ARID RECOVERY

2013-2014

Annual Report

2013-14 ANNUAL REPORT

For more information on Arid Recovery visit www.aridrecovery.org.au or call 08 8671 2402.

This document is the 17th in a series of annual reports and outlines the activities of Arid Recovery for the period from 1st July 2013 to 30th June 2014.

Arid Recovery is an independent, not-for-profit conservation initiative that has been restoring Australia's arid lands since 1997. Our success is attributed to many supporters including the unwaivering support of the local community through volunteers and the long term support of our major sponsors BHP Billiton, SA Department for Environment, Water and Natural Resources and the University of Adelaide.

Copies of this report, supplementary information and previous reports are available on the Arid Recovery website.

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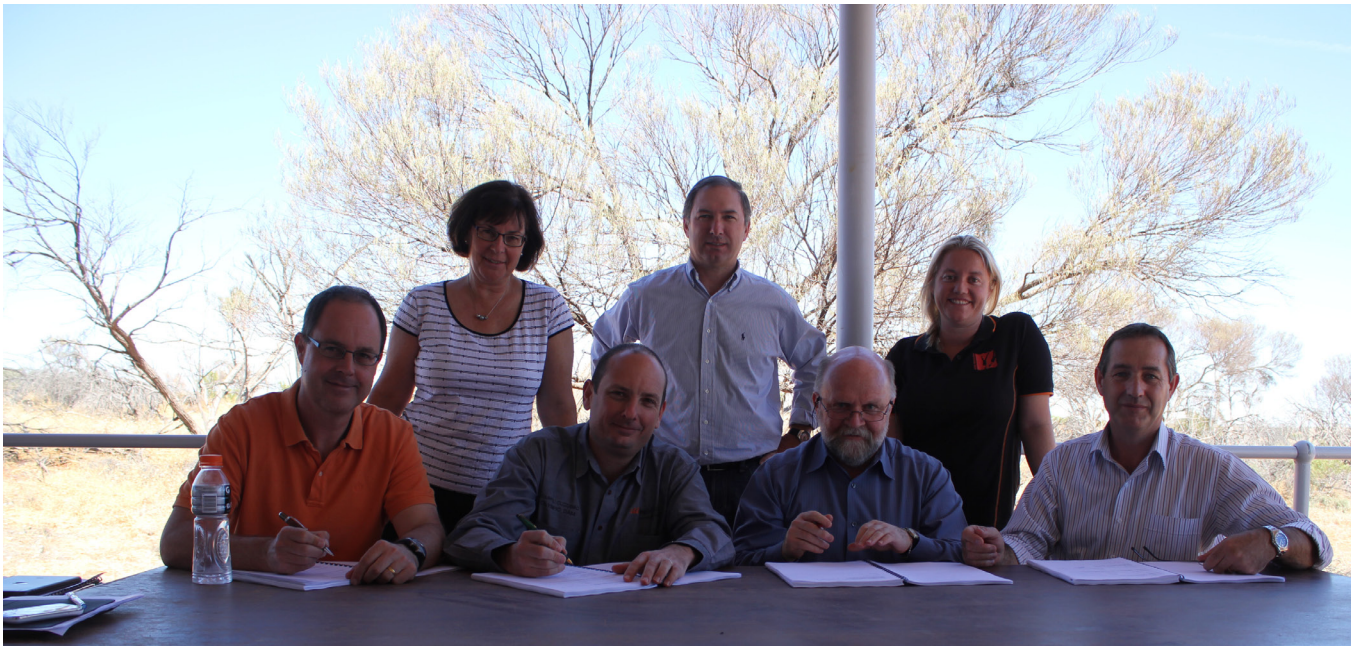
Cover photo: Greater Bilby (*Macrotis lagotis*)

Photo courtesy of: Ben Parkhurst

REPORT



Chairmans Report

MARK PRIADKO

ARID RECOVERY IS AN inspirational place and organisation. It has been a privilege to serve in the capacity of temporary Chairman over much of the last year.

Arid Recovery is a place of great conservation value - the site and organisation has overseen the successful re-introduction of four threatened native species.

Arid Recovery is place of great scientific value – its the home of ongoing research into the progress of threatened species and their impacts on their environs.

Arid Recovery is a place of great educational value – it serves as a learning ground for students and researchers.

Arid Recovery is a place of great community value – Arid Recovery is a credit to the communities of the arid lands, relying on enormous contributions from volunteers and relying on support from its partners BHP Billiton, the University of Adelaide and the Department of Environment, Water and Natural Resources.

While serving as a chairman has been a privilege, the organisation has also experienced its share of challenges and new opportunities over the past year. As a not-for-profit organisation, we face the ongoing challenge of trying to do much with constrained resources at a time when the local economy is also facing its share of challenges. In some respects, the organisation has almost been too successful in achieving its conservation objectives. We are experiencing an over abundance of bettongs. They are doing so well, they are putting pressure on the enclosure, both the plant life and the fencing.

⬆ AR Board (L to R): Mark Priadko (Chair), Sue Carthew (Independent), Darryl Cuzzubbo (BHP Billiton), Andrew Corletto (Independent), Bob Hill (University of Adelaide), Kylie Piper (CEO), John Schutz (DEWNR)

This is a testing environment for all of the team and it's a testament to their passion and resilience. I want to recognise each of their efforts and thank them for their commitment. Particular thanks to Kylie Piper for her commitment and hard work over a testing 12 months.

It is our goal to be the leader in sustainable restoration of multi-use arid ecosystems. Three significant initiatives in 2013-14 will progress us towards this goal.

The first was the commencement of a research collaboration with the University of New South Wales into tackling prey naiveté in Australia's threatened mammals.

