

## WILDLIFE MANAGEMENT IN AUSTRALIA

Australia has had to deal with several serious wildlife management problems over the years. Hamish Kidd reports on controlling rabbits and foxes in Australia

### Rabbits

Thomas Austin introduced rabbits into Australia in 1859, for sporting hunters. But with no natural predators and litters of five or more bunnies seven times a year, soon there was a rabbit plague.

Farmers ripped their warrens, laid poison and shot them, but they still multiplied. In the 1950s CSIRO introduced myxomatosis which killed millions of rabbits, but eventually the rabbits became resistant and by 1995 had multiplied to an estimated 300 million.

Brian Cooke of CSIRO started working on rabbit calicivirus in 1998, when it first appeared in wild rabbits in Spain. Four years of research (1991–1995) into the virus was carried out in the high-security laboratory in Geelong to examine animal health risks. Then in March 1995, a quarantine station was set up on tiny Wardang Island off the coast of South Australia to test rabbit calicivirus which had kept down rabbit populations in Europe. It was due for release in 1998, but, after only 6 months it escaped from the island, most likely carried by insects.

Although there would have been more discussion about the merits or otherwise of release of the virus had it not escaped, the effects of calicivirus release in Australia were as good as expected. In the arid zones there was a remarkable reduction. The numbers of rabbits went down to 10–15% of their original numbers, and there have been consequent improvements in the landscape.

The calicivirus has not worked so well in colder wetter regions, and scientists are working on the reasons for this. Scientists are also aware that, since myxomatosis was only effective for 15–20 years, rabbits could also become resistant to calicivirus.

### Foxes

European red foxes cost producers thousands of dollars in lost lambs annually across Australia. Until recently Tasmania was spared the threat from this predator. There is now, however, concern that foxes could become established in Tasmania, where they could become a major threat to agriculture and wildlife, especially since the island has many ground-dwelling mammals which are prime targets for foxes. Around 10 mammalian species (some unique to Tasmania) e.g. Eastern quoll (*Dasyurus viverrinus*), Tasmanian pademelon (*Thylogale billardieri*), Eastern barred bandicoot (*Permeles gunnii*), Southern brown bandicoot (*Isodon obesulus*), Tasmanian bettong

(*Bettongia gaimardi*) and long-nosed potoroo (*Potorous tridactylus*) fall within a critical weight range of 35–5500 grams and are therefore subject to predation by foxes. If nothing was done it was feared that some of these mammalian species could become extinct.

During June this year a programme called Out Fox was launched in an effort to nip the potential fox threat in the bud. Funded by Australian Wool Innovation, it was a joint effort of the Pest Animal Control Cooperative Research Centre, CSIRO, the Tasmanian Farmers and Grazier's Association and the Tasmanian Department of Primary Industry, Water and Environment. It was run on farms and community centres and involved teaching the Tasmanian public how to identify and detect foxes.

The Pest Animal Control CRC is committed to developing humane solutions for controlling Australia's pest animals. The RSPCA issued a statement concerning the issue of the fox problem in Tasmania, following the meeting of the Fox Control Reference Panel on 7–8 March 2002 in Launceston. This statement strongly supported the development of an immunocontraceptive vaccine by the Pest Animal Control CRC. However, since it was necessary to eliminate foxes rapidly from Tasmania, the use of immunocontraceptives had to be rejected, because more work was needed before they could be shown to be effective or politically acceptable.

### New approach

The Pest Animal Control CRC is developing vaccines to control pest animals by limiting their reproduction. Delivery of the vaccines will be through baits, or preferably through the agency of a virus which spreads naturally through the target pest population. The vaccines are created by genetically modifying a carrier virus to include DNA for sperm, egg or other key reproductive proteins. The product is a modified virus, which during infection of the pest, causes an immune response which attacks the animal's own sperm or eggs and prevents reproduction. The use of fertility control vaccines promises to be more cost-effective, more humane and more environmentally friendly than current methods of control.

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For more information on wildlife management in Australia see: <http://www.pestanimal.crc.org.au/> and <http://www.cse.csiro.au/research/Program4/index.htm>