

The Upper Bidgee Bulletin

The Upper Murrumbidgee Landcare Quarterly Newsletter

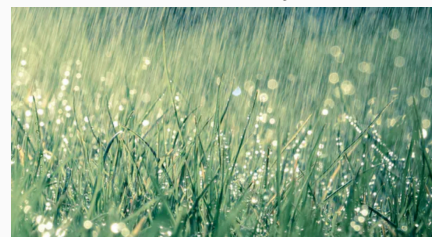
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Welcome to the winter edition of the Upper Bidgee Bulletin. Well winter has certainly come with a few cold and rainy days this year. We also find ourselves in various levels of COVID restrictions again. While we all do our best to stay safe and warm, what better way to entertain that with a read of the UMLC newsletter. We hope you enjoy...



UMLC President's Report

by Tony Robinson

In many of the articles in this edition of the Bidgee Bulletin, one is reminded again of how water drives the system in our area and indeed across our dry continent. From the prolonged drought which was relieved in early 2020, to now, the increased precipitation is helping along our plantings, the insects and the birds. I see that in June this year, on our place, we are ahead of June 2019 by 100 mm. It would be nice to think this will continue.

I will not see it though, at least not in this neck of the woods. It is time for Gill and me to decamp and head down to Albury to be closer to our family. We have had a wonderful 20 years on our conservation block "Gundharwar" near Michelago. We will miss community and in particular all our friends, many of whom we have met through Landcare and the RFS.

The article on Verbascum reminds us of all the weed control we have done across those 20 years. The wetter period has certainly got those pesky seeds going again and Verbascum is one of those that got a good go-on this year. Overall, though we are very satisfied with our weeding efforts over the years and are pleased to be able to leave our property in good shape for the new owners.

As this will be my last President's report, I would like to thank you all for your continuing care for the land. I thank our Committee: Maryke Booth, Antia Brademann, Lauren van Dyke, Jo Gaha, Jim Wharton and Alex Mond who over the years have put in so much effort for the Committee as well as landcaring in their own patch ... and of

course an enormous thank you to Georgeanna our Coordinator who has put in an amazing effort on our behalf. George, we could not hold the show together without you.

Don't forget UMLC's 25th anniversary on Sunday 12 September for a celebration and lunch at the Bredbo Hall. It will be a special occasion.



Coordinators Corner

by Georgeanna Story

Over the last 3 months our Landcare groups have made good use of our brief 'sense of normality'. At Numeralla we have wrapped up the pest control campaign with a community session and been hard at work with the plantings along the local TSR. Bredbo and Michelago have also been working hard to control their vertebrate pests and Michelago Landcare also held a session looking at the ins and outs of tree planting design. Cooma Landcare have continued with their weed control at the Monaro Flora Gardens site. Royalla Landcare delved into the world of insects and led the way on a community wide rabbit RHDV biocontrol release. Finally, Queanbeyan Landcare continued with their works at Mt Jerrabomberra and Bicentennial Park and look forward to an upcoming visit from the local cub scout group.

In addition to these activities UMLC members have been busy with a number of grant opportunities. In particular, funds to cover further pest control, native grass seed workshops and box-gum woodland management sessions. There have also been a number of Landcare gatherings that our members have attended, including the South East Landcare Muster and the NSW Landcare Coordinator gathering.

I would also like to acknowledge the work of Tony Robinson, our UMLC chair, and bid him a fond farewell. Tony and Gill have been an integral part of UMLC and Michelago Landcare for many years and will be deeply missed. We all hope that your move to Albury is hassle free and look forward to you visiting us in the future.

Thanks again to those that have provided articles for our newsletter, we have a great mix of stories for this edition.

Upcoming events

Small Farms Network Wicking bed design. 21 Jul, 7:00 to 8:30 pm. Wicking beds can be a water efficient way to use large containers to grow vegies, fruit and many other plants. Chris Curtis from Roogulli Farm has recently completed a research project with Charles Sturt University investigating the performance of various materials in wicking beds, and will share his findings on how to build wicking beds, how often you need to water them, and any other questions you may have.

