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# The Australasian Bat Society Newsletter

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Number 40

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ABS Website: <http://abs.ausbats.org.au>  
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**– Instructions for Contributors –**

The *Australasian Bat Society Newsletter* will accept contributions under one of the following two sections: Research Papers, and all other articles or notes. There are two deadlines each year: **10<sup>th</sup> March** for the April issue, and **10<sup>th</sup> October** for the November issue. The Editor reserves the right to hold over contributions for subsequent issues of the *Newsletter*, and meeting the deadline is not a guarantee of immediate publication.

***Opinions expressed in contributions to the Newsletter are the responsibility of the author, and do not necessarily reflect the views of the Australasian Bat Society, its Executive or members.***

For consistency, the following guidelines should be followed:

- Emailed electronic copy of manuscripts or articles, sent as an attachment, is the preferred method of submission. Faxed and hard copy manuscripts will be accepted but reluctantly! Please send all submissions to the *Newsletter* Editor at the email or postal address below.
- Electronic copy should be in 11 point Arial font, left and right justified with 16 mm left and right margins. Please use Microsoft Word; any version is acceptable.
- Manuscripts should be submitted in clear, concise English and free from typographical and spelling errors. **Please leave two spaces after each sentence.**
- Research Papers should include: Title; Names and affiliation of authors and an email address for corresponding author; Abstract (approx. 200 words); Introduction; Materials and methods; Results; Discussion; and References. References should conform to the Harvard System (author-date; see recent *Newsletter* issues for examples).
- Technical notes, News, Notes, Notices, Art etc should include a Title; Names and affiliation of author(s) and an email address for the corresponding author. References should conform to the Harvard System (author-date).
- All pages, figures and tables should be consecutively numbered and correct orientation must be used throughout. Metric units and SI units should be used wherever possible.
- Some black and white photographs can be reproduced in the *Newsletter* after scanning and digital editing (consult the Editor for advice). Diagrams and figures should be submitted as 'Camera ready' copy, sized to fit on an A4 page, or electronically as TIFF, JPEG or BMP image files. Tables should be in a format suitable for reproduction on a single page.
- Editorial amendments may be suggested and all articles will generally undergo some minor editing to conform to the *Newsletter*.
- Please contact the *Newsletter* Editor if you need help or advice.
- **Advertising:** please contact the editor for current advertising (half and full page) rates.

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**– Editorial –**



Hello everyone,

Ah, how wonderful it is to exert my whim as Editor and give Rachel Blakey's lovely photo of a Large-footed Myotis, *Myotis macropus*, pride of place on the cover of the 40<sup>th</sup> *ABS Newsletter*. This charming individual was caught along the Murray River near Barmah in Victoria where we have few existing records of this enigmatic (Editor's prerogative again!) species, see page 11 for further details on Rachel's fishing bat adventures.

For the first time in quite a while I can actually report on some hands on bat activity that I've been fortunate to be involved. In December 2012, I was invited by Peter Pritchard from the WA Museum in Albany to host a trapping night for the Young Naturalist club. I was floored by the enthusiasm of these budding young naturalists (photo below), and after 45 min or so of questions on top of my talk, we ventured out with a half dozen bat detectors and were rewarded with lots of calls in the cleared area amongst the melaleuca scrub. We were also lucky to harp trap a couple of Lesser Long-eared Bats and Little Forest Bats (or were they Southern Forest? I was unable to distinguish in time) to the delight of all those (including me!) who attended. I now have a much greater appreciation of the value of

'Bat Night' events and I'm pleased to report on various activities that have taken place around the country as part of Australasian Bat Night official activities (pages 17 to 23).

Since the last *Newsletter* went to press there has been a number of very fruitful discussions circulating on the ABS discussion list. One of these centred on the need for members to be seen applying due safety and care when handling bats at all times, i.e. during research, education and extension activities. What came to light during the e-mail discussions was the vast spectrum of individuals' thoughts towards wearing gloves whilst handling bats. I would like to re-iterate our President's thoughts in recommending that ABS members take the utmost due care towards their own health as well as the health of the animals they're handling. Obviously the right choice of glove will depend on the species being handled, but at the end of the day, there's a wealth of experience to be tapped into throughout our membership base – so don't be afraid to ask if you're uncertain. The up-shot of this discussion is that *after* this edition, I will no longer accept images of un-gloved hands handling bats for publication in this *Newsletter*.

On a lighter note, please enjoy this *Newsletter* and as always, *please* think about what you could contribute to the next edition.

**Susan Campbell**  
**Newsletter Editor**

Cover: Large-footed Myotis *Myotis macropus*, Murray River region, photo: Rachel Blakey.

Photo above & below – Albany Young Naturalists members (and their mums & dads!) participating in some bat detecting, trapping and education. Photos: Peter Pritchard.



**– From the President –**

Things certainly do not stand still in the bat world – well politics anyway, and they certainly have not improved. In the time since the last *Newsletter* our little society has been vocal a few times. One avenue for public comment was recently provided by an invitation from the Senate to make a submission to two enquiries. The first was on the effectiveness of threatened species and ecological communities protection in Australia, and we made comment on many of the terms of reference. Most of the comments were directed at the shortcomings of the Commonwealth, but there were also comments that provided an assessment of State Governments. In reality there was not much new here, as a lot of information from the Royal Society of NSW symposium on bat conservation ended up in the document. The second submission provided support for a Bill put forward by Greens Senator Larissa Waters, which proposed changes to the EPBC Act that removed the opportunity for bilateral agreements between the Commonwealth and the States. We have seen several excellent recent examples of why giving greater powers of environmental oversight to State Governments would probably not be in the interests of wildlife, and in particular our flying-foxes. We have seen Premier Newman call for local councils to hurry up and apply for flying-fox shooting permits, and Katter's suggestions for yippee shoots, plus approvals and threats for dispersals at several locations. A lot certainly happens in Queensland. And science and specialist experience is not behind a lot of it. I emailed to the Discussion list the links on the Commonwealth website for the two Senate submissions we made, and have included them at the end of my schpeel here.

I do not want to paint too negative a picture however. I have seen a few things recently that show some parts of Government are listening, and that environmental groups are gaining ground by working together. The Places You Love campaign led by the Humane Society is very active in responding to the issue of efforts by business and State Governments to weakening our Commonwealth environmental law, and I am sure recent announcements by Prime Minister Gillard indicating a pull back from devolving Commonwealth powers to the States is part of that effort. The coalition of environmental groups also celebrated the recent announcement of the water trigger for the EPBC Act – good signs that

there is some balance being injected here. But of course it will require sustained long term effort to counter the very strong pressure from business interests on changing our environmental law, especially after the federal election. I was also invited to the Pilbara Biodiversity Workshop recently to contribute to a regional management strategy being formulated by the CSIRO. The aim was to identify regional threats to listed Western Australian threatened species, and compiled thoughts from all stakeholders in the region (miners and consultants included) for targeted remedial actions. A great effort since the increased activity in this region really requires a regional perspective when assessing projects. There will be a follow up mini-workshop on threatened Pilbara bats, which will be the best opportunity I have had in many years to help provide regional perspective on these species to government managers and Commonwealth policy researchers that are keen for input.

Another very exciting opportunity I was privileged to be a part of was the birth of Bat Conservation Africa – a network of bat workers from all African countries. The African Bat Conservation Summit was organized and funded through Bat Conservation International and was held at the Kenyan Wildlife Service Training Institute. Representatives from BCI, the South East Asian Bat Conservation and Research Unit, Bat Conservation Trust (UK), Chiroptera Conservation and Information Network of South Asia (CCINSA), RELCOM (the bat conservation network from Latin America) and the ABS were all represented and invited to give perspectives on how each of their societies or networks functioned. It was interesting to see the differences amongst our groups, and hear of both the successes and challenges each had faced. Following these presentations, there were breakout working groups that discussed the various requirements for setting up a new network in Africa, which was then collated and decided upon by the African representatives. There were some great comments, and by the last day of the summit, their steering committee had been elected, a structure had been decided upon and a set of priority actions had been delegated out. Bat Conservation International is currently putting a lot of effort into linking the various bat societies in the world and encouraging exchange of experiences and knowledge. From some of the emails I have

seen, this is already happening – as an example some good practical advice on fruit tree netting was passed from our members in Queensland to our colleague in Mauritius. The upcoming International Bat Research Conference in Costa Rica will include a symposium that will also encourage greater exchange amongst our respective societies. We certainly have much to learn from each other, and I am particularly keen to hear more from our Latin American colleagues about their Priority Bat Areas and other research on their unique bat fauna.

So to end off, I would like to encourage as many people as possible to attend the Financial Annual General Meeting between 8 – 10 June (Queen's Birthday long weekend), which will be held at the Queensland Museum. I have circulated a draft schedule via the Discussion List, which lists a variety of flying-fox and microbat issues that need discussion and action. Basically the meeting will be a three day thrash-it-out talk-fest with the theme of "Getting Organised". In the past year, it has been very difficult for me and the society to respond quickly to the various things that pop up. I am a bit wary of the media, so my approach has been to only release carefully worded media statements to the press or via our website, and avoid talking directly. I am very careful to make sure we get a sensible, scientific/experienced-based set of comments out in the public sphere, and ones that reflect our professional and collective view as a society. To be more active in advocacy our society needs to have information resources at the ready and networks of people to help respond. We have a great new website,

which is being constantly updated. We also have a new Communications Strategy document, put together by the very capable Micaela Jemison. In this document is outlined quite a number of ways in which our society can better engage in the public debate. We need to discuss these and seek help from energetic people willing to compile our position statements, reviews of past experiences and other information resources. I very much hope to see lots of people in Brisbane in June – I am sure we can get a lot done together, and it needs everyone's thoughts and help.

The ABS Senate submissions mentioned above can be downloaded as per the information below.

The effectiveness of threatened species and ecological communities' protection in Australia

[http://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate/Committees?url=ec\\_ctte/threatened\\_species/submissions.htm](http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Committees?url=ec_ctte/threatened_species/submissions.htm)

submission 110

Environment Protection and Biodiversity Conservation Amendment (Retaining Federal Approval Powers) Bill 2012

[http://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate/Committees?url=ec\\_ctte/epbc\\_federal\\_powers/submissions.htm](http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Committees?url=ec_ctte/epbc_federal_powers/submissions.htm)

submission 111

**Kyle Armstrong**  
**ABS President**



*Ed: Behind all the hard work put in as President of the ABS is a humble fieldy who seems pretty happy to meet this orange leaf-nosed bat. Thanks to Terry Reardon for this photo of Kyle.*

**– Australasian Bat Society Inc: Business and Reports –**

**Notice of upcoming Australasian Bat Society Financial Annual General Meeting**

8<sup>th</sup> - 10<sup>th</sup> June 2013

Queensland Museum, Brisbane.

