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Pythons in the pergola: the ecology of ‘nuisance’ carpet pythons (*Morelia spilota*) from suburban habitats in south-eastern Queensland

S. Fearn^A, B. Robinson^B, J. Sambono^A and R. Shine^C

^ASchool of Biological Sciences, James Cook University, Townsville, Qld 4811, Australia.

^B7 Ferret Street, Sadliers Crossing, Ipswich, Qld 4305, Australia.

^CSchool of Biological Sciences A08, University of Sydney, NSW 2006, Australia.

Abstract. Carpet pythons (*Morelia spilota*) are large (to >4 m, 11 kg) non-venomous snakes that are widely distributed across mainland Australia. In many parts of their range, viable populations persist even in highly disturbed urban and suburban habitats. Over a six-year period, we collected 258 ‘nuisance’ pythons from two cities (Brisbane and Ipswich) in south-eastern Queensland. Most of these snakes were reported by members of the general public, often after the snakes had consumed domestic pets or cage-birds. We provide data on seasonal activity patterns, body sizes, sexual size dimorphism, reproduction and food habits of these snakes. Snakes were active and fed year-round, primarily on domestic and commensal birds and mammals. Dietary composition shifted with body size: one small snake consumed a lizard, intermediate-sized snakes took mostly mice, rats and parrots, and large snakes fed on larger items such as cats, brushtail possums and poultry. Adult male pythons engaged in combat bouts during the breeding season, and (perhaps as an adaptation to enhance success in such bouts) grew larger and were more heavy-bodied than conspecific females.

Introduction

The expansion of cities generally results in a decline in the abundance and species richness of native fauna. Nonetheless, some species not only persist in the highly modified habitats of suburbia, but may actually thrive under such conditions (Beebee 1979; Dickman 1987; Dickman and Doncaster 1987). Although the fauna of Australian cities is dominated by feral species of birds (such as Indian mynahs) and mammals (such as introduced rats and mice), a few native species have also managed to take advantage of these novel habitats (Keast 1995). Obvious examples include magpies (*Gymnorhina*) and brushtail possums (*Trichosurus*), but several reptile taxa also persist even in the highly disturbed habitats of suburban backyards. Most such reptilian survivors are small-bodied (e.g. scincid lizards of the genus *Lampropholis*) but a few are much larger. For example, bluetongue lizards (*Tiliqua*) can be found in suburban backyards of all the capital cities in Australia (Koenig 1999; Koenig *et al.* 2001).

One such ‘success story’ in terms of large reptile species exploiting suburban habitats is at first sight a most surprising one. Large semi-arboreal pythons of the genus *Morelia* occur in the suburbs of cities such as Sydney, Brisbane, Cairns, Perth and Darwin (Gow 1976; Griffiths 1987; Bush *et al.* 1995). Throughout most of this range, a single species is involved: the ‘carpet python’, *Morelia spilota*. Intensive

radio-telemetric studies have been conducted on a population of this species in outlying areas of Sydney (Slip and Shine 1988a, 1988b, 1988c) and on two populations in agricultural land in north-eastern New South Wales (Shine and Fitzgerald 1995, 1996). However, there are few published data on the ecology of this species in Queensland, nor on truly suburban python populations. Householders in the suburbs of Brisbane and nearby Ipswich frequently encounter carpet pythons in their homes or yards, and ask wildlife authorities to remove the snakes. In the course of collecting and removing these ‘nuisance’ pythons over a six-year period, we gathered data on the basic natural history of the animals.

Methods

Study species

Field guides show the ‘carpet python’ (*Morelia spilota*) as occurring over a large proportion of the Australian mainland (Cogger 2000), but there is extensive geographic variation in traits such as mean adult body sizes and colouration within this group. This variation has led some authorities to recognise several subspecies within the *M. spilota* complex, and/or treat some of the component taxa as separate species (Barker and Barker 1994). Recent molecular studies suggest, however, that most of these taxa are very closely related to each other (L. Rawlings, personal communication). The form in south-eastern Queensland (= *M. s. mcdowelli* of Barker and Barker 1994) is a very large (to >4 m, 11 kg) snake. The dorsal surface is blotched in various shades of brown (giving the name ‘carpet snake’) and the venter is

