LAND FOR WILDLIFE
South East Queensland

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High Density Living

Tree hollows are priceless. They are high rise apartments and maternity wards all in one. They provide homes for hundreds of different types of wildlife including birds, gliders, microbats, possums, pythons and frogs, every day and night.

Each hollow usually takes at least 100 years to form. Yes, 100 years. They cannot be replaced in our lifetime by planting a tree. The best that we can do is to ensure, as much as possible, that the big old trees (either alive or dead) are left in place to continue their free rental service to wildlife.

In areas where there are limited or no habitat trees with hollows, we can help by installing nest boxes. Nest boxes work. Wildlife will quickly find and use available hollows, including nest boxes. Have a chat to your Land for Wildlife Officer about nest boxes for your property.

These delightful photos have proven to be the most popular Land for Wildlife SEQ Facebook post so far reaching over 650,000 people. Some of our witty followers have made comments about timeshare accommodation and the need for high density living given rental prices in Brisvegas. Others have learnt about hollows and the sceptics doubted it was the same tree. The wonders of social media.

Left: In September 2013, a Galah and Southern Boobook Owl took up residence in this old gum tree.

Right: In September 2015, there was a change of tenants with a Rainbow Lorikeet and Sulphur-crested Cockatoo moving into the same hollows in the same tree.

Photographs by Peter Metzdorf
Land for Wildlife member
Kenmore Hills, Brisbane

CONTENTS

1 **High Density Living**
2 **Editorial and Contacts**
3 **Fauna Vignettes**
4-5 **Property Profile**
Quandamooka Takes Lead Role in Conservation
5 **Fauna Research**
Meet Your Local Koala Cluster
6-7 **Fauna Profile**
Pass the Salt Please
7 **Fauna Research**
Sunshine Coast - A Kangaroo Refuge
8 **Practicalities**
Splatter Guns for Herbicide Application
9 **Property Profile**
What we have Learnt
10 **Property Profile**
Our Little Patch of Farm Forestry
11 **Fauna Profile**
Blue-banded Bees
12 **Fauna Rescue**
Hatching Wildlife
13 **Book Reviews**
14 **Fauna Profile**
A Master of Disguise
15 **Property Profile**
A Journey with Land for Wildlife
16 **Online Newsletter Index and Annual Report**

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editorial

At the start of every year there is lots of talk about resolutions. How they don't work through to how vital they are. I therefore enjoyed finding a story that suggested ditching the traditional New Year's resolution of losing weight and saving money in favour of weekly or monthly targets. The trick is to keep most of them simple and achievable, with just one or two to stretch yourself. For example, Sunday nights cook a nice meal in preparation for the week. Or once a month contact a distant friend or do something creative. Write down your goals and keep a track of how you are going – I have mine, including the three above, on my fridge.

Our Facebook page further suggests: learning a new native plant each week; going for a bushwalk somewhere new once a month; taking a photo from your property and sharing it on our Facebook page or here in this newsletter; or installing one nest box on your property. You never know, you might just lose weight and save money as well. Whatever your goals, I hope that 2016 is a good year for you.

If you are looking for places in SEQ to visit to fulfil a resolution, North Stradbroke Island, or Minjerribah, is a must. In comparison to the mainland, it is a wilderness with stunning old growth forests, beautiful beaches, rugged cliffs, wildlife and a vibrant indigenous community and culture. In 2015, the Land for Wildlife program was privileged to welcome the Quandamooka Yoolooburrabee Aboriginal Corporation as a new member with the registration of their exclusive use native title lands on Minjerribah. I congratulate the Quandamooka People on their native title determination and I wholeheartedly welcome the opportunity to work together. See pgs. 4-5 for more details.

One of the great things about Land for Wildlife, I believe, is the bridge between researchers and landholders. This is a two way bridge where scientists can learn from landholders and vice-versa. Findings from two genetic research projects are presented in this edition, one on Koalas and one on Eastern Grey Kangaroos. The results are fascinating and help inform us about this region's history.

Just watching nature can bring about discoveries as shown in the articles on blue-banded bees, the strange diet of kangaroos and camouflage techniques used by Tawny Frogmouths. Three property profiles showcase the lessons learnt, through success and failure, and I thank those landholders for sharing their stories here allowing others to ponder them.

As always, I welcome your contributions and draw inspiration from your tales. Happy new year.

Deborah Metters
Land for Wildlife
Regional Coordinator
SEQ Catchments

Landholder Registrations, Land for Wildlife SEQ - 1/1/2016			
Registered Properties	Working Towards Registration	Total Area Retained	Total Area under Restoration
3160	848	58,604 ha	6,157 ha

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fauna vignettes

PRIZES!

SEQ Catchments is giving away *Birds of South East Queensland* booklets to selected Land for Wildlife members who contribute published articles in the January, April and July 2016 editions. Limit of three books per edition. Please send your article and/or photos to the Editor (details pg. 2).

The Circle of Life

A hungry python.

The target.

Getting close.

Look away.

Stretch.

Digesting.

The next day.

As difficult as it is to see the struggle between predator and prey, it is part of the web of Life that we all depend upon.

Peter Metzdorf
Land for Wildlife member
Kenmore Hills, Brisbane

Cooling Off This Summer

One of the easiest ways to attract native birds to your garden is to install a birdbath. During the summer months especially, birds will seek out drinking water several times each day. Many will also indulge in a bath, both to cool off and to help dislodge parasites.

In my front yard all manner of native birds from tiny Brown Honeyeaters up to Magpies and Sulphur-crested Cockatoos can be observed bathing each afternoon.

Some of the lorikeets spend so long in the water they struggle to fly at all afterwards, barely managing to leap a few centimetres to an overhanging tree to preen.

Pictured is a Red-rumped Parrot, not swimming but taking his morning drink.