River Basin Management Society 10th Australian Stream Management Conference 1 to 4 August, Kingscliff or online. An opportunity to connect with the people driving stream and integrated catchment management in Australia, while sharing new experiences and advancements in knowledge and practice. The conference brings together researchers, policy makers, consultants and practitioners dedicated to investigating and managing stream ecosystems and their catchments in Australia. *Full conference tickets from \$190 (online) or \$995 (in-person).*

Friends of Grasslands Reading a grassland landscape and learning Aboriginal Cultural Science. 14 August, 10.00 to 11.30 am, and 1.15 to 4.00 pm. Geoffrey Simpson is in the Fire and Cultural Science team within the NSW Department of Planning Industry & Environment, where he is developing the science behind bringing a cultural voice to landscape management. Geoffrey will lead this workshop, to view the landscape through a cultural /scientific lens, ask questions and learn about Aboriginal wisdom and connection. For more information email Geoff at geoff.robertson@fog.org.au

NSW Weeds Conference (Weeds Societies of NSW & VIC). 24 to 26 August, Albury. This conference will showcase the latest research and ideas for managing the establishment, impact and spread of weeds. *Tickets start at \$330 for 1 day.*

UMLC 25th Birthday. Join us for an afternoon of celebration at Bredbo Hall.



We are turning 25 and we want your help!

Upper Murrumbidgee Landcare has been working to support Landcare groups across our region for 25 years. During this time there have been many people involved in the committee and it's time to celebrate all of your efforts. Without all of you, UMLC could not have been the wonderful group that it is, for as long as it has been.

To mark this milestone, we are holding a celebration lunch at the Bredbo Hall on Sunday 12th September and we want you all there. Come along and reminisce, catch up with old friends and see what UMLC is up to now.

We call out to those with a past and present association with UMLC to share your memories, your stories and your photos. We would like to provide as much insight into the history of UMLC so please contact Georgeanna to discuss what you may have to contribute. Either email upper.murrumbidgee@gmail.com or call 0429779928. Thanks in advance!



Stepping stones for woodland birds across the Michelago Valley

Tony Robinson, Michelago Landcare

Imagine the Michelago Valley with many more patches of trees and shrubs providing nesting sites and “stepping stones” for birds criss-crossing between the Tinderry mountains and Namadgi National Park.

Farmers and more recent arrivals with smaller acreages are making this happen, with two years of plantings over the autumn months, despite less than average rainfall and some very hot summers.

The project is being run by the Michelago Landcare Group as part of the Save our Species - Save our Scarlet Robin initiative and assisted by support from South East Local Land Services and the NSW Government through its Environmental Trust.

Over 7000 native plants and shrubs springing up across the valley are a testament to everyone’s efforts.

We congratulate the twelve participating landowners on achieving an average 80% survival rate greatly aided by the quality of the plants supplied by Greening Australia, the Monaro Native Tree Nursery and Sow More Seeds.

But it’s not just about the birds, as organisations from around the world are planting millions of trees in the face of our changing climate, and our project is just one small part of this huge global effort.



Rachel Harling and Ben Tate-Allum assist the planting effort on a property in the Michelago valley (Photo courtesy of Leanne Pattison)



Leanne Pattison secures a tree guard on Brian and Christine Wallis's property (Photo courtesy of Leanne Pattison)



Cooma Landcare focus weed *Verbascum thapsus*

Cooma Landcare

Verbascum is a genus of about 360 species of flowering plants native to Europe, Asia and Mediterranean. *Verbascum thapsus* is the species that is most common across our area. It is a short lived annual or biennial herb that grows to 2.5 metres high. Common names include Great Mullein and Aaron's Rod.

It grows readily on disturbed sites, rocky outcrops and roadsides. It also grows in open habitats such as grasslands, creek beds and forest edges where it out competes with the native plants. Stock rarely eat it so it can overtake pastures and grazing land.

In its first year it forms a large rosette with grey/green leaves covered in layers of hairs giving it a woolly appearance making it an easily identifiable plant. In its second year, a single flower stem with numerous yellow flowers appear in late Summer. Although the plant dies once the seeds set, each plant can produce 250,00 seeds and 80% of these seeds are expected to germinate. What is even more distressing is that the seeds can remain viable in the ground for up to 100 years.



