VICTORIAN
LANDCARE
& CATCHMENT MANAGEMENT
SUMMER 2022 Issue 83

LANDCARE AND BIODIVERSITY

Eagles return to the Barrabool Hills

Restoring ground flora

Planting habitat for the Eltham copper butterfly

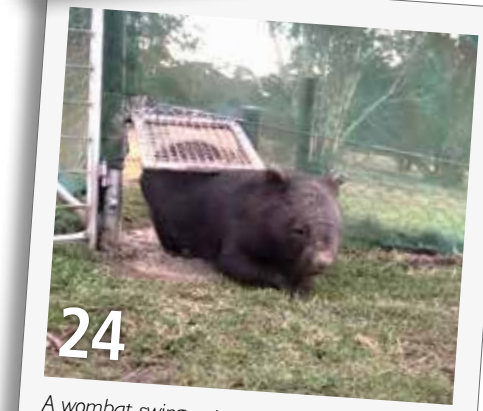
Victorian Landcare Program
VICTORIA State Government

Victorian Landcare and Catchment Management

SUMMER 2022 Issue 83

A rare wallflower orchid (Diuris orientis) at Tarwin Cemetery, an important site for biodiversity in South Gippsland.

A selection of local provenance seed — species mix is critical for replanting after bushfires.



A wombat swing gate can prevent damage to fences. Gates with mange treatment containers have also been developed.

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Cover photograph
Bunjil, the wedge-tailed eagle, is of special significance to Indigenous Australians, especially the Dja Dja Wurrung people of central Victoria.

This wedge-tailed eagle perched in a buloke was photographed by Geoff Park on Dja Dja Wurrung Country at Joyces Creek in March 2021.

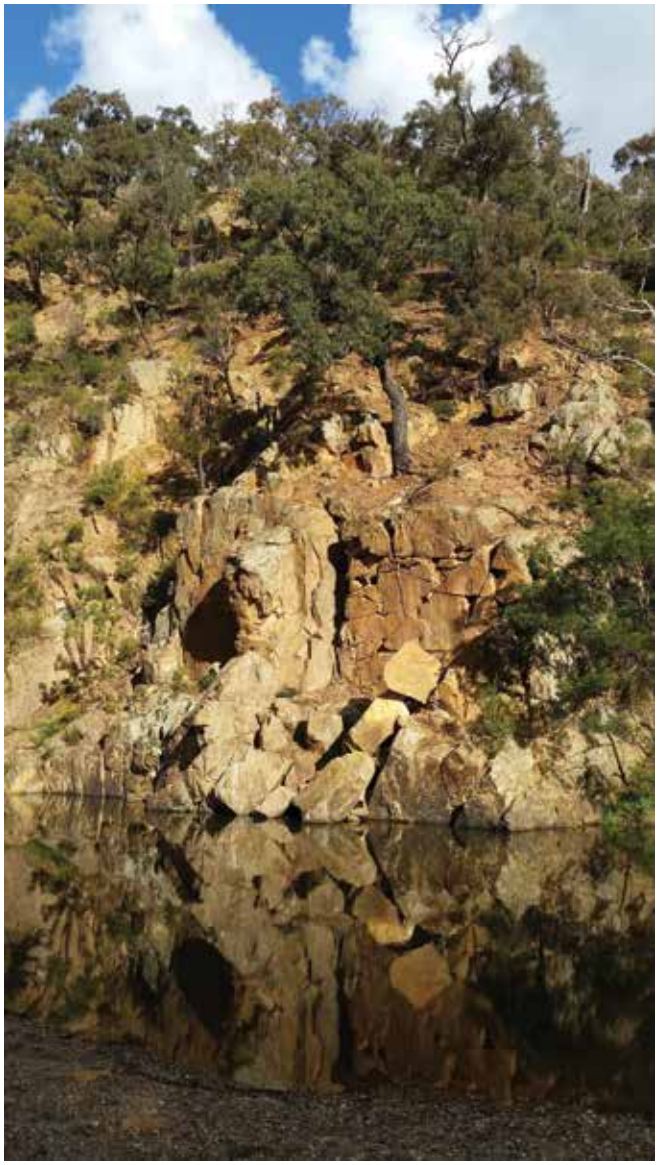
Geoff shares his observations of flora, fauna and the landscape of central Victoria in his award winning blog, Natural Newstead. Go to www.geoffpark.wordpress.com

From the Minister

Happy New Year! I hope you have all had time to enjoy the holiday season, however you and your family may celebrate.

Biodiversity is the theme of this edition of the magazine. It features stories on the diverse work Landcare and environmental volunteering groups and networks are doing to improve biodiversity.

The Victorian Government recognises the vital importance of biodiversity. We are committed to protecting and enhancing the environment. Since we came to government in 2014, we have invested over $500 million into our biodiversity, with a further $270 million invested into our waterways and catchments in the last two State Budgets. This is the largest ever investment into our biodiversity by a Victorian Government.



In 2017, I was proud to launch *Protecting Victoria's Environment – Biodiversity 2037*, our 20-year strategy to stop the decline of biodiversity. This strategy will ensure our natural environment is healthy, valued and cared for actively through our long-term vision and goals with specific targets.

We have also delivered over 250,000 hectares of biodiversity protection. That includes 65,106 hectares of new national parks and reserves in the central west, the cessation of logging in old growth forests across 90,000 hectares and the creation of 96,000 hectares of Immediate Protection Areas in Mirboo North, the Strathbogie Ranges, Central Highlands and East Gippsland.

Our $62.2 million bushfire recovery program is re-seeding 11,000 hectares of mountain ash forest and controlling pests across 565,000 hectares. These actions give our native species the best chance of recovery.

We acknowledge that there is more to do. We are resolute about protecting our environment and we have the track record to prove it.

Our 2021–22 State Budget allocated $52 million over four years to deliver unique biodiversity protection through community action. This includes the Victorian Landcare Program.

The work of Landcare and environmental volunteering groups and networks is crucial to improving our natural environment.

The stories in this issue showcase the range of biodiversity projects that you are doing.

It covers everything from local projects to save a single species to large-scale bio-links that reconnect the landscape.

I thank you all for your dedication to improving Victoria's biodiversity.

The Hon. Lily D'Ambrosio
Minister for Energy, Environment and Climate Change
Minister for Solar Homes

A view along the Lerderderg River in the new Wombat-Lerderderg National Park. The Victorian Government has created new national parks and reserves in the forests of the central west that will help protect the headwaters of the Wimmera, Avoca, Loddon, Campaspe, Coliban, Moorabool, Werribee and Maribrynong Rivers.

Our initial camera trap results yielded lots of yellow footed antechinus, brush-tailed possums, echidnas, swamp and red necked wallabies, scrub wrens, blue wrens, babblers, and stumpy tails. Unfortunately, they also attracted the occasional fox or feral cat and lots of black rats.

Clive and Catherine Carlyle with the joint largest measured river red gum in Australia on their property at Fyans Creek.

Eureka – the first southern brown bandicoot captured on camera on the Carlyle's property in the Grampians.

A southern brown bandicoot adventure

In 2013 Catherine and I purchased a 145-hectare property at Fyans Creek with the view to managing it for biodiversity values. The property is situated between Halls Gap and Stawell at the foot of the Mt Difficult range. To the west it abuts the Grampians National Park, part of the Gariwerd Aboriginal cultural landscape.

Much of the property had been grazed since the 1870s. It comprises partially cleared, but now fast-regenerating red gum flood plain with many very large trees, yellow box/red gum woodland, and heathy woodland. An area of around 70-hectares of mixed yellow box/red gum woodland has a medium to very dense bracken understorey with glades of native grasses.

There is a seasonal creek and an extensive seasonal wetland, which we have restored to pre-drainage flow conditions by installing a weir, under a permit from the Wimmera CMA and with assistance from Nature Glenelg Trust. The property is home to many *Environment Protection and Biodiversity Conservation Act (1999) (Cth)* listed plant species. Most of the property is now under a Trust for Nature covenant.

Playing with wildlife cameras

Keen to learn what wildlife was on the property, we started playing with wildlife trail cameras back in 2013. This involved attaching cameras to trees either on our access road or sites with obvious animal pads. In 2017 we began experimenting with baited camera traps to see if we could get pictures of smaller animals. We used the standard bait of peanut butter, oats and honey.

This bait had been successful at attracting southern brown bandicoots for a gene flow study in south-east South Australia we had assisted with, but we never considered this species might be in our area. Large scale surveys conducted in 2011–12 across public and private land on the eastern and western fringes of the Grampians National Park found bandicoots at only one location on private property near Pomonal. None were found in the Black Range which had previously supported a southern brown bandicoot population. It was our understanding that the bandicoots were close to being regionally extinct.

A southern brown bandicoot captured for a conservation genetics study at Mt Gambier in South Australia. Clive and Catherine Carlyle assisted with the study.

> *When I realised it was a southern brown bandicoot I almost fell off my chair.*

at Fyans Creek

By Clive Carlyle

Our initial camera trap results yielded lots of yellow footed antechinus, brush-tailed possums, echidnas, swamp and red necked wallabies, scrub wrens, blue wrens, babblers, and stumpy tails. Unfortunately, they also attracted the occasional fox or feral cat and lots of black rats.