The second is the commencement of a partnership with Bush Heritage to create the South Australian Rangelands Alliance. The Alliance will see Bush Heritage and Arid Recovery cooperate more extensively (including sharing resources) on conservation research, feral animal and weed control methods, and land conservation approaches for improving biodiversity outcomes in the region.

The third initiative is the partnership between Arid Recovery and the Green Army program of the Commonwealth Government. This initiative will contribute to the development of Green Army volunteers as well as provide on-the-ground resource support to Arid Recovery.

Each these initiatives will continue for a number of years adding a new dimensions to what is already a world-class reserve and initiative.

My tenure as temporary Chairman will cease with Dr Steve Morton taking over as the Chairman of Arid Recovery. Steve brings with him many years of experience as a highly respected and leading scientist in the arid lands. The infusion of his passion and talent will be of great benefit to Arid Recovery.

AR Board

For more information on the people of Arid Recovery visit our website at www.aridrecovery.org.au.

IN NOVEMBER EACH year the Arid Recovery Board meet to undertake a day of strategic planning. This years' planning day had special significance, with the re-signing of the Arid Recovery participation agreement between BHP Billiton, the University of Adelaide and the SA Department of Environment, Water and Natural Resources. This document outlines the agreement by Arid Recovery's three long-term partners to work together and continue to support Arid Recovery over the next 3 years.

The November 2013 planning meeting at the AR Reserve
Photo by: Arid Recovery

AR BOARD MEMBERS

Mark Priadko
Chair of Arid Recovery Board
Independent
Financial management, financial and business analysis and business case consultant.

Darryl Cuzzubbo
Representative for BHP Billiton
Asset President, Olympic Dam.

Allan Holmes
Representative for SA Department of Environment, Water and Natural Resources
CEO for DEWNR.

Professor Bob Hill
Representative for the University of Adelaide
Executive Dean, Faculty of Sciences at the University of Adelaide

Andrew Corletto
Independent
Partner, Kelly and Co Lawyers

Professor Sue Carthew
Independent
Pro Vice Chancellor, Faculty of Engineering, Health, Science and the Environment at Charles Darwin University.

Arid Recovery strategic plan

IN NOVEMBER the Board and AR staff revisited whatAR has achieved over the past year and looked ahead to where Arid Recovery wants to go as an organisation over the coming years.
Stemming from this meeting a new strategic plan will be developed for Arid Recovery. This plan builds upon Arid Recovery's original goals and principles and will aid in the development of initiatives to strengthen AR's sustainability as a business, broaden the scope of our research and encourage us to take on new opportunities.

Our vision
Leading sustainable restoration of arid ecosystems

Our mission
We are a not-for-profit research and conservation organisation whose primary purpose is to facilitate the restoration of arid zone ecosystems through on-ground works and applied research in collaboration with industry, community and government.

What we do
1. Conservation and restoration
2. Research and monitoring
3. Demonstration and training

For more information on the people of Arid Recovery visit www.aridrecovery.org.au or call 08 8671 2402.

Arid Recovery Staff

General Manager/CEO
Kylie Piper

Ecology and Research
Catherine Lynch
Ecologist

Tina Schroeder
Scientific Field Officer

Katherine Moseby
Research Scientist

Field and Maintenance
Craig Wyatt
Field and Maintenance

Marty Kittel
Fence maintenance

Zac Richardson
Casual

Kane Mooney
Casual

Education and Community
Anni Walsh
Education and Community

Perri Carter
Education and Community

Administration
Hayley Thompson
Office Manager

Vanessa Marsden
Office Manager

Scientific Advisory Group

Peter Copley
David Paton AM
John Read
Reece Pedler

The 2013 Christmas photo for the Arid Recovery team.
Photo by: Arid Recovery

Thankyou to the volunteers of Arid Recovery:

Special thanks to the following people who have volunteered their time over the past twelve months:

Molly Allen
Mel Allen
Mark Allen
Hannah Bannister
Bianco Amato
Rowan Carroll
Cornel Carvalho
Fernando Carvalho
Kayla Carvalho
Marco Carvalho
Meryn Codell
Peter Coleman
Brendan Cook
Anna Cook
Phillippa Copley
Peter Copley
Ben Cronin
Troy Darling
Simon Cherriman
Scott Elliott
Brooke Essex
Jenna Forbes
Bree Galbraith
Scott Giacopini
Trav Gotch
Travis Hague
Ben Haines
Jackie Hines
Zoe Jellie
Stewart Jones
Ken Lamb
Hannah Leadbeter
Hugh Leadbeter
Megan Lewis
Mike Mayrhofer
Chris McGoldrick
David Milazzo
Jamie Millard
Kev Mooney
Beth Moyses
Barbara Murphy
Nisha Nagasinghe
Brendan Noone
Charles Nzama
Tristan O'Brien
Tess O'Leary
Patrick Pacecca
Peter Paisley
Alix Palmer
Ben Parkhurst
Chris Parsons
Reece Pedler
Merri Pedler
Johan Poteiter
Tim Quinn
Katy Read
Zac Richardson
Sarah Robertson
Annie Robinson
Allan Robinson
Karen Russell
Robin Russell
Luke Sanders
Bianco Staker
Kiara Taylor
Sophie Telfer
Hayley Thompson
Jill Tideman
Gareth Toms
Brad Tonkin
Lara Van Der Westhuizen
Emma Wilson
Margarett Wyatt
Brianna Wyatt
Anthony Wyatt
Millie Young
Rachel Young
Mark Young

Re-introduced species report

Re-introduced species at Arid Recovery continue to thrive throughout the Reserve. All parts of the feral free area of the reserve are now home to all four species of mammal. In July through to October of 2013 over 1400 Burrowing Bettongs were removed from the Reserve to minimise vegetation damage and look at possible re-introduction techniques for external releases outside of fenced reserves.

