

## Birds 2009

## 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 are a conspicuous component of many ecosystems and have high body temperatures, rapid metabolisms, and occupy high trophic levels. As such, changes in landbird populations may be indicators of changes in the biotic or abiotic components of the environment upon which they depend. Relative to other vertebrates, landbirds are also highly detectable and can be 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



PHOTO: © ROBERT SHANTZ

House finch

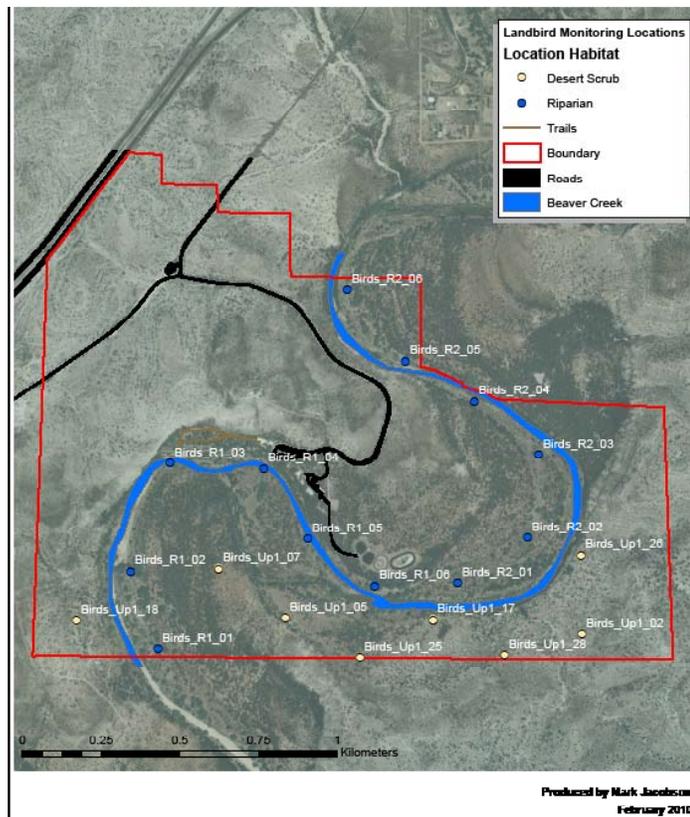


Figure 1. Bird sampling locations at Montezuma Castle NM.

the Southern Plains, Sonoran Desert, and Chihuahuan Desert Networks. 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 preparation). At Montezuma Castle National Monument (NM), we sampled 27 survey points along four transects (Figure 1) two times during the breeding season (Table 1). Three transects were located at the Castle Unit and one was located at the Well Unit. 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.

**Table 1. Sampling dates at Montezuma Castle NM.**

Location Name	Unit	Visit 1	Visit 2
R1 (Riparian)	Castle	5/20/2009	6/04/2009
R2 (Riparian)	Castle	5/19/2009	6/04/2009
Up1 (Desert scrub)	Castle	5/20/2009	6/03/2009
R (Riparian)	Well	5/19/2009	6/03/2009

It is important to note that our objectives focus on long-term changes and trends, and a minimum number of years are required before meaningful estimates related to trends are feasible. Consequently, it is neither practical nor feasible to conduct comprehensive analyses for each objective on an annual basis.

## Results and Discussion

During our 2009 surveys, we had 1,258 detections of birds of 70 species. Overall, Bewick's wrens were the most commonly detected species, followed by Lucy's warblers and house finches. At the Castle Unit, the most commonly detected species was Bewick's wren, accounting for 9% of the detections. House finches (9%), Lucy's warblers (8%), ash-throated flycatchers (6%), and brown-crested flycatchers (6%) were also common. At the Well Unit, the most commonly detected species was the yellow warbler, accounting for 8% of the detections. Also common were Lucy's warblers (7%), brown-crested flycatchers (6%), gila woodpeckers (6%), and mourning doves (6%). One new species was documented for the monument in 2009—the yellow-throated vireo, described below.

Wet Beaver Creek at the Castle Unit was lower than previous years and some sections of the creek were dry, but riparian bird activity remained high with many resident species actively nesting and numerous migrants streaming through. Bell's vireo, yellow-breasted chat, Abert's towhee, song sparrow, summer tanager, and Bewick's wren were notably prominent. Several pairs of common black-hawks were found nesting along the transect, and a pair of common mergansers was suspected nesting along the same lush stretch of creek where they have nested in recent years. Yellow-billed cuckoos were present in suitable nesting habitat later in the season.

An exciting find at the Well Unit was a calling territorial male elegant trogon, which was detected on surveys and seen briefly; its voice was recorded for documentation. This may have been the same individual that was calling at the Castle Unit the previous year. This constitutes the northernmost record for this colorful tropical species from Mexico, which is usually found in moist canyons of the border mountains in southeast-



Lucy's warbler

PHOTO: © ROBERT SHANTZ

ern Arizona. A singing male yellow-throated vireo, an eastern vagrant, was recorded and photographed along the transect; it was observed there for several weeks. Equally interesting were records of the dusky-capped flycatcher and Northern beardless-tyrannulet, two tropical border range species which seem to be pushing further north in recent years. An interesting side note are the pairs of breeding sulphur-bellied flycatchers and thick-billed kingbirds found north of the park in similar riparian habitats in recent years. These observations may indicate that closer attention to neotropical migratory species that may occur in the parks is warranted.

## Contacts

Rob Bennetts, Landbird Monitoring Project Lead  
Southern Plains Network  
Robert\_Bennetts@nps.gov

Kristen Beaupre', Data Manager  
Sonoran Desert Network  
Kristen\_Beaupre@nps.gov

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

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