



LAND FOR WILDLIFE

SOUTH EAST QUEENSLAND

FEBRUARY 2024 VOL. 18 NO. 1

INSIDE THIS ISSUE

- 2 Land for Wildlife Team
- 3 Editorial
- 3 Climate & Weather Outlook
- 3 Weeds to Watch
- 4 Native Guava in Logan showing signs of Myrtle Rust resistance
- 5 Spiky Plants: Armed but not always dangerous
- 6-7 Greater Glider Recovery Project on the Sunshine Coast
- 8-9 From Paddock to Paradise
- 10-11 What Motivates People to do Conservation?
- 12 Plant and They Will Come
- 13 Book and App Reviews
- 14-15 From Farm to Forest
- 16 Christmas Beetles: Are they in decline?



Native Guava p.4



30 Years of Revegetation p.14

Your Officers



Brisbane City Council

Amanda Maggs ☎ 3178 6767
Andrew Wills ☎ 3407 0215
Cody Hochen ☎ 3178 1001
Fflur Collier ☎ 3178 2489
Susan Nolan ☎ 3403 6777
Tony Mlynarik ☎ 3178 4294

City of Gold Coast

Adrian Cain ☎ 5582 8896
Andrew Attewell ☎ 5582 8344
Melanie Mott ☎ 5582 8915
Saul Hondow ☎ 5582 8022
Todd Burrows ☎ 5582 9128

Gympie Regional Council

Position Vacant ☎ 1300 307 800

Ipswich City Council

Dani Andlemac ☎ 3810 7173
Ko Oishi ☎ 3810 6666

Lockyer Valley Regional Council

Martin Bennett ☎ 5462 0310

Logan City Council

Craig Welden ☎ 3412 4975
Jennie Bacon ☎ 3412 4522
Jason Creamer ☎ 3412 5034
Nick Swanson ☎ 3412 5355
Peter Copping ☎ 3412 5321

Moreton Bay Regional Council

Adam Richardt ☎ 5433 2072
Debbie McQuattie ☎ 5433 2145
Nicole Byrne ☎ 3094 3632
Stefan Hattingh ☎ 3480 6362
Wendy Heath ☎ 3883 5636

Noosa Council

Dave Burrows ☎ 5329 6500
Paul Sprecher ☎ 5329 6500

Redland City Council

Maree Manby ☎ 3820 1102 / 0438 776 535

Scenic Rim Regional Council

Catherine Madden ☎ 0458 486 008

Somerset Regional Council

Darren McPherson ☎ 5424 4000

Sunshine Coast Council

Chad Oliver ☎ 0417 774 278
Kylie Gordon ☎ 0418 398 904
Michael Mills ☎ 0477 795 231
Michael Reif ☎ 0437 112 071
Nadia Joyce ☎ 0427 569 990
Nick Clancy ☎ 0407 754 193
Rhonda Bordonaro ☎ 0459 737 626
Stephanie Keys ☎ 0408 665 826

Toowoomba Regional Council

Daniel Tay Chean ☎ 4688 6514
Sandy Robertson ☎ 0415 277 145

Land for Wildlife South East Queensland Team,
December 2023

Land for wildlife SOUTH EAST QUEENSLAND SNAPSHOT

 **5,602**
TOTAL
PROPERTIES

 **4,450**
REGISTERED
PROPERTIES

 **1,152**
PROPERTIES
working towards
RESTORATION

 **79,475^{ha}**
RETAINED HABITAT

9,306^{ha}
Habitat **Under**
RESTORATION

 **49,149**
iNaturalist
OBSERVATIONS

 **12,203**
Facebook Followers

www.inaturalist.org/projects/lfwseq

To join contact your local LfW Officer

Land for Wildlife South East Queensland acknowledges this Country and its Traditional Custodians. We acknowledge and respect the spiritual relationship between Traditional Custodians and this Country, which has inspired language, songs, dances, lore and dreaming stories over many thousands of years. We pay our respects to the Elders, those who have passed into the dreaming; those here today; those of tomorrow. May we continue to peacefully walk together in gratitude, respect and kindness in caring for this Country and one another.

Land for Wildlife is a voluntary conservation program that encourages and assists landholders to provide habitat for wildlife on their properties.

Land for Wildlife South East Queensland is a quarterly publication published by 13 Local Governments in south-east Queensland and distributed free of charge to their Land for Wildlife members.

Opinions expressed by contributors to Land for Wildlife South East Queensland are not necessarily those of the Land for Wildlife program nor any of the supporting agencies.

Printed on EcoStar Silk 100% post-consumer recycled paper, FSC certified, chlorine-free process and made carbon neutral. Printed using vegetable based inks.

ISSN 1835-3851 Print run - 4160 copies

Front Cover: Installation of a Habitech nest box for Greater Gliders, photo by WPSQ.

Front Cover Inset Photos: Native Guava flower, photo by Nick Swanson; Aerial photo of Daryl and Craig Hosmer's property from 2006.

Editor: Deborah Metters
Proof-readers: Tony Mlynarik, Todd Burrows and Peter Copping.

Prepress: Kingfisher Creative
Printer: Greenridge Press

 www.lfwseq.com.au

 facebook.com/lfwseq

The results of a recent study have added weight to the nature vs nurture debate, within a LfW context. Marilyn Shrapnel is a long-term LfW member and retired psychiatrist (yes, impressive) who decided to undertake a PhD to explore why people do conservation.

Apparently, a desire to care for nature is not necessarily innate within humans but can be a learnt process. Personally, my life experiences would lead me to agree with this. I remember naively realising that not everyone saw that trees give us air, healthy soil gives us food and that wildlife are our evolutionary relatives.

