



Victoria's Largest Fox-Free Area

Very exciting news for the team comes from this property near Mortlake. Tiverton is an 800 ha privately owned property, managed for its grassland values. It is co-owned by Nigel Sharp who also owns Mt Rothwell Biodiversity Interpretation Centre, which currently holds the largest EBB population in the recovery program. The private landowners have been working with the recovery team for some time, seeking funding to predator-fence the entire site. Now, with the very generous assistance of Zoos Victoria and their Fighting Extinctions project, Tiverton will be secured for EBB recovery with 18 km of predator barrier fencing to surround the entire property. The property will provide good quality EBB habitat in the form of stoney rises grassland interspersed with flats dominated by Poa tussocks and seasonal wetlands. For many years it was managed as a sheep property, with relatively low stocking rates and low rates of fertiliser application, which protected its grasslands. Now the owners use sheep as a tool to enhance the grassland values, by ensuring that annual grasses and weeds are minimised. The management of the property for grassland values is supported through offset agreements with property developers and other companies, which have cleared grasslands in the course of their business and have to support areas like Tiverton to offset their impacts.

The project to fence Tiverton and remove all foxes and cats will commence in the second half of this year and will take 2-3 years. At 800 ha, Tiverton will eventually become the largest fox-free site in Victoria. It has the potential to support upwards of 1000 Eastern Barred Bandicoots, and is a major step forward in the conservation of the EBB. What a great project it will be and a huge thankyou to the owners, Nigel Sharp and Harry Youngman, and to Zoos Victoria, who together have seriously put the EBB on the road to recovery. • Richard Hill

“Tiverton will eventually become the largest fox-free site in Victoria [and] has the potential to support upwards of 1,000 EBBs...”

- Richard Hill



Eastern Barred Bandicoot (Photo: G. Coulson)

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The EBB enclosure inside the bandicoot hideout (Photo: B. Gulli)

Baz' Bandicoot Hideout

For years Zoos Victoria has been helping recover EBBs, by breeding and releasing animals to sites across the state. We have been working hard to engage visitors in the fight for EBB survival through our fighting extinction program, but without having EBBs on display, it has been difficult to create connections to EBBs and their grassland habitat. Visitors can enter the Australian Journey enclosure at Werribee Open Range Zoo (WORZ), where EBBs have been released into the grasslands, thanks to the predator-barrier fence surrounding the exhibit, but it was extremely rare that they would encounter one, given their nocturnal nature. With the opening of the new Bandicoot Hideout (Nocturnal House) at WORZ, all this is about to change!

For the first time, a host of native, nocturnal animals will be displayed on the property, including EBBs, legless lizards, growling grass frogs, fat-tailed dunnarts, and a tawny frogmouth. We see the Bandicoot Hideout as a fun and engaging place where we hope families will fall in love with the Eastern Barred Bandicoot and their grassland habitat, and be inspired to take action. For the kids the Bandicoot Hideout serves as the starting point for their very own fighting extinction spy mission, where they meet Baz the Bandicoot and are sent out into the grasslands of Australian Journey, hunting for clues, which will help them understand the plight of EBB's, and how they can help ensure their survival.

The opening of the Bandicoot Hideout coincides with the annual 'Wild Nights' at the zoo, where every night from 28th June to 12th July visitors can come to the zoo and stay until dark, enjoying a host of night time activities such as fire shows, marshmallow toasting, shadow puppet theatre, an interactive glow zone and a secret garden to explore. We hope visitors will come and experience the zoo in a way they've never seen before, and hopefully spend some time observing and learning about our Eastern Barred Bandicoots and what they can do to help safeguard survival of the species. • Ben Gulli



Baz the EBB (Zoos Victoria)

A Woodland Park to Call Home

Bandicoots are finally at Woodlands Historic Park!

From July 2013, 47 bandicoots were released into Woodlands. Some animals were wild translocated from Mt Rothwell and Hamilton and others came from the captive breeding program. So we are off to a great start with a good number of animals on the ground.

Monitoring straight after the first release was a huge success, with 26 of the original 32 animals being caught. Weights were good and breeding was on the way. Plus the EBBs were on their bikes finding new habitat and moving throughout the site.