A eureka moment

In February 2018 we moved the cameras to a new area comprising dense bracken with a red gum/yellow box/rough barked manna/black wattle overstorey. One camera was placed in bracken just off an open area that is an ephemeral water course. One morning I was trawling through the usual combination of footage showing swaying vegetation, wallabies, possums and antechinus, when I saw something different.

I wasn't immediately sure what it was as the camera was tripod-mounted, so the picture was taken from above. When I realised it was a southern brown bandicoot I almost fell off my chair. I scrolled back and forward through the images to check then forwarded them to contacts at Trust for Nature and Parks Victoria who quickly confirmed it was indeed a southern brown bandicoot.

We were immediately keen to get an idea of numbers and extent of the bandicoots. Considering the vegetation type there was a potential area of more than 70 hectares on our property and a further 40 hectares of contiguous crown land. We rotated four cameras across18 locations for an exposure period of four weeks.

We also started to look for bandicoot diggings. The first diggings we found fitted the size range described in the literature, but we have since found diggings of up to 30 centimetres deep which are southern brown bandicoots.

Predation from foxes and cats

Diggings are easy to find in open areas, but almost impossible to locate under dense bracken.

We suspect that the bracken cover has allowed the bandicoots to survive predation by foxes and cats.

Our cameras capture images of foxes and cats in the open areas surrounding the dense bracken, but it is rare to get a photo within the bracken itself. We discontinued camera trapping in the bandicoot area when we noticed foxes were periodically attracted to the baits.

Since 2017 we have been running an active fox baiting program using 10 to 15 Canid Pest Ejectors (CPE) across the property, and cage traps for feral cats. In four years, we've had 146 CPE firings and trapped seven cats. Foxes are always around. Cats don't seem to reside on the property but pass through periodically, we deploy cage traps whenever a cat is seen on camera.

We are continuing to find sporadic bandicoot diggings in the open areas where we found them previously, and we occasionally find them elsewhere on the property. Our bandicoot adventure has encouraged and hastened our work to progressively replant corridors with thicket forming understorey plants to extend and connect areas of potential southern brown bandicoot habitat across the property.

Clive Carlyle is a member of the Jallukar Landcare Group and chair of the Project Platypus Landcare Network. For more information email catherineandclive@bigpond.com

Typical marks from southern brown bandicoot diggings.

24 years of biodiversity knowledge sharing in the Wimmera

By Annie Hobby

The annual Wimmera Biodiversity Seminar is a locally run event bringing biodiversity research, projects, and news to local environmental enthusiasts each spring. Set in the sunny Wimmera, the seminar has been running for 24 years and despite a recent move online, it is still reaching a vast audience of professionals, volunteers, students, researchers, and Landcare groups.

The seminar series began in 1998 with the theme of wind harps of the Wimmera, focusing on the iconic buloke trees that grace the Wimmera plains. Since then, it has covered a range of themes including treasures of the goldfields, fungi, mosses and lichen, habitat restoration, biolinks, the impact of bushfires on insects, and climate change.

The seminar moves around the region each year, taking the 100 or so attendees to smaller towns and supporting local businesses. Past hosts have included Rupanyup, Nhill, Great Western, Dimboola and Horsham. The 2021 seminar was organised and supported by a committee of representatives from Barengi Gadgin Land Council, DELWP, Grampians Wimmera Mallee Water, Trust for Nature and Wimmera CMA.

Financial support comes from Bank Australia and DELWP. The committee would also like to acknowledge the Traditional Owners of the land on which the seminar is held and extend our respect to the Wotjobaluk, Jaadwa, Jadawadjalia, Wergaia and Jupagulk peoples. We pay our respects to their Elders, past, present and emerging and recognise their proud traditions, vibrant culture, and continued connection to land, water and the community.

Farmers share biodiversity stories

The organising committee chose biodiversity on farm as the theme for 2021. Agriculture is a major land use in the region, dominated by broadacre cropping and grazing. There are large areas of remnant vegetation on private land. This means farmers are critically important to the preservation and restoration of biodiversity in the region. The 2021 seminar presentations explored how biodiversity can fit into agricultural landscapes.

The presenters included farmers, researchers, and natural resource managers all showing how they have incorporated biodiversity on farms.

Colin Seis is a well-known regenerative agriculture farmer from near Gulgong, NSW, who made the transition from traditional agriculture after a fire devastated his family farm. Colin was motivated to try and find a way to lower his input costs.

Colin shared his 40-year journey to the current day where he uses minimal herbicide and no pesticide or fungicide and instead lets nature take care of the pests. He has shown that by bringing the soil microbiology and insect diversity back to his farm, he can run a profitable business with minimal inputs.

Steven Hobbs, a farmer from Kaniva, shared his story of making the transition from traditional agriculture to a more sustainable model after analysing climate data from his property. Steven realised that cropping in the Wimmera was becoming very risky due to the shorter growing season, later autumn rains and more frequent frosts. Based on this,

Farmers are critically important to the preservation and restoration of biodiversity in the region. The 2021 seminar presentations explored how biodiversity can fit into agricultural landscapes.

Zoe Wilkinson, former Area Chief Ranger for Parks Victoria, speaking at the Keith Hateley Reserve during the 2018 Wimmera Biodiversity Seminar tour.

Elia Pirtle, one of the 2021 seminar presenters, created this digital vision for the Victorian Volcanic Plains Biosphere – areas for livestock, grassland, protected wetlands and people living alongside each other.

Steven moved to primarily farming livestock, selecting breeds that are more suitable to these conditions. He found perennial grasses are key to supporting livestock over summer through rotational grazing and greater ground cover that supports sheep and soil biology.

Move online increased audience

In 2020 the organising committee made the difficult decision to hold the 2021 seminar online so it could continue during COVID-19 restrictions. While this has been challenging, it has also provided an opportunity to extend the reach of the seminar.

Attendees tuned in from all over Australia and around the world, including Peru, the UK, and the US. The one-day in person event became a series of webinars held over the month of September with two speakers each week. These have been recorded and can be viewed on the SWIFFT website. Search for Wimmera Biodiversity Seminar at swifft.net.au

The seminar is held on the first Thursday of September to launch biodiversity month. Recent feedback from participants indicates support for keeping the seminar online. The committee is keen to return to an in-person seminar, as an important outcome of the seminar is connecting people. We hope to be able to do both. The in-person seminar will also include a site visit for attendees to experience the riches of Wimmera biodiversity.

Annie Hobby is a former Natural Environment Program Officer, Grampians Region, with DELWP. For more information on the Wimmera Biodiversity Seminar email wimmerabiodiversityseminar@hotmail.com or search for Wimmera Biodiversity Series on Facebook and Instagram.

Kaniva farmer Steven Hobbs was a speaker at the 2021 Wimmera Biodiversity Seminar.

> *Attendees tuned in from all over Australia and around the world, including Peru, the UK, and the US.*

In the 1980s, there were only five individual wattle plants along the entire 10-kilometre length of Campbells Creek.

The condition of a Campbells Creek tributary in 1894 – the landscape was devasted by gold mining.

Bolboschoenus medianus, Persicaria decipiens, Carex appressa, Cyperus gunnii *and* Alisma plantago-aquatica *are visible in the semi-aquatic zone – along with some weeds.*

Restoring ground flora in degraded

The Friends of Campbells Creek Landcare Group (FCC) are active in an area of Central Victoria devastated by gold mining and subsequent weed invasion. Since it started in 2000, the group has transformed creek-side public land previously dominated by blackberry, gorse and willows.

Nearly all the ground flora species were missing, with herbaceous weeds preventing most native plants from regenerating. The group is still learning which species of ground flora can be restored, what's sustainable with limited maintenance effort and how restoration helps exclude weeds and promotes recruitment of natives.

Taking control of the soil surface vegetation is important – that's where all our plants, except mistletoes, begin life. Without self-recruitment we would only be able to maintain a few large and long-lived species. It's largely a trial-and-error process. We plant or direct sow species, but it can take years to discover their ability to persist or regenerate.

FCC members have now re-introduced over 100 missing plant species of which around 40 now exist as self-recruiting populations.

Although gold mining devastated Campbells Creek, we think what we've learnt is applicable elsewhere and will be of interest across Victoria.

Native herbs succeed in semi-aquatic areas

Large native herbs cope with and even suppress competition from the weeds that proliferate in shallow parts of the creek and at its margins.

Australian gypsywort (*Lycopus australis*), was rare in our district, only being known from one or two places. It grows to 1.5 metres tall and one plant can form a dense stand several metres wide.

The club-rushes *Bolboschoenus medianus* and *Schoenoplectus tabernaemontani* have established and recruited new populations. Another excellent herb is *Persicaria decipiens*. We've also re-introduced the locally rare species *Persicaria subsessilis* which is now spreading successfully.

Ian Higgins with direct sown everlastings 18 months after direct sowing.

landscapes

By Ian Higgins

Robust tussocks in the riparian zones

A defining feature of riparian zones is the abundance of resources for plant growth, but most of Campbells Creek's original soil was destroyed. Only a few hardy species like river red gum managed to recolonise after the gold mining era. Since then floods deposited new soil, but the native vegetation did not recover. In the 1980s, there were only five individual wattle plants along the entire 10-kilometre length of Campbells Creek. Our restoration work led to thousands of wattles and other woody species like tree violet recolonising the riparian zone, but the ground flora was still absent.

