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9-2002

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Jorgensen, Joel G., "The Changing Status of Sandhill Crane Breeding in the Eastern Rainwater Basin" (2002). *Nebraska Bird Review.* Paper 333.
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The Changing Status of Sandhill Crane Breeding in the Eastern Rainwater Basin

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Introduction

Prior to extirpation as a breeder before 1900, the Sandhill Crane (*Grus canadensis*) formerly bred throughout Nebraska (Bruner et al. 1904; Ducey 1988; Sharpe et al. 2001). During the 1990s, several summer observations of Sandhill Crane in the Eastern Rainwater Basin region of south-central Nebraska suggested the probability of breeding. In 1999, I discovered direct breeding evidence at Harvard Waterfowl Production Area, Clay County. This breeding record, along with another by different observers in the same county during the same season are the first modern breeding records for Nebraska. In this note, I describe my observations, summarize all modern summer records, and discuss the species status in the Eastern Rainwater Basin.

Evidence of breeding

The Eastern Rainwater Basin (eRWB) is a region of gently rolling loess plains with scattered wetlands in south-central Nebraska. The region occurs primarily in Clay, Fillmore, Hamilton and York counties and also adjacent portions of Adams, Polk, Thayer, Seward, and Webster counties. In modern times, the Sandhill Crane has been essentially an uncommon migrant in the eRWB (pers. obs.), becoming more common to the west. The species is abundant in the northwest portion of the region where the eRWB abuts the Platte River drainage in Hamilton County.

During the mid-1990s, there were a few summer observations of Sandhill Cranes in the eRWB. At first, these were considered merely wandering birds. However, additional observations clearly pointed to a pattern and suggested the possibility of breeding, even though this seemed unlikely at the time. I made a conscious effort in 1999 to search what I presumed were potential breeding areas. During May, I observed a pair of cranes at Harvard Waterfowl Production Area (WPA) in Clay County on several occasions.

On 23 May, the pair was foraging in moist meadow southeast of the main basin. I observed the birds through a scope from the north-south road on the east border of the WPA. The pair's behavior, one bird deliberately walking behind the other maintaining the same distance, suggested that they might have had young. However, vegetation made it impossible to see any chicks from such a distance. On 29 May, I once again observed the pair through a scope from the same distance. This time, two chicks, or colts, were clearly seen. Later in the day, Gerald Jorgensen also observed the family group. It is not known if either colt fledged.

Also, in late May, 1999, personnel from the Nebraska Game and Parks Commission (NGPC) observed a pair at Kissinger Basin Wildlife Management Area (WMA), Clay County, that were acting territorial. In early June, Mark Humpert observed the pair with one chick (Hoffman 1999, J. Dinan pers. comm.). Successful fledging of young was not confirmed.

Might Breeding Have Occurred Before 1999?

As stated previously, confirmation of breeding in 1999 was preceded by and has also been followed by additional breeding season observations; these data are summarized (Table 1).

Table 1: Breding season observations of Sandhill Cranes in the Eastern Rainwater Basin, Nebraska 1992-2001

Date	Location	Number of Birds	Source
14 June 1992	Clay Co	Unknown	Nebraska Bird Review 60: 145
20 August 1994	Basin #79, Clay Co	2 ads, 2 juvs.	Pers. obs. w/ Gerald Jorgensen
3 September	1 mile n of Mallard Haven WPA Filmore Co	2 ads, 2 immature birds	Silcock (1995)
14, 21, 28 July 1996	Harvard WPA, Clay Co	2 adults	Pers. obs.
25 June-9 July 1996	Krause WPA, Filmore Co	2 ads behavior suggested possibility of breeding	Sharpe et al. (2001)