***Verbascum thapsus* rosette and flower stem**

Best Control Methods are chipping out with a weeder to remove the rosette before the flower stalk appears is the best way to control it. The whole tap root should be removed, and care should be taken because loosening the soil can stimulate more of those thousands of seeds in the soil to germinate. Herbicide can be used but may not be effective especially if the plant is flowering.

If you come across a plant with a flower stalk developing, cut the flower stalk and bag it, then chip out the rosette. If the flower stalk is setting seeds or has seeds, carefully hold over a bag or bucket and cut the stalk so the seeds fall into it. Dispose of seeds preferably by hot composting.



Most important message - If you see this plant remove it before it has a chance to flower.

Enhancing insect biodiversity in a rural environment and managing your garden and its surrounds as a natural functioning ecosystem

Dr Roger Farrow, Insect Ecologist

Rural subdivisions are mostly established on former agricultural land although a few are lucky enough to be in native forest or grassy woodland that constitute natural functioning ecosystems. These are defined as sustainable biological communities of diverse native interacting organisms in a physical environment, be it forest, woodland or grassland. Agricultural ecosystems are characterised by a loss of biodiversity and a paucity of native organisms, causing a loss of stability to the extent that we see outbreaks of native and exotic plants (weeds) and animals (pests) as witnessed by the recent dieback of eucalypts in the Monaro. This was due to a massive outbreak of the native eucalypt weevil (*Gonipterus* sp) at a time when its host trees were under climatic stress.

Traditional garden areas generally consist of expanses of lawn, exotic trees and shrubs and beds of exotic flowering plants that often have high water requirements. These can be transformed into a more favourable environment for native animals to colonise and reproduce, especially by insects, by changing the structure and selection of plant species and the physical environment, within the constraints of fire protection and other requirements. The first step is to establish a range of different species of native trees and shrubs of different heights, densities and flowering times and retain any large existing native trees, especially eucalypts, as long as they are in safe positions. Beneath this canopy, a cover of low herbaceous plants and prostrate shrubs can be grown. These can be mulched with a bed of native litter and scattered decaying logs added to encourage native decomposers or left as a ground cover of native grasses, forbs and lichens (the biological crust) that will support a different range of insect species. Rocks also can be placed to provide more refuges for not only insects but for other invertebrates and vertebrates, such as reptiles. Loose-barked eucalypts provide more homes for insects, such as native earwigs and plant bugs, than the solid bark of gums and boxes. Finally, a water feature can add more diversity, not just for frogs, but for the many insects with aquatic stages, such as dragonflies, among others.

Eucalypts, especially at the juvenile stage, support the highest diversity of insect herbivores of any plant group, despite the presence of pungent oils and other chemical anti-feedents. They can be maintained at a juvenile stage by cutting them back to the lignotuber at intervals and allowing them to reshoot. Leaf-feeding insects, mostly adult and larval beetles and moth larvae, get a bad rap because of the often very visible effects of defoliation. This places such insects into the invidious category of pests, as the title of many gardening books attest to. However, most native plants can sustain and recover from high levels of defoliation. In most functioning ecosystems, with a high biodiversity, herbivore numbers are controlled by predators and parasitoids, mostly other insects and spiders.



Leaf beetle larvae, *Paropsis atomaria*, feeding on a gum leaf



Leaf beetle larva grabbed by a crab spider

Predatory insects, such as solitary wasps, nest in holes that they provision with prey for their larvae, such as caterpillars and spiders. Some excavate vertical tunnels in the ground, such as spider wasps, whereas other utilise existing horizontal holes and crevices in timber. Nesting places can be augmented by retaining open sandy areas of ground and by drilling horizontal holes of different sizes in untreated wooden posts and dead tree trunks and in clay-filled blocks.



Mud wasp *Pison* sp. (Crabonidae) inspecting an artificial nest hole



Digger wasp nest, *Isodontia* sp. occupying a crevice in a tree trunk. The grass stems are inserted by the wasp to prevent entry of parasitic cuckoo wasps.