Large tussocks like *Poa labillardierei*, *Carex appressa*, *C. tereticaulis* and some other large sedge species have been the key to taking control of the ground layer in the riparian zone that is so vulnerable to weed invasion.

The seed of the *Poa* tussock grass is easy to collect. By sowing it we can quickly establish a dense stand that out-competes most weeds. So far, our direct sowing of sedges isn't producing adequate densities, so we plant seedlings. This is expensive, but large sedges suppress weeds and we can overspray them with selective herbicides against broad-leaf or grass weeds that re-invade.

Preparing the site by eradicating invasive perennial weeds is critical. Although this can take up to four years, it greatly reduces follow up maintenance.

Reducing the weed cover is transformative—more native species recruit even after native ground flora species dominate. The challenge in over-fertile environments is ensuring gains are not lost. Perennial weeds will reinvade, but we're finding that our volunteers can keep up with the maintenance, provided we are vigilant with monitoring.

Direct sown herbs responding well on elevated sites

Mount Alexander Shire made some council owned freehold land in the creek surrounds available and with council assistance, FCC has been exploring floristic restoration in a dryland environment well above the riparian zone. The entire property is a challenge as gold mining activity removed most of the topsoil. We'd previously reduced gorse and re-established some native woody species in our trial areas. Our first trial here in an open, sunny area with low soil fertility, relatively low weed cover and plenty of native grasses was a failure. We discovered that red-legged earth-mites were destroying our direct sown wildflowers while they were tiny seedlings.

We'd already learnt elsewhere that these species could be re-established by direct seeding, so in 2019, we tried again in a similar site nearby in which canopy trees provided partial shading. The Loddon

Continued...

> *We've now re-introduced more than 110 understorey and ground flora species by sowing or planting.*

Continued from page 9...

Prison Landmate team fenced the site to exclude grazing animals and we've now re-introduced more than 110 understorey and ground flora species by sowing or planting. For most species it's too early to tell whether they will go on to self-seed, but several are already proving successful.

Arthropodium minus, the smallest of our local chocolate lilies, has been the best coloniser from direct seeding. In our tough conditions (poor soil, competition from mature trees and unreliable spring rainfall) it can take three years from sowing to flowering. *Leucochrysum albicans* is a quick growing everlasting daisy that is easily established from seed. *Linum marginale* is another quick growing species that soon flowers and sets seed. *Lagenophora gunniana* is a small perennial daisy that readily self-seeds and *Wahlenbergia multicaulis* is a very hardy perennial bluebell.

Although we couldn't source seed of *Chrysocephalum semipapposum* or *C. apiculatum*, both these everlasting daisies that we planted are now recruiting new individuals, with some seedlings even appearing outside the fence.

Ground flora restoration tips

- Remove perennial weeds before attempting restoration. Many of our native ground flora can coexist with, or even out-compete, annual weeds, but eradicating perennial weeds among native herbs is difficult.

Direct sown Poa labillardierei *20 months after sowing on a floodplain.*

- Be patient. Preparing a restoration site can take several years. Some native plants take years to mature.
- Soil nutrient levels are a key consideration. The combination of soil disturbance and excessive nutrient levels is fatal in fragmented native vegetation.
- Seed production areas are essential for producing enough seed of ground flora species. FCC produces seed of some of these species in private gardens. We can now also collect seed from our previous restoration successes.
- Restoration in severely damaged, weedy environments is not practicable without herbicides. Selective herbicides (for either broad-leaf or grass weeds) are also useful in follow up weed control work in newly established stands of ground flora.

In the woodlands and forests of our district, ground flora species comprise the bulk of our plant biodiversity, but all too often they were eradicated by past land management practices. This is especially so in riparian zones and more fertile areas. We're learning that with minimal maintenance, it is possible to sustain assemblages of at least some indigenous species and that these support natural regeneration and help exclude weeds.

Ian Higgins has worked in revegetation and environmental planning in Victoria for more than 30 years and was one of the instigators of the Friends of Campbells Creek. For more information go to www.focc.org.au or email ianhiggins54@gmail.com

> *Be patient. Preparing a restoration site can take several years.*

Friends of Campbells Creek members replanting tussocks in the riparian zone along the creek.

A biodiversity protection plan for South Gippsland

By Jillian Staton and Julie Murray

Funding from the Helen Macpherson Smith Trust has enabled the South Gippsland Landcare Network (SGLN) to appoint Julie Murray as a part-time Biodiversity Protection Officer to collaborate with key stakeholders in South Gippsland and prepare a draft Biodiversity Protection Plan for community consultation.

*Wallflower orchid (*Diuris orientis*) at Tarwin Cemetery.*

The planning process involves pulling together information on native species and habitats from existing recovery plans, local flora and fauna surveys and management plans, and seeking advice from the region's Traditional Owners, the Bunurong and GunaiKurnai. The draft plan will include a climate change risk assessment and will identify effective biolinks to help SGLN and the community make sound management decisions to enhance and protect South Gippsland's biodiversity.

Former SGLN Board member Libby Anthony was responsible for the grant application, which supports many of the goals and objectives contained in the SGLN Strategy 2020–2030. Libby recognised that although SGLN had invested substantial work in restoring native vegetation and habitat on a site scale, addressing biodiversity decline required coordinated action across the landscape.

"To protect our biodiversity, we need to have accurate data on what plants, animals and habitats actually exist in the region, and where they are located. Many individuals, community groups and natural resource management organisations have done work in this area, but the information has not been collated. Our knowledge, therefore, is fragmented. Finally, in order to develop effective strategies for protecting biodiversity, we need to identify and understand the processes that threaten its existence," Libby said.

SGLN has appointed a Scientific Advisory Committee to guide the development of the plan. The committee comprises four environmental experts who live in South Gippsland and are generously volunteering their time. Peter Gannon and Thomasin Bales are professional ecologists, Dr Christine Connelly lectures in Environmental Science at Victoria University and Mark Brammer is a Natural Environment Program Officer with DELWP.

We will be drawing on the knowledge and expertise of our Landcare community, friends and conservation groups, regional natural resource management organisations and Traditional Owners. Our engagement activities will include workshops and round table discussions – ideally in-person, but online if necessary.

SGLN's recently launched citizen science project – building a volunteer workforce to record wildlife and pest animals on the Bunurong Coast – will also provide valuable data for the plan. This camera-trapping project, which is supported by the Victorian Government through a 2021 Community Volunteer Action Grant, will help us understand what native animals exist in bushland on the Bunurong Coast, and how threats like foxes and deer move across the landscape.

Our aim is to create a long-term plan for SGLN, to ensure we direct our resources effectively. We also hope the plan will be a valuable reference for other natural resource management agencies, and that it will inform future planning and development decisions for South Gippsland.

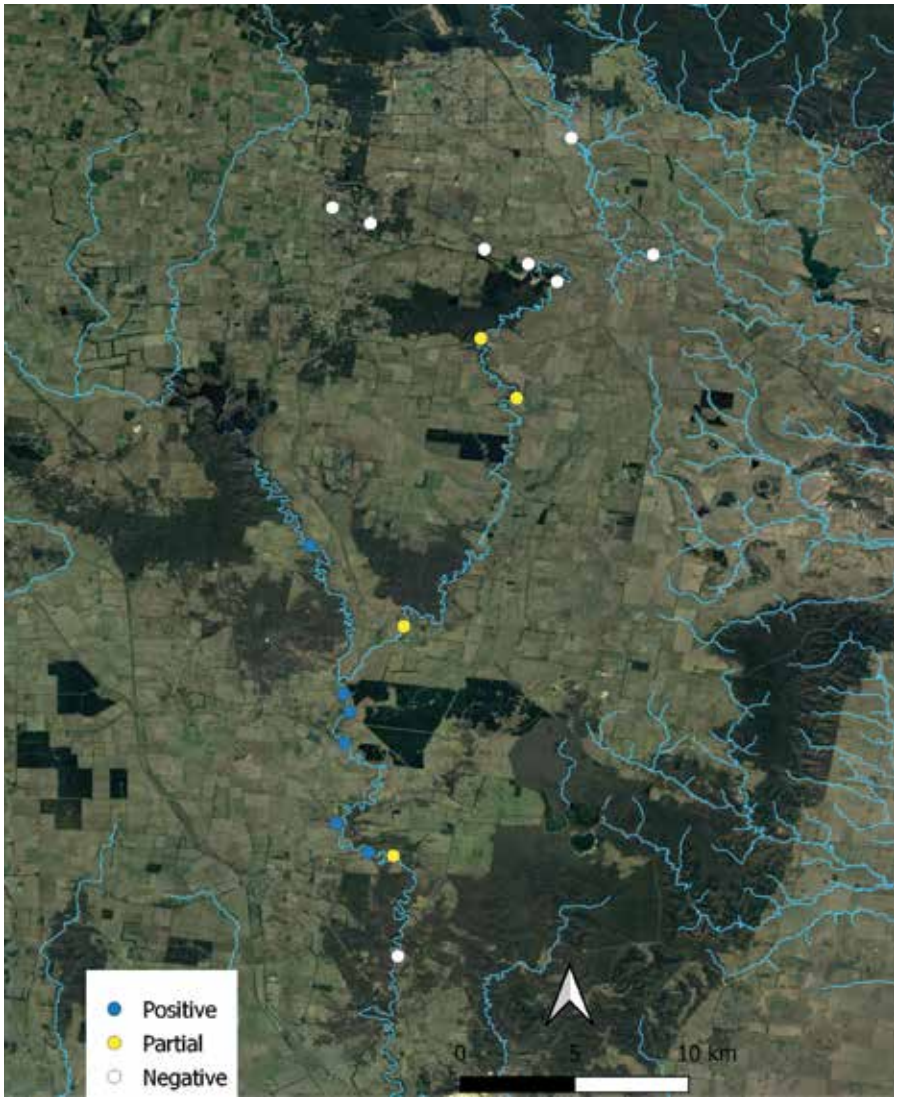
Jillian Staton is Chair of SGLN. Julie Murray is Biodiversity Protection Officer for SGLN. For more information email info@sgln.net.au

Tarwin Landcare Group members orchid spotting at Tarwin Cemetery in November 2021. The South Gippsland Conservation Society keeps an updated plant list for this site which is rich in native flora.

