

Seasonal Inventory of Birds in Low Elevation Riparian Habitats

Fort Davis National Historic Site

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

PROJECT SUMMARY



Fort Davis National Historic Site.

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 Fort Davis National Historic Site (NHS), the first inventory of birds conducted in the site. 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.

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.

In 2004, the researchers conducted fall migration surveys at Hospital Canyon, including the cottonwood grove, and the adjacent mesquite grassland. Researchers surveyed the sites again in the spring, summer, and fall of 2005 and 2006. Point count transects and a timed area search site were established at Hospital Canyon. Surveys were conducted in the morning, but were abandoned during inclement weather conditions such as high wind.

The timed-area search method was used to survey mesquite grassland adjacent to the point count transect following a general route. Researchers recorded detections of birds according to time and location of the first detection and documented flyovers associated with the site. Flyovers not associated with the site, birds flushed before or after the count, and birds detected between counts were considered incidental observations.

Results

A total of 80 species were recorded in Fort Davis NHS during this inventory. This comprises 32% of the species known to occur in the site, compared to a checklist compiled of previous work in the Trans-Pecos and Davis Mountain regions. Of the species documented, 6 were riparian-obligate species and 11 were riparian-dependent species. Seventy-two of the species documented in Fort Davis NHS were detected in the surveys of Hospital Canyon.

In spring 2005, higher precipitation associated with El Niño and available food sources allowed birds to use other non-riparian areas. Most breeding species appeared early at breeding sites in 2005. Spring and early summer of 2006 were very dry, particularly in the Davis Mountains region and fewer migrants and breeding birds were present in Fort Davis NHS during the surveys.

Hospital Canyon

Of the 72 species documented in Hospital Canyon, 42 were

breeding or potentially breeding, 3 were riparian obligates, and 9 were riparian-dependent species. No unusual migrants or vagrants were reported during surveys. Black-chinned sparrow (*Spizella atrogularis*) and Cassin's sparrow (*Aimophila cassinii*), both U.S. Fish and Wildlife Service (USFWS) species of conservation concern (USFWS 2002) were observed. No federally or state-listed species were documented.

Black-crested titmouse (*Baeolophus atricristatus*) and Montezuma quail (*Cyrtonyx montezumae*) were both observed in Hospital Canyon, though they were absent from areas of the larger Chihuahuan Desert Network study where they had been historically observed, such as the Guadalupe Mountains approximately 100 miles north of the Fort Davis NHS.

A pair of western wood-pewees (*Contopus sordidulus*) were observed nesting in the cottongrove, the first known record for this species nesting in Fort Davis NHS and the adjacent state park. Pewees typically nest at higher elevations in the pine-oak forest of the Davis Mountains.

One pair of black-headed grosbeaks (*Pheucticus melanocephalus*) was observed in Hospital Canyon during summer 2006. This species also typically nests at higher elevations. The pair may have been potential breeders at a low elevation or early dispersers after breeding.

Mesquite Grassland

Of the 46 species observed in the mesquite grassland, 34 were considered breeding or potentially breeding species. No federally listed species were documented, though three species listed as threatened by the State of Texas were observed in the mesquite grassland: common black-hawk (*Buteogallus anthracinus*), gray hawk (*Buteo nitidus*), and zone-tailed hawk (*Buteo albonotatus*). Cassin's sparrow (*Aimophila cassinii*), and loggerhead shrike (*Lanius ludovicianus*), listed by USFWS as species of conservation concern (USFWS 2002) were also observed.

Of note, an adult male bronzed cowbird (*Molothrus aeneus*) and five of unknown age and sex were observed flying over the mesquite grassland in summer 2006. Researchers also made three observations of the western kingbird (*Tyrannus verticalis*) in the spring and summer (breeding season).

Discussion

Fort Davis NHS, located in the Trans-Pecos region of Texas near the Davis Mountains, is near the range limits for many bird species and is a stopping point for many eastern migrating species. Hospital Canyon supports many bird species, but not riparian obligate or dependent species. The mesquite grasslands can be productive and is used by a variety of migrant bird species.



STEVE WEST

Gray vireo (*Vireo vicinior*).

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 (*Vireo vicinior*), although not detected during this study but known to occur in other Chihuahuan Desert Network parks, and the Montezuma quail, may be warranted to answer questions of abundance and distribution. Staff at Fort Davis NHS may want to refine the initial species checklist derived from this study to detect changes in bird communities and assess the impacts of fire and other disturbances.

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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