Neil Schultz
Land for Wildlife member
Tarampa, Somerset

property profile

Quandamooka Takes Lead Role in Conservation

In June 2015, Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) registered almost 1,400 hectares of significant bushland on Minjerribah (North Stradbroke Island) with the Land for Wildlife program. This is now the largest Land for Wildlife property managed by Traditional Owners in Queensland. The land registered with Land for Wildlife only includes land on which the Quandamooka People have been recognised as having exclusive native title rights, granting them the exclusive rights to possess, occupy, use and enjoy these lands. Redland City Council (RCC) and the Land for Wildlife program are privileged to partner with QYAC for this historic Land for Wildlife registration.

The registration demonstrates Quandamooka People's leadership and commitment to land and sea management. The registered land contains high ecological and cultural values and some of the grand old trees would be classed as the oldest veteran or heritage trees known to exist in Redland City. These lands are also home to threatened flora and fauna including the Yellow Swamp-orchid (*Phaius bernaysii*) and Oxleyan Pygmy Perch (*Nannoperca oxleyana*).

Minjerribah also contains a unique population of healthy Koalas. Research indicates that Minjerribah Koalas are genetically distinct from mainland Koalas, as the Koalas on Minjerribah descended from a population that was isolated on the island about 8,000 years ago after the last sea level rise. Minjerribah Koalas are largely disease free, or at least do not exhibit signs of common Koala diseases found on the mainland. Interestingly, the most closely related Koalas are those found on the Gold Coast. Research also shows that Koalas on Minjerribah are likely to be the only naturally-occurring island Koalas in Australia.

Quandamooka People have been caring for country for over 40,000 years. More recently, QYAC has established the Quandamooka Community Rangers (QCR), which has seen young Quandamooka People develop skills to manage weeds, control pest animals, protect cultural artefacts and restore country. Key weeds include Basket Asparagus Fern, Camphor Laurel, Umbrella Tree and Moth Vine.

QYAC is a key agency in the Straddie Pest Management Group that is working towards eradication of foxes from Minjerribah. QYAC is also a key partner in the North Stradbroke Island Fire Management Group. These groups offer opportunities for agencies to collaboratively work together.

Celebrating this historic Land for Wildlife registration are (left to right): Lordie Walker, QCR; Richard Martin, QCR; Cr Craig Ogilvie; Maree Manby, RCC; Phil Sutherland, Biosecurity Queensland; Joel Bolzenius, SEQC; Kurun Ruska, QCR; Cameron Costello, QYAC CEO; William Smart, QCR and Darren Burns, QYAC.

Left: Quandamooka Community Rangers, Jai Adley (left) and Jarlon Burns (right), removing Basket (Ground) Asparagus, a declared Weed of National Significance, near Amity Point. Photo by Deborah Metters.

Right: Looking out over Quandamooka country towards Flinders Beach. Photo by Maree Manby.

Quandamooka People have been caring for country for over 40,000 years

The types of vegetation registered with Land for Wildlife, and currently being managed by QYAC, include mangrove shrubland, heathland, coastal dunes, wetlands and woodlands and includes nationally significant Threatened Ecological Communities such as Salt Marsh and Littoral Rainforest.

In mid-2015, QYAC and SEQ Catchments entered into a Memorandum of Understanding as a way of formally recognising collaborations between the organisations and acknowledging Quandamooka People as being at the forefront of natural resource management on Quandamooka Country. This Land for Wildlife registration creates the platform for further partnerships between QYAC, Redland City Council and SEQ Catchments. Already the three organisations are working towards an open day in 2016 whereby other Land for Wildlife members will be invited to come and experience Quandamooka Country and Quandamooka land management first hand.

This registration provides a valuable opportunity for QYAC to showcase traditional owner values, land management and cultural heritage to the broader Land for Wildlife network whilst increasing opportunities to work with Redland City Council and SEQ Catchments in managing Minjerribah's iconic landscapes.

References & Further Reading

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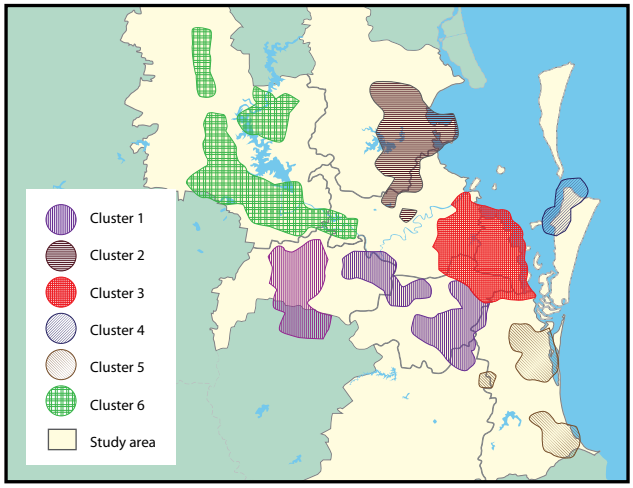
www.dreamingonthemovie.com

Article by Maree Manby (Land for Wildlife Officer Redland City Council) and Joel Bolzenius and Deborah Metters (SEQ Catchments).

fauna research

Meet Your Local Koala Cluster

Back in 2009, 512 Koalas from across South East Queensland (SEQ) were tested to work out their genetic differences and to see whether habitat fragmentation is causing reduced genetic diversity. The study found that there are six distinct clusters of Koalas based on their genetics in SEQ (see map below), and yes, urbanisation is a contributor to reduced genetics, especially in the Koala Coast population.



The six Koala clusters in SEQ as per research findings from Lee et. al. (2009) *Conservation Genetics* 11, 2091-2103.