After the removal of bettongs from the Reserve the number of Western Barred Bandicoot tracks showing up on regular transect monitoring increased. This notable increase may be due to the difficulty in picking up tracks of these small marsupials in the presence of high numbers of bettongs in previous years, along with a natural increase in their numbers through dispersal around the Reserve.

Track numbers of Greater Stick-nest Rats remain stable in the regular track monitoring. Nest monitoring is also undertaken to monitor stick-nest rat populations and has been included in surveys to monitor damage by bettongs during periods of high populations.

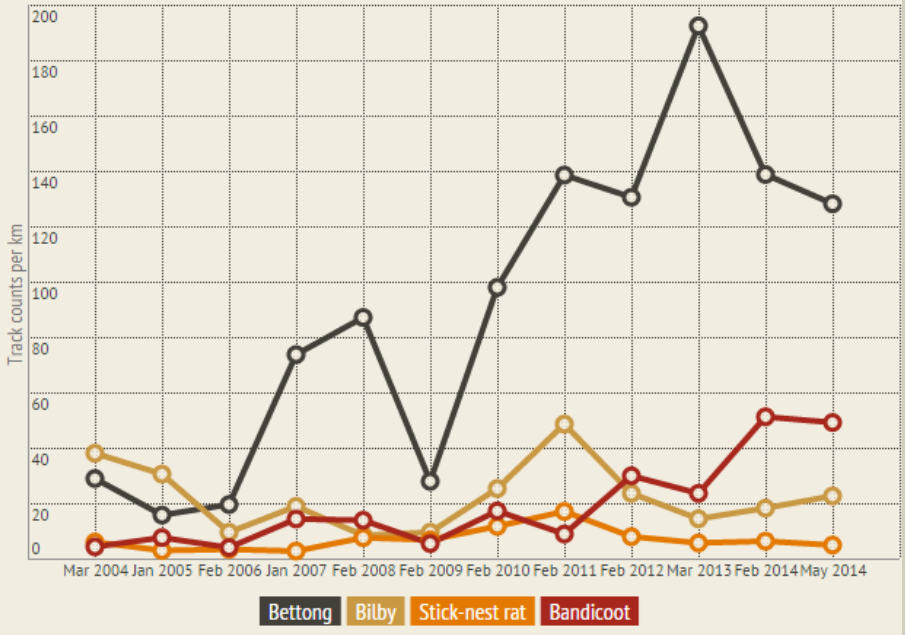
Methods to give an accurate picture of populations of re-introduced species are currenlty being looked at, which may include a variety of options such as camera traps, capture mark recapture data and the long term track transect methods used to date.

⬆ Greater Stick-nest Rat (*Leporillus conditor*)
Photo by: Arid Recovery

SPECIES INCREASES

Over the past 10 years the re-introduced species at the Arid Recovery Reserve have continued to thrive. An absence of predators and other feral species has seen populations increase significantly.

The populations of Western Barred Bandicoot are now reaching the highest level ever since their release into the Reserve in 2001.



⬅ Each year volunteers come from across Australia to assist with the annual trapping event at the Arid Recovery Reserve.
⬇ A smooth knob-tailed gecko (*Nephrurus levis*)

Annual trapping

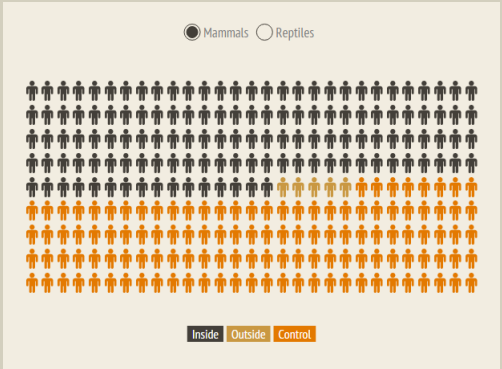
The annual monitoring for small vertbrates was again held in February in and around the Arid Recovery Reserve.
A total of 22 species were captured across the 4 day trapping event - 4 mammal and 18 reptile species.
Analysis of the annual trapping data for the 16 year period to 2014 has commenced. This analysis will look at the long term responses of small mammal and reptile assemblages to:
a) the removal of feral animals
b) the addition of reintroduced mammals
c) climatic and environmental changes.

It will also invlove analysis of the response variables that are measured including:
- abundance, diversity, richness
- fecundity, condition and size
- temporal stability of species and guilds.

ⓘ Further information on monitoring at Arid Recovery, including the interactive version of the diagrams on pages 4 and 5, can be obtained from the Arid Recovery website at www.aridrecovery.org.au.

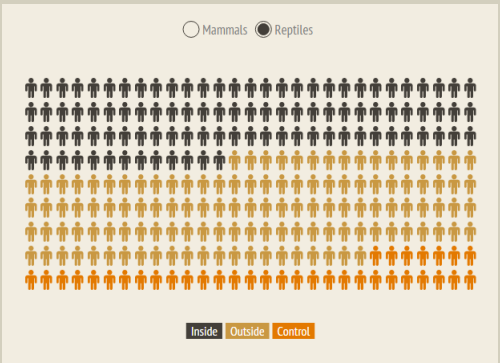
MAMMALS

- A total of 110 mammals were captured, (plus 15 of same session re-captures). This is up from 58 captures (excl. SSRs) in 2013.
- No native mammals were captured outside of the Reserve. Two house mice were captured outside the Reserve.



