



Upper Shoalhaven  
Landcare  
Council

# The Landcare Perspective

The Quarterly Newsletter of the Upper Shoalhaven and Upper Deua Catchments

## DATE

Summer 2016

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## Butterflies of the Upper Shoalhaven

Kim Pullen

The insect fauna of the Upper Shoalhaven is that which is characteristic of the cold, open grassy valleys and wooded ridges of the Southern Tablelands of NSW, together with some coastal elements penetrating along the eastern escarpment. This short treatment will cover the southern part of the catchment centered on Braidwood, home to about 70 butterfly species. It will describe some of the more commonly seen species, as well as some other notable but less common ones.

In the Upper Shoalhaven there are five families of butterflies: **Skippers** (Hesperiidae) with about 27 species; **Swallowtails** (Papilionidae) 2 Spp; **Whites and Yellows** (Pieridae) 6 Spp; **Nymphs** (Nymphalidae) 13 Spp; and **Blues and Coppers** (Lycaenidae) about 20 species.

The **Skippers** are small butterflies with a stout body and relatively short wings. Most

are dull coloured, with browns and yellows predominating. They have a rapid wingbeat and a quick, moth-like flight, often near ground level. Caterpillars of the two species of 'Flats' feed on a range of broad-leaved plants, but those of the remainder, comprising Ochres (*Trapezites*), Grass-skippers (*Toxidia*), Shield-skippers (*Signeta*), Sedge-skippers (*Hesperilla*, *Oreisplanus*) and Grass-darts (*Ocybadistes*, *Suniana*, *Taractrocera*), among others, have monocotyledonous host plants, mainly grasses and sedges.

Most of the 17 Australian **Swallowtail** species are tropical, and only the Macleay's (see image left) and Orchard Swallowtails reach our region. The former (*Graphium macleayanum*) is an exquisite green-marked butterfly often common in mountain forests, where it flies rapidly in the canopy, stopping briefly to feed at flowers: it's caterpillars eat the leaves of peppers (*Tasmannia*) and Southern Sassafras (*Atherosperma*).

*Continued page 3....*



*Trapezites phigalioides*  
Source: OEH: Shane Ruming



Imperial Jezebel *Delias harpalycy* Photographer: Russel Best



*Graphium macleayanum*  
macleayanus Source: Photograph: B. D'Abbrera Website: [museumvictoria.com.au](http://museumvictoria.com.au)



Chairperson: Martin Royds, Secretary: Sarah Merriman

Treasurer & Vice Chair: Phil Shoemark, Public Officer: Richard Stone

Landcare Coordinator: Simone Horne

Biodiversity Program Manager: Felicity Sturgiss

Summer 2016 Landcare Perspective editor & commissioning editor: Felicity Sturgiss

### Update from the Chairperson - *Martin Royds*

Welcome to the Summer edition of the Landcare Perspective. 2016 is starting off just great. Beautiful rain brought great relief to pastures after a challenging spring. The importance of trees for shade and good biodiverse ground cover is highlighted when we have these very hot days, followed by erratic weather. On the management front Richard Stone has done a fantastic job as the Landcare Support Officer in 2015 keeping all the landcare groups and projects ticking over, getting the first Green Army up and running and showing his skill and tenacity at getting all the accounts under MYOB working smoothly for the first time ever. He is now handing the reins over to Simone Horne who will be hitting the ground running on the 1st of Feb. Local Land Services now has a Landcare Program Manager: Kate Andrews. It is great news that LLS are planning to continue working with us to all our mutual benefit. May your programs all grow well this year and bear nutritious fruit! MR.



### Update from the Biodiversity Program Manager - *Felicity Sturgiss*

Welcome to the Biodiversity Special Issue of the Landcare Perspective for Summer 2016. As we are moving into the last six months of the Biodiversity for Carbon and Corridors program I have been given the opportunity to pull together this edition of our newsletter. While our page numbers are more limited these days, I have aimed to fill them with biodiversity focussed articles exploring our local species and how to care for them.

