

## FEMALE GREATER SANDHILL CRANE CONTINUES TO INCUBATE AFTER THE LOSS OF HER MATE

CARROLL D. LITTLEFIELD<sup>1</sup>

*Malheur Field Station  
HC 72 Box 260  
Princeton, Oregon 97721 USA*

**Abstract.**—The reproductive pattern of a Greater Sandhill Crane (*Grus canadensis tabida*) pair was disrupted in May 1976 when the male was shot and killed on Malheur National Wildlife Refuge, Oregon. The female continued to incubate a remaining egg, and tended the chick near the nest through May. By early June she had lost the chick but remained on the breeding territory. These observations show that under certain circumstances a female sandhill crane can incubate and tend young without a mate.

### UNA HEMBRA DE *GRUS CANADENSIS TABIDA* CONTINÚA INCUBANDO LUEGO DE HABER PERDIDO A SU PAREJA

**Sinopsis.**—El patrón normal de reproducción de una pareja de individuos de *Grus canadensis tabida*, (que se encontraba en el el Refugio Nacional para la Vida Silvestre de Malheur, Oregon), fue interrumpido en mayo de 1976 cuando el macho murió a causa de un disparo. La hembra continuó incubando un huevo y luego alimentó al pichón a lo largo del mes de mayo. A principios de junio perdió el pichón pero permaneció en el territorio reproductivo. Estas observaciones muestran que bajo ciertas circunstancias una grulla hembra puede incubar y atender el pichón sin que esté presente su pareja.

Male and female Greater Sandhill Cranes (*Grus canadensis tabida*) share incubation during the approx. 30-d incubation period, which begins with the deposition of the first egg (Drewien 1973, Littlefield 1968, Walkinshaw 1965). After the eggs hatch, both parents care for the precocial young until they fledge at 66–75 d (Drewien 1973, Littlefield pers. obs.). In May 1976, this reproductive pattern was disrupted when the male of an incubating pair was shot and killed on Malheur National Wildlife Refuge (NWR), Harney County, Oregon.

#### STUDY AREA

Malheur NWR is located at the northern extremity of the Great Basin in southeast Oregon. One of the largest federal refuges in the contiguous United States, a combination of freshwater wetlands, shrub-covered uplands, and two large lakes are located on the 72,200 ha area. This wetland complex provides excellent crane habitat, and the refuge is the most important Greater Sandhill Crane breeding location in the Pacific states (Littlefield et al. 1994).

#### RESULTS AND DISCUSSION

I first visited the nest of Pair 26 on 7 Apr. 1976, approximately 10.4 km NNE of Frenchglen (42°59'N, 118°51'W), in the southern portion of Malheur NWR. Incubation had been in progress for about 5 d at the time of

<sup>1</sup> *Current address: HCR 4 Box 212 Muleshoe, Texas 79347 USA.*

discovery. The nest was located in residual creeping wildrye (*Elymus triticoides*) within 50 m of State Highway 205. The male had been banded (#599-01415) and color-marked with colored-plastic leg bands about 4.6 km north of the nest site on 21 Aug. 1973, and had been present with an unmarked female on the breeding territory in the 1974 and 1975 nesting seasons. When first visited in 1976, the male was incubating their two eggs while the female fed nearby. Upon my approach, the female sneaked away before flying east about 100 m where she initiated feigning an injury (Littlefield 1968, Yosef 1994). The male eventually flew directly from the nest, joined the female, and initiated pseudo-preening.

I revisited the nest on 6 May, 4 d after expected hatching. The female flew from the nest as I approached, and the male was discovered about 10 m away where he had died from a gunshot wound. A newly hatched chick was at the nest and an unhatched egg was nearby in the water. Carcass condition indicated the male had died about 1 wk earlier. The female continued to incubate alone and successfully hatched one egg. Hatching date indicated that embryonic development had been slowed by 3 or 4 d, however. Weather conditions from 29 April through 6 May probably contributed to the successful conclusion of the nesting effort, as mean temperatures averaged 2 C above normal, reaching 22 C on 30 April and 26 C on 1 May (4 and 7 C above normal, respectively). Below freezing temperatures and snow regularly occur in southeast Oregon in late April and early May.

The female attended the chick within 100 m of the nest for a few days, but on 11 May a male from an adjoining pair attempted to drive her from the territory. She was reluctant to leave, however, and on 3 June she was still present, but the chick had disappeared and was presumed to have died.

A female was observed alone on the territory on 10 Mar. 1977 and throughout the 1978 spring, but it was not until March 1980 that a crane pair reoccupied the site. Considering that the original female was not banded or color-marked, I could not determine if this was the same female. General behavior, use of the same preferred feeding sites and subsequent nest locations were similar to those of the female that lost her mate in 1976, however.

These observations confirm that a female *G. c. tabida* can continue to incubate and brood-rear in the absence of a male. Above normal temperatures, lack of precipitation, and the nearness to egg hatching when the mate was killed, probably contributed to the success of this hatching effort.

#### ACKNOWLEDGMENTS

I would like to thank R. C. Drewien and R. Yosef who greatly improved an earlier draft of the manuscript. Funding for Greater Sandhill Crane studies on Malheur NWR was provided by the U.S. Fish and Wildlife Service.

## LITERATURE CITED

- DREWEN, R. C. 1973. Ecology of Rocky Mountain greater sandhill cranes. Ph.D. thesis. Univ. Idaho, Moscow, Idaho.
- LITTLEFIELD, C. D. 1968. Breeding biology of the greater sandhill crane on Malheur National Wildlife Refuge, Oregon. M.Sc. thesis. Colorado State Univ., Fort Collins, Colorado.
- , M. A. STERN, AND R. W. SCHLORFF. 1994. Summer distribution, status, and trends of greater sandhill crane populations in Oregon and California. *Northwestern Nat.* 75: 1–10.
- WALKINSHAW, L. H. 1965. One hundred thirty-three Michigan sandhill crane nests. *Jack-Pine Warbler* 43:136–143.
- YOSEF, R. 1994. Sex-related differences in distraction-displays by Florida Sandhill Cranes. *Condor* 96:222–224.

Received 11 Jul. 1994; accepted 29 Sep. 1994.