LfW members from three council regions in SEQ were involved in Marilyn's research. All of them were attached to their properties, but some so deeply that they were unable to envisage a time that they may have to leave. This deep connection to nature was a result of a learnt bonding process with their land. Such a bond takes time to develop and was seen more in LfW members who spend lots of time interacting with their properties. Interestingly, the research showed that the LfW program played a pivotal role in this learning and bonding. Pages 10-11 detail this research.

Two stories in this edition demonstrate this bonding process and how it drives conservation behaviour. The titles, *From Paddock to Paradise* and *From Farm to Forest*, speak for themselves.

It feels good to be a part of a program that offers a slow and safe way for landholders to learn about their properties and to form a lifelong bond with nature. Many of us grew up learning more about lions and elephants than wallabies and gliders, so it makes sense that we need some guidance to introduce us to this country. I don't know where I would be without my connection to nature. It has helped me through difficult times in my life and is always there to listen to my joys and woes.

We have a long way to go in our society before we are living with and respecting this country, rather than trying to change it or take from it. What this research shows is that a connection and care for nature can be learnt, and that LfW members are the champions of this.

Thank you to all LfW members who have shared your stories about your connection to your properties, which inspire others in their bonding and learning process.

I want to acknowledge also that a connection to nature, like all deep connections, can sometimes be heartbreaking. The wild storms and floods over this summer have affected many LfW properties and the clean up will continue for some time.

On a final note, I want to congratulate Noosa Council on expanding their investment into conservation through the addition of a new position to help manage their rapidly growing LfW and conservation covenants programs. Welcome to Paul Sprecher, who moved from the LfW position at Gympie, to join Dave Burrows at Noosa. This is the first time that Noosa Council has had two LfW Officers and I look forward to seeing how the program grows and diversifies over time.

Happy reading.

Deborah Metters
Land for Wildlife
Regional Coordinator

We welcome all contributions.

Please send them to:

The Editor

✉ deborah@seqlfw.com.au

☎ 0437 910 687



Climate & Weather

REGIONAL OUTLOOK Feb - Mar 2024



Daytime and Night-time Temperatures.

Above average daytime and night-time temperatures are very likely.



Rainfall. Above median rainfall is likely.



Streamflow. Low to near-median streamflows are likely for most of SEQ.

Climate Influences

- An active El Nino, although warming has likely peaked.
- A positive Indian Ocean Dipole (IOD) remains but it is weakening steadily.
- A positive Southern Annular Mode (SAM) increases the chances of above average rainfall for SEQ.
- Record warm ocean temperatures globally.

Sources

www.bom.gov.au/climate/outlooks/
www.bom.gov.au/water/ssf/

Weeds to Watch

Feb - Mar 2024

All weeds are loving this rainy, hot weather, so prioritisation of control effort is key. Both Parthenium and Annual Ragweed are weeds of pastures, floodplains and disturbed areas, rather than bushland areas and may currently be flowering. Some people are highly allergic to these plants and their pollen, with Annual Ragweed also called asthma plant.

Both Parthenium and Annual Ragweed are listed as Category 3 under Qld legislation and must not be distributed. They can be easily confused in the field – look for the ribbed stems on Parthenium. Parthenium is used by some farmers as an indicator that pastures are overgrazed or cultivated areas are over-tilled.

Both weeds can be controlled with selective herbicides – there is lots of information online about control options, or chat with your Land for Wildlife Officer.



Parthenium



Annual Ragweed

Martin Bennett, Lockyer Valley Regional Council



NATIVE GUAVA IN LOGAN SHOWING SIGNS OF *Myrtle Rust Resistance*

The Native Guava (*Rhodomyrtus psidioides*) is a Critically Endangered species that was once reasonably common along the east coast of Australia from Hervey Bay to Sydney. It has been almost completely wiped out due to the introduced fungus, Myrtle Rust, which affects all parts of the plant and eventually kills the plant. Myrtle Rust was first detected in Australia in 2010 and has spread widely through native plants within the Myrtaceae family. It has particularly affected and caused major declines in species of *Rhodamnia*, *Gossia* and *Rhodomyrtus*.

Most Native Guava now found in the wild are suckers off the roots of trees that are long gone. These suckers reach about a foot high before they are killed by Myrtle Rust as new growth is highly susceptible to this fungal disease. This cycle of sprouting and being knocked back can continue over many years, until finally the plant stops sending out suckers and fully dies.

In October 2022, six Native Guava plants, ranging from 1-3 metres in height, were found on a Land for Wildlife property in Logan and appear to be resistant to Myrtle Rust as there were no signs of rust on the plants. What is even more exciting is that these plants put on a seriously impressive flowering display and then fruited profusely in the months following.

Logan Land for Wildlife Officers and the landholder worked with the Department of Agriculture and Fisheries to collect cuttings for testing and propagation. This will tell us more about the level of resistance these plants have to Myrtle Rust.

Fruit was also sent to Brush Turkey Enterprises Nursery on the Sunshine Coast for propagation. The fruit recently germinated and the seedlings are growing well. So far, no fungicides have been used on these propagated Native Guavas, which is a great sign that they are growing without signs of rust.

We are continuing to monitor these six plants in Logan and, more than a year on from their discovery, they are still growing well with no signs of Myrtle Rust. So, let's hope that these plants do turn out to be Myrtle Rust resistant and can potentially help save Native Guava from extinction.