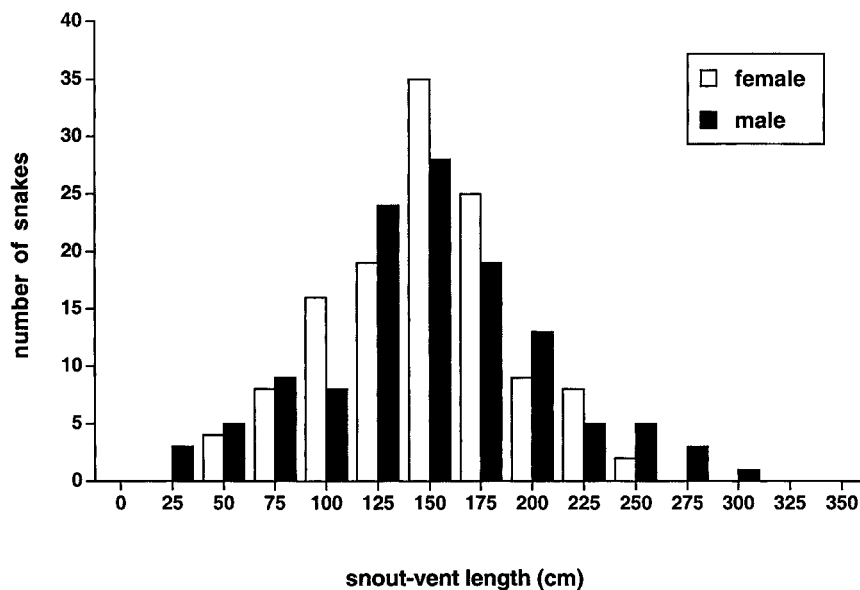


Fig. 1. Distribution of body sizes of carpet pythons collected from urban and suburban habitats in south-eastern Queensland. Both sexes mature at about 130 cm snout–vent length.

yellow and black. This is the same subspecies as studied by Shine and Fitzgerald (1995, 1996), but differs substantially in size and colour from the *M. s. spilota* studied by Slip and Shine (1988a, 1988b, 1988c).

Methods

Over the period from February 1994 to September 2000, we removed 258 *M. spilota* from urban and suburban areas in south-eastern Queensland. Most snakes came from the Beenleigh–Logan Village area on the southern outskirts of Brisbane and from the Ipswich area 38 km west of Brisbane. The climate in this region is subtropical, with midsummer air temperatures averaging 20.7–29.4°C and midwinter temperatures averaging 9.5–20.4°C (monthly mean maxima and minima for January and July respectively: Australian Bureau of Meteorology, http://bom.gov.au/climate/averages/tables/cw_040214.shtml).

The snakes were collected under wildlife damage mitigation permits. Most collections (220, = 85%) were initiated by members of the general public who found pythons on their premises and wanted the animals removed. These people sometimes provided additional information on the snakes' behaviour, or on predation by the snakes on domestic pets (especially caged birds). The remaining specimens were found active on the road, or as road-kills, or after being killed by members of the public or domestic pets.

We recorded dates and times of capture, and the snake's activity and location. Soon after capture, the sex of each snake was determined (by eversion of hemipenes), and its snout–vent length (SVL) and tail length were measured by stretching the animal out along a tape measure. The snake was also weighed, and palpated for the presence of prey items in the gut. Some snakes regurgitated recently ingested items; others defecated copiously (and thus provided samples of prey items for identification). Aviculturists also provided lists of birds ingested from their aviaries, as well as the sizes of those birds. Masses for partly digested birds were estimated from published literature (MacWhirter 1987; Marchant and Higgins 1993).

Results

Composition of the sample

The sex ratio in our sample was approximately equal (126 females, 123 males: against a null of 50% male, $\chi^2 = 0.04$,

d.f. = 1, $P = 0.84$). The smallest female python definitely known to be reproductive (brooding eggs) was 136 cm SVL (395 g). The smallest male found engaged in male–male combat was 130.7 cm SVL (500 g). Using 130 cm SVL as our criterion for maturity in both sexes, 79% of males in our sample were adults, as were 77% of females. Thus, the proportion of adult animals did not differ significantly between the sexes ($\chi^2 = 0.04$, d.f. = 1, $P = 0.84$). The distribution in body sizes of both sexes was approximately normal (Fig. 1), with a peak in the size range of small adults.

