

THE FIRST RECORD OF A FOUR-EGG CLUTCH FOR SANDHILL CRANES

CARROLL D. LITTLEFIELD and GAYLIN D. HOLLOWAY, Malheur Field Station, Box 260-E, Princeton, Oregon 97721

We determined clutch sizes in 815 Greater Sandhill Crane (*Grus canadensis tabida*) nests in Oregon from 1966 through 1984. Of these, 744 (91.3%) nests contained two eggs 67 (8.2%) one egg, 3 (0.4%) three eggs, and 1 (0.1%), which we report on here, contained four eggs. Average clutch size was 1.92. Three-egg clutches from Sandhill Cranes are rare, but there are records from Florida (Walkinshaw 1973), Idaho (Drewien 1973), Michigan (Walkinshaw 1973), Oregon (Littlefield 1981), and Wisconsin (Gluesing 1974). There is no previous record of a wild Sandhill Crane producing a four-egg clutch. Furthermore, there are no such records for other members of the family Gruidae, except for the Common Crane (*G. grus*) (cf. Johnsgard 1983) and South African Crowned Crane (*Balearica regulorum regulorum*). Four-egg clutches are not uncommon for the latter (Walkinshaw 1973).

On 18 April 1983, we located a crane nest about 8.0 km WNW of Diamond, Harney Co., Oregon, on Malheur National Wildlife Refuge (NWR). When discovered, the nest contained two eggs that measured 95.6 × 61.5 mm and 98.7 × 61.4 mm, respectively. On 21 May, after the normal 30-day incubation period, the pair was still incubating. Assuming the eggs were infertile, we flushed the male off the nest. Surprisingly, the nest contained four eggs. The two additional eggs measured 95.8 × 61.1 mm and 95.0 × 61.5 mm. Two eggs were in the nest bowl, but the other two were near the nest's edge. By Westerskov's (1950) method for incubational stages, one egg was at stage 5, one at stage 4, and two at stage 3, indicating that all four eggs were not being incubated simultaneously. On 28 May, all eggs were together in the nest bowl and were being tended by an adult. The pair abandoned the nest on the morning of 29 May after incubating at least 43 days. The nest was adjacent to Kiger Creek, which flooded during the afternoon of 29 May, washing away the nest and eggs.

The pair (Pair 216) occupy a large territory and receive no disturbance from other Sandhill Crane pairs, eliminating the possibility of another female dumping eggs into the nest. In addition, all four eggs were very similar in size and coloration: whitish tan with a few small reddish spots on the blunt end. The nearest neighbors (Pair 186) nest about 0.8 km south of the site and lay olive-brown eggs. Furthermore, territorial Sandhill Crane pairs are intolerant of other cranes in spring and it is highly unlikely another female would be permitted on Pair 216's territory long enough to deposit two eggs, particularly since the nest was not concealed and could be seen from a great distance.

Pair 216 has had an interesting history since establishing the territory in 1971. The pair's nests were examined in 1974, 1982, and 1983. In 1974, their clutch consisted of three eggs and represented the first three-egg clutch located on Malheur NWR. They laid a normal two-egg clutch in mid-April 1982; however, one egg was infertile. The fertile egg hatched on 16 May. After hatching, one adult tended the young crane while the other adult continued to incubate the infertile egg at least through 22 May. Eggs laid in 1974 and 1982 were similar in size and coloration to those laid in 1983, indicating the same female has occupied this territory since at least 1974. Another interesting behavior is the pair's tolerance of human disturbance. The nest was on the same site in 1982 and 1983, adjacent to a corral within 75 m of a well-traveled county road. In 1974, the nest was within the corral. A ranch house was within 50 m of the nests and refuge vehicles passed daily within 5 m of the site without excessively disturbing the incubating bird.

NOTES

The circumstance involved in the female's laying four eggs is unclear. Up to seventeen eggs per year have been laid by captive Greater Sandhill Cranes, with six eggs being the average number produced (Erickson 1976). However, eggs from these birds were removed shortly after being laid, thus stimulating females to produce additional eggs. Perhaps the first eggs of Pair 216 were displaced from the nest bowl, resulting in the female's laying two additional eggs. Because the female had laid a three-egg clutch in the past, however, it is likely she is unique both behaviorally and physiologically, and her future nesting efforts will be interesting to monitor.

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