

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

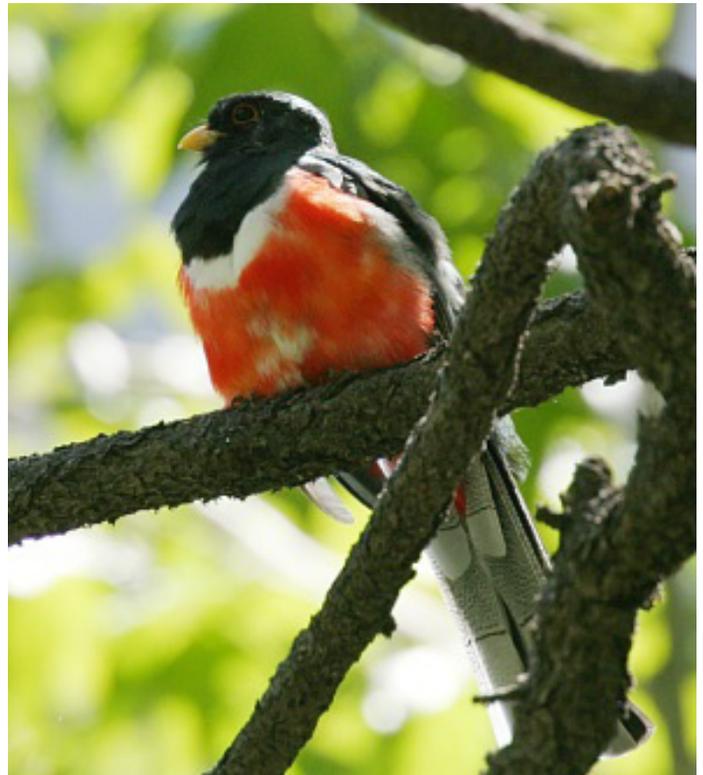


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Elegant trogon (male), a rare species in the park.

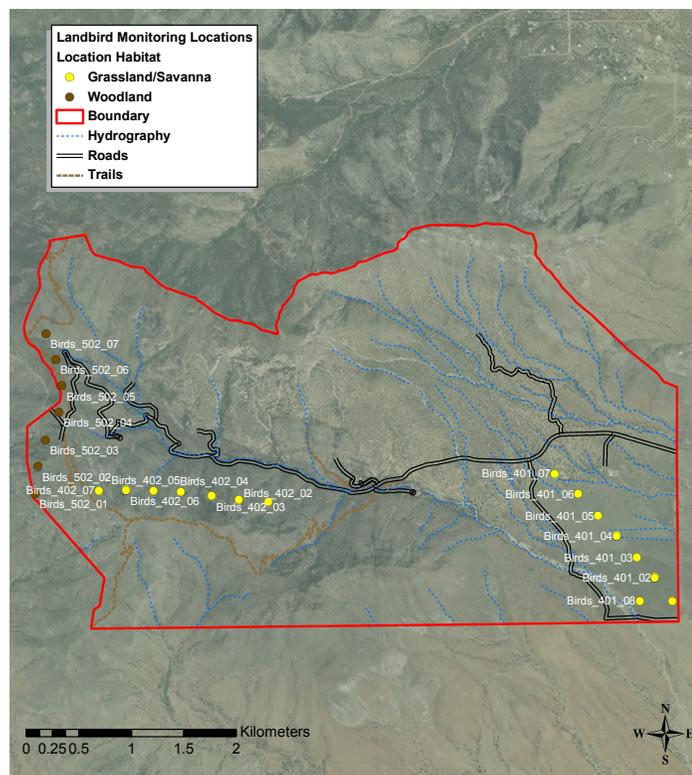


Figure 1. Bird sampling locations at Coronado NMem.

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). During May and June of 2010, we sampled three transects at Coronado National Memorial (NMem; Figure 1), two with seven survey points and one with five points. Two transects were in the grassland savanna habitat type and were sampled twice, and one transect was in the woodland habitat type and was sampled once. A total of 33 survey points were sampled at Coronado NMem. 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 composi-



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White-winged dove.

tion. 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, 452 birds of 61 species were counted at Coronado NMem. Mourning dove (*Zenaida macroura*) was the most commonly counted species (7%). Ash-throated flycatcher (*Myiarchus cinerascens*; 6%), eastern meadowlark (*Sturnella magna*; 6%), white-winged dove (*Zenaida asiatica*; 5%), Bewick's wren (*Thryomanes bewickii*; 5%), and Mexican jay (*Aphelocoma ultramarina*; 5%) were also common. No new species were detected in the park in 2010.

After a rainy winter, the mesquite grassland transect along the international border fence was notably lush, and increased numbers of eastern meadowlark, Cassin's (*Peucaea cassinii*)

and Botteri's (*Peucaea botterii*) sparrows, and western kingbird (*Tyrannus verticalis*), were observed. Wild turkeys (*Meleagris gallopavo*) were detected at a survey station in the oaks around a homeowner's yard and are known to frequent the area for the water features. American kestrel (*Falco sparverius*) and loggerhead shrike (*Lanius ludovicianus*) were observed nesting off transect, although they have not been detected annually in recent years. The montane transects yielded the expected oak-chaparral species, with numerous detections of spotted towhee (*Pipilo maculatus*), Mexican jay, rufous-crowned sparrow (*Aimophila ruficeps*), Bewick's wren, western scrub-jay (*Aphelocoma californica*), Montezuma quail (*Cyrtonyx montezumae*), black-chinned sparrow (*Spizella atrogularis*), hepatic tanager (*Piranga flava*), Scott's oriole (*Icterus parisorum*), and dusky-capped flycatcher (*Myiarchus tuberculifer*).

Exciting reports for the year included a nesting pair of sulphurbellied flycatcher (*Myiodynastes luteiventris*) and a solitary migrant male elegant trogon (*Trogon elegans*) in the narrow riparian strip of Montezuma Canyon; both species are rare in the park. A credible observation of a plain-capped starthroat (*Heliomaster constantii*) at Montezuma Pass was reported later in the season. The starthroat is a vagrant hummingbird from Mexico that frequents flowering agaves in the summer. There have been very few sightings of the species in the memorial over the past two decades.

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
(URL: <http://www.nature.nps.gov/im/units/SODN>)

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