

Rabbit Management for Conservation in the Flinders Ranges, SA

Dr Chris Holden
National Parks and Wildlife SA

Flinders Ranges Bounceback is an ecological restoration program in the Northern Flinders Ranges region of South Australia that is funded by the South Australian Government and the Natural Heritage Trust, and managed by National Parks and Wildlife SA. The program arose from localised control programs to protect colonies of the endangered yellow-footed rock wallaby (*Petrogale xanthopus xanthopus*) in the Flinders Ranges National Park, commencing with goats in 1990 and with foxes and rabbits in 1993.

Initially, rabbit control, via the targeted destruction of rabbit warrens, was sought over a 20 km² area adjacent to a rock-wallaby colony with the aim of improving drought food reserves. Capitalising on the advent of RHD in October 1995, control was extended across areas of highest rabbit infestation as part of a larger program to reduce total grazing pressure. After RHD, rabbit numbers within controlled areas were less than 10% of the pre-ripping, pre-RHD levels and were gradually pushed towards the 1% level by follow-up treatment with explosives. Rabbit numbers in untreated areas continued to fluctuate between 3 and 12% of the pre-ripping, pre-RHD levels with seasonal breeding and outbreaks of RHD and myxomatosis.

Most progress in rabbit control occurred from 2000 onwards with a dedicated contract crew. In addition to the existing controlled area of 25 km², 220 km² (22% of the total park area) was mapped, ripped and blasted to link with a rabbit controlled area of 100 km² on neighbouring Gum Creek sheep station. On-park, a further 60 km² was ripped and awaits follow-up treatment.

The rabbit control program is the largest invested component of Bounceback. Costs for rabbit control on-park since 2000 were: contracted labour \$530,000; sundries \$60,000, and ripping contracts \$40,000, amounting to a control cost of \$29 per hectare. Other associated costs include monitoring rabbit abundance in both treated and untreated (control) areas, measuring outcomes such as vegetation recovery, and managing concomitant increases in kangaroo densities.

National Parks and Wildlife SA is currently exploring a number of scenarios for future rabbit control based on labour costs, with a decision to be made on expansion versus maintenance. These options range from a fulltime program of expansion and follow-up at \$290,000 p.a. to a maintenance program costing \$36,000 p.a.

Dry years, high euro (wallaroo) densities and a lack of seed bank in highly degraded areas near previous stock waters have confounded short-term gains in vegetation recovery within the rabbit controlled areas. Exclosure studies within the rabbit controlled area suggest a further reduction in total herbivore grazing pressure is required to increase the recruitment and biomass of native grasses and palatable chenopods.

Populations of both foxes and cats decreased substantially some six to ten months after the advent of RHD. The diet of foxes changed as a result of reduced rabbit numbers, with much less rabbit and more invertebrates and carrion being eaten. The physical condition of foxes showed little change after RHD. The diet of cats did not change markedly, but they were in a substantially poorer physical condition compared with before RHD. Total predation on native fauna is considered to have decreased after RHD. Small vertebrate monitoring using pitfall grids has not demonstrated any marked change in small mammal and reptile densities in the past three years.