> *To protect our biodiversity, we need to have accurate data on what plants, animals and habitats actually exist in the region, and where they are located.*

A lot of information about platypuses in particular waterways is anecdotal.

From left, ecologist Josh Griffiths instructs MCLG volunteers on how to take eDNA water samples, assisted by Dr Farley Connelly.



Results from eDNA sampling in the MCLG area. Blue is positive detection for platypus, yellow is partial and white is no-detection.

eDNA testing for

A problem shared by many Landcare groups is a lack of data on the presence of wildlife in their waterways. The platypus is a good example. It is nocturnal, most active at dawn and dusk and sometimes during the day when the sky is overcast.

It lives in rivers, creeks and dams needing both freshwater and the riparian zone where it can find prey and dig burrows for resting and breeding. A lot of information about platypuses in particular waterways is anecdotal.

Without the intimate knowledge and access to our rivers once enjoyed by Traditional Owners, the Wadawurrung, the health and distribution of local platypus populations in the area where I work, the Moorabool catchment, is largely unknown.

Platypus monitoring techniques have been very labour intensive, expensive, and often

A platypus in the Werribee River – detecting them by sight can be difficult.

> *Platypus are a flagship species that indicate macro-invertebrate abundance, species diversity, water quality and vegetation quality.*

platypus in the Moorabool catchment

By Jackson Cass

inaccessible to community citizen science projects. The Moorabool Catchment Landcare Group (MCLG) is using a new technique developed by EnviroDNA to investigate the current distribution of platypus throughout the catchment while engaging the community and raising awareness of local conservation issues.

Environmental DNA (eDNA) is a non-invasive sampling technique that detects genetic material from a target species secreted into its surrounding environment.

According to Josh Griffiths, a senior ecologist at EnviroDNA, this includes skin, faeces and urine.

"We are looking for pretty much any bodily secretion you can imagine platypus making into the river This genetic material is then screened and tested in the lab to determine the species that it came from," Josh said.

Citizen scientists test local waterways

In May 2021 MCLG members undertook training in collecting water samples to be screened for platypus eDNA and went on to test the Moorabool River (east and west branches and at the point of bifurcation), Paddock Creek, and the Werribee River.

The implications of having a clear picture of platypus population distribution in the MCLG area are massive. Platypus are a flagship species that indicate macro-invertebrate abundance, species diversity, water quality and vegetation quality.

The results were available a month after testing. Six out of the eighteen sample sites returned positive results, while trace amounts were detected at another four. Positive detections occurred in the west branch of the Moorabool River and downstream from the point of bifurcation.

Partial detections in the east branch of the Moorabool River means platypus may be present, but in low abundance. These partial detections may also be a result of sample contamination or dispersal of DNA from further upstream. Repeat sampling is recommended to confirm presence or absence at these sites.

The collection day was a thrilling event for the community. MCLG members enthusiastically took on the role of citizen scientist and collaborated with others they had not met previously. They also got to visit parts of our catchment they had not previously seen. The event rekindled our sense of community after many difficult months of COVID-19 restrictions.

MCLG President, Julie Keating, said the day was inspiring.

"The opportunity to participate in the eDNA data collection day reminded me of how much there is to do, how everyone can make a difference, and how important these things are. Connecting with the river and its wildlife this way with members of my community, and learning from experts, has inspired me to want to do more," Julie said.

Baseline established

With very little historical data, platypus population trajectory in the MCLG area has been hard to determine. We now have important baseline data from which we can continue to monitor and track local populations.

MCLG will now use this data to target revegetation projects in riparian areas with poor vegetation quality. Improving these areas can help expand and improve the health of platypus populations and all other biodiversity that depend on healthy waterways.

eDNA technology was used to test more than 2000 sites across Victoria from August-November 2021 as part of The Great Australian Platypus Search. The MCLG eDNA testing project was funded by the Corangamite CMA.

Jackson Cass is Landcare Coordinator for Moorabool Catchment Landcare Group. For more information email moorabool.landcare@gmail.com

The grey-headed flying-fox camp at Gateway Island, Wodonga.

Protecting our pollinators – restoring

Albury Wodonga is home to several species of megabats. Both the grey-headed flying-fox and the little red flying-fox live in the area, sometimes together. The greys are noticeably larger. Flying-foxes are mammals. Like humans they live in communities and their wings contain the same basic hand bones as humans, connected by thin membranes – we are not so far apart at all.

Both the grey-headed flying-fox and spectacled flying-fox have declined by at least 95 per cent in the past century, with massive losses in the past 30 years.

Flying-foxes assist in pollinating and long-range dispersal of the seeds of flowering and fruiting trees, performing the unique service of night pollination, which many native species require. They are known as a keystone species, on which whole ecosystems rely. Along with the pollinating insects, megabats are key drivers of biodiversity in our native bushlands and forests.

Unlike microbats, flying-foxes don't use sound waves to echolocate. They have good eyesight and a keen sense of smell to find fruiting and flowering trees. Nectar, blossoms and native fruits are their preferred food. They are very social and known for forming large noisy camps and chatting loudly while they feed.

Migratory activity complicates conservation

Flying-foxes camped on the river at Albury have been known to feed on flowering eucalypts in Chiltern at night. They are adept at finding their favourite foods, and happy to travel. They migrate along the east coast of Australia — moving in large camps as different native fruits come into season. They fly thousands of kilometres a year. The migratory activity of flying-foxes complicates their conservation and management.

Both the grey-headed flying-fox and spectacled flying-fox have declined by at least 95 per cent in the past century, with massive losses in the past 30 years. The grey-headed flying-fox is now listed as vulnerable to extinction in NSW and Victoria.

Restoration in progress by Parklands River Stewards in a section of the Murray River corridor. The restored corridors at Bonegilla will provide habitat continuity for many native species as the climate changes.

> *Climate change is having a huge impact on the species.*

bat habitat at Bonegilla

By Anne Stelling

The greatest threat to flying-foxes is habitat loss. Over time their ancestral camp sites are being surrounded by urban development. Bats have been part of human superstition for centuries and are often viewed negatively by their human neighbours.

Climate change is having a huge impact on the species. Flying-foxes are particularly susceptible to the heat, and recent scorching summers have seen countless bats die from heat stress. When temperatures are over 40C, flying-foxes need access to trees near the river so they can roost in cooler, humid air, in order to regulate their body temperature. Roost sites can host several thousand flying-foxes so many large trees are necessary to allow for air circulation. Flying-foxes also need to be able to move up and down within different layers of vegetation as the temperature and humidity changes – using upper, middle and even lower canopies.

Fencing the floodplains

Parklands Albury Wodonga is addressing the needs of the local grey-headed flying-fox population with a bat biodiversity project at Bonegilla.

Bonegilla lies between Albury Wodonga and the Hume Weir spillway, where the Murray River emerges cold from the bottom of the Hume Dam and ancient river-red gums line the riverbanks and floodplains. While many trees have survived, the fertility of the floodplains has led to widespread clearing of both mature trees and understorey for farming. Regular grazing by sheep and cattle now prevents regeneration of the native vegetation. The habitat for our threatened native flying foxes is shrinking, just when the need is becoming more urgent.

With support from the Landcare Led Bushfire Recovery Grants Program, Parklands Albury Wodonga is securing habitat for the grey-headed flying-fox by fencing priority habitat in Bonegilla to exclude livestock.

Parklands Rangers are working with neighbouring farmers, local Landcare groups and volunteers with their River Stewardship program to fence several corridor reserves along the Murray. The removal of livestock will enable natural regeneration of native plants and the sites will then be managed for conservation. This will include revegetation with native plants in winter 2022, eventually providing height diversity, more roosting options and food for flying-foxes.

The project is supported by the Australian Government Bushfire Recovery for Wildlife and Habitat Community Grants Program.

