Quarterly Update No 30 … October 2022

Greetings on this beautiful Spring Day!

Accounting for the environment

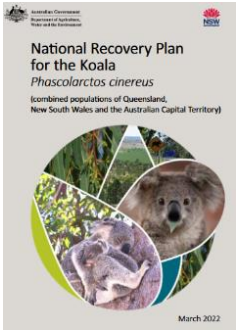
At least 30 years ago, the concept of the triple bottom line was introduced into government decision-making requiring that decisions account for economic, social, and environmental costs and benefits. In practice, the concept was rarely supported by agreed methods for integrating the different sets of information. Finally, there is global progress on this front with the UN's System of Environmental-Economic Accounting (SEEA), an accepted international standard for accounting for nature in decision-making.

At its simplest, environmental accounting measures ecosystem goods and services and natural capital in transaction terms – that is, their 'use' to us (humans) – and integrates these measures with economic measures to make decisions about sustainable development.[1] Accounts may refer to a component of ecosystems and the environment (e.g. Water) or the integrated functioning of an ecosystem.[2] While the focus is on the national accounts level, those accounts would rely, in part, on bottom-up accounts from other levels of government.

Valuing environmental factors and considerations in 'exchange' terms is problematic. For example, how do we value a threatened species in terms of a transaction?[3] Recently, I overheard an example of human-centred 'exchange' thinking when a person argued that the loss of koalas would not present a problem for humans and money spent on koala recovery would be better spent on housing!

The Lockyer Valley Catchment Action Plan 2015-2018 is a good example of how water is valued solely in human exchange terms without reference to the biodiversity supported by the 12 sub-catchments. How would environmental accounting quantify the proportion of the water system in our region that is needed to support biodiversity? Healthy Land & Water's water report card program does not include a definition or assessment of required baseline environmental flows in the region.

A genuine integration of nature with economics in decision-making would start from the basis of standards and commitments espoused by decision-makers, such as the National standards for the practice of ecological restoration in Australia 2021[4] and Recovery Plans for listed threatened species and ecosystems. Actions prescribed by these standards and commitments and, equally important, the implications of inaction, would need to form part of environmental assessments and be factored into the accounting process.



[1] Environmental accounting could revolutionise nature conservation but Australia has squandered its potential

[2] The BOM Guide to Environmental Accounting in Australia

[3] https://www.pannelldiscussions.net/2022/02/366-environmental-accounting/

[4] The standards were endorsed by the previous government and intend to aid regulators in their audit of ecologically appropriate environmental repair in all land and water ecosystems of Australia,

Continuing our members' stories…

"What conservation means to me"

by Mike Darvall
(photo supplied)

Modern conservation efforts in Australia face a significant hurdle in that the dominant societal paradigm governing humanity's place in the natural world is outmoded and constrained. Thinking that developed under the auspices of our Grandfathers refers to a pre-federation world; a world with fewer than two billion people where the key constraint to our success as a species was our ability to produce food. The necessary default position was that nature needed to be subordinated to human needs. At the societal level this hasn't changed.

Since the 19th century there has been an overwhelming advance in technology and an explosion of human population. There have been critical improvements such as the development of plastics leading to massively improved sanitation (pipes) and other gains, the harnessing of external power sources (fossil, nuclear, and renewable), and probably the biggest single factor, the cracking of Nitrogen from the atmosphere. The cropping and animal fodder supplied from cracking N from air is estimated to account for 75% of all human protein; in other words, 6 billion people are here because of the Haber-Bosch process to make fertilizer from gaseous Nitrogen, or if you prefer, 75% of everyone is made of hot air. For the record, I think these things have been mostly beneficial to humanity – with some obvious long-term problems that we now need to face.

Under 19th century conditions, clearing a field for agriculture took groups of men weeks or months. There was a significant limit on human capability in that it still relied heavily on, well, humans.

Mechanisation has externalised our weaknesses and enabled much larger scale work. Clearing that same field can now be completed by one man in a large dozer in the space of a few days. This isn't itself the problem, the problem is the persistence of the 19th century mindset.