*Agenda for the ABS FAGM:*

		<b>Topic</b>	<b>Explanation</b>
<b>Day 1</b>			
<b>Saturday 8 June</b>			
9:45	10:00	Welcome and outline of the meeting objectives – Kyle Armstrong	
10:00	12:00	<b>Session 1 Echolocation call survey and reporting standards</b>	What can the ABS do to ensure echolocation surveys are up to scratch in the currently fast-paced world of acoustic surveys?
		Introduction: Why we need standards and introducing the new ABS draft - Kyle Armstrong	
		Presentations: available hardware - Roger Coles, Chris Clague, Kyle Armstrong	
		Presentations: available software techniques - Brad Law, Kyle Armstrong	
12:00	13:00	<i>Lunch in the cafe</i>	
13:00	14:00	Discussion and amendment of the draft standards	
14:00	15:00	<b>Session 2 Windfarm standards and information gathering</b>	Can the ABS further develop standards for windfarm surveys, obtain summary data from surveys and produce a public standards document?
		Introduction: Why we need standards and what outcomes might be desirable - Lindy Lumsden	
		Presentations: experience with windfarms - Mark Venosta (Skype), Greg Richards (Skype), Terry Reardon (on the usefulness of radar)	
15:00	15:20	<i>Afternoon tea</i>	
15:20	16:45	<b>Session 3 Bat Blitz update and discussion</b>	An update on the funding and planning.
		Introductory comments - Kyle Armstrong / Terry Reardon	
		Update on the current situation and presentation and general discussion of aims, timing, locations and logistics	
17:00	onward	Dinner somewhere	
<b>Day 2</b>			
<b>Sunday 9 June</b>			
9:30	11:00	<b>Session 4 Mammal Action Plan</b>	Should the ABS develop its own resources for providing information to Action Plan updates or for nominations to the TSSC?

		Introductory comments - Terry Reardon	
		Discussion, drafting and delegating	
11:00	11:20	<i>Morning tea</i>	
11:20	13:00	<b>Session 5 ABS Communications Strategy, Website and the role of the ABS in advocacy</b>	The ABS needs to become better organised if we are to have a greater role in advocacy. Notwithstanding the great resources we already have, this will require the development of new resources and the updating of old ones, development of new ways and networks for communication and the commitment of people to certain tasks and ongoing roles.
		Introductory comments - Kyle	
		Presentation: draft Communication Strategy - Micaela Jemison (via Skype)	
		Presentation: ABS Newsletter - Susan Campbell (via Skype)	
		Discussion	
13:00	14:00	<i>Lunch</i>	
14:00	15:00	Discussion, drafting and delegating	
15:00	15:20	<i>Afternoon tea</i>	
15:20	16:45	<b><i>Financial Annual General Meeting</i></b>	
17:00	onward	Free time, dinner and the pub. Louise Saunders has offered BBQ at Ennogergera/ or batty boat cruise	
<b>Day 3</b>			
<b>Monday 10 June (Queen's Birthday Public Holiday, all States except WA)</b>			
9:30	10:30	<b>Session 7 Flying foxes Part 1</b>	How can we respond better and in a more organised way to issues with flying-foxes?
		Presentations: Recent political events	
		Presentations: Recent local events as case studies	
		Discussion: What should the society be doing?	
10:30	10:50	<i>Morning tea</i>	
10:50	12:30	Discussion and resolution of actions for flying-foxes	
12:30	13:30	<i>Lunch</i>	
13:30	16:00	<b>Session 8 Flying foxes Part 2</b>	
		Discussion: Flying-fox subcommittee and delegation	
		Discussion: Media statements	
		Discussion: Documenting experience	
16:00		Closing remarks	

–Research Notes –

## Flying-fox diaries – high school students track large fruit bats in eastern Australia

Kalyx Jorgensen, Lowana Littlechild, Rhiannon Pye and Annelise Rosnell.

Project co-ordinators

Billie Roberts<sup>1</sup>, Kelly Roch<sup>2</sup> and Shane Ruming<sup>2</sup>

<sup>1</sup> Biologist, Griffith University

<sup>2</sup> Office of Environment and Heritage

[Billie.roberts@bigpond.com](mailto:Billie.roberts@bigpond.com)

On the north coast of New South Wales, Australia, Maclean High School is home to a controversial colony of flying-foxes (large fruit bats of the genus *Pteropus*). Urban development has slowly encroached on the flying-fox roost ('camp') and in the 1960s the school was built next door. From that time, the presence of flying-foxes has created conflict with the local community. The camp is made up of both Grey-headed (*Pteropus poliocephalus*) and Black Flying-foxes (*P. alecto*), which occupy Lowland Rainforest vegetation that is listed as an Endangered Ecological Community under State legislation. In the case of the Grey-headed Flying-fox, this camp is considered to be habitat critical to the survival of this threatened species because it has a history of being used by such large numbers of animals and is an important maternity site.

In early 2012, a group of 16 year old, senior Biology students from Maclean High School assisted local biologist Billie Roberts and the state environment agency (Office of Environment and Heritage) in a telemetry study of these bats, aimed at involving students in cutting-edge wildlife research and to gain knowledge of the migratory behaviours of Black Flying-foxes on the east coast of Australia. It was also hoped that the project would improve the public view of bats in the local area and gain knowledge of flying-fox behaviour which may help resolve future conflicts in the local and wider community.

Using a mist net held up by 11 m poles, the flying-foxes were trapped at dawn and dusk, when leaving or returning to the camp to feed (Photo 1). Every bat caught was aged, sexed, thumb banded for future identification, weighed,



Photo 1. One of the Black Flying-foxes captured in the mist nets. Biologist Billie Roberts secures the head while volunteers Gill Bennett and Shane Ruming detangle the animal's wings and feet. Photo ©D. Novak.



Photo 2. Biologist Billie Roberts releasing one of the collared Black Flying-foxes. Fitted around the neck onto a leather collar is a 12 g solar powered PTT (duty cycle 10 hrs ON 48 hrs OFF). Photo ©D. Novak.

measured, assessed for general body condition and offered supplements (fruit juice) for their missed feed. A total of 63 flying-foxes (38 Grey-headed and 25 Black Flying-foxes) were caught during the trapping. Four adult male Black Flying-foxes (>700 g) were fitted with 12 g solar powered bird PTTs, specially modified to be mounted to a neck collar (Photo 2). Students

assisted with all aspects of field work including mist netting, measurements, and attachment of the satellite transmitters to sedated bats (see Photo 3 and 4). Flying-fox numbers at roost sites in the area were also monitored every few months; along with information on flowering trees to assist with the interpretation of flying-fox movements. Three oral presentations were given about the project by the students to various community groups.



Photo 3. The Maclean High School Biology Students involved in the project, with teacher Wayne Rice, assisting wildlife carer Imelda Jennings and researcher Billie Roberts measuring, weighing, tagging and collaring the flying-foxes. Photo ©D. Novak.



Photo 4. The students assisting in recording measurements of one of the 63 flying-foxes captured. Photo ©D. Novak

The four male bats which were collared have been tracked for over six months, and in March 2013 regular data from three animals were still being received. Movement patterns have varied between individuals, with some moving long distances and others remaining relatively

sedentary. Two flying-foxes remained at the point of capture for their entire tracking period (>6 months) and fed within 15 km of their roost. The remaining two flying-foxes (Wayne and Jonah) have been more mobile, moving between a number of roost sites in northern NSW and south east Queensland (Figure 1 and 2). The maximum distance moved between roost and feeding site for these two animals was 32 km. One flying-fox migrated north 220 km over just a few days to roost in the metropolitan area of Brisbane.

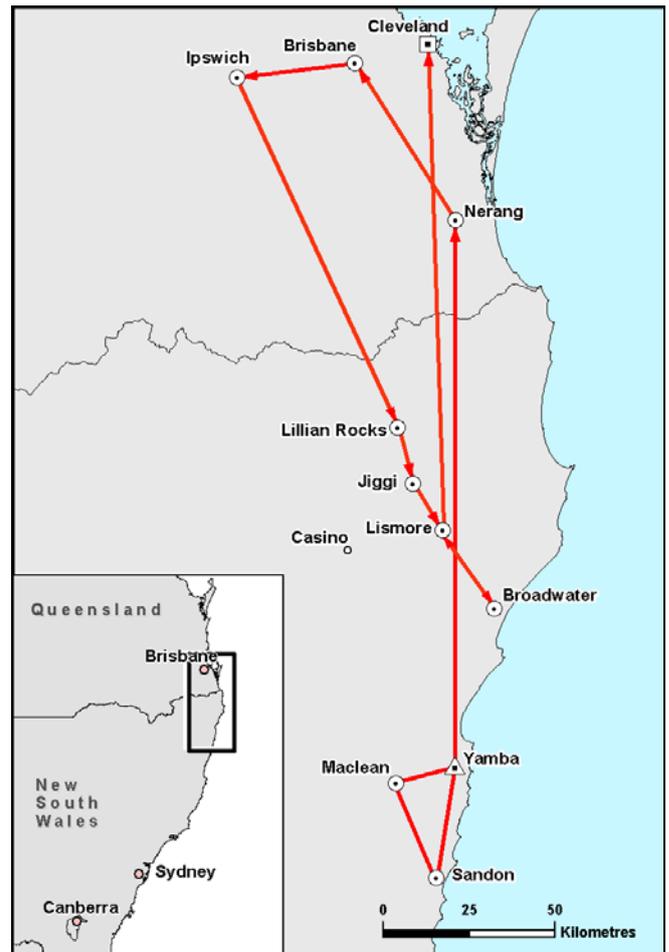


Figure 1 The movements of the Black Flying-fox (*Pteropus alecto*) named Wayne over the past 10 months. The white triangle shows the point of capture at Yamba. The white dots represent all roosting sites used, the red line is the direct line path taken between roosts and the square point represents the final location.

The project has helped to clear up many misconceptions surrounding flying-foxes held by the students and teachers. Everyone touched by the project gained new insight and knowledge into flying-foxes' movements and behaviour, the intricacies of telemetry research and many preconceived opinions about bats were changed. It has also led to the broader education of the community, through the presentations given by

the now informed students. The students in particular gained valuable knowledge of the importance of flying-foxes to the ecosystem and the difficulties of managing this mobile species in the urban environment.