**Article and photos by Nick Swanson
Land for Wildlife Officer
Logan City Council**



Armed BUT NOT ALWAYS DANGEROUS

During Land for Wildlife visits, property owners are regularly surprised that some of the most thorny and spiky vines are indeed native plants! Whilst there are some thorny introduced vines like Bougainvillea, generally most of the seriously armed (a botanical term meaning having a defensive mechanism such as a thorn, spine, prickle or stinging hair) vines are natives.

Barbed-wire Vine (*Smilax australis*) and Cockspur Thorn (*Maclura cochinchinensis*) are a couple of good common examples. My personal favourite is Wait-a-While or Southern Lawyer Vine (*Calamus muelleri*). This is a vigorous climber with stems up to 20m long that often forms large clumps with climbing assisted by the spines. It grows primarily in rainforests from Macksville in NSW to Tinana in Qld.

Anyone who has walked unexpectedly into a patch of Wait-a-While will have memories of trying to free themselves, and the careless or impatient will have the scars to prove it! While these vines are generally unpopular with many, they are valuable nesting habitat for a range of bird species that use the spines of the vine to protect their nests and young.

In the Sunshine Coast hinterland the hanging nests of birds including the Yellow-throated Scrubwren and Brown Gerygone are often seen in *Calamus* tangles. Once abandoned, these nests are also sometimes re-used by Large-billed Scrubwrens and Golden-tipped Bats.

Other birds such as Eastern Yellow Robins will use sturdy lower *Calamus* canes to build cup-shaped nests in, but as the photos show, it's not a guarantee of safe nesting. So next time you're carefully avoiding your local spiny vine tangle take a moment to see if any wildlife is making themselves at home.

**Article and photos by Michael Reif
Land for Wildlife Officer
Sunshine Coast Council**



A couple of species of gerygone and scrubwren make these hanging nests, usually from a spiky native plant, like *Calamus*.



Shown here is a series of photos of an Eastern Yellow Robin nest taken over a three week period on a Land for Wildlife property at Mapleton. Unfortunately the nest failed, probably due to predation by a Pied Currawong.



Greater Glider

RECOVERY PILOT PROJECT ON THE SUNSHINE COAST

Spot the nest box in this eucalypt forest on a sandstone ridge in the Mooloolah Valley.



The eucalypt forests of SEQ are home to a variety of gliders including the largest and perhaps most iconic, the Greater Glider (*Petauroides volans*). In 2022, the Greater Glider was re-listed from Vulnerable to Endangered nationally as it continues to decline across the east coast of Australia. A recent study by Macgregor et al. (2020) identified there may be three distinct species of Greater Glider including the Northern Greater Glider (*P. minor*), Central Greater Glider (*P. armillatus*) and Southern Greater Glider (*P. volans*). However, at this time and for the purposes of this article, I will hereafter refer to the local species in SEQ (Southern and Central Greater Gliders) as Greater Gliders.

Greater Gliders primarily forage on eucalypt leaves and require mature, hollow-bearing trees (typically eucalypts). Suitable hollows are critical as they are used for shelter during the daytime and for breeding.

One of the greatest threats to Greater Gliders is loss of habitat due to the decline of large hollow-bearing trees. Land clearing and wildfires have contributed to this habitat loss in SEQ over recent decades. The 2018 bushfires in central and southern Queensland and the more recent 2019-2020 wildfires impacted at least 30% of Greater Glider habitat throughout their

range. As growing threats of habitat loss continue to mount, and with the impacts of a changing climate and land clearing, there are many projects across the east coast focused on restoring habitat and providing supplementary hollows for Greater Gliders.

Greater Gliders have relatively small home ranges of 1-4 hectares in areas of good quality, highly connected habitat with abundant hollows. They are known to have a wider home range in less fertile areas like central Queensland. In SEQ, studies have shown that individuals require a minimum of 2-4 den (hollow-bearing) trees for every 2 hectares of suitable forest habitat. However, some records show individuals can use up to 20 den trees. Greater Gliders typically give birth to single young in March to June (winter).

Over the past year the Sunshine Coast Land for Wildlife team have developed a pilot project to install 18 Habitech nest boxes across several Land for Wildlife properties on the Sunshine Coast.

All nest boxes were installed within four distinct defined habitat patches with known occurrences of Greater Gliders. These four patches were identified as suitable Greater Glider habitat areas based on an assessment of ecosystems, physical barriers in the landscape (e.g.

highways, suburbia) and the known home range (approximately 2ha) for Greater Glider females in SEQ (Eyre et al. 2022). All identified habitat patches contain hollow-bearing trees suitable for denning as well as feed trees and habitat connectivity across the landscape.

This project aims to identify hollow-dependant fauna investigating and using these nest boxes while providing more habitat for Greater Gliders.

All nest boxes were installed between 10-14 metres high on eucalypt species including bloodwoods (*Corymbia* sp.), Grey Gums (*Eucalyptus propinqua*) and Tallowoods (*Eucalyptus microcorys*), which are known to be used as denning or feed trees by Greater Gliders in Queensland. Habitech nest boxes are made from long-lasting, UV-stable plastic with timber linings to create a well-insulated, modular and stackable nest box with potential for multiple entry configurations.

Nest boxes were installed in October – November 2023 and will be monitored using a combination of techniques including mounted fauna cameras, spotlighting and from the ground with a fauna camera on an extension pole. In addition, Land for Wildlife Officers and landholders will undertake surveys including spotlighting and stag watching.



Maaïke Hofman (WPSQ) installing a Greater Glider nest box on a Bloodwood tree on a Land for Wildlife/Nature Refuge property in Mooloolah Valley.



Common visitors to nestboxes in the first few weeks after installation are tiny Feathertail Gliders and Pale-headed Rosellas.

