



## GUADALUPE MOUNTAINS

# Seasonal Inventory of Birds in Low Elevation Riparian Habitats

## Guadalupe Mountains National Park

Source: R. Meyer, La Tierra Environmental Consulting, LLC, and D. Griffin, Griffin Biological Service.

## PROJECT SUMMARY



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Mexican spotted owl in Guadalupe Mountains National Park.

### Introduction and Background

In 2004, independent researchers began conducting a three-year inventory of birds in low-elevation riparian habitats in four parks in the National Park Service's Chihuahuan Desert Network. The objectives of this study were to (1) conduct surveys to document the presence, richness, and abundance of bird species; (2) compare results to existing information about birds at each sampling area and update park checklists; and (3) provide baseline data and site evaluations that may be used to develop bird monitoring programs in the Chihuahuan Desert Network. This summary presents information from the surveys at Guadalupe Mountains National Park (NP). Summaries of the surveys conducted at the other Chihuahuan Desert Network parks are available on the Learning Center of the American Southwest website, [www.southwestlearning.org](http://www.southwestlearning.org).

### Methods

The researchers initially visited each survey site to assess the extent of the habitat, determine the appropriate survey technique for the site, and establish the point count stations or survey area. The survey method for each site was based on the area's size and arrangement. Sampling was conducted during migration and breeding seasons over a three-year period from 2004 to 2007. Surveys for migrating species were conducted in spring (April and May) and fall (September and October); surveys for breeding species were conducted in June. Incidental observations accounted for a significant proportion of the species documented in this survey.

The researchers conducted point count transect surveys in East, North, and South McKittrick Canyon. Timed area searches were used to survey Guadalupe Canyon and Spring and Choza Springs. In 2004, the McKittrick Canyon sites were surveyed during fall migration. In 2005, surveys of the McKittrick Canyon and Choza Spring sites were conducted in the spring, summer, and fall, and Guadalupe Spring and

Canyon in the spring and summer. In 2006, spring and summer surveys were conducted in McKittrick Canyon. Surveys were conducted in the morning, but were abandoned during inclement weather conditions such as high wind.

### Results

A total of 121 species in Guadalupe Mountains NP were recorded during this inventory. This comprises 41% of the species known to occur in the park, compared to a recent checklist. Four new species were added: blue-headed vireo (*Vireo solitarius*), Carolina wren (*Thryothorus ludovicianus*), hermit warbler (*Dendroica occidentalis*), and yellow-breasted chat (*Icteria virens*). Incidental observations accounted for a significant proportion of the species documented in this survey.

In spring 2005, higher precipitation and available food sources allowed birds to use other non-riparian areas. Migrating species arrived early at breeding sites and the songs of territorial males for most breeding species were heard in late April, though counts were low. Windy conditions associated with El Niño made spring surveys difficult. The survey areas were very dry during the spring and early summer of 2006.

### East McKittrick Canyon

A total of 102 species or 35% of the species known to occur in the park were observed during the surveys of East McKittrick Canyon. Of these species, 45 were breeding or potentially breeding, 6 were riparian obligates, and 17 were riparian de-



pendent. Black-chinned sparrow (*Spizella atrogularis*), crissal thrasher (*Toxostoma crissale*), elf owl (*Micrathene whitneyi*), Grace's warbler (*Dendroica graciae*), and gray vireo (*Vireo vicinior*), all U.S. Fish and Wildlife Service (USFWS) species of conservation concern (2002), were observed. No federally or state-listed species were documented. This site appears to be used less by migrant species than anticipated given its characteristics.

### North McKittrick Canyon

A total of 50 species or 17% of the species known to occur in the park were observed during the surveys of North McKittrick Canyon. Of these species, 34 were breeding or potentially breeding. The black-chinned sparrow and Grace's warbler, both USFWS species of conservation concern (USFWS 2002), were observed. No federally or state-listed species were documented.

### South McKittrick Canyon

A total of 68 species or 23% of the species known to occur in the park were observed during the surveys of South McKittrick Canyon. Of these species, 38 were breeding or potentially breeding. Black-chinned sparrow, elf owl, Grace's warbler, and gray vireo, all USFWS species of conservation concern (2002), were observed. The Mexican spotted owl (*Strix occidentalis lucida*), which is a federally and state- (Texas) listed threatened species, was documented. The results from surveys in South McKittrick during the spring and fall migration periods did not indicate this area was a major migratory corridor, though the presence of water and dense, diverse vegetation provides important breeding habitat for many species.

### Choza Spring

A total of 66 species or 22% of the species known to occur in the park were observed during the surveys of Choza Spring. Of these, 36 were breeding or potentially breeding species, 4 were riparian obligates, and 13 were riparian dependent. Cassin's sparrow (*Aimophila cassinii*), a USFWS species of conservation concern (2002), was observed. No federally or state-listed species were documented. The isolated nature, small size, and fragmentation of the site by a four-lane highway may be limiting bird use of the area. However, the researchers observed low numbers of migrants in most of the riparian areas they surveyed in 2005.

### Guadalupe Canyon and Spring

A total of 40 species or 14% of the species known to occur in the park were observed during the surveys of Guadalupe Canyon and Spring. Of these, 10 were riparian dependent. No riparian obligate species were detected at Guadalupe Canyon and Spring. Black-chinned sparrow and crissal thrasher, both

USFWS species of conservation concern (2002), were observed. No federally or state-listed species were documented. Approximately 30% of species observed at this site were passage migrants, or species in the process of migrating. The site supports a diverse bird community though it is small and isolated.

### Discussion

Guadalupe Mountains NP, located near the convergence of the Chihuahuan Desert and Great Plains, is near the range limits for many bird species and is a stopping point for many eastern migrating species. McKittrick Canyon provides important habitat for resident and migrating birds and also provides a setting for educational, interpretative, and recreational opportunities. It is the most extensive riparian system in Guadalupe Mountains NP and has the greatest potential to be a monitoring site for local breeding bird populations because of its size. Choza Spring is also an important riparian area for birds. The park should continue to survey this site to further determine the importance of this site to birds and other species.

The researchers determined that the point count and area search methods were efficient and successful in detecting most species during the breeding season, while other methods may be more effective for very rare or elusive species. For species in migration, intensive searching and mist netting may be more appropriate. Studies of USFWS species of conservation concern, such as the gray vireo and the Montezuma quail, may be warranted to answer questions of abundance and distribution. The Montezuma quail was historically widespread in the Guadalupe Mountains and reintroduction efforts were made in the 1980s, though recently only occasional sightings were made in the higher elevations.

### Literature Cited

Meyer, R., and D. Griffin. 2007. Seasonal inventory of birds in low elevation riparian habitats at Chihuahuan Desert Network Parks, National Park Service. Final report.

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