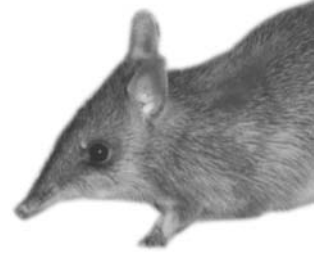




# Warron



## Eastern Barred Bandicoot Newsletter

### **New Eastern Barred Bandicoot Recovery Plan**

*Richard Hill Recovery Team Convenor*

A new recovery plan has been written for the Eastern Barred Bandicoot. Recovery plans are the detailed documents that all threatened species recovery teams funded by the Commonwealth are required to produce. They are revised 5 yearly to provide an opportunity to review the main approaches being taken and the success of actions undertaken to date. Although yet to be approved by the Commonwealth, we have commenced year one of the new five year plan.

Some of the main changes of direction proposed in the new plan are a new overall conservation objective for the Eastern Barred Bandicoot. This is to establish a 'self-sustaining reintroduced population'. By self-sustaining, we mean one that does not require reintroductions from captive-bred bandicoots for the population to persist. This is a substantial change from the previous approach, which allowed that reintroduced populations would require reintroductions from time-to-time for them to persist.

The rationale behind this new approach is that by learning to manage bandicoots and their habitats so that they can persist in all conditions, we will develop a much better knowledge of what good bandicoot habitat is. We currently know that some of the existing reintroduction sites provide better bandicoot habitat than others (bandicoot populations are larger and more persistent), but we are not sure why. This better knowledge of habitat requirements will enable us to rationalise existing reintroduction sites and

identify any new reintroduction areas which we think are required to meet that objective of a self-sustaining reintroduced population.

We have also recognised that there are still lots of aspects of Eastern Barred Bandicoot ecology that we don't understand fully. We don't know fundamental things such as why bandicoots have persisted at some reintroduction sites without supplementation (eg Mooramong/Woodlands) and not at others. The wild population at Grange Burn still persists, in the presence of high numbers of feral cats and foxes, and without any predator control, yet at Hamilton Community Parklands, Lanark and Lake Goldsmith, bandicoots have gone to extinction or virtual extinction in the presence of a substantial predator control effort. Clearly we need to know more about bandicoot ecology so that we can concentrate our efforts on managing those sites which suit bandicoots best, and if necessary find new sites where bandicoots can do better. To this end we are hopeful that Amy Winnard, a doctoral student from University of Melbourne, will shortly commence a detailed study of bandicoots at reintroduction sites and at the Grange Burn population to try and identify what the key factors are that differentiate between successful and less successful bandicoot sites.

Over the next few years, the results of Amys' work and work done by scientists at DSE, will be used to evaluate each reintroduction site and its role in achieving that elusive "self-sustaining reintroduced population" of Eastern Barred Bandicoots. This work will also tell us if we need additional sites to secure bandicoots in the wild. Thus we hope this new recovery plan will provide renewed momentum to our goal of securing our

mainland Eastern Barred Bandicoot from extinction.

## New member of the recovery team



Dr. Graeme Coulson has recently agreed to join the Eastern Barred Bandicoot Recovery Team. Currently a Senior Lecturer in the Department of Zoology, University of Melbourne, Graeme started his career as a secondary school

biology teacher before pursuing his interest in Environmental Studies by completing a Masters of Environmental Studies at the University of Tasmania. He returned to the University of Melbourne in 1982 to complete a PhD on the behaviour of Eastern and Western Grey kangaroos. After having completed the fieldwork component of his PhD, Graeme accepted a position at the then Institute of Education (University of Melbourne) lecturing in environmental science to Bachelor of Education (Environmental Science) students before transferring to the Department of Zoology in 1993. Graeme will supervise Amy Winnard, whose proposed project is described above. He brings to the recovery team very considerable experience in the conservation and management of Australian mammals and will be a great asset to our group.

## Hamilton Wild population

The last known population of Eastern Barred Bandicoot on the Australian mainland occur around the South-west Victorian town Hamilton. The main threat to these Bandicoots is predation by Foxes and Cats. While it is very difficult to control Foxes in an urban environment, there is a lot that can be done to reduce the threat from Cats, particularly domestic Cats.