One of the monitoring techniques used as part of our project includes fixed fauna cameras installed above the nest boxes to monitor real-time fauna movement. Solar powered fauna cameras were skilfully installed on four nest boxes by Wildlife Preservation Society Queensland's Matt Cecil and Maaïke Hofman.

Although Blackbutts (*Eucalyptus pilularis*) are a known denning trees for Greater Gliders in SEQ and the dominant canopy species throughout the project area, these species were omitted from having nest boxes installed. This is due to their large lateral limbs posing potential threats to camera mounts during storms and high wind events.

This exciting project will run over the next 12 months, and we hope that by using a combination of monitoring techniques coupled with the installation of nest boxes across four distinct patches in the landscape that we can provide more sheltering and denning sites for Greater Gliders on the Sunshine Coast. In addition, we hope to also gather insight into the local Greater Glider habitat preferences and support landholders in continuing their conservation and restoration goals for this federally threatened species.

To learn more about Greater Gliders and other locally threatened glider species visit the Queensland Glider Network at wildlife.org.au.

References and Further Reading

Eyre TJ, Smith GC, Venz MF, et al. (2022). *Guide to greater glider habitat in Queensland*. Report prepared for the Dept of Agriculture, Water and the Environment. DES, Brisbane.

Eyre T J (2005). Hollow-bearing trees in large glider habitat in south-east Queensland, Australia: abundance, spatial distribution and management. *Pacific Conservation Biology*, 11, 23–37.

Kavanagh RP, Lambert MJ (1990). Food selection by the greater glider, *Petauroides volans*: is foliar nitrogen a determinant of habitat quality? *Australian Wildlife Research*, 17, 285–299.

Foley WJ, Lawler IR, Moore BD et al. (2006). Diet selection in marsupial folivores of Eucalyptus: the role of plant secondary metabolites. In: Goldingay RL & Jackson SM (Eds.) *The Biology of Possums and Gliders*. Surrey Beatty & Sons, pp. 207–221.

Macgregor D, Padovan A, Georges A et al. (2020). Genetic evidence supports three previously described species of greater glider, *Petauroides volans*, *P. minor*, and *P. armillatus*. *Scientific Reports*, 10, 19284.

Ward M, Tulloch AT, Radford JQ et al. (2020). Impact of 2019–2020 mega-fires on Australian fauna habitat. *Nature Ecology & Evolution*, 4, 1321–1326.

**Article and photos by De-Anne Attard
Land for Wildlife Officer
Sunshine Coast Council
Additional photos WPSQ**



Marta (Land for Wildlife landholder) and Maaïke assessing a large Bloodwood for installation of a nest box.

FROM Paddock TO *Paradise*

Like a growing number of Australians, James and Simone Lane's story began with a tree change – borne from the desire for their children to grow up playing in a pollution-free and spacious environment that only regional living could offer. Their ideal property needed to be relatively close to Brisbane's CBD and their places of work while still maintaining privacy from neighbours and the world. After a year of searching and waiting, paradise was finally found in a ten-acre block in Cornubia, a verdant suburb in Logan's east. The acreage had everything on James and Simone's wish list and more, with one considerable catch – the property was a badly degraded former horse paddock.

The previous landowner had rented out the property for many years, including most recently to tenants with horses. The block was fenced off into half a dozen paddocks with many of the wattles and other mid-storey vegetation removed, leaving only the mature gumtrees spaced around 10-20 metres apart. The horses left a legacy of ringbarked trees, razed grass and bare ground interspersed with blue billygoat weed and lantana thickets. There was very little wildlife except for the usual wallabies, magpies and good old Noisy Miners.

When James and Simone settled in late 2015, they quickly set about pulling down all the internal fencing to allow greater freedom of movement for wildlife. This literal breaking of barriers proved to be symbolic as well, leaving the couple with a clean slate to begin restoring the land to some semblance of its former glory. Soon after, they joined Land for Wildlife with Working Towards Registration status.

Armed with an abundance of knowledge from the internet and their local Land for Wildlife Officer, James and Simone got stuck into weed control and revegetation. With some trial and error, they learned what was and wasn't a weed, and what natives would and wouldn't grow on their land. Herbicide was crucial for taking

on the large extents of Singapore Daisy and Lantana, with hand-weeding enough to control the remaining weeds. Even now, most unwanted plants are pulled out while strolling the property and enjoying the space.

Early in their journey, James and Simone learned the importance of water. Though it may seem obvious, keeping the soil moist and plants hydrated was not easy in a land of long dry spells. Fifty dollars bought them 10 cubic metres of mulch to lay across the barren areas, working to hold in moisture, suppress weeds and return much-needed nutrients to the soil. On areas of hillsides, the mulch was laid out to create contour banks to slow the outflow of water and keep as much on the property as possible. Any dead or fallen branches were laid across the flow of water or on the barren ground, with neighbours even donating their 'rubbish' to the cause. These simple additions created habitat for insects and other wildlife who gratefully returned the favour by adding their own mulch to the mix. The property's dam was put to good use with the addition of a dam pump and plenty of two-inch hosing to flood irrigate the high areas, as well as bring water to all the planted tube stock from Land for Wildlife incentives. The secondary benefit of pumping from the dam is the removal of nutrients and reduction of aquatic weeds.

All the hours spent unloading logs, mulching and pulling weeds paid off in multitudes and they were upgraded to the Land for Wildlife Registered status only two years later. Those lucky enough to visit this beautiful property would find it inconceivable that an area so lush and full of life was once a barren paddock.

**Article by Michelle Mogilski
Land for Wildlife Officer
Logan City Council, and
James Lane
Land for Wildlife member
Cornubia, Logan**

Before...

