



Landbird Monitoring 2010

RESOURCE BRIEF

Importance

The National Park Service's mission is to manage park resources "unimpaired for future generations." Protecting and managing some of our nation's most significant natural resources requires basic knowledge of the condition of ecosystems and species that occur in national parks. Landbirds have high body temperatures and rapid metabolisms, and they occupy high trophic levels. Therefore, they may be indicators of changes in the biotic or abiotic components of the environment upon which they depend. Landbirds are also a conspicuous component of many ecosystems, making them highly detectable and efficiently surveyed with the use of numerous standardized methods.

Status and Trends

The Sonoran Desert Network (SODN) began monitoring birds in Spring 2007. This effort is part of a collaboration among the Southern Plains, Sonoran Desert, and Chihuahuan Desert Networks, and Rocky Mountain Bird Observatory (RMBO). The overall goal of our bird monitoring program is to detect biologically significant changes in population parameters over time. Details of our approach can be found in our monitoring protocol (in review). At Fort Bowie National Historic Site (NHS), we sampled two transects/grids (one in riparian habitat and one in desert scrub habitat) during June and July of 2010. Each transect was visited twice for a total sample of 28 points. The specific objectives of our efforts are:

1. To estimate the proportion of sites occupied for most species in most parks. Occupancy is a measure of presence or absence of a species in space that, when evaluated across time, indicates changes in the distribution of a species.
2. To estimate parameters related to community dynamics, particularly species richness and species composition. Monitoring the richness and composition of native communities can provide valuable insights about changes in the overall health of the system of concern.
3. To estimate density of the most-common species.

It is important to note that our objectives focus on long-term changes and trends. It is neither practical nor useful to conduct



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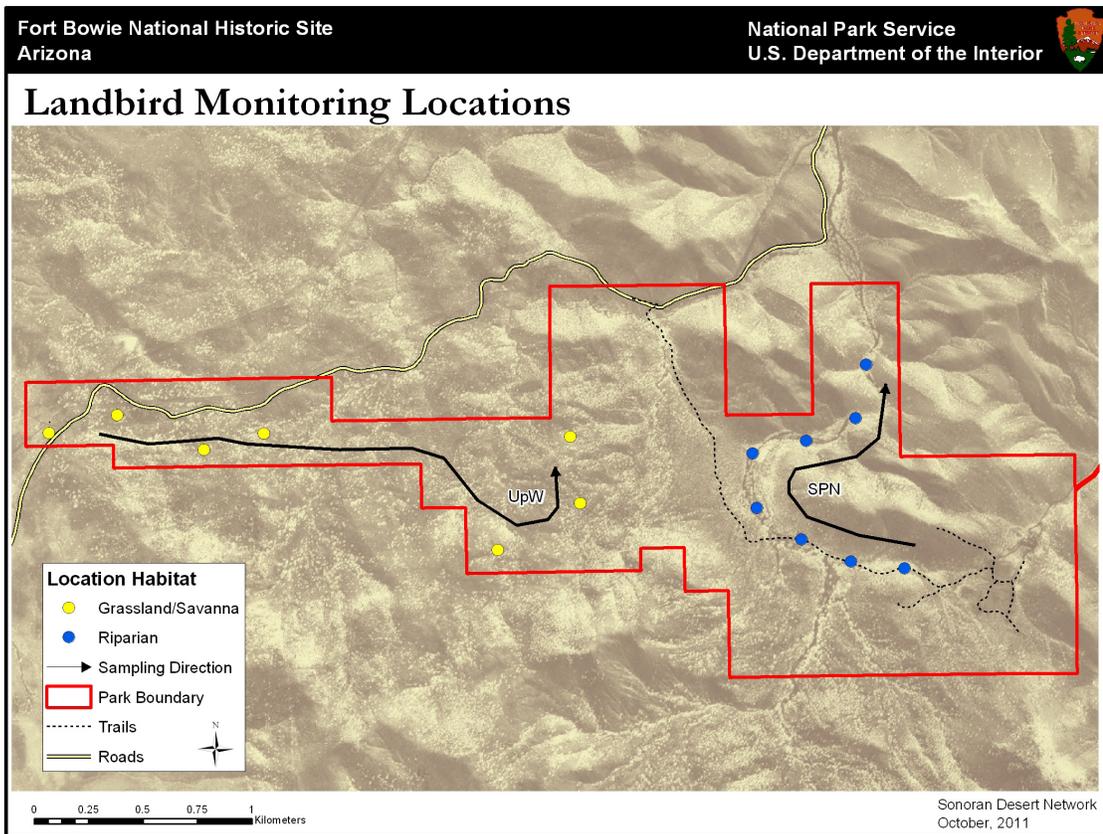
Ash-throated flycatcher.