A planned monitoring session in December to catch our first born and bred bandicoots on site, was a success. We caught a little girl weighing only 170 grams, around the size of a small house mouse. So exciting! But it gets even better. The next monitoring session was planned after summer in April 2014. After a very long and incredibly hot and dry summer the anticipation was up to see how the animals had coped. The great news is that they thrived. All animals caught had significant weight gain. They were all classified with good body condition and surprisingly had been breeding. Bandicoots will often slow down their breeding over summer as the conditions and food source can be down. But not at Woodlands. Seven of the eight females caught, were carrying eleven pouch young in total!! So it looks like the bandicoots have settled incredibly well into their new home. The other great news is that the original EBBs released are now grandparents, as two females born at Woodlands have been caught with pouch young.

Thanks again to all the wonderful volunteers who toiled away through winter and spring. They did a great job planting around 9,000 grasses to create a new bandicoot habitat. With such a hot summer, endless days were spent watering the plants to keep them alive. Volunteers also continued the weeding program, collapsed rabbit warrens and many more tasks. • *Travis Scicchitano*



Bandicoot monitoring with the Coetsee family (Photo: T. Scicchitano)

Did you know:

You can get involved with EBB recovery at Woodlands Historic Park by volunteering with Conservation Volunteers or joining a Naturewise holiday?

Check out the [Conservation Volunteers website](#) for more details.



You're My Mate

It has been another busy year in the captive breeding program, especially with all the bandicoots coming through the Melbourne Zoo Vet Department for checkups before their exciting release at Woodlands Historic Park! We currently have 51 Eastern Barred Bandicoots, including 9 weaned offspring, at different institutions around Victoria. Some EBBs are on special pre-release diets as 7 animals prepare for release to populations at Mt Rothwell Biodiversity Interpretation Centre and Woodlands Historic Park, 2 females will travel to their new home at Mooramong and 2 males have been chosen for a new home at Dunkeld. This year, 12 males and 11 females will contribute to mate choice trials and will be introduced for breeding this winter.

An important aspect of our captive breeding program is the ability to conduct research that will assist with the recovery of the EBB. Recent research projects have included trials to determine methods to monitor individual animals after they are released into the wild, new ways to monitor wild populations of bandicoots and new mate choice techniques. It is crucial to ensure that we are producing the best possible animals for release to the wild and no one can pick a better mating partner than the bandicoots themselves! Mate choice research with other marsupials has shown that allowing a female her choice of mate can significantly increase her breeding success, while decreasing the amount of time it takes to become pregnant. However, every species is different and may choose mates based on different criteria. In breeding programs, we must determine the best methods to provide a female with her own choice of mate,

while still carefully managing the genetic diversity of the population for the future.

Last year we commenced mate choice trials at Werribee Open Range Zoo (WORZ) to investigate the use of mate choice in the EBB breeding program and how this may affect the success and survival of young. Females showed interest both in the scents from suitable males, as well as interactions with males through specially designed doors. This year, the teams at WORZ, Zoos Victoria's Wildlife Conservation and Science Department and a new Masters student from the University of Melbourne, will be building on that work to see if we can incorporate mate choice into the wider program to increase the number of young produced and ensure we have the best offspring possible to assist the recovery of the EBB.

On a final sad note we all bid farewell to one of our oldest residents, "Bruiser", who was recently euthanised due to old age related issues. Bruiser would have turned 5 in October. He certainly gave his keepers a run for their money and will be remembered! • *Marissa Parrott & Deb Dyson*

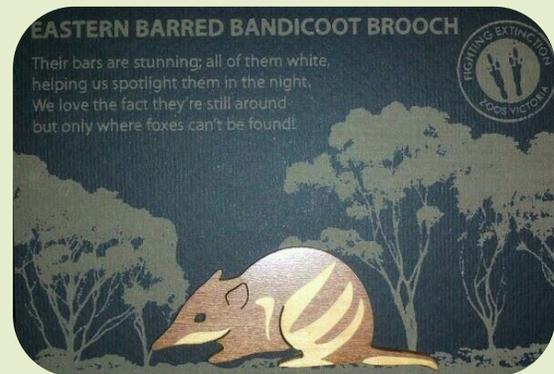


Old Bruiser, foraging for and greatly enjoying his mealworms
(Photo: D. Dyson)