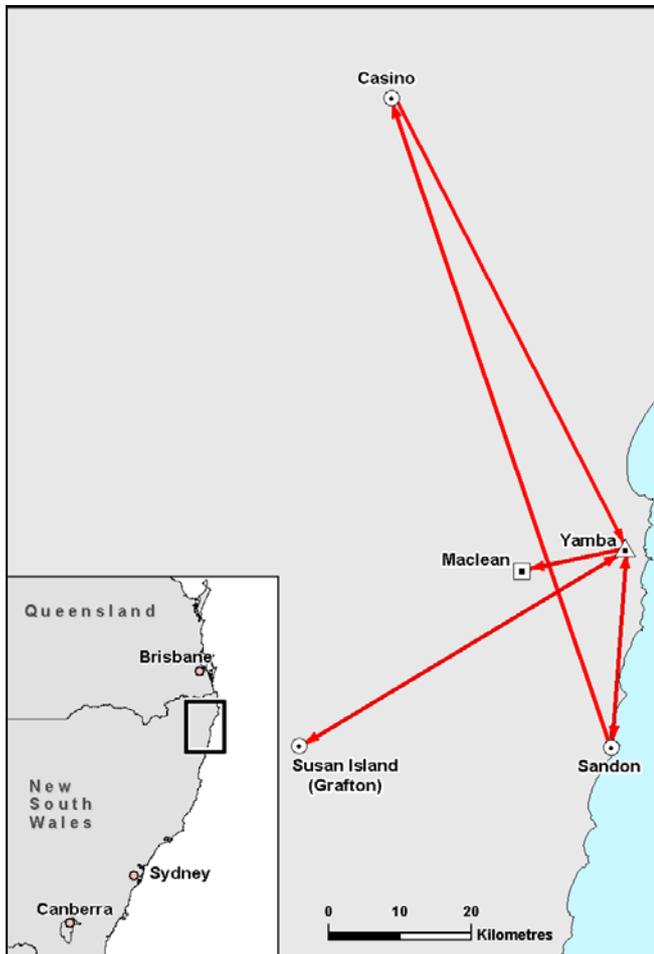


Figure 2 The movements of one of the collared Black Flying-foxes, named Jonah. The white triangle is point of capture; white dots represent all other roost sites used; the red lines represent the animal's movements between these sites over the past 10 months and the white square is the end point.

Also see link to short video clip of the project: <http://vimeo.com/42398697>.

**Acknowledgements:** We would like to acknowledge the many people who contributed to the project including the students' parents, Maclean High teachers (Karen Rowe and Wayne Rice), Gill Bennett, Imelda Jennings, Linda Wright, Carole West and Deborah Novak. All four satellite tags were donated by Microwave Telemetry as part of their 'PTTs for schools' grant. The project had additional funding from OEH, Clarence Valley Council, Valley Watch, Wildlife SOS, Maclean High School and the Maclean Vet Clinic.

## Another "Furthest South" for Western Australian bats in 2012.

Bob Bullen<sup>1</sup> and Greg Harewood<sup>2</sup>

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The year of 2012 has turned up yet another southern range extension in Western Australia. In December, two of WA's biologists, Greg Harewood and Glen Murray, were working at Mount Forrest in the southern Murchison bioregion and were putting Anabat detectors out at likely bat habitat. One of their recordings picked up a series of Yellow-bellied Sheath-tailed Bat (*Saccolaimus flaviventris*) calls. This represents a range extension of about 250 km.

The southern boundary of the traditional range of this species in Western Australia lies roughly on a line between the plains south of Shark Bay to the Wiluna district some 600 km inland. This line is at latitude 26.75°S. The Mt Forrest range lies at 28° 50' S, 119° 40' E, to the north of Lake Barlee, a dry salt lake on the southern edge of the Murchison bioregion.

Compared to *Saccolaimus flaviventris* movements in the eastern states this may not seem remarkable, as the species is known to fly south to Victoria from its summer range in Queensland and the Northern Territory. In WA though the species inhabits the tropical northern half of the state and this record is the first well into the temperate half, south of the arid inland Murchison district. It comes on the back of at least two other significant southerly range extensions reported in the last *ABS Newsletter* No. 39. (Finlayson's Cave Bat *Vespadelus finlaysoni* and Hill's Sheath-tailed Bat *Taphozous hilli*).



## **If you can't beat them join them? An interesting example of a moth mimicking a bat.**

**Michael Pennay**  
[vespadelus@gmail.com](mailto:vespadelus@gmail.com)

I've had a long fascination with the predator prey struggle between bats and moths and the amazing adaptations this has driven in both bats and moths. Moths, being a popular prey item for many insectivores, are quite well known for mimicry. There are many examples of moth species that mimic toxic or dangerous animals such as wasps, some have 'eye spots' like owls, or snakes and many mimic not so tasty things such as leaves, bark, lichen and mosses.



Recently I stumbled upon a surprise, whilst browsing through a fellow naturalist, Dr. Vijay Anand Ismavel's photos I noticed a moth that mimics the shape of a microbat in the resting position. At first glance I thought the unidentified moth species (possibly a Notodontidae) from Assam in Northern India was a microbat. On closer inspection and admiring the deception I noticed details beyond the basic silhouette, such as the brown fur and 'leathery' wings. It is the first instance that I have been able to find of a moth mimicking a bat, although it is difficult to conceive what benefit appearing to be a microbat may have, as they are not poisonous or particularly dangerous (except to moths) and are often prey themselves to larger animals.

Photo 1 (left top): Imposter moth [photo credit: V. A. Ismavel].

Photo 2 (left below): Microbat on a wall [photo credit: S. Oh].



## **Large-footed Myotis records on the Murray River.**

**Rachel Blakey**

PhD candidate, Uni. of New South Wales.  
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During a 3 week field campaign in November 2012, we captured 14 Large-footed Myotis (*Myotis macropus*) within creeks and wetlands of the Murray River in Barmah-Millewa Forest. The animals represented a range of life histories, including lactating and post-lactating females, males, and juveniles and were captured at 4 different sites. Such a large presence of this species was an exciting surprise, as they are poorly known from inland river systems. Although a 2009 ABS trip to the nearby Murrumbidgee yielded an exciting Myotis capture [Ed: *and what a capture it was!*], this species hasn't been captured along the Murray for at least 10 years. The last big survey for Myotis was conducted by Law and Anderson (1999), across 18 sites in



Barmah-Millewa and Koondrook-Pericoota forests [Ed: I also trapped for three nights in Barmah State Forest in December 2002 and caught 86 bats, 9 species, including a single White-striped Freetail Bat – but no Myotis]. The Law and Anderson (1999) survey included roost searches, harp traps, mist nets, bat call recorders and there were no captures, only two calls recorded. We believe we had the ideal conditions for trapping this species during 2012 as the wetlands and creeks were just beginning to recede after very extensive flooding, condensing Myotis populations into smaller water covered areas.

The little bat with the big feet captured the imagination of the locals of Barmah (population: 200) where we were based. We had many visitors to our caravan, including the publican who left the bar unattended for a good 15 minutes so she could catch a glimpse of the

famous fishing bat. Perhaps it's not surprising the little bats were so popular, as fishing is the best-loved pastime of Barmah residents!

In addition, the knowledge that these water-dependent bats reside in the largest remaining stand of River Red Gum, recently acquired as National Park, has sparked the interest of a range of government agencies. We're hoping to conduct radiotracking this spring/summer to better understand how Myotis are using River Red Gum habitats.

Rachel Blakey (PhD candidate at UNSW, supervised by Dr Brad Law & Prof. Richard Kingsford), Andrew Wurst & Adam Birnbaum.

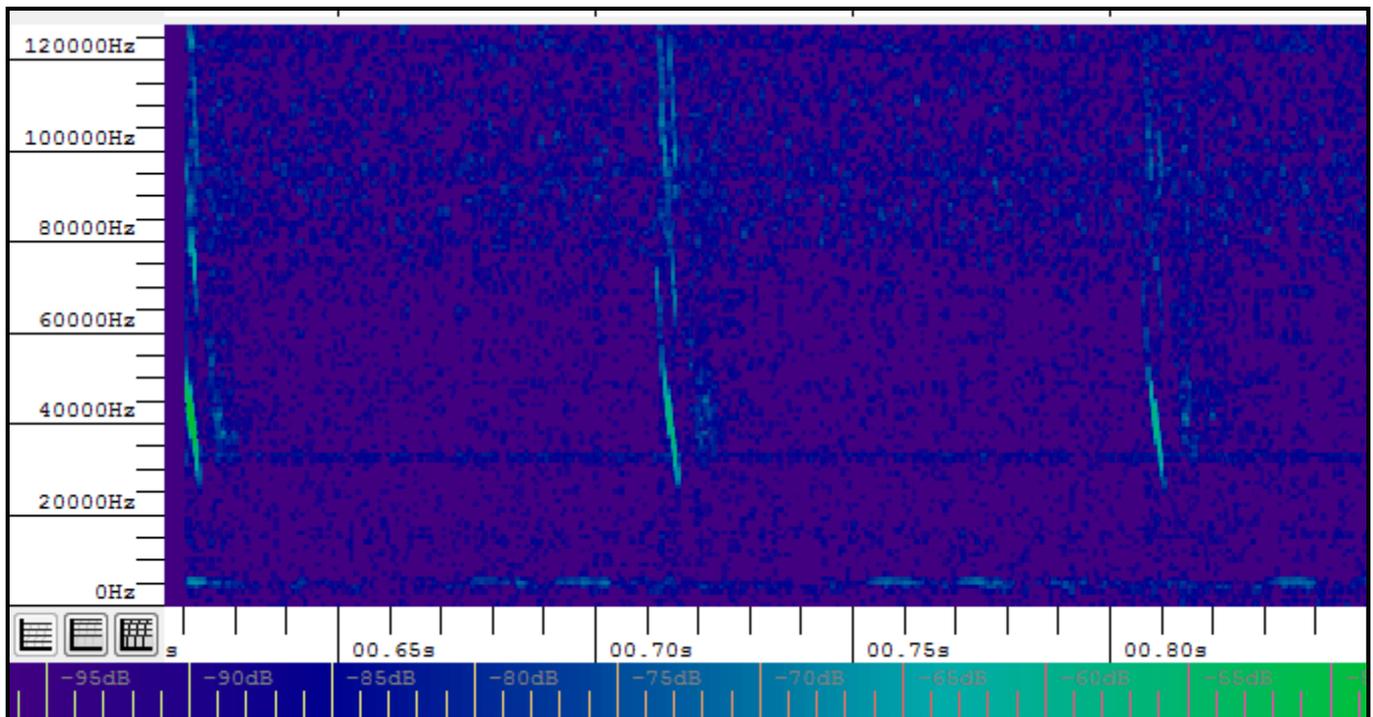


Figure 1 (above): Full spectrum reference call from Large-footed Myotis *Myotis macropus* caught in the Barmah-Millewa forest as displayed in Songscope (Wildlife Acoustics).

**– Reports, Viewpoints –**



Jo Burgar checks out a pipe bat house in one of the unmined area of her PhD field site, with the help of an ABS Conservation Grant. See further details of Jo's work on the following pages.  
Photo: Jessie Young.



Western Long-eared Bat, *Nyctophilus major*, from Alcoa of Australia Limited's Huntly minesite, northern jarrah forest, Western Australia. Photo from Jessie Young.

## **It's not all about location! Bats select artificial hollows based on design**

**Jo Burgar**

PhD Candidate

Murdoch University, Perth, WA.

