

Real Conservation Breeding and Reintroduction of Small Mammals

The Native Species Breeding Programme at Perth Zoo

Sally Walker

A visit to the Native Species Breeding Programme at Perth Zoo is an experience in outstanding practice and implementation in zoo conservation as compared to the pompous theories and incorrect practice one sees in some zoos in this hemisphere. It is a refreshing change and a stimulus to recommitment to the tool of captive propagation as a conservation solution.



Perth is located in Western Australia which has suffered from the wrongful introduction of the European fox (*Vulpes vulpes*) and the domestic cat (*Felis catus*). These are not the only species which have been introduced into Australia; there are many. These have, however, resulted in the decline of a number of native species -- many of them endemic marsupials -- to fragmented and isolated populations. These populations have been categorised as Threatened (either Critically Endangered, Endangered or Vulnerable) under the IUCN Red List Criteria.

Correction of the problem of introduced or "Alien" species has been undertaken by a government department known as CALM, the Department of Conservation and Land Management. CALM has done predator control which created an environment with conditions suitable for the native species to become re-established and recover.

Enter the zoo or captive breeding. Zoos and captive propagation programmes have no meaning unless the conditions which caused decline or extirpation of native species are corrected. This is laid out clearly in the Guidelines of the SSC, IUCN Reintroduction Specialist Group, but are very rarely adhered in

our part of the world. That, among many other reasons, is why there have been almost no genuinely successful reintroduction programmes in S. Asia.

In Western Australia the wildlife authority and other organisations as well as the zoo work together to strengthen or re-establish threatened populations to the wild. The goal of the Native Species Breeding Program (NSBP) in Perth Zoo is to support threatened Species Recovery Plans by providing animals for release into the wild and conducting scientific research into the reproductive biology of threatened fauna. Some of the animals which are part of this programme are:

Numbat (*Myrmecobius fasciatus*)

The numbat was once categorised as Endangered but has been reclassified as Vulnerable after CALM and Perth Zoo together re-established a number of populations which now total over 2000. The zoo bred 95 numbats since they started the programme in 1993 and provided 59 of them for release in sites selected by CALM. As the numbat is a specialised marsupial which eats only termites, the zoo had to establish and perfect a termite breeding facility. When we visited, they provided the guidelines for this to us for circulation to zoo professionals in South Asia who might require a supply of termites for captive populations.



Keeper inspects animals in outdoor holding enclosures.

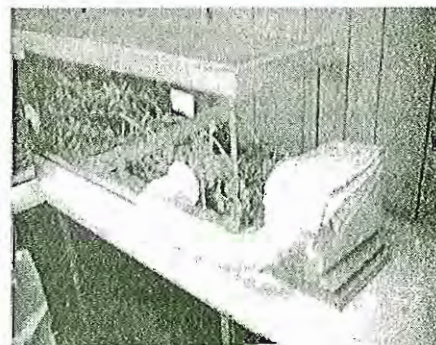
Chuditch (*Dasyurus geoffroii*)

Chuditch is also called a quoll and is the largest marsupial predator in Western Australia. Although the Western quoll occurred in about 70% of

Australia at the time of European settlement, by late 1980's they were Endangered with less than 6000 left in SW Western Australia. Perth Zoo has bred 300 quolls for release; they have been recategorised as Vulnerable.

Western Swamp Tortoise (*Pseudemydura umbrina*)

The Western Swamp Tortoise is a unique species, the only member of its genus with no close relationship with any chelidae. Currently categorised as Critically Endangered, this species occurs only in fragmented locales in a 5 km strip in Western Australia. Perth Zoo has bred 374 tortoises and released 267. It will take time for this species to demonstrate sufficient stability to be downlisted.



Special breeding box for mice

Dibbler (*Parantechinus apicalis*)

Dibbler (Endangered) is a small carnivorous marsupial which was found only on two islands off Western Australia. Perth Zoo has bred 134 island Dibblers, of which 86 have been released to one of the islands to establish a fresh population. More recently the mainland Dibbler has been the focus of recovery efforts. Perth Zoo is putting research and breeding efforts now into the recovery of the mainland Dibbler.

Djoongari (*Pseudomys fieldi*)

Also known as the Shark Bay Mouse, Djoongari (Vulnerable) was known only on one island prior to 1993. An estimated 6000-7000 population is all there are of one of Australia's most geographically restricted mammals. Perth Zoo has bred more than 150 Djoongari. Now 126 have been

released to multiple sites in the NW Western Australia. These are being monitored by CALM.

Research in Zoos

Why is it that South Asian zoos are not showing such results? One reason is surely their staff and infrastructure. Comparing your best South Asian zoo with Perth Zoo, it is easy to see what is missing.

- Perth Zoo has had a Director of Research since 1996 and a full research facility



Fully equipped lab at NSBP, Perth Zoo

- Perth Zoo is one of the six nodes of the national programme "Marsupial Cooperative Research Centre" as a full research partner

- As a result of this partnership, the Research Programme is fully funded.

- Perth Zoo has had a Conservation Geneticist of its own since 1996. Findings from his studies have been used in preparation of management and translocation plans for these species.

- Perth Zoo and the Western Australian Department of Conservation and Land Management work together to reintroduce threatened fauna into their former ranges.



Keeper with device for training small mammals to fear predators.

Although some countries in South Asia pay lip service to cooperation between wildlife agency and zoos, the lack of other elements and also the difficulty of genuine cooperation within a severe hierarchical service prevents the communication and respect for all parties necessary to achieve genuine cooperation.

Another aspect which prevents a genuine conservation success in South Asian countries is the emphasis on large mammals which are expensive to keep, sometimes difficult to breed (but not always), difficult to move around for mixing gene pools, and almost impossible to reintroduce. All of the species taken up by Perth Zoo and CALM are small bodied mammals and reptiles. These have their own difficulties and problems but they also have many advantages, not the least of which is a short generation time and small body size. With these characteristics it is possible to keep and breed a large number of animals in a small space and in a short period of time. There is time for failures, experimentation and correction. When there is a success, the lift given to the staff and the zoo community in general is enormous.

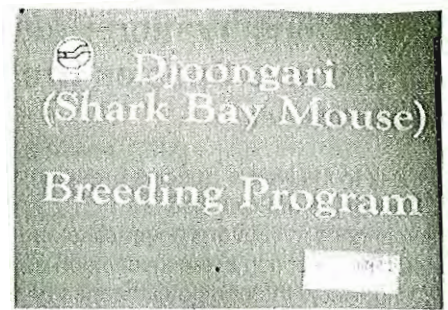
South Asian zoos and breeding centres have their own problems which perhaps Australian zoos do not, but there is no reason to think they could not achieve much with more practically directed effort.

There are a number of rodents and insectivores in South Asia which were assessed as threatened by IUCN and by the various national efforts. These could be bred with an eye to developing expertise and investigation done whether the habitat problems could be solved to justify reintroduction.

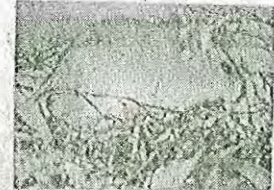
A Conservation Assessment and Management Plan (CAMP) workshop is coming up this year in which more species will be assessed in a better way and categorised. A training workshop will precede even this so that members will have a better idea of what is involved.

For further information on the programmes described in this article visit Perth Zoo website:

<http://www.perthzoo.wa.gov.au>.



Djoongari
Pseudomys fieldi
(Shark Bay Mouse)



Native rodent

Status - Endangered

232 animals provided for release
at 2 locations since 1997



Djoongari (*Pseudomys fieldi*)
Shark Bay Mouse