Property advertised online for sale.
Basically it was a degraded horse paddock.



After...

Diverse native grasses and natural regeneration of trees.



"While it has probably taken longer than we expected, it is a pleasure to see the transformation that has been made. We see much more wildlife from lizards and birds to the odd wandering echidna taking advantage of the white ants that enjoy munching on all the mulch. It is cooler in the hot months too, as the wind is cooled blowing through all the undergrowth.

If there is one piece of advice we could offer to others just starting out it would be this: water. Keep as much of it as possible on site. Just support the land and mother nature will do the rest. While planting is important, the effort in doing so is better spent on supporting what is already there. Just plant for biodiversity."

James and Simone.



WHAT MOTIVATES PEOPLE TO DO

Conservation?

Being a long-term member of Land for Wildlife (LFW) for over 20 years, and having a background in psychology, I have often wondered what motivates people like me to become involved in conservation behaviour. How important are factors such as a rural background and previous experience with the natural world? Why do people join LFW and what role does LFW play for its members? Does personality play a role and if so, how?

To investigate these questions, I enlisted the help of 31 LFW volunteer registrants in the three Local Government Authorities of Noosa, Sunshine Coast and Moreton Bay.

Participants followed a four-step process:

1. I conducted an in-depth, one-to-one interview with each participant, following their journey from the relocation to their current property, through to their decision to register for LFW, the subsequent changes in their land management practices and the connectedness to the nature on their property. I investigated the many variables known to be involved in Pro-nature Conservation Behaviour (ProCoB), to determine their influence in each individual.
2. After the interview, I conducted a property walk with each registrant, which provided the opportunity for the landholder to show me what they had achieved, the challenges that had been encountered and how they had been overcome, as well as what plans they had for the future.
3. I also requested them to complete the Temperament & Character Inventory (TCI -140 self-report personality questionnaire) administered online, prior to the interview. The inventory is based on a theory of personality that suggests that personality consists of the two principal domains of Temperament and Character. Temperament is largely genetic (what we are born with) whereas Character is what a person makes of themselves as they navigate their way through their lives, learning from experience.
4. I also asked participants to respond to the Inclusion of Nature in Self (INS) Scale. This is a graphical representation of images, which measures the degree to which an individual identifies themselves and their relationship with the natural world.

Nine LFW staff, who were familiar with each participant's property, were also interviewed, to gain their insights into the landholder's journey.

So, what was the outcome of the research?

- Although those with a rural background and childhood experience with the natural world were more likely to join LFW, they were not essential features. The majority of people did not join for conservation reasons, but rather to learn more about, and have assistance with, the management of their properties.
- After joining LFW, their motivation for involvement changed and their original motivation to join LFW did not necessarily continue to be the reason for their ongoing participation and engagement, which was dependent on other factors that developed during their involvement with LFW. Their aspirations for their land also changed as their experiences with the natural world on their properties led to a greater understanding of ecological systems. They also became more motivated by social factors, like being with "like-minded people" and receiving support and encouragement from the LFW community. They also developed a desire to become

"A strong connectedness to nature develops as a result of an experiential learning process, in which Land for Wildlife plays a pivotal role."

more involved in local environmental issues with other LfW registrants, as well as expressing concern for global environmental issues.

- These changes in motivation and commitment to ProCoB on their property demonstrated an increasing connectedness to nature on their land, which represents the outcome of a dynamic bonding process. This has characteristics of an experiential learning process, in which LfW plays a pivotal role. This process takes time to develop and was seen most often in individuals who were able to spend an appreciable amount of time on their properties, interacting and developing an intimate relationship with the natural world. Participants who had less opportunity for this interaction, due to constraints imposed by time, work and/or physical constraints were less likely to exhibit strong connectedness to nature on their property.
- All the research participants were attached to their properties, enjoyed living there, and said they would be sad when they had to leave. However, some participants displayed such a deep and binding connection to the nature on their land, that they were extremely reluctant to entertain thoughts of having to leave and expressed great concern for, and protectiveness towards the property, the wildlife and their efforts. In some this led to their registration for a Voluntary Conservation Agreement.
- Personality factors were also demonstrated to be of importance:
 - All participants had higher-than-average levels of the two Character dimensions of Self-directedness (self-determination) and Cooperativeness, which are considered essential pre-requisites for an ongoing commitment to work on the property. Connectedness to nature on property is considered to be a facet of the third dimension of Character (Self-Transcendence, which is our ability to overcome self-interest and strive for the greater good). As expressed above, LfW, through an experiential learning process, acts as a catalyst for the development of this aspect of Character.
 - The results showed variations in the Temperament dimensions of participants and indicated that Temperament played a significant role in the manner in which individual landholders accessed, processed and then acted on the environmental information. Therefore, for information to be successfully conveyed, a program requires a structure, content and modes of presentation that cater for those individual differences. The research showed that the LfW program offers a range of different activities which successfully accommodates the different personality styles.

Summary

Each person follows a unique path. Having a rural background or previous experience with the natural world are not necessary pre-requisites for people to develop a strong connectedness to nature on their property. Instead, it develops as a result of an experiential learning process, in which LfW plays a pivotal role.

Personality is important in terms of the capacity of registrants to put in the "hard yards", (character dimensions) and also in terms of their preferences for accessing, processing and acting on environmental information (temperament dimensions). The LfW program provides a variety of activities (group and one-to-one) which cater for these individual differences, helping people

to develop strong connections to the wildlife on their properties, regardless of their backgrounds. This is great news for the environment.