Did you know:
Female EBBs are pregnant for just 12.5 days
Females can breed throughout the year but prefer to have their young in the cooler months
EBBs live for 2-3 years in the wild, but up to 6 years in captivity



HEAD DOWN TO Melbourne or Werribee Zoo and pick up a plush EBB and brooch



(also available in the online [zoo shop](#))



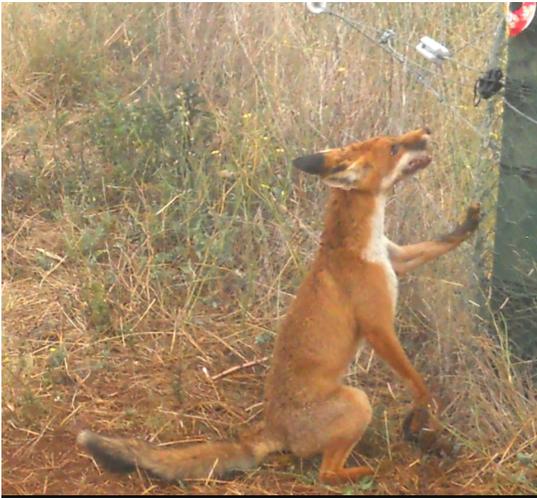
Zoos Victoria

Eastern Barred Bandicoot adoptions are available through Zoos Victoria and make a wonderful gift

...and don't forget to order your EBB Recovery t-shirt from Conservation Volunteers. Call the Melbourne Office on 03 9326 8250 or email:

melbourne@conservationvolunteers.au





A fox caught investigating the Mt Rothwell fence (Photo: C. Bester)



Fox trapping master class at Woodlands (Photo: A. Rypalski)

One Crafty Fox

It hasn't been a good 12 months at Hamilton Parklands, with a fox(es) eluding our fox trapping team for most of this period. Endless fence checks, searches for hidden culverts, spotlighting, fox drives with 20 plus shooters (a big thankyou to the Victorian Field and Game guys for their help) and extensive pruning of overhanging trees has so far not produced a body. Foxes can be elusive and this one is proving to be very elusive. From experience, we know that a new fox in the reserve will quickly start patrolling the boundary, looking for a way out, and will encounter and scratch at one of a dozen sand pads placed around the fence perimeter. These are small areas of sand that are kept clear of vegetation and are raked regularly so that prints of any animals visiting the pads can be seen. Monthly, we bury free feeds, freshly prepared liver, at these sites to search for presence of foxes. If a fox is present, it will invariably eat these baits, after which we can lay a poison bait. This fox has really tried our patience. Detected only by occasional scats, it appears to be as elusive as a fox can be and has our fox team scratching for new ideas.

Did you know:

Foxes are the biggest threat to EBBs

We have constructed 23 km of predator barrier fences to protect 853 ha of EBB habitat from foxes

Fences need to be checked at least twice weekly for any damage

One was to drag the body of a freshly killed fox around the reserve. This can prompt the resident fox to change its behaviour, becoming more reckless and easy to detect. Not this time however. Another was to free feed with Kentucky Fried Chicken, and lo and behold, the fox did take several free feeds of chicken, the first time we had got it to take food. Then, rather than eat the bait, it instead cached them, burying them for later, a common thing that foxes do.

