 0030-0950/81/0003-0132 $1.00/0

BRIEF NOTE

NEST TRANSFER OF YOUNG BARN OWLS[1]

BRUCE A. COLVIN,[2] Department of Biology, John Carroll University, Cleveland OH 44118

OHIO J. SCI. 81(3): 132, 1981

An attempt was made to transfer young barn owls (*Tyto alba*) among 3 Ohio nesting locations on 20 July 1979. The first nest was in a silo in Stark County, the second in a barn in Holmes County, and the third in a barn in Wayne County (see table 1). The need to transfer the young owls was created by the imminent destruction of the silo in which the first pair was nesting. The 4 owls from that nest were brought to the Holmes County nest. They were estimated to be between 4 and 5 weeks of age. The older two were selected to be placed in the Holmes County nest. It was decided by the Ohio Division of Wildlife to have the other two owls raised by hand for release in a wildlife area with suitable habitat.

TABLE 1
Results of barn owl nestings involved in transfer.

Pair	Co.	Eggs	Hatched	Fledged
1	Stark	5	4*	2**
2	Holmes	5	3+	0
3	Wayne	3	3	0

*Two transferred to pair #2 July 20.
+One transferred to pair #3 July 20.
**Reared and released by M. Irwin.

At this time, there was only one living nestling in the Holmes County nest; the other two had previously been found dead. The surviving bird was 7.5 weeks old, with very little down remaining. The Stark County owls were significantly smaller and completely down covered. Due to this size and age difference, the Holmes County bird was transferred to the Wayne County nest, which contained one surviving slightly younger owl.

The Stark County birds appeared healthy and alert when placed in the Holmes County nest. The nest was cleaned of all pellet material so that it would be possible to determine the amount of food brought to the transferred young by their foster parents. The Wayne County nest was not cleaned of pellet material due to the chance that physical disturbance of a nest would affect a transfer.

We observed an initial confrontation between the Holmes County and Wayne County young. The Wayne County bird, though smaller, was far more aggressive. It hissed and refused to go near the other bird, which became quiet after the first minute. While we observed, the Wayne County bird continued to hiss at the Holmes County bird for 10 minutes.

We observed the Holmes County nest that evening and both adults flew to the farm yard from their conifer roost 45 min after sunset, as usual. They then made several flights past the nest cavity entrance. The young were not calling aggressively for food as was the norm at the nest, and both adults flew off in the direction of the pastures that they most frequently hunted. Upon returning, one adult flew directly to the nest cavity entrance with prey. It alighted momentarily and then flew up and began circling the barn. It flew in small circles at first and then widened them over a two minute period. As this bird flew, it gave a rapid and high pitched "squeak-squeak-squeak" call. On one other occasion, I heard this call

[1]Manuscript received 13 December 1979 and in revised form 3 April 1980 (#79-58).
[2]Present address: Environmental Studies Center, Bowling Green State University, Bowling Green OH 43403.

when the adults were chasing each other. This sound could very well be the same repeated staccato squeaking that Bunn (1974) described as being produced by the male during the breeding season.

As one adult circled, the other entered the nest cavity and it was in the barn during the 2-min squeaking period of the circling adult. The adults then flew off together toward the roost. One adult returned 3 min later and landed on the barn. It gave a series of loud shrieks in sets of 4, 7, and 7. The cadence of these shrieks was about 6/min, and the average interval between sets was 10 min. At no other time have I observed barn owls producing this call in regular series. Shrieks are normally produced irregularly and singly. At 11:15 p.m. EDT, the other adult flew to the nest momentarily. My observations ended at this point with both young owls alive and in good condition the following morning.

At the Wayne County nest, the original bird was dead on July 27. The transferred Holmes County bird was missing at this time. Two days later it was found outside the barn and placed back in the nest. On July 30 it was found dead below the nest cavity entrance. I have observed young barn owls stretching out of a nest cavity entrance with such apparent eagerness for food that they fell from the nest. I feel this was the case with this bird and that both may have died of starvation.

The Holmes County nest was checked on July 28 and both birds were alive, but on July 30 both birds were dead. Analysis of the pellet material in the nest showed only 14 prey items had been brought to the nest by the adults over 10 nights. Average weight of these prey items was calculated to be 28.4 g from individuals of the same species taken in mammal surveys of surrounding habitat. In addition to the prey brought by the adults, one starnose mole (*Condylura cristata*) and two house sparrows (*Passer domesticus*) were left in the nest by John Staab of the Ohio Division of Wildlife. Smith *et al* (1974) state that Bussman observed an average of 11.3 feedings per night at a nest containing 4 young. My observations of other nests compare favorably with those of Bussman. I believe, therefore, that the number of feedings at the Holmes County nest was inadequate and the Stark County birds starved.

An attempt was made to attract a pair of adult barn owls to their abandoned nest by placing the third and fourth Stark County birds in the nest. These adults had abandoned their nest of 7 eggs the second week of June but had continued to hunt the nearby fields. The calls of the young were not very loud, and the adults, hunting 250 m away, did not approach the barn.

Lendrum (1975) successfully transferred a single young barn owl into a nest of four. Van Camp (1973) successfully transferred 5 young barn owls to a nest already having 2 young of the same age. These transfers were similar to the one attempted with the Wayne County nest. The Holmes County nest had received all new young of considerable age difference from the owlets they had replaced. Marti *et al* (1979) successfully transferred orphaned young into 2 nests where eggs had not hatched, and several young barn owls have been transferred successfully in Southern California (P. Bloom, California State University, Long Beach, personal communication). It is difficult to identify the cause of failure in this attempt, since apparently healthy young had previously died in both nests receiving transferred young. The 2 Stark County owlets which were not used in the transfer attempt were successfully reared and subsequently released in Medina County on 5 October 1979.

The need for positive management techniques for the barn owl was seen in Ohio in 1979 where out of 9 pairs observed, 8 nested and only 17 owls fledged. The 3 nests discussed above are included in this figure. Marti *et al* (1979) recorded a mean number of 5.2 fledglings per brood of 24 clutches examined in nest boxes. Six of the pairs I observed, including the Holmes and Wayne County pairs, had used nest boxes. When the negative effects of cold winters and cyclic prey populations on barn owls in the northern portion of their range are considered (Wallace 1948),

this low replacement rate could be partially responsible for the low number of breeding barn owls in Ohio today. With the use of transfers, orphaned young and runts of large broods, which often do not fledge, could be placed with other broods for overall greater production.

Acknowledgment. John Staab of the Ohio Division of Wildlife supervised this transfer and aided in the collection of data.

LITERATURE CITED

Bunn, D. S. 1974 The voice of the barn owl. Br. Birds 67: 493–501.

Lendrum, J. 1975 Adoption of a barn owl chick by a separate family of owls. Honeyguide 82: 45.

Marti, C. D., P. W. Wagner, and K. W. Denne 1979 Nest boxes for the management of barn owls. Wildl. Soc. Bull. 7: 145–148.

Smith, D. G., C. R. Wilson, and H. H. Frost 1974 History and ecology of a colony of barn owls in Utah. Condor 76: 131–136.

Van Camp, L. F. 1973 Barn owls. *In:* 1973 Naturalist Yearbook, 29: 59–60. Toledo Natural. Assoc., Inc.

Wallace, G. J. 1948 The barn owl in Michigan, its distribution, natural history and food habits. Mich. Agric. Exp. Stn. Bull. 208: 1–61.