[joburgar@gmail.com](mailto:joburgar@gmail.com)

Mature, hollow-bearing trees are being removed from production landscapes faster than natural hollow formation occurs. Artificial hollows are one tool that management agencies, and the public, use to combat hollow loss in an attempt to conserve hollow-dependent fauna. Unfortunately, monitoring the use of artificial hollows is often lacking or only occurs sporadically. In addition, few studies have looked at the influence of design on artificial hollow use. Thus, the aim of this project was to determine if Australian bats would use artificial hollows (i.e., bat boxes) as potential roosts and if bats preferred on type of box over another. Bat boxes constructed from wood were compared to those constructed from reclaimed pipe material. Internal temperatures were also recorded to determine the influence of temperature on bat box use. Funding from the Australasian Bat Society enabled the monitoring of bat boxes.

The study area was Alcoa of Australia Limited's Huntly minesite located in the northern jarrah (*Eucalyptus marginata*) forest of south-western Australia, approximately 100 km southeast of Perth. Forty-eight bat boxes were installed at four sites: two pairs of restored sites and adjacent unmined forest sites. At each site, six pipe bat boxes and six wood bat boxes were installed. Half of the bat boxes were fitted with temperature dataloggers to record internal temperatures, in addition to two dataloggers recording ambient temperatures. Bat box monitoring and associated temperature recording took place during the spring of 2012. Bat boxes were monitored five or six times each from 7/09/12 to 19/11/12.

Nineteen bats were recorded using the bat boxes; roosting was primarily solitary but seven bats were observed roosting communally. Three species of bat were identified: Gould's Long-eared Bat (*Nyctophilus gouldi*), Western Long-eared Bat (*N. major*) and Southern Forest Bat (*Vespadelus regulus*). Bats used bat boxes in restored and unmined forest in comparable numbers. Over three-quarters (79%) of the bats were recorded in wood bat boxes. Temperatures within bat boxes were significantly different from ambient temperatures and also differed between bat box design type. Wood bat boxes had more stable temperatures with lower maximum temperatures and higher minimum temperatures than pipe bat boxes.

The findings from this project suggest that the limitation to bats roosting in restored forest is the lack of potential roosts. Bat boxes may be one means of ameliorating hollow loss in production landscapes. However, wood boxes will likely require replacing four or five times before natural hollow formation occurs, thus wood bat boxes may not be an effective management solution. The low numbers of bats utilising the boxes may be reflective of the relatively short time since installation (between one and two years depending on the site). However, use by three bat species is encouraging, particularly as the bat boxes were installed only 3 m above the ground. Thus, monitoring of bat boxes should continue to determine if bat box use increases over time and if there is a continued preference for wood bat boxes.

This work would not have been possible without generous support from the Australasian Bat

Conservation Fund, Alcoa of Australia Limited, Murdoch University, and the Wildlife Preservation Society of Australia. In addition, I would like to thank Robert Bender for providing invaluable information learned from the Organ Pipes National Park bat box program, Joe Tonga for guidance on bat box design, John Gunnell for generously providing the wood bat boxes, Alan Elliott (Landcare) for construction of the pipe bat boxes, Vicki Stokes for gracious installation of the bat boxes and the assistance of many volunteers: Hilary Harrop-Archibald, Christine Allen, Tamera Minnick, Sarah Campbell, Ian Dapson, Michael Jay Williams, Sophie Bradley, Hannah Bannister, Bridget Johnson, Sarah La Rose and Sarah Way.

For more information, please email: [J.Burgar@murdoch.edu.au](mailto:J.Burgar@murdoch.edu.au)



Southern Forest Bat, *Vespadelus regulus*, from Alcoa of Australia Limited's Huntly minesite, northern jarrah forest, Western Australia. Photo from Jessie Young.



## **ABS Grant recipients**

**CONGRATULATIONS** to **Jo Burgar** (*Murdoch University*) and **Rachel Blakey** (*University of New South Wales*), recipients of the 2012 ABS Grants.

See page 13 for an update from Jo on her work and stay tuned for the next edition for an update from Rachel who has been kept busy trapping *Myotis* bats (page 11).

For further information on the ABS Grant, including submission deadlines, please see our website: <http://abs.ausbats.org.au>



## **Sydney Microbat Posters**

**Nancy Pallin**

[npallin@bigpond.net.au](mailto:npallin@bigpond.net.au)

Brad Law and Caragh Threlfall developed the first poster on microbats for the Sydney Region. The purpose of the poster was to increase people's awareness of the diversity of microbats in the Sydney area and was a follow on from Caragh's PhD and other related student work on conserving bats in the Sydney landscape. The decision was made that a colour poster, with up to date information on the species, would help transfer some of that scientific knowledge and spark greater interest in bats. NSW Primary Industries contributed to the design. Ku-ring-gai Bat Conservation Society committee provided many helpful comments on the information and design, Treasurer, Jocelyn Chenu, managed the income and payments and I distributed the posters. 786 of the 1000 printed have been distributed by end of February.

### Photographs

Michael Pennay contributed his photographs, pro bono, which is very much appreciated. More were sourced from Pavel German. Together their photos covered 15 of the 17 species which have been found in the Sydney region.

### Funding

We asked Councils for \$500 toward production in return for their logos on the poster and 50 of the

printed posters. Warringah, Ku-ring-gai, The Hills Shire and Parramatta City Councils contributed. Pittwater and City of Sydney contributed \$250 each for 50 posters after production had been completed. Posters are B2 size. Printing of 1,000 cost \$1023.

### Distribution

My distribution method was to send out a call on an environment officers email group via the very helpful Kirsty McIntyre, Environment officer at the NSW Local Government and Shires Association.

Requests for posters were received from the Tweed Valley in the north, far south coast and as far west as Mudgee. All but one of Sydney's Local Government Areas and most national parks have received some.

### Enthusiastic comments received:

'I'm very glad to see Caragh's microbat posters out at last!' Pete Ridgeway, Hawkesbury-Nepean Catchment Management Authority

'I'm really super interested in distributing your wonderful Microbat Poster to some key players who are rehabilitating these awesome mammals back into the wild daily. I am the Bat Coordinator for the North West Area of Sydney and am happy to pay for a couple of posters that might become available.' Adrian was given them free and also helped distribute to several Councils.

'Love the poster, have put one up over my desk.' Lindy

'Greetings from Tweed Shire Council; We love the microbat poster, congratulations to the development team. We would appreciate receiving copies for our Environmental Education Officer, Community Support Officer and Natural Resource Management Unit for use in public displays, community education workshops and NRM interpretation gigs. Virtually all the bats depicted occur in Tweed Shire and while I know we are just a little outside the Sydney Region we would love some and I can swap you for matching numbers of *Butterflies of SE Qld and NE NSW* posters if that will swing the deal!! (Many will also occur in Sydney)' John Turnbull

'We will plant a tree for Micro bats.' Stuart, Kiama Public School

'Congrats on posters. They are a great credit to all involved. Hornsby council could use them to educate the public about the species and in

biodiversity displays.’ Danielle at Hornsby Council.

‘These posters are magnificent.’ Bushcare Officer/Natural Open Space, Gosford City Council.

‘Firstly, congratulations on the posters, a great initiative! Strathfield Council would be most grateful to receive 3 to 5 please.’

‘What a fantastic poster!! We would love to have some to display at a couple of our local bushland reserves and for different community events, bush walks and wildlife talks. It would really help us educate the community about microbats as we have a few different species around the Parramatta area.’ Grace Keenan, City Assets & Environment Unit, Open Space & Natural Resources, Parramatta City Council.

The bat poster is fantastic! I have one up near my desk and it gets lots of comments – mostly

people saying they had no idea these types of bats were around here, so it’s a great education tool that we will give away at events’ Katie Oxenham, Manager Urban Ecology, Sydney City Council.

I have really enjoyed interacting with all these enthusiastic local government and national parks people who are so keen to get the environmental messages out to their communities. At first we did not have enough budget to cover all postage, so many helped by passing on posters to nearby Councils.

If you know of any people in the region who would like a microbat poster please put them in contact with me. We still have some available.

The poster is now also available on the ABS website.

**Meet Sydney's Microbats**

**1. Meet the Microbat**  
Microbats are small mammals with long, thin wings. They are the only mammals that can fly. They are found in all parts of the world, but are most common in tropical and subtropical regions. In Australia, there are 12 species of microbats. They are found in a variety of habitats, including forests, grasslands, and urban areas. They are important for the ecosystem as they eat insects and other small animals. They are also important for the economy as they eat agricultural pests.

**2. How do they fly?**  
Microbats have a unique way of flying. They use their wings to catch the air and then flap them to move forward. This is called 'echolocation'. They emit high-frequency sounds that bounce off objects and return to their ears. This allows them to navigate and catch their prey in the dark.

**3. What do they eat?**  
Microbats are insectivores. They eat a variety of insects, including mosquitoes, beetles, and flies. Some species also eat small mammals and birds. They are important for the ecosystem as they eat agricultural pests and help to control the population of insects.

**4. Where do they live?**  
Microbats live in a variety of habitats, including forests, grasslands, and urban areas. They are found in all parts of the world, but are most common in tropical and subtropical regions. In Australia, they are found in a variety of habitats, including forests, grasslands, and urban areas.

**5. How do they reproduce?**  
Microbats have a unique reproductive cycle. They give birth to a single pup, which is born blind and hairless. The pup stays in its mother's pouch for several weeks before it is born. The pup is born with its wings folded and is unable to fly. It stays in its mother's pouch for several weeks before it is born. The pup is born with its wings folded and is unable to fly. It stays in its mother's pouch for several weeks before it is born.

**6. Why are they important?**  
Microbats are important for the ecosystem as they eat insects and other small animals. They are also important for the economy as they eat agricultural pests. They are also important for the environment as they help to control the population of insects.

**7. How can we protect them?**  
Microbats are protected by law in Australia. It is illegal to kill, harm, or disturb them. They are also protected by the Environment Protection and Biodiversity Conservation Act 1999. We can protect them by protecting their habitats and by not disturbing them.

**8. What are some interesting facts?**  
Microbats are the only mammals that can fly. They are the only mammals that can fly.

**9. How can we learn more?**  
We can learn more about microbats by reading books, watching videos, and visiting museums. We can also learn more by participating in bat conservation programs and by supporting bat conservation organizations.

**10. How can we help?**  
We can help by protecting their habitats and by not disturbing them. We can also help by participating in bat conservation programs and by supporting bat conservation organizations.

**11. How can we get involved?**  
We can get involved by participating in bat conservation programs and by supporting bat conservation organizations. We can also get involved by volunteering for bat conservation projects and by donating to bat conservation organizations.

**12. How can we make a difference?**  
We can make a difference by protecting their habitats and by not disturbing them. We can also make a difference by participating in bat conservation programs and by supporting bat conservation organizations.

*Ed: Thanks to Bat Night co-ordinator Maree Kerr for sending this information through along with a wrap up and photos on the following pages. Hats off to all the presenters named below, you are a credit to the ABS!*



## **Australasian Bat Night Events 2013**

### **Australian Capital Territory**

**Urban Bats of Canberra Thursday 7 March Bat Talk.** The Field Naturalists Society of Canberra and Australasian Bat Society (Darren Le Roux and Michael Pennay).

