

# 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.



PHOTO: © ROBERT SHANTZ

Brewer's blackbird.

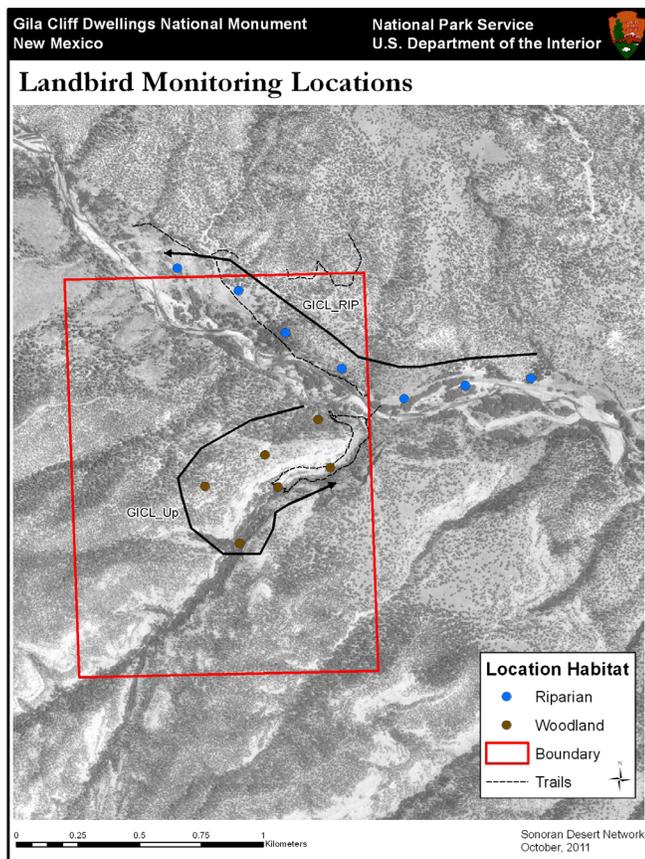


Figure 1. Bird sampling locations at Gila Cliff Dwellings NM.

### 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). During June and July of 2010, we sampled two transects at Gila Cliff Dwellings National Monument (NM). One transect was in riparian habitat with seven survey points and one was in upland habitat with six survey points. Each transect was surveyed twice for a total sample of 26 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, 453 birds of 62 species were counted at Gila Cliff Dwellings NM. Approximately the same number of species were observed in upland compared to riparian habitat, but a greater number of individual birds were counted in riparian habitat. Spotted towhee (*Pipilo maculatus*) was the most commonly counted species (11%) at the monument. American robin (*Turdus migratorius*; 8%), violet-green swallow (*Tachycineta thalassina*; 5%), northern flicker (*Colaptes auratus*; 5%), and black-headed grosbeak (*Pheucticus melanocephalus*; 5%) were also common. No new species were recorded during the surveys in 2010.

The riparian transect was very active with breeding birds, such as cordilleran flycatcher (*Empidonax occidentalis*), yellow-breasted chat (*Icteria virens*), blue grosbeak (*Passerina caerulea*), summer tanager (*Piranga rubra*), and yellow warbler (*Dendroica petechia*), as well as pine-oak juniper species, including western scrub-jay (*Aphelocoma californica*), Virginia's warbler (*Oreothlypis virginiae*), purple martin (*Progne subis*), and northern flicker (*Colaptes auratus*). Numbers detected and diversity were higher than in 2009. In 2010, a nesting pair of red-naped sapsucker (*Sphyrapicus nuchalis*) was noted, as was a Lewis's woodpecker (*Melanerpes lewis*). A new upland transect was added on the higher pine-oak juniper slopes and atop the mesa above the cliff dwellings. This transect yielded some interesting species, such as Brewer's blackbird (*Euphagus cyanocephalus*), pygmy nuthatch (*Sitta pygmaea*), bushtit (*Psaltriparus minimus*), greater pewee (*Contopus pertinax*), hepatic tanager (*Piranga flava*), red-faced warbler (*Cardellina rubrifrons*), dark-eyed junco (*Junco hyemalis*), Steller's jay (*Cyanocitta stelleri*), Grace's warbler (*Dendroica graciae*), and broad-tailed hummingbird (*Selasphorus platycercus*). Common black-hawk (*Buteo galus anthracinus*) and common merganser (*Mergus merganser*) were noted off-transect in suitable breeding habitat, and the great blue heron (*Ardea herodias*) rookery was active again.

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>).



PHOTO: © ROBERT SHANTZ

Spotted towhee.

## Contacts

Rob Bennetts, Landbird Monitoring Project Lead  
Southern Plains Network  
[Robert\\_Bennetts@nps.gov](mailto: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>)