



Lake Meredith National Recreation Area

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 April and May of 2011, we sampled four transects/grids at Lake Meredith National Recreation Area (NRA). Two transects were located in grassland habitat (upland grassland) with 19 unique points each, and two were located in riparian habitat (bottomland grassland and cottonwood bottom) with 19 unique points each (Figure 1). Each point was surveyed three times for a total of 228 point visits (the number of unique points multiplied by the number of visits).



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Cassin's Sparrow (*Peucaea cassinii*) was the most commonly detected species at Lake Meredith NRA in 2011.

Results

During 2011, 956 birds of 60 species were counted at Lake Meredith NRA. The most commonly counted species was Cassin's Sparrow (17%), which occurred primarily at the honey mesquite transect. The count of Cassin's Sparrow nearly doubled compared to 2010, possibly due to substantial regrowth of mesquite. Red-winged Blackbird (9%), Northern Mockingbird (7%), Mourning Dove (5%), and Western Kingbird (4%) were also common.

The park's diverse habitat, ranging from upland grassland to riparian canyon land and bottomland with a mix of grassland/savannah/wetland, attracts a high diversity of bird species. Red-winged Blackbird was still abundant at the bottomland transect, despite extremely dry soil, along with many Mourning Dove, Eastern Meadowlark, Bullock's Oriole, and Western Kingbird.

The cottonwood transect along Turkey Creek produced two of the three new park species detected in 2011, including a singing Say's Phoebe and at least two singing, male Black-throated Sparrows. The other new species for the park was the Clay-colored Sparrow, passing through on migration, at the honey mesquite transect. Although not new species for the park, Indigo Bunting and Carolina Chickadee, found at the cottonwood transect, had not been detected in point count surveys since they were initiated in 2009. A group of three Olive-sided Flycatchers, one singing, represents the third consecutive season that this species has been detected on Turkey Creek.

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>.

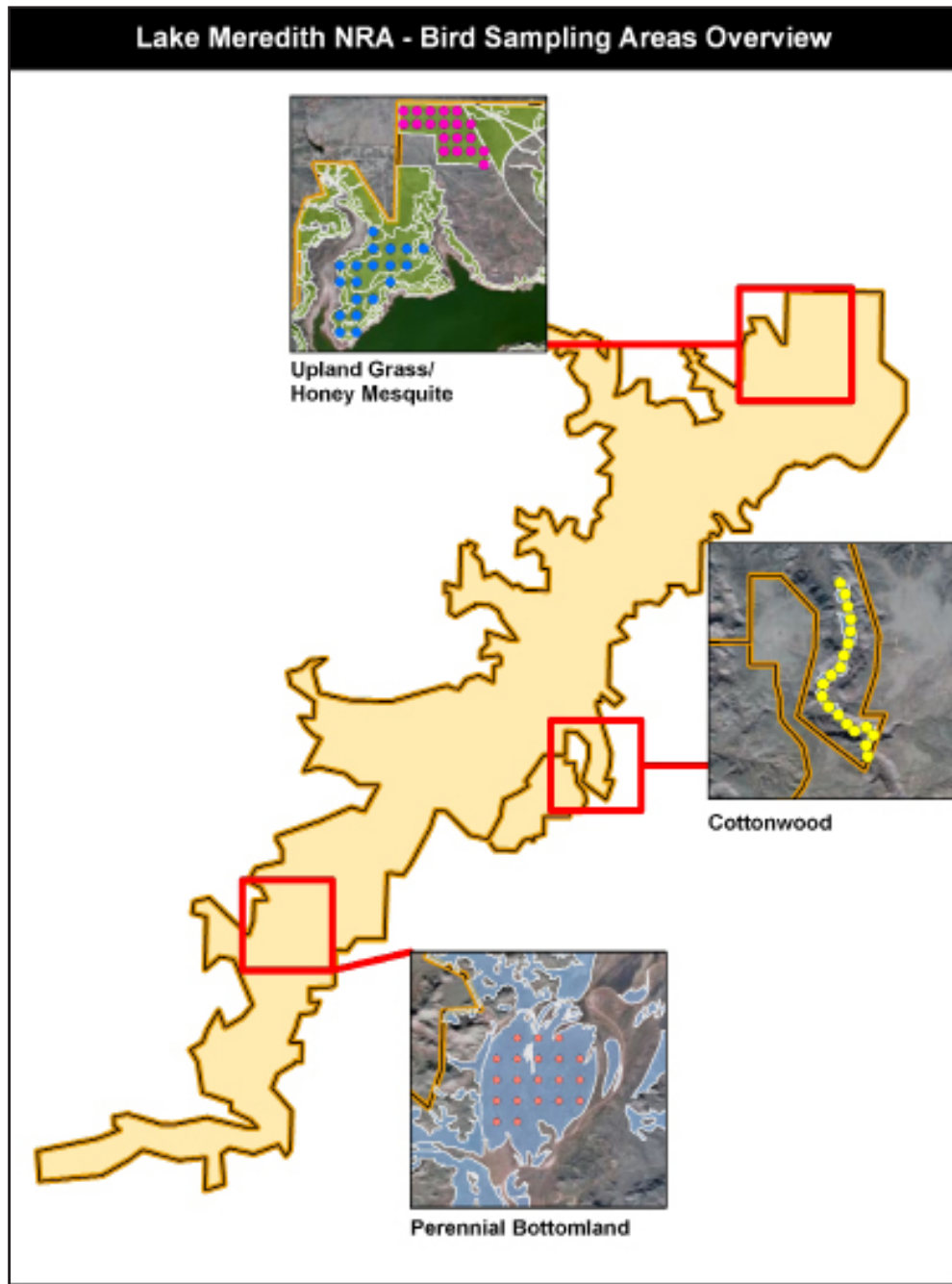


Figure 1. Bird sampling areas at Lake Meredith NRA.