

Backyard blues

Urbanisation is usually disastrous for wildlife, but the blue-tongued lizard seems to be a striking exception. In Sydney, for example, where lace monitors, bearded dragons, diamond pythons, red-bellied black snakes and other large reptiles have disappeared or retreated to remnant bushland, the blue-tongued lizard remains abundant.

So how has this large, defenceless, slow-moving lizard managed to persist in suburbia?

Scientists at the University of Sydney – Jennifer Koenig, Professor Rick Shine and Dr Glenn Shea – have been hunting for an answer in Sydney backyards.

They suspected that the lizards were not just common, but more abundant in these disturbed areas than in more pristine adjacent habitats such as remnant forest. So they decided to implant transmitters into 17 adult lizards and track them for six months in the suburb of Hornsby.

'We found that each radio-tracked lizard used many (5–17) suburban backyards, but each animal spent most of its time in a few core areas near several shelter sites in its home range, Koenig says.

'Males had larger home ranges than females (average of 12 700 versus 5100 square metres) and moved further between shelter sites. Pregnant females were more sedentary, with home ranges averaging just 1000 square metres.'

The scientists found that blue-tongued lizards seemed to show a distinct preference for garden habitats over more natural remnant habitats in the vicinity.

Within this environment, they did not move about at random. They used corridors of dense vegetation to move between familiar retreat sites and actively avoided crossing roads, perhaps showing more road sense than their domesticated enemies, cats and dogs.

Koenig and her colleagues say a combination of ecological factors enable the lizards to live in suburbia.



Male blue-tongued lizards are much more likely to roam than their pregnant partners, which prefer the relative safety of a backyard compost heap.

Firstly, the reproductively important pregnant females are highly sedentary, remaining at sites with abundant food and shelter (such as compost heaps), and are therefore less likely to encounter dangers like vehicles, cats, dogs, birds and humans.

The more expendable males move about much more, probably to locate females, but mostly in times and places that involve minimal risks from humans and pets. Peak activity periods coincide with the times when many humans are at work.

Information from a wildlife rescue database and museum specimens suggests that adult male blue-tongues are the group most likely to suffer injuries and fatalities, especially in spring, but this has less impact on populations than if it were, say, pregnant females coming to grief.

Newborn lizards are also vulnerable, but these losses are more or less countered by large litter sizes (up to 18 per litter) and a potentially long life span. Captive lizards sometimes live to 30 years or more. This means that populations of adult blue-tongued lizards may persist for many years, even without recruitment.

In addition to largely spurning roads, the radio-tracked lizards showed strong 'site fidelity', spending up to 70% of their time in safe locations, including

drainage pipes, sheds, thick vegetation, concrete crevices, car tyres and overgrown wood piles. They have no qualms about using this artificial shelter, or about consuming unnatural food such as introduced garden snails, dog food, newspaper and kitchen scraps such as water melon!

Only one of the radio-fitted lizards was killed during the study. Data from the Wildlife Information and Rescue Service, however, indicate a massive rate of death and injury in urban blue-tongued lizards. More than 2000 'rescues' were recorded in Sydney in three years.

Paradoxically, the scientists see this as an encouraging result because it suggests that population densities of the lizards are still high in many areas of the city, for the reasons outlined above.

Their use of non-territorial, overlapping home ranges in a food-rich environment means that the likeable blue-tongued lizard can potentially reach large numbers in suburban areas.

More about blue-tongued lizards

Koenig J Shine R and Shea G (2001) The ecology of an Australian reptile icon: how do blue-tongued lizards (*Tiliqua scincoides*) survive in suburbia? *Wildlife Research*, 28:215–227.

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