"Just get in and get the job done"
"Gotta work hard and get this place sorted"
"All these bloody trees in the way, just taking up good cropping land"
"It might look cute, and this 'environmental' thing is all well and good, but we've got mouths to feed"

And my personal favourite, which I think derives from a deep-seated incompetence and an inherent inability to actually work with anyone else: *"Get on board or get out of the way".*

Barring the last, which I think is a perversion of the ideal of striving to achieve, the other ideas are fine for a 19th century economy and technology, at least arguably. Now they are a significant threat to our own survival. That way of thinking still exists solely because it's what we have inherited and is clung to by those who can see the gains of the past but cannot comprehend the losses of the future.

So, what does this mean for my version of conservation?

Well, if we're going to achieve the physical change away from rapid clearing and habitat degradation, my opinion (for what it's worth) is that we need to change fundamental thinking about humanity. We are not some sort of pinnacle of evolution or God's will, and we are no more important than any other species. This is no epiphany to most these days, at least on a theoretical level, but it is still an ingrained fundamental belief; somehow humans are just better.

My concept of how conservation is achieved is through the development of a framework of thought that does the following:

- Acknowledges the individual as deserving of respect and,
- Moves towards a model of equality and,
- Acknowledges the individual is not bigger than the sustaining environment in which they live, nor any other person or entity.
- Furthermore, no individual has the right to disproportionate use of the freely available natural resources. (The allocation of water rights from the Murray Darling system springs to mind)

In applied terms this looks like, for example, taking a coal miner and giving them the skills and training necessary to transition to another job in a post-carbon world, and doing this at the individual level. They would not be vilified for having chosen to work in coal (or oil or gas); they have worked within the system as it is currently designed. They probably won't get a job as highly paid – coal pays over the odds, increasingly so as people view it as a doomed industry, but this only makes them more equal. This approach addresses respect of the individual, advances equality, and limits the cost to others of their self-advantage. Almost every environmental defender I have met is similarly aligned – don't hate on people for finding a way to make a living. Unfortunately, there is a deliberate misrepresentation of environmentalists as anti-human because environmental protection is shown as limiting to maximum production. This comes back to the need for debunking the concept that humans are the pre-eminent species.

At the same time there need to be models of land conservation practice that span the range of uses, from freehold given over to farming, through a variety of mixed-use applications, to zones of pure preservation. These latter areas are continually under threat due to the mindset that something is only valuable if it has a use value for people – again the 19th century mindset.

These are things that happen at the legislative level, i.e., government. My role in this is to directly approach government on the need for change through writing to members of parliament to express my views. I also approach conservation through the appropriate foundations, in my case using GetUp as the conduit to effect change. Their model allows for a form of direct democracy as they specify exactly what any donation will be used for. Not interested in an initiative around first nations people? Fine, don't donate to that cause, wait until there's something directly affecting an issue you care about.

Concurrent with efforts to address systemic change, I choose to undertake minor direct conservation. This takes the form of managing (in the loosest sense of the word) my own block of land to support native species. Mostly this involves avoiding and preventing clearing, minimising vehicle access, and clearing weeds as time permits. Fire management is also critical. Planned burning was successfully implemented under first nations people. I think we have technology available to us now that could supersede burning with some sort of slash and mulch technique that reduces fuel load without stripping the top soil. This aims to make a virtue of the weeds like lantana in building soil until it has capacity to hold significant moisture, effectively turning the top 6 inches into a low-grade dam.

I think this is practically applicable across most of my block, some of the sandstone caps lack the necessary underlying rock minerals to develop this quickly, but even they have longer term potential for rehabilitation. As the land progresses towards a rehabilitated soil, I think this should enhance all aspects of native conservation; in the short term introduced weeds tend to have the upper hands, but over longer periods the natural vegetation will win out being better adapted to Australian conditions.

Nothing I'm doing is new or amazing, but hopefully I can do my bit within the scheme of things to support conservation. ***Mike***

Progress on grant funded projects

LUCI's work in Dwyers Scrub Conservation Park is being enhanced through projects supported by a state government ***Community Sustainability Action Grant Round 6: Community Engagement on Queensland's National Parks and State Forests***. While LUCI volunteers have undertaken manual weed control tasks in the SEVT areas of the park since 2015, the grant will enable LUCI to better plan their rehabilitation of, and fire risk management for, the SEVT areas.

Consultants from Redleaf Environmental have now completed a weed survey of the SEVT areas in the park mapping dominant weeds such as Lantana, Cats Claw and Madeira vines, Coral Berry, Brazilian Nightshade and Passiflora. The mapping identifies the extent and density of each weed and helps our volunteers to better prioritise and plan our weed work. Three locations were identified for photo point monitoring so that our weeding results can be tracked over the long term.