REPTILES

- A total of 266 reptiles were captured, 4 of which were same session recaptures.
- This is up from 112 captures (excl. SSRs) in 2013.
- 18 different species of reptiles were captured



AR RESEARCH REPORT

Bettong relocation

BY CATHERINE LYNCH

WITH THE ABSENCE OF dispersal and natural predation, Burrowing Bettong numbers within the Arid Recovery Reserve have increased dramatically since their re-introduction. Despite drought conditions experienced over the years the population continued to increase, leading to unsustainable population numbers, with a total estimated population size of several thousand individuals as at May 2013. Track counts reached their highest on record in the Main Exclosure and Northern Expansion in late 2012, with 385 tracks per kilometre in the Main Exclosure recorded in December 2012.

At the beginning of 2013 it was agreed that active management of bettong overpopulation should be undertaken to prevent further unacceptable impacts to vegetation and other fauna, as well as bettongs themselves. To achieve this, it was decided bettongs should be translocated to an area outside of the Reserve. This also provided the opportunity to apply lessons learnt from previous release trials and to attempt to re-establish a bettong population outside of the Reserve, north of the Dog Fence, and in the presence of an intact dingo population. The "superabundance" of bettongs in 2013 also afforded Arid Recovery the opportunity to attempt to test a predator-swamping approach, not previously attempted at this scale. This project also allowed Arid Recovery to test additional factors that may increase the chance of survival of re-introduced populations, including supplementary feeding for the re-introduced population and taste aversion for predators.

Such an approach will also provide valuable insights into alternative management options for other organisations facing similar overpopulation issues within their fenced reserves.

Post-release monitoring included track counts, warren activity monitoring, camera trapping, cage trapping and active searching. (see Signs of Life, page 7).

A total of 1266 bettongs were released in the main release area between July and October 2013. No animals were known to be alive in December 2013, five months after the start of the initial release period in July 2013 and two months after the last animals were released in October 2013. None of the 266 bettongs released into the alternative release areas between October and December 2013 were known to be alive by the end of December 2013, two months after the initial release and seven days after the second release in mid-December 2013. The last animal was known to be alive on 25 December 2013.

ⓘ This is an extract from the Arid Recovery internal report on the 2013 bettong release. For further information please contact the Arid Recovery office on info@aridrecovery.org.au.

⬇ A bettong caught on remote camera on August 3, 2013. this bettong was photographed near one of the feeders in the main release area.

INTO THE WILD

Summary of bettongs released outside of the Reserve between July and December 2013.

A total of 1491 bettongs were released outside of the Reserve between July and December 2013. Bettongs were sourced from all expansions of the Reserve in which bettongs were currently present. A total of 8374 trap nights was undertaken. The majority (1266) of bettongs were released into the main release area. A total of 954 bettongs were released over 15 nights between 8 July and 1 August 2013.

Paddock	Trap nights	Number of bettongs moved		
		Male	*Female*	*Total*
Main Exclosure	*1754*	*282*	*283*	*520*
First Expansion	*2145*	*215*	*161*	*376*
Second Expansion	*3170*	*239*	*170*	*409*
Northern Expansion	*1305*	*104*	*82*	*186*
Total	*8374*	*840*	*651*	*1491*

⬅ Cat Lynch, AR Ecologist, in the processing shed during the bettong relocation.
⬇ (top) Bettongs displaying fighting behaviours after release into main release area.
⬇ (bottom) A bettong showing signs of the DMP sprayed onto the back of the neck as predator deterent.

SIGNS OF LIFE

Post-release monitoring included track counts, warren activity monitoring, camera trapping, cage trapping and active searching.

TRACK COUNTS

Both native and feral species were monitored using track counts within the Reserve and within the main release area. The same methodology that has been carried out inside the Reserve for the previous 13 years was used. A total of 3.21 km of transects was monitored in dune habitat within the Main Release Area between May and August 2013. An additional transect was added in September 2013, after which a total of 4.43 km of transects was monitored monthly. Tracks counts were also conducted along vehicle tracks within the main release area.

WARREN ACTIVITY

Monitoring of warren activity was undertaken in the release location as an indicator of bettong activity. A total of 112 warrens were mapped within the main release area and immediate surrounds. Prior to the release of bettongs, rabbit activity level, the number of entrances, and track and scat abundances were recorded for each warren. Monitoring of all mapped warrens was undertaken monthly following the initial release of bettongs until November 2013, after which only warrens recorded as active by bettongs in the previous month were monitored monthly until January 2014.

CAMERA TRAPPING

Remote cameras were installed at up to 10 locations at a time across the main release area and surrounds. Some cameras were set at feeders, some were set at the entrance of a warren and some along vehicle tracks. Cameras were set to capture one to 10 images with no delay or quiet period. One camera was also set to take video from 27 July 2013 until 18 November 2013. For each day on which cameras were operating, the presence of bettongs, rabbits, dingoes, cats and foxes was recorded.

AR RESEARCH REPORT

Flora monitoring

BY CATHERINE LYNCH

ALTHOUGH THE animals of Arid Recovery are often under the spotlight, we also focus on the vegetation of the Reserve. It's vital that we monitor the health of the vegetation inside the Reserve to ensure that we maintain a healthy ecosystem.

Flora monitoring at Arid Recovery was established when the Reserve was first built in 1997. A range of techniques have been used to enable us to collect long-term data on vegetation condition, cover and species diversity in and around the Reserve. Now, with over 15 years of data, it gives us a great chance to look at the effects of our introduced and re-introduced native herbivores on the vegetation. Establishing thresholds for grazing levels and identifying indicator species will help to trigger management actions when overgrazing occurs.

Recent analysis of flora data showed that there are modifications to our monitoring that we can employ in order to get even more out of the data we collect. Over the past few months we have been working closely with our Research Scientist, Katherine Moseby and Flora Ecologist Craig Baulderstone, who has previously worked at South Australia's Pastoral Board, to further develop Arid Recovery's flora monitoring program.