Resin bee, *Megachile* sp., at nesting hole with cuckoo wasp, *Chrysis* sp., waiting to parasitise the nest.



Exited holes previously occupied by nests of the mason wasp, *Pison* sp., in a block of wood. These vacated holes need to be cleaned out for reuse.

Other hole nesters. The majority of solitary bees nest in holes in the ground but some such as the resin and leafcutter bees, (*Megachile* spp., shown here) and masked bees (*Hylaeus* sp.) also nest in pre-existing holes in timber and other crevices and will make use of artificial holes.

Flowers. Many insect species are dependent on nectar and pollen from flowers as their primary food source, including many parasitoid wasps that help regulate the numbers of other insects. Other visitors such as hoverflies have predatory larvae whereas blowflies and their allies have larvae that assist in the decomposition and recycling of nutrients from cadavers. Bees collect pollen and nectar to feed their offspring but most flower-visiting insects consume the pollen or nectar directly. In Australia, the flower-visiting fauna is dominated by beetles and flies, rather than bees or butterflies. Many insects also use flowers as a place to aggregate and

mate, such as soldier beetles. Establishing a garden with a range of different types of native flowering plants, so that nectar and pollen are available throughout the year, will attract and sustain a wide range of insect species.



A leaf beetle, *Peltoschema* sp. feeding on acacia pollen. Small beetles are the main pollinators of Acacias.



Hoverfly, *Simosyrphus grandicollis*, feeding on pollen on a *Brachyscome* daisy

Decomposers. Ecosystems cannot function without the recycling of nutrients from the breakdown of organic matter, derived from the shedding of leaves and bark, and from entire fallen trees as well as from decaying roots. Beetle and moth larvae, cockroaches and termites are involved in this process and the adults of some of these species are quite spectacular in appearance. Household organic matter can also be recycled by insects as much as by earthworms.



Female 'golden' stag beetle, *Lamprima aurata*. Its larva feeds on rotting wood



Red-headed cockchafer larva, *Adoryphorus couloni*. These also feed on live roots and can become a pest in pastures and lawns

Insects are great dispersers and will quickly locate changing resources and establish breeding populations in gardens and more extended areas that are being managed as natural functioning ecosystems, following the principles described here.



The First Bird's Nest

by Sue Wallace, Bredbo Landcare

Yesterday evening, walking the dogs with my husband, Steve observes, "These trees are growing better now in winter, with all the insects gone..."

I look at all the tender new growth on the tops of the eucalypts which we had planted back in that fabulous wet year, 2016. Planting these trees had been a team project. In the Spring of 2015 my new Landcare friend, Lauren had helped me collect the seed from the beautiful old trees on our farm. Tablelands Nursery had then supplied

expertise and greenhouse space for our seedlings. The Green Army appeared at the right time to plant them and Upper Snowy Landcare had kindly donated tree-guards. We managed to plant over two thousand local eucalypts and almost the same number of assorted understorey shrubs along the southern boundary of our Monaro property and on an adjacent Crown Road Reserve.

“They certainly have grown well. I reckon some of them are up to five metres,” I reply. This was not too surprising since we had perhaps extravagantly, put in automatic irrigation using dripper lines prior to planting.



The wonderful growth at our tree plantings is enjoyed by all.

We walked a bit further along the tree-lined corridor. Meanwhile, the dogs half-heartedly chased a roo between the rows of trees, startling a colourful flock of red rumped parrots and crimson rosellas.

“How long do you reckon it will take before these birds are not just visitors, but make their homes here amongst these trees?” Steve says.

I think about this for a while and realise that it probably won’t happen in our lifetime, since parrots nest in hollows, and hollows occur only in old trees. I’m already old in human years, and these trees probably need another fifty years before a fallen branch might produce a suitable hollow. I won’t be around to see this, but it is not so important. The satisfaction of planting trees for me is more in the “now”, and not so much the legacy which they may become.