Redleaf Environmental consultants and Chris Hoffmann (LVRC Catchment Officer/LUCI member) setting out on a day's weed mapping in Dwyers Scrub CP.

Early November will see Guy Cooper and a work crew from The World As I Am spend two days undertaking lantana control treatment around the perimeter of the SEVT areas in the park.

LUCI welcomes new volunteers for the Dwyers Scrub project and induction and tools for the task are provided. Contact LUCI if you are interested in joining the team.

LUCI has commenced a ***pilot project of a flood recovery monitoring app*** developed by Griffith University as part of the Ecological Health Check and Recovery Strategy for the Upper Lockyer Catchment. The project is an initiative of the Great Eastern Ranges (GER) and the International Fund for Animal Welfare (IFAW). The app is a citizen science tool that allows landholders to record and upload their observations of flood impacts on their property (e.g. erosion, weed infestation, wildlife presence). When collated across landholders, these records can provide a regional snapshot of damage hotspots and updates on recovery of habitats and wildlife to help inform catchment management decision making and attract funding for on ground initiatives.

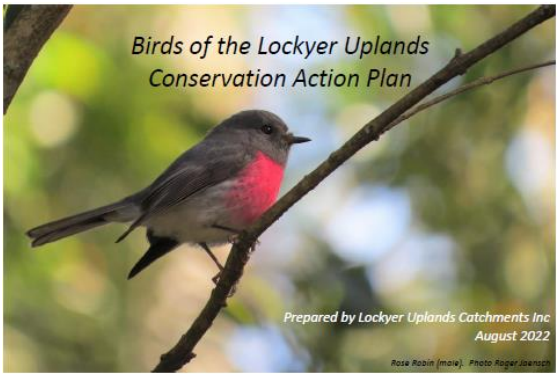
Diane Guthrie (LUCI) and Wendy Simpson (IFAW) with landholder Sandy Lawson putting the Flood Recovery app through its paces. Photo Liz Gould.

Initial consultations between the GER and LUCI project teams have helped to refine the app and planning is underway to enlist landholder assistance in the pilot study to further develop the app's functionality and utility. ***Landholders who are interested in participating*** in this essential process can contact LUCI for more information.

Birds of the Lockyer Uplands Conservation Action Plan

The draft of the Birds of the Lockyer Uplands Conservation Action Plan (BLUCAP) is nearing completion. The Plan will see several groups and individuals collaborating to maintain/increase the diversity of native birds (especially small bush birds) across our landscape. To take the plan through to completion and launch, a steering committee has been formed and will meet for the second time in November.

Meanwhile, Roger Jaensch continues with the baseline bird survey component of the plan. Undertaking a third round of surveys on the original 12 properties in the survey sample, Roger has now commenced first surveys on other properties joining the project. Roger will be helped in the survey task by members of the Toowoomba Bird Observers. ***Anyone interested in the survey work*** or the BLUCAP generally please contact LUCI for more information.



When finalised, the BLUCAP will be posted on the LUCI website.

Dwyers Scrub Conservation Park, an education and research site.

One of the actions in the Park Management Plan for Dwyers Scrub is that the park is to be used for education and research. It is heartening to see that this objective is being met by Dr Annabel Smith (UQ Gatton) who has incorporated into her third year Wildlife Technology subject extensive field-based teaching and the involvement of community members. Dwyers Scrub has been one of the locations for two years now as part of Annabel's course.

LUCI members, Diane Guthrie and Chris Hoffmann, and Gordon Claridge from Lockyer Community Action (LCA), have contributed to this subject in both years at the Dwyers Scrub site teaching students a koala survey technique and koala scat recognition. This year four koala transect surveys were completed with several scat records observed.

Students deployed several cameras across various locations in the park and captured three koala sightings. The students collate all the data and provide reports for course assessment and for LUCI's and LCA's information.

Photo Rhiannon Bird.

LUCI is grateful to Dr Smith and her students for providing valuable species (native and pest) monitoring information to assist in our landscape conservation efforts.

SAVE THE DATE…3rd December

LUCI AGM/GM Christmas Party

Celebrate another big year of LUCI activities and achievements.