Date	Location	Number of Birds	Source
16 May 1997	Pintail WMA, Hamilton Co	1 adult	Pers. obs.
13 July 1997	Harvard WPA, Clay Co	1 adult	Silcock and Jorgensen (1997)
25 April-9 May 1998	Harvard WPA, Clay Co	2 adults	Pers. obs.
16, 22 August 1998	Basin #79, Clay Co	2 ads, 2 juvs	Pers. obs.
May 1999	Harvard WPA, Clay Co	2 ads, 2 chicks	Pers. obs.
May 1999	Kissinger WMA, Clay Co	2 ads, one chick	Hoffman (1999)
30 April, 7, 13-15 May 2000	Hupp WMA, Thayer Co	1 adult	Pers. obs.
15, 20, 28 May 2000	Massie WPA, Clay Co	1 adult	Pers. obs.
21, 28 May 2000	Harvard WPA, Clay Co	1 adult	Pers. obs.
20 August 2000	South of Massie WPA, Clay Co	2 adults flying	Pers. obs.
24 June, 1 July 2001	Krause WPA, Fillmore Co	2 adults	Pers. obs.
14-17 July 2001	Harvard WPA, Clay Co	1 adult	Pers. obs.

Although direct breeding evidence was not found prior to 1999, circumstantial evidence suggests that breeding likely occurred as early as 1994, as well as in 1998. In both years, I observed two juvenile cranes accompanied by a pair of adults in August in a heavily grazed pasture/basin located five miles north of Ong in the southeast quarter of Section 13 in Clay County. It is designated as basin #79 and is listed as consisting of 94 acres (Nebraska Game and Parks Commission 1971).

Lanny Randolph and Robin Harding observed a family group on 3 September 1995 at a basin a mile north of Mallard Haven WPA, Fillmore County (Silcock 1995). Presumably, this is the basin located in the southern portion of Section 22. It is designated as Basin #30-11 and presently consists of 85 acres (Nebraska Game and Parks Commission 1971). This site is similar to #79 in that it is also a heavily grazed pasture and basin. Although this observation occurred in September, it would be exceptionally early for genuine migrants (Tacha et al. 1992).

Young cranes remain with their parents for less than a year, usually for 9 to 10 months (Tacha and others 1992). Thus it can be deduced that the juveniles observed in August and early September were hatched only a few months earlier. It could be suggested that nesting occurred elsewhere and the family groups wandered into the eRWB in late summer. This possibility seems very unlikely since the nearest known breeding locale outside of the eRWB is Tama County, Iowa (Kent and Dinsmore 1996), approximately 350 miles away.

Breeding likely did not occur, however, at either of the smaller basins where the family groups were observed. Both basins are rather small and are bordered by county roads. It is my supposition that these heavily grazed basins became attractive to the family groups for foraging at a time of year when many other sites, possibly including the nesting site, are grown over with dense vegetation. Sandhill Cranes require large and expansive wetland habitat, far from human habitation, for nesting (Tacha and others 1992). Both confirmed breeding sites are large: Harvard WPA totals 1,484 acres and Kissinger WMA totals 421 acres. Both sites possess an array of wetland and grassland habitats. It is possible that these family groups originated in Krause WPA, Fillmore County, which is less than 2 miles from either Basin #79 or #30-11. Krause is also a large WPA, totaling 527 acres, and is the site of several summer observations (see Table 1).

Regional trends

Six subspecies of Sandhill Crane are currently recognized. Three subspecies are nonmigratory populations that occur in Cuba, Florida, and Mississippi (Tacha et al. 1992). Migratory races breed from the central United States northward to northern Canada, Alaska, and Siberia (Tacha et al. 1992). The southern-breeding, migratory race, *C.g. tabida*, is also known as the "Greater" Sandhill Crane. This race breeds in valleys of the intermountain west and in the Great Lakes region. In recent decades, numbers around the Great Lakes have increased (Tacha et al. 1992). Recent expansion and increases in Iowa, Illinois, and Indiana are chronicled by Brock (Brock 1994, 1997, 2000, 2001). Breeding first occurred in Iowa in 1992 in Tama County, and there have been additional breeding records since (Kent and Dinsmore 1996).