Phillip Island Nature Park have a lot of expertise in fox control, and one of their staff, Craig Bester, recently ran a fox-trapping 'master class' at Woodlands for all our reserve site staff. Craig is also a dog handler and had a couple of newly-trained Springer Spaniels which are being introduced to the Phillip Island fox program to hunt down the few remaining foxes on the island. Craig gave a very detailed presentation on setting up a fox trap and the range of devices used to lure foxes into traps. It was a very worthwhile day and many thanks to Craig and the Phillip Island Nature Park for making him available. Now, with our newly acquired skills, the Hamilton fox doesn't stand a chance! • *Richard Hill*





Island Life

In July–August 2012, the Eastern Barred Bandicoot Recovery Team released a total of 18 EBBs onto French Island as part of a 12-month trial to determine whether habitat conditions were suitable for the species, and to examine the habitat preferences of the bandicoots. The aim was to help identify possible risks arising from EBB introduction to the island. The research was designed to permit an evidence-based evaluation of whether a full release might be worth undertaking. Rebecca Groenewegen (Bec), a Masters student from the University of Melbourne, undertook the bandicoot monitoring work on French Island to evaluate the trial.

Importantly, the male bandicoots that were released on French Island had been de-sexed at Melbourne Zoo to ensure that no breeding could occur during the trial.



'Blue Gums' the EBB release site on French Island
(Photo: R. Groenewegen)

The trapping and radio-tracking results revealed that most EBBs did not travel far (< 500 m) from their release site. The tendency was for animals to concentrate their denning and foraging in open grassland, or in grassland habitats near the edge of tea-tree thickets. The body weight data revealed that most animals experienced some initial weight loss, but this was followed by subsequent weight gain and stabilization. This fits the typical pattern observed for EBBs released at other sites. Overall, the body weight results were encouraging and suggest that foraging conditions on French Island are suitable for EBBs.

Typical lifespan of EBBs in the wild is 2–3 years. The EBBs released on French Island were at least 1.5 years old at the time of release, so it was expected that few would survive through to the end of the trial. Given their age, a survival period of three months was defined as 'successful establishment'. The survival results for the 16 individuals that could be followed were: seven (44%) died in the first month post-release, two (12%) survived for 2–3 months, and seven (44%) survived for three months or more. These results are comparable to those recorded for many reintroduction programs which often report high rates of mortality during the early stages of a successful release into a new area. The findings were therefore encouraging, given the age of the individuals released and the high density of cats in the release area. In May 2013, after approximately nine months, the longest surviving individual was removed from the island in good condition and returned to Melbourne Zoo. The results from trapping and camera surveys at this time indicated that there were no surviving bandicoots left on French Island.

Remains of nine EBBs that died during the trial were recovered. It was possible to determine the cause of death with confidence for five of these cases. Despite a high cat population in the release area, just two of these five bandicoots fell victim to cat predation – a relatively low rate.

A more significant finding was that three of these five EBBs had contracted toxoplasmosis, a fatal condition caused by infection with the protozoan *Toxoplasma gondii*. Cats are the host for this parasite, and shed *Toxoplasma* eggs in their faeces which can then enter the food chain. It is thought that bandicoots may feed upon soil invertebrates that have been infected

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with *Toxoplasma oocysts*. Toxoplasmosis is common in cat populations across the world. If transmitted to marsupials in Australia it is typically thought to result in death of the individual (and no vaccine or treatment exists). The presence of toxoplasmosis amongst the high density cat population on French Island is not surprising, and the implications for EBBs will be evaluated over coming months.

This preliminary assessment of the results indicate that most EBBs could maintain or increase their body condition on French Island, and importantly the habitat choices made by EBBs avoided areas of higher conservation value, being mostly confined to areas of grassland within the release site. However, the combined impact of cat predation and toxoplasmosis on the likelihood of successfully establishing EBBs on French Island requires further consideration. Bec is currently completing this more detailed analysis of the findings as part of her Masters degree. The EBB Recovery Team will return to the island to present the latest results and proposed next steps in mid-2014. • *Richard Hill & Dan Harley*



Ruth Woodrow (Parks Victoria) performing a regular health check on a female EBB (Photo: M. Wills)

Breeding Time

Serendip Sanctuary has been a holding facility for EBBs on and off for the past few years. Our contribution to EBB recovery is now changing, as we become involved in the captive breeding program. Currently we have four EBBs (2 males and 2 females) occupying four of our 11 captive breeding pens. These EBBs will soon be put together for mating and any offspring produced will be released into Woodlands Historic Park, when they reach breeding age.