**Flyout and Bat walk Commonwealth Park Sunday 10 March.** The Field Naturalists Society of Canberra (Michael Pennay and Maree Kerr).

**BatWatch ACT Bat monitoring program.** ACT government and Australasian Bat Society (Michael Pennay).

### **New South Wales**

**Gordon Bat Night Saturday 9 March 2013-displays, talk and children's batty activities and flyout walk.** Ku-ring-gai Council and the Ku-ring-gai Bat Conservation Society.

**Biodiversity Survey Field Trip Myall Lakes National Park & Smiths Lake Field Research Station Wednesday 13 til Sunday 17 March.** Macquarie University Post graduate Wildlife Management degree Field Trip for *GSE854 Biodiversity Survey and Habitat Assessment techniques unit.* (Adam Fawcett).

**Warriewood Wetlands Wetland Nightlife Friday 15 March. Spotlight walk.** Pittwater Council.

**Blue Mountains Bat Night Friday 22 March. Bat activities for children, DVDs, Bat cave, Bat Talks and Bat Walk,** Katoomba Falls Kiosk, Blue Mountains City Council, Blue Mountains Conservation Society, NSW National Parks, Australasian Bat Society (Marg Turton).

**Earth Hour Festival - Mad about Bat's Talk & Spotlighting Guided Walk. Coal Loader**

**Centre for Sustainability, Waverton Saturday 23 March.** North Sydney Council and Ku-ring-gai Bat Conservation Society (Tim Pearson).

**The Dark Night: Bat Walk and Talk, Parramatta Saturday 13 April 2013** Parramatta City Council, Parramatta Park Trust and Ku-ring-gai Bat Conservation Society Inc (Tim Pearson).

**"Going Batty" Evening Walk, Lane Cove. Tuesday 23 April** Lane Cove Council and Ku-ring-gai Bat Conservation Society (Tim Pearson).

### **Queensland**

**Bat Night - Under the Stars at Mt Ommaney, Westlake Friday 15th March *Presentation and walk to flyout*** WaCC (Wolston and Centenary Catchments Inc) CDEA (Centenary and District Environment Action Inc) and Bat Conservation and Rescue Queensland (Louise Saunders).

**Bat Conservation & Rescue Qld Rehabilitation Training Event. Sunday 17 March Wacol** (Louise Saunders).

**Batty Boat Cruises on the Brisbane River 24th March** Wildlife Queensland (Brisbane Branch).

**Kuranda Bat Walk Saturday 30 March** BatReach and the Far North Branch of the Wildlife Preservation Society of Queensland.

**Batty Habitat Boxes Working Bee and BBQ, Geebung, Qld. 7th and 21 April.** Bat Conservation Rescue Qld.

### **South Australia**

**The Wonderful World of Bats Adelaide Hills Tuesday 12 March. Bat Talk and presentation including meeting rescued bat Miss Lily.** Adelaide Bat Care (Mary Chrichton) and Adelaide Hills Natural Resource Centre (Val Hunt).

### **Tasmania**

**Bat Information Evening Bonorong Wildlife Sanctuary Thursday 21 March *Presentation and walk*** Bonorong Wildlife Sanctuary and Australasian Bat Society / University of Tasmania (Lisa Cawthen).

**Australasian Bat Night Bat Walk and Talk Mount Nelson, Tasmania 27th March 2013**

**Bat Talk and walk** The Sustainability Learning Centre (Lisa Cawthen).

**Bat talk and survey highlighting revegetation works along the foreshore.** Taroon Environmental Network (Lisa Cawthen).

### Victoria

**Field survey Cardinia Parklands, (Cardinia Reservoir), Officer Friday 8 March- Monday 11 March** Field Naturalist Society Victoria.

**Bat Night at Numurkah Saturday 9 March - Talk and walk** Broken Boosey Conservation Management Network. Robert Bender (Friends of the Organ Pipes National Park bat box project manager) and Tanja Straka (PhD Student from the Australian Research Centre for Urban Ecology).

**Boxes for Bats in the Broken Boosey Wunghnu. Sunday 10 March. Presentation and bat box building workshop** Broken Boosey Conservation Management Network. Robert Bender (Friends of the Organ Pipes National Park bat box project manager) and Tanja Straka (PhD Student from the Australian Research Centre for Urban Ecology).

**Bat Box Check Wilsons Reserve, Ivanhoe. Saturday 23 March** (Robert Bender).

**Annual harp trapping at Organ Pipes Organ Pipes National Park Saturday 30 March.** Friends of the Organ Pipes National Park (Robert Bender).

**Blind Creek Bat Night Saturday 6th April.** Bat talk and walk. Friends of Blind Creek/ Billabong and Gardens for Wildlife (Knox) (Ian Kitchen and Fay).

**Horsham's Secret Night Life. 20 April . Children's activities, Bat Cave, Batty dress ups. Guest Speakers. Fantastic Bat Facts. Bat spotting and detecting.** A Horsham Landcare Event - Supported by Wimmera CMA, LandCare Victoria, State Government of Victoria and the Australasian Bat Society (Wendy McInnes).

### Western Australia

**Microbat Habitat box building workshop, Wednesday 1 May.** Falcon City of Mandurah and NatSync (Joe Tonga).

### New Zealand

**Bat Fun Day Swanson Reserve, West Auckland Saturday 23 March** Bat face painting, bat kite making, bat story telling and other activities. Auckland Council.

**Project Echo: Bat Fun at Childrens Day Hamilton 23rd February.** Children's activities, bat face painting, bat kite making. Free Lunch Street Theatre group and Project Echo.

**Bat Night: Hamilton Gardens. Bat talk and walk. Friday 22nd March** Project Echo and Hamilton Junior Naturalist club.



## **Australasian Bat Night - 2013**

**Maree Kerr**

Australasian Bat Night Co-ordinator  
[cantcatchme@netspeed.com.au](mailto:cantcatchme@netspeed.com.au)

The second Australasian Bat night was held in seven states and territories of Australia and in Hamilton and Auckland, New Zealand, during March and April 2013 culminating in Mandurah WA on 1<sup>st</sup> May.

Australasian Bat night is based on European Bat Night, which has been running for 16 years, and is designed to raise awareness of bats and educate the community about bats throughout Australasia. In the first year of European Bat Night, two countries participated and a handful of activities were held. In 2012, 30 countries, including countries in Africa and South America, participated and over 200 activities were held with numbers attending reaching over 2000. Some events attracted 500 participants. Australasian Bat Night differs from European Bat Night in that it is held over a month (or months) rather than one week with a focus on one weekend.

Following a similar pattern, the inaugural Australasian Bat Night in 2012 comprised ten out of 14 planned events, in four states, NSW, ACT, Victoria and Queensland during March and into early April 2012 with very bad weather during March cancelling or postponing some events. The Blue Mountains Bat night had over 100 participants.

In 2013, thirty events were held in Tasmania (3), Queensland (6), NSW (7), ACT (3), Victoria, (7) South Australia (1) Western Australia (1) and New Zealand (3) with most events booked out, many attracting 50, 100 and even 200 participants (Blue Mountains). This year a number of bat events were held in regional areas as well as cities and interest was very high despite an atmosphere of adverse media attention from late February especially in Queensland.

Community groups, especially Bat groups, and government sectors, such as LandCare groups and local government, were invited to participate in Australasian Bat Night.

Bat Night 2013 was promoted on the ABS website and social media sites, through NRM and landcare networks, Local Government and Shires Association of NSW (LGSA) and other local councils, BushCare org, Sydney Nature Carers group, Wildlife Tourism Australia, Interpretation Australia, Urban Ecology Group of Ecological Society of Australia and Scouts Australia.

The interest among local councils and land care groups was very high - that more events were not held is because of limitations in supplying bat experts especially to regional towns. This is a challenge to be addressed for 2014.

As in 2012, activities included bat surveys as part of a field trip component in a Macquarie University Masters of Wildlife Management degree and conducted by the Victorian Field Naturalists, a Batty boat cruise on Brisbane River, visits to see flying-fox and microbat flyouts, and a range of bat talks and bat walks. Additionally this year a number of bat box workshops were held in Queensland, Tasmania, regional Victoria and Western Australia and a bat rescue and care training course in Brisbane. Following the example of Blue Mountains 2012 Bat Night, which could be likened more to a Bat festival than just a Bat Information evening, a range of children's activities were held in Bat Nights in Adelaide, Horsham (Vic), Geebung Qld, Hamilton New Zealand and of course the Blue Mountains which attracted over 200 people!

It is to be hoped that Australasian Bat Night will continue to grow in popularity and that we will begin to see a change in people's attitudes which will result in a more positive public image, better management of bat-human conflicts and better conservation outcomes.



Great images from Bat Night activities, Project Echo Children's Day 2 (above) and Parramatta Bat Night (below). Images thanks to Maree Kerr.



## Wilson Reserve bat box check

Robert Bender

[rbender@netlink.com.au](mailto:rbender@netlink.com.au)

### Bat box check 23 March

We had an overcast day but the rain held off very obligingly. Two new recruits joined us: Michael Bajer of Broadmeadows and Shannon Hobson of Calgary Canada, both of whom I'd met earlier in the week on a freshwater turtle project in Doncaster. The glider box was unoccupied but had a fresh eucalypt leaf nest, so it has been there recently.



There were two big groups of Gould's Wattled Bats, first in B16.



A White-striped Freetail Bat male in box 8 (as always) and the second big group of Gould's Wattled Bats was in box 2 (both photos over page). There were also a few ones and twos in four other boxes. It is still the same family of Gould's Wattled Bats we have been finding for six months, but they seem to be splitting into two families.



Stephen was helping Tanja Straka gather material for her study of bat diet by isolating male Gould's and the Freetail in Styrofoam cups to collect their scats. Tanja wants to compare the diets of country and city bats, and of males and females. The Gould's complied, the Freetail did not. Several boxes had resident Huntsmen – this was definitely the prettiest.

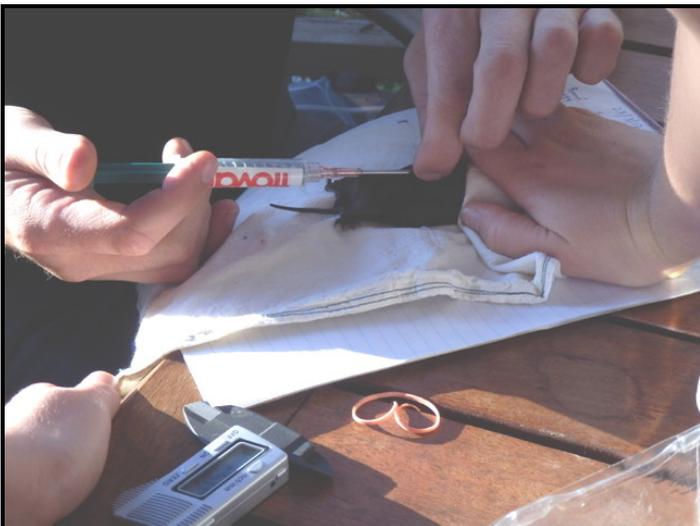


Near the end, at box 6, which is on a multi-stemmed old Red Gum, there were two Brushtail Possums snoozing alfresco in the hollow between the four trunks.