The most important action is to keep Cats

confined to their owners property, especially at night. The simplest way is to feed the Cat in a small room (say the laundry) in the late afternoon and confine them till morning. This benefits both wildlife and the Cat as most injury to domestic Cats occurs at night from vehicles and fighting with feral Cats.

The Hamilton Field Naturalists are embarking on a program with the Southern Grampians Shire Council to reduce the threat from Cats. The program includes a community awareness program coupled with a night time trapping program. Traps have been purchased through a Threatened Species Program grant and will be set in the back gardens of Field Naturalists.



*As part of the community awareness program 'Fluffy' will be part of a mobile display appearing around the town over coming months*

## Post-release survival of eastern barred bandicoots at Woodlands Historic Park.

*K. Long, A. J. Robley and K. Lovett*

A critical time for establishing individuals at release sites is the period immediately following their release from captivity. In July 2001 the Arthur Rylah Institute for Environmental Research and Parks Victoria undertook a study looking at weight loss in bandicoots immediately following their release from captivity. While factors that have led to the demise of the species in the wild are fairly well understood, eg predation by foxes and feral cats, and loss of habitat through land clearing, we know less about the factors influencing the survival of animals immediately following their release. Improving our knowledge

of what influence survival will increase our capacity to manage the reintroduction of bandicoots.

In July 2001, 10 eastern barred bandicoots were released in the 'back paddock' at Woodlands Historic Park as part of the ongoing recovery effort for the species. Trapping was conducted over five weeks following release. Each individual had been marked prior to release with uniquely numbered passive implant transponders or PIT-tag to allow identification. Trapped bandicoots were identified, weighed, checked for injuries and pouches of females were checked for young. Bandicoots that were captured but were not part of this release were deemed to be 'residents'. Un-marked residents (i.e. those that had not been released or trapped during studies prior to this) were also given a PIT-tag.

Seven of the 10 released bandicoots (four males and three females), were known to be alive at the end of the trapping period. Released animals had lost 5-22% of their body weight by the time of first capture. By 19 days post release, two males had lost 21% and 24% of their body weight. While the latter male was regaining weight after a 31% loss both were considered to be in poor condition when examined by staff from the Melbourne Zoo and were returned to captivity. A released female recorded the largest weight loss of 32% over eight days. She was caught on all four nights of trapping following the release but not thereafter. The average maximum weight loss (removing the influence of estimated pouch-young weight) for released animals was  $17.6\% \pm 10.2\%$ , this was significantly greater than that lost by resident animals ( $7.3\%, \pm 5.1\%$ ). By the end of the study (five weeks after release) the three remaining females weighed in excess of their release weights, and the two remaining males weighed 2% and 10% less than their release weights. One female was captured four months after the completion of the study and had gained an additional 14% in body weight and the final weights of the resident animals ranged from 11% below to 3% above their initial weights.

Weight loss sustained by the released animals may have been caused by limited food resources or by stress associated with their release into an unfamiliar environment. However,

since the condition of resident bandicoots ranged from 'fair' to 'good' and these animals suffered only minor weight losses, food shortage in general was probably not severe and the 'stress' of adjusting to a novel environment is likely to have been a more significant contributing factor for the released animals. This stress may have been compounded by the presence of foxes and by territorial disputes with resident bandicoots as evidenced by the degree of physical injury observed in released males. The weight loss may also partially reflect the greatly increased level of physical exertion captive-bred animals experience in the 'wild' when they have to search for their own food and shelter.

The maximum weight loss recorded from bandicoots at other reintroduction sites ranges from 16 to 20%, compared to 32% in this study. In order to minimise disturbance to newly released bandicoots post-release trapping has not previously been conducted as intensively as described here. As a consequence, past recapture rates here and at other sites have been low, and animals suffering larger immediate post-release weight losses may not have been detected. The stress and lost feeding opportunities that animals experience when they are trapped is unlikely to fully explain the weight losses experienced by released bandicoots in this study because residents were trapped more frequently but did not suffer similar weight losses. We do not discount, however, that trap-related weight loss did occur, and that trapping may have contributed to the overall stress experienced by the released animals. The fact that, on close to half of all occasions (2 out of 5 occasions for released animals and 7 of 13 occasions for resident animals), the weight an animal lost when trapped on consecutive nights, was regained by the following trapping session, suggests that the intervening non-trapping period did go some way towards alleviating trap-related weight loss. This technique, probably with an extended non-trapping period, may prove to be of use in future monitoring sessions.