In the last four years we have been able to work intensively on restoring habitat and biodiversity to a wide range of areas, manage the impacts of invasive flora and fauna on at least 2000ha as well as share information far and wide about what we know biodiversity is, and what we don't know and need to nut out. We have also had the opportunity to revegetate over 35ha with a hugely diverse set of plant species, in the hope that these areas will be resilient to changes in climate, management and anything else that gets thrown at them. This work includes vertebrate pest and invasive species control across all areas and their surrounds. As well as these onground works, the program has offered considerable opportunity to develop our understanding of local biodiversity. Through our Biodiversity Fair, series of revegetation field days, habitat restoration field days, species watch days and nights, the development of local species lists, a biodiversity information website, a baseline aquatic biodiversity survey, numerous bird and frog surveys and numerous school visits we have worked hard to increase our understanding of local species and the interactions of all species so that land managers can make the best possible decisions on the land aiming for the mutual benefit of all. May you enjoy this issue and may our neck of the 'woods continue to be home to the most diverse range of passionate and insightful human people I have ever had the pleasure to come across. FJS

### Update from the Landcare Support Officer - *Simone Horne*

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**Thank you and farewell** The Upper Shoalhaven Landcare Council would like to say a heart-felt thank you to:

Richard Stone – our outgoing Landcare Support Officer;  
Colin McLean – an outgoing committee member; and  
Ken Moran – also an outgoing committee member.

Without their contributions the Upper Shoalhaven Landcare Council would not be able to carry out the valuable work we do. We are sure to see them all throughout 2016 & wish them all the best for the next challenges they take on.

**Introductions:** Please allow me to introduce myself as your new Landcare Support Officer. I will take up my position from 1 February. I have had a career in environmental and natural resource management, am an experienced administrator and am looking forward to meeting all our landcarers and helping groups to achieve their goals!

## Green Army Team 2 to start in Autumn 2016

Applications for the Green Army to assist Landholders in sustainability projects are **NOW OPEN**

Following on from the success of our first Green Army team, a second team is planned to start this autumn. Could any landholders who are seeking Green Army team assistance with projects please complete and submit a Works Request Form to Simone Horn as soon as possible. Please note that it is important to provide answers to all parts of the form and to provide clear maps. To obtain a Works Request Form, please call the office on 4842 2594, come in to 42 Ryrie Street, or email us at [upper.shoalhaven@gmail.com](mailto:upper.shoalhaven@gmail.com)

### GREEN ARMY - ROUND ONE SUCCESSES

The USLC green army team (G.A.T.) have been of considerable assistance in the spring planting season for the Biodiversity program. They have used their own broad existing knowledge and hard work ethics, their interest in a sustainable future and in plants, animals & the wellbeing of farmers, to help us fence, plant, water & tend to thousands of new trees & flowering shrubs in the district. They have also been open & willing to learn a great deal from their hosts, the landcarers that are lucky enough to be on the receiving of the GAT helping hands. Every one of them would be an asset to any new employer after their GAT experiences. Participants are: Nicole Polley, Chloe Stuart, Tom Alder, Tiarnah Hodgkinson & Dylan Crisp. Team leader: Alex James.



### Butterflies continued....

The Orchard Swallowtail (*Papilio aegaeus*) is the giant black and white butterfly that lazily floats through urban gardens. Males and females are quite differently patterned, and the caterpillars eat rutaceous plants such as citrus.

The **Whites and Yellows** include the ubiquitous Cabbage White (*Pieris rapae*), a pest of brassicas; it was accidentally introduced into Australia about 85 years ago. Of the five native species of Whites in the region, all but one are Jezabels (*Delias*), whose black and white wings have bright red and yellow markings underneath. Their caterpillars eat mistletoes or Cherry Ballart (*Exocarpos*).

Among the **Nymphs** are 10 species of Browns (*Argynnia*, *Heteronympha*) and Xenicas (*Geitoneura*,



Varied Swordgrass Brown (*Tisiphone abeona*) Photographer: M. & P. Coupar ©  
Source: Meuseum of Victoria Website.