We collected 32 bats for the day then Stanley and Steve went off to Burke Rd and fetched another 17 bats from two tubes. Meanwhile Jessica arrived and started assessing individual bats. The first one was 84640, who has been captured now 16 times in 19 months, so we have a very complete record of her annual cycle of weights for almost two years, in the first of which she was not breeding and in the second year she was.

Only three new bats had arrived and needed to be banded. Steve Griffiths is keen to learn new things about Freetails and has a permit to insert PIT tags (microchips) into their backs between the shoulder blades. He has done quite a few at Gresswell Forest and this was his first in Wilson Reserve. It is a tiny pellet that does not interfere with the bat's flying behaviour and does not move around its body but stays between the shoulder blades.



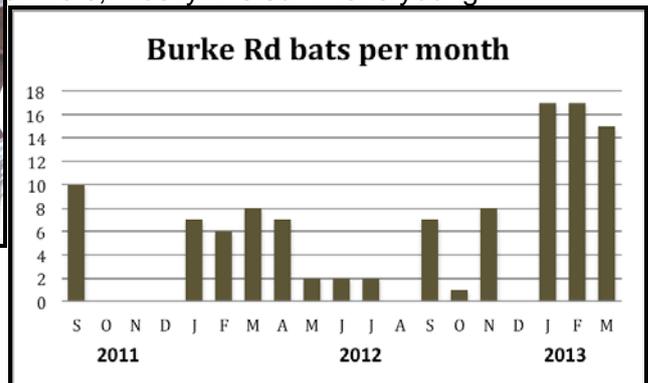
Box	Bats	Species	Adult	
			M	F
B02	13	Gould's	7	6
B16	12	Gould's	2	10
B10	2	Gould's	1	1
B14	2	Gould's	1	1
B06	1	Gould's	1	
B13	1	Gould's		1
B08	1	Freetail	1	
	32	<b>Total</b>	13	19
<b>Burke Rd</b>				
T04	15	Gould's	4	11
T12	2	Gould's	1	1
	17	<b>Total</b>	5	12
	49	<b>Overall</b>	18	31

**Burke Rd tubes**

To this month, we have banded 28 bats from Burke Rd., 22 females and 6 males, all Gould's Wattled Bats. The frequency of capture of these bats is as follows, out of 17 box inspections. The most frequent users of the tubes are all females.

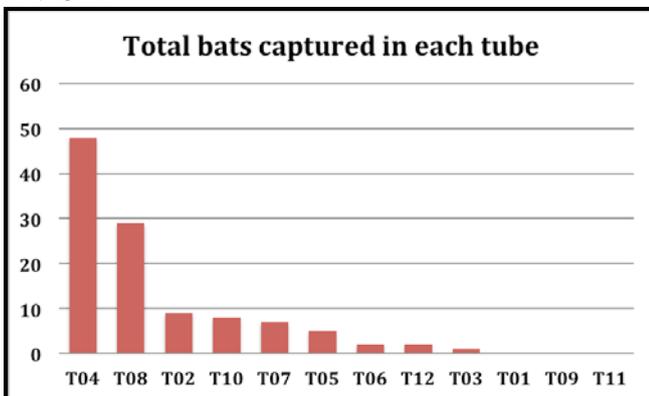
How often	Number of bats	M	F	Which band No.	When banded
11	1		1	91744	Jan 12
9	1		1	84650	Sep 11
8	2		2	91745 91833	Jan 12 Mar 12
7	3	1	2		
6	1		1		
4	1		1		
3	12	4	8		
1	7	1	6		
<b>Total</b>	<b>28</b>	<b>6</b>	<b>22</b>		

10 females were banded in Sep 2011, when we first started. Only two of those appeared this month, the others being their children (banded last summer) and grandchildren (banded this summer) with possibly a few immigrants. The one "resident male" has not been seen since Nov 2012 and the others are recent arrivals. The 19 bats captured once or thrice are all recent arrivals, mostly this summer's young.

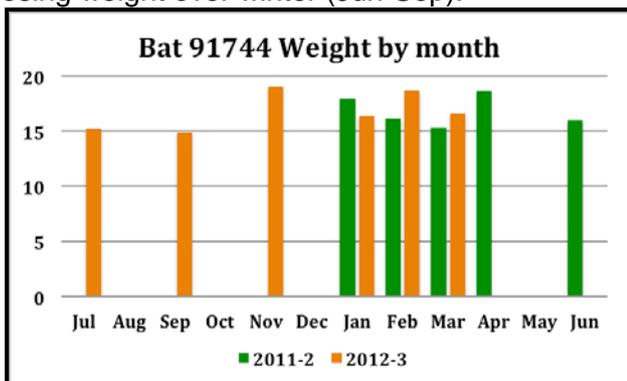


Stanley has recently installed two more tubes making 12 in all. There have been 109 captures from them of the 28 bats. Forty-eight of them were in tube 4 (nearly all in the last 3 months), by far the most-used tube, and another 29 in tube 8, all Sep 2012 or earlier. So the bats' tube preferences seem to be changing. Three tubes have never had bats in them and four more have been used once. We have a similar experience at Wilson Reserve, where some boxes are used far more than others. So the bats are telling us what they like and what they don't like. It probably has a lot to do with internal temperature and humidity and whether the tube smells like home – so a used tube is more likely to be reused than one that has never been used.

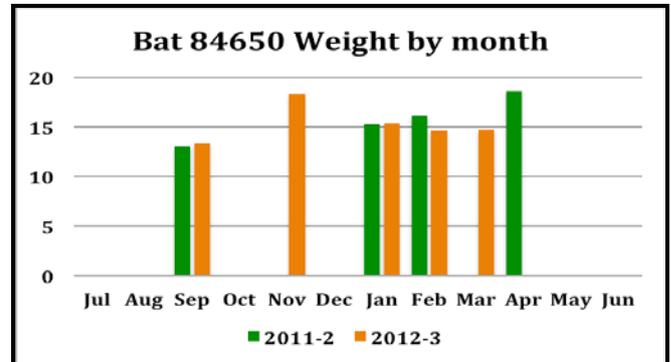
All the big groups of 10+ bats have been in tubes 4 and 8, the others mainly having solitary animals in them.



Bat 91744 has been captured 11 times since Jan 2012, and we now have weights for the same month over two years for Jan, Feb and Mar. She was judged to be post-lactating when first captured, so it is a study of the annual cycle of weight fluctuation through pregnancy, lactation and fattening up for winter. She was quite a bit heavier this summer but like the frequently captured bats from Wilson Reserve, put on a lot of weight in late pregnancy (Nov) and during lactation when the pups are about full-grown (Jan-Feb) then fattening up for winter (Apr) and losing weight over winter (Jun-Sep).



The other frequently captured bat is 84650, first banded in Sep 2011 and captured 9 times so far. We have two-year comparisons for 3 months – Sep, Jan and Feb., she was much the same weight both years, and apparently going through the same cycle as 91744. The data is a bit patchy, but still makes for most interesting comparisons year-to-year.



## Bats at Numurkah & Wunghnu

Robert Bender

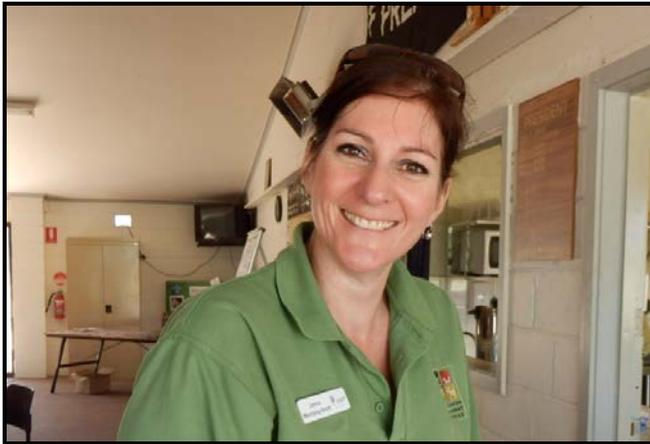
[rbender@netlink.com.au](mailto:rbender@netlink.com.au)

### March 2013

Janice Mentiplay-Smith (photo opposite), Conservation Management Network Coordinator of the Goulburn Broken Catchment Management Authority invited myself and Tanja Straka to talk to an assembly of Landcare and other members of her group on the 9<sup>th</sup> – 10<sup>th</sup> of March. First event was at a park by a lake with a small colony of Grey-headed Flying-foxes. About 35 people brought picnic baskets and Eskies and settled down to await the evening fly-out.



I spoke about bats, how flying-foxes differ from microbats in structure and way of life, Tanja spoke about echolocation and how it works and distributed a big bag of Anabat devices for people to listen to the microbats flying around the lake margin after sunset, while others watched the flyout of flying-foxes. There were quite a lot of intelligent questions about viruses, transfer of diseases to humans from other species, how far they can fly in a day, how long they live, etc.



Next morning we drove a few kilometers south to the village of Wunghnu where at the football clubrooms Janice assembled a somewhat different group – about half were the same people as the previous night, but a lot of others who had not been there. Thirty-six people had booked for the day. Janice had collected a wide range of leaflets and booklets on bats, birds and vegetation.

Again, lots of intelligent questions, followed by lunch then about half the people stayed around to assemble precut kits to make bat boxes. I had sent Janice the Bat Roost Box Kit from the Latrobe Field Naturalists Club and they had used that design to cut their timber, but used metal flywire on front and back plate instead of the more labour-intensive saw-grooves.



Janice and her carpenter had organized cordless drills, screws, pots of paint and rollers and about a dozen people worked hard to assemble and paint the boxes.