I would like to thank all LfW participants and LfW management for the generous contribution of their time and knowledge, without which this research would not have been possible. For further information on the research, you are welcome to contact me at M_S417@student.usc.edu.au

References

- Cloninger CR, Svrakic NM & Przybeck TR (1993) A psychobiological model of temperament and character. *Archives of General Psychiatry*, 50 (12), 975.
- Schultz PW. Inclusion with nature. Understanding the psychology of human-nature interactions. *The Psychology of Sustainable Development*. New York: Kluwer. Pp 61-78.

**Article and photos by Marilyn Shrapnel
Land for Wildlife member
Diamond Valley, Sunshine Coast
PhD Candidate, University of Sunshine Coast**



Plant AND THEY WILL COME

Peter Burke and Lisbet Dean are proud Land for Wildlife members who have also entered into a Voluntary Conservation Agreement with Noosa Council. Their property on Black Mountain Range in the Noosa hinterland is within a large (2,200 hectare) tract of remnant vegetation containing various eucalypt forest types and pockets of rainforest. Within this core area are many Land for Wildlife and Voluntary Conservation Agreement properties, as well as a 100 hectare land parcel recently purchased by Council for conservation.

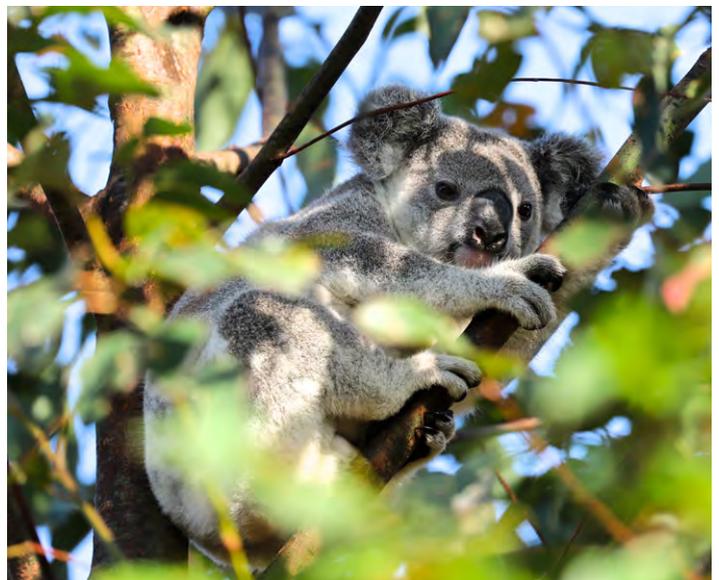
The Voluntary Conservation Agreement on Peter and Lisbet's property was established in 2012, and since that time open areas on the property have been planted with 2,500 trees, with a focus on establishing Koala habitat. The main eucalypts planted were Tallowwood (*Eucalyptus microcorys*) and Grey Gum (*Eucalyptus propinqua*). The most recent planting was in July 2020.

Late last year Lisbet and Peter were thrilled to see that Koalas had moved into the most recent planting. This demonstrates how re-establishing habitat for wildlife can make a difference in a short period of time.

Lisbet is an accomplished photographer and here are some photos she has taken of Koalas on their property.

**Article by Dave Burrows
Land for Wildlife Officer
Noosa Council**

Photos by Lisbet Dean



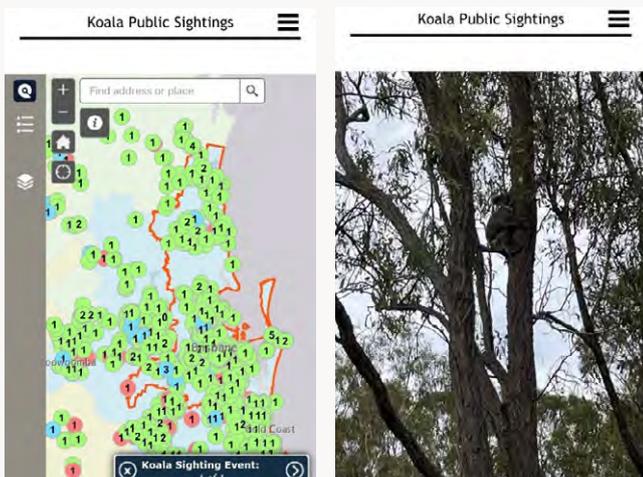
QWildlife



Have you seen a Koala? Are you interested to know if others have encountered a Koala near your property or route to work? QWildlife is an online crocodile and Koala monitoring platform created by the Queensland Government. You can attach photos and details of your Koala sightings and/or view other Koala sightings in your local area.

The app provides useful links to websites with information on what to do if you see a deceased, sick or injured Koala. There is also information about Koala conservation, rehabilitation, rescue and regulations.

The app is relatively basic with two options for either logging a sighting or linking to websites for more information. The data collected via this app is used to support research, conservation and management actions in Queensland. So if you spot a Koala at home or in your travels, be sure to use this app to log the record.



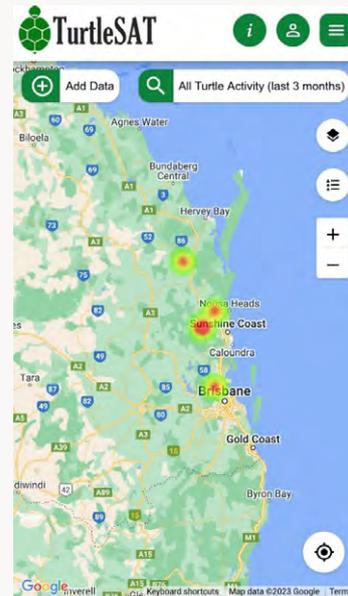
Developed by Dept of Environment and Science
iOS and Google Play | Size: 173MB | Free

App Review by De-Anne Attard
Land for Wildlife Officer, Sunshine Coast Council

TurtleSAT



It's turtle nesting season for a lot of our freshwater turtles and this new app and website is a great way to log your records. TurtleSAT (Turtle Surveying and Analysis Tool) is a useful tool for users to log sightings and include photos, coordinates (or a pin location on the map), species type (if known) and your contact details (optional). The interactive map can be used to filter sightings (live or dead) of turtle records on the heatmap, however the heatmap does lack specificity on locations and species.



