

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 the 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 Chiricahua National Monument (NM), we sampled five transects (Figure 1) in June and July of the 2010 breeding season. All transects were in the upland habitat class of either grassland savanna or woodland habitat types. Each transect had seven points, for a total of 67 survey points (not all points were sampled twice). 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.



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Black phoebe, a new species for the park.

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, 1,181 birds of 63 species were counted at Chiricahua NM (not including three incidental species). Bewick's wren (*Thryomanes bewickii*) was the most commonly counted species (7%). Also common were Mexican jay (*Aphelocoma ultramarina*; 7%), spotted towhee (*Pipilo maculatus*; 6%), and bushtit (*Psaltriparus minimus*; 6%). Five new species were recorded for the monument in 2010: black-tailed gnatcatcher (*Polioptila melanura*), Eurasian collared-dove (*Streptopelia decaocto*), black phoebe (*Sayornis nigricans*; incidental), Cassin's sparrow (*Peucaea cassinii*; incidental), and short-tailed hawk (*Buteo brachyurus*; incidental).

Diversity of habitat and terrain contributed to the monument's high bird diversity and numbers observed at the two new mid-elevation transects, Picket Canyon and Whitetail Canyon. Notable species included yellow-eyed junco (*Junco phaeonotus*), magnificent hummingbird (*Eugenes fulgens*), Arizona woodpecker (*Picoides arizonae*), band-tailed pigeon (*Patagioenas*

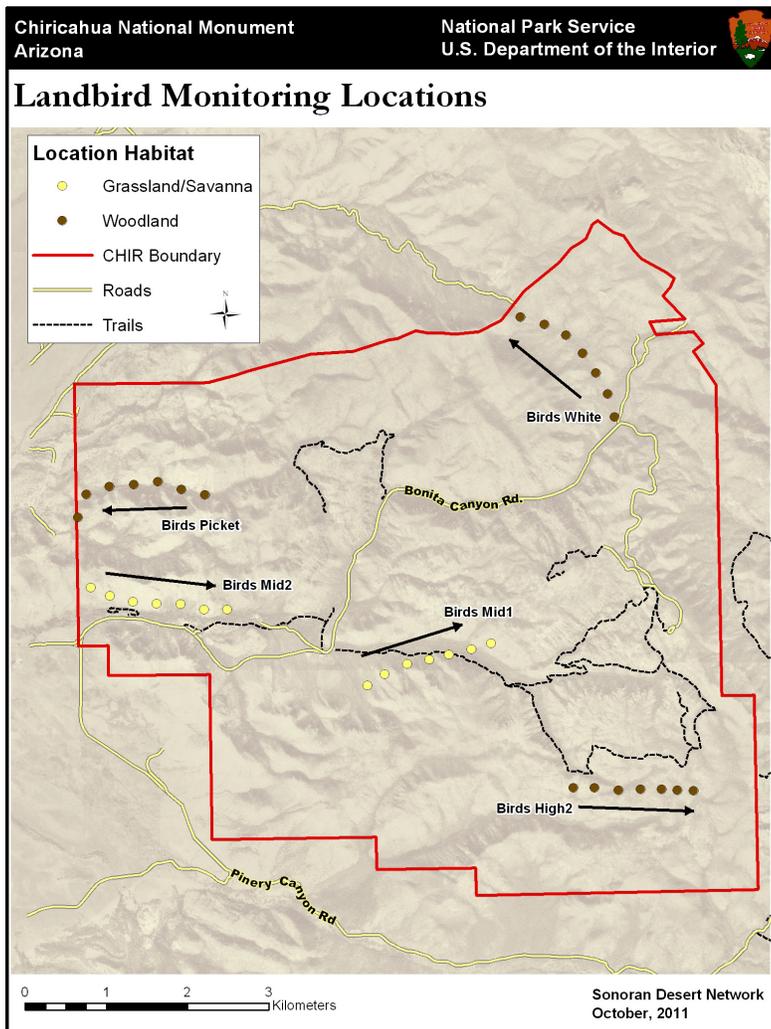


Figure 1. Bird sampling locations at Chiricahua NM.

fasciata), juniper titmouse (*Baeolophus ridgwayi*), dusky-capped flycatcher (*Myiarchus tuberculifer*), painted redstart (*Myioborus pictus*), and hepatic tanager (*Piranga flava*), as well as a juvenile northern goshawk (*Accipiter gentilis*) seen and heard at Whitetail Canyon.

The highlight of 2010 for the monument was the sighting of a light morph adult short-tailed hawk (*Buteo brachyurus*)—a new species for the park—observed from Massai Point above Rhyolite Canyon. Short-tailed hawks are rare, recent arrivals to the area from the Sky-Island mountains of northern Mexico. A pair regularly nests a few miles south of the monument at Barfoot Lookout in the higher elevations of the Chiricahua Mountains. Barfoot Lookout is visible from Massai Point. The bird was most likely a foraging member of the pair, rather than a different individual holding a territory in the park. The sighting confirms the species as a new addition for the park and is somewhat overdue given the proximity of the breeding pair in recent years. The pair fledged two young this year, and it is

possible the species may establish a small population adjacent to the park.

A pair of singing Cassin's sparrows (*Peucaea cassinii*) were detected in the open grassland at the monument's entrance booth, displaying from mesquite on both sides of the boundary fence. The pair was on territory (birds arrived or remained on a defended breeding site), singing and displaying in breeding mode prior to the onset of the monsoon rains. Their behavior suggested nesting, though this was not confirmed. Their presence in and adjacent to the park in suitable habitat is encouraging, as Cassin's sparrows are more common in mesquite grasslands further west and have been somewhat absent this far east in recent years. This sighting is the first for the park.

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>).

Contacts

Rob Bennetts, Landbird Monitoring Project Lead,
Southern Plains Network
Robert_Bennetts@nps.gov

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

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



Mexican jay.

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