comprehensive analyses for each objective on an annual basis. Therefore, we will provide basic data summaries on an annual basis (in resource briefs such as this one) and, once every five years, a comprehensive synthesis report that will go into much greater depth, including analyses for all objectives and interpretations in a broader ecological context.

Results and Discussion

During 2010, 442 birds of 45 species were counted at Fort Bowie NHS. Thirty-six species were detected in riparian habitat, while 27 species were detected in upland (desert scrub) habitat; these numbers include 18 species that were observed in both habitat types. The ash-throated flycatcher (*Myiarchus cinerascens*) was the most commonly counted species (9%) at the park. Northern mockingbird (*Myiarchus cinerascens*; 9%), mourning dove (*Zenaida macroura*; 7%), canyon towhee (*Melospiza fusca*; 6%), rufous-crowned sparrow (*Aimophila ruficeps*; 6%), white-winged dove (*Zenaida asiatica*; 6%), and northern cardinal (*Cardinalis cardinalis*; 6%) were also common. No new species were detected in the park in 2010.

The riparian corridor along Siphon Canyon once again hosted the most bird activity, with summer breeders and migrants appearing prominently along the small stream from Apache Spring. Species with confirmed breeding were summer tanager (*Piranga rubra*), Cooper's hawk (*Accipiter cooperii*), common raven (*Corvus corax*), black-chinned hummingbird (*Archilochus alexandri*), crissal thrasher (*Toxostoma crissale*),



www.rmbo.org/public/monitoring/CountsEffort.aspx.4

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Network website
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Learning Center of the
American Southwest
(URL: <http://www.southwestlearning.org>)

Figure 1. Bird sampling locations at Fort Bowie NHS.

blue grosbeak (*Passerina caerulea*), Bell's vireo (*Vireo bellii*), Cassin's kingbird (*Tyrannus vociferans*), and lesser goldfinch (*Carduelis psaltria*), all within the narrow riparian stretch. The zone-tailed hawk (*Buteo albonotatus*) nest was again occupied, with the adult pair in close attendance. Although the nest stage was not determined, their behavior seemed to suggest that there were small young in the nest. Western scrub-jay (*Aphelocoma californica*) were noted in small groups, and gray vireo (*Vireo vicinior*) were detected off-transect and outside of the nesting territory of previous years. The large turkey vulture (*Cathartes aura*) roost appeared healthy, with more than 40 birds found in the same area as in recent years, and singing indigo buntings (*Passerina cyanea*) were noted in several locations in the park. The upland transect did not have as much diversity as last year, but western scrub-jay, Scott's oriole (*Icterus parisorum*), Bewick's wren (*Thryomanes bewickii*), northern mockingbird (*Mimus polyglottos*), western (*Tyrannus verticalis*) and Cassin's (*Tyrannus vociferans*) kingbirds, and American kestrel (*Falco sparverius*) were noted in suitable breeding habitats.

RMBO, the NPS's primary cooperator for this project, collects and manages the bird monitoring data. The data are available through the RMBO Avian Data Center (URL: <http://>



White-winged dove.

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