



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.



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Brown-crested flycatcher.

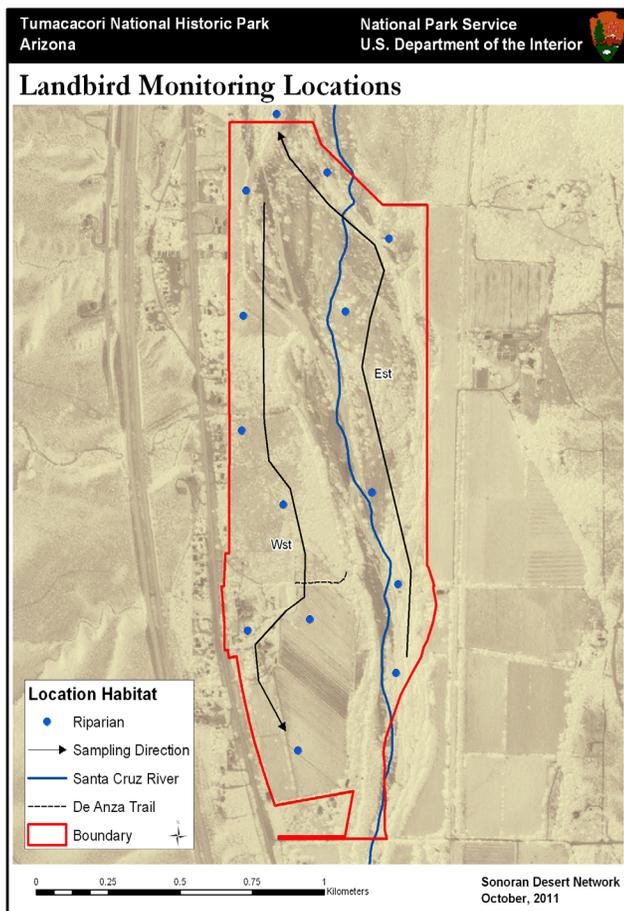


Figure 1. Bird sampling locations at Tumacácori NHP.

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). We sampled two transects at Tumacácori National Historical Park (NHP; Figure 1) during the 2010 breeding season. Both transects, with seven survey points each, were in riparian habitat. The transects were surveyed twice in May for a total sample of 28 survey 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 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, 696 birds of 62 species were counted at Tumacácori NHP. Brown-crested flycatcher (*Myiarchus tyrannulus*) was the most commonly counted species (11%). Gila woodpecker (*Melanerpes uropygialis*; 7%), brown-headed cowbird (*Molothrus ater*; 6%), Bewick's wren (*Thryomanes bewickii*; 6%), and Lucy's warbler (*Oreothlypis luciae*; 6%) were also common. No new species were recorded in 2010.

The lush riparian corridor along the east transect continued to host higher numbers and species diversity than the west transect, with many of the expected summer breeders, such as yellow warbler (*Dendroica petechia*), summer tanager (*Piranga rubra*), yellow-breasted chat (*Icteria virens*), Bell's vireo (*Vireo bellii*), and brown-crested flycatcher, in healthy attendance. Residents such as Bewick's wren, Abert's towhee (*Melospiza aberti*), Gila woodpecker, lesser goldfinch (*Carduelis psaltria*), brown-headed cowbird, and song sparrow (*Melospiza melodia*) were also noted in high numbers. Several pairs of gray hawk (*Buteo nitidus*) were observed nesting along and adjacent to the east transect, and a pair of territorial tropical kingbird (*Tyrannus melancholicus*) were encountered in prime nesting habitat where they have bred in recent years. The west transect, consisting primarily of mesquite woodland and open agricultural fields, hosted large numbers of blackbird and dove and open country flycatcher, kingbird, sparrow, and finch. Flyover black-bellied whistling-duck (*Dendrocygna autumnalis*) and numerous paired common ground-dove (*Columbina passerina*) were also detected. Interesting vagrant



PHOTO: © ROBERT SHANTZ

Summer tanager, a summer breeder at the park.

species in and adjacent to the park included hooded (*Wilsonia citrina*) and Kentucky (*Oporornis formosus*) warbler, white-eyed vireo (*Vireo griseus*), Baltimore oriole (*Icterus galbula*), and northern parula (*Parula americana*).

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://www.rmbo.org/public/monitoring/CountsEffort.aspx.4>).

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