twice, including Acorn Woodpecker, Cassin's Sparrow, Chihuahuan Raven, Great-tailed Grackle,

Green-tailed Towhee, Ladder-backed Woodpecker, Lesser Nighthawk, Phainopepla, Say's Phoebe, Virginia's Warbler, Western Scrub-Jay, Western Tanager, and Wilson's Warbler. No new species for the park were recorded in 2012.

Accessing the Data

The Rocky Mountain Bird Observatory (RMBO), our primary cooperator for this project, manages the bird monitoring data they collect. 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. To view interactive maps showing survey and detection locations, as well as species counts and survey effort, visit RMBO's Avian Data Center at <http://rmbo.org/v3/avian/Home.aspx>.

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Figure 1. Point locations targeted for annual sampling at Fort Davis NHS.

Information source:

White, C., and P. Valentine-Darby. 2013. Landbird monitoring in the Chihuahuan Desert Network: 2012 annual report. Natural Resource Technical Report NPS/CHDN/NRTR—2013/702. National Park Service, Fort Collins, Colorado.