It is relatively easy to enter data via the app, however it is not designed to assist users in species identification. People may choose to use TurtleSAT in conjunction with the identification app/website, iNaturalist.

TurtleSAT is already used by local catchment groups including Mary River Catchment Coordinating Committee to track threatened turtles to help with broader conservation management. Overall, it is a good app aimed to collect more specific information on turtles.

Developed by University of Western Sydney
iOS and Google Play | Size: 12MB | Free

App Review by De-Anne Attard
Land for Wildlife Officer, Sunshine Coast Council

The Song of the Dodo

BY DAVID QUAMMEN

Every so often you read a book that entirely changes your view of the world - this book does just that. It puts the jigsaw pieces of ecology, evolution, conservation and other biosciences together.

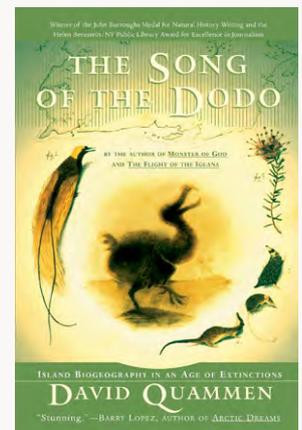
What did the Dodo sound like? The simple but heart-aching answer is that we'll never know. Its demise was the result of a multitude of factors that all point to human intervention.

This book explores the science of island biogeography, a theory that fundamentally changed ecology and conservation biology. Islands often work as 'incubators' for evolution, effectively speeding up evolutionary changes. This book celebrates island life.

The Dodo is an iconic casualty of human expansion across the globe. The study of island biogeography helps explain why the Dodo, and many other species since, have

become extinct, and also offers methods that we can use to help species teetering on the brink of extinction. Island biogeography stipulates that larger, less isolated islands have higher numbers of species, while smaller, more isolated islands have lower numbers. The trouble with rapid human expansion is that we are creating 'islands' of nature over every continent. To maintain the number and diversity of species, we must stop creating more 'islands', maintain big islands and connect natural areas.

Despite being written over 25 years ago with examples of lost species, this is a book full of positivity, awe and discovery. I challenge anyone to read it and not be moved to try that little bit harder to protect and conserve what this precious Earth offers. Island biogeography presents an understanding of how to do so, and it's explained beautifully in this book.



Published by Scribner, 1996
701 pages, paperback
Available widely online

Review by Adam Richardt
City of Moreton Bay

FROM FARM TO FOREST

30 Years On

This aerial image from 2001 shows the extent of lantana and previously cleared steep areas on Daryl and Craig's property. The brown areas in the gullies are where Daryl and Craig prepared the site for revegetation.

A question that I occasionally get asked is "how long will it take to restore my property to its natural state"?

This is a tricky question, and one dependent on many factors, for example the extent of damage that has occurred to the original ecosystem. Understanding this and the natural regeneration capacity of the site will determine whether only assisted regeneration such as weed control is required (as the existing ecosystem has the ability to recover naturally), or if a more intensive approach such as planting is needed.

The latter is true for this super couple, who this year, celebrate the 30th year of their property restoration journey. While they continue to extend on planted areas, pull weeds and plan new projects, their goal of providing habitat for a diversity of fauna species happened well before the 30-year mark.

Daryl and Craig moved to their 15.8 hectare Sunshine Coast property in 1994. It was mostly cleared grazing land infested by lantana and heavily compacted by cattle that roamed at will. The property also posed many physical challenges, as it's positioned on the steep eastern escarpment of the Blackall Range where Echidna Creek starts its journey down to the Maroochy River. Fortunately, the rich soils and favoured hinterland climate facilitated fast plant growth. Daryl and Craig started right away, acquiring knowledge on local vegetation, revegetation techniques and native rainforest plants through Barung Landcare. Joining Land for Wildlife in 1998 gave their efforts another boost.

In 2001, Daryl and Craig partnered with Healthy Waterways and five of their downstream neighbours to plant 18,000 plants, creating a 4 km corridor along Echidna Creek to link up with Spring Pastures Drive Bushland Reserve. Since then, they have been successful in applying for small grants from Sunshine Coast Council and the Federal Government to help employ experienced local bush regenerators to support their work. To ensure the longevity of their efforts, in 2010 they decided to place a Voluntary Conservation Covenant over the vegetation to protect it in perpetuity. In 2018 they added two new covenant areas, expanding the total protected vegetation area to 12 hectares.

The increased diversity of native flora and fauna present is a great performance indicator to show success. Some of the wildlife diversity now found on site include Noisy Pittas, Eastern Whipbirds, Rufous Fantails, Tusked Frogs and possibly Giant Barred Frogs. Topknot Pigeons are now frequent visitors, as are flying foxes.

I often use this project as inspiration to new landholders starting their restoration and land management journey. It's truly inspiring to witness what can be achieved in a reasonably short period of time. Their outstanding success is not only due to their tireless hard yakka, but the knowledge and lessons learnt early on that guided their planning and restoration processes.