Anne Stelling is Communications Ranger at Parklands Albury Wodonga. For more information email anne@parklands-alburywodonga.org.au

Flying-foxes are very susceptible to extreme heat. Thousands can die during heatwaves.

Banking the right seed for the future

By Vicki Leris

The 2019-2020 black summer bushfires resulted in the tragic loss of five lives, 300 homes and an area covering almost 1.4 million hectares of our natural landscape in East Gippsland. Rare flora and fauna species, rare plant communities, critical wildlife habitat and food sources all need to be re-established. It's a complex process and while time is critical it is important that our rush to replant quickly does not come at the expense of biodiversity and local provenance plants.

Immediately after the fires, donations started arriving, grant funding became available and there were lots of offers of seedlings from students, volunteer groups and corporations from all over the state. Unfortunately, a lack of knowledge about the importance of local provenance seed and restoring the diversity of species meant that many of the wrong seedlings were being dispersed. The seedlings were mainly eucalypts, wattles and tea-trees – all of which have adapted to fire and restore themselves without needing any help. These species will also burn faster in future fires, so caution is needed when growing them for large-scale restoration work.

Local provenance critical

Local plant communities have evolved through the process of natural selection. This means the healthiest, strongest plants that are best adapted to local soil, rainfall and climatic conditions reach maturity. These are the plants that we need to collect seed from for local restoration. It is also worth considering climate change and planning for the predicted future climate of the area when planning revegetation. This could mean mixing local provenance with the same species from locations with a similar climate to that predicted for the revegetation area.

Ignoring provenance when growing seedlings means you risk planting a seedling adapted to coastal conditions into a high-country project site and vice versa. The species name may be the same, but there are sub-species to consider as well.

Manna gum is a good example. On the East Gippsland coast they grow to 10 metres; drive inland an hour and they are around 25 metres; further inland they grow to 40 metres and have been known to reach 90 metres in Tasmania. Unknown provenance manna gum may survive in a bushfire regeneration site for a time, but often the seed sourcing, growing, planting and guarding is wasted because the coastal seedling can't cope with the inland frost.

Government funding cycles are an additional challenge for revegetation. Project funding is confirmed in spring, with a planting deadline in autumn. This limits plant selection to what can be grown in those five to six months, with a resultant loss in diversity. The only seed that can be collected in spring are species with woody capsules which hold seed all year.

When volunteers are growing plants for donations it is important to communicate the need for a diverse mix that includes species that suppress rather than assist fire. When landscape restoration has a six-month timeline, it can be difficult to collect the right seed at the right time.

A field identification day on unburnt Bruthen walking trails in the morning and the burnt Clifton Creek in the afternoon.

A selection of local provenance seed – species mix is critical.

> *Ignoring provenance when growing seedlings means you risk planting a seedling adapted to coastal conditions into a high-country project site and vice versa.*

This can result in swapping out the important fire-retardant species for the easier-to-obtain and grow species that burn readily. A poor long-term decision.

Planning for a new seedbank

In April 2021 the Foundation for National Parks & Wildlife (FNPW) reached out to the East Gippsland Landcare Network (EGLN) about establishing a seed bank for the future project to meet the needs of bushfire recovery.

Operating for more than 50 years, FNPW is the trusted charity partner of Australia's National Parks. The non-government organisation funds conservation projects across Australia to safeguard wilderness and wildlife for future generations.

EGLN saw the FNPW approach as an opportunity to meet the region's longer-term restoration needs. FNPW is supporting the establishment of a central seedbank, funding community nursery set-ups, seed collection training workshops and ongoing seed collection days.

The workshops will include safety, permits, ethical and sustainable collection practices, species identification, collecting, cleaning, labelling and preparing seed for storage. Common and protected species will be collected as per permit requirements and parent stock will be grown in ground or in pots. Seed collection trainees will be encouraged to add rarer species to wildlife corridors and shelterbelts on their land, so that in the future these living seedbanks reduce seed collection from the wild.

Although the seedbank infrastructure becomes the property of the EGLN, anyone who is interested can participate in seed collection or volunteering their time at a community nursery.

COVID-19 restrictions have delayed progress, but online seed collection workshops have been run in some communities and field training in plant identification and marking future collection sites are underway.

Restoration of rare plants and biodiversity after large scale loss is a challenging task at the best of times. The science says we will be experiencing more frequent and more severe weather events in the future. The East Gippsland community is very grateful to FNPW and EGLN and is looking forward to the community engagement these initiatives will create, as well as the significant improvement for local biodiversity.

Vicki Leris is a member of the Nicholson River Landcare Group. She has been growing indigenous, threatened, and protected plants for more than 20 years though her Wildseed Nursery in Gippsland. For more information email wildseed.office@gmail.com

From left, East Gippsland Central seedbank collaborators Matt Stephenson, Geoff Trease, Phil Horner, Caroline McGuinn, Trudiann Dale and Vicki Leris.

Land clearing and fire are two of the main threats to the species.

From left, Karl Just and Elaine Bayes at an education day on sweet bursaria and the Eltham copper butterfly at Kalimna Park, Castlemaine in November 2019.

Endangered butterfly finds a home in central Victoria

The nationally endangered Eltham copper butterfly (*Paralucia pyrodiscus lucida*) has a dramatic history. The species was formally described in 1951 having been collected at several sites around Eltham from 1923. Subsequent lack of records over the next 37 years combined with housing development around the northern and western suburbs of Melbourne resulted in the belief that they had become extinct.

The Eltham copper butterfly is a small attractive butterfly with bright copper colouring on the tops of its wings that lives in dry open woodlands.

The butterfly was rediscovered at Eltham in 1987 on a property about to be subdivided. Community campaigning for this tiny insect resulted in eight hectares of habitat around Eltham and Greensborough being purchased and protected. A statewide search was also triggered and by 1988 nine colonies had been discovered, including two new regions: Castlemaine and the Kiata/Salisbury area.

This summer (2021/22), ecologists from the Wetland Revival Trust have been working with a team of citizen scientists to uncover new populations of the butterfly in northern Victoria. An area of 1100 hectares was mapped for the larval food plant, sweet bursaria (*Bursaria spinosa*) and follow up butterfly surveys carried out where it occurred. This search, funded through the Victorian Government Biodiversity On-ground Action Program (2021 Icon Species Projects) resulted in five new populations being found around Mount Alexander Shire and in the Wimmera.

This work builds on a similar search carried out in 2011 when a 3000-hectare search revealed eight new populations around Central Victoria and at Wail. The new populations are very localised with the butterfly only occurring in 3-25 per cent of suitable habitat. Numbers of butterflies are also very small, with populations of around 50 being peppered across a larger area.

The Eltham copper butterfly, like many of the blue butterfly family, is ecologically interdependent with two species – a *Notoncus* ant species and the sole larval food plant, sweet bursaria (*Bursaria spinosa*).

Ants guard larvae from predators

Adult Eltham copper butterflies lay their eggs on or at the base of sweet bursaria. The eggs hatch and the larvae make their way to the ant nest where they are tended and guarded by *Notoncus* ants. The butterfly larvae are believed to give off chemicals and make noises that pacify ant aggression, mimic ant brood hormones and

An Eltham copper caterpillar on a sweet bursaria.

An Eltham copper butterfly on the flower of a sweet bursaria.

By Elaine Bayes

attract and alert ants if the larvae are alarmed. Butterfly larvae produce sugary secretions from their bodies to feed the ants – knowing exactly how much to produce for the number of ants they need to guard them.

The nocturnal ants then lead the larvae out at night to browse exclusively on the sweet bursaria leaves and defend them from the many nocturnal predators that see them as a juicy snack. The larvae pupate in or near the ant nest, with adult butterflies emerging from October to March each year, peaking from November to early January. The adults then feed on the nectar of sweet bursaria flowers, before they lay their eggs at the base of the plant and the cycle begins again.

The butterfly is listed as threatened under the Victorian *Flora and Fauna Guarantee Act 1988* and as endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. This places considerable importance on managing the small number of known population sites and locating any potential new sites so they can be protected from threats.

Threats to the Butterflies

Land clearing and fire are two of the main threats to the species. It is critical that we search for unrecorded populations so they can be protected, particularly from planned burns. The habitat around butterfly populations is vital and must be protected from over burning for the butterfly and their complex ecological relationships to survive.

Knowledge of where Eltham copper butterflies occur is provided back to DELWP who use it to ensure that fuel reduction burns and other management actions are carried out with consideration of this species.

Landholders can help by retaining and restoring native understorey plants, and, if appropriate to the area, by planting sweet bursaria. Look for the copper sparkle of flying adults from early November to January. Sightings can be reported on the Butterfly Australia app available at www.butterflies.org.au

Insect diversity is related to plant diversity and health. Our knowledge of the insect world and its complex interactions is poor. I hope that the Eltham copper butterfly can be a flagship species for butterflies in general, and also for the protection of remnant bushland. We cannot manage threatened species independent of their habitat.

Search for the Eltham copper butterfly on Facebook for volunteer events related to the Eltham-Greensborough population and visit www.butterflies.net.au to find out more about projects across the state. Elaine Bayes is a co-director at Wetland Revival Trust. For more information contact her through the contact form on the website www.wetlandrevivaltrust.org

> *Insect diversity is related to plant diversity and health.*

A nature-based solution to landscape repair

Brent Rodden (in white hat) with students from Gordon TAFE, planting out a section of the steep escarpment with 13,000 native plants in 1999.

