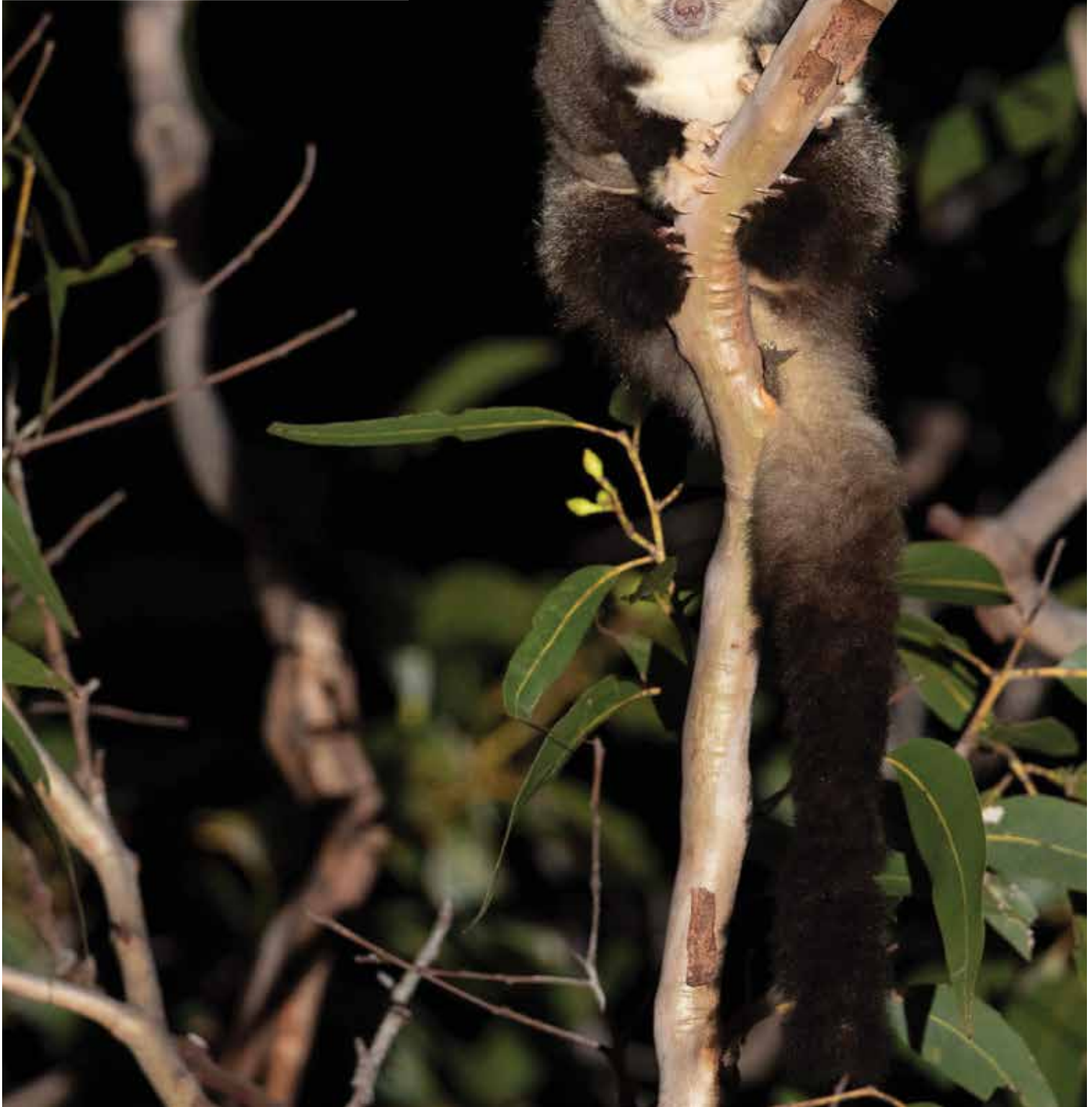


PARK WATCH



A GREATER REFUGE FOR GLIDERS
GOVERNMENT LATE FOR IMPORTANT DATE