I really enjoy our daily walks, observing the trees and the changes which are occurring. My “treelings” as Lauren used to call them are getting taller. On warm days the smell of eucalypt is now overpowering. On rainy days they emit that earthy forest smell, so full of life in comparison to the dull straw of the African Love Grass blanketing the rest of our farm. The candlebarks shine at night in the headlights as we drive by, and the tall ribbon gums look like basketball players, head and shoulders above the others. The snowgums have lots of character, some of them stretching along the ground before deciding to grow upwards. On the rare occasions when it snows, our white dogs seem to morph into white wolves hunting amongst these young snow-covered trees.

The low evening light sends golden shafts of light through the rows. I squint up and there, right in front of us in one of the denser ribbon gums sits a bird’s nest. It is a classic shaped bird’s nest, made of sticks, with a depression in the middle which would have cradled the eggs. I guess the eggs hatched, and as the chicks matured the bird family then would have left this nest.



The nest hiding in our plantings

“I hope they come back next Spring,” I say with a heart-felt smile in my voice. “What sort of birds do you think they are?”

“Hmm.... not parrots!” replies Steve.



Fish and flows key to future of the upper 'Bidgee

Antia Braddeman, UMDR

Representatives from conservation groups, NSW and ACT state governments and the community came together in Canberra recently to discuss the future of the upper Murrumbidgee River – the often-forgotten headwaters of Australia's second longest river and one of the most iconic waterways in the Murray Darling Basin.

Led by the Upper Murrumbidgee Demonstration Reach (UMDR), the one-day ‘Fish and Flows’ forum highlighted the great work being done by range of stakeholders to recover native fish populations and improve the overall health of the upper ‘Bidgee. However, it is also made clear that the upper ‘Bidgee is at risk of being left behind by water legislation and flow management compromising the river’s social, cultural and ecological values.

UMDR Facilitator Antia Brademann said the forum was about getting stakeholders together to share their work, gain greater understanding of the key issues faced by the river and discuss opportunities for ongoing collaboration. The initiative is part of the UMDR’s Upper Murrumbidgee Recovery Reach project funded by Murray Darling Basin Authority under the Native Fish Recovery Strategy.



ACT Government fish ecologist Matt Beitzel presenting at the fish and flows forum (photo courtesy Antia Brademann)

"The upper 'Bidgee flows through two state jurisdictions and what happens upstream has flow on effects for what happens downstream. It is critical that all stakeholders work together to address threats including flow management if we want to ensure we have a thriving river system providing healthy habitat for native fish and other native species long into the future," Brademann said.

The forum heard that current flow management arrangements allow 96% of headwater flows to be extracted at Tantangara Dam, as part of the Snowy Hydro Scheme. As a result, the flows in the upper Murrumbidgee are well below the scientifically accepted level required to maintain a healthy river ecosystem. Monitoring data presented at the forum showed how parts of the river ran dry during the 2019/2020 Black Summer with critical water shortages and algal blooms experienced by local communities. Concerns were raised that in the future such events could also impact native fish.



The Murrumbidgee River on Long Plain in Kosciuszko National Park (photo courtesy Antia Brademann)

The Murray Darling Basin Plan aims to ensure sustainable and equitable water management across state jurisdictions. Respective state government are currently drafting Water Resource (and associated water sharing) Plans and once accredited, these water plans will be the principle mechanisms to achieve objectives sought by the Basin Plan.

Brademann said that the Murrumbidgee Water Resource Plan which is currently being drafted was an opportunity to create more sustainable water flows in the upper Murrumbidgee and ensure that the hard work

being done by a huge range of stakeholders to recover native fish and improve river health are not compromised.

“Flow management in the upper ‘Bidgee is complex, involving two state jurisdictions and the Snowy Hydro Scheme, but sometimes it feels like it’s all just put in the ‘too-hard’ basket. We’ve already lost several fish species from the upper ‘Bidgee since European colonisation and we can’t afford to lose anymore” Brademann said.



“Flow management in the upper Murrumbidgee River is complex, involving two state jurisdictions and the Snowy Hydro Scheme, but sometimes it feels like it’s all just put in the ‘too-hard’ basket,” says Antia Brademann (photo courtesy Antia Brademann).