It was determined that a number of small quadrats should be set up at each of our sites to provide data on cover of flora species, as this data was generally not being picked up through other methods. Craig recently visited Arid Recovery for a week to assist Cat with setting up the new quadrats and collecting data. With his two kids, Mick and Tom, in tow, Craig very enthusiastically trudged the dunes and swales in hot weather to measure saltbush, blue bush, ruby saltbush and other weird and wonderful flora that makes Arid Recovery and the arid zone so unique.

The monitoring event was very successful, with a range of data collected that will assist us with determining the effect that our re-introduced native herbivores (i.e. bettongs and stick-nest rats) have on vegetation inside the Reserve, as well as the effect that introduced herbivores (i.e. rabbits) have on vegetation outside the Reserve.

We thank Craig ver y much for volunteering his time to assist Arid Recovery with our f lora monitoring program.

⬅ One of the floa monitoring photopoints inside the Reserve.
⬆ Craig Baulderstone assist with the setting up of the flora monitoring sites inside the AR Reserve.
Photos by: Cat Lynch

Student research projects

FACTORS INFLUENCING THE REINTRODUCTION SUCCESS OF THE BURROWING BETTONG (BETTONGIA LESUEUR) TO ARID AUSTRALIA

Hannah Bannister, Honours student
University of Western Australia

The release of such a large number of bettongs outside the reserve presented the opportunity to determine which factors might influence the survival, dispersal and condition of bettongs. My research aimed to determine whether supplementary feeding and predator deterrent could improve the burrowing bettong's reintroduction success.

To test the influence of supplementary feeding, I compared the number of bettong tracks close to supplementary feeders with the number of tracks in areas a short distance away from feeders, but still in the release area. I found significantly more bettong tracks at feeders than at other sites within the release area. This is an important discovery as by keeping released animals in one area (without the use of fences) other factors such as introduced predators (feral cats and foxes) can be more easily controlled and monitoring of the released population is made easier. I was unable to determine whether supplementary feeding affected the bettongs' condition post-release as they did not persist for long enough for such effects to become noticeable.

The novel concept of using predator deterrent was that if the bettongs tasted bad (bitter) then predators would learn to avoid them, thus enhancing their survival. To test whether predator deterrent had any impact, new release sites had bettongs released with predator deterrent (a bitter substance) applied to the back of their neck, where predators typically grab them, while other sites had bettongs with no deterrent. A reapplication system for the deterrent was invented whereby supplementary feeders for the bettongs had automatic soap dispensers containing the bitter substance positioned over the entrance, depositing a drop of deterrent on bettongs as they moved in or out of the feeding station. Unfortunately, due to environmental conditions in the arid zone, the reapplication system failed to reapply deterrent to the bettongs after their release.

The results from the predator deterrent experiment were initially promising, as bettongs at that site remained for longer than bettongs released without predator deterrent. However lower predator numbers at the site with predator deterrent in the first week post-release may have also contributed to their relative success, making it difficult to determine how strong the effect of the predator deterrent was. A second release testing predator deterrent did not show any difference in the persistence of bettongs with and without predator deterrent. Despite the relative success of the first group of burrowing bettongs released with predator deterrent, those bettongs also ultimately failed to persist for any significant length of time. This failure was largely attributed to the continued presence of introduced predators (feral cats and foxes) and dingoes at the release sites.

⬅ Bettongs using one of the feeders outside the AR Reserve, part of Hannah Bannister's research project.

⬇ Hannah Bannister and a bettong.

These experiments did show that supplementary feeding had a positive effect on released burrowing bettongs, encouraging them to remain close to their release site, where introduced predators can be targeted. By combining supplementary feeding and modified predator deterrents with more effective and intensive introduced predator control in the future, burrowing bettongs may one day be able to be re-established on mainland Australia in a free-ranging population.

WARREN ACTIVITY AS AN INDICATOR OF SURVIVAL AND DISPERSAL OF THE REINTRODUCED BURROWING BETTONG – A COMPARISON TO RABBIT ACTIVITY.

Jacqueline Hines, Work placement student
University of Queensland

The reintroduction of the Burrowing Bettong (Bettongia lesueur) from the Arid Recovery Reserve in 2013 was considered an important step towards establishing a sustainable wild population as well as a necessary approach to manage the unprecedented numbers of bettongs in the reserve. To understand whether these efforts were successful, a study of warren activity was undertaken. This study indicated the survival and dispersal rate of the Burrowing Bettong population released into the wild compared to rabbits – a coexisting species. By observing the tracks and scats of bettongs and rabbits within and surrounding the release area over a 40 day period in August and September 2013, it was established that the Burrowing Bettong population of 995 individuals was declining at a rate of 60 percent. From this result it was predicted that during the first year of release there would be no likelihood of survival if this rate of decline was not improved. It was believed, however, that opportunistic releases of bettongs over the following 12 months could improve this rate of decline if the waves of releases were in larger groups. A larger population of bettongs could result in a 'swamping' effect, which would deter competitors and predators.

AR RESEARCH REPORT

Prey naivete

BY KATHERINE MOSEBY

PAST ATTEMPTS TO reintroduce threatened species outside the Arid Recovery Reserve have failed due to predation by introduced predators. Australia's native mammals are particularly vulnerable to introduced cats and foxes as they have not co-evolved with these eutherian predators. Naivety of prey species can mean they either don't recognise cats and foxes as predators or they don't respond appropriately. Keeping threatened species protected within conservation exclosures benefits them in the short term but does not allow them to learn to coexist with predators in the long term.