*Oreixenica*), small to medium-sized butterflies patterned in yellow, brown and black, usually with 'eyespots' on the wings. They frequent the forest undergrowth and fly slowly until disturbed; their caterpillars feed on grasses and sedges. The

largest butterfly in this group is the very pretty Varied Swordgrass Brown (*Tisiphone abeona*), carrying a vivid orange flash on each forewing. The three other local Nymphs include the Meadow Argus (*Junonia villida*) and Painted Lady (*Vanessa kershawi*), ubiquitous in open areas where they fly close to the ground and often rest there. Their caterpillars eat a range of broad-leaved herbaceous plants, including many introduced ones. The last of this group, the Yellow Admiral (*Vanessa itea*), is a fast flier that often perches on a leaf or tree trunk in the sun; its caterpillar feeds on nettles.



Broad-Margined Azure *Ogyris olane* Source: The wonderful website:  
[www.butterflygardening.net.au/](http://www.butterflygardening.net.au/)

*Butterflies continued page 11.....*



## Australian Native Bees

By Rebecca Klomp

Like so many other natural backyard wonders, Australian native bees species can often go about their important business without drawing any attention, leaving them undiscovered to many. Australia is home to 1,600 species of diverse and beautiful native bees. Having evolved with the wildflowers of Australia for thousands of years they come in all shapes, sizes and colours.

Our exquisite bees drive biodiversity by pollination, facilitating seed production and fruit development.

**Australia is home to 1,600 species of diverse and beautiful native bees.**

Each bee species individually contributes to the preservation of indigenous biodiversity of Australia and plays an important role in today's horticultural and agricultural industries.

Our region is mainly home to solitary bee species, this means that the bees live individually rather than in a colony, each female bee mates and then builds a solitary nest on her own (R.Owen, 2015). Solitary bees gather pollen to provision their nests with food for their brood, they do not have queens, workers or drones. Solitary bees are usually oligoleges, only gathering pollen from one or a few species or genera of closely related plants.

Australia has ten species of social native bees (genera *tetragonula*) however these species tend to have a limited distribution. The temperature threshold for flight activity in *T.carbonaria* is  $> 18^{\circ}\text{C}$  (Heard and Hendrikz, 1993), and for *A.australis*  $> 20^{\circ}\text{C}$  (P.Vit et al. 2013), which means foraging periods are substantially reduced for colonies in the most southerly range of their distribution.

Some of our native bees such as Blue Banded bees, Carpenter bees and Teddy Bear bees are capable of buzz pollination. The process of buzz pollination involves an effective technique to release pollen which is held firmly by the anthers of some flowering species. This is done by the bee's ability to grasp the flower with its legs and vigorously vibrate their thoracic muscles dislodging the pollen (R.Owen, 2015). There are many plants that are pollinated by buzz pollination including: species of the Solanaceae family, *Hibbertia* spp, *Dianella* spp, blueberries and cranberries.

Some bee species found in our region include the following:

### Blue Banded Bees

Some species include: *Amegilla pulchra* & *Amegilla asserta* size: 1.2cm



*Amegilla pulchra* roosting. Source: [www.ala.org.au](http://www.ala.org.au)

Blue banded bees stand out in the garden due to the vibrant blue bands that run across its black abdomen and its distinct darting and hovering flight pattern. Males can be distinguished from females by the number of blue bands that they

wear. Males display five bands and females display four.

Blue Banded bees preform buzz pollination and are becoming an important component of grow houses and extremely valuable to farmers. The solitary female burrows into clay soil, soft stone, mudbrick or soft mortar to build their nest. Many blue banded bees may build their nest burrow close to another creating a village of nests. Males can often be seen clinging to plant stems in groups during the evening. Blue Banded bees have a fondness for purple and blue flowers and they can often be seen pollinating the following species; *Peltophorum pteracarpum*, *Westingia fruticosa*, *Hibbertia dentata*, *Lambertia formosia*, basil, rosemary, sage, and lavender.