Snakes were reported (and thus collected) in all months of the year. Dividing the year into four seasons, more snakes were captured in spring (September–November, $n = 81$) and summer (December–February, $n = 79$) than in autumn (March–May, $n = 44$) or winter (June–August, $n = 45$). Chi-square analysis of these data rejects the null hypothesis of equal numbers in each season ($\chi^2 = 20.30$, d.f. = 3, $P = 0.001$). The most obvious pattern in these data involves the high numbers of adult male snakes collected in spring (the mating season: Shine and Fitzgerald 1995). Males comprised 41 of 63 adult snakes found in spring (65%) *versus* <45% (56 of 129) of the adult snakes found in the other three seasons combined ($\chi^2 = 9.16$, d.f. = 3, $P = 0.027$). The proportion of adult *versus* juvenile animals also varied among the four seasons in males, reflecting the higher numbers of adult males in springtime ($\chi^2 = 9.36$, d.f. = 3, $P = 0.025$). There was no significant seasonal variation among age composition (relative numbers of juveniles *v.* adults) in female snakes ($\chi^2 = 2.45$, d.f. = 3, $P = 0.49$), nor among the relative numbers of juvenile males *versus* females ($\chi^2 = 2.48$, d.f. = 3, $P = 0.48$).

Sexual size dimorphism

The two sexes both attain sexual maturity at approximately 130 cm SVL (above), and mean adult body sizes did not differ significantly in our sample. Our 97 adult female pythons averaged 176.1 cm SVL (s.d. = 31.2) whereas our 97 adult males averaged 180.7 cm SVL (s.d. = 40.3; one-factor ANOVA comparing the sexes, based on ln-transformed data to remove variance heterogeneity, $F_{1,192} = 0.44$, $P = 0.51$). Nonetheless, males tended to grow larger than females. For example, the largest seven snakes were all males. If we compare the largest 10% of snakes of each sex ($n = 12$ in each case), males averaged substantially larger than females (mean SVLs = 264 v. 237 cm, $F_{1,22} = 19.83$, $P = 0.0002$).

The disparity between the sexes was even larger in terms of mass than in terms of SVL, with the heaviest male weighing 6.5 kg whereas the heaviest female weighed only 4.4 kg. This result suggests that males tend to be heavier-bodied than females at the same SVL. We tested this possibility using one-factor ANCOVA, with sex as the factor, SVL as the covariate and ln(mass) as the dependent variable. The analysis confirms that slopes of the relationship between SVL and ln(mass) were similar in males and females ($F_{1,146} = 1.77$, $P = 0.19$), but that males were significantly heavier than females of the same SVL ($F_{1,147} = 8.54$, $P = 0.004$).

Reproductive biology

Male–male combat was recorded on 13 October 1996, 9 February 1997 and 4 October 2000, with males intertwined as described by Shine and Fitzgerald (1995). The two snakes fighting in February 1997 were very similar to each other in body sizes (203 cm and 2.5 kg v. 200 cm and 2.3 kg). The same was true of the snakes fighting in October 2000 (205 cm and 2.7 kg v. 199 cm and 2.4 kg). Several of the adult male pythons collected in spring had fresh lacerations, of the type caused by biting during male rivalry (Shine and Fitzgerald 1995). Our limited data also clarify the seasonal timing of the female reproductive cycle in *M. spilota*, with vitellogenesis in spring and oviposition in summer. A road-killed female of 160 cm SVL had 21-mm ovarian follicles on 15 September 1996, and ovarian follicles were palpated in other females in October and November. One heavily gravid female (168 cm SVL) was discovered under a pile of lumber on 14 December 1996, where she laid 15 eggs on 31 December 1996. The female's mass prepartum was 1.6 kg, and the eggs weighed a total of 640 g. Another female python (SVL 136 cm) was found coiled around eight eggs on 11 December 1995, inside a cardboard box in an urban shed. Finally, four hatchlings from a natural nest hatched on 7 February 2000. The hatchlings (two males and two females) were 45.5–47.0 cm SVL, and 23–24 g in mass. All 41 adult females collected in autumn and winter were non-reproductive.

Food habits

Of the 258 snakes examined, 74 (29%) contained prey remains. The proportion of snakes containing prey was similar in adults and juveniles (29 v. 27%). The proportion of snakes with prey was lower in winter (17% of 47 snakes) than in autumn (38% of 48), spring (27% of 81) or summer (32% of 82), but the differences among seasons in these proportions were not statistically significant ($\chi^2 = 5.41$, d.f. = 3, $P = 0.14$). Females contained prey items more often than did males, in both adults (35% v. 22%) and juveniles (31% v. 23%; combining both age groups to compare males v. females, Fisher's Exact Test gives $P = 0.049$).