Congratulations Daryl and Craig! Your 30 years of hard work has truly transformed this landscape and has inspired many others to do similar.





KEY TIPS FOR SUCCESSFUL RESTORATION

Select sites strategically to maximise connections and minimise edges.

Linking up or extending on patches of existing vegetation to create larger core areas is important to reducing edge disturbances such as weeds, predators and surrounding land use. In the undergrowth, there are usually more weeds around edges, so smaller forbs and native grasses are likely to thrive in the core area of a larger patch.

Make sure the size of the site is within your ability to maintain for three years.

Developing a restoration plan for the site and breaking the site up into smaller more manageable areas is a great way to record your progress and feel a sense of achievement as you tick off completed areas.

Select species carefully for the specific location.

Use a reference ecosystem near the restoration site with similar environmental conditions such as climate, geology and natural disturbance history to help guide your species selection. Taking note of what is already existing and growing well in your specific location will also help with success.

Use a high ratio of pioneers and fast growers.

The percentage of pioneer species will depend on the site attributes, however a minimum of 30% and maximum of 60% pioneers is recommended. These can be pruned and dropped on the ground to aid in developing a humus layer and to speed up the growth of longer-lived canopy species coming up underneath.

Choose species to seal edges and keep weeds out.

Bushy shrubs and small trees that carry foliage down low are excellent for planting edges and reducing edge effects.

Prepare sites thoroughly, well in advance of planting.

A well-prepared site can speed up site establishment and save time in the long run. Fence the area to exclude livestock, spray out or hand remove exotic grasses and other weeds.

Plant in rows to facilitate maintenance.

Maintenance is fundamental to success. Planting in rows allows for easy access with a mower to keep the grass and weeds down. Within a few years, you won't even notice the rows. Daryl and Craig cannot use mowers on their steep land, but still advocate planting in rows on contours at regular spacing as a way to help find small seedlings that may otherwise be swamped by rampant weed growth.

Plant closely to achieve quick canopy closure with consequent reduced maintenance.

A tree and shrub spacing of 1.5m centres will result in rapid canopy closure, shading out exotic species and reducing maintenance requirements. Edges can be planted at higher density to reduce edge effects.

Plant early in the wet season to maximise growth.

Planting should preferably be carried out after rain when the soil is moist. Try to avoid seasons where extremes of weather could be expected. February to May is traditionally recognised as a good time to plant in SEQ.

Mulch well to retain soil moisture and control weeds.

If feasible, mulching can be a fantastic addition to your planting site. It helps to reduce competition for light, nutrients, and moisture by suppressing weeds and assisting in water retention to keep roots cool and moist.

References and Further Reading

Chenoweth EPLA and Bushland Restoration Services (2012). *South East Queensland Ecological Restoration Framework: Guideline*. Prepared on behalf of SEQ Catchments and SEQ Local Governments.

Sunshine Coast Council. *Guidelines for Habitat Plantings*, Information Sheet.

**Article by Nadia Joyce
Land for Wildlife Officer
Sunshine Coast Council**

Land for Wildlife
South East Queensland
proudly delivered by:



Dedicated to a better Brisbane

CITY OF
GOLDCOAST™



Christmas Beetles

ARE THEY IN DECLINE?

This rainy, hot summer has resulted in huge emergences of beetles (order Coleoptera) and bugs (order Hemiptera). Beetles are generally either herbivores (feeding on leaves), predators (feeding on other invertebrates) or scavengers that feed on fungi, leaf litter, carrion or dung. This summer has been a particularly good season for cicadas and beetles.

One of the most iconic groups of Australian beetles is the Christmas beetles (large beetles in the genera *Anoplognathus*, *Calloodes* and *Repsimus*). There are 36 known Christmas beetle species and most of them are found only in Australia.

Like most beetles, female adult Christmas beetles lay their eggs in the soil. These hatch into grubs (larvae) that live underground for several years, feeding on roots and decaying leaves. Eventually they pupate and emerge from the ground during summer as adults to find a mate and start the cycle again.

Anecdotally, many people say that Christmas beetles have declined in recent times. We even reviewed a children's book in the last newsletter edition with such a title. Declines certainly make sense because we know how much native vegetation has been lost recently. However, there is no long-term data about beetle populations in Australia. To help fix this, Invertebrates Australia in partnership with researchers at the University of Sydney have created the Christmas Beetle Count project.

This project aims to compare current and historic distribution records of Christmas beetles and to see if there are declines and the potential cause.

By uploading any photos of Christmas beetles to iNaturalist, you are automatically contributing to the project. Ideally, take four photos of each beetle – one of the back, belly, face and rear. This will help ensure accurate identification. Already the project has found 'missing' Christmas beetles – species that have not been formally sighted in decades. Exciting stuff.

Christmas beetles, like all invertebrates, are essential to life on Earth. They help recycle organic matter in the soil and they provide a great source of protein for birds, reptiles and mammals. So, if you find Christmas beetles on your property, please consider taking some photos (on your phone is fine) and upload them to iNaturalist. Your Land for Wildlife Officer would be happy to talk to you about using iNaturalist if you need assistance.

Article by Deborah Metters



Top down L-R:
Washerwoman (*Anoplognathus porosus*)
A Shining Leaf Chafer (*Anoplognathus rhinastus*)
Duck-billed Beetle (*Anoplognathus montanus*)
Black Nail Beetle (*Repsimus manicatus*)
Campfire Beetle (*Anoplognathus concolor*)
Granny Smith Beetle (*Anoplognathus prasinus*)

Photos by Greg Tasney. All were taken in SEQ, including some on Land for Wildlife properties, and are recorded on iNaturalist.