Blue banded bee pollinating a tomato flower. Photo by: John Tann. Source: [www.aussiebee.com.au](http://www.aussiebee.com.au)



Vibrant colours of Blue Banded bees. Source: [www.bellingbees.org.au](http://www.bellingbees.org.au)

**Teddy Bear Bees**

Such as: *Amegilla bombiformis*  
 Size: most species are 7-15mm in length

These rotund bees are covered in thick golden brown/orange fur, resembling a bumblebee shape. The female Teddy Bear bee builds shallow 10cm nest burrows in soft soil, creek banks, in weep holes of retaining walls, in gaps of sleeper surrounding garden beds and sometimes



*Amegilla bombiformis*. Source: Atlas of living Australia:www.ala.org.au

flatten forelegs adorned with fine hairs used in part of the bee's mating ritual. Leafcutters are important



© 2011 Corinne Jordan-Ivers

Leaf Cutter bee nest [www.aussiebees.com.au](http://www.aussiebees.com.au) image by Corinne Jordan-Ivers 2011

pollinators of crops like clover, alfalfa, fruits and vegetables particularly onions and carrots. Favourite flowers loved by leafcutter bees include; Rose, honeysuckle, native ginger *Alpinia caerulea*, wisteria, peas, lavender and *Brachyscome* spp.

**Resin Bees**

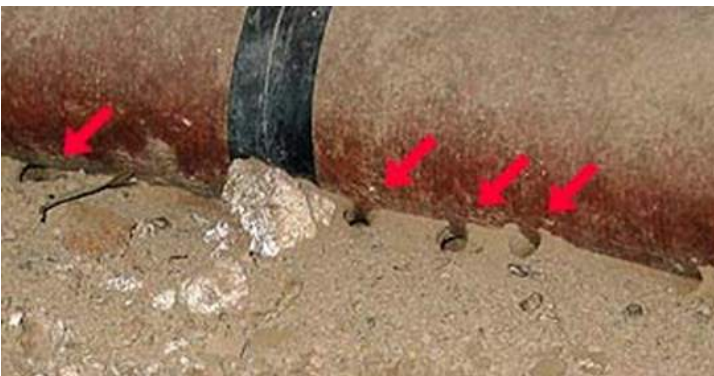
Some species include: *Megachile punctate*, *Megachile aurifrons*, *Megachile Lucidivetris* & *Megachile deanii*, *Megachile mystaceana*. Size: 10-13mm in length.

Resin bees chose to nest in holes constructed by wood-boring insects, gaps in timber and stone work and artificial nests. To create a habitat for resin bees in your backyard, drill holes in hardwood blocks and insert paper liners or straws for easy cleaning to provide a clean nest space for the following season.

As the name suggests, resin bees collect resins and gums to build their nests. The resin is rolled into a ball with their front legs and used to seal gaps and make partitions between their brood cells. The female resin bee makes a species paste known as bee bread by mixing pollen and honey into a paste on which she lays she egg as food for the developing larvae (R.Owen, 2015). Resin bees hibernate through the winter and can be seen in spring hovering around *Crotalaria* and *Peltophorum* species.



*Megachile aurifrons*. Source: [www.ala.org.au](http://www.ala.org.au)



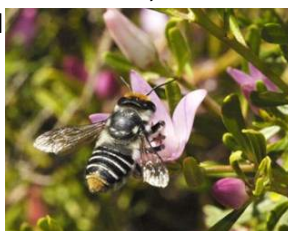
Teddy bear bees burrow. Source: [www.aussiebee.com.au](http://www.aussiebee.com.au)

underneath houses. Although they are solitary bees the females may nest close together (R.Owen, 2015). They place a ball of pollen and nectar in the cell then lay the egg on top, before sealing the cell. Teddy Bear bees perform buzz pollination and can be seen hovering around *Abelia x Grandiflora*, *Dianella caerulea*, *Hibbertia dentata*, *Senna clavigera*, *Grevillea* spp. Tomato and *Callistemon* spp.

**Leafcutter Bees**

Some species include: *Megachile maculariformis* & *Megachile serricaud*. Size: ranges from 6mm to 15mm.

Most Leafcutter bees are black and white with orange-gold stripes of hair on their abdomen. People often first notice Leafcutter bees when they observe a row of neat circular cuts on the leaves of garden plants. The female Leafcutter uses the discs of leaf as materials to construct her delicate nest. Many species of the male leafcutter bees have broadened



*Megachile maculariformis*. Source Robert Lutrell <http://soer.justice.tas.gov.au/2009/image/973/index.php>

*Bees continued on page 7 .....*





## Braidwood Bird Surveys 2015

### Canberra Ornithology Group

Braidwood Rural Landcare group has been hosting visits from Canberra Ornithological Society (COG) for the last 6 years. Sue Lashko from COG has produced this report.