Weight loss appeared to influence bandicoot survival immediately post release, and was not directly related to trapping intensity. Stress of



being release, the presence of established animals was likely to be more important. Relatively high levels of alternative and familiar food sources for foxes (i.e. rabbits), the continual presence of toxic fox baits and/or the availability of sufficient refugia for the bandicoots may have reduced predation by foxes. How bandicoots would have fared if one or more of these conditions were different requires further investigation. The current program of continual releases of captive-reared *P. gunnii* at sites across Victoria provides an opportunity to further investigate the role of each of these factors as well as the causes of, and potential remedies for, post-release weight loss.

## Acknowledgments

This research, like all Eastern Barred Bandicoot projects in Victoria, has greatly benefited from the assistance and wealth of knowledge provided by John Seebeck. His absence from the EBB world will be truly felt. We thank Nick Clemann, Ian Norman and Michael Sroggie, The Eastern Barred Bandicoot Recovery Team staff at Melbourne Zoo's Native Mammal and Veterinary Departments, staff from Healesville Sanctuary and all the field volunteers.

## Woodlands

*Katrina Lovett*

The bandicoot population at Woodlands Historic Park continues to remain at quite low numbers. The last release into the site was of 13 bandicoots from the Captive Breeding Program into the refurbished pens in April 2004, which had mixed success. Within two weeks of the release two male bandicoots were found dead, one inside the pens and the other outside (though still within the Back Paddock). The death of the EBB found within the pens was deemed to be caused by intra-species aggression, that is, he had been "beaten up" by the other bandicoots. Unfortunately the death of the other male was the result of predation according to Melbourne Zoo's veterinary department.

The positive news from the release included one of the female founders being captured two

months later with pouch young, as well as a number of clean skins encountered during the monitoring.

Since this release there have been a number of monitoring sessions conducted, all resulting in low capture rates. In July 2004 two males were captured during the trapping that covers the entire Back Paddock, one wildbred and one clean skin. October 2004 was disappointing with no bandicoots encountered when we conducted a trapping in Simone's Grid. In April 2005 Parks Victoria staff set-up a new trapping grid with the assistance of a Green Corps team just south of the pens as there had been a fair amount of activity in the area over the years yet bandicoots never seemed to be picked up when the entire Back Paddock grid was used. Our hopes of catching a plethora of animals soon faded, though we did encounter one male clean skin which was great.

The most recent monitoring session covered the entire Back Paddock once again and was conducted in July with the assistance of a number of Department of Sustainability and Environment staff from the Box Hill office. Unfortunately all our efforts did not reap the rewards we were after as we did not capture any EBB's. We did however see a lot of fresh sign, both scats and diggings, so perhaps they were more interested in the soil invertebrates than our peanut-butter and rolled oats bait, thus were not enticed into our traps.

There has been continued intensive effort to



*Flood damaged fence at Woodlands*

control predators, though these suffered a setback on 3rd February 2005 when the storm event that hit Melbourne also impacted on Woodlands. The Greenvale Creek, which has been dry for all of the 4 years that I have been at Woodlands, runs right through the Back Paddock. As a result of the massive rainfall that night the Back Paddock predator exclusion fence was washed away in a number of locations, in particular where the Greenvale Creek passes through. Extensive efforts were made to erect those areas that had collapsed under the weight of the water and debris that was pushed up against the fence by the following day. However, the electrics remained out of operation for another month as repairs continued.

## **Bringing Back the Bilbies at the Arid Recovery Centre**

*Katrina Lovett*

I was fortunate enough to be awarded a Parks Victoria/Earthwatch Institute Fellowship position in April of this year, and it was an experience I will never forget. The project I was involved with was called Bringing back the Bilbies and was based at the Arid Recovery Centre 20km north of Roxby Downs, South Australia.

