

Short Communications

Food of the Powerful Owl *Ninox strenua* in Suburban Brisbane, Queensland

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Powerful Owls are present in forest and woodland within several Australian cities including Brisbane (Pavey 1993), Sydney (Chafer 1992; Rose 1993), Wollongong (Chafer 1992) and Melbourne (Cooper 1964; McNabb 1987; Quinn 1994). There are over 20 sites within a 35 km radius of the Brisbane GPO where this species has been observed and is likely to be resident (CRP unpubl. data). This paper presents information on the food of Powerful Owls from two of these sites, to provide comparison with the prey taken at Mt. Coot-tha, where fruit-bats *Pteropus* spp. and the Common Ringtail Possum *Pseudocheirus peregrinus* were the main food of a pair of Powerful Owls (Pavey et al. 1994).

Toohy Forest is 530 ha of woodland and open forest 10 km south of the Brisbane GPO; it is completely surrounded by urban settlement (Catterall 1987). A Powerful Owl was observed roosting in vine forest along Mimosa Creek (50-100 m asl), during March–September 1987, July 1988, May–June 1989, January–August 1991 and February 1992. Pellets were collected below roosts from April 4–June 19 1987 (by R. Annels) and May 30–June 29 1989 (by CRP). A single pellet was collected in June 1991. Pellets were collected on average every eight days in 1987 (43 pellets) and every five days in 1989 (16 pellets). The bird was not observed holding prey.

Bunyaville State Forest Park, 12 km north of the Brisbane GPO, is 620 ha of regrowth woodland and open forest. Vegetation on private property links it to a state forest to the west. A pair of Powerful Owls successfully reared a single young during 1993. Twenty-four pellets were collected between September and November 1993 (by R. McGuire), below roosts in vine forest along the upper branches of Albany Creek (20-70 m asl). The birds were observed holding prey, at the day roost or at night, on several occasions from September to December 1993.

Prey material was examined either at the Queensland Museum (vertebrates) or the University of Queensland Insect Collection.

Table 1 Food items of Powerful Owls at three sites in suburban Brisbane; Toohy Forest (1987, 1989), Bunyaville State Forest Park (1993) and Mt. Coot-tha (1989–91).

Species	Toohy Forest 1987	Toohy Forest 1989	Bunyaville 1993	Mt. Coot-tha 1989–91*
MAMMALS				
Common Ringtail Possum ¹	7	0	1	49
Common Brushtail Possum	0	0	3	13
Unident. possum/ glider	2	0	0	8
Sugar/Squirrel Gliders	11	12	4	18
Greater Glider	0	1	0	1
Fruit-bats	0	0	2	59
BIRDS	1	0	7	59
INSECTS	0	1	0	2
Total	21	14	17	209

¹ Another Common Ringtail Possum was recorded in a pellet from Toohy Forest in 1991. * Pavey et al. 1994.

Results and discussion

The food of the Powerful Owl at Toohy Forest consisted almost entirely of four species of arboreal marsupial (Table 1). Both species of smaller gliders, Squirrel Glider *Petaurus norfolcensis* and Sugar Glider *P. brevicauda*, were taken. Skeletal material from these animals could not always be separated to species level and are considered together as small gliders. The single Greater Glider *Petauroides volans* consumed was a young animal that weighed an estimated 500 g. The insect taken was an orthopteran.

The main difference in prey composition between the two years at Toohy was that in 1987 both Common Ringtail Possums (7) and small gliders (11) were fed on frequently, whereas in 1989 the sample consisted entirely

ly of gliders. All but one of the 13 gliders taken in 1989 was a Squirrel or Sugar Glider. The change in the numbers of Common Ringtail Possum and small gliders preyed on between the two years was significant (Fisher's Exact Test, $P < 0.05$).

Arboreal marsupials at Toohey Forest counted during 42 hours of spotlighting in 1982–83 were as follows: Sugar Glider, 2; Squirrel Glider, 25; Greater Glider, 23; Common Ringtail Possum, 11; and Common Brushtail Possum *Trichosurus vulpecula*, 13 (McRae & Smith 1987). Although there is a four year gap between the mammal survey and the pellet collection the ratio of spotlight numbers to prey numbers is interesting: 11:8 for the Common Ringtail Possum and 27:23 for small gliders, but 23:1 for the Greater Glider.

Food of Powerful Owls at Bunyaville included nine vertebrate species, a high diversity from a sample of only 17 individuals. The main prey were small gliders (4), Common Brushtail Possum (3) and Rainbow Lorikeet *Trichoglossus haematodus* (3). Other birds taken were Scaly-breasted Lorikeet *T. chlorolepidotus* (1), Galah *Cacatua roseicapilla* (1) and Pied Currawong *Strepera graculina* (2). Fruit-bats were recorded twice. Spotlighting surveys were not conducted in this area; however, arboreal marsupials recorded at Bunyaville include Koala *Phascolarctos cinereus*, Common Brushtail Possum and Sugar Glider (R. McGuire unpubl. data).

The food taken by the Bunyaville owls showed several similarities to the Mt. Coot-tha birds, although they cover different years (1993 and 1989–91, respectively). Each of the prey species at Bunyaville was recorded at Mt. Coot-tha. Also, birds were a numerically important food at both sites, making up seven of 17 items at Bunyaville and 59 of 209 items at Mt. Coot-tha.

The food of the Powerful Owl at Toohey Forest differed with no evidence of predation on fruit-bats and only one record of bird predation. Predation on small gliders was much higher at Toohey Forest (23 of 36 items) than at Mt. Coot-tha (18 of 209 items). Common Ringtail Possums were frequently taken at both sites, whereas the Greater Glider was only preyed on once at each location. This heavy predation on small gliders at Toohey Forest is consistent with other recent studies which show that they are frequently taken by Powerful Owls despite their small size (Van Dyck & Gibbons 1980; Tilley 1982; Hollands 1991; Chafer 1992; Traill 1993).

The diversity of prey taken at three sites around Brisbane (Bunyaville, Toohey Forest and Mt. Coot-tha) emphasises that Powerful Owls do not exhibit specific

dietary preferences when living close to urban settlement. This diversity and the large number of arboreal marsupials taken at Toohey Forest does not support my previous assertion linking the presence of Powerful Owls in urban Brisbane to the presence of fruit-bats (Pavey 1993).

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