This is a story about more than just biodiversity, but rather about harnessing the power of nature and community to solve environmental issues. It starts in 1990 when my husband and I had two daughters under two, and we purchased a new farm on the western outskirts of Geelong.

The farm had the carcass of an 1854 bluestone house perched on a narrow ridge that jutted into the Barwon River flood plain. There were picturesque views of the river and its river flats and the Barrabool Hills on the skyline. There were also steep, rocky, non-arable and in some instances degraded, escarpments pock marked with vast ancient rabbit warrens which had exposed the infertile subsoil – an open invitation to opportunistic germination by every weed imaginable.

Our immediate priority was to fence the property into land classes so that those areas more vulnerable to over-grazing or not suitable for cultivation were managed differently. This was quickly superseded by an urgent need to find a way to manage an increasing infestation of an emerging weed in the district on the bare escarpments. In late spring thousands of windborne serrated tussock seed heads were blown across the district from large infestations to the west. Barrabool Hills was under attack. The prevailing winds caused most of the seed to fall on the river escarpments and non-arable areas which were already degraded and difficult to access.

A community battles serrated tussock

This was not a problem to be solved by individual land managers. It demanded that the entire community rally to fight the weed together. In 1995 the Barrabool

In late spring thousands of windborne serrated tussock seed heads were blown across the district from large infestations to the west.

Before: In 1997 the escarpment was denuded and infested with serrated tussock.

in the Barrabool Hills

By Kaye Rodden

Hills Landcare Group was formed. Despite serrated tussock being a Weed of National Significance, there was little funding or support. Each land manager needed to find a way to control the infestations with their own or pooled resources, always knowing though that the community had their back. It was in everyone's interest to succeed.

Our treeless escarpment was sprayed by fixed wing aeroplane and helicopter, using the recommended chemical at that time. The spray's residual activity restricted germination of the serrated tussock seeds and every other grass species too. This left the area effectively devoid of any ground cover.

We decided to isolate the area and attempt to revegetate it with deep rooted native trees and shrubs, to repair and stabilise the soil. Our theory, which was not common practice at the time, was that as the perennial plants grew they would cover the bare soil and make it difficult for the serrated tussock to germinate and set seed, providing a long-term sustainable solution.

We also decided to create a living barrier for serrated tussock seed blowing in from the west by planting multiple rows of casuarina (*Allocasuarina cunninghamiana*) along the top of the escarpment. We took advice from our local nurseryman, Stephen Murphy, and selected a range of local provenance and other indigenous species which we hoped would manage the extreme hot and dry conditions. Stephen suggested that we position the plants in groups of five to aid cross pollination and hopefully regeneration.

Between 1997 and 2000 we roped in family, friends and local TAFE students, picking our way between the rocks to plant and guard 13,000 seedlings across 20 hectares of slopes. The terrain was so steep it was sometimes difficult to stand up.

Nature begins to heal

There were good years and bad years – not unexpected as most of the slope faced north and had little organic matter in the topsoil. In 1998–1999, during the millennium drought, 70 per cent of the plants were lost and needed to be replanted the following year.

> *This was not a problem to be solved by individual land managers. It demanded that the entire community rally to fight the weed together.*

Continued...

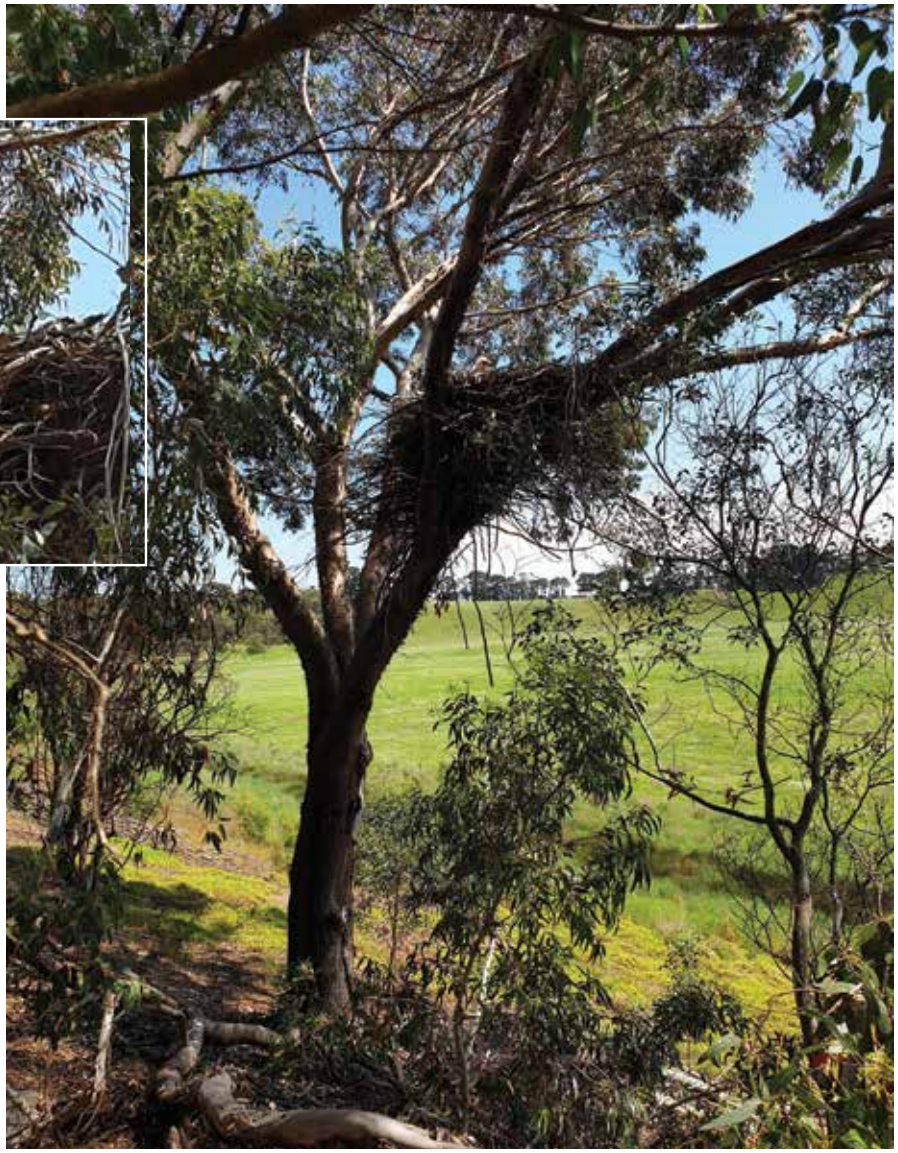
After: A thirty-year Landcare project has transformed Kaye and Brent Rodden's property.

Continued from page 21...

The escarpment is now free of serrated tussock and a haven for wildlife including this wedge-tailed eagle chick in 2021.

Other losses were more specific, with all of one species suddenly dying, causing us to reassess our species mix for subsequent plantings.

Over time most of the plants started to grow and drop leaves and branches. The water that had previously run off in sheets, began to slow and pool in the leaf litter. The organic matter in the soil increased providing good conditions for seeds from the native vegetation to germinate. Nature was healing the land.



> *Our once denuded landscape is now home to a rich variety of wildlife including echidnas, snakes, kangaroos, swamp wallabies and many bird species.*

We still need to clamber up and down the slopes once a year ducking under branches with a backpack to spray the odd tussock seedling or other weeds that have germinated from seeds that have found their way through a gap in the canopy or have survived in the soil.

Our once denuded landscape is now home to a rich variety of wildlife including echidnas, snakes, kangaroos, swamp wallabies and many bird species. A rabbit proof fence right around the escarpment and a rabbit management plan have been successful at rabbit control. With a burgeoning population of raptors, rabbits are now a threatened species in the area. In 2021, for the first time, a pair of wedge-tailed eagles nested in one of the trees we planted and guarded more than 20 years ago.

It has been exciting to see our neighbours and the broader Landcare community witness what we have achieved and follow suit. Increasingly degraded or rocky non-arable areas on local farms are being fenced off and planted with perennial trees and shrubs, providing a more biodiverse environment, helping to manage pasture and crop pests, and importantly, preventing soil erosion by keeping the water in the soil profile – in effect a nature-based solution to a very challenging problem.

Added to this the landscape is now more resilient to changing climatic conditions and is just nicer to be in too!

The Rodden family are foundation members of Barrabool Hills Landcare Group. Kaye is currently on the executive of the group and also Deputy Chair of the Geelong Landcare Network. For more information email barraboolhillslandcare@gmail.com

Protecting remnant vegetation for biodiversity

By Jay Duncan

The first principle of biodiversity enhancement is to protect remnant vegetation. Since the Yinnar-Yinnar South Landcare Group (YYSLG) began in 2007, we have been working to eradicate an infestation of sycamore maples (*Acer pseudoplantanus*) in the Budgeree Bushland Reserve at Yinnar South. This is a small, south-facing reserve in the Strzelecki Ranges.