Most snakes contained only a single prey item ($n = 59$), but 15 snakes contained multiple prey (2–11 items). Thus, the numbers of prey items recorded for some species were higher than the number of snakes containing those items (Table 1). This was especially true for aviary birds (such as love-birds), which were frequently taken as multiple meals (Table 1). The most commonly recorded prey types were birds (in 32 snakes; total of 56 prey items: see Table 1) or their eggs (2 snakes, 6 eggs). Most non-avian prey items were mammals (29 snakes, 34 prey items), especially rats (*Rattus* spp., $n = 14$ snakes, 16 prey items). However, several other types of mammals were also consumed, including a fruit-bat, a guinea pig and domestic cats (Table 1). The single reptile recorded from a carpet python was a scincid lizard from a small (42 cm SVL, 20 g) juvenile snake.

A high proportion of the diet of carpet pythons from suburban and urban habitats consisted of non-native prey species. These included commensal pests (notably black rats and house-mice), but also animals kept as domestic pets. For example, one of our snakes regurgitated a pet cat; another was captured as it was coiled around (attempting to kill) a large (4 kg) pet cat; and another was found lying in ambush on a cat's bed. Sometimes these trophic roles are reversed: one adult snake was killed by a cat. The other domestic animals that are often consumed by pythons are domestic birds. The snakes took not only poultry and their eggs, but also exotic species from cages and aviaries. Indeed, 20 of the snakes were found in aviaries after consuming birds. Reports by people finding these snakes suggest that, in almost every case, the snake captured its prey at night. However, the unsuccessful predation attempt on the cat (see above) occurred in the evening (at 1750 hours on 20 November 1997).

Dietary composition was broadly similar among male and female pythons, but males tended to feed on birds less often than did females. Of the endothermic prey items taken by male snakes, five were birds and 14 were mammals. Corresponding figures for females were 16 and 13 items respectively. This apparent difference was not statistically significant using contingency-table testing (Fisher's Exact Test, $P = 0.075$) but was in a logistic regression (with prey type as the dependent variable and sex as the independent

Table 1. Prey items identified from gut contents of carpet pythons in urban and suburban habitats in south-eastern Queensland

Juvenile snakes were those ≤ 130 cm snout–vent length. Prey species are listed in order of decreasing mean mass within each major category

Prey species	Prey mass (g)	No. of snakes:		Total no. of prey items
		Juveniles	Adults	
Mammals				
Domestic cat (<i>Felis catus</i>)	500–4000	0	2	2
Brushtail possum (<i>Trichosurus vulpecula</i>)	1100	0	4	4
Guinea pig (<i>Cavia porcellus</i>)	1000	0	1	1
Fruit bat (<i>Pteropus</i> spp.)	600	0	1	1
Black rat (<i>Rattus rattus</i>)	40–351	3	10	16
Swamp rat (<i>Rattus lutreolus</i>)	162	0	1	1
Marsupial shrew (<i>Antechinus flavipes</i>)	62	0	1	1
House-mouse (<i>Mus domesticus</i>)	20–42	5	1	8
Birds				
Domestic duck (<i>Anas platyrhinos</i>)	2300–5000	0	2	2
Domestic chicken (<i>Gallus gallus</i>)	500–1600	0	4	4
Domestic turkey (<i>Meleagris gallopavo</i>)	700	0	1	1
Pheasant coucal (<i>Centropus phasianinus</i>)	350	0	1	1
Feral pigeon (<i>Columba livia</i>)	350	0	1	1
Common koel (<i>Eudynamys scolopacea</i>)	200	0	1	1
Torresian crow (<i>Corvus orru</i>)	150	0	1	1
Silver quail (<i>Coturnix ypsilophora</i>)	140	0	1	4
Rainbow lorikeet (<i>Trichoglossus haemotodus</i>)	125	0	1	1
Princess parrot (<i>Polytelis alexandrae</i>)	100	0	2	3
Cockatiel (<i>Nymphicus hollandicus</i>)	90	1	1	4
Chinese quail (<i>Coturnix chinensis</i>)	40–80	0	3	3
Budgerigar (<i>Melopsittacus undulatus</i>)	50–55	0	5	8
African lovebird (<i>Agapornis roseicollis</i>)	50	0	3	12
Bourke's parrot (<i>Neopsephotus bourkii</i>)	50	0	1	4
Canary (<i>Serinus canarius</i>)	25	0	1	2
Java sparrow (<i>Padda oryzivora</i>)	25	1	0	1
Zebra finch (<i>Taeniopygia guttata</i>)	16	1	0	3
Bird eggs				
Domestic goose (<i>Anser anser</i>)	160	0	1	1
Domestic chicken (<i>Gallus gallus</i>)	80	0	1	5
Reptiles				
Scincid lizard	?	1	0	1