If you would like more information please contact Antia- upperbidgeereach@gmail.com



A Helping Hand

Numeralla Landcare Koala Recovery Project

by Georgeanna Story, UMLC

The Badja Forest Road fires burnt large areas around Numeralla in south-eastern NSW in early 2020. Over 4 weeks this fire burnt more than 300,000 ha of forest and was particularly devastating around Countegany and Numeralla. The area around Numeralla supports a range of tall eucalyptus forests that in turn supports a number of threatened species, such as the spotted-tail quoll and greater glider. The area is also recognised as containing the most stable koala population in the region. The intensity of the Badja Forest Road fire was such that along with the understorey, much of the eucalypt crown was also burnt. The result of this for the surviving koala population is that food is scarce and patchily distributed. During such situations, koalas spend more time on the ground and are more susceptible to predation. Through support from LLS SE Bushfire Recovery Funding our project aimed to control feral predators within areas directly affected by the fire and the interface with the remaining remnant vegetation near Numeralla. This project looked to reduce pest predation pressure through a targeted trapping campaign across known koala habitat and facilitate faster recovery for the remaining koala population and other surviving native animals.



The state of the Numeralla area post bushfire

Pest control was undertaken along 25km firescar boundary and adjacent properties. A cat-detection dog was used to survey the area to help identify trap positions. Qualified trappers were contracted to remove vertebrate pests using a combination of soft jaw and cage traps. Two trapping sessions were undertaken, each over 20 days and were conducted three months apart. Trail cameras were also used to monitor pest presence and abundance, as well as other species in the area. Any feral cat or fox that was caught was sampled to conduct dietary analysis to identify any prey animals. In conjunction with CSIRO, samples were also collected to test for RHDV antibodies.



One of the 8 feral cats & Numeralla chair Jim Wharton at the community information session

Thirty properties within the Numeralla area joined the control programs and covered approximately 5.5ha. The two trapping periods caught similar numbers of cats and foxes and overall a total of 8 cats and 5 foxes were trapped. These numbers identify that there was at least one pest predator present per hectare. The diet of these predators identified 6 different native species had been consumed, as well as rabbit. Results from the trail cameras detected rabbit, eastern grey kangaroo and wombats as the most frequently mammals. Other mammals detected included koala, brushtail possum, red-necked wallaby, swamp wallaby and echidnas. Despite similar levels of trapping success, detections from the trail cameras found that foxes were identified more frequently than feral cats and both pest species were detected at higher levels in the first trapping session. The consistent trapping success between the two sessions identifies the dispersal capacity of pest predators and highlights the need for continual control if any long-term benefit is to be achieved. Landcare will continue to work with the community and Local Land Services to maximise pest control effectiveness within our communities.



Some of the wildlife pictured during the control period

This project was supported through the South East Local Land Services Managing Established Pest Animals and Weeds Project and South East Bushfire Recovery Funding.



August is Platypus Month Calling all intrepid volunteers!

Antia Braddeman, Cooma Waterwatch

During the depth of winter, it is not all quiet along our waterways! Platypus are becoming active with pre-breeding activity- busy feeding to build up extra fat stores, preparing nest sites, defending territory and wooing mates. This higher activity level means the usually shy and nocturnal platypus can be easier to spot from the bank, and even be active during the middle of the day! Hence August is Platypus Month for Upper Murrumbidgee Waterwatch which sees groups of intrepid volunteers heading out to sites on our rivers early in the morning and late in the afternoon to undertake platypus surveys across our catchment.

Waterwatch has been monitoring platypus in the Upper Murrumbidgee catchment every year since 2015. Surveys are conducted along the upper Murrumbidgee, Molonglo and Queanbeyan Rivers, the Cooma Creek and at Tidbinbilla Nature Reserve. Surveys involve groups of up to 20 volunteers scanning for and recording platypus activity over up to a km of river frontage. This valuable data allows us to tell how many platypus and water rats are present at a site. Such data could only otherwise be determined via netting the animals which is costly, stressful to the animal and is a method which only has limited success in large waterways. Due to the high cost of netting surveys- we have no platypus data for many areas in our catchment and so our Waterwatch surveys are building up a very important data set.

