

**NOTES ON THE DIET OF THE BARN OWL *Tyto alba* FROM MULYUNGARIE STATION IN NORTH-EASTERN SOUTH AUSTRALIA.** Dietary investigations of Barn Owls *Tyto alba* are relatively common in the literature. This possibly reflects the ease with which such studies can be conducted from regurgitated pellets that accumulate at roost sites. Prey items are usually readily identifiable from indigestible fragments contained within these pellets. This is also helped by the fact that Barn Owls are specialist predators preying almost exclusively on rodents in most parts of their range in Australia (Morton *et al.* 1977; Morton and Martin 1979) and in other parts of the world (Travaini *et al.* 1997; Yom-Tov and Wool 1997). Other small vertebrate and invertebrate prey species have been recorded in Australia (Valente 1981; Smith and Cole 1989), but there is little evidence to suggest Barn Owls are capable of adopting a semi-generalist or generalist predatory strategy.

This note reports on the diet of the Barn Owl from pellets collected from a site on Mulyungarie Station, located in the north-eastern pastoral zone of South Australia. Prey availability was not monitored, but the diet of feral Cats *Felis catus* was also investigated, allowing for comparison between this generalist predator and the specialist Barn Owl.

Fourteen fresh pellets were collected from underneath a eucalypt tree *Eucalyptus* sp. located in the back garden of a cottage at the station homestead complex (31°33'22"S, 140°47'15"E) in October 1993. A single Barn Owl was observed roosting in the dense foliage mid-way up the tree, but only used this roost for a relatively short period. The dominant habitat surrounding the roost was an open chenopod shrubland with scattered stands of casuarina *Casuarina* sp. along drainage lines.

Pellets were soaked individually in a container of warm water for several hours. A lid was then applied and the container shaken vigorously to break up the pellet. A flotation process using running water was employed to differentially separate the material in each pellet. The lighter floating material (mostly hair) overflowed out of the container into a sieve placed underneath, while the heavier material (mostly bones and skull fragments) remained in the container. The water was allowed to run into the container until it cleared. Distinguishable bones, for example

mandibles, cranium (often broken) and tibia, were removed and placed on a clean sheet of paper to air dry. The material collected in the sieve was put through the flotation process several times with reduced water pressure to ensure all heavier fragments had separated from the floating matter.

All pellets were found to contain small mammal remains including characteristic skull and lower jaw fragments that allowed identification to species level by referring to diagrams in Watts and Aslin (1981). Hair analysis (Brunner and Coman 1974) was therefore not required. Investigations by Valente (1981) suggest that hair analysis provides little extra information when easily identifiable fragments are present in a pellet. The number of individuals contained within each pellet was determined by pairing lower jaws. The 14 pellets examined contained 54 individual prey items, all of which were House Mice *Mus domesticus*. The number of *M. domesticus* per pellet ranged from three to six, with a mean of 3.9.

The lack of prey diversity is not unusual for Barn Owls in this region of Australia. Morton and Martin (1979) recorded an almost identical result from a collection of pellets taken from similar habitat at Erudina Station 130 km W of this study site. They found 137 *M. domesticus* in 31 pellets (mean 4.4 individuals per pellet) and four other prey items, including an unidentifiable rodent, one Stripe-faced Dunnart *Sminthopsis macroura* and two geckos (probable).

Other nearby collections made by Morton and Martin (1979) from Fowlers Gap and Mount King in NW New South Wales also contained a high proportion of *M. domesticus* (>80%). However, a range of other prey species including native rodents, small dasyurids, bats, birds, reptiles and frogs, were also found. Both collections were of over 250 pellets possibility representing a considerable time series. Prey monitoring at Fowlers Gap found that consumption of non-rodent species generally only occurred when rodent abundance was low. However, being specialist predators, Barn Owls were unable to take full advantage of these prey populations despite some species being relatively common. Consequently, Barn Owls were forced to disperse or succumb to starvation as rodent numbers declined further (Morton and Martin 1979).

In comparison, Rabbits *Oryctolagus cuniculus* were the staple prey for Cats at this site, but they

also took a wide range of other fauna species (R. Palmer unpubl. data). Four of the six feral Cats shot in October 1993 had eaten *M. domesticus*, with one stomach containing 18 individuals. Other contents included young Rabbits, native rodents (Bolam's Mouse *Pseudomys bolami*), dunnarts, quail, reptiles and invertebrates. October 1993 and April 1994 were the only periods in which rodents were recorded in the 40 Cat stomachs collected during 1990-94, indicating *M. domesticus* populations had responded to the good seasonal conditions experienced at Mulyungarie in 1993, enabling the Barn Owl reported here to feed exclusively on a single prey species while in temporary residence at this site.

#### ACKNOWLEDGMENTS

I would like to thank Bill Lewis for informing me about the owl roosting in the back garden and assisting me in collecting the pellets. I am also grateful to Bill for the sample of feral Cats. Stefanie Pidcock and a referee made valuable comments on the manuscript. Laboratory facilities for analysis of pellets were provided by the Australian Plague Locust Commission, Canberra.

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Received: 22 January 2000