



Figure 1. Study area showing presumed and known routes of spring migration.

## COMMENTS ON THE RECOGNITION OF OFFSPRING BY RAPTORS

by

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Stinson (1976) presents anecdotes which suggest that Ospreys (*Pandion haliaetus*) may be able to recognize their own fledged young, and he contrasts his observations with those of Postulpalsky and Holt (1975), which suggest that Bald Eagles (*Haliaeetus leucocephalus*) may not recognize their own unfledged young. Although it is possible to argue that recognition, or lack thereof, has not been clearly demonstrated in either paper, let us assume that it has.

There is no adaptive rationale for the recognition of unfledged young in altricial species in which there is any distance between nests, because there is no natural way for a strange young to get from one nest to another. Once the young are on the wing, however, it would be adaptive for parents to recognize their own young, particularly in Ospreys, which often nest relatively near to other pairs and which exhibit little territorial behavior.

Territorial defense, nest-building, courtship, egg production, incubation, and the rearing of young constitute a considerable energy drain on the parents, increase their susceptibility to injury and disease and, by decreasing chances for individual survival, constitute a loss in genetic fitness to the adult. This loss in fitness is compensated for by the genes of the adult which have been passed to its young, resulting usually in a net gain. If adults feed unrelated young, there is a loss in fitness, so adults should recognize their own offspring. As long as the young are in the nest, recognition of the nest is sufficient. Once the young have fledged, individual recognition of the young increases the fitness of the adult if there is any chance that unrelated young will be fed. In species which defend large territories, and in which the young remain well within the territory, individual recognition of the young may be unnecessary.

Davies and Carrick (1962) were probably the first to suggest that individual recognition of young develops as the young become mobile. Extremes in the onset of individual recognition can be seen in (1) the Common Murre (*Uria aalge*) which lays its egg on a rock edge in extremely close proximity to those of neighbors, the eggs can roll a bit on slanting ledges, and the parents recognize their own eggs (Tschanz 1959); and (2) Barn Swallows (*Hirundo rustica*) and Tree Swallows (*Iridoprocne bicolor*), which do not recognize their own young until about the time of fledging (Burt 1977).

It would be interesting to determine, experimentally, the age at which Ospreys and other raptors begin to recognize their own young, but I would argue against such a study. There have been more than a few studies on parental recognition of young in a variety of birds, and there is every reason to expect that the phenomenon occurs in almost all species. Further studies of the phenomenon should not be performed on species that are suffering from low or declining populations, which includes too many of our raptors.

#### *Literature Cited*

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