An Australian Research Council Linkage Grant was obtained between Arid Recovery and the University of Adelaide with the aim of improving the survival of extant and reintroduced threatened species populations. We aim to explore prey naivety to introduced predators and develop strategies for improving predator avoidance behaviour. Our specific objectives are to:

1) Investigate the level of prey naivety present in native Australian threatened mammal species

2) Test the effectiveness of in-situ predation and natural selection as an alternative to classical conditioning and pre-release predator avoidance training in reintroduced mammals.

3) Identify individual behavioural or physical traits that lead to improved predator avoidance and which can be used in selective screening and breeding programs.

The results of this project will advance understanding of prey naivety to introduced predators and provide novel strategies to help wildlife managers re-establish populations of endangered wildlife. Three students from the University of NSW conducted research at Arid Recovery this year, two honours and one PhD student.

To date we have documented the base level of prey naivety in native bettongs within the reserve and have begun an experiment to expose them to low levels of predation in order to improve their responses. We have removed all foxes and all but one feral cat from the 26 square km Red Lake Expansion and moved 260 bettongs into this paddock from other areas of the reserve. Twenty one of these bettongs are radiocollared and we also have 10 radiocollared bettongs left in the main exclosure as a control group. The vigilance, predator response and flight behaviour of these bettongs has been documented and their survival and change in anti-predator behaviour will be monitored after exposure to the cat within the Red Lake Expansion. We hope that over time the bettongs will learn to recognise and adapt to the cat and that we can detect an improvement in anti-predator behaviour over successive generations. We are also using bilbies as an experimental species and have begun moving bilbies fitted with radiotransmitters into the Red Lake Expansion. Bilbies may learn differently from bettongs as they are a solitary species rather than a social one. Predator levels within the Red Lake Expansion will be carefully monitored and controlled to ensure they do not cause the extinction of the bilby and bettong populations.

⬆ Bettong tracks on the dunes

⬇The flipping of the floppy top fence in the Dingo Pen.

AR RESEARCH REPORT

SARA project

BY KYLIE PIPER & GLEN NORRIS

IN MARCH 2014 a Memorandum of Understanding was signed to enable the SA Rangelands Alliance project to commence. The first step in the program was to develop a project plan and hire a regional ecologist who would oversee both the ecological monitoring and research for the project. The project itself covers a vast landscape that encompasses the AR Reserve, Bon Bon Station and Boolcoomatta Station.

For Arid Recovery this project will give us a chance to work outside of the fence and take knowledge and research practices that have been established over the past two decades into the landscape. With it comes the opportunity to work closely with another conservation organisation to enable the research into wildlife management, behavioural studies and conservation practices to be utilised immediately in non-fenced reserves. The opportunity to share resources and knowledge in the region may also lead to more efficient ways of undertaking conservation and management of threatened species populations. Bush Heritage has a vast knowledge of conservation management and ecological reporting at the property level. For over 25 years they have successfully engaged a wide range of landholders, philanthropists, indigenous groups and volunteers to assist in their work. Engaging more closely with Bush Heritage also gives AR the opportunity to increase the knowledge of our work by a wider audience, spreading information of Australia's important arid regions and, in turn, the outcomes of our research at the Reserve. The project itself is for an initial 3 years, and we hope that the success that we have seen so far will continue into the future to compliment both organisation's goals for conservation of Australia's unique landscapes and ecosystems.

ⓘ Further information on the SA Rangelands Alliance project can be obtained from the Arid Recovery website at www.aridrecovery.org.au.or the Bush Heritage website at http://www.bushheritage.org.au.

⬆-Buffel busters at Bon Bon station, one example of potential collaboration for the SARA project.

⬇ A Mallee black-headed snake (Parasuta spectabilis), one of the reptiles found at Boolcoomatta Station.

Properties of the SA Rangelands Alliance

BOOLCOOMATTA STATION

Located 100km west of Broken Hill, Boolcoomatta Reserve was acquired by Bush Heritage in 2006 with the assistance of the Australian Government under the Natural Heritage Trust's National Reserve System Program and the Nature Foundation SA.

BON BON STATION

Bon Bon Station Reserve is an old sheep station located south of Coober Pedy in South Australia. Bon Bon Station Reserve was acquired in 2008 and covers an area of 216 700 ha. It straddles two major bioregions – the Stony Plains in the north and the Gawler Ranges in the south.

ARID RECOVERY RESERVE

The Arid Recovery Reserve is 123km2 fenced reserve located just north of Olympic Dam. First fenced in 1997, the Reserve is now home to four re-introduced native species:S Burrowing Bettongs, Greater Bilbies, Western Barred Bandicoots and Greater Stick-nest Rats.

Reserve & ferals

BY CRAIG WYATT

RESERVE REPORT

Fencing is the number one priority and we work continuously to ensure that the integrity of the AR fence is of high standard. Due to certain ground conditions where soil is more acidic mesh used for foot-netting has a shorter lifespan requiring it to be replaced more frequently. Foot-netting replacement is ongoing in some areas of the western, eastern and southern boundaries while the western boundary has almost been completed by the Maintenance Officer. Internal foot-netting in the Red Lake Expansion (RLX) along theboundary of the Northern Expansion needed the majority replaced in preparation for the UNSW project. Some areas of fenceline on the RLX western boundary have been raised due to bund walls for erosion control being in place on the outside which shortened the height of the fence.

VEGETATION

Vegetation removal is another ongoing requirement especially in the wetter months were the vegetation will grow quicker along the fence line. This must be maintained to ensure a line of sight for any damage of fence. I would like to thank the volunteers that helped with vegetation removal in RLX and the Northern Expansion boundary line.

⬅ The flipping of the floppy top in the dingo pen
Photo by: Kylie Piper.

DISSECTION DATA

➡ Animals found in the stomach contents of 208 feral cats and 49 foxes dissected by Arid Recovery in the past year.