Historically, it would seem that there were groups of coastal Koalas and inland Koalas with little exchange between them. Two hundred years ago, the Koala population of SEQ would have been at least several million whereas today it has been estimated at about 35,000 individuals. This huge decline has been largely caused by loss of habitat, fragmentation, roads, disease caused in part by stress, and the export of millions of pelts in the early 1900s.

The Koala Coast (Brisbane City Council area south of the Brisbane River, Logan City Council region east of the M1 and all of Redland City Council area) is one of Australia's most significant Koala populations. A survey in 2008 estimated the Koala Coast population at only 2,279 individuals. The study found that Koalas in this region are genetically distinct from adjacent areas and that urbanisation has restricted gene flow.

The study showed that Koalas on North Stradbroke Island have less genetic diversity compared to mainland Koalas. This is consistent with the general ecological principle that wildlife confined to islands have less genetic diversity. Genetic studies provide a valuable insight into the past and can help guide future corridors and strategies for the release of rehabilitated Koalas to ensure that genetic diversity is maintained.

Reference & Further Reading

Lee KE, Seddon JM, Corley SW, Ellis WA, Johnston SD, de Villiers DL, Preece HJ & Carrick FN (2009) Genetic variation and structuring in the threatened koala populations of Southeast Queensland. *Conservation Genetics* 11, 2091-2103.

Article by Deborah Metters
Land for Wildlife Regional Coordinator, SEQ Catchments

fauna profile

Pass the Salt Please

A joey goes inside the hollow whilst Mum supervises.

Upon flicking through and sorting hundreds of photos from fauna cameras recently deployed on a Land for Wildlife / Voluntary Conservation Agreement (VCA) property at Weyba Downs, I noticed a curious behaviour exhibited by Eastern Grey Kangaroos (*Macropus giganteus*).

I had cameras set up facing hollows at the base of two old Scribbly Gums (*Eucalyptus racemosa*) at different locations on the property. Scattered among the pictures of Echidnas, Koalas, Lace Monitors, a Red-bellied Black Snake, Yellow-footed Antechinus and Common Brushtail Possums were pictures of Eastern Grey Kangaroos repeating the same behaviour. They were meticulously investigating the insides of hollow trees; the juveniles would even completely disappear into the hollows for short periods!

Eastern Grey Kangaroos eat a diet of up to 98% grass, but with no grass (or any plant for that matter) inside the hollows, I was at a bit of a loss as to what they were doing. Wallabies are known to consume a wide range of underground-fruiting fungi, and rotting ground hollows such as the ones being photographed would be a prime location for many fungal species. However, unlike wallabies, mycophagy (fungus-eating) has not been extensively reported in Eastern Grey Kangaroos.

Studies have shown that scent marking is important for indicating social status in Eastern Grey Kangaroos and may also be important for predator recognition. However our in-office wildlife expert, Nick Clancy, thought that the Eastern Grey Kangaroos were demonstrating too much interest in the hollows for scent marking.

I sent the series of photos to the Queensland Museum and some local ecologists for further analysis. A few weeks later, I was delighted to receive a reply from behavioural ecologist Associate Professor Anne Goldizen from the University of Queensland. Anne suggested that the kangaroos were obtaining salt or some other desired mineral by eating the soil.

Around the world, geophagy (consumption of soil) is widely observed and studied in herbivorous mammal species. Until recently, geophagy had never been reported in any marsupial species. In 2013, Emily Best along with Anne Goldizen and Julia Joseph published the first report of Eastern Grey Kangaroos using natural salt licks at Sundown National Park to supplement their salt and mineral requirements. The researchers found that visitations by kangaroos to salt licks increased depending on their reproductive state. Lactating females and large males spent the most time at the lick. To date, this behaviour has not been detected in any other intensively studied kangaroo population across Australia.

Now, I know what you're thinking, "*Why would the soil inside a hollowed out tree have more salt or minerals than any other patch of dirt?*"

Kieran Aland from the Queensland Museum offered an answer:

"*Rain-protected soil containing ash in the base of a tree hollow would certainly retain a higher concentration of soluble elements than surrounding rain-washed soil outside of the hollow.*"

Other suggestions received were that the kangaroos were seeking trace elements in the ash at the base of the hollow, or that the roos were eating mineralised clay/ termite nesting material within the hollow.

Armed with a fascinating hypothesis, I will be back out to Weyba Downs with my fauna cameras to try and capture video footage from inside the hollows to confirm what this behaviour is all about. I just hope the resident Red-bellied Black Snake doesn't get too upset with me!

A joey ventures into the hollow on its own.

A large male Eastern Grey Kangaroo tries to squeeze his way into the hollow.

fauna research

Sunshine Coast: A Kangaroo Refuge

***Geophagy** (say jee-of-uh-jee) n. the practice of eating earthly matter, especially clay or chalk.*

Macquarie Dictionary

Studies from around the world have shown the importance of refuges, or refugia, for wildlife especially during difficult climatic periods such as ice ages. During ice ages, the climate cools and dries allowing mesic habitat such as grasslands and open eucalypt forests to expand. At the same time, rainforests and the animals that depend on them, retreat into refuges to survive the cold, dry times. Conversely, during interglacial periods, such as now, the climate is much warmer and wetter allowing rainforests the ability to expand and mesic habitats correspondingly contract.

A recent study by researchers at the University of Queensland (UQ) looked at how Eastern Grey Kangaroos in South East Queensland (SEQ) have responded genetically to climate fluctuations over time. They determined that there is a distinct genetic population of kangaroos on the Sunshine Coast that are probably climate 'refugees'. These kangaroos probably expanded into the Sunshine Coast during a past glacial maximum, or ice age, and when the climate started to warm, the kangaroos stayed put in suitable habitat and in effect became isolated. They now live in, what is called, a mesic refugia.

While many studies have been undertaken on Queensland rainforest refugia, not many studies exist regarding mesic refugia and the animals that depend upon them.

