

# Urban terrorist?

Have you ever wondered what mischief lies ahead as your beloved moggy vanishes over the fence with that jaunty swish of the tail? Limp offerings left on the doorstep offer partial clues, but gleaning the full story of moggy's adventures would require spying on those secret sorties.

Five years ago, ecologist Dave Barratt decided to do just that. He recruited 214 cats and 143 cat-owners from 61 Canberra suburbs to help him study the effects of felines on the surrounding environment.

Barratt's study was for his masters thesis at the University of Canberra's Applied Ecology Research Group. He received funding assistance from the ACT Department of Environment, Land and Planning. Wildlife managers in the ACT have a particular interest in predation by domestic cats because many Canberra suburbs adjoin remnant grassland, woodland and open-forest habitat. Much of this habitat is protected in 22 small reserve units comprising the Canberra Nature Park.

Previous cat predation studies elsewhere had shown that the average house cat takes significantly less prey than feral cats, which have no milk and biscuits to come home to. But the actual impact of house cat predation on native fauna populations was poorly understood. Questions such as why some house cats were keener hunters than others, and whether particular types of prey were favoured, remained to be answered.

After conducting neighbourhood surveys, Barratt selected 17 cats to join his covert operation: 10 house cats living at the edge of a suburb adjoining grassland and forest/woodland habitat, and a nearby colony of seven farm cats. During a nine-month period, he radio-collared and tracked each cat's movements, building up a detailed picture of their daily activities.

Barratt found that four of the 10 house cats ventured into the forest/woodland, and that most cats journeyed furthest under cover of

darkness. The largest day-time home range was 17 hectares, the largest night range was 28 ha, and the furthest distance moved into adjoining habitat was 900 metres.

For a 12-month period, the owners of all 214 cats helped Barratt to collect and record assorted items of prey. Some 2000 vertebrate prey items, representing at least 67 species were reported. House mice comprised 56% of the catch, and black rats (7%) were the next most common. Birds comprised 27% of the total prey items, including 47 species, 41 of which were native. Reptiles and amphibians made up 7% and 1% of the total respectively. Four goldfish were also reported!

There were no significant decreases in common bird prey species in suburban Canberra during the same period. Barratt says this reflects the fact that most bird species in Canberra have either invaded or re-invaded the suburbs in response to habitat development, irrespective of cat predation.

The number of prey caught by each cat ranged widely. Barratt says environmental attributes such as distance to prey sources and cat density explained some of the variation, but much was probably due to individual cat personalities. Some 70% of cats were reported to catch less than 10 prey items per year, but 6% were prolific hunters, taking on average at least one or two prey a week.

An important finding was that 62% of mammals and all amphibians were taken at night and 70% of the birds and 90% of reptiles were caught by day. In light of this result, and the daily and nightly hunting patterns, Barratt believes night time curfews on cats would probably lessen mammal predation in nearby native habitat, but may have little impact on predation of reptiles and birds.

Barratt concluded from his study that predation beyond suburban edges is likely to mostly affect arboreal marsupials (such as sugar gliders), and small ground-dwelling



Dave Barratt

In preparation for the radio-tracking study, traps were set to monitor feral cat populations in nearby woodland habitat.

mammals. This is because both are nocturnally active, and appear to be preferred prey of house cats. He says adverse effects on native fauna will always potentially be greatest in undisturbed habitat near new residential developments.

The findings have implications for urban planning. Barratt says wherever possible a 1 km buffer zone should be allowed around habitat where nocturnal species may be threatened and 200 m where diurnal species may be at risk. Where buffer zones aren't feasible, night time curfews should be encouraged. He also suggests domestic cats should be required to be registered, preferably with a microchip implant.

Barratt's study also identified topics for further research. He says in specific problems areas, population ecology studies of species potentially at risk are warranted, including analysis of the primary causes of juvenile and adult mortality. The effect of predation by house cats on competition between introduced and native species, particularly birds, is also worthy of further research.

Dave Barratt is now working for Environment Australia on biodiversity assessments for regional forest agreements.

## More about predation by house cats

Barratt DG (1998) Predation by house cats, *Felis catus* (L), in Canberra II. Factors affecting the amount of prey caught and estimates of the impact. *Wildlife Research* 25(5):475-487.

Bryony Bennett