Special guest speaker- Eric Vanderduys, biologist, author, and nature photographer, will talk about "all things frogs". CSIRO Publishing

Christmas bbq and sweet treats will be provided. Bookings essential for catering purposes. ***RSVP LUCI***

Office bearer nomination forms and meeting agenda will be sent out prior to the event.

Biodiversity property management

LUCI members were pleased to welcome Dr April Reside (UQ Gatton) as guest speaker at the 9th meeting of the Biodiversity Property Management group. The meeting was hosted by Peter and Elspeth Darvall at their property and Peter had nominated Managing under a Changing Climate as the topic for the meeting.

Peter talked about some of his strategies for biodiversity management on his property. Examples included plantings to enhance vegetation understorey to provide habitat resources for small bush birds, construction of swales to slow water runoff and keep soil moisture longer, strategic weed management (e.g. lantana 'corridors') and recycling of weeds. After 13 years of managing for biodiversity on their property, Peter was able to report native grasses are coming back, a persistent koala presence in his high value eucalypt regrowth areas (including a recent sighting of a mum and joey), 52 bird species recorded during surveys plus numerous more species from opportunistic sightings, and glider presence.

Peter raised several issues around management at the property level in response to rapid climate changes and commented that, at a cultural and political level, the available information on climate change adaptation is being underutilised.

April's presentation *on Managing Biodiversity for Climate Adaptation*[5] outlined the adaptation options for species, for example: changing behavioural patterns (e.g. with flora - earlier budding/flowering; and fauna - earlier/later migration in birds or a change in food sources); range retraction or range shift; changes in morphology (e.g. colour and/or body size changes); genetic evolution; and extinction. April outlined the properties of potential refugia (habitat in which species are most likely to persist in the face of climate change) and provided an overview of detailed modelling of potential shifts in species, location of species richness and biodiversity hotspots under projected environmental conditions. This work can inform decision-making around landscape prioritisation for protection/restoration.

To describe the complexities of climate adaptation planning for conservation for just one species, April presented the example of the Glossy Black Cockatoo. We know the Glossies in our landscape prefer a particular she-oak feed tree species (the black she-oak), which was decimated during the recent drought. April talked about the knowledge gaps and actions needed to achieve future food availability and connectivity of foraging habitat for the Glossy. In concluding her talk, April said the most cost effective, successful climate adaptation option for ensuring biodiversity is to protect and restore currently available and potential habitat.

Dr April Reside talking about the Glossy Black Cockatoo and the threatening processes (including climate changes) that the species faces.

Further reading of interest…

Reside, A.E. et al (2014). Characteristics of climate change refugia for Australian biodiversity. *Austral Ecology*, v.29, pp.887-897.

Reside, A.E. et al (2017). Trade-offs in carbon storage and biodiversity conservation under climate change reveal risk to endemic species. *Biological Conservation*, v.207, pp.9-16.

[5] April's slide presentation is available as a pdf file, now uploaded to LUCI's website Resources page

What I learned at a regenerative agriculture workshop…by Peter Darvall

David Andrews, Principal of Tarwyn Park Training, was sponsored by Lockyer Valley Regional Council to give a presentation on Natural Sequence Farming at Stockyard Creek Hall on the 11th September. David is building on his father's (Peter Andrews) principles of slowing overland flow, increasing soil and vegetative biodiversity and landscape regeneration.

While David's objective is regenerative, sustainable, productive farming, the principles he uses reinforce what I/we/LUCI believe and practise in our environmental conservation and biodiversity improvement endeavours. Key features of the presentation for me were:

- Slowing overland water flow, use of gravity, soil hydrology/moisture retention, and do not underestimate the contribution from condensation, dew, and fog.
- Contours he treats as his basis for landscape/pasture regeneration and improvement; they must be level, stabilised with grass and able to harmlessly overflow when required. Similar effects are achieved by melon-holes (like my 'small swales'), 'chain-mailing' and accumulated surface debris, including mulch.
- Wetlands – retain, rebuild and revegetate and/or build from scratch.
- Plant/soil interaction – there is no such thing as a 'weed'. I assume monocultural invasion is an exception in view of LUCI members' experience. I have long subscribed to the view that all vegetation has something to contribute in most circumstances.
- Strategic use of animals to recycle nutrients, seeds and to consolidate wetlands, pastures, and contours. Hand feeding livestock on high ground helps recycling.
- Build soil carbon. Loss of soil nutrients → loss of soil biodiversity → compaction → chemical dependence → soil sterility.
- Understand the process of filtration and where it occurs within the landscape.