The main reason I was so keen to be involved with this particular Earthwatch expedition was due to the parallel goals between the Arid Recovery Centre and the Eastern Barred Bandicoot Recovery Team, in particular at sites such as Woodlands where exclusion fencing has been used to try and assist with the establishment of endangered species.

Arid Recovery is an ecosystem restoration initiative where an area of mining and pastoral lease land was fenced off and all cats, rabbits and foxes were eradicated. This created an area of complete protection into which four locally extinct species were reintroduced:

- Greater Stick-nest Rat, *Leporillus conditor*
- Burrowing Bettong, *Bettongia lesuer*
- Greater Bilby, *Macrotis lagotis*
- Western Barred Bandicoot, *Perameles bougainville*



*Predator proof fence at the Arid Recovery Centre,  
Roxby Downs*

Each of these reintroductions has been successful and all four species are breeding within the reserve, though some with greater success than others.

Currently the reserve encompasses a 60km<sup>2</sup> predator-proof fenced area, with an additional 26km<sup>2</sup> area also fenced off around 2 years prior, with the long process of eradication the “exotics” from this area well on the way.

The Earthwatch volunteers assisted in a number of projects from Greater Bilby netting (it has to be seen to be believed), Greater Stick-nest Rat monitoring using Elliot traps, Sleepy Lizard radio-tracking, to a seed experiment that entailed excavating ant nests with a knife and spoon.

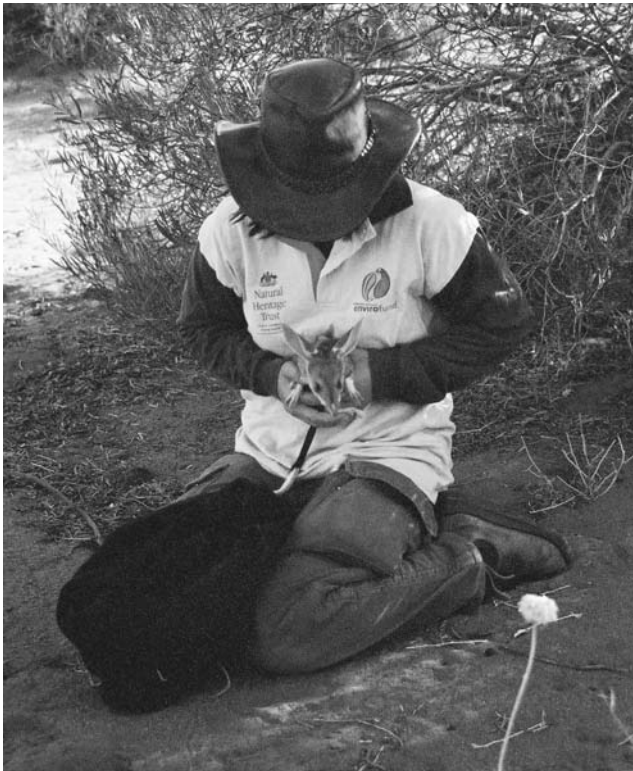
Whilst the EBB Recovery Team and the Arid Recovery staff work in different environments and issues such as vandalism to fences are not as much of a problem for the latter team, I was still able to take a lot away from my experience. Of particular interest was the fence design and we are looking at making a few alterations to the fence at Woodlands as a result of my experiences working at the Arid Recovery Centre.

I'd like to take the opportunity to thank Mandy Watson, who as the Convenor of the Eastern



Barred Bandicoot Recovery Program wrote a letter supporting my application for the Fellowship Program. I'm positive her support on behalf of the Recovery Team assisted me in becoming the eventual Parks Victoria candidate selected to participate in the expedition.

Anyone that is keen to find out more about the work conducted at the Arid Recovery Centre should peruse their website [www.aridrecovery.org.au](http://www.aridrecovery.org.au). One of the principal investigators involved with the project, John Read, has also written an amazing book about arid zone ecology called Red Sand, Green Heart that I can thoroughly recommend for a unique insight into an ecosystem that is often deemed a "wasteland".



