HARRIER RADIO-TAGGING TECHNIQUES AND LOCAL AND MIGRATORY MOVEMENTS OF RADIO-TAGGED JUVENILE HARRIERS

The purpose of this study was to determine postfledging movements of juvenile Northern Harriers (*Circus cyaneus hudsonius*) hatched on the Buena Vista Marsh in central Wisconsin. This determination necessitated radio-tagging of both adult and nestling harriers. Breeding harriers have adapted poorly to backpack harnesses in the past. I used three radio-packages: double-loop backpack, crossed-loop backpack, and tail-feather mount. The double-loop backpack proved unsuitable on two of three adults tagged in 1976; one female died of starvation 10 days after being tagged, and another partially deserted her young. A male accepted the double-loop backpack quickly. The crossed-loop backpack was used successfully on seven fledglings, two in 1976 and five in 1977. The tail-feather mount was readily accepted by eight of nine breeding adults in 1977. One female removed her radio-tagged feather almost immediately after attachment but then resumed normal behavior.

I followed the local movements of seven radio-tagged juveniles from three nests in 1976 and 1977 and the early migratory movements of three of these juveniles in 1977. All seven remained within 0.9 mi (1.4 km) of their nests for about 3 weeks after their first flights. They did little or no hunting during this period. Five of the seven left the study area about 21 days after fledging. One juvenile was killed near his nest by a Great Horned Owl (*Bubo virginianus*) 33 days after fledging, and the last one left the study area 52 days after fledging.

Of the six juveniles that left the study area, four were known to have left alone, rather than with parents or siblings. Three were located during migration. Their migratory movements were interrupted by the establishment of temporary home ranges which were used for 2–3 weeks. One juvenile was located 44 mi (71 km) southeast of her nest. Another was monitored in two temporary home ranges, one 53 mi (85 km) east-southeast and another 106 mi (171 km) southeast of his nest. A third juvenile was tracked continuously until she was in a temporary home range 102 mi (164 km) southeast of her nest. All known locations of the migrating juveniles were in the southeast quarter of Wisconsin. Case histories of the movements of these three juveniles are presented in detail.

Beske, Alan E. 1978. Harrier radio-tagging techniques and local and migratory movements of radio-tagged juvenile Harriers. M.S. thesis, University of Wisconsin, Stevens Point, Wisconsin. 47 pp.

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