Probably attending a course at Tarwyn Park Training would be a good way to get more of a handle on all this plus be a good way to have a holiday! ***Peter***

Special interest walk at Helidon Hills…by Martin Bennett

LUCI's Special Interest Winter Walk at Helidon Hills was a well-attended outing, with several new members there, keen to see a great wildflower display. Some of the flora species present can be observed only in this area. Many pea family plants were in flower with the dominant flower colour in these species, being yellow to orange, Some of the species we observed included *Hakea, Pimelea, Leptospermum, Smilax, Scaevola, Grevillea, Styphelia, Hibbertia, Goodenia, Persoonia, Exocarpos, Petalostigma*, the orchids *Diuris*, and *Caldenia*, many Acacia, Koala fern (*Caustis blakei*), *Banksia spinulosa* and plenty of Eucalypts, *Angophora* and *Corymbia* spp.

Banksia spinulosa (Hairpin Banksia) against a backdrop of *Caustis blakei* (Koala Fern) and *Pultenaea euchila* (Orange Pultenaea).

The Helidon Hills area never disappoints during spring for anyone interested in what south east Queensland boasts with wildflower display.

Networking around SEVT patches

LUCI members hosted a visit from members of the Killarney Bushcare Group in early October. The purpose of the visit was to learn about the restoration of Semi-evergreen vine thicket (SEVT) vegetation communities through volunteer weed programs. The day involved two site visits, Redwood Park, and Dwyers Scrub Conservation Park. Hugh Krenske gave a talk to the groups at Redwood Park and Jim Scanlan and Martin Bennett described LUCI's work at Dwyers Scrub.

Susan Savage, Coordinator of the Killarney group, noted "Hugh's excellent organisation of the Redwood scrub work and his active communication with the council." Susan said the Killarney group was particularly fascinated by the large number of volunteer hours invested in the work and that an estimate of their own volunteer hours would be useful in discussions with council and in applications for funding.

Hugh Krenske (Friends of the Escarpment Parks, Toowoomba) explaining the weed control program at Redwood Park. Photo Martin Bennett.

Recapping the day by Martin Bennett

A big thank you to Hugh and Kay Krenske. Their talk was very motivating - to know what Redwood Park was like, and what it is like now, has involved thousands of hours of work by a dedicated crew. An eye opener was Kay's method of dealing with the Madeira vine via tubers, which she demonstrated by locating a large diameter vine trunk and following it to the source (the tuber). Easily uncovering this mass, Kay cuts into it and pours in Diesel/4% Fluroxypyr. This method keeps the stem and tuber intact while, along with its aerial tubers, sucking up the herbicide. The result is all the pest material dies, and the tuber turns to mush. Another method is to do foliage spot spraying of Madeira vine leaves on the ground.

LUCI member Josh (ex-Ecosure regen practitioner) shared another method for control of Madeira vine, which involved cutting the large diameter stems at the point where the aerial stem and the ground tuber stem join. Both ends are placed into a 2-litre bottle full of Fluroxypyr and water and left to drink up all the herbicide. Gaffa tape is used around the stems at the mouth of the bottle to save any spillage. Another method Josh mentioned was to scrape the vine stem numerous times and treat the scrape with Grazon.

Thanks to Jim Scanlan and the Friends of Dwyers Scrub for creating a great pathway through the scrub for our visit there and to better facilitate our ongoing treatment of the Madeira and Cats Claw. The results of years of work there by a very small group of volunteers was obvious. Treatment of lantana in the dry vine forest is also helping facilitate better access to treat other weeds.

LUCI and Killarney Bushcare members on the SEVT sites visit to learn about restoration of dry vine forest. Photo Martin Bennett.

A big thanks to the Darvalls who, after the Dwyers visit, provided everyone with a great afternoon tea where everyone enjoyed a great amount of chit chat. While there, an

interesting find was a Satin Bowerbird's Bower – actually, a great find.

And a bonus…

Apart from all the delightful scrub species we saw, some in glorious flower, we did see a plant I don't see that often right in the scrub, *Nicotiana forsteri*, Native tobacco. The plant's leaves and stems are dried and mixed with ash. This mixture is moistened with saliva, then moulded into a small package known as a quid. The quid is chewed and held in the mouth for long periods of time. Sometimes it is placed behind the ear to be absorbed through the skin. Mixing the leaf with the ash helps nicotine enter the body.

