Photo: Nicki Munro

Fact Sheet #01

What is Arid Recovery?

Restoring Australia's Arid Lands

Arid Recovery has developed into Australia's premier arid zone conservation partnership.

The Arid Recovery restoration initiative is a unique demonstration of how mining, tourism, pastoralism, community and conservation can provide mutually beneficial conservation outcomes.

Arid Recovery is based in Roxby Downs, in the South Australian outback and is dedicated to the restoration of Australia's arid lands.

Our major supporters are BHP Billiton, SA Department for Environment and Natural Resources, The University of Adelaide, and the local community.

Map of the Arid Recovery Reserve

The development of a world class conservation program adjacent to the huge Olympic Dam mine and processing plant shows that contemporary mining operations can benefit, rather than threaten, regional environmental values.

Established in 1997, Arid Recovery is centred around an 123km² fenced reserve of which 60km² have been eradicated of all feral cats, rabbits and foxes. Arid Recovery is now focusing on areas outside of the reserve to help preserve the natural environment.

The site of the Arid Recovery Reserve was chosen to include a variety of habitats. These include saltbush/bluebush swales, *Acacia*, hopbush and native pine dunes, mulga sand plains, canegrass swamps and claypans.

The reserve was built in six stages, gradually expanding to cover more habitats to accommodate the reintroduction of a wide range of species and so that viable populations of native animals can be accommodated.

The reserve provides an area of complete protection allowing the regeneration of native vegetation and reintroduction of locally extinct mammals. There are now six times as many naturally occurring small mammals inside the reserve compared to outside.

Why was Arid Recovery needed?
At least 27 species of native mammals once inhabited the Roxby Downs region but over 60% have become locally or completely extinct since European settlement.

Predation by cats and foxes and competition for resources by rabbits have contributed to the decline of these animals.

Greater Stick-nest Rat

Photo: Hafiz Stewart

Greater Bilby

Photo: Erica Meles

Burrowing Bettong

Photo: Seonie Lyon

Western Barred Bandicoot

Photo: Jude Carter

Some bird species have also declined and the reserve provides a stable area for them to live and breed. Reptile species are also under threat from feral predation and loss of habitat.
Long lived arid zone vegetation species, such as the

Native seedlings recruiting at a vegetation monitoring site. Photo: K. Moseby

Mulga (*Acacia aneura)* and Western Myall *(Acacia papyrocarpa),* have been unable to regenerate due to the grazing from livestock and rabbits. Short lived annual plant species and weeds then replace trees and shrubs as they die.

Arid Recovery aims to restore as much of the original fauna and flora to the reserve as possible, through natural re-establishment and planned re-introductions.

How do we keep cats, rabbits & foxes out of the reserve?
The original fence was based on the design developed for the Rabbit Calicivirus trial pens on Wardang Island, SA.

After extensive trials at Arid Recovery using 59 feral cats, a new effective design was finally developed. Since then two other fence designs based on the original design have been tested. The two electric wires around the fence were not included in the later fence designs as they do not appear to be integral to keeping out cats and foxes.

The first Arid Recovery fence design with two electric wires. Photo: BHP Billiton

The cost of installing the fence was around $10,000 per km plus the cost of ongoing maintenance. The height of the fence in the Red Lake expansion was reduced from 1.8m to 1.15m so that it is more cost effective. This lower design allows kangaroos to access the area, making it a more natural ecosystem. Field trials of this design are continuing.

Which native animals have been reintroduced into the reserve?
Four threatened mammal species have been successfully re-introduced to the reserve to date. Reintroductions began in 1998 with the Greater Stick-nest Rat followed by the Burrowing Bettong in 1999, Greater Bilby in 2000 and the Western Barred Bandicoot in 2001 and a supplementary release in 2009.

Reintroductions are research-based to obtain information on how the animals survive in the arid zone, and the best methods for reintroduction and also whether long term re-establishment is possible.

In November 2005 Arid Recovery conducted a trial release of five Numbats into the reserve with varied success. There are more planned for the future.

Reintroduction of the Woma python was trialled in 2007 with unanticipated results when existing Mulga snakes were found to be a deadly predator. There are plans for another reintroduction in the future.

Woma Python
Photo: BHP Billiton

Womas are becoming increasingly rare in the wild. They are a natural predator of Bilbies and would help to maintain natural, sustainable population levels within the reserve.

In the future Arid Recovery plans to release animals outside the reserve using one way gates. These are currently being trialled within the reserve. Effective feral animal control outside the reserve will enhance the survival of these reintroduced animals.

How do you know which animals used to live in the region?

A sub-fossil deposit 30 km from Arid Recovery, records specimens from early explorers and indigenous peoples were used to determine which species formerly occurred in the region.

Globally extinct species are in *italics*, species which have already been re-introduced are in **bold** and species that could potentially be reintroduced are underlined.

Pig-footed Bandicoot
Lesser Stick-nest Rat
Short-tailed Hopping Mouse
Long-tailed Hopping Mouse
Goulds Mouse
Greater Stick-nest Rat
Burrowing Bettong
Greater Bilby
Western-barred Bandicoot
Numbat
Woma Python
Golden Bandicoot
Kultarr
Ampurta
Common Brush-tailed Possum
Long-haired Rat
Plains Wanderer
Bush Stone-curlew

Find Out More

www.aridrecovery.org.au

Read, J. (2003) **Red Sand Green Heart**, Lothian Publishing, Australia
Moseby K.E.; Read, J.; (2006) The efficacy of feral cat, fox, rabbit exclusion fence designs for threatened species protection, Biological Conservation 127 pg 429—437