Six members of Canberra Ornithologists Group (COG) surveyed six Braidwood properties on Sunday 8 November. This was the third biennial survey and we have now recorded 98 different species. Species seen this year but not previously recorded were **Pink-eared Ducks** and **Little Grassbird** on Jillamatong; **Collared Sparrowhawk**, **Jacky Winter**, **Little Eagle** and the stunning, tiny **Azure Kingfisher** on Durham Hall; and **Fan-tailed Cuckoo** and **Grey Currawong** on Meroo Flat.

On Jillamatong, in willows beside a dam, we counted at least 17 **Little Pied** and 6 **Little Black Cormorant** nests, some with adults sitting on eggs and others with up to 4 young per nest, as well as two **Australian White Ibis** nests with chicks. The dam itself had a wonderful array of ducks, with **Pink-eared**, **Australian Wood** and **Pacific Black Ducks**, **Grey** and **Chestnut Teal**, and **Hardhead**.



Pink-eared duckies *Malacorhynchus membranaceus* Photo: Geoffrey Dabb COG

Many species of small birds are largely absent from remnant vegetation with no shrub layer, but it was pleasing to see good numbers of them in revegetation, including **Yellow Thornbills** busily nest building in Jillamatong. This species particularly favours acacias and casuarinas for feeding, although the nest was in a young eucalypt.

Other small birds live in reeds along rivers and dams, with **Australian Reed-Warblers** being the most obvious with their constant chattering, but at Jillamatong we also recorded a **Little Grassbird** from its mournful 'p-pee-pee' call.

As always, the gardens around the houses were favoured by species such as **Rufous Whistler**, **Grey Fantail**, **Eastern Spinebill**, **Superb Fairy-wren** and **Satin Bowerbird**, with bowers seen at Clarevale and Meroo Flat. Interestingly, the bowerbirds nest up to 500 metres away from the bower with the female doing all the nest building, incubation and feeding of chicks.

Our thanks to the property owners for allowing access and for providing a delicious lunch at Durham Hall after the surveys.

### Biodiversity Day @ St Bedes with Year 3 and Ms Hillsdon

Year 3 spent a whole day with me in late November last year, talking all about biodiversity. In the morning we toured Bicentennial park and Monkittee Creek looking, listening, collecting samples & asking mountains of questions. In the afternoon, Year 3 set about producing some pretty imaginative pictures, especially after seeing their samples through the light microscope. The highlight was, of course, looking at each others hair and follicles through the microscope. Pretty cool day, thanks Year 3.



Azure Kingfisher *Alcedo azurea*. Photo courtesy of Geoffrey Dabb COG

Bees Continued.....

**Masked Bees**

(Amphylaeus, Hylaeus & Meroglossa) Some species include: *Amphylaeus morosus* & *Hylaeus nubilosus* *Hylaeus elegans*, *Hylaeus Delicatus*. Size: 3mm-11mm in length.

Masked bees acquired their name from their characteristic yellow or white markings that adorn their black faces. *Hylaeus bicolorcellus* is known for its unique specially adapted jaws that chew into flower buds before they open, thus, stealing the pollen leaving the flower with no opportunity to pollinate. *Hylaeus* are short tongued but their small size permits them to access deep-throated



*Hylaeus Delicatus* image by Linda Rogan source: [www.ala.org.au](http://www.ala.org.au)



Masked bee emerging in the spring from a bamboo stake image by Rob Crucikshank source: [resonatingbodies.wordpress.com](http://resonatingbodies.wordpress.com)

flowers. Due to their lack of strong mandibles and other adaptations for digging, most species of masked bees nest in pre-existing tunnels in plat stems and twigs. Lining their burrows in a cellophane-like material they protect their larvae. Masked bees lack exterior structures to transport pollen; consequently they store pollen and nectar internally in a honey stomach. This swollen area of the oesophagus is located just ahead of the "regular" stomach. Pollen and nectar accumulated here can be simply regurgitated once the bee returns to its nest. Masked bees favourite flowers include: Common fringe myrtle *Calytrix tetragona*, blackberry rubus spp. Daisy Brachyscome spp, Eucalypt spp., banksia spp., grevillea spp., callistemon spp.

