

Bringing back the bettongs

Many of the marsupials that roamed the inland of Australia at the time of European settlement have become extinct. Some, although they escaped that fate, are very rare or absent on the mainland and are confined to 'refuges' on off-shore islands.

The Shark Bay region of Western Australia, famous for Monkey Mia and its dolphins, is one such area. The islands in the region afford a refuge for five species of threatened land mammals. The five — all listed in the International Union for the Conservation of Nature (IUCN) red data book for rare and endangered species — live on Bernier and/or Dorre Islands.

They are: the western barred bandicoot (*Perameles bougainville*), the banded hare wallaby (*Lagostrophus fasciatus*), the western or rufous hare wallaby (*Lagorchestes hirsutus*), the burrowing bettong (*Bettongia lesueur*), and the Shark Bay mouse (*Pseudomys praeconis*).

With the exception of the rufous hare wallaby (which exists in a captive breeding colony in the Tanami Desert), the animals have been absent from the Australian mainland for more than 40 years, and are presumed to be extinct here. But all is not quite lost, as the Shark Bay region also has great potential for providing a mainland home for these creatures once again.

Two scientists, Mr Jeff Short of the CSIRO Division of Wildlife and Ecology and Mr Chris Majors of the University of Western Australia, are hoping to reintroduce the burrowing bettong and rufous hare-wallaby to an area where, they believe, the creatures will thrive and remain.

The two noted that the long, narrow peninsulas of the Shark Bay region (see the map) make it relatively simple to exclude



Because of the peninsulas, a small amount of fencing can protect a large area.

foxes — which were probably the main culprit in the demise of the mammals on the mainland. For example, the scientists have calculated that building just 6 km of fence could keep foxes out of an area of 180 000 ha that comprises three peninsulas likely to become national parks or nature reserves within the next few years.

Why these two species and why Shark Bay? Firstly, that part of the mainland is close to the island homes of the animals, and so has very similar climate; land-form, and vegetation — to which the animals should easily adapt. Secondly, bettongs and hare-wallabies appear to be the most robust of the endangered species on the islands. And finally, the bettongs may benefit from the hare-wallabies as they use the burrows dug by the latter in addition to their own warrens.

Mr Short has estimated the animals' numbers on their island homes: there are about 1600 bettongs and some 4000 hare-wallabies — enough that some can safely be removed.

(The animals are endangered, although not rare.)

With a grant from the Australian National Parks and Wildlife Service, logistical assistance from Shark Bay Salt Joint Ventures Pty Ltd, and the help of the people of Useless Loop (population 150), the reintroduction is proceeding in three stages.

The first is the construction by the Useless Loop community of a fence across Heirisson Prong, designed by Mr David Clarke of the Conservation Commission of the Northern Territory, to give an area of 1100 ha for the reintroduction. This is already near completion.

Then, biologists from the Western Australian Agriculture Protection Board will poison foxes and cats on the peninsula. Additional poisoning on the southern side of the fence should clear a buffer zone there for added safety. This will remove the introduced predators, but searching for predators on the peninsula will continue, to ensure that none succeed in returning.

Stage 2, which will start early in 1991, involves the introduction of 40 animals of each species from Dorre Island to the area north of the fence. The scientists will monitor their status, including their general health and reproductive success, for about 2 years. The area will be divided in two and rabbits (which the Stage 1 poisoning excludes) will be controlled in one part but not in the other. The scientists will monitor the status of the animals and also try to assess the degree of competition for warrens between bettongs, hare-wallabies, and rabbits.

In the final stage of this experiment the scientists hope to find out the density of foxes that bettongs and hare-wallabies can tolerate. To do this they will subdivide the marsupials' territory into three approximately equal areas — one without foxes, the other two with different levels of fox control in force.

This will provide vital management information for the Western Australia Department of Conservation and Land Management, which is ultimately responsible for managing reintroduced populations. To allow them to plan predator-control operations, biologists need to know what level of introduced predators — if any — these fragile species will tolerate.

Whatever the outcome, even the simple act of introducing the animals at the beginning of the program will improve the chances of survival of these endangered species. Although they occur in abundance on their islands, any damage to those habitats will render the creatures extinct. Extending their range shortens the odds on their long-term survival as a part of our unique natural heritage.

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