It is logical that breeding and breeding-season observations in the eRWB of Nebraska are the result of continued westward range expansion from the upper Midwest. What is most surprising is the fact that breeding and/or summering has occurred in an isolated and extralimital fashion. Expansion has not followed a slow, east to west, progression from the assumed source, nor has breeding been detected at other, perhaps larger and more pristine, wetland complexes to the north and east. If breeding did occur as early as 1994, as it likely did, it essentially occurred concurrently with range expansion in eastern Iowa.

Outlook and Conclusions

Confirmed breeding has occurred at large, isolated eRWB basins that possess a variety of wetland and grassland habitats. There currently exist only a handful of similar sites in the eRWB. Approximately 65% of the original total wetland acres in the eRWB have been destroyed (Nebraska Game and Parks Commission 1971). However, continued purchases, renovations, and restorations by government agencies and private interests continue to increase the amount of wetland and grassland habitat in the region. Kissinger WMA, for example, where breeding occurred in 1999, is a site that was purchased and renovated as recently as the 1990s.

While potential habitat may continue to increase in the eRWB, habitat conditions will remain directly linked to localized precipitation, and thus will be highly variable. This situation perhaps translates into either "boom or bust" years for potential breeding Sandhill Cranes, and recent events illustrate this possibility. No breeding activity was observed, for instance, during the very dry years of 2000 or 2002, nor does it seem likely to have occurred. The observation of 2 juveniles, rather than one, in both 1994 and 1998 may suggest ideal conditions were present in both of those years. Sandhill Cranes rarely fledge more than one young, and usually only in years of abundant food (Tacha et al. 1992).

Since breeding has likely taken place in multiple years in the eRWB, breeding is expected to occur in the future at larger basins where suitable habitat is present during years when favorable water conditions exist. Expectations aside, variable conditions in the region make it questionable if the species will be a regular breeder in the eRWB, despite continuing increases of habitat. Recent breeding by Sandhill Cranes in the eRWB is likely a component of continued increases and range expansion from the upper Midwest. Only future events will reveal if the Sandhill Crane will consolidate its range on the central Great Plains by re-colonizing other wetland complexes in Nebraska and surrounding states or if breeding in eRWB during the 1990s will remain spatially and temporally isolated.

Acknowledgement

I thank Ross Silcock for providing helpful comments to earlier draft of this note.

Literature Cited

Brock, K.J. 1994. Middlewestern Prairie Region. Field Notes 48:946-950.

Brock, K.J. 1997. Middlewestern Prairie Region. Field Notes 51: 1002-1005.

Brock, K.J. 2000. Middlewestern Prairie Region. North American Birds 54:387-390.

Brock, K.J. 2001. Middlewestern Prairie. North American Birds 55:438-441.

Bruner, L., R.H. Wolcott, and M.H. Swenk. 1904. *A Preliminary Review of the Birds of Nebraska, with Synopses.* Klopp and Bartlett, Omaha.

Ducey, J.E. 1988. Nebraska Birds, Breeding Status and Distribution. Simon-Boardman Books, Omaha.

Hoffman, R. 1999. Sandhill Cranes nest in Nebraska. Nebraskaland Magazine, October 1999.

Nebraska Game and Parks Commission. 1971. Work Plan K-71. Nebraska Game and Parks Commission report, Lincoln.

Sharpe, R.S., W.R. Silcock, and J.G. Jorgensen. 2001. *Birds of Nebraska: Their distribution and temporal occurrence.* University of Nebraska Press, Lincoln.

Silcock, W.R. 1995. Fall field report, August-November 1995. Nebraska Bird Review 63: 94-114.

Silcock, W.R., and J.G. Jorgensen. 1997. Summer field report. Nebraska Bird Review 65:102-115.

Tacha, T.C., S.A. Nesbitt, and P.A. Vohs. 1992. Sandhill Crane (*Grus canadensis*). In The Birds of North America, No. 31 (A. Poole and F. Gill, eds). The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, D. C.