variable, log-likelihood ratio tests give $\chi^2 = 34.00$, d.f. = 1, $P = 0.046$). The scarcity of avian predation in males (the larger sex: see above) is surprising in view of a tendency for larger snakes to take birds rather than mammals (mean SVL of snakes with birds = 165.4 cm, s.d. = 36.9, $n = 54$; mean SVL of snakes with mammals = 143.1 cm, s.d. = 44.6, $n = 33$; effect of prey type on SVL from one-factor ANOVA, $F_{1,49} = 6.38$, $P = 0.013$).

Both prey types and prey sizes shifted with increasing size of the snake. Juvenile pythons took small prey, mostly mice and small birds. Relatively small prey items were also taken by pythons up to about 1 kg in mass, but snakes above this size generally took much larger prey, such as brushtailed possums and domestic ducks. Thus, prey mass increased with snake mass, with no sex-based divergence in this relationship. One-factor ANCOVA with sex as the factor, SVL as the covariate and $\ln(\text{prey mass})$ as the dependent

variable, showed that larger snakes ate heavier prey items ($F_{1,83} = 98.95$, $P = 0.0001$), but with no effect of sex ($F_{1,83} = 0.54$, $P = 0.47$) and no interaction between sex and SVL ($F_{1,83} = 1.92$, $P = 0.17$).

The mean mass of avian prey items was slightly but not significantly less than that of mammalian prey items (means of 312 v. 412 g; $F_{1,83} = 0.32$, $P = 0.32$). However, relative prey mass (mass of prey item divided by mass of the snake consuming it) showed a stronger pattern: the birds taken by snakes were smaller relative to snake mass than were the mammals (Fig. 2). We used a two-factor ANOVA to analyse the data in Fig. 2. Relative prey mass was greater for mammals than for birds ($F_{1,83} = 5.36$, $P = 0.023$), but did not differ between male and female snakes ($F_{1,83} = 1.16$, $P = 0.28$), nor was there any significant interaction between these two factors ($F_{1,83} = 0.11$, $P = 0.74$).

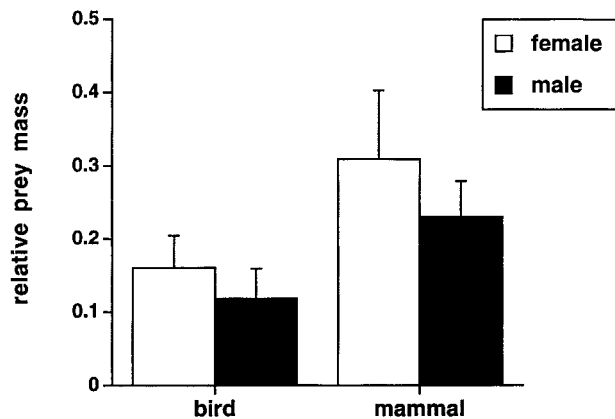


Fig. 2. Relative prey mass (prey mass divided by snake mass) for food items consumed by carpet pythons in south-eastern Queensland. The prey items are separated into categories according to prey type (bird or mammal) and the sex of the snake. Histograms show mean values and associated standard errors. See text for statistical analysis of these data.

Associated with the allometric shift to larger prey, very large pythons (>2 kg) ceased to feed on small prey (Fig. 3a). Relative prey mass displayed a more complex pattern, with prey items being large relative to snake size in very small snakes, declining in medium-sized pythons, and then rising again in very large snakes (Fig. 3b). The highest relative prey mass was recorded from a 223-cm-SVL (1.6 kg) female python that consumed a duck weighing 2.3 kg (i.e. approximately 1.5 times as much as the snake that consumed it).