MAMMALS	BIRDS	REPTILES
74	36	113

VEHICLES AND ASSETS

We have seen a reduction of available vehicles this year due to ongoing maintenance and an ageing fleet. This has at times made it very difficult to perform the daily task required. With the help of BHP Billiton in the later part of 2014 we received 2 new vehicles from their old fleet. Due to the ageing of equipment (eg. solar units that run the Reserve ATCO facilities) the maintenance has increased around the Reserve.

This year we have had some new signs installed at the viewing platform replacing the old and outdated ones. We are also currently replacing the old decking on the platform.

In February of 2014 we were lucky enough to have had a house with in Roxby Downs donated to Arid Recovery. This also required a lot of maintenance for which I would like to thank the participants of the Prisoner Re-integration and Employment Opportunity program who kindly help with all the challenges this house presented.

Feral control

Over the past 12 months feral control has been an ongoing task for AR both in and outside of the Reserve. Over 12 months ago the remote telemetry system for our leg hold trap around the reserve went down. This has been a time consuming effort and has added a lot more to the daily tasks required due to having to check all traps around the outside of the Reserve. We need to keep the leg hold traps open to relieve pressure on the AR fence line. I would like to thank the volunteers who have help on weekends to allow the Arid Recovery staff some much needed rest.

This year has seen the introduction of a new project were we are releasing bettongs and bilbies into the Red Lake Expansion. Before they could be released we needed to ensure that the area was feral free and this has also been a part of the Maintenance Officer's role.

This year we have had 2 incursions of rabbits both within the Northern Expansion, both of these were caught with in a week. After continuous fence checks and not being able find any damage to the fence line it is believed that this occurs around the same time every year were young inexperienced wedge-tailed eagles are dropping their prey over the fence line.

⬅ A rabbit caught on remote camera inside the Reserve


MOUNTAIN DESIGNS

⬅ The Bettong Bush Bus with it's cargo ready for relocation. The Bettong Bush Bus was donated by ODT Australis specially for the bettong move.

⬅ (Far left) A volunteer and a baby bettong during the great bettong move of 2013
Photos by Arid Recovery

Volunteers and community

BY PERRI CARTER

THE YEAR 2013-2014 saw a continued effort by Arid Recovery's dedicated volunteers, this year committing a total of 3115 hours of their time to our conservation efforts.

One particularly large event that occurred through the year was the move of almost 1500 Burrowing Bettongs to outside the Reserve. After months of planning, waiting and more planning on July 8th the bettong movement began. Within the first week over 450 bettongs had been moved from areas of the Reserve.

A total of 1,492 bettongs were released outside the Reserve within a 5,500 ha release zone between July and December 2013. Translocating bettongs to a different location is no mere feat, as volunteers had to work from dusk until well into the night to move the bettongs safely with the support of Arid Recovery's staff. The success of the move to date is thanks to the extraordinary efforts of Arid Recovery staff and volunteers putting in late nights and risking fingers to process over-excited bettongs by the hundreds. AR volunteers have collectively given over 1300 hours of their time to assist and we thank every single one of them. A huge thanks also to those businesses who have assisted, especially to Sodexo for supplying food for our late nights and to ODT Australis for the purpose built Bettong Bush Bus, without which we would not have been able to move our animals with such efficiency.

However the bettong move is not the only way volunteers have helped us this year. Arid Recovery also rely's on volunteers to run some of our great community events from Supporters Nights to our Open Days volunteers have assisted in a range of ways to help these events run smoothly and usually with lots of positive enthusiasm. Our program 'Adopt a Bettong', where you can adopt a bettong that had been given a name and character is largely due to volunteer effort. Inspired by a night out with the little characters ,volunteers spent hours coming up with names and characters and creating cards with a picture of a Burrowing Bettong to match.

ⓘ Further information on Arid Recovery community events can be found online at www.aridrecovery.org.au or by contacting the Volunteer and Community Officer on 08 8671 2402

VOLUNTEERS AND EVENTS

3115

⬅ Number of volunteer hours in 2013-14, the equivalent of over $75,000 worth of staff time for the year.

84

⬆ Number of events for the community.

31,336

⬆ Number of attendees at community events


ARID RECOVERY
www.aridrecovery.org.au
ARID RECOVERY
History
RESEARCH

⬅ In Roxby Downs publicity for AR work occurred through fundraising campaigns including donations of peanut butter for bettong trapping.
⬅ (Far left) Out of town events included Science Alive, the largest Science Week event in Australia.
Photos by Arid Recovery

Publicity and events

BY PERRI CARTER

THIS YEAR AGAIN saw a rise in the profile of Arid Recovery's website rising from 24,056 visits per year in 201-12 to 902,963 this financial year. Continued engagement on the Arid Recovery website can be put down to raising our profile through media but also through our blogs and facebook page. This year's Annual Trapping event saw volunteers taking part in the event by writing a daily blog, which was a great success. We had great feedback that people came back each day to read the blogs. We have committed to a weekly blog on a range of topics, from events at Arid Recovery, National Threatened Species Day, National Science Week and even how you can get more involved in nature in your patch.

Arid Recovery has been involved in a number of tourism planning initiatives in the region and in Roxby Downs. As the tourism represenatitive on the Roxby Downs Business Forum our General Manager, Kylie Piper, assisted in the development of the new Roxby Downs tourism brochure. Kylie also attended the SA Tourism Outback and Flinders Working Group in Coober Pedy to look at the development of new advertising and branding for the outback region of SA.

Staff and volunteers of Arid Recovery were also involved in the development of the upgrade of the Roxby Downs Emu Trail. The Emu Trail works its way around the town of Roxby Downs and the planned upgrade will include an area focusing on the work of AR.