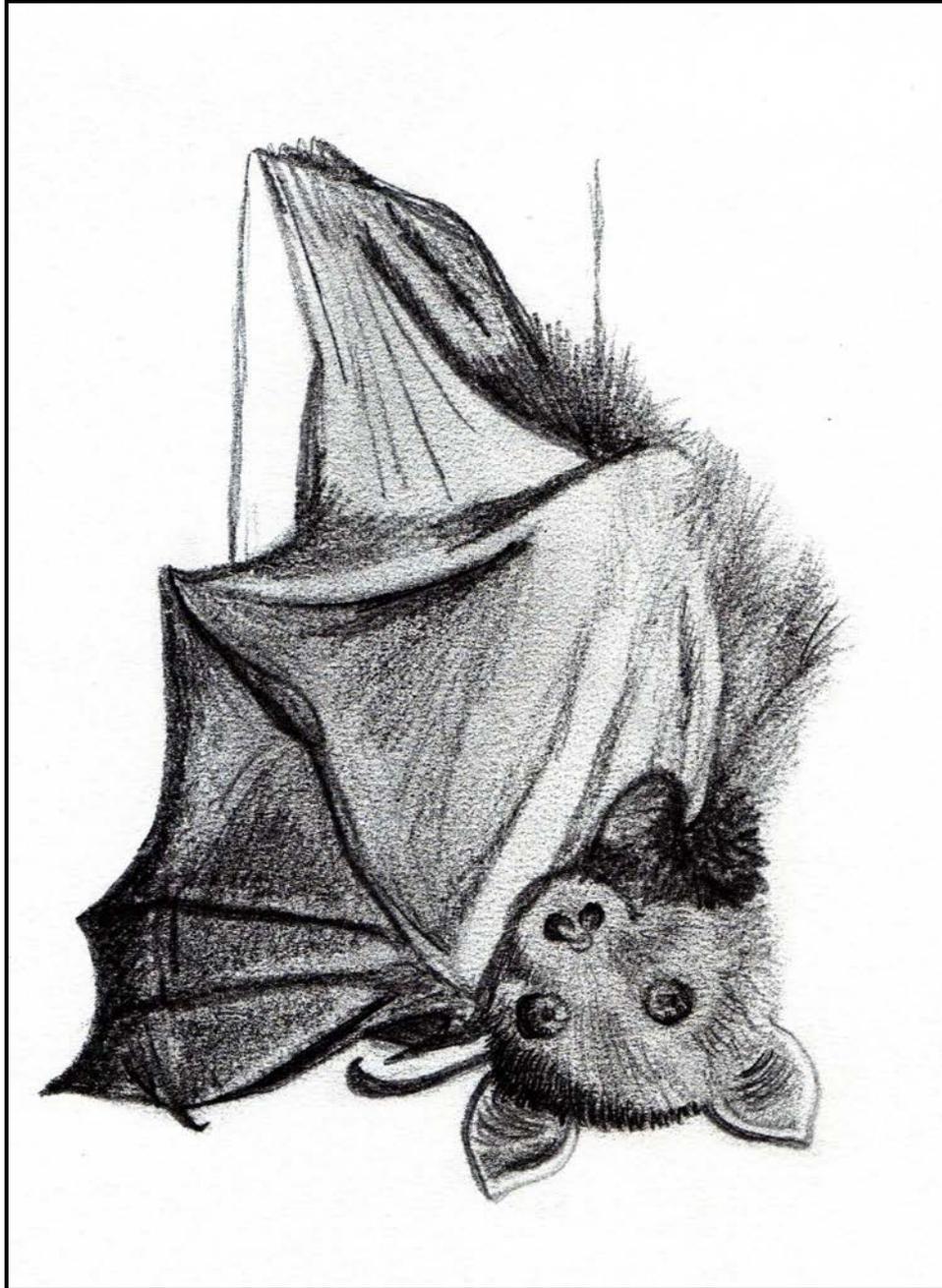


These were to be offered to anyone wanting to set up boxes in their yards – initial talk was of one per household but I told them bats need to move roost often so there should be at least two and preferably more.



Several people came over for more questions and a chat afterwards and wanted to tell me about their possum or bird boxes and show me photos of local wildlife – there are some fine observers and photographers out there. Nobody had known anything about bats beforehand, and all said it was a very good weekend's information session. I talked far too long as always but didn't seem to lose any of them and none agreed with me that it had gone on too long. Two of them said there are other events in the area (nearby towns within 50 km or so) later in the year and asked if we might return to talk to those groups. I had printed 10 copies of Sue Barnard's chapter on bat houses and my paper on seasonal and annual variation in box use and they all went.

**– Gadgets, Techniques and Photos –**



Drawing by Lisa Knight, sent in by Lib Rutenberg.

*Ed: Got an image you'd like to see published in the Newsletter? Please send it through to [editor@ausbats.org.au](mailto:editor@ausbats.org.au)*

**– News and Announcements / Classifieds –**

## **Collating flying-fox die-off event data**

**Justin A. Welbergen**

ARC Senior Research Fellow, Centre for Tropical Biodiversity & Climate Change, James Cook University, Townsville, QLD 4814

[j.a.welbergen@gmail.com](mailto:j.a.welbergen@gmail.com)

*Ed: Justin has received quite a lot of data already and he would encourage members to continue contacting him with relevant information (see below). Stay tuned for the next Newsletter when Justin will be able to provide a summary of his work. Below is a copy of Justin's message to the Discussion list, encouraging members to report information on flying-fox die-off events.*

I have been steadily receiving some really useful information on the impacts of extreme temperature events on flying-foxes. I am very grateful for all the data that I have received (or have been promised) so far; however, I know that there is still a lot of information out there that has not yet come my way.

The information that I have received includes:

- Data on the number and demographic composition of individuals present in affected camps;
- Tallies of any unfortunate individuals that died (preferably by species, sex and age class);
- Forearm and weight measurements of (a representative sample of) individuals that died;
- (Anecdotal) behavioural observations of individuals subjected to heat stress, not limited to camps that ended up experiencing die-offs.

If you have such information (from recent or past events), please do get in touch if you have not done so already - any contributions will be much appreciated!

Like I said in my previous postings, I think we all agree it is important that we understand these dreadful events better. A better understanding means that i) we will be in a better position to convince policy makers to change the plights of flying-foxes (and other wildlife), ii) we will be

better able to predict the locations and magnitudes of these events so that rescues can be mounted more efficiently, and iii) we will be better informed about which practical measures can be taken to minimise future impacts. Your contribution is essential for understanding these events better, and will be incorporated in a database that will be made publically available through the Australasian Bat Society.



## **Online bat box presentation**

**Roger Jones**

Mountfield, East Sussex

[serotine@live.co.uk](mailto:serotine@live.co.uk)

*Posted on behalf of Jaja Dekker*

Dear bat workers,

Please find a new presentation on bat boxes online: <http://www.vleermuiskasten.nl> and then under presentations.



## **Monitored bat boxes**

**Louise Saunders**

President; Bat Conservation & Rescue Qld Inc.

Website: [Bat Conservation & Rescue Qld Inc](http://www.batconservationandrescueqld.org.au)

[president@bats.org.au](mailto:president@bats.org.au)

*Posted on behalf of Brad Dunn*

Brad Dunn owns a software company in Melbourne that's interested in urban agriculture and encouraging microbats into the built environment.

This from Brad....

We're looking at building bat boxes with some monitoring equipment to help researchers. We've built similar things for bee-hives. We built a device to monitor the amount of honey and bees in a bee-hive to help urban bee-keepers. I think the idea was we could do the same with bats.

We'd need some funding I think to help us, (perhaps a grant) but the idea was to build bat boxes that could:

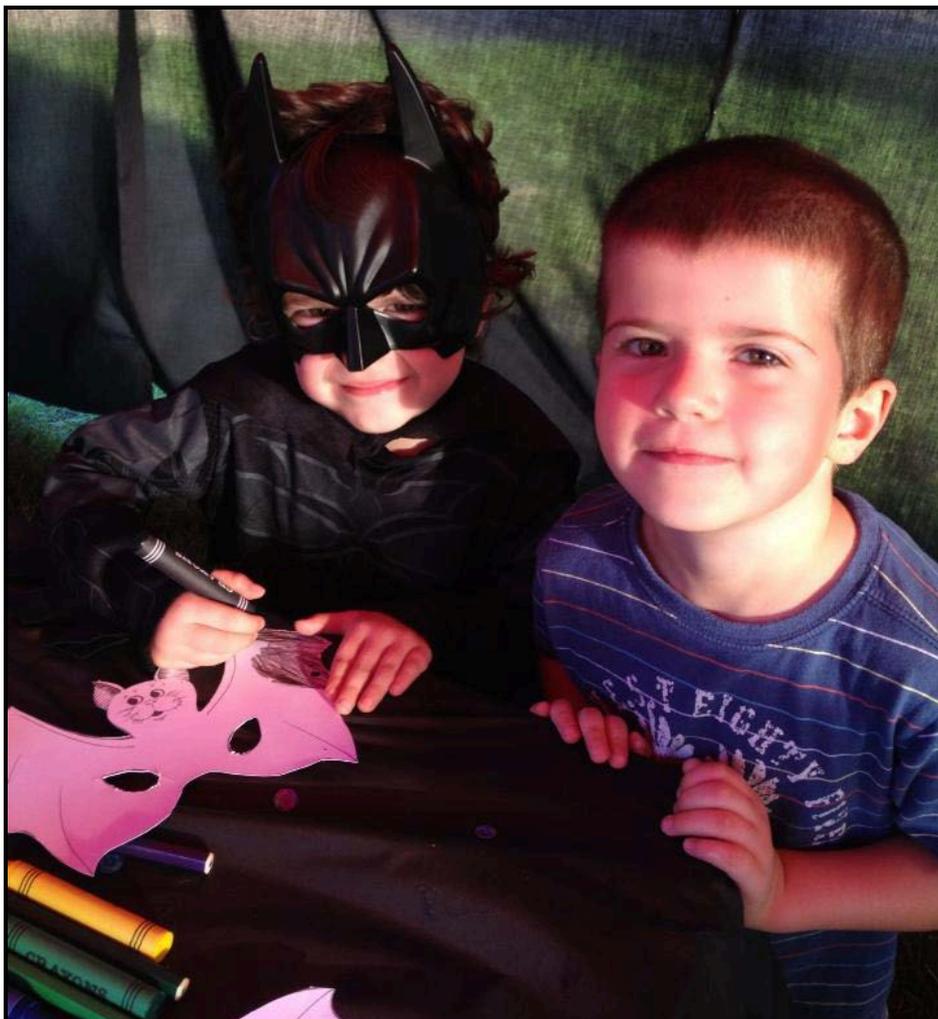
1. Record internal temperature.
2. Record weight of the box (so to measure bats coming in and out of the box) so recording activity.
3. Warn if the bats leave suddenly (showing predators or problems with the box).
4. Live video footage.
5. The boxes would come with QR codes so you can scan the box once you install it to add it to your list of boxes on the phone.
6. Create two mobile applications (iOS and Android) which would display the above data.

Are there any other ideas bat researchers would want built into it? The idea was that you would go to a website, purchase a bat-box from the site that would include the above technology.

Then we could create a web portal to allow researchers to view and analyse the data across the country.

