

Baseline Avian Inventory At Washita Battlefield N.H.S.

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Introduction and Background

Washita Battlefield National Historic Site (WABA) was established in 1996 in order to “protect and interpret the site of the Southern Cheyenne village of Peace Chief Black Kettle that was attacked by the 7th U.S. Cavalry under Lt. Col. George A. Custer just before dawn on November 27, 1868.” To date, extensive botanical surveys have been conducted at the site, but information on animal species potentially using the site has been lacking. Birds are important components in temperate ecosystems of North America and many species are in decline. The potential causes and ramifications of these declines are still debated but one problem facing many regions of the United States, including Oklahoma, is that knowledge of the distributions of many species are inadequate to assess the degree of population declines. This inventory will set the stage for a long-term monitoring program for birds at Washita Battlefield National Historic Site.

Methods

Surveys were conducted for birds within eight habitat types found within the park boundaries and during five distinct survey periods in conjunction with, and continuing after, surveys for non-volant terrestrial vertebrates (16-21 February 2001, 21-26 May 2001, 15-20 January 2002, 29 May – 3 June 2002, 26 November – 1 December 2002). Although coverage was not perfect, each habitat type was represented by at least two point count stations, all but one of them (sandy prairie) by at least three. were conducted using 10-minute timed point counts. Most individuals were expected to be recorded within the first five minutes, with the extra five minutes available for identifying “stragglers” or obtaining verification of individuals that had suspect initial identifications. Thirty sampling points were established throughout the park. The sampling points were at least 250 m apart and were stratified by habitat in order to document avian use of specific habitats within the park. Each point was counted twice during each survey session: once in the

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morning and once in the evening. Morning and evening counts were conducted within 3 hours of sunrise or sunset, respectively. During a particular survey session, 6 points were counted every morning for 5 days. These points were repeated that same evening.

At each point count station, habitat variables were recorded during each session. A 10 m rope, knotted at 1 m intervals, was laid on the ground at each cardinal direction from the center of the station. Therefore, there were 40 measurement points (4 - 10 m lines with 10 knots per line) for each sample. Under each knot, we recorded the presence of grass, forb, bare soil, cacti, yucca, sticks/logs, shrubby/woody vegetation, leaf litter, rocks, water, or crop stubble. We also recorded vegetation height at each point in one of six categories: <10 cm, 11-25 cm, 26-50cm, 51-75cm, 76-100cm and >100 cm. (See data collection sheet example at the end of this report.) Measurements were converted into a percentage of sampling points containing a particular vegetation type or belonging to a particular height category. Canopy cover was calculated using a spherical densiometer. Measurements were taken at four points in the center of the station and cover estimates were averaged for that site.

Results And Discussion

In all, 65 avian species were detected by at least one survey method over all survey sessions. A species list, including scientific names and locations detected is given in the full project report (Lomolino and Smith 2007). The highest species richness (25 species) was observed in river riparian

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Northern Cardinals were one of the more common species observed at WABA during this survey.

habitat. Richness at the other habitat types was as follows: restored wheat field (19 species), south riparian (17), north bench (17), north flood plain (16), plowed field (13), sandy prairie (10), and upland range (9).

During spring/summer, 27 species were recorded on point counts. Of these, 72.3% of all individual observations were of just five species: Dickcissel (26.8%), Mourning Dove (18.3%), Meadowlarks (11.4%), Northern Cardinal (10.9%), and Carolina Chickadee (4.9%). The Dickcissel was also the most widely dispersed of all species, occurring at 22 of the 30 point count stations (73.3%). For the fall/winter surveys, 22 species were recorded on point counts. Seven species accounted for 70.2% of all individual observations: American Goldfinch (17.9%), Song Sparrow (16.5%), White-crowned Sparrow (8.7%), Northern Cardinal (8.0%), Mourning Dove (7.6%), Harris's Sparrow (6.3%), and Carolina Chickadee (5.2%). The most widely dispersed fall bird was the Field Sparrow, occurring at 14 point count stations (46.7%), albeit in low numbers (5.1% of individual observations). Below, we highlight patterns and abundance of birds in each habitat type.

Species of Concern

A 1999 bird list for WABA (K. Foote, pers. comm.) listed Interior Least Tern (*Sterna antillarum athalassos*) as occurring "within the historic site or in the surrounding Black

Kettle National Grassland." We did not observe Least Tern either as part of our standard point counts or incidentally. It is our opinion that appropriate nesting habitat along the river (broad, flat, sandy banks and bars) does not occur along the Washita River within Park boundaries. Therefore it is likely that the Least Tern on the original bird list was observed within the surrounding landscape and not at WABA. In fact, nesting for this species was confirmed from 1997-2001 north of WABA at the border of Roger Mills and Ellis Counties. Additionally, the U.S. Fish and Wildlife Service (1997) lists Whooping Crane (*Grus americana*), Bald Eagle (*Haliaeetus leucocephalus*), and Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*) as occurring in Roger Mills County. None of these species were recorded during our surveys.



Photo Credit: Robert E. Bennetts

Although reported as occurring at WABA, Least Terns were not observed during this survey

Literature Cited

- Lomolino, M. V., and G. A. Smith. 2001. Baseline inventory baseline avian inventory at Washita Battlefield National Historic Site, Oklahoma Final report submitted to the National Park Service, Washita Battlefield National Historic Site, Cheyenne, OK..
- U.S. Fish and Wildlife Service. 1997. Section 7 consultation with National Park Service on Endangered Species Act. Letter dated December 11, 1997.

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