**Green Carpenter Bee**

*Xylacopa* species size: up to 17mm in length This is the largest bee species in southern Australia,

displaying an eye catching metallic blue green body.



Female *Xylacopa areatus* source [www.bowerbird.org.au](http://www.bowerbird.org.au)

Females have dark legs and wings with white hairs on the face near the tip of the abdomen. Males are more metallic green than blue in colour with bright yellow markings on the face between the eyes. Carpenter bees have

earnt their name by their habit of burrowing into wood. These bees bore into wood creating separate chambers to lay eggs and protect their larvae as they develop. You might find these bees nesting in dead, dry



Carpenter bee larvae inside chamber. Source: [www.brisbaneinsects.com](http://www.brisbaneinsects.com)

flowering stalks of the grass tree (Xanthorrhoea), dead wood of banksia and melaleuca and dead twigs of casuarina species. The species can be seen visiting

flowering Fabaceae species, Leptospermum, Myrtaceae and Epacridaceae species. This bee is often heard by its loud low-pitched buzz whilst hovering around flowers. This bee is also capable of performing the impressive buzz pollination.

**Attracting Bees**

Planting out large plots of flowers is the greatest way to attract bees to your garden. The more variety of flowers you can provide in your garden will result in a greater diversity of bees you will attract. Many bee species are drawn to purple and blue flowers, in particular Blue Banded bees and teddy bear bees. Common native plants that attract native bees include; Tea tree, hardenbergia, eucalypt, pultanaea, westreingia and grevillea. Planting Exotic herbs like basil, parsley, coriander, celery, fennel, rosemary, sylvia, hyssop and borage will also attract bee species to your backyard.

*Native bees continues page 9.....*



## Pretty as a daisy? NOT!

Text & photos by Richard Stone

Ox eye daisy *Leucanthemum vulgare* is a new emerging weed in and around the district and is a declared weed in both Tasmania & Victoria. It is an erect perennial herb commonly 30cm to 80cm high and is a member of the Asteraceae family, the same family as sunflower. It is most noticeable during flowering and can form a dense white carpet reminiscent of a European alpine meadow. Ox eye daisy can grow so densely and is so competitive that over time it can exclude all other vegetation. Because of this growth habit after the daisy dies off at the end of summer soils can be left exposed and prone to surface erosion. Although the daisy is not poisonous to native fauna or stock it is highly unpalatable and is known to contaminate cows milk. It favors colonising disturbed and degraded pasture areas. In the United States the daisy is known as a host for the yellow dwarf potato virus but its effect in this role in Australia is not yet known.



Flowers have 20 – 30 petals, 30 – 50 mm across and are borne individually on smooth stems, leaves are smooth, dark green and often glossy margins are serrated.



Keith McDougal, a botanist with the NSW Government & local Mongarlowe resident, reported on a recent USLC sponsored Mongarlowe river walk that; “*The daisy has been causing real problems in Kosciuszko National Park. In Kosciuszko National Park it went from obscurity to out of control in the space of a year. Individual plants can produce up to 26,000 seeds/year. In a dense population that is 100 million seeds/hectare/year. The half-life of seeds is about 20 years, but not all germinate at once*”. The daisy can also spread by clumping root rhizomes.

Because the Ox Eye daisy is so easy to spot with its egg yellow center and white petals I have been hand pulling plants along Little River Road and it comes out readily. However if the flowers are finishing and seed is starting to set the pulled plants are best double bagged and placed in your bin. The plants I have been pulling are at least 4 km as the crow flies from the known outbreak. This demonstrates how far the seeds can travel but they are not carried or dispersed by wind but they can travel long distances on the fur of animals, the shoes of humans or mud on vehicles. If you have some in your garden (it is still sold by garden centers), it can be tamed by simply cutting the heads off before they go to seed.





*W. S. Jevons.  
Jembaicumbene.*

William Stanley Jevons: Gold Digging, Jembaicumbene, Braidwood, NSW, January 1859. (mounted stereoscopic albumen print, 811060420)

Bees continued...