Discussion

Although intuition suggests that giant pythons would be unlikely to thrive in the highly disturbed habitats of suburbia, it is clear that these animals are indeed able to exploit such situations. Similar success has been reported for populations of *Morelia* in other cities and towns around Australia (Shine and Fitzgerald 1996; Greer 1997), as well as for other species of pythons in Asia (e.g. Cox 1997; Shine *et al.* 1998, 1999). The snakes' persistence in such unlikely situations reflects their ability to evade detection by people, and to take advantage of the abundant food sources present in such areas (Shine *et al.* 1999). In the case of *M. spilota*, this means that very large animals (up to 4.2 m total length: D. Mundy, personal communication) can be found even in highly disturbed urban habitats.

Obtaining ecological data on free-ranging snakes in such situations is not a simple task. For example, local residents often refuse to allow researchers to move through their properties at night while tracking radio-tagged pythons (R. Shine, unpublished). The method adopted in the present study was to rely upon requests for assistance from the public, who frequently encounter snakes and wish to have them removed. This approach provided a large data set, but

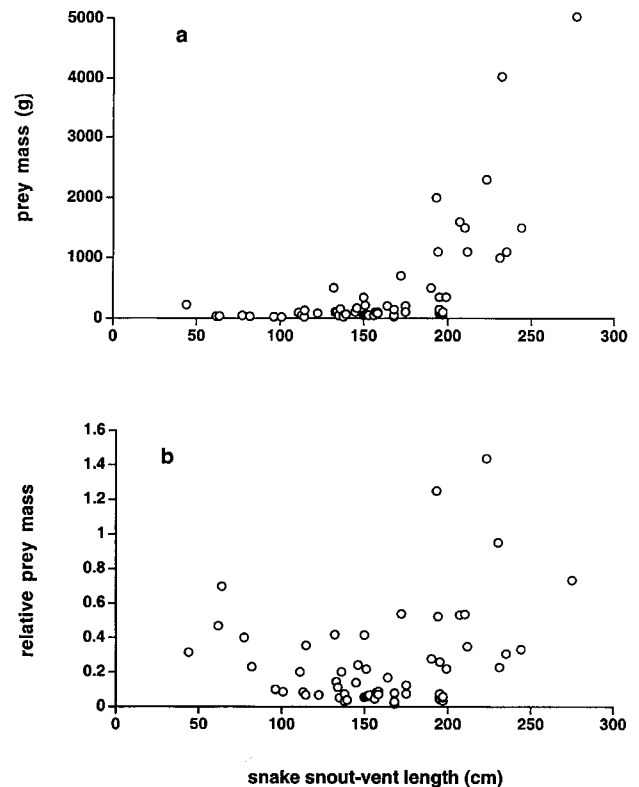


Fig. 3. Prey sizes of carpet pythons as a function of the body size of the predator. The upper graph (a) plots prey mass against snake body length, whereas the lower graph (b) plots relative prey mass (prey mass divided by snake mass) against snake SVL. See text for statistical analyses of these data.

undoubtedly also introduced biases in terms of which animals were collected. For example, our sample contained very few juvenile snakes. These animals probably escape detection by the public because they are small, they can use hiding places inaccessible to people, and they do not draw attention to themselves by consuming domestic pets and cage birds. Thus, our sample is not informative about the age structure of suburban python populations. Similarly, the particular specimens that we encountered may well have been a non-random subset of the population in terms of attributes such as movement patterns, habitat selection or prey choice (Harris 1984; Bonnet *et al.* 1999).

Despite these caveats, our data provide substantial information on the biological characteristics of commensal pythons. Many attributes of these snakes reveal a strong effect of human activities, but other aspects are likely to be representative of python populations in undisturbed habitats also. We deal first with traits that have been modified by suburban life, before turning to more basic characteristics.

The most obvious effect of anthropogenic activities – and a large component of the reason why these snakes have persisted in suburbia – involves their exploitation of non-native prey species. Suburban houses and gardens provide much higher and more predictable sources of food

and water than does the surrounding bushland. As a result, suburban habitats contain a high biomass of potential prey for predators such as pythons. These prey fall into three main categories: commensal species (such as brushtailed possums, rats, mice, and pigeons), free-ranging domestic pets (especially cats), and pets and poultry confined to cages and aviaries (such as chickens, parrots, canaries and guinea pigs). Carpet pythons in our study areas exploited all of these food sources: <15% of prey items were native species (Table 1).

