



Amistad National Recreation Area

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. Information in this brief comes from 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 April and May of 2012, we sampled 19 transects/grids at Amistad National Recreation Area (NRA; e.g., Figure 1). We conducted 92 point counts on nine grids



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Migrant Plumbeous Vireo (*Vireo plumbeus*) were recorded at Amistad NRA for the first time in 2012.

in grassland habitat and 65 point counts on ten transects in riparian habitat, for a total of 157 point counts at the park. Each point was surveyed once in 2012. Note that the riparian stratum was re-stratified in 2012 to include the Pecos and Devils Rivers and to omit areas, for reasons of safety, along the Rio Grande.

Results

During 2012 surveys, 2,286 birds of 98 species were counted at Amistad NRA. Although not observed in 2010 and 2011 surveys, Cave Swallow had the highest number of individuals counted in 2012 (9% of the total number of birds counted). The next species counted in the highest numbers were Turkey Vulture (8%), Northern Mockingbird (7%), Brown-headed Cowbird (5%), Bell's Vireo (4%), and Black-throated Sparrow (4%).

Amistad NRA encompasses three different rivers but very little dry land. Many of the rivers are cut through steep bedrock canyons with upland mesas. Because of this unique geography, many of the upland surveys were conducted very close to water, and the riparian surveys were close to upland habitat. For this reason, there was some overlap in the bird communities. The 72 species observed at grassland grids represents the highest bird diversity of any grassland habitat surveyed in the CHDN. Species observed in the highest numbers included Northern Mockingbird, Brown-headed Cowbird, Black-throated Sparrow, Turkey Vulture, Brewer's Blackbird, Northern Cardinal, and Painted Bunting. There were 75 species recorded in riparian habitat, the highest bird diversity of any riparian habitat surveyed in the CHDN. Species observed in the highest numbers included Cave Swallow, Turkey Vulture, Bell's Vireo, Yellow-breasted Chat, Canyon Wren, Painted Bunting, and Red-winged Blackbird. Some species, such as Bell's Vireo, Turkey Vulture, and Painted Bunting, were counted in relatively high numbers in both grassland and riparian habitats.

New species for Amistad NRA in 2012 included a migrant female Bobolink, one European Starling, and several migrant Plumbeous Vireos. Species infrequently observed included two Varied Buntings at a riparian transect, and a Scissor-tailed Flycatcher and a Peregrine Falcon in grassland habitat.

Accessing the Data

The Rocky Mountain Bird Observatory (RMBO), our primary cooperater for this project, collects and 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. 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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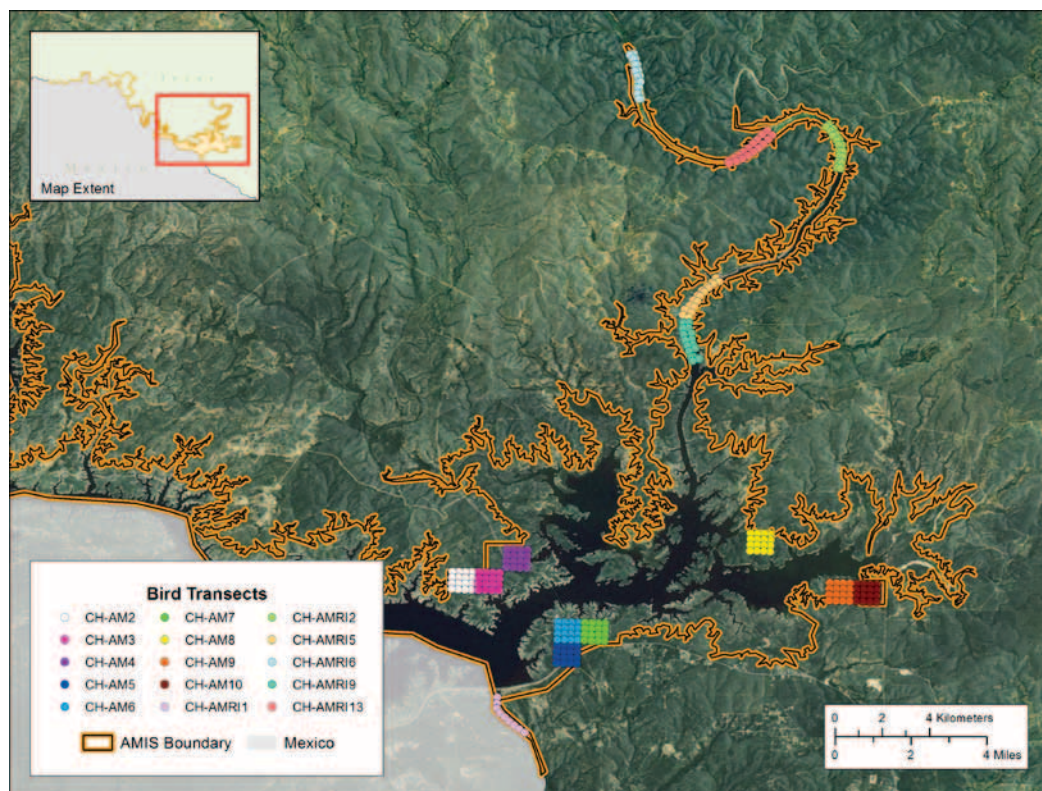


Figure 1. Point locations targeted for annual sampling at Amistad NRA, East.

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.