

Summer Newsletter 2021

With the start of a new year, a lot of exciting activities and projects are kicking off in the range. This year we have already had a fantastic community workshop where private landholders from the Little Liverpool Range Initiative, and Ipswich City Council and Lockyer Valley Regional Council Land for Wildlife all got together and identified key topics of interest, which will be integrated into our workshops and programs this year. As part of the workshop we headed out into the field to learn about flora identification and how to use the iNaturalist app to effectively document species. Since the workshop we have added 5 new members to our Wildlife of the Little Liverpool Range iNaturalist Project, added 183 new observations and identified an additional 77 species of flora and fauna across the range!

This year we are excited to announce the development and expansion of coordinated landholder projects that provide strategic surveying and management of species on the LLR! We are also introducing 'Office Hours' where the doors at the Hidden Vale Wildlife Centre will be open to landholders in the LLR. During these scheduled times experts from the Hidden Vale Wildlife Centre or local councils will be available to discuss potential problems you might be facing or offer advice! These times will be advertised well in advance of our session so keep a look out!

Remember to keep up to date by following our social media pages.

Instagram: @littleliverpoolrange

Facebook: @littleliverpoolrange



Species identification workshop guided by Martin Bennett



A brushtail possum & rufous bettong caught on camera at a private landholder's property





Pest features: As sneaky as a fox!

European foxes were introduced to Australia in 1855 for recreational hunting. They then quickly established wild populations in just over 15 years.

Why are foxes such a hindrance to our native ecosystems? Have you ever heard of the term as clever as a fox! This is exactly why. Foxes have the ability to adapt and change to their environment, making it very easy for them to live across many regions of Australia. Being predominantly nocturnal, foxes can sneak by without us even knowing. However, you may see traces that they have been around. Look out for their foot prints and scats of these troublesome animals!

Foxes have played a major part in the decline of many native birds, small to medium mammals and many reptiles. One significant species impacted by foxes is the greater bilby.

What can you do to help in the fight against pest animals? Firstly, documentation of sightings or traces of these animals is critical. This can be easily done through the free [FeralScan App](#). You can then contact us at the LLRI we can offer assistance and get you in contact with pest management experts!



Photo credit: Karmen Butler – Hidden Vale Wildlife Centre

LLR Native Species Profile

Common name:
Rufous Bettong

Scientific name:
Aepyrymnus rufescens

Conservation status:
Least concern – QLD, Vulnerable - NSW

Lifespan: Approximately 6 years, captive individuals are known to live up to 8 years.

Population trend: Unknown. Despite being 'least concern' in QLD population trends are unknown.

Reasons for Historic decline: Predation by foxes, land clearing, cattle grazing and changes in long-term climate.

Fun Fact: Rufous bettongs make grass nests to sleep in during the day-time and carry this grass with their tail!





Threatened Species of the LLR



Tusked frog, *Adelotus brevis*. Photo credit: Greg Tasney

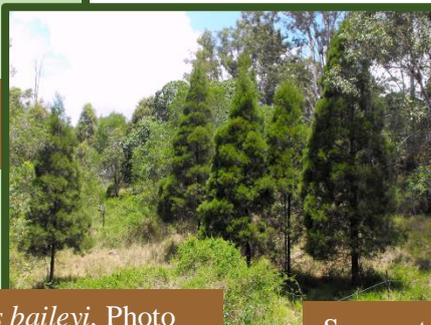


Brush sophora, *Sophora fraseri*. Photo credit: Martin Bennett

Most of the range on the Ipswich and Lockyer side is composed of basalt soils at higher elevations, and graduating to the lower sandstone slopes, eventually into alluvial soils on the flood plains. Several threatened regional ecosystems can be found on the range, the endangered Semi evergreen Vine thicket on basalt soils, contains several threatened species e.g. Brush sophora, *Sophora fraseri*, a small shrub with pinnate leaves, and yellow pea flowers, it is listed state and federally as vulnerable, Baileys cypress pine, *Callitris baileyi*, a tree to 20m with dark dense needle like foliage, listed as near threatened by the state, on the range they occur are isolated specimens, in other areas the Baileys cypress pine can be the dominant mid-storey species.