YYSLG contacted Latrobe Valley Field Naturalists Club not long after we got underway. A member of their botany group surveyed Budgeree Bushland Reserve and the Boolarra Nature Conservation Reserve and provided us with lists of the plant species found. These lists have been a valuable reference for subsequent local revegetation projects.

Boolarra is in much drier and more open country on the Gippsland Plain. Our group's area includes both these types of terrain and vegetation communities.

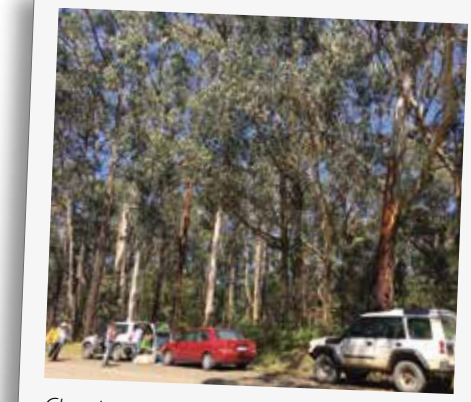
The Budgeree plant survey revealed the reserve had an excellent representation of locally indigenous flora. The only weed of significance was the infestation of sycamore maple that was shading out other plants and preventing new growth from getting established.

We researched maple control methods and learnt that herbicides are generally ineffective and that the physical removal of plants, especially seedlings, was required. Thankfully we were all fifteen years younger when we began the project, and some hard work by volunteers with chainsaws took down most of the trees that were large enough to set seed.

We used the most effective of the herbicides in sponge applicator bottles to paint cut stems or trunks. We've also used tree pullers and loppers on medium sized saplings in our subsequent annual maple massacres. One of our main activities throughout has been finding and hand pulling two-leaf seedlings.

This project has been a resounding success for local biodiversity. It has promoted the regeneration of native flora in an area of the Strzeleckis that were already legally protected as declared reserves. The site is now able to be studied to enhance our knowledge of endangered vegetation in the area.

The project has also been inspiring and sustaining for our group. YYSLG members have learnt an enormous amount about local indigenous plants and ecosystems. We have enjoyed working together and involving others in our community on a project that is achievable and meaningful.



Choosing a site on a quiet road with enough room to park is a consideration when planning a working bee.

We were able to inspire the forestry company that leases the other side of the creek to treat the maples on their land, which has helped enhance biodiversity and riparian habitat as native plants return. We were successful at persuading an adjoining landholder to eradicate some large old maples that were seeding into the reserve.

The project has helped to publicise YYSLG through advertising our working bees and reporting on volunteer efforts in the local news media. It has also required very little money, so we have been able to avoid the work of writing funding applications.

Sometimes newer Landcare groups struggle to find planting sites and funds for revegetation projects. For groups wanting to enhance biodiversity and looking for a cheap community project that's pretty easy to execute, we can recommend weeding existing high quality native vegetation. It's a great way to start, especially if the area is protected from future land use change and the dominant weed species is relatively easy to find and remove.

Jay Duncan is an active member of the Yinnar-Yinnar South Landcare Group. For more information email jduncan@speedweb.com.au

The 1st Yinnar Scouts were a great help with the 2010 maple massacre at Budgeree Bushland Reserve.

Living with wombats

By Jenny Mattingley

Wombats are among the largest burrowing mammals in the world. The earliest fossil records of wombats date back to about 20 million years ago.

The bare-nosed wombat was once widespread throughout southern Australia and is now only found in parts of eastern NSW, Victoria, south-eastern SA and Tasmania. It is one of three species of wombat which includes the northern-hairy-nosed wombat which is listed as endangered with its habitat restricted to only two sites in central Queensland, and the southern hairy-nosed wombat which is considered near threatened with a fragmented and declining population across semi-arid parts of SA and across the Nullarbor Plain into WA.

When establishing their burrows wombats can dig under thick layers of very hard soils called calcrete. Their digging improves water infiltration which increases soil moisture. Digging by wombats provides sites for water to enter soil, and also creates habitat for other species.

Wombats are herbivores that graze on grasses and herbaceous plants rather than shrubs or trees. We need to allow wombats to move freely through their home territory. Unfortunately, they are often blamed for the damage done by other grazing animals.

Learning about wombat behaviour

Affectionally known as the bulldozers of the bush, wombats are powerful and determined animals that may sometimes build their burrows under houses, along driveways or along domestic stock routes. This can result in inconvenience and conflict between wombats and people. It is important to understand wombat behaviour so we can learn to live with them.

Wombats construct burrows to escape the heat and hide from predators. They prefer areas where it is easy to dig. A single wombat may occupy three or four burrows. These can be shared with other wombats but not usually at the same time. Depending on the location, wombats will use existing burrows in preference to digging a fresh one.

Many of the problems caused by wombats can be resolved with patience and innovation. Concerns over stock injuries or damage to farm machinery when hitting or falling down a wombat burrow can be addressed with fencing. A post or low strand wire fence to mark burrows in paddocks or driveways will keep stock away. Electric fencing at 30 centimetres above the ground will allow the wombats to pass under but keep the stock away. Using old pallets to mark burrows and stop stock from getting too close has also been successful.

Wombat gates alleviate fence damage

Wombats are creatures of habit and use the same trails to get to and from their preferred feeding areas. Instead of going around an obstacle, such as a fence, a determined wombat will try to go through, or under it. This is when the conflict starts. The landowner repairs the fence, and the wombat makes an alternate hole to enter or exit and so the process continues.

Removing the lowest fencing wire (15 centimetres above ground level) may allow wombats to move through an area without damaging the fence. This can be a much cheaper option than excluding them completely.

> *We need to allow wombats to move freely through their home territory.*

A wombat swing gate can prevent damage to fences. Gates with mange treatment containers have also been developed.

A bare-nosed wombat foraging for food. Wombats are one of the largest burrowing animals in the world.

CSIRO researchers have found installing wombat gates can reduce fence damage and most importantly, wombats will use them. The Wombat Protection Society of Australia (WPSA) approached the Berwick Men's Shed and with their assistance have developed a prototype free-swinging gate allowing access in both directions.

The gates are also fitted with a mange treatment container that can be utilised if needed. Mange, caused by an infestation of the mange mite Sarcoptes scabei is a serious threat to wombats, who may die without treatment. Sick wombats can be reported to the WPSA.

Installing wombat swing gates at known wombat breech points along a fence will allow them to pass through without causing damage, so the fence will continue to exclude larger animals. Evidence shows echidnas will also use the wombat gates. The gate needs to be installed after initial damage to the fence as this is the only way to know the animal's preferred route.

Free gates in exchange for feedback

WPSA are trialling wombat swing gates. Gates will be available at no cost to eligible landholders on the condition they are prepared to give feedback on the success of the gates. This will enable improvements to be made if necessary. It will be the landowner's responsibility to install the gates which have been designed to fit into most existing ring lock and exclusion fencing. The trial is supported by the Victorian Government through a Community Support Fund grant.

Wombats can be excluded from burrows under a building by erecting a one-way sturdy door that allows the animal to leave, but not return. This method can also be used when evicting a wombat from a wombat hole in a dam wall. More information on this is available on the WPSA website.

The trapping and relocation of wombats is not permitted. Wombats are territorial animals. If relocated, they are likely to be harassed and attacked by resident wombats or killed on the road or by dogs as they try to find their way home.

Learning to live with wombats has many benefits for the species and for biodiversity. Being aware of the needs of wombats means paying attention to the pressures of land clearing and the impacts of disasters such as drought, bushfires, and flooding on these precious creatures.

Jenny Mattingley has been a wildlife carer in West Gippsland for more than 30 years. She is Victorian representative for the WPSA. For more information or to be part of the free wombat gate trial email info@wombatprotection.org.au

Installing wombat swing gates at known wombat breech points along a fence will allow them to pass through without causing damage.

Landcare news from across the State

Aboriginal Landcare Facilitator

Community conversations are continuing as the Landcare for Country pilot finally gets underway. Landcare for Country is about strengthening grassroots connections between Landcarers, Traditional Owners and First Nations communities so they can come together and do Landcare, for Country.

The pilot will create a number of new positions based in Traditional Owner groups that will work with Landcare to drive and support outcomes that align with Traditional Owner aspirations and priorities for Country. The pilot will run over four years and be supported by DELWP's Victorian Landcare Program.

For more information contact Jackson Chatfield on Jackson.chatfield@delwp.vic.gov.au or 0419 504 451.

Landcare Victoria Inc.

Landcare Victoria Inc. (LVI) continues to expand its role and services for members, including upgrading communications capacity, preparing a submission to the review of the National Landcare Program to put community Landcare back on the agenda, and supporting members with grant auspicing.

In early 2022, an online membership census will be conducted to collect information about Landcare activities and priorities and information required for insurance purposes. We will also be working on the first stage of developing a new Landcare Plan for Victoria that will establish a platform for community Landcare in the decades ahead. We are looking forward to visiting groups in the regions soon.

For more information on LVI or to become a member visit www.lvi.org.au or (03) 9034 1940.

Corangamite

Two new local Landcare facilitators have been welcomed to the Corangamite Landcare Team. The Geelong Landcare Network has recently appointed Bronwyn Merritt and Lismore Land Protection Group has recently appointed Alicia Merriman.