The importance of the survey program is highlighted by the fact that the platypus is now listed on the IUCN Red List as 'near threatened' and scientists are now recommending this status be upgraded to 'vulnerable'. The conservation advice predicts that platypus will decline markedly over its range with specific areas seeing heavy declines while others may continue to seem unaffected. This in turn results in the fragmentation of populations, leaving the platypus increasingly vulnerable to further decline due to threats specific to each area. But if we don't know how numbers are tracking over time we don't know if our efforts to reduce threats to platypus are working!

We are interested to hear from any intrepid volunteers interested in being involved in our Platypus Month surveys this year. Surveys are held during the week and at weekends throughout August and early September. If you would like to be involved or for further information please contact Antia on 0429 778 633 or coomawaterwatch@gmail.com.

Cooma Waterwatch is part of Upper Murrumbidgee Waterwatch and monitors river health in the southern part of the Upper Murrumbidgee Catchment. It is proudly supported by Icon water, the ACT Government and Local Land Services.



Intrepid volunteers braving the cold at a socially distant early morning platypus survey on the Cooma Creek (Photo courtesy of Antia Brademann)



Bushfires, koalas and food resources

Murray Land, ANU

Hello! My name is Murraya Lane and I am a PhD student from the Australian National University in the Research School of Biology. I am currently looking at the impact of bushfires on koalas and their habitat. I am hoping to get some voluntary help for some of my fieldwork that I am hoping to finish by the end of this year. Here is a little summary of my work and how it contributes to the bigger picture!

Eucalypt foliage is a critical food resource for several arboreal folivores, including the koala (*Phascolarctos cinereus*). The nutritional quality of eucalypt foliage is known to influence food choice, habitat quality, and koala population numbers. Fire has the capacity to substantially alter the quantity and quality of available food by removing mature eucalypt foliage and promoting the growth of juvenile leaves, which differ in nutritional value. Understanding the nutritional quality of the recovering landscape is therefore crucial for determining the full impact of fire on koala populations, and for guiding appropriate conservation and management decisions. The aim of my PhD research is to determine how fire affects the immediate and longer-term nutritional quality of available eucalypt leaves, and how koalas use the nutritional landscape after fire. Since November 2020, I have been collecting eucalypt leaves (juvenile, adult/mature foliage, or both if available) from burnt and unburnt areas every 5-6 weeks. My burnt area is located in Peak View, NSW and was burnt extensively in the 2019/2020 bushfire season. In this landscape, I have been collecting the epicormic growth from 10 individual trees from each of the 6 different eucalypt species available and that are known to be used by koalas (60 trees total). This includes *Eucalyptus rossii* (scribbly gum), *Eucalyptus mannifera* (brittle gum), *Eucalyptus dives* (broad-leaved peppermint), *Eucalyptus macrorhyncha* (red stringybark), *Eucalyptus rubida* (candlebark) and *Eucalyptus viminalis* (ribbon gum). If my sites also have trees with mature foliage present, I collect this as well. My unburnt site is located in Numeralla, NSW (approx. 20km south of Peak View). In January 2020, the fires came within approx. 1km of my unburnt site. This site provides as a comparison, I collect the mature/intact eucalypt foliage from the same 6 species of eucalyptus species. At the end of this year, I expect to have almost completed the collection of leaf samples, which I will analyse for key nutrients and herbivore deterrent plant secondary metabolites in the subsequent year. I have also concurrently collected GPS and VHF tracking data from resident koalas in these burnt landscapes to monitor animal welfare and determine where they forage. This combined dataset will provide valuable information on how fire impacts the nutritional value of eucalypt forests and the impacts on koala populations. I anticipate that the outcomes of my PhD research will guide future management decisions about whether koala populations need nutritional support after fire to limit further decline, and the most appropriate timing to release rehabilitated koalas after fire to ensure that sufficient food is available.

To complete my leaf collection, I have another 2 'rounds' which I would love to have some volunteers for! My next leaf collecting round will commence at the end of July and go into August (hoping to start the week of the 26th July) The following round will commence approx. 6 weeks later (end of August and go into September). Exact dates are yet to be determined as when I start my last round will depend on when I finish the round before, weather variables and volunteer availability. Work will involve helping me pick and bag leaves (leaves are collected by myself using a slingshot or cutting pole). Field days are normally ~5-6 hours and terrain can be steep, rocky and difficult, so a good level of fitness is recommended! This opportunity will provide a great experience to be out in a beautiful landscape and to contribute to important research. If this is something you like to hear more about contact me at Murraya.Lane@anu.edu.au.