Swamp tea tree, *Melaleuca irbyana* is an endangered regional ecosystem with the State and Federally, and State listed for each individual specimen as endangered, occurs as isolated specimens or as a dominant community. The Tusked frog, *Adelotus brevis*, listed as vulnerable with the State. Koala, *Phascolarctos cinereus*, listed as vulnerable under both State and Federal legislation.

– Martin Bennett, Lockyer Valley Regional Council Environment Officer



Bailey's cypress pine, *Callitris baileyi*. Photo credit: Martin Bennett



Swamp tea tree, *Melaleuca irbyana*. Photo credit: Martin Bennett





LLRI Landholder Highlight: Impressive monitoring and restoration work at the Holley's!

We are extremely lucky to have some really inspiring and actively engaged landholders in the Little Liverpool Range. Bob and Judy Holley of Grandchester are no exception.

Bob and Judy have been involved with the Land for Wildlife program for 6 years, and engaged with the Little Liverpool Range Initiative since the Initiative's inception. They initially joined the Land for Wildlife program as the program was seen as a great avenue to support the conservation work that they wished to achieve on their property. Through Ipswich's Landholder Conservation Partnerships Program, they have been able to complete conservation projects on their property that they wouldn't have otherwise been able to do, such as recent weed removal works, which expanded approximately 1 hectare of their property.

Despite the various challenges that they have faced, including the recent drought, they have maintained their enthusiasm and love for the bush. Their vision is to preserve native flora and fauna for the coming generations, and to return the habitat to what it should be, while integrating indigenous land management practices. To do this, they have provided the local critters with habitat through the establishment of wildlife-friendly dams, which now house native fish and turtles. They have also planted native trees and shrubs to attract birds and wildlife, and cleared weeds including lantana and fireweed.

When asked what they have found most rewarding about the restoration works, their response was "the native flora and fauna that have been found on the property, the peace and calm of being out in the bush, to be able to sit and wait for birds to come around you, and building a relationship with the local birds including kookaburras and magpies that now follow us around the property".

They have noticed a large increase in birds around the property over the last 6 years. Some of their favourite birds are top knot pigeons, and pale-headed rosellas for the beautiful vocalisations that they make. They are also lucky to have a number of resident koalas that are often seen (and heard) on the property.

To find out more about the Land for Wildlife program, check out the Land for Wildlife SEQ website: <https://www.lfwseq.org.au/>



Before...



...and after lantana removal at the Holley's.



Conserving the Glossy Black-Cockatoo in the Lockyer Uplands

There is something very special about being in the presence of a Glossy Black-Cockatoo or two or, even more amazingly, a small group of Glossies as they feed in a stand of she-oaks. Sometimes, you hear them before you see them as their sturdy beaks busily crunch she-oak cones, one after the other, to extract the tiny seeds. If there is more than one Glossy, and particularly if there is a fledgling present, feeding is interspersed with quite a lot of ‘cockatoo talk’.

Their presence in the landscape is special because the Glossy Black-Cockatoo (*Calyptorhynchus lathami*) is listed as *Vulnerable* in Queensland and New South Wales with one of the greatest threats to their survival being the removal of habitat resources. They are specialist feeders dependent on the seeds of certain species of *Casuarina* and *Allocasuarina*, a species of tree that is, sadly, not considered by many to be of value. Moreover, access to large tree hollows is critical for nesting and, again, this resource is diminishing in the landscape as landholders “tidy up” their properties. Added to these resource dependencies, the fact that an adult Glossy female produces one egg every two years and it’s not hard to appreciate their vulnerability.

Our group, Lockyer Uplands Catchments Inc (LUCI), adopted the Glossy Black as one of our target species for habitat conservation in the western Lockyer region. In 2017, we initiated a long-term citizen science project to better understand how the Glossy Black was using feed trees in our landscape and how we could better manage the long-term viability of its much-needed habitat resources. LUCI is mentored in this work by Dr Guy Castley, a Griffith University researcher and [Glossy Black Conservancy](#) representative, and supported by the Lockyer Valley Regional Council.

We generated a long list of questions we wanted to address in our project such as “Are the Glossies feeding on one species more than another and at different times of the year?”, “Is age of tree related to seed desirability?” and “Is a feed tree likely to be fed on repeatedly?” to name just a few. To answer these questions, we’ve surveyed 675 trees on a six-monthly basis on six private properties and in one of our local conservation parks. The sample trees represent three potential feed tree species, namely, *Allocasuarina littoralis* or Black she-oak, *Allocasuarina torulosa* or Forest she-oak and *Allocasuarina inophloia* or Woolly bark she-oak. Our first survey task is to look for evidence of Glossies feeding through the presence of orts, that is chewed up cones, at the base of a tree.

