

THE ECOLOGY OF THE GRASS OWL *TYTO CAPENSIS* SOUTH OF LAKE EYRE

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SUMMARY

The first records of Grass Owls *Tyto capensis* from south of Lake Eyre are documented. Grass owls were resident at Coward Springs Bore from December 1992 to March 1993 and were located at Morris Creek Bore in March 1993. House Mice were the principal prey of the owls at Coward Springs, although six small native mammal species were also eaten.

INTRODUCTION

Grass Owls *Tyto capensis* are found at scattered localities along the eastern coast of Australia, the Top End of the Northern Territory and the Kimberly regions (Blakers *et al.* 1984) but are considered to be rare in the Australian arid zone (Parker and Horton 1990; Garnett 1992; Reid and Fleming 1992). Reid *et al.* (1990) considered them to be infrequent or vagrant visitors to the north-eastern deserts of South Australia. The Grass Owl was first recorded from South Australia in 1975 when a population of at least five individuals was located near Pandiburra Bore in the far north-east of the state (Cox 1976). Since this discovery Grass Owls have also been recorded at Mirra Mitta Bore (Parker 1977) and Eyre Creek (Parker 1980), also in the far north-east of South Australia. The occurrence of Grass Owls in South Australia has been linked with irruptions of the Long-haired Rat *Rattus villosissimus* which is their chief prey species (Parker 1977).

RECENT GRASS OWL OBSERVATIONS

On 30 December 1992 four large *Tyto* owls were flushed from dense stands of the sedge *Cyperus laevigatus* in the Coward Springs bore drain 29°24'S, 136°48'E (Fig. 1). They were identified as Grass Owls rather than Barn Owls *T. alba* by their long trailing legs and orange-buff coloured underparts. This bore drain had been surveyed by the author in the same fashion every month since April 1991 and was also visited 37 times by F.J. Badman before 1987 (Badman 1987) without Grass Owls being recorded. Subsequent sightings of Grass Owls at the Coward Springs bore drain were as follows.

9 January 1993	10 owls
30 January 1993	5 owls
16 February 1993	10 owls
8 March 1993	7 owls
8 April 1993	Owls had left

Bird counts were not intended to be accurate censuses so that the limited bore drain habitat was not adversely affected by exhaustive searches. The Grass Owls were always flushed from flooded *Cyperus* beds and were usually found in areas surrounded by open water. They had formed 'burrows', approximately 50 cm long into the sedge. Often up to three or four owls were flushed from adjoining burrows. Pellets, faeces and feathers from

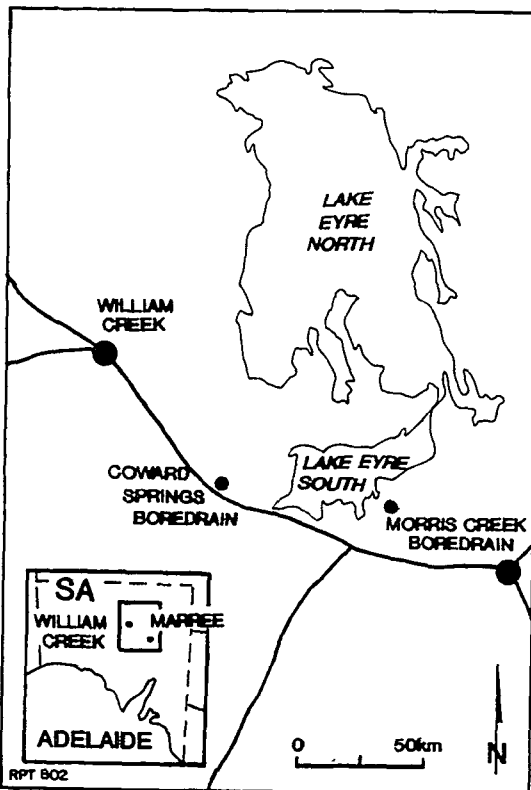


Figure 1. Location of Coward Springs and Morris Creek Bore Drains.

