Landbird Monitoring
2010

RESOURCE BRIEF

PHOTO: © ROBERT SHANTZ

Common yellowthroat, first observed at the park in 2010.

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). A total of 11 transects were sampled at Saguaro National Park (NP) in April, May, and June of 2010 (Figures 1 and 2). Six transects were in the Rincon Mountain District (SAGE). Five of these were in the upland habitat class (four in desert scrub habitat types and one in woodland habitat); one transect was in riparian habitat. The transects in the desert scrub and riparian habitats were visited twice, while the woodland habitat was visited once. The five transects in the Tucson Mountain District (SAGW) were in upland desert scrub habitat and were visited twice. We sampled a total of 144 points in the park. 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 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, 2,954 birds of 88 species were counted at Saguaro NP. White-winged dove (*Zenaida asiatica*) and Gila woodpecker (*Melanerpes uropygialis*) were the most commonly counted species. At the Rincon Mountain District, 1,464 birds of 81 species were counted. Species counted in the highest numbers were white-winged dove (12%), Gila woodpecker (8%), brown-crested flycatcher (*Myiarchus tyrannulus*; 6%), ash-throated flycatcher (*Myiarchus cinerascens*; 6%), and Gambel's quail (*Callipepla gambelii*; 6%). At the Tucson Mountain District, 1,490 birds of 56 species were counted. Species counted in the highest numbers were white-winged dove (16%), Gila woodpecker (15%), Gambel's quail (8%),

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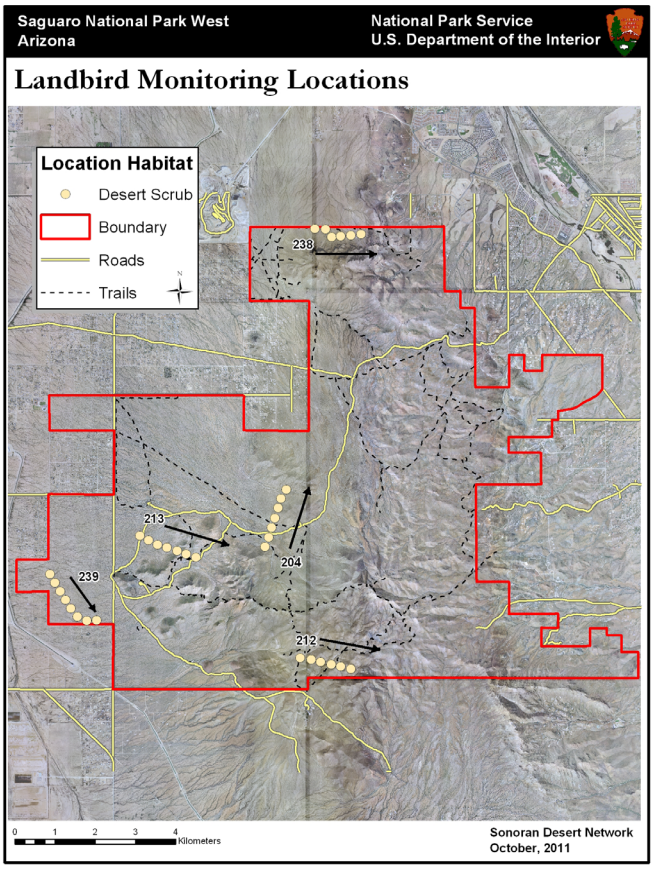

Figure 1. Bird sampling locations at the Tucson Mountain (West) District (SAGW).

ash-throated flycatcher (5%), cactus wren (*Campylorhynchus brunneicapillus*; 5%), and verdin (*Auriparus flaviceps*; 5%). One new species, the common yellowthroat (*Geothlypis trichas*), was documented at the park in 2010.

Heavy winter rains were beneficial to the desert scrub residents at both park units, and numbers of common species were relatively high. Gila woodpecker, mourning (*Zenaida macroura*) and white-winged doves, cactus wren, Gambel's quail, house finch (*Carpodacus mexicanus*), ash-throated flycatcher, and verdin were most commonly detected in the upland transects. A migrant gray vireo (*Vireo vicinior*) was again detected singing in lush desert scrub, nesting Harris's hawks (*Parabuteo unicinctus*) held the same territory, and a great horned owl (*Bubo virginianus*) nest with large young was observed in a saguaro. Both peregrine (*Falco peregrinus*) and prairie (*Falco mexicanus*) falcons were again detected within the park, although nesting was not confirmed. A lowland wintering spotted towhee (*Pipilo maculatus*) in desert scrub was unusual, as were lingering, singing Brewer's sparrows (*Spizella breweri*).

Along Rincon Creek at SAGE, stream levels and surface water pools were unusually high from the bountiful winter rains, and snow melt from the Rincon Mountains contributed to lush riparian undergrowth, attracting good numbers of yellow-breasted chat (*Icteria virens*) and Bell's vireo (*Vireo bellii*), species which have been absent in dry years. A female common yellowthroat along the riparian stretch was the first confirmed report for the park; the habitat could be suitable for nesting in wetter years. Gray (*Buteo nitidus*) and zone-tailed (*Buteo albonotatus*) hawks, great horned owl, yellow warbler (*Dendroica petechia*), northern beardless-tyrannulet (*Camptostoma imberbe*), and yellow-billed cuckoo (*Coccyzus americanus*) were also present. A pair of "Mexican" mallards (*Anas platyrhynchos*) favored a suitable breeding stretch of the creek. The high-elevation transects in the Rincon Mountains at SAGE were not surveyed this year due to a crew-member injury.

RMBO, the NPS's primary cooperator for this project, manages the bird monitoring data. The data are available through the RMBO Avian Data Center (URL: http://www.rmbo.org/public/monitoring/CountsEffort.aspx.4).

Contacts

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

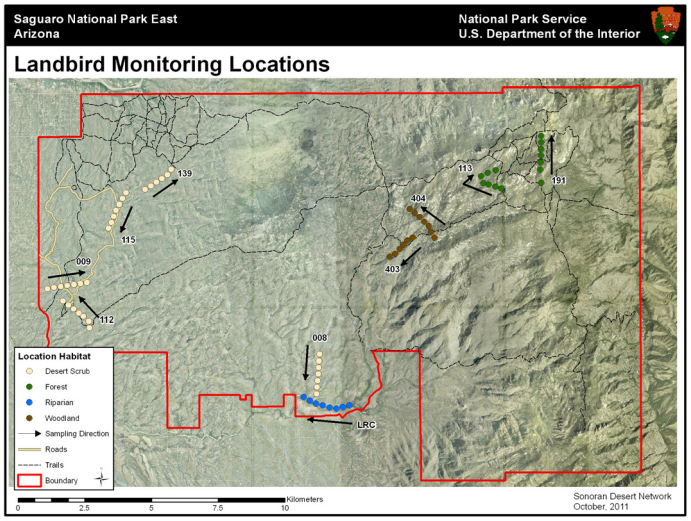

Figure 2. Bird sampling locations at the Ricon Mountain (East) Unit (SAGE).