

WomSAT – Wombat Survey and Analysis Tool



Bare-nosed wombat

Julie M. Old, Edward Narayan, Chandni Sengupta, Rowan Thorley, Blaire Vallin
School of Science and Health, Hawkesbury, Western Sydney University

The southern hairy-nosed wombat (*Lasiorhinus latifrons*) and bare-nosed wombat (*Vombatus ursinus*) both suffer from sarcoptic mange. Mange infestations are severely debilitating, and result in death of wombats through secondary infections. Although wombats can, at times, be treated using 'treatment flaps' or 'burrow flaps' or invasive techniques, these methods have limitations and are not always effective. In our preliminary study conducted in 2011, we found the following limitations prevented further treatment of wild wombats in the field using relatively non-invasive techniques (i.e. treatment or burrow flaps):

- A very large population of wombats in the study area, hence

huge numbers of active burrows requiring 'treatment flaps' to be assembled and maintained long-term, which was not feasible or practical.

- As wombats move around and share burrows, it was very difficult to ensure newly infested wombats (or potentially other infested animals) did not reinfest treated wombats, hence huge amounts of people-power were required to maintain burrow flaps indefinitely.
- Difficulty ensuring the affected animals were treated effectively and other animals were not inadvertently treated unnecessarily
- Potential risk of resistance developing in the mite population

- Difficulty treating wombats in areas that were inaccessible to people
- The scale of the problem

It was clear from our preliminary study that a nation-wide strategy was needed to increase public awareness of wombats, and to gain a greater understanding of how and why wombat mange occurs and affects wombats to the extent that it does. The development of WomSAT is the first stage in educating the general public about wombats and increasing public awareness of wombat sarcoptic mange.

WomSAT (WomSAT.org.au) is a citizen science-based website, with associated iPhone and Android apps. It allows anyone to log wombats (dead or alive,

and their level of mange), and wombat burrow sightings online, in real-time. The information gathered will be used primarily to investigate the ecology of wombats and mange; specifically it will document wombat distribution, and sarcoptic mange distribution and prevalence in wombats. It is hoped the information gathered will provide clues as to when and why wombats appear to be so badly affected by sarcoptic mange. Collection of long term data across the entire wombat range will aid in our understanding of the disease and the development of nation-wide management strategies.

WomSAT also documents other threats to wombats, such as road kill. Long-term data collected on wombat roadkill fatalities will provide data to identify 'hotspots'. The data can then be used to provide justification of where road mitigation strategies are required to reduce wombat deaths.

In addition to WomSAT, we have started to investigate the immune system of wombats. The first study involves investigating MHC gene diversity of wombats using non invasive techniques (DNA from scats). MHC gene diversity can be correlated to the level of immune competence, hence the more diverse the MHC genes in wombats, the better their ability to fight disease and infestations such as mange. We are hopeful this study will provide insights into why wombats are so badly affected by mange in some areas and others are not. The second study we are currently undertaking is aimed at assessing the levels of stress in wombats, again using non-invasive techniques (scats). Stress is likely a contributing factor to the severity of wombat mange, but it is yet to be assessed. Both these studies will increase knowledge of the wombat immune system and aid in future wombat conservation efforts.

Everyone can help!

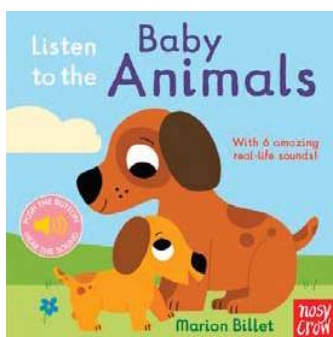
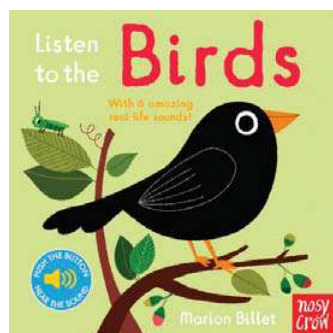
Please support #WombatWednesday on Twitter and Facebook, and log a sighting of a wombat at least every Wednesday using either of the WomSAT apps or directly using the website (womsat.org.au) if you see wombats or their burrows. The more information we gather as a community, the greater the chance we have to conserve wombats for future generations. We are also on the search for fresh wombat scats for the immunology projects we are undertaking. If you can help, please drop us an email.

We would like to thank all the #WombatWarriors and everyone for their support!

Website: WomSAT.org.au

Email: WomSAT@outlook.com

Book Reviews



Listen to the Birds, Listen to the Baby Animals

Adults and children alike will be enchanted by these charming board books, which are distinguished by the exceptional quality of the sounds that bring every picture to life. Aimed at the very young, the books have a button on every spread which triggers one of six different baby animal sounds.

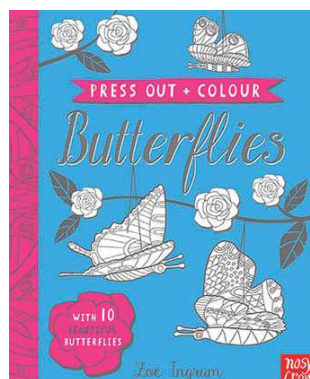
Publisher: Allen & Unwin
RRP: \$18.99



Gift Boxes to Colour and Make: Birds and Blossoms

Each page of this brilliant book is actually a box! Simply tear along the dotted lines, fold along the scored lines and you've created a gift box perfect for storing all kinds of goodies. The boxes are beautifully decorated with black and white designs of birds and blossoms, which you can customise by colouring in with pens or pencils. Get creative with your colour scheme or use traditional colours from nature -- either way, this fantastic book of easy-to-assemble boxes will make sure your gifts are truly special this springtime.

Publisher: Allen & Unwin
RRP: \$19.99



Butterflies - Press out, colour

Make your own beautiful, 3D butterfly decorations with this board book of press-out ornaments. Each press-out butterfly is intricately decorated with foil and perfect for all ages to colour in. Featuring ten unique butterfly species, each with a contrasting pattern on the undersides of their wings, the press-out pieces can be easily slotted together to create cheerful hanging ornaments.

Publisher: Allen & Unwin
RRP: \$19.99