Nicotiana forsteri (Native Tobacco). Photo Martin Bennett.

Staying with weeds…exotics popping up locally

These strange plants can be seen popping up in clusters among grass pastures. Thanks to Martin Bennett (LVRC Environment Officer) for identifying them as the Small Broomrape (*Orobanche minor),* which is listed as an environmental weed in Queensland and a declared pest in New South Wales and Western Australia.

A native to Southern Europe, the Small Broomrape can produce large numbers of tiny seeds and be dispersed by wind, water and the usual animal and vehicle traffic. The seeds can remain viable in the soil for long periods as can the stem, which can undergo a considerable period of growth underground.[6]

Flowering *Orobanche minor* (Small Broomrape).

Small Broomrape can be spot sprayed with herbicide (e.g. Gyphosphate 10mL/1L water) while manual removal is not recommended or permitted in some states.

Another Mediterranean exotic you might see popping up in clusters now is the *Petrorhagia nanteuilii* (Wild Carnation – thanks again Martin). Considered an environmental weed in Queensland, again it is found in pastures and disturbed ground. Its small pink single flowers are followed by an ovoid seed capsule filled with tiny black seeds. Very little information on control is available although Martin suggests a broad leaf herbicide might be effective.

Petrorhagia nanteuilii (Wild Carnation), described as an environmental pest in Queensland.

[6] https://weeds.dpi.nsw.gov.au/Weeds/broomrapes and https://www.agric.wa.gov.au/declared-plants/broomrape-declared-pest

An unexpected sight…by Martin Bennett (LVRC Environment Officer)

Recently, I visited a property in Flagstone Creek to explore a Semi Evergreen Vine Thicket (SEVT) site. Before I got to the SEVT area, however, I was fascinated by five planted trees around a set of cattle yards. One tree was a runt compared to the rest, which were large, fat boys although all were only 12 - 15m tall.

Brachychiton x turgidulus, (Scrub Bottle tree). Photo Martin Bennett.

They must have been planted way back as the only green on the bark was on the small branches while the rest of the bark was all brown and fissured. The large entire leaves were like the trees' 'parent' species, *Brachychiton rupestris* (the Queensland Bottle Tree), with the odd trilobed leaf like the other one of the 'parent species, *Brachychiton populneus* (Kurrajong). The stand of five were, of course, *Brachychiton x turgidulus*, (Scrub Bottle tree), a natural hybrid.

Photos Martin Bennett.

The Queensland Bottle tree, Kurrajong, and the hybrid all grow in this area, as do other Brachychiton species such as Lace bark (*B. discolor*), and Little Kurrajong (*B. bidwillii*).

Risk-taking pythons

Our Dwyers Scrub weeders were lucky enough to come across a beautiful python (*Morelia spilota*) a couple of weeks ago. The snake was stretched out, unfortunately and as is their habit, on the road catching some sun during breaks in the recent showers. Wanting to avoid a potential tragedy (for the snake), we tried to coax the python off the road only to be baled up and challenged repeatedly by its persistent striking out at us. One of our group (thanks Jim S.) finally convinced it to move back into the bush.

Warming up on the road.

This episode was the second time I had experienced a very tetchy response from a python when attempting to move it off a road. Perhaps it is the time of year when they are out of hibernation, looking for food and to breed, and they are out of sorts. Usually, pythons are considered docile, and it is possible to get close enough to them to observe the beauty of a snake.

For some (many?) people, the sight of a snake elicits comments such as "terrifying", "the only good snake is a dead snake", and so on and so on. It is very sad to see these beautiful creatures deliberately run over on the road. Snakes are an ancient link in the complex web of life and their diminution or loss will be our loss as highlighted in this article…

Snakes, the ecosystem and us: it's time we change

Martin Bennett has summarised the following information on *Morelia spilota* from the Queensland Museum website…

Carpet pythons are extremely diverse in appearance with seven geographical races or subspecies recognised:

- *Morelia spilota spilota* - eastern New South Wales and north-eastern Victoria;
- *M. s. bredli* - central Australia;
- *M. s. mcdowelli* - north-eastern New South Wales and eastern Queensland;
- *M. s. cheynei* - Wet Tropics area of north-eastern Queensland;
- *M. s. metcalfei* - Murray/Darling drainage;
- *M. s. imbricata* - southern Western Australia;
- *M. s. variegata* - northern Northern Territory and Western Australia.