New plans to upgrade the Visitor Information Centre in Roxby Downs will also include an upgraded area to highlight the work of Arid Recovery. The increased focus of AR in Roxby;s tourism opportuntiies was also highlighted in the 2014 community consultation of the Roxby Downs population by the Roxby Downs Council for future developments in the town.

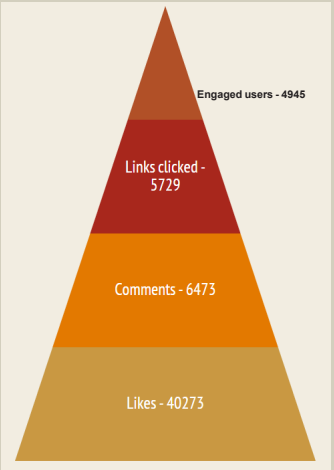
ⓘ Further information on Arid Recovery community events can be found online at www.aridrecovery.org.au or by contacting the Education and Community Officer on 08 8671 2402.

2013-14 SOCIAL MEDIA

➡ Facebook statistics for 2013-14 have shown a marked increase in people utilising the Arid Recovery social media pages.

902,963

⬆ Number of visits to the Arid Recovery website in the past 12 months. This is up from 24, 056 in 2011-12.



2013-14 Financial Report

FUNDRAISING AND IN-KIND SUPPORT

IN-KIND SUPPORT from businesses and individuals continues to be an imprtant source of both income and services to AR. In early 2014 a long term supporter of AR generously donated a house to Arid Recovery. This house, located in Roxby Downs has given our organisation the opportunity to provide staff with subsidised accommodation in town. This will assist us significantly in the future especially during periods where housing is unavailble or unaffordable.

FULL FINANCIAL AND AUDIT REPORT

ARID RECOVERY accounts are audited each year by Ernst and Young. The full audited financial report can be found on the Arid Recovery website at www.aridrecovery.org.au.

Balance sheet

ASSETS		
CURRENT ASSETS	**2014**	**2013**
Cash and cash equivalents	$192,934	$270,776
Trade and other receivables	$15,972	$3,596
Inventories	$18,781	$22,150
TOTAL EQUITY	**$227,687**	**$296,522**
NON-CURRENT ASSETS		
Plant and equipment	$409,107	$51,542
TOTAL NON-CURRENT ASSETS	$409,107	$51,542
TOTAL ASSETS	**$636,794**	**$318,064**
LIABILITIES		
CURRENT LIABILITIES		
Trade and other payables	$28,112	$15,641
NAB - Credit Card	$2,952	$2,989
Provision for annual leave	$40,831	$23,773
TOTAL CURRENT LIABILITIES	$71,895	$42,403
TOTAL NET ASSETS	**$564,899**	**$305,661**
TRUST FUNDS		
Retained earnings	$564,899	$305,661
TOTAL FUNDS	**$564,899**	**$305,661**

⬅ Wedge-tailed eagles nest on Stuart Creek Station, north of the AR Reserve *Photo by: Kylie Piper*

⬇ The team from Broadspectrum helping out fencing at the Reserve *Photo by: Anni Walsh*

Profit and loss

REVENUE	2014	2013
Interest received	$11,008	$14,184
Sponsorship contributions	$400,000	$400,000
Grants	$82,996	$51,315*
Fundraising income	$17,568	$17,986
Education & consultancy	$33,606	$73,271
Other income	$41,834	$27,522
Donation income	$365,000	-
Total income	**$952,012**	**$584,278**
OPERATING EXPENSES		
Staffing costs	($479,221)	**(**$468,527)
Project expenses	($60,571)	**(**$109,620)
Vehicle expenses	($33,457)	**(**$31,333)
Depreciation	($36,974)	**(**$18,484)
Administration and other	($82,551)	**(**$83,323)
Total operating expenses	**($692,774)**	**($711,287)**
NET PROFIT / (LOSS)	**$259,238**	**($127,009)**

** 2012 & 2013 DEWNR partnership funding received in 2012 financial year*

SUPPORTERS

Thank you to the sponsors and supporters of Arid Recovery

Arid Recovery is a conservation initiative supported by BHP Billiton, the SA Department of Environment, Water and Natural Resources, the University of Adelaide and the local community.

Thanks to the many organisations who have assisted us over the past 12 months and continue to support the work of Arid Recovery:

Alliance Airlines
Battery World Mt Barker
Blackwoods
Blue Lake Milling
Bush Heritage Australia
CAT Rental
CEG
Cereal Partners Worldwide
Coates Hire
Cowell Electric
Cummins Mill
EBS Ecology
Ernst & Young
Fauna & Flora International
Global Leadership Foundation
Greyhound Australia
McCarthy Transport
Mitre 10 Roxby Downs
MFP Insurance
Monadelphous Engineering
The Monitor newspaper
National Science Week
ODT Australis
Reece Plumbing Victor Harbour
Roxby Bakery
Roxby Downs Motor Inn
Roxby Leisure
Roxby Pest Management
RoxFM
Roxby Leisure Centre
SAAL NRM Board
Sodexo
Transpacific
Woolworths

You can assist the ongoing work of Arid Recovery through a variety of ways. Visit the website or contact the Arid Recovery Office on 08 8671 2402 for further information.

Donate

Donate online or over the phone to assist the work of Arid Recovery.

Volunteer

Join us for a working bee or assist around the office, there are many opportunities to volunteer with the staff of Arid Recovery.

Join

Become a member of Arid Recovery for as little as $25 a year and receive our quarterly newsletters and monthly e-news updates.

Sponsor

Contact the Arid Recovery office if you or your organisation would like to become a sponsor.

⬆ Wodger the Wedgie *Photo by: Diane James*

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