

- Johnson, D., and J. H. Enderson. 1972. Roadside raptor census in Colorado—Winter 1971–72. *Wilson Bulletin* 84(4):489–490.
- Murphy, J. R. 1975. Status of a Golden Eagle population in central Utah, 1967–73. In J. R. Murphy, C. M. White, and B. E. Harrel, eds., *Population status of raptors*. Raptor Research Report no. 3, pp. 91–96. Raptor Research Foundation, Vermillion, South Dakota.
- Overton, W. S. 1971. Estimating the numbers of animals in wildlife populations. In Robert H. Giles, ed., *Wildlife management techniques*. The Wildlife Society, Washington, D.C.
- Southern, W. E. 1963. Winter populations, behavior and seasonal dispersal of Bald Eagles in northwestern Illinois. *Wilson Bulletin* 75(1):42–55.
- . 1964. Additional observations on wintering Bald Eagle populations: Including remarks on biotelemetry techniques and immature plumages. *Wilson Bulletin* 76(2):121–137.
- Woffinden, N. D. 1975. Ecology of the Ferruginous Hawk (*Buteo regalis*) in central Utah: Population dynamics and nest site selection. Ph.D. dissertation, Brigham Young University, Provo, Utah.

REVERSING FEMALE DOMINANCE IN BREEDING RAPTORS

by

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In past years we have had trouble with female aggression in Merlins (*Falco columbarius*). This aggression seems to occur only at certain times of year and becomes most pronounced (in our cases) around the equinoxes. The females become very aggressive and chase and attack their mates. In one of our cases the male was killed from a pair which had successfully raised four young the year before. Other cases of aggression with Merlins have come to our attention (Fyfe, Adamson pers. comm.).

In all cases mentioned above the aggression did not appear to be due to imprinting, but rather to the birds' high-strung temperament, and possibly because they were confined to pens where the male could not readily escape. The females seem to become highly territorial and do not even permit the presence of their mates in their territory.

We discussed methods of reversing or repressing this aggression and finally decided to clip the wing tips of the females in the spring before putting them into the breeding chambers with the males. The males are kept in the breeding pens the year round, but the females are removed in September or October and are kept out until the following April.

The wings were clipped to a rounded shape, like an accipiter's wing, with a pair of scissors. The birds could fly and reach any part of the pen but were severely handicapped.

We clipped one female this spring just prior to putting her in the breeding pen. She flew up to a perch and remained there in a frozen position for forty minutes. Meantime the male was flying round the pen. Finally he flew over near the female and caused her to duck to avoid being hit. After forty minutes the female moved, but there was no further aggression, and courtship and copulation followed shortly after. The male seemed to have asserted his dominance and seemed to court more aggressively thereafter.

This method could possibly be used on imprinted birds with good results where imprinting could possibly be reversed.