In the news

Landcare Australia Limited [Landcare volunteers enjoy substantial improvements to their mental and physical wellbeing](#). For decades, those involved in Landcare have testified to a greater sense of self, both physically and mentally, resulting from an enhanced link with their local environment and boosted community wellbeing. Now, newly published findings by KPMG Australia indicate substantial improvements in wellbeing owing to involvement in Landcare, leading to an approximate savings from avoided healthcare costs of \$403 per individual per year.

2021 National Landcare Conference. The National Landcare Conference attracts delegates from around the world, and from rural, regional and urban communities in Australia - all with a common purpose: a vision to actively restore and protect the environment in their local community through sustainable land management and conservation activities. Due to COVID-19, we understand that some people may not travel to Sydney this year - so we will bring the conference to you! You can register as an in-person delegate attending the conference or as an online delegate (free registration).

Landcare Australia Limited and National Landcare Network. [Landcare signs the "Darwin Agreement" for ecosystem restoration](#) - Landcare Australia Ltd and the National Landcare Network have both signed up to the 'Darwin Agreement', a collaboration between Australasian environmental organisations to support the UN Decade on Ecosystem Restoration. The Consortium urges concerted support of the UN Decade on Ecosystem Restoration by all sectors of society – policy makers, industry and communities – to retain ecosystems, reduce our impacts upon them and to repair ecosystems to optimise potential for humanity to revive the natural world that supports us all.

Landcare NSW Creating Confident Committees Workshops for Landcare Groups. We are keen to provide our Host Committee Members and program participants, the opportunity to tailor a workshop for your region. This would be delivered by the program staff with expert training as required. We are inviting landcare groups and networks to put in an expression of interest to any of the workshops below.

Workshops included:

- Corporate Governance
- Roles and Responsibilities of the Committee
- Strategic Planning, developing your vision
- Effective and Efficient Meetings
- Grant Writing
- Financial Management Systems
- Employee Management 101
- Above the Line Training
- Aboriginal Cultural Awareness

- Work, Health and Safety

If you would like to host a workshop, please complete this [form](#) and return it to landcare.admin@lls.nsw.gov.au

Wettenhall Trust Small Environmental Grant Scheme. Applications OPEN 1 July. Grants of up to approximately \$10,000 are available to support projects that will make a positive difference to the natural living environment, in land, sea or air, rural or urban. Projects should be focused on flora and fauna conservation or threatened mammal conservation, and should involve: monitoring, recording and sharing data; delivering community education; providing community capacity building; or research and science.

Foundation for Rural and Regional Renewal Tackling Tough Times Together – Tier 3 grants Applications close 12 August. Grants of up to \$150,000 are available to support community-based activities in drought-affected regions that both help to relieve current stressors and symptoms, and build capacity and resilience for the future. Projects should be completed within 18 months.

Foundation for Rural and Regional Renewal Tackling Tough Times Together – Tier 1 & 2 grants Applications close 24 August. Grants of up to \$20,000 (Tier 1) or \$60,000 (Tier 2) are available to support community-based activities in drought-affected regions that both help to relieve current stressors and symptoms, and build capacity and resilience for the future. Projects should be completed within 18 months.

Foundation for Rural & Regional Renewal Strengthening Rural Communities grants. Close 24 August. Grants are available for a broad range of grassroots initiatives that benefit local communities. Under the 'Small & Vital' Stream, grants of up to \$10,000 are available for communities with fewer than 15,000 people. Under the 'Bushfire Recovery' Stream, grants of up to \$25,000 are available for projects that support the recovery of rural, regional or remote communities affected by the Sept 2019-Feb 2020 bushfires.

Upper Murrumbidgee Landcare Committee is registered as
a charity with the Australian Charities and Not-for-profits Commission ABN
51686917287.



Upper Murrumbidgee Landcare, Upper Bidgee Bulletin

Our email address is:

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