*Arid Recovery staff member with juvenile bilby*

## **Mooramong**

*Jim O'Brien, Senior Wildlife Officer  
Ballarat*

Numbers of Eastern Barred Bandicoots captured over the past 12 months have been quite consistent.

With a total of 66 EBB's trapped over 5 monitorings. Of which 26 were first encountered animals.

60% of EBB'S captured (39) were females carrying 58 pouch young.

We have had some nice rain over the past 8 months which has helped with the dams on the property and also there has been some water in the Horse shoe lake.

This is all looking good for the future of the EBB's at Mooramong, with signs of activity around the lake.

Foxes are still about, the last two fox poison programs we have had at Mooramong we haven't been able to use Liver baits, so we have used Foxoff. We had many takes during the April program. At the end of each poison program we complete 3 consecutive spotlight nights, each night counting an average of 3 per night. Also the following weekend we had a local Fox club go through the property, where they shot 10 Foxes. The following week spotlighters saw another 3 foxes.

We have a poison program going at the moment, but there is lambing going on around the area, so there has been limited takes. But again the Fox club went through last weekend, shooting 10 Foxes again.

During our July monitoring we had 10 International volunteers stopping on the property for the week, they were quite taken by our little furry friends.

## **Hamilton Community Parklands**

The Hamilton Community Parklands have received funding to upgrade the predator fence. The upgrade included the installation of a 'floppy top'. This makes it far more difficult for foxes and cats to climb into the Parklands, even if they manage to get pass the two electric wires!



*New "floppy top" fence*

## Update of the EBB's at Little River Earth Sanctuary

*Joel Little, Field Officer*

The Eastern Barred Bandicoot program at Little River Earth Sanctuary (soon to be known as Mt Rothwell) began in September 2004 with the release of 4 animals. Two of these were released into a 1 hectare compound where they could be monitored and supplementary feed made available during their transition. The other two released with radio transmitters attached. Though the transmitters didn't last long enough to give us real indications of their movements, they did show that it took only about 10 days for the animals to settle into new territories. Frequent sightings of the animals along the open grasslands and several successful trap nights paved the way for the next release of 6 individuals in late December 2004.

Since then, most of the animals have been trapped among open grassland not far from a large semi-permanent soak with good remnant grassy-woodlands nearby. Pouched young have been recorded on several occasions with juveniles now sighted frequently. There were concerns, mainly by sanctuary staff, that clean skin animals had not yet been trapped but these are now being reconciled with one clean skin adult being trapped recently and with several other released animals and juveniles found in new locations within the 170 hectare fox free environment.

Just recently Jasmine Ferguson, an honours student from the University of Melbourne, began investigations into the impact of a transitional soft release of captive bred animals, utilising the existing 1 hectare compound at the sanctuary. A total of 12 animals will soon be released with half of these completing their pre-release diet program within the sanctuary compound. All animals will have radio transmitters to track their daily movements, nest site choice and habitat utilisation with frequent trapping to determine the impact and success of both 'soft' and 'hard' release methods.

The sanctuary was established in 2000 by Earth Sanctuaries Ltd (ESL), a company founded by

the often controversial Dr John Wamsley, to create a feral free environment on the Victorian Volcanic Plains. The sanctuary, located on the northern end of the You Yangs Range encompasses 700 hectares of fox and cat free habitat with rabbits all but eliminated. Since 2002, several mammal species have been reintroduced including Rufous Bettong, Southern Brown Bandicoot, Long-nosed Potoroo and Brush-tailed Rock-wallaby. It is intended that other parts of the sanctuary be made available to the EBB's as habitat restoration continues. In March 2005, ESL merged with ES Link, a Melbourne based environment firm with experience in ecotourism, conservation research and green energy. Under the new partnership it is intended that the sanctuary will be used to further community involvement and education, and to establish ongoing research projects with local tertiary institutions to further our knowledge of the endangered species at the sanctuary, and their relationship with the dynamic ecosystem they occupy.

If you would like to be added to the Eastern Barred Bandicoot Newsletter mailing list please contact Tim Burnard on 03 5581 2250

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