For illustrations of Australian native bees in NSW see Gina Cranson's poster <http://tinyurl.com/je5glrf>

Information gleaned from Australian native bee groups including :

- Aussie Bees [www.aussiebee.com.au](http://www.aussiebee.com.au),
- Bee Aware of Your Native Bees group [www.facebook.com/groups/beeawareofournativebees](http://www.facebook.com/groups/beeawareofournativebees),
- Bees Business [www.beesbuisness.com.au](http://www.beesbuisness.com.au),
- Valley Bees -Mary River Catchment [www.mrccc.org.au/valley-bees](http://www.mrccc.org.au/valley-bees),
- Bellingen Bee Sanctuary [www.bellingenbees.org.au](http://www.bellingenbees.org.au), <http://blog.flowersacrossmelbourne.com.au/flowers/flowers-for-bees/>
- Bowerbird [www.bowerbird.org.au](http://www.bowerbird.org.au) and
- atlas of living Australia [www.ala.org.au](http://www.ala.org.au)

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Heard, T.A. and Hendrikz, J.K., 1993. *Factors Influencing Flight Activity of Colonies of the Stingless Bee Trigona-Carbonaria* (Hymenoptera, Apidae). *Australian Journal of Zoology*, 41(4), pp.343-353.  
 R.Owen, 2015, *Australian Bee Keeping Manual*, Exisle Publishing Pty Ltd, Wollombi NSW Australia.  
 Vit, P., Pedro, S.R. and Roubik, D., 2013. *Pot-honey: a legacy of stingless bees*. Springer Science & Business Media.

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 • Editors Note: Dr Thomas Braidwood Wilson is credited with bringing the first hive of European honeybees to Australia, aboard the ship 'John' which arrived in Hobart town in 1831.  
 • Source: Harry Glenn and Wikipedia & the ABC's Ocham's razor transcript 2002.  
 • .....

## William Stanley Jevons on the Jembaicumbene 1859

William Stanley Jevons arrived in Sydney 112 years ago at age 19. He worked as an assayer at the Sydney mint having studied chemistry in London. Jevons was an intellectual with a social interest. Further interests in photography, philosophy & meteorology were well attended to in 1850's Sydney as the burgeoning society exposed much opportunity for contemplation with its distinct social inequities & new world opportunities. The meticulous Jevons set about coupling his interest in photography & social documentation with a job assessing the quality & purity of gold at the goldfields throughout the colony. He produced a substantial collection of photographs that now constitute an important record, a large number of which were exhibited by the Powerhouse Museum in 2004. Stereoscopic photography was a fashionable & impressive medium (if you owned a stereoscope) as represented by the dual image above. Of particular personal interest is the type & spacing of the vegetation as well as the depth of the excavations which are still small in scale when compared with other vast diggings throughout NSW & Victoria. It's wise to remember (& hard to forget) when assessing landscape function & restoration, just how much excavation occurred in areas that were once goldfields such as the Jembaicumbene.

## WOMBATS ~ *Vombatus ursinus*

By Georgeanna Storey

Love them or hate them, there is no denying that wombats are an integral part of the landscape within the Upper Shoalhaven & Duela Landcare region. Of the three extant species of wombat, it is the common or bare-nosed wombat that is found in this region. The scientific name for the common wombat is *Vombatus ursinus* and it is the only living species left from the *Vombatus* genus. The other two species, the northern and southern hairy-nosed wombats, are part of a separate genus, called *Lasiorchinus*. Together these wombats represent the largest living burrowing mammals in the world.

Wombats are marsupials and like all marsupials have a short gestation period and give birth to tiny



embryonic young. In common wombats gestation is only around 21 days, but the young will continue to development in the pouch for between 8 to 10 months. Wombat pouches point backwards so that they don't fill with dirt and as the young grows their nose can sometimes be seen sticking out of the pouch between the mothers back legs. By 10 months of age the young will permanently vacate the pouch, however will remain with the mother as a young at heel and not be weaned completely until 12 to 15 months old. The age at which a young becomes fully independent is highly variable, with some separating soon after weaning while others remain with their mother for almost another year. This long association between the mother and her young, means that wombats will only produce a single young every 2 to 3 years. Claims of 'wombat plagues' are biologically impossible!