Our data suggest that caged birds were particularly important as dietary items (Table 1). This result fits well with the arboreal habits of carpet pythons (>70% of the snakes that we collected were coiled in arboreal sites, typically in pergolas and sheds). However, previous studies have suggested that birds constitute only a relatively small proportion of the diet even for most highly arboreal snake species, probably because birds are agile and difficult to capture (Shine 1983; Luiselli and Rugiero 1993). Carpet pythons in suburban Brisbane and Ipswich overcome this problem by capturing birds in aviaries and cages, where the birds have little opportunity to evade the snake. Often, snakes caught most or all of the birds in an aviary during a single overnight raid. For example, one snake (168 cm SVL, 1.8 kg) consumed five love-birds, four Chinese quail, and two canaries in a single night's foraging. The trend to year-round feeding in our snakes may reflect not only the warm climate of the study area, but also the snakes' frequent selection of roof spaces where temperatures were high and prey items abundant.

In other aspects of their biology, the suburban pythons probably resemble their conspecifics in less disturbed habitats. For example, adult male pythons typically do not feed during the mating season in spring, and often travel large distances at this time (Hammond 1988; Slip and Shine 1988a, 1988c). These behaviours are presumably the reason for some of the patterns in our data: for example, males contained food less often than females, and were encountered more frequently in springtime than in other seasons. Similarly, adult female pythons typically reproduce on a less-than-annual basis (e.g. Slip and Shine 1988a; Shine and Fitzgerald 1995, 1996), explaining the large numbers of adult-size non-reproductive females captured during our study.

Although the specific prey items taken by suburban pythons are different from those taken in undisturbed habitats, broad patterns of prey size relative to predator size are likely to be similar. A trend for larger snakes to eat larger prey, and to cease taking very small prey, is widespread in snakes (Arnold 1993), including other species of pythons (Shine *et al.* 1998, 1999). Relative prey mass is high for small snakes (Fig. 3b) because most potential prey items are large relative to the size of the predator. Intermediate-sized snakes can consume a wide range of prey, but larger snakes begin to concentrate on very large prey (Fig. 3a, b). Although

these are presumably scarce, and more difficult to capture, they provide a much greater nutritional benefit to the predator. Relative prey mass may be higher for mammals than for birds because mammals weigh more than birds for any given body diameter (presumably the factor determining maximal ingestible prey size for a snake).

The foraging tactics of individual pythons remain unclear. Although snakes of this lineage are classical examples of 'ambush predators' that lie in wait for their prey (e.g. Slip and Shine 1988b; Secor and Diamond 1995), their entry into aviaries and the like indicates that they use active foraging as well. In practice, the snakes presumably rely on both tactics. In a few cases, people reported seeing pythons coiled in ambush postures in the same place for two or three days before the animals moved elsewhere. Usually, however, people discovering large pythons in their homes were anxious to have them removed as soon as possible.

Our data are broadly consistent with previous studies on the ecology of *Morelia spilota* in other parts of its geographic range. In particular, our observations confirm the existence of male–male combat bouts in specimens from south-eastern Queensland (Covacevich 1975; Charles *et al.* 1985; Shine and Fitzgerald 1995). Males in our sample also attained larger maximum body sizes than did females, in keeping with the general correlation between male–male combat and male-larger dimorphism among populations of *M. spilota* (Shine and Fitzgerald 1995) and among snakes in general (Shine 1994). Our study also showed that males were significantly more heavy-bodied than were females at the same snout–vent length. Although we did not quantify this trend, our experience in handling these animals also suggests that males are stronger than females. Sex differences in muscular strength have been documented in elapid snakes (Schwaner and Sarre 1990) and colubrid snakes (Shine *et al.* 2000) and thus, may prove to be widespread. In the case of carpet pythons, the heavier build of males may enhance their ability to 'wrestle' with rivals during the mating season.

Lastly, we encourage other herpetologists to collect analogous data on 'nuisance' reptiles that are removed from residential areas. Recent years have witnessed an enormous increase in the scale of this activity, with most large cities having groups of volunteer (or paid) personnel who capture and relocate 'problem' animals. This interaction between people and wildlife provides a unique opportunity for us to document not only the natural history of poorly-known reptile taxa, but also to understand the ways in which these animals have responded to anthropogenic disturbance. Such information may well prove to be of great value in framing management initiatives to help maintain biodiversity in our cities and suburbs.

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