



Capulin Volcano 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 overall goal of the Southern Plains Inventory & Monitoring Network (SOPN) landbird 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.

Methods

We sampled primarily in two habitat classes: grassland and riparian, which are the dominant vegetation communities in the SOPN. We used point-transect surveys to estimate and monitor landbird population parameters. 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, that will include analyses for all objectives and interpretations in the broader ecological context.

During June of 2011, we sampled two transects/grids at Capulin Volcano National Monument (NM). One transect was in the grassland habitat class (shortgrass prairie) and one was in the woodland habitat class (pinyon-juniper); the woodland habitat in which the transect was located was targeted for conversion to grassland prior to the 2010 sampling year, but this may no longer be the case. See Figure 1 for a map of annual sampling plot locations. The pinyon-juniper transect



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The first verified observation of a Western Bluebird (*Sialia mexicana*) at Capulin Volcano NM was recorded in 2011.

had 11 unique points and the shortgrass prairie transect had 17 unique points. Most points were surveyed three times for a total of 83 point visits (the number of unique points multiplied by the number of visits) at the park in 2011, compared to 135 point visits in 2010.

Results

During 2011, 783 birds of 52 species were counted at Capulin Volcano NM. Spotted Towhee was the most commonly counted species (17%). Also common were Western Wood-pewee (10%), Northern Mockingbird (10%), Mourning Dove (8%), Black-headed Grosbeak (6%), and Lark Sparrow (5%). Other prominent species included Brown-headed Cowbird (4%), Chipping Sparrow (4%), and Mountain Chickadee (4%).

Three new species were recorded in Capulin Volcano NM in 2011: Northern Cardinal, Northern Rough-winged Swallow, and Western Bluebird. Several other interesting birds were noted: Hepatic and Western Tanager; White-winged Dove; Canyon, Green-tailed, and Spotted Towhees; and three species of wrens— Bewick's, House, and Rock. Black-billed Magpie and Hairy Woodpecker were detected for the first time in three years of point count surveys, but they are not new species for the park.

Accessing the Data

The Rocky Mountain Bird Observatory (RMBO), our primary cooperator for this project, manages the bird monitoring data associated with it. Other networks using RMBO also use this service and have found it to be efficient and effective. This enables SOPN 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. SOPN and its parks will have easy access to the data upon completion of the new Avian Data Center, expected in summer 2012. To access this data, go to <http://www.rmbo.org/public/monitoring>.

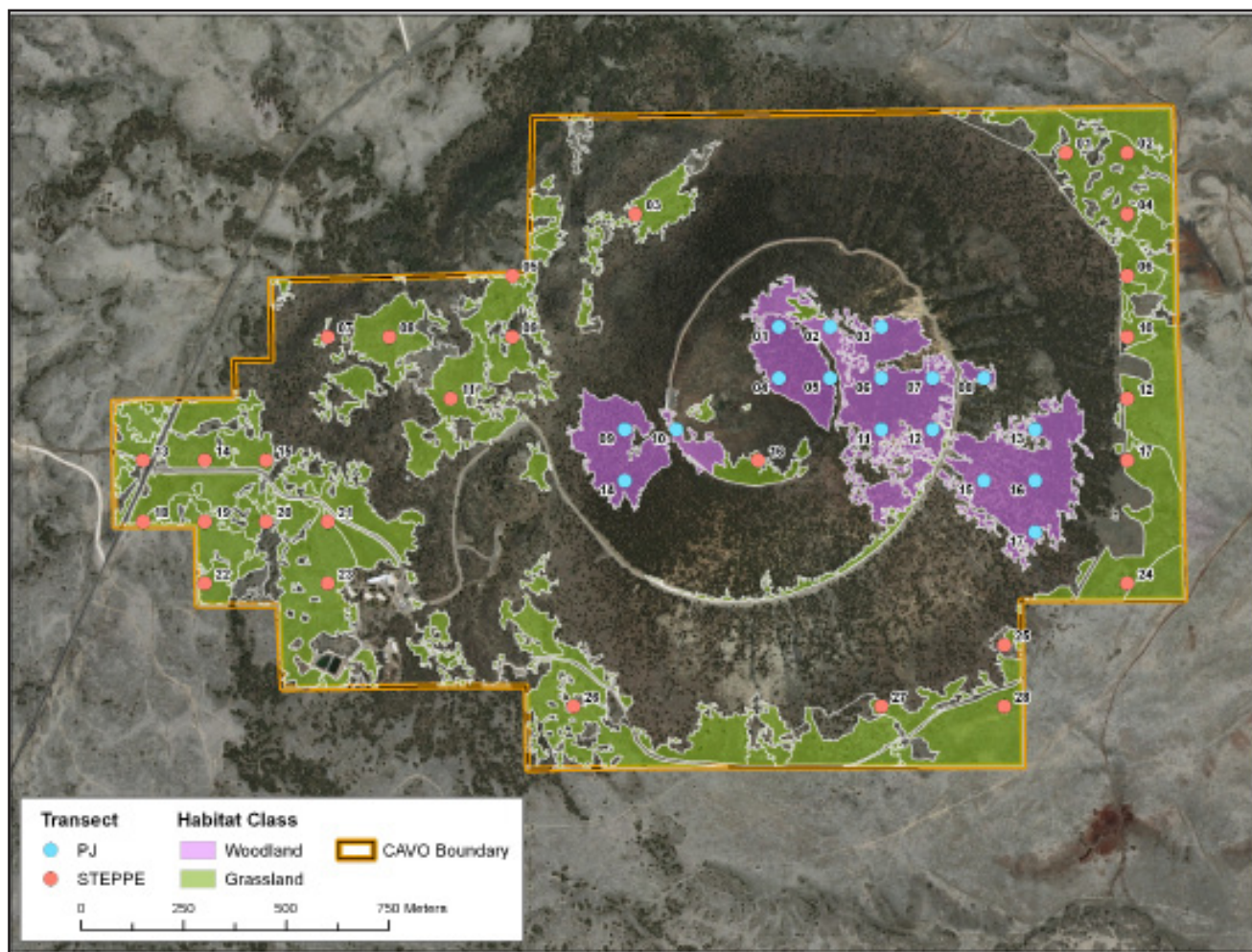


Figure 1. Point locations targeted for annual sampling at Capulin Volcano NM.