Varying in pattern and colour, they are mostly arboreal and feed mostly on warm blooded mammals, land lay eggs. Often Coastal Carpets, the ones we are most likely to see, are a mix of brown and cream colour although some have the yellow, black and cream colouration while, when young, they are black and cream coloured. Although some are blotched, others have the longitudinal stripes. They vary from around 2m up to 5m in length.

Important numbers:
Wildlife Rescue Education and Rehabilitation (07) 4630 5208

Wildlife carers Kath and Steph 0410 334 661 (available 24/7)

Bat Conservation & Rescue Qld Inc 0488 228134

Interesting snippets…

Climate science (in)action

Why are some scientists calling on the science community to not support further rounds of climate assessments by the International Governmental Panel on Climate Change? Two New Zealand scientists and one Australian scientist say there has been enough research and "climate change science is settled to the point of global consensus". Their view is that governments have failed to take meaningful, coordinated action on the science. The authors argue that the science-society contract is broken. Read the authors' full argument in The Tragedy of Climate Change Science. These authors are not alone in their call to action. Other scientists around the globe are taking more direct action, and to the streets, to express their demands for government action on climate change as reported in this article Climate scientists are becoming climate activists.

Climate impacts on a different scale

Still on the topic of climate, a research project on a group of fairy wrens in Western Australia's Kimberley region has found that nestlings exposed to hot dry temperatures in the first days of life had shorter telomeres or DNA caps on the end of their chromosomes. Heatwaves kill animals but survivors don't get off scot-free Earlier research by the authors had shown that "nestlings with shorter telomeres tend to die younger and subsequently have fewer offspring."

Purple-crowned Fairy Wren. Photo Marc Gardner, eBird.

The authors' modelling of the rate of warming temperatures and effects on telomere length indicated fairy wren populations could decline solely as a function of nestling telomere shortening. The authors point out that these results may extend to other birds and mammals and

have implications for biodiversity under warming conditions.

The WWW but not the one you know

Did you know that trees communicate and exchange materials via a complex underground web of roots, fungi and bacteria popularly called the wood wide web? Wood Wide Web A mere 500 million years in development, this web of ectomycorrhizal and arbuscular mycorrhizae fungi and bacteria has been 'mapped' through a global research effort involving 28,000 tree species across 70 countries

The authors say that "this global map of fungi beneath the soil helps us to understand how global ecosystems work" and that this understanding helps explain how the climate is changing and how we can restore different ecosystems. Trees social networks are mapped

That old chestnut…culling

A couple of years ago, LUCI members undertook a pilot pig baiting program on some private properties in conjunction with QPWS' placing baits simultaneously in Dwyers Scrub. The program did not produce any results. This article, Feral pigs out of control, highlights the lack of success with culling strategies and argues for a multi-strategy approach. One thing is certain, control of pest animals requires a coordinated landscape approach and can be a waste of resources (labour and money) when undertaken on a property in isolation.

On the topic of culling, this article, Should we cull noisy miners , discusses the mixed findings on the success of programs trialling strategies to control the density of the native Noisy Miner. Due to human alteration of the landscape, for example the loss of understorey vegetation among other changes, habitat for the Noisy Miner has benefitted. Coupled with their social organisation and aggressive behaviour, their increasingly dense numbers are thought to contribute to the decline in presence and numbers of other woodland bird species, particularly small bush birds. Considered a threatening process under national law in potential woodland and forest habitats, culling a native species can be controversial and some would argue that we need to restore the understorey in natural landscapes. Do we have a Noisy Miner problem in our LUCI landscape? Certainly, Noisy Miners are posing problems in urban settings Control aggressive noisy miners in your garden Email LUCI if you would like to contribute to this discussion.