We also have a 3.2 ha, hexagonal, predator-free enclosure onsite that is split into 5 pens. These pens are currently empty, but plans are in place to move our other EBB resident, a post-breeding female, into one of these pens. She can then live out the rest of her days in a larger, wilder space, digging for worms and meeting Serendip's newest arrivals: four brush-tailed rock wallabies. These wallabies will be coming from Mt Rothwell, but before they arrive we need to redevelop the enclosure slightly, to make it more secure, as one is a known escape artist! Although just holding pens at this stage, these enclosures containing a mixture of *Poa* and other native grassland species, as well as open Tea Tree and *Acacia* species have the potential to be a soft release enclosure for captive bred EBBs, where they can acclimatise to a more natural setting, prior to release into one of the reintroduction sites.

• *Matt Wills*



Did you know:

We use a range of techniques to capture and monitor EBBs, including:

- Cage trapping
- Camera trapping
- Netting
- Radio-tracking
- Dig counts



Mt Rothwell netting team: A. Rypalski, K. Chang-Kum R. Hill, B. Gulli, and R. Groenewegen (Photo: J. Young)

Catch Me If You Can

Mt Rothwell's population of EBBs is still going strong and appears to have stabilised, after peaking in early 2011 to a population of approximately 300 individuals. Adults with pouch young, juveniles and young at foot have been sighted throughout summer and 7 to 14 EBBs are commonly seen on our 1.2 km spotlight trail.

Of the three different EVC's across the property (Open Grassy Woodland, Granitic Rises and Basalt Grasslands), the Granitic Rises continue to show the highest EBB activity.

An on-going challenge is to reduce the rabbit population within the reserve. All efforts are focussed on removing as many rabbits as we can, forcing us to think outside the square and trial various innovative control methods.

As the years go by, wild behaviour traits demonstrated by Mt Rothwell's EBBs continue to evolve and develop as they are exposed to seasonal changes, raptor presence and competition. The recent release at Woodlands Historic Park was a great example of this whereby staff and Recovery Team members were required to capture 30 EBBs over two nights. As our wild EBBs are difficult to catch in traps, we attempted a new technique: race around the property with butterfly nets in a mad attempt to out-run the little guys. We quickly discovered that this was a near impossible feat. Fine tuning our efforts, we used team work and an effective corralling method to capture the required number of bandicoots for release into Woodlands.

Whilst no foxes have breached Mt Rothwell's predator-barrier fence, natural harvesting of weak, old or naive animals does occur by the local Barn Owl population. Earlier this year, predatory pressure increased when a group of 14 Wedge-tailed Eagles descended on the EBBs, enjoying a great snack. Luckily, after just one week, their tastes moved on to other species on the property. A few weeks later they dispersed, leaving behind our usual resident pair, who have more of an appetite for rabbits.

The success of Mt Rothwell is now driving efforts to advance our satellite site 'Tiverton', an 800 ha property located in Dundonnell, Victoria. With assistance from the Recovery Team, we will now progress and develop this site into an ideal Eastern Barred Bandicoot haven...stay tuned folks! • *Annette Rypalski & Jacqueline Young*





The Eastern Barred Bandicoot Recovery Team was founded in 1989 after a continual decline was noted in the wild population. Although extinct in the wild, reintroduced populations of bandicoots can be found in predator-free areas at Hamilton Community Parklands, Mt Rothwell and Woodlands Historic Park, occupying a total of 783 ha.

'Warron' is the Kirrae Whurrong word for the Eastern Barred Bandicoot. This newsletter was named 'Warron' in honour of Wayne Drew after his passing in 2001. Wayne was the 'Bandicoot Ranger' for Woodlands Historic Park and a member of the Kirrae Whurrong people from the western district of Victoria.



Further information:

Act Wild
www.actwild.org.au/animals/bandicoot/

Conservation Volunteers
www.conservationvolunteers.com.au

Mt Rothwell
www.mtrothwell.com.au

Zoos Victoria
<http://www.zoo.org.au/werribee/animals/eastern-barred-bandicoot>

If you would like to receive this newsletter by email send your address to amy.coetsee@unimelb.edu.au



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