We wish outgoing Landcare facilitators Tim Trottier and Rod Eldridge all the best for the future and thank them for their great Landcare work.

The 2021 Victorian Landcare Grants round has funded 15 Project Grants and 34 Group Support Grants across the region.

For more information visit www.ccma.vic.gov.au (Get Involved/ Landcare) or contact Elisia Dowling on 0418 397 521.

East Gippsland

Landcarers in the region are busy implementing their 2021 Victorian Landcare Grants projects that were announced in October 2021. Groups are enjoying getting back to delivering projects and meeting for working bees. Bushfire recovery works are continuing as groups who received funding from Landcare Led Bushfire Recovery Grants look to wrap up by April 2022.

Planning is underway for a Landcare celebration event to be hosted by ABC gardening personality Costa Georgiadis on the long weekend from 12–14 March 2022. This will be an opportunity for the Landcare community to come together, celebrate their achievements and be inspired by Costa's energy for plants and the environment.

For more information visit www.egcma.vic.gov.au (What we do/Landcare) or contact Carolyn Cameron on 0419 892 268.

Glenelg Hopkins

The Landcare community has responded positively to the easing of the COVID-19 restrictions and has started conducting field day and working bees. AGMs are being held face-to-face; however online meetings may be here to stay.

Landcare groups have been busy planning to deliver the 26 projects funded through the 2021 Victorian Landcare Grants. These grants are highly valued by our local Landcarers.

Environmental scientist Dr Graeme Lorimer has been engaged by the CMA to conduct wetland plant identification training. The training is targeted at the Landcare facilitators, with CMA staff taking advantage of the opportunity to further develop their skills.

For more information visit www.ghcma.vic.gov.au (Get Involved/Landcare) or contact Tony Lithgow on 0418 180 996.

Goulburn Broken

It has been great to have face-to-face meetings once again. Groups are adapting to the requirements of social distancing and checking in.

It is full steam ahead with our 2021 Victorian Landcare Grants. We have some impressive projects in the pipeline across the catchment with several new groups supported to deliver on their local priorities. In addition, 21 groups received Group Support Grants.

A group of enthusiastic locals from Rushworth and surrounds are looking at coming together to form the Waranga Landcare Group. A new group in the catchment will be a strong note on which to start 2022.

For more information visit www.gbcma.vic.gov.au (The Region/Community natural resource management) or contact Tony Kubeil on 0408 597 213.

Mallee

The CMA extends its congratulations to the 21 groups who were successful in their 2021 Victorian Landcare Grants applications. Funded projects include large-scale pest plant and animal control works to support remnant native vegetation and reduce competition for native fauna, education events to promote the protection of riparian vegetation, and native indigenous revegetation to increase habitat for threatened species.

Citizen science projects will also be undertaken to increase the understanding of the Mildura ogyris butterfly (*Ogyris subterrestis subterresstis*) listed under the *Flora and Flora Guarantee Act 1998*. This project will promote awareness of the species that may lead to the discovery of new populations. The Mildura ogyris is ranked seventh on the list of Australian butterflies most likely to become extinct in the next 20 years.

For more information visit www.malleecma.vic.gov.au (Get involved/ Landcare) or contact Nelson Burand-Hicks on 0427 540 469.

North Central

The summer break provided an opportunity for the regional Landcare team to plan for the year ahead. Youth engagement will be a strong theme of our 2022 program, supported by the CMA's School Based Trainees and Apprentices Program staff.

Plans are underway for the fourth Cascade Connections Landcare facilitator event. Hosted in collaboration with the North East, Goulburn Broken, and Corangamite Landcare teams, the 2022 event will be held in the North East and will support the Landcare facilitators and project coordinators of the four catchments.

The endangered Mildura ogyris butterfly will be the focus of a citizen science project in the Mallee.

February marks our annual Rabbit Buster Month campaign. Landholders and community groups are encouraged to read up, reach out and rip into their rabbit control programs as the summer heat dries up feed, breeding numbers are low, and soils are more responsive to culturally-safe warren destruction.

For more information visit nccma.vic.gov.au (Get involved/Landcare) or contact Tess Grieves on 0438 357 874.

North East

The announcement of the 2021 Victorian Landcare Grants has provided funding for nine Group Support Grants and 28 Project Grants in the region. Ten of the successful project grants have also been identified as eligible through the Australian Government Bush for Birds Program and will receive an additional funding contribution towards some of their activities.

Four new Landcare facilitators took up their roles during the spring.

The dormant Jarvis Creek Landcare Group has become active again. A recent meeting of Landcarers in the area (near Tallangatta) have formed a new executive committee and begun planning how to invigorate local Landcare and community events. The executive is a mix of newer and more experienced members. We look forward to hearing about their strategic direction for the group.

For more information visit www.necma.vic.gov.au (Solutions/Landcare & community groups) or contact Richard Dalkin on 0409 683 467.

Port Phillip and Western Port

Landcare groups in the region continued to show their passion and focus with applications for the 2021 Victorian Landcare Grants the most subscribed in in the CMA's history. Twenty-one Project Grants and 87 Group Support Grants were funded.

On 1 January 2022, the Port Phillip and Westernport CMA integrated into Melbourne Water, bringing the catchment management and waterway management roles for the region under a single entity. Barry Kennedy continues as Regional Landcare Coordinator, and other Melbourne Water staff are excited to get out soon and meet their new partners.

The Regional Landcare Support Plan has been finalised and continues to have a strong focus on environmental volunteering's vital role in achieving state and national priorities.

For more information contact Barry Kennedy on barry.kennedy@melbournewater.com.au or 0447 821 559.

West Gippsland

West Gippsland's five Landcare Networks and the CMA got together recently to exchange ideas and discuss future directions. Hosted at Narkoojee winery in Glengarry, the strategic planning day provided a much-needed opportunity to reconnect in person. With the theme of Past, Present, Future, attendees shared their achievements and the challenges of recent times and reported on how Landcare was going in their patch and what they hoped to achieve over the coming years.

For more information visit wgcma.vic.gov.au (Getting involved/Landcare) or contact Sam Shannon on 0409 944 114.

Wimmera

Wimmera Landcare groups have been focused on rolling out a diverse range of 2021 Victorian Landcare Grant projects. We look forward to seeing these projects continue to develop over the course of 2022 as they build capacity for land stewardship and significant on-ground change across the region.

A large-scale soil moisture and weather station networking program coordinated by Wimmera CMA as part of the Australian Government's Future Drought Fund, continues to engage with many Landcare groups to improve management of natural resources and build drought resilience of agricultural and broader landscapes.

The Wimmera Landcare Team welcomes Annie Hobby, who has replaced Wendy McInnes as the Horsham Rural City Council area Landcare Facilitator. Annie brings a great skillset to the role and is well placed to build on Wendy's fantastic achievements with the local Landcare community.

For more information visit wcma.vic.gov.au (Get involved/Landcare) or contact Joel Boyd on 0429 949 196.

Do you need a rabbit mentor?

Are you struggling to manage rabbits on your property, in your community or workplace?

Do you understand rabbit management techniques but don't know how to implement them in a coordinated and effective program to achieve long term results? Perhaps you are responsible for planning a rabbit control program at your workplace or community organisation and want to make sure you get it right from the start?

Victorian Rabbit Action Network (VRAN) mentors are recognised experts in rabbit management and community action. They mentor, run training and deliver workshops to support people and organisations to collaborate on rabbit action across Victoria.

VRAN mentors provide strategic support in developing rabbit management strategies or integrated best practice rabbit management plans. They facilitate and give presentations at community workshops and demonstration days and conduct onsite training in specific rabbit management control methods.

Whether your rabbit program is big or small, VRAN mentors can assist.

VRAN mentor Brad Spear giving a rabbit control field demonstration.

For more information or to book a session email VRAN Executive Officer Heidi Kleinert at heidi.kleinert@agriculture.vic.gov.au

The *Victorian Landcare & Catchment Management* magazine is published three times per year by the Victorian Government's Department of Environment, Land, Water and Planning and distributed in partnership with Landcare Victoria Incorporated. The magazine aims to raise awareness of Landcare and natural resource management among Victorian farmers, landholders, the Victorian Landcare community and the wider community.

Mailing list enquiries and to receive your copy via email alert
Contact Landcare Victoria Incorporated
Phone: 9034 1940 Email: info@lvi.org.au

Read the magazine online
To access the *Victorian Landcare & Catchment Management* magazine online as web pages since the Spring 2016 issue (#67) go to www.landcarevic.org.au/landcare-magazine/
Back issues of the magazine since the Spring 1996 issue (#1) can be accessed online as pdfs.

Next issue

The next issue of the magazine, to be published in Winter 2022, will feature stories on how Landcare and environmental volunteer groups and networks are using online tools to publicise, plan, communicate and report on their projects.

Our readers are keen to learn about the successes of different approaches as well as what hasn't worked and the insights and reflections of your group or network along the way. The magazine fills up very quickly so please get in touch well before the contribution deadline.

Contributions for the Winter 2022 issue should be sent to the editor by Friday 18 March 2022.

Email: editorviclandcare@gmail.com

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