

BROOD SIZE AND FOOD HABITS OF GREAT HORNED OWLS NEAR CALGARY, ALBERTA

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From 1975 through 1977, I banded 125 flightless young Great Horned Owls in the Calgary area. The 60 nests were in agricultural areas up to 100 road miles from Calgary. I am indebted to Dan Sikorski and John Riddell for their skilled assistance in spotting the nests and banding the young owls, and to Richard Fyfe and Harry Armbruster of the Canadian Wildlife Service for their aid in obtaining a sub-permit and the necessary bands for me.

Owls were banded by the author a spare time permitted. During the three years, the optimum time for banding owls in the Calgary area was the last week in April and the first week in May. This is approximately two to three weeks earlier than C. S. Houston reported for Saskatchewan.² Most nests were visited only once with 30 owls being banded in April and 95 in May. The earliest banding date was April 13, 1977, while the latest was



Great horned owl with coot

Fred W. Lahrman



Great horned owl feeding his mate

Lorne Scott

May 19, 1975. Besides banding the young owls, the author recorded food items in the nest. A number of nests contained no prey during my visit, while very large nests did not allow the climber to see the contents. Pellets were not examined.

Nest success in 1975 was better than in 1976 or 1977 with an average of 2.5 young per nest and with 50% of the nests containing three of four young (Table 1). Although I have no figures for the density of prey species (hares, pocket gophers, water birds and mice), water birds were noticeably more plentiful during 1975 than in subsequent years. This was verified by habitat conditions and the proportions of aquatic species of birds visible in nests (Table 2). Some sloughs present in the spring of 1975 dried up by 1976 and even more disappeared by the 1977 nesting season.

The number of prey species found in

Great Horned Owl nests was 60; 29 of the food items being birds and 31 mammals. In 1975, 100% of the prey items were birds as compared to 57% in 1976 and 34% in 1977.

The most abundant prey items found in Great Horned Owl nests were Varying Hare (*Lepus americanus*), Pintail, Richardson's Ground Squirrel (*Spermophilus richardsonii*) and Pocket Gopher (*Thomomys talpoides*). The Varying Hare was also found the most important prey in Manitoba by Bird, and in central Alberta by McInville and Keith.^{1 3} It is interesting that Richardson's Ground Squirrel, a diurnal mammal, composed over 25% of the mammals found in the owl nests. Another feature was the low numbers of mice and voles found. It may be that because of their small size, there was less chance of finding uneaten portions in nests or that the adults were consuming them and



Varying hare

J. B. Collop

Pintail

J. B. Collop





Richardson's ground squirrel

Frank Switzer

Pocket gophers left for food in owl nest

Lorne Scott



Table 1. BROOD SIZE OF GREAT HORNED OWL IN THE CALGARY AREA

| Year | Number Nests With: | | | | Total Nests | Total Young | Average No. Young | Total Young Banded |
|--------|--------------------|-------|-------|-------|-------------|-------------|-------------------|--------------------|
| | 4 yg. | 3 yg. | 2 yg. | 1 yg. | | | | |
| 1975 | 2 | 3 | 3 | 2 | 10 | 25 | 2.5 | 25 |
| 1976 | 0 | 5 | 12 | 4 | 21 | 43 | 2.0 | 43 |
| 1977 | 1 | 8 | 11 | 9 | 29 | 59 | 2.0 | 57 |
| TOTALS | 3 | 16 | 26 | 15 | 60 | 127 | 2.1 | 125 |

Table 2. PREY ITEMS RECORDED IN GREAT HORNED OWL NESTS, 1975-1977

| Prey Species | Number of Individuals | | |
|------------------------------|-----------------------|------|------|
| | 1975 | 1976 | 1977 |
| BIRDS | | | |
| Mallard | | 2 | 1 |
| Mallard egg | | 1 | |
| Pintail | 1 | 8 | |
| Pintail egg | 1 | | |
| Sharp-shinned Hawk | | 1 | |
| Ring-necked Pheasant | 1 | | |
| Gray Partridge | | | 6 |
| American Coot | | 1 | |
| Rock Dove | | | 1 |
| Short-eared Owl | | 1 | |
| Horned Lark | | 1 | |
| Common Crow | | 1 | |
| Common Starling | | | 2 |
| SUB-TOTAL | 3 | 16 | 10 |
| MAMMALS | | | |
| White-tailed Prairie Hare | | 3 | |
| Varying Hare | | 3 | 7 |
| Richardson's Ground Squirrel | | 4 | 4 |
| Pocket Gopher | | 1 | 6 |
| Deer Mouse | | | 2 |
| Meadow Vole | | 1 | |
| SUB-TOTAL | 0 | 12 | 19 |
| TOTAL | 3 | 28 | 29 |

bringing larger prey to the young owls. Orians and Kuhlman found a similar situation in Wisconsin.⁴ In pellet analysis, they found *Peromyscus* and *Micortus* well represented, but in the

nest inspections, only one animal of each genus was found.

Odd items of prey included a Pintail egg in one nest in 1975 and a Mallard egg in another in 1976. In both cases, female of the species was found in the nest with the egg, suggesting that the ducks were not completely dead after being carried to the nest.* Items of prey such as Sharp-shinned Hawk, Short-eared Owl, Rock Dove, Crow, Starling and Horned Lark illustrate the Great Horned Owls' capabilities and flexibility, and, also, the shortage of preferred prey items.

*EDITOR'S NOTE: In a paper entitled "Eggs of Other Species in Great Horned Owl Nests" (Auk 92:377-378, 1975), C. S. Houston and D. W. A. Whitfield give details of nine such cases. They speculated that these eggs were within the bodies of laying hens when brought to the nest and were either expelled there by live birds or left after the owls had eaten the birds' flesh.

¹BIRD, R. D. 1929. The Great Horned Owl of Manitoba. Canadian Field-Nat. 43(4):78-83.

²HOUSTON, C. S. 1971. Brood size of the Great Horned Owl in Saskatchewan. Bird Banding 42(2):103-105.

³McINVILLE, W. B. and L. B. KEITH. 1977. Predator-prey relations and breeding biology of the Great Horned Owl and Red-tailed Hawk in central Alberta. Canadian Field-Nat. 88(1):1-20.

⁴ORIAN, G. and F. KUHLMAN. 1956. Red-tailed Hawk and Horned Owl populations in Wisconsin. Condor 58(5):371-385.