Besides their stocky build, wombats have some other unusual characteristics that allow them to be wonderfully adapted for their environment. Wombat teeth are rootless, which means that they continually grow throughout their life. This allows wombats to select the highly fibrous native grasses that wear down tooth enamel. The bones of the head and pelvis are strong and thick, allowing them to deal with troublesome objects while digging burrows or defending themselves from predators. If chased into a burrow, a wombat is quite capable of crushing a dog's skull against the tunnel roof with its rump. Burrows wombats also offer protection from the elements, especially high temperatures. Wombats do not possess sweat glands so rely heavily on the stable burrow environment when the ambient temperatures get over 25°C.

**Wombats will only produce a single young every 2 to 3 years**

Despite being common in our area, the nocturnal behaviour of wombats mean we don't often see them in their natural habitat. Most often, we come across wombats while trying to avoid them when driving at night, we see them along the road side as roadkill or on occasion when mange infected individuals are feeding during the day. Car collision and mange are the most severe threats for wombats. In just a single 15 kilometre stretch of the Kings Highway, more than 50 wombats die every year. While death through *Sarcoptes scabiei*, has been known to cause localised extinctions. Research into prevention of roadkill and treatment of mange will hopefully lead to better outcomes for the wombat in the near future.





In the meantime common sense actions such as, slowing down along areas or at times when collisions are likely, will help to reduce roadkill levels. In general, wombats tend to go about their business without bothering anyone too much, but there are times when the presence of wombats is not always a welcome one. Wombats can be a nuisance when they dig burrows under dwellings, or when they stubbornly push through fences that cross their path, leaving holes that let in rabbits or let out stock. In cases like these management options are available, to either discourage or facilitate wombat movement. For example there are several wombat gate designs that allow only wombats to pass through. Alternatively, a combination of netting fence with a low strung electric fence has proved successful in preventing wombat movement and fence damage. What is obvious, is that there are ways of living together with wombats without the need for control.

Despite the common status of the common wombat, there are reasons why we should be vigilant in the conservation of this iconic and unique species. There



are already changes observed in the distribution of the species, with a shift in a south-easterly direction. The reason for this is currently unknown, however changes to habitat quality and increasing fragmentation of habitat are considered to be partially to blame.

Continual changes in habitat with a changing climate and increasing urbanisation will exacerbate the already substantial threats facing wombats.

With continuing research, education and commitment towards the long-term conservation of the common wombat, it is hoped that common wombats will be a feature of our landscape for generations to come.

Butterflies continued....

The **Blues and Coppers** are small butterflies, but many are brilliantly coloured in blues, purples, reds and orange. A feature of their life history is that many



*Zizina labradus* Common grass blue.  
Photographer: Dylan O'Donnell.  
Website: Deography.com.

caterpillars are attended by ants; they secrete sugars and proteins fed upon by the ants, which in turn protect them. Caterpillars of the two Azure (*Ogyris*) species feed on mistletoes, the Dusky-blues (*Candalides*) on dodders and the Silky Hairstreak (*Pseudalmenus chlorinda*) on Pomaderris. The majority of the remainder, including the

tiny Common Grass Blue (*Zizina labradus*), seen everywhere in gardens and open fields, feed on a variety of legumes.

**Note from Ed.** For more information on Butterflies of the Upper Shoalhaven and Upper Deua, have a read of *Monga Intacta* (edited by Robyn Steller) where Kim has compiled a list of the Butterfly Species of Monga that is applicable for the Braidwood area.

**LOCAL LAND SERVICES South East**

are conducting a

**WAR ON WORMS IN CATTLE**

**When:** Wednesday the 10th of February from 10am to 3pm at the Braidwood Serviceman's Club.

**With:** Dr. Kate Sawford, District Veterinarian, LLS & Dr. Steve Love, Veterinarian/Research Officer, Parasitology, NSW Dept. of Primary Industries.

**This is a free session with Morning Tea and Lunch provided.**

**RSVP by Feb 5:** to Nicky Clarke, South East local Land Services, Braidwood.

**T: 02 48422594 E: Nicky.Clarke@lls.nsw.gov.au**



## **Australian Government**

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