We also record the diameter of trees, which is a proxy for tree age, its sex and, if it is male, whether it has pollen and, if it is female, its cone abundance and whether it is flowering.

As our project is now entering its fourth year, we are able to answer some of our initial questions while new questions are being raised. As an example, we know that in our landscape the Glossies’ preferred feed tree species is *A. littoralis* and, with the *A. inophloia*, is more likely to be fed on during Spring and Summer with no seasonal pattern detected yet for the *A. torulosa*. Compared to the other two species, an *A. littoralis* tree is more likely to be fed on as the tree gets bigger as does the likelihood that once it is a feed tree, it is often a feed tree. Abundance has its attractions as, for each species, the more cones on a tree the greater the likelihood of it being fed on.

Perhaps the most dramatic finding to emerge is the rapid and alarming increase in mortality of *A. littoralis* trees over the second and third years of the study compared to the other two species. Our analyses of rainfall data shows that the *A. littoralis* dies off fastest as the previous year’s rainfall reduces and this die off is particularly marked where trees are in Basalt/Sandstone soil types. We’re hypothesising these die off rates are the evidence of drought impacts differing across the three she-oak species. This unexpected finding is now shifting the focus of where we go from here with our project as our end goal is Glossy Black habitat improvement. We are now looking at recruitment rates across the three species, with particular interest in the *A. littoralis*, to investigate how adapted are the three species to extreme weather events and how tolerant are the species to changing weather conditions. Findings from this next phase will better inform any conservation planning around protection and improvement of Glossy Black food resources in our landscape into the future. For further information on this project contact info@lockyeruplandscatchmentsinc.org.au or visit our website at www.lockyeruplandscatchmentsinc.org.au



Research Showcase – Dr Dalene Adam – Hidden Vale Wildlife Centre Manager

What research did you conduct for your PhD project?

The aim of my research was to investigate the physiological and behavioural adaptations of koalas in response to a range of environmental conditions, with a particular focus on body temperature. I attempted to discern the critical climatic thresholds that elicit behavioural or physiological adjustments, such as shade seeking, habitat selection or elevated or lowered body temperature, for this species.

How does your research help koala populations across Australia?

Contemporary models which predict the effect of climate change on koalas, while very valuable, overestimate current distribution so that future distribution predictions are unlikely to be accurate. This is because, historically, mapping prime koala habitat and some of the techniques used to detect koalas (e.g. searches only occurring in eucalypt forests) placed a very heavy emphasis on preferred fodder species. My research demonstrates that the previous approach to predicting koala distribution needs to be modified to include greater habitat variation, especially which associated with the koala's use of cooler (non-fodder) species that provide respite from heat for koalas. My research has enhanced our understanding of the relationship between thermoregulation and microclimate-habitat selection which should be utilised in management decisions related to habitat retention and revegetation strategies for maintaining and developing climate change refugia for this species. It also highlights the need for further investigations to determine the physiological boundaries of the thermal niche for this species, in order to better equip models that will more accurately predict the impacts of climate change on koalas.

What recommendations would you make to landholders when restoring their properties for koalas?

*Good quality koala habitat is not only comprised of fodder trees, it must also include refuge trees which koalas can use to escape the heat. The best way to restore a property for koalas would be to find out what species of trees are native to the area, from that list select species of trees known to be 'preferred' fodder species, but also include species of trees such as *Acacia* spp., *Casuarina* spp., *Melaleuca* spp. (particularly tea-tree), *Lophostemon* spp. *Corymbia* spp. almost any species of tree native to the area that will provide ample shade. My research has shown that koalas can save energy over 24 hours by taking shelter in a densely foliated (non-fodder) tree, even though the animal expends a large amount of energy changing trees; fodder to non-fodder and back again.*



Upcoming events

11th March 2021 – Fauna Pest Identification and Management Workshop

April 2021 – iNaturalist competitions begin

24th April 2021 – Glossy Black Cockatoo Monitoring Project launch!

