

# WILDLIFE RESEARCH

## Management and Conservation

### Contents in brief

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#### Survival behaviour of swamp wallabies during prescribed burning and wildfire

*N. Garvey, D. Ben-Ami, D. Ramp and D. B. Croft*  
*Wildlife Research*, 2010, **37**, 1–12.

Pre-emptive burning to reduce fire fuel load is commonly used to minimise the potentially devastating impact of wildfires. We found that the swamp wallaby (*Wallabia bicolor*), a common medium sized forest dwelling wallaby, can successfully avoid these cooler fires and remain in the burnt areas. Pre-emptive burns should be undertaken at sufficient time intervals to allow for forest regrowth and to lessen the impact on swamp wallabies.

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#### Patchiness in distribution of rodents and mustelids in New Zealand forests

*A. F. Watkins, J. L. McWhirter and C. M. King*  
*Wildlife Research*, 2010, **37**, 13–18.

When operating conventional traps or bait stations for broadscale control of small introduced predators, it is probably false economy to minimise servicing costs by deploying devices in lines and at maximum economic spacing, assuming that pest populations are evenly distributed through a given habitat. We confirmed that patchiness among populations of wild rodents and mustelids ranges from slight to extreme, and predict that control devices set at too large a spacing (between and within lines) may miss important refugia from which pests may recolonise. The consequences of moderate patchiness depend on the purpose of a study, but may be more important for practical management than for population monitoring.



Photo by C. M. King © 2010

**Population age structure of the spotted tree frog (*Litoria spenceri*): insights into population declines**

G. Gillespie

*Wildlife Research*, 2010, **37**, 19–26.

Knowledge of amphibian population dynamics is poor and this has so far hampered evaluation of the significance and causes of amphibian declines within Australia and globally. This paper examined the population age structure and survival of the spotted tree frog (*Litoria spenceri*), a critically endangered species in south-eastern Australia, and identified predation of tadpoles by introduced trout as the most parsimonious explanation for differences in population density. These findings re-enforce evidence that introduced fish have played a role in the decline of this species.



Photo by Graeme Gillespie, Zoos Victoria © 2010

**Advancement to hair-sampling surveys of a medium-sized mammal: DNA-based individual identification and population estimation of a rare Australian marsupial, the spotted-tailed quoll (*Dasyurus maculatus*)**

M. Ruibal, R. Peakall, A. Claridge, A Murray and K. Firestone

*Wildlife Research*, 2010, **37**, 27–38.

The marriage of DNA technologies with remote hair-sampling methods offers great promise for wildlife survey and monitoring methods of rare/cryptic, wide ranging or difficult-to-capture species. Yet the method has rarely been applied due to potential limitations. This study shows, for the threatened spotted-tailed quoll, that population-level information gained by DNA adds considerable value to hair sampling, which, up until the present study, had been used only to detect its occurrence. Also, we offer a practical and cost-alternative way to deal with cross-contamination and DNA quality limitations.



Photo by M. Ruibal © 2010

**The success of using trained dogs to locate sparse rodents in pest-free sanctuaries**

*A. Gsell, J. Innes, P. de Monchy and D. Brunton  
Wildlife Research, 2010, 37, 39–46.*

Detecting the first or last individuals in rodent invasions or eradications respectively is clearly crucial for successful management of both. We used laboratory mice and rats as surrogates for wild ones, in a New Zealand pest-free forest sanctuary, to demonstrate experimentally that trained dogs could locate most rodents and their scent trails. Trained dogs show promise as a tool to detect sparse wild rodents, alongside other methods.



Photo by N. Fitzgerald ([www.neilfitzgeraldphoto.co.nz](http://www.neilfitzgeraldphoto.co.nz)) © 2010

**Cat-exclusion zones in rural and urban-fringe landscapes: how large would they have to be?**

*E. M. Metsers, P. J. Seddon and Y. M. van Heezik  
Wildlife Research, 2010, 37, 47–56.*

Population growth and urban sprawl means that people and their pets pose a mounting threat to vulnerable wildlife in remnant natural areas. In New Zealand, introduced domestic cats are one such pet that threatens native lizard species, so tracking their movement behaviour may help quantify an exclusion zone, or safe distance between residential and natural areas. However the size of an exclusion zone needs to reflect the landscape, degree of residential development and large behavioural variation of individual cats.

**Predator-baiting experiments for the conservation of rock wallabies in Western Australia: a 25-year review with recent advances**

*J. E. Kinnear, C. J. Krebs, C. Pentland, P. Orell,  
C. Holme and R. Karvinen  
Wildlife Research, 2010, 37, 57–67.*

For more than 25 years, predator baiting experiments designed to measure the impact of red fox predation on endangered rock-wallaby colonies have been in progress. A review of the project has confirmed that fox predation is a major threatening process affecting the future survival of rock-wallabies and other endangered marsupial prey. Baiting is an effective and essential management procedure, but has limitations as a research tool. Recent developments in radio-telemetry are described that promise major advances in predator-prey research.



Photo by Craig Pentland © 2010

**Long-term impact of coordinated warren ripping programmes on rabbit populations**

*S. E. McPhee and K. I. Butler*

*Wildlife Research*, 2010, **37**, 68–75.

The efficacy of rabbit haemorrhagic disease in regulating rabbit populations has diminished within Australia. The improvement of existing or development of new biological control agents could take decades. In contrast, well managed and co-ordinated warren ripping programmes using heavy warren ripping machinery provide an immediate and more predictable long-term (~10 years) reduction (>95%) in rabbit populations.



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