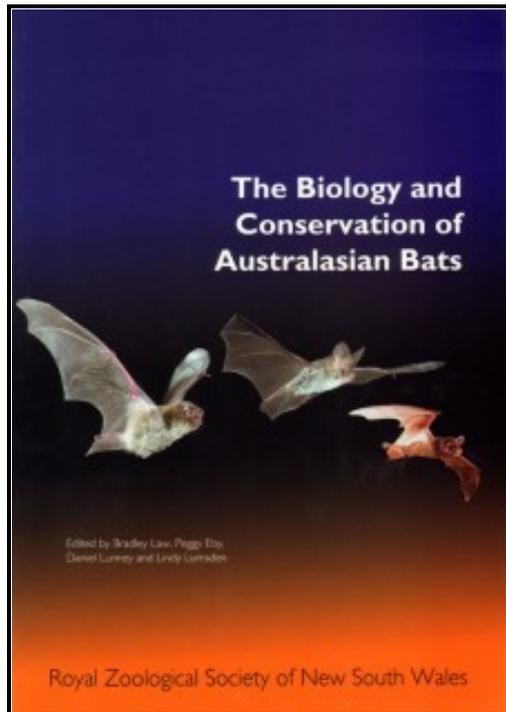
**If anyone is interested in Brad's idea or can assist with information please email him direct [brad.dunn@nazori.com](mailto:brad.dunn@nazori.com)**

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orp](http://twitter.com/nazori_corp)



It doesn't get much cuter than these two lads enjoying activities in the bat cave at Parramatta Bat Night. Photo: Marree Kerr.

**– Book reviews –**



**The Biology and Conservation of Australasian Bats**

**Eds. Bradley Law, Peggy Eby, Daniel Lunney and Lindy Lumsden.**

*RZS Publication*

**Reviewed by Darren Le Roux**

*Fenner School of Environment & Society,  
The Australian National University, ACT  
[darren.leroux@anu.edu.au](mailto:darren.leroux@anu.edu.au)*

The editors of this book have done a fantastic job of compiling a highly relevant, timely and important resource. The book is presented as a series of contributed articles that cover many different aspects of bat biology, sampling methods, conservation and management issues. The book begins with a section titled 'perspectives on bats in Australia' with some interesting reflections including a must-read piece by Dan Lunney and Chris Moon on traditional bat prejudices and today's bad bat press. I now have a new appreciation of bat education and Barcardi rum.

The articles presented throughout the book take the reader on a geographical journey throughout Australia from disused military tunnels in eastern Sydney to stylish bat boxes at Koala Beach and

Organ Pipes National Park. Beyond Australian shores, the bat fauna of Papua New Guinea, Norfolk Island and even Kazakhstan are among those showcased. There are also plenty of great colour photographs of awesome bats, field locations and 'flattering' poses of researchers from meetings past.

Echoing the words of Prof. Mark Brigham who wrote the foreword to the book: *The Biology and Conservation of Australasian Bats* provides a unique Aussie spin on a set of questions and challenges that are globally relevant. Some of the many topics covered include: flying-fox reproduction and artificial insemination; radar technology and surveying bats at wind farms; the design of urban bat flyways; and lessons learned from the extinction of the Christmas Island Pipistrelle.

This book will be a useful resource for bat researchers, managers, students, carers and enthusiasts throughout the region. Highly recommended!



**Landscape and urban design for bats and biodiversity**

**Gunell, K.**

*Bat Conservation Trust*

**Reviewed by Caragh Threlfall**

[caragh.threlfall@unimelb.edu.au](mailto:caragh.threlfall@unimelb.edu.au)

This book is intended for those working in urban landscape management, such as landscape architects, local Councils, planners and consultants. The book is divided into three sections about bat ecology: foraging, roosting and commuting. The information provided is designed to assist in the creation of bat friendly habitats in cities, from how to foster greater prey abundance, to how to connect bat commuting routes at a city scale. The book is written for a United Kingdom (UK) audience, describes UK bat species, and provides a planting guide for what species to plant to attract nocturnal insects and thus bats. However, they have tried to make this specific information transferrable, by listing the

flight patterns of certain species, and their foraging, roosting and commuting preferences, so that recommendations could be adopted for comparable bat species from other areas. Glancing through their plant species list, I recognise most species names as they are typical non-native plants often found in parks and gardens in cities in Australia. Despite their non-native origin, this list is still useful to Australian urban landscape managers as the benefit to bats of each plant is listed (for foraging or roosting), along with information about the requirements for plant growth and ideal planting locations (e.g. good for planting on green roofs, living walls or flower beds).

The first thing I noticed about this book is that there are two contents pages: one where the content is listed by design themes, and the other where the content is listed by bat requirements. What a great idea! This means, if you are an ecologist needing a reference to how to enhance foraging habitat you know which pages to go to. On the other hand, if you are an architect who needs to know about master planning, or urban green space design, you also know which pages to turn to.

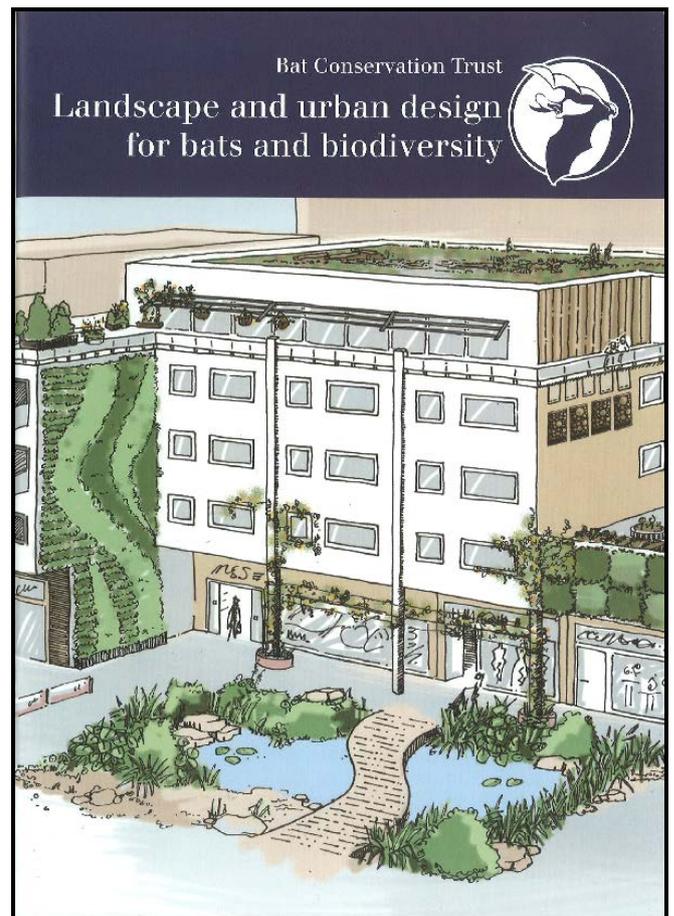
The first section is about bat foraging requirements, and how to design landscape features to promote foraging habitat. The book lists actions residents can take to improve bat foraging habitat in their yards. It also lists features that could be included during master planning for new estates that will promote insect activity, and attract bats. These include the provision of rain gardens, green roofs, urban wetlands, and other types of green infrastructure.

The second section is about roosting requirements. Again, it is very UK specific, but provides some great examples and information about tree and building roosts, and about the use of bat boxes that could be transferred into the Australian context.

The last section is about commuting habitat and landscape connectivity. I think this is one of the most useful parts of the book, because connectivity at a city scale is an issue that is currently poorly incorporated into urban planning. This book provides some great examples and recommendations for how urban landscape managers could improve this in the future. This section provides information about street trees, hedgerows, provision of linkages (green spaces, underpasses, overpasses), and recommendations for outdoor lighting.

I think one of the best messages this book gets across is that if you design your landscape to successfully attract bats, you will be creating a biodiverse landscape that is functional for many more taxa too. For landscape architects reading this book, they will come away with greater ecological knowledge about the urban food web, and that to attract mammals like bats, you need to provide habitat for invertebrates too. For ecologists reading this book, they will come away with some examples of what habitat enhancements have worked elsewhere, and some good ideas to recommend and implement in the Australian context.

As someone working in the urban green infrastructure field I would definitely recommend this book as a resource. Not strictly for its scientific information *per se*, rather, as a source of examples and ideas for habitat restoration in cities and towns, and as a communication tool to demonstrate to Councils, planners and the like some sound ecological design principles.



**– Recent Literature –**

Compiled by Lisa Cawthen (University of Tasmania, Hobart) from Web of Science  
(early October 2012 – April 2013)

*Ed: Thanks to Lisa again for compiling this list despite being busy publishing her own work as well (see Wind farm current literature).*

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### **Stop Press**

Two early on-line papers in Austral Ecology that we just couldn't resist adding at the last minute.

Contrasting habitat use of morphologically similar bat species with differing conservation status in south-eastern Australia

Anna McConville, Bradley Law, Trent Penman and Michael Mahony

Article first published online (AUSTRAL ECOLOGY): 29 APR 2013 | DOI: 10.1111/aec.12047

The urban matrix and artificial light restricts the nightly ranging behaviour of Gould's long-eared bat (*Nyctophilus gouldi*)

C. G. Threlfall, B. Law and P. B. Banks

Article first published online (AUSTRAL ECOLOGY): 29 APR 2013 | DOI: 10.1111/aec.12034



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# Echo Meter **EM3+** Handheld Bat Detector / Recorder



## **EM3+** The latest addition to the Wildlife Acoustics product family

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- Zoom in and out of current and recent bat passes while continuing to monitor and record.
- Record to 16-bit full spectrum WAV files for instant analysis in compatible software.
- While recording, listen to bat calls using Wildlife Acoustics' patent pending Real Time Expansion mode, which delivers the maximum amount of spectral and temporal information about the bat echolocation call in real-time.
- Monitor in Heterodyne mode, either using Auto-Het, programmed presets or manual tuning.
- Playback bat calls in Time Expansion mode at desired speed to hear details of the call.
- Categorize or tag a bat call in real-time in one of four categories to facilitate post processing.
- Select sample rates of 256kHz or 384kHz.
- Monitor bat calls with headphones or the built-in speaker.
- Fully self-contained, the EM3+ is easy to hold, lightweight and requires no additional hardware.
- Capture voice notes and bat passes in the same trigger for direct correlation.
- Map bat signal to location with optional GPS accessory.
- Record driven transects with optional external cable adaptor and microphone.



### Specifications:

#### Power:

Four AA rechargeable NIMH batteries and integrated battery charger included.

#### Storage:

One SDHC/XC card slot supporting up to 128GB.

#### Battery Lifespan:

Up to 12 hours on a single charge.

#### Sampling Rate:

Selectable, 256 or 384 kHz

#### Recording Bandwidth:

Up to 192kHz

#### Recording Technology:

16-Bit full spectrum or frequency division (zero cross).

#### Size & Weight:

145 x 90 x 33 mm, 340 grams including batteries.

### Accessories:



EM3+ GPS Option  
GPS Receiver/Antenna



EM3+ SMX-US  
External Microphone & Lead



EM3+ SMX-UT  
External Microphone & Lead



Ultrasonic directional horn  
for SMX-US/UT

For more information on the EM3+ or other Wildlife Acoustics products, navigate to a product sheet at [www.faunatech.com.au](http://www.faunatech.com.au)

Local stocks support and warranty by:  
**Faunatech Austbat Pty Ltd**  
Australian Distributors  
p: 03 5157 9001  
e: [goodgear@faunatech.com.au](mailto:goodgear@faunatech.com.au)  
w: [www.faunatech.com.au](http://www.faunatech.com.au)



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