Grass Owls were often found in or adjacent to these burrows. The owls typically flew approximately 100 m before quickly dropping into the bore drain vegetation. No communication was observed or heard between owls in the group although at least one owl could usually be seen 'on watch' from within the *Cyperus*.

Several other bore drains and mound springs were surveyed for Grass Owls during the period of their residence at Coward Springs bore drain. On the evening of 1 March 1993 a Grass Owl was mist-netted in Morris Creek bore drain 29°25'S, 137°34'E (Fig. 1) while the author was searching for bats with Winston Head and Loraine Jansen. No evidence of Grass Owls was detected when the bore drain was surveyed during the preceding afternoon, although the habitat was apparently more expansive and more suitable for Grass Owls than Coward Springs. Since no owls, burrows, pellets, faeces or feathers were detected, the Grass Owl population at Morris Creek was likely to be both small and transitory. Grass Owls were not detected at Morris Creek bore drain during a follow-up survey on 3 August 1993.

PREY SPECIES

Prey species recorded in Grass Owl pellets from Coward Springs bore drain are listed in Table 1. The owls fed predominantly on the exotic House Mouse *Mus domesticus* and the native Forrest's Mouse *Leggadina forresti*. Two other native rodents, the Desert Mouse *Pseudomys desertor* and Plains Rat *P. australis*, and three dasyurids, the Stripe-faced Dunnart *Sminthopsis macroura*, Fat-tailed Dunnart *S. crassicaudata* and Paucident Planigale *Planigale gilesi*, were also present in the pellets (Table 1).

Elliot traps were set to investigate the potential prey species for Grass Owls at Coward Springs bore

drain. No mammals were caught amongst the owls in the bore drain though one Desert Mouse and several House Mice were trapped around the periphery of the bore drain between 8 and 10 January 1993. In the same period two Stripe-faced Dunnarts, one Paucident Planigale and two Forrest's Mice were pitfall trapped at Curdimurka, 28 km east of Coward Springs. These species were found in gibber habitat typical of the Coward Springs area.

DISCUSSION

The occurrence of Grass Owls at Coward Springs in early 1993 coincided with high rodent numbers in the region. Rodent numbers had escalated in response to above-average rainfall throughout 1992 which stimulated the growth of dense annual vegetation in this normally arid region.

The Grass Owls fed predominantly on small rodents but also a range of other mammal species. These mammals featured in the diets of Grass Owls in percentages approximately equal to their occurrence in the region (J. Read, unpublished data). Therefore the owls apparently did not select certain prey species but captured species when they were encountered. These prey were probably captured both in the bore drain habitat and on surrounding gibber plain. Unlike populations studied in north-eastern South Australia (Parker 1977), Grass Owls at Coward Springs were not dependent on Long-haired Rats which were not present during the study.

Despite the extensive patches of *Cyperus laevigatus* in bore drains and some mound springs south of Lake Eyre, the Grass Owl was only recorded at two sites. Both of these sites were in bore drains where some parts of the *Cyperus* beds were isolated from the surrounding country by a 'moat' of water, greater than 30 cm in depth. This moat may dissuade potential predators of Grass Owls such as dingos and feral cats from encountering the owls in their diurnal roosts.

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Table 1. Mammal species recorded from Grass Owl *T. capensis* pellets at Coward Springs Bore drain.

n = total number of pellets examined

Species	30 Jan 93 n=31	16 Feb 93 n=13	8 Mar 93 n=9	Total n=53
<i>Mus domesticus</i>	174	78	29	281
<i>Leggadina forresti</i>	31	17	21	69
<i>Pseudomys desertor</i>	12	1	2	15
<i>Pseudomys australis</i>	2	0	0	2
<i>Sminthopsis macroura</i>	2	4	7	13
<i>Sminthopsis crassicaudata</i>	0	1	0	1
<i>Planigale gilesi</i>	3	3	0	6
TOTAL	138	104	59	387

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