

Response of incubating Black-bellied Whistling-ducks to loss of mates.—Earlier work reported that Black-bellied Whistling-ducks (*Dendrocygna autumnalis*) mate for life and that both sexes in this species share incubation duties (Bolen, J. Wildl. Manage. 35:385-388, 1971). There is no verification from field studies of shared incubation among the other seven species of whistling-ducks except for the single observation of Flickinger (Wilson Bull. 87:106-107, 1975) for the Fulvous Whistling-duck (*D. bicolor*). This poses the question as to whether the loss of one member of a pair of Black-bellied Whistling-ducks might cause nest failure during incubation. Experimental evidence has thus far been lacking, although our field records include an instance when the death of a male led to nest abandonment by the female. We attempted to experimentally examine this question by removing 1 mate of 2 pairs of incubating whistling ducks and then observing the nest and the remaining mate to determine whether incubation would continue or whether the survivor would remate and renest during the current season.

On 28 June 1975 we removed 2 Black-bellied Whistling-ducks from separate nests in boxes designed for their use (Bolen, J. Wildl. Manage. 31:794-797, 1967); a male was taken from one nest and a female from the other. We held these birds in captivity for 4 days, then released them 60 km distant from the nesting site. The respective mates of each bird had been previously banded and marked prior to our experiment. In each case the nest was abandoned following the removal of the incubating bird. In one instance, we know that the surviving mate (female) was immediately available to assume incubation as she was repeatedly seen loafing on the pond near the nest box; she was seen in virtually the identical spot the day following the removal of her mate from the nest. Furthermore, a small string placed atop the eggs at the time the male was removed remained undisturbed for 24 h, indicating that the hen had not entered the nest box unseen. The male was not seen again following his release, and we likewise have no further history of the hen following 29 June.

In the second case, the nest also failed although the female returned to the nesting area on 2 July following her release; this hen's mate was noted in the company of a banded bird on 26 July (presumably the pair was then reunited), and on 16 August the male was captured incubating a clutch apparently begun about 24 July. On 27 August the female was captured on this nest and confirmed by her band number as the bird captured and released earlier. The nest successfully hatched by 4 September, and represented a successful renesting attempt on the part of this pair (cf. Delnicki and Bolen, Auk 93:535-542, 1976).

These observations support the earlier observations of Bolen (Ph.D. thesis, Utah State Univ., 1967) and Delnicki (M.S. thesis, Texas Tech Univ., 1973) that the exchange of incubation duties is initiated by the bird (of either sex) on the nest; this is accomplished simply by the incubating bird leaving the nest and flying to a loafing area where it joins the waiting mate. The loafing mate thereafter returns to the nest to continue incubation without further behavioral interaction or nest exchange ritual. Thus, the simulated or actual death of the bird on the nest interrupts the sequence and the nest is abandoned when the incubating bird fails to join its mate at a loafing site. This study was part of a M.S. thesis accepted by the faculty of Corpus Christi State University.—RICHARD E. McCAMANT AND ERIC G. BOLEN, *Rob and Bessie Welder Wildlife Foundation, P.O. Drawer 1400, Sinton, TX 78387*. (Present address REM: *Buffalo National River, P.O. Box 1173, Harrison, AK 72601*.) Accepted 5 May 1977.