Worth revisiting…amazing wattles

In an earlier edition of the *Quarterly Update* (October), LUCI members Jim Kerr and Judy Whistler wrote of the amazing efficiency and benefits of wattles as carbon sequesters, nitrogen fixers and frugal water users. We can add another positive to the list, that is, as restoration pioneer planting and provider of habitat resources as demonstrated in this story…
Bare paddocks to teeming with wildlife

A plug for our native grass pastures and grassy understorey

I get a buzz out of wandering across what I call our native grassland, a part (about 5 acres) of our property that was cleared in the past for agistment and cropping. Like a lot of tree changers moving to bush blocks, coming here 29 years ago, I knew little about our native flora although I think I knew a gum from an ironbark but that was about it. I cringe when I think how much we 'tidied up' around the few structures that were here on the top 'paddock' and how hard it was to mow those big tussock grasses!!! Now I know those big tussocks were the beautiful Native Sorghum (*Sarga leiocladum*) providing habitat resources for numerous species.

Sarga leiocladum (Native Sorghum).

Thankfully, I am pleased to see many of these tussocks have survived and I collect seed assiduously to disperse around the former paddock now 'grassland'. They are one of my favourite grasses.

At the moment, the grassland is filled with the beautiful purple-green flowerheads of the Plume grass (*Dichelachne crinita*). I have never seen so many as in this season's crop. Also flowering are the Kangaroo Grass (*Themeda triandra*), Common Wheat Grass (*Anthosachne scabra*), Queensland Blue (*Dichanthium sericeum*), Pitted Bluegrass (*Bothriochloa decipiens*) and the native Slender Rats Tail (*Sporobolus elongatus*) to name a few. Thanks to Darren Fielder (Redleaf Environmental), over 30 native grass species have been identified in these 5 acres. I am waiting for my other all-time favourite to start flowering (a bit later than usual?), the Scented Top (Capillipedium sp).

Dichelachne crinita (Plume grass).

Of equal delight to me are the various flowering forbs and small shrubs scattered among the grasses including Native geranium (*Gernanium solanderi* var. *solanderi*), Australian Bugle (*Ajuga australis*), Swainsona (*S. queenslandica*), Pink Skull Cap (*Scutellaria humilis*), Spreading Woodruff (*Asperula conferta*), Variable Glycine (*G. tabacina*), Tall Isotropis (*Isotropis foliosa*), Rusty Tephrosia (*Tephrosia rufula*), Native indigo (*Indigofera australis*), Everlasting Daisy (*Xerochrysum bracteatum*), Pineapple Daisy (*Pterocaulon redolens*), and more than one species of each *Dianella, Senna plecthranthis and Wahlenbergia* (I'll need Martin Bennett's help with ID there!)

Swainsona Queenslandica.

The grassland is providing resources for quails, finches, rosellas, numerous small and medium sized butterfly and moth species as well as countless other insect species. It is good hunting ground for our resident Magpie family and the many other insectivorous bird species that sit in the treetops of the nearby eucalypts and understorey.

The critical importance of maintaining and restoring grasslands and grassy/shrubby understorey for our insect populations can not be overstated. Accounts of insect populations 'crashing' or becoming endangered is a very worrying trend particularly when considering the potential domino effects on the complex web of life. I read that five Australian butterflies may become extinct in the next two decades, and "four of the five most imperilled butterflies occur in Queensland….an area currently undergoing high rates of land clearing". Butterflies on the Brink. The butterfly habitats listed as critical to the

imperilled species includes wetlands, summits of hilltops, inland native grasslands and heathlands and inland communities of old-growth brigalow.

We are on a hilltop, and I will do my bit to maintain our hilltop grassland and grassy/shrubby eucalypt understorey. I love wading through my grassland and seeing the wildflowers amongst the grasses and the myriad insects scattering in my pathway. Of course, there are numerous 'exotics' in amongst the mix but it doesn't detract from my enjoyment.

Further reading of interest…

https://www.theguardian.com/environment/2022/oct/07/number-of-butterflies-in-uk-falls-to-lowest-since-surveys-began

https://www.abc.net.au/news/2022-09-25/butterfly-spotters-guide-south-eastern-australia/101461938

https://www.theage.com.au/lifestyle/life-and-relationships/melbourne-tried-to-bring-butterflies-back-to-the-cbd-it-worked-20220930-p5bm5o.html

Scientists studying earth's trees issue a stark warning to humanity

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And one last message…please don't confuse the exotic fireweed…

The exotic *Senecio madagascariensis* (Fireweed). Photo Martin Bennett.

with one of the native fire daisies…

Senecio pinnatifolius (Variable groundsel).

Leaves on the exotic are mainly whole except for small teeth on the margin with only lower leaves sometimes having a few large lobes. The leaves of the native fire daisy are finely divided (fern-like) or deeply lobed.