Eastern Grey Kangaroos depend on mesic habitats and are relatively easy genetic subjects given that their DNA can be extracted from faeces. Other studies into Eastern Grey Kangaroos already showed that there is a genetic difference between inland Queensland individuals and those in southern NSW, Victoria and Tasmania. This UQ research set out, and succeeded, to genetically map the Eastern Grey Kangaroo populations of SEQ and northern NSW in more detail.

The study successfully sequenced the DNA of 256 samples and found five distinct 'clades' of Eastern Grey Kangaroos, as follows:

1. A Sunshine Coast clade.
2. A Northern clade (individuals from Qld (e.g. inland Qld, Wacol, Somerset, Scenic Rim) and south to Glen Innes and Moree).
3. A Central clade (individuals from Vic, Tas and NSW)

4 & 5. NSW clade with only individuals from NSW.

The limited geographic range of the Sunshine Coast clade suggests that these kangaroos have survived in this mesic refugia for a long time, as genetic variance takes time to evolve.

The Sunshine Coast clade currently overlaps with the Northern clade around Murgon, Kingaroy, Buderim and North Lakes. The boundary of these clades and their genetic make-up is always in flux whether the cause be climate shifting, human-made expansion of kangaroo habitat, human-caused habitat fragmentation or the release of rehabilitated kangaroos into different clades.

It is fascinating to think about how this country has changed over time. For the past 50,000 years, people, plants and animals have had to adapt to climatic fluctuations, just as future generations will have to do. Although the difference now is that the fluctuations are occurring at a significantly more rapid and uncharted rate than ever before. Therefore, the ability of plants, animals and people to adapt is also uncharted.

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Article by Deborah Metters
Land for Wildlife Regional Coordinator
SEQ Catchments

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Article by Danielle Crawford
Land for Wildlife Officer
Sunshine Coast Council

practicalities

Splatter Guns for Herbicide Application

Over the last decade or so, splatter guns have proven to be an effective weed control tool in the ongoing war to manage lantana and other weeds.

Background

Popular legend traces the splatter gun back to northern NSW where a frustrated land manager improvised an old drenching gun as a method of delivering herbicide to weeds in difficult to reach areas such as cliff faces and over the neighbour's fence. With a bit of practice, it was found that the jet stream of herbicide could be aimed with precision in forested areas out to a distance of 8-10 metres. Provided the concentration of herbicide was higher than normal, only a fraction of the leaf area needed to be wet to achieve good kill rates.

Over time, a number of nifty attachments have been added, such as a gas bottle powered gun to save tired pumping arms and a special 4WD attachment to save tired legs. However, the basic drenching gun style handpiece remains the same.

Demonstrating a splatter gun at a workshop. Note that gloves should always be worn when handling herbicide, but this gun was only filled with water for demonstration purposes.

At this point I would like to mention the oddity of the name 'splatter gun'. This term is probably better associated with graphic video games designed for people who have never heard of 'environmental weeds'. It certainly does not fit the precise and targeted delivery of a stream of high concentration herbicide. Possibly something that video gamers aspire to! Of course I tried to think of a better name but couldn't come up with anything sensible.

The Principle

Unlike other foliar spray methods, the splatter gun is designed to shoot a stream of herbicide, not a spray nor even a splatter. This stream is delivered in a single line out to around ten metres, with each line separated by about two metres. The concentration of herbicide is increased, so there is not the normal requirement to wet all the foliage. As a bonus, the total volume of herbicide used is decreased.

The Benefits

- Splatter guns are great for use in forested areas where targeted streams of herbicide can be shot around sensitive native vegetation, sleeping wallabies or nesting birds etc.
- They are perfect for steep terrain and other difficult-to-reach areas.
- Splatter guns require less herbicide than conventional foliar spray packs, so this reduces the risk of residual herbicide damage and reduces the impact on the wallet too.
- When delivered from a five litre backpack, splatter guns are easy to carry and manoeuvre through thick bush, even my Mum can do it.

The Disadvantages

- The number of weeds controlled is limited by how fast your Mum can walk.
- Splatter guns usually come with a five litre backpack that needs to be regularly refilled when managing large areas.
- There is the possibility of overspray from splatter guns on windy days or with inexperienced operators.
- If the splatter gun is powered by gas, the gas bottles can be expensive to refill.

Studies in northern NSW have shown that an experienced operator can shoot a one second stream of approximately 20 ml, out to ten metres, once every two metres. This means at normal walking speed, in hilly terrain with 50% lantana coverage, a single operator can cover 0.25 ha in around 45 minutes using 20 litres (9:1 water to glyphosate mix). Try doing that with a normal foliar sprayer!

Trials in Queensland and NSW have led to splatter guns being used to control blackberry, raspberry and bellyache bush. Trials around Grandchester, near where I live, are planned to test the effectiveness of the splatter gun on my neighbour's straying cat (of course, without herbicide).

So whilst the splatter gun may be oddly named, it is certainly proving to be a valuable addition to the range of weed control tools now available. NJ Phillips appears to be the only manufacturer in Australia and their splatter guns can be ordered directly from them or through www.thefarmstore.com.au for about $550. Some Local Governments in SEQ will loan splatter guns to Land for Wildlife members, so if you are interested, it is best to ask your Land for Wildlife Officer.

Article by Peter Copping
Land for Wildlife Officer
Logan City Council

Mosaic revegetation where only small areas of weeds are cleared and natives planted is proving to be effective.

property profile

What we have Learnt

The chequered history of our revegetation efforts is long and winding, and I would like to share some of the ways in which our experiences have completely changed our thinking and approach to revegetation over the years.

Our property in Upper Brookfield lies on Moggill Creek, with about 300 metres of creek frontage. When we moved here 22 years ago the creek was barely visible behind dense vegetation. Migrants from afar, we naively thought it all very exotic. In fact it was just the usual suspects: Lantana, Asparagus Vine, Glycine, Leucaena etc. The wildlife was abundant; water dragons, eels, yabbies, turtles and our resident Platypus.

One day we received a flyer in our mailbox offering free plants for revegetation. Being from the Namib Desert, the concept of revegetation was somewhat new. Still plants for free must be worth investigating, especially since my husband is Scottish. So we made the call and received a visit from a local bush regenerator, who began our education on the art of revegetation.

Whilst I knew nothing about plants, I was won over by the idea that native vegetation would attract native fauna.

We started our project as most novices do with enthusiasm and ignorance. Over the following months we cleared every visible weed (and probably some natives, too). Our scorched-earth policy left only the Chinese Elms that were too large for us to remove. An entire stretch of creek frontage was now cleared of vegetation, leaving a large bare patch ready for planting native species. With impeccable timing this coincided with the start of the El Nino and one of the worst droughts on record. Our attrition rate was well above 50% with the return of some drought resistant weeds taking care of the rest. The area was now severely degraded. When the rains came at last and Moggill Creek flexed its muscles, the remainder of our plants, and what little soil we had, was washed away.

Devastated, we thought this might be the end of our revegetation efforts. However the erosion risk was so bad that something had to be done. We realised that we need to radically alter our approach, so we decided to allow the whole area to revert back to its former weed-infested glory, in order to stabilise the creek bank. At the same time we began clearing small areas of about one metre between the weeds and planting natives.

This method was not the easiest as it was a slow and time-consuming process. We decided which weeds had to go (such as Madeira Vine and Freckle Face) and then removed them completely. Other weeds such as Asparagus Vine, Elephant Grass, Leucaena and Glycine we cut, leaving the roots in place to hold the bank and revisited them regularly to control their growth. We did this every month with a pair of garden shears, cutting them down to ground level and leaving the root system intact. The weed grasses we pruned high enough so they could bend over in the floods and protect the other plants. We were conscientious not to allow this area to become a weed source for properties downstream. We subsequently learned that this method of revegetation was called the 'mosaic method'.

It has been four years since we adopted this approach and I am absolutely convinced of its efficacy. During the 2013 floods, our creek bank held for the first time and all of our plants survived. The native plants now outnumber the weeds and I believe it won't be long before we will be weed free and lush with natives. There has been a gradual return of animals such as birds, water dragons and snakes along the creek and we are looking forward to welcoming back the Platypus!

Article and photos by Kate McVicar
Land for Wildlife member
Upper Brookfield, Brisbane

Our misguided scorched-earth policy of weed removal (left) created the conditions for bank erosion (right) to occur when Moggill Creek flooded.

"The country largely looks after itself now that a balance has been returned."

property profile

Our Little Patch of Farm Forestry

Nine years ago we bought a 65 hectare patch of Spotted Gum country in the north-eastern corner of what is now the Lockyer Valley Regional Council area. This was to be a lifestyle venture with space for the extended family. Since joining Land for Wildlife seven years ago, and applying many of the Land for Wildlife principles, 'Keep it Messy, Mate' being the favourite, we have seen our patch of country emerge from drought years to become a bush wonderland, teaming with wildlife.

Family and friends visiting from town often say, "But you have so much work to do", to which the reply is that the country largely looks after itself now that a balance has been returned.

The most significant decision, in terms of management for wildlife and flora, was to take cattle off the block. The sandy soil of the central ridge is just too fragile. The steep creek banks and a large swampy area are too precious for those hard-hoofed beasts, though we keep half a dozen horses, which don't plough through the fences into the protected areas the way cattle did. Eastern Grey Kangaroos and Red-neck Wallabies do most of the grass-mowing and we love to watch them at work in the early mornings and afternoons.

A few years ago, we attended a workshop about sustainable native farm forestry, held on a nearby property that had a similar profile of regrowth Spotted Gum and Bloodwood as our block. In an ad hoc way, we had been thinning regrowth, but with no formalised management plan or any proper idea of whether we were doing the right thing by the country in the long term. Subsequent site visits to out patch by SEQ Catchment's farm forestry advisor and the team from Private Forestry Southern Queensland, saw us register the block as a Farm Forest Practice. We put in place management plans for treating regrowth and became more systematic in identifying self-sown saplings to keep. We also defined no-go areas - rough and messy undisturbed places for wildlife.

Two years ago we did a limited harvest (a 'salvage harvest') that took out a lot of poor quality timber as well as some saleable logs. The effect, as we were advised, was to open the forest to allow better growth of potential habitat trees and commercial timber. The cutting contractor piled the cut 'tops' into heaps for burning, but we opted not to do that, instead leaving the piles to become safe micro-habitats.

Already, the difference is noticeable at ground level. Before, the regrowth canopy was too dense and created an understorey with limited diversity. Now, there are native grasses, herbs, casuarinas, banksias and melaleucas shooting up. There are also large numbers of black wattles and lantana growing happily in the light on the forest floor. It is easy to hand-pull seedlings when the country is wet. No, there is not a lot of work to do, but we can't be lazy or complacent about the maintenance jobs involved in caring for the country.

The other significant decision was not to replace our dogs as they were taken out by brown snakes. We kept a breed of hunting dogs that were completely wrong for a back-to-nature bush block. We mourned their passing (though the chooks were pretty happy) and planted *Melaleuca irbyana* on their graves.

We are dogless now, but watching kangaroos and goannas wandering through the house garden, and witnessing at close range the 'coming out' of joeys more than compensates. With the demise of the dogs and the increasing density of habitat, Echidnas have also returned to the property. In under two years, they and the growing population of goannas have opened up hundreds of termite nests that sat up like boils on our creek flats that had been cleared in the past for grazing and cropping. The resilience of the country and the ability of the bush to rejuvenate itself continually amazes us as we walk around discovering new plants, birds and frogs.

Article and photos by Jill Watkinson
Land for Wildlife member
Spring Creek, Lockyer Valley

Far left: Tree tops were left to decompose and provide habitat.

Left: An ephemeral gully running through the property.

fauna profile

Blue-banded Bees

There are eleven species of described blue-banded bees in Australia ranging in size from 8-14 mm. They are also known as long-tongued bees or buzz pollinators. Blue-banded bees are solitary and are found in all states of Australia except Tasmania. They have a sting but are not aggressive.

They have thick, reddish-brown fur on their thorax and a black abdomen with iridescent blue, whitish, green or reddish furry stripes. The colours are caused by microscopic diagonal stripes engraved on each hair which reflect light causing these glittering colours. Males have five stripes and females have four. Their faces have yellow, cream or white markings.

Blue-banded bees forage on a variety of exotic and native flowers such as *Hibbertia scandens*, *Melastoma malabathricum subsp malabathricum*, tomato, chilli, basil, buddleia, lavender, abelias, Leucophyllum and cigar plants (Cuphea). Research has shown that blue-banded bees could be valuable pollinators of greenhouse tomatoes.

Females build their own nest and are attracted to areas where other females are nesting. Nests are built in soft mortar, mud bricks or soft sandstone banks in sheltered positions. Females use their jaws to dig burrows. Inside the burrows, they create oval-shaped cells lining them with waterproof secretions.

Before depositing an egg, a mixture of nectar and pollen is placed in the cell. Once an egg has been deposited each cell is capped, and when all cells are filled and capped the burrow is closed with a layer of soil. The female then goes in search of another nesting site.

According to J. C. Cardinale (Australian National Insect Collection, Canberra 1968), blue-banded bees live for about 40 days and about three generations hatch during one summer. Baby bees take about seven weeks to hatch and those that do not hatch due to approaching winter, overwinter in their cells, emerging in the following spring.

Male blue-banded bees roost together in small groups at night, out in the open, hanging onto twigs or stems with their mandibles. They vigorously shake their legs and wiggle their abdomens when a new bee arrives to settle. Eventually they all tuck their legs under their bodies to sleep. After warming up in the morning they go on their daily routine of foraging and finding a female to mate with.

Blue-banded bees can be attracted to your garden by making a mud brick. Drill a variety of holes 10-15 mm wide and 25-50 mm deep before the mud brick dries and place the finished brick in a sheltered position. Alternatively, you can use an extruded brick with core holes, in which the holes are filled with mud. When the mud dries, drill holes for the bees.

Placing soil from an existing blue-banded bee nesting site on top of the brick will help attract females to the new nest. For more information on creating bee walls, there is an excellent factsheet available from www.permaculturenoosa.com.au > How to > Instructions for a Bug Hotel.

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www.beesbusiness.com.au

www.museum.wa.gov.au/research/collections/terrestrial-zoology/entomology-insect-collection/entomology-factsheets/native-bees

Article and photos by Erica Siegel
Native bee enthusiast

Header: This female blue-banded bee is robbing nectar by piercing the flower petals with her straw-like brown sheath that protects her tongue.

Top: A group of male blue-banded bees roost together. Males have five abdominal bands, whereas females have only four.

Above: A male blue-banded bee roosts at night suspended by his mandibles.

Top down: The seven Common Tree Snake eggs that came into care, three of which could not be saved.
One of the four surviving Common Tree Snakes.
Hatching Bearded Dragons.
A hatching Brisbane River Turtle.

fauna rescue

Hatching Wildlife: What to do if you dig up reptile eggs?

I received a call from Deborah Metters, Land for Wildlife Regional Coordinator, in early December 2014 about some likely reptile eggs that she accidentally uncovered whilst digging up large stones on her property. We met at the local Bunnings car park for me to look at the eggs and indeed they were reptilian, most likely from a Common (Green) Tree Snake.

As a wildlife carer specialising in reptiles, I know how important identification is when dealing with snake eggs as some of our most venomous snakes such as Eastern Brown Snakes lay eggs. Other snakes such as Red-bellied Black Snakes are live-bearers. I have a lot of experience with hatching all species of reptiles (I hatch about 100-150 reptiles every year), so I was confident that these were Common Tree Snake eggs.

Once home, I could see that these eggs were in a lot of trouble. They were clumped together (as snake eggs often are) and some were badly damaged. There were seven eggs in the clutch and three were beyond salvaging. I placed the viable eggs in an incubation medium of vermiculite and water and placed them into a reptile incubator.

On Christmas Day, I got the best present ever: one of the three eggs had a head out. They were indeed baby tree snakes. By Boxing Day all four babies had successfully hatched. The babies were rested for a few days in individual containers and then released back into the wild. I must say, I never tire of hatching babies and these were special as not often snake eggs come into care. Mostly, I hatch dragons and turtles, so these were little emerald gems!

In addition to hatching reptiles, this year, I turned my attention to birds. Unlike reptile eggs, bird eggs need to be regularly rotated and their temperature and humidity requirements are vastly different from reptile eggs. So far this year, I have successfully hatched Rainbow Lorikeets, Azure Kingfishers, Masked Lapwings and Bush Stone-curlews. They have all been returned to the wild.

If you dig up eggs, they are likely to be reptilian. Reptile eggs are soft, unlike bird eggs. If you can place them back in the ground where you found them, then do so, but try not to rotate them. If you cannot put them back in the ground, place them in a container in the same orientation that you found them. Even cracked eggs may be able to be saved.

Once in a container, keep the eggs warm, but do not overheat them and do not turn them. Try not to let them dry out if possible, so keep a warm wet tissue or material in the container too. Contact your local wildlife care group or call Wildcare on 5527 2444 as soon as possible. For reptile egg care, I can be contacted directly on 0404 660 547. It is important that reptile eggs are placed in an incubator as soon as possible, so try to get them to a carer ASAP and thanks for helping our wildlife.

Article and photos by Annette Bird
Land for Wildlife member
Jimboomba, Logan
and Reptile Coordinator, Wildcare Australia

book reviews

The Complete Guide to Finding the Mammals of Australia

By David Andrew

Up front, this book states that "it makes sense to start in Queensland" to see Australian mammals, and the SEQ region comes highly recommended given the diversity of mammal species here. Our region is one of the best places in the world to see Humpback Whales and three of the largest flying mammal species on Earth (i.e. flying foxes) occur here.

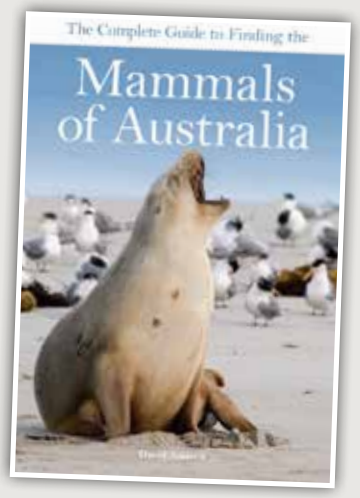
People from all around the world visit Australia to see mammals that we take for granted such as kangaroos, Koalas, Platypuses and Echidnas. This book is a wonderful resource for visitors, but is also a valuable guide for locals.

This book is divided into two main sections. The first describes locations state-by-state with potential species at each site.

The second lists all Australian mammals with short facts about the animal, techniques required to see it and locations cross-referenced to the first section.

Some locations listed are vast such as White Rock Conservation Park for Brush-tailed Rock Wallabies. To be successful, you would need local knowledge about a specific site within the park, or be very lucky. Whereas other locations mentioned are very specific offering directions to a lawn near a building where Black-striped Wallabies can be seen at dawn.

I am excited by the opportunities offered by this book. I will use it as a travel guide to help me locate and hopefully photograph some of our world-renowned and obscure native mammals.



CSIRO Publishing, 2015
Paperback 448 pages
Price: $49.95
Available from CSIRO Publishing and other online bookshops.

Review by Deborah Metters

Birds of South East Queensland

By BirdLife Southern Queensland

This colourful little booklet contains photographs of all bird species found in SEQ over a nine year (2008-2015) period.

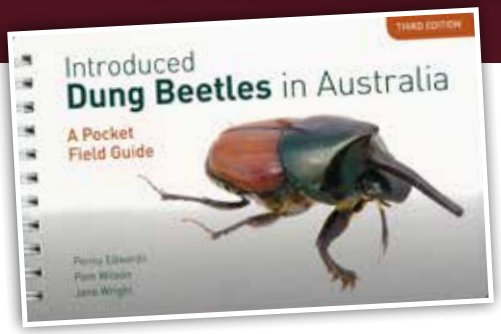
It is designed as a checklist to help birdwatchers of SEQ, especially young birders, to keep track of their sightings. There are tick boxes under each photograph and a comprehensive list at the back of the book. The 336 species detailed are presented in a recognised sequence suitable for transposing records into a sightings database such as eBird. The photographs are generally very good.

This booklet aims to stimulate a greater appreciation of birds, especially in young people, and does not try to replicate the many excellent field guide books and apps available today.

There is also a list of special birding places around SEQ that could be helpful for beginner birders or those new to the region. It is a good little resource to take on day trips or family camping adventures around SEQ. With profits directed towards bird conservation, and with a sales tag of only $10, it is a worthy investment or thoughtful gift for a budding naturalist.

BirdLife Southern Queensland, 2015
A5 size, spiral bound, full colour, 64 pages
Price: $10 plus $4.30 shipping per book
Available by emailing southernqld@birdlife.org.au

Review by Keith McCosh



Introduced Dung Beetles in Australia

By Penny Edwards, Pam Wilson & Jane Wright

The CSIRO Dung Beetle project remains one of Australia's most successful biological control programs with foreign dung beetles imported from around the world during the 1960s, 70s and 80s. The aim was to help bury cattle dung across all of our climatic zones to address pasture fouling and control pest fly populations.

This handy pocket guide, perfect for gloveboxes, covers all of the 25 introduced species that have established across Australia, as well as some of the more common native dung beetles and other beetles commonly found in cattle dung.

This durable guide is packed with excellent colour photographs and descriptions of key features, biology and distribution maps for each species. It will be a great resource for landholders, Landcare groups and anyone who wants to identify and learn more about these amazing insects and the valuable role they play in our landscapes by enhancing pastures, improving soil health and reducing parasites.

CSIRO Publishing, 2015
Pocket size, plastic-covered, 80 pages, full colour
Price: $22. Available from CSIRO Publishing and other online bookshops.

Review by Bruce Lord, SEQ Catchments

fauna profile

A Master of Disguise

Left: A Tawny Frogmouth nest with fluffy, white nestlings (young birds still in the nest) and protective parents found at Thornton in the Lockyer Valley, November 2015.

Right: The adult and nestling both assuming the camouflage pose. Photographs by Kaori van Baalen.

The nocturnal Tawny Frogmouth (*Podargus strigoides*) is a master of disguise. This disguise and camouflage is assembled through a combination of stretched bodies, flattened and coloured feathers, narrowing their eyelids to obscure their yellow eyes and an uncanny ability to stay absolutely still and quiet. Generally perching low down on tree branches during the day, often angling their feet along the tree trunk, the Tawny Frogmouth can easily pass as a dead branch.

Nestling fluff balls that were seen last November did not have all of the strategies down pat but they were certainly quick to pick up the posture of disguise. Nestlings as young as two weeks of age have been noted to adopt the camouflage posture.

Tawny Frogmouths are more closely related to nightjars than owls. Although they have the leading edges of their primary feathers fringed to allow for silent flight like owls, they lack the owls curved talons. Tawny Frogmouths generally have a silver-grey plumage, being slightly paler below, with black and rufous streaks and mottling. These birds are found throughout Australia, including Tasmania, ranging across a variety of habitats except dense rainforests and treeless deserts.

Feeding mainly on a variety of nocturnal insects, snails, slugs and worms but also eating frogs, birds and small mammals, Tawny Frogmouths generally pounce on their prey from an elevated perch. However, they also swoop down to catch moths on the wing. Sadly this often results in them being hit by cars in urban areas.

Tawny Frogmouths form lifelong partnerships. Pairs have been noted to roost during the day within 10-15 metres of each other, often sitting next to each other during the breeding season. When they do sit next to each other they can adopt opposite facing camouflage poses so that they look like a tree fork.

Breeding occurs August to December generally resulting in one brood of one to two chicks. Males and females share the nest building though they have been noted to also use suitable abandoned nests. Nests are constructed by parents selecting a horizontal forked tree branch and dropping sticks and leaves onto this forked area. Old native trees are noted to offer the most suitable nesting sites.

It is generally thought that both parents share the brooding at night time with the male taking over full duties during the day. Early to mid-summer fledglings are evicted from the nest and are sexually mature within a year. One banded bird lived to almost 14 years of age. For a chick to survive to such an age it must have survived a variety of predators including goshawks, currawongs, goannas and butcherbirds. Tawny Frogmouths must also face other threats of barbwire fences, cats, dogs, foxes, pesticide ingestion and cars.

What a pleasure and delight to see these precious balls of fluff practising their postures under the careful and protective eye of their parent. Let us hope they have many more years of successful disguises ahead of them.

An adult and fledgling (a young bird that has left the nest) on a Land for Wildlife property at Bellbird Park also in November 2015.
Photo by Deborah Metters.

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Qld Dept. Environment & Heritage Protection: www.ehp.qld.gov.au/wildlife/animals-az/tawny_frogmouth.html

Tasmania Parks and Wildlife Service: www.parks.tas.gov.au/index.aspx?base=24031

Article by Kaori van Baalen
Land for Wildlife Officer
Lockyer Valley Regional Council

Removing Slash Pines.

Creating Pathways.

Planting native trees where Lantana had once thrived.

property profile

A Journey with *Land for Wildlife*

> *"Each day is a delight as we are always discovering something new."*

In June 2015, approximately 40 people visited my property of about 40 acres close to Gympie. This was the culmination of a six year personal journey.

In late 2008, our then Land for Wildlife Officer, Marc Russell, visited our then very overgrown property. Our property had originally been used for small crops but had not been touched for 30 years. The main problems in 2008 were areas of thick Molasses Grass and huge thickets of Lantana. Marc inspected the land and noted all the existing flora and fauna and suggested tackling one area of weeds at a time.

The area closest to the house came first. A large mat of Molasses Grass was sprayed and I began a program of cutting and poisoning 1-2 large Lantanas each day. In three months a long, thin area had been treated – but I needed something speedier! Landcare came to the rescue. Two men with long hoses and a pump spray controlled as much Lantana in three hours as I had cleared in three months.

Over time, other areas were similarly tackled and now the only Lantana that dares to grow is easily pulled out. Molasses Grass has also diminished with one large area mowed regularly for control.

The biggest advance has been establishing a 4 km network of pathways. These have created access for easier weeding and planting, and they have also provided us with pleasant walking tracks.

A program of planting native trees and removing exotic trees has been followed. For example, a small Healthy Habitats grant enabled the establishment of a dry rainforest gully. Trees and shrubs were planted along the paths, around the dams and in previously mown areas. Recently, 200 Koala feed trees (mainly Tallowwood and grey gum) have been established in an area with large trees that show animal scratches.

A range of wildlife is found on the property including wallabies, kangaroos, bandicoots, gliders, birds etc., and recently, observation of the occasional Koala. A walk each day is a delight as we are always discovering something new and seeing the fruits of our labour.

This has been a long and continuing journey but it was great to hear Marc say, at the end of the Land for Wildlife walk, that my property had been 'transformed'.

Article and photos by Nonie Metzler
Land for Wildlife member
Gympie, Burnett Mary region

Eight years ago, the understorey was thick with Molasses Grass.

Now the understorey is full of native grasses, herbs and grass trees.

Land for Wildlife in Gympie

The Mary River Catchment Coordinating Committee (MRCCC) organises workshops and field days for Land for Wildlife members in the Gympie region four times a year. Workshops are usually on the first Sunday of each season. If you have a Land for Wildlife property in the Gympie / Mary River region and would like to receive an invite to workshops, please contact MRCCC on 5482 4766.

Online Newsletter Index now available

Since 1998 Land for Wildlife SEQ has been developing quarterly newsletters, such as the one you are now reading. Collectively, they are a treasure-trove of stories about plants, animals, creeks, soils and the people who manage them. You can now search topics (from the past nine years) including authors, Council regions or maybe even yourself, via our homepage at **www.lfwseq.org.au**. The Land for Wildlife Notes series is also searchable.

Annual Report

207 new properties joined the Land for Wildlife SEQ program during 2014/15, adding an extra 2,146* hectares to the Land for Wildlife network. The largest new Land for Wildlife registration was on Minjerribah (North Stradbroke Island), and the smallest was at Moggill, Brisbane. For more facts, figures and stories from the past year, the Annual Report can be downloaded from **www.lfwseq.org.au/reports** or ask your Land for Wildlife Officer for a copy.

*Note: This figure excludes the registration of 1,399 hectares on Minjerribah.

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We have nearly 3,000 Followers, many of whom are Land for Wildlife members. Join us online to continue the conversation.

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