Southern Plains Network
RESOURCE BRIEF

National Park Service
U.S. Department of the Interior

Inventory & Monitoring Program

Capulin Volcano National Monument

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 Southern Plains Inventory & Monitoring Network (SOPN) began monitoring birds in 2009. This effort is part of a collaboration among the Southern Plains, Chihuahuan Desert, and Sonoran Desert 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 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.

Methods

We used point-transect surveys to estimate and monitor landbird population parameters. We sampled primarily in two habitat classes, grassland and riparian, in the SOPN. During May of 2012, we sampled two transects/grids at Capulin Volcano National Monument (NM; Figure 1). 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 it is unclear whether the conversion will take place.

Black-headed Grosbeak (*Pheucticus melanocephalus*) was one of the most common birds detected at Capulin Volcano NM in 2012.

The pinyon-juniper transect had 17 unique points, and the shortgrass prairie transect had 28 unique points. Points were surveyed three times for a total of 135 point visits (the number of unique points multiplied by the number of visits) at the park in 2012.

Results and Discussion

During the 2012 survey, 1,459 birds of 48 species were counted at Capulin Volcano NM. Spotted Towhee had the highest number of individuals counted (15% of the total number of birds counted). The next species counted in the highest numbers were Northern Mockingbird (11%), Western Wood-Pewee (8%), Western Meadowlark (7%), Western Kingbird

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(6%), and Black-headed Grosbeak (6%). Other prominent species included Lark Sparrow (4%), Mourning Dove (4%), Pinyon Jay (4%), and Chipping Sparrow (3%). Two species, Scaled Quail (detected at the steppe transect) and Downy Woodpecker, were previsously reported on 1981 and 1993 checklists for the park; however, they were not officially verified for the park until this year when they were detected during surveys.

Other birds recorded during surveys included Hepatic and Western Tanager, Green-tailed and Spotted Towhee, Mountain and Western Bluebird, and two species of wrens– Bewick's and Rock. Common Poorwill was recorded for the first time in four years of point count surveys.

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 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. 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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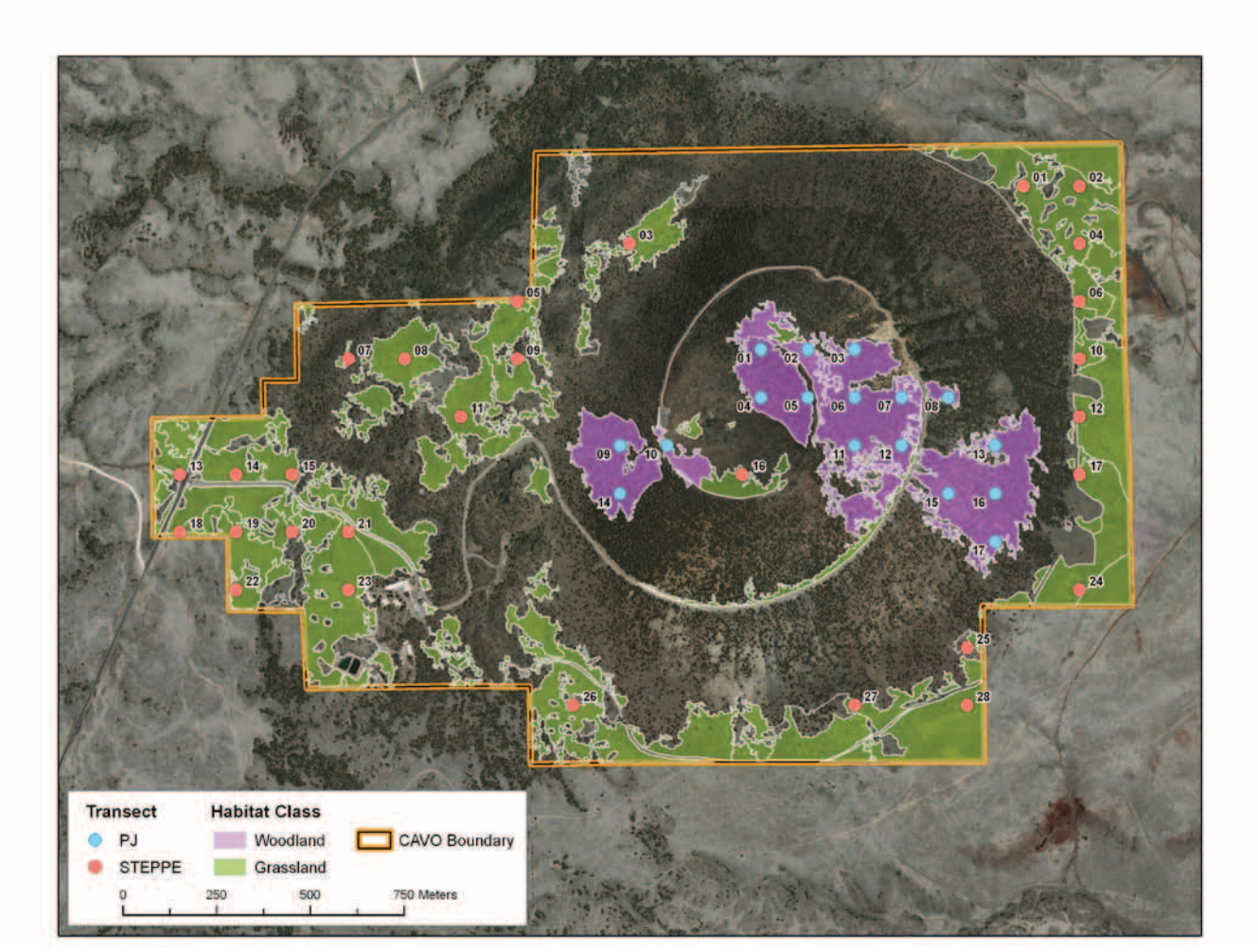

Figure 1. Point locations targeted for annual sampling at Capulin Volcano NM.

Information source:
Lock, R., P. Valentine-Darby, H. Sosinski, and R.E. Bennetts. 2012. Landbird monitoring in the Southern Plains Network: 2012 annual report. Natural Resource Technical Report NPS/SOPN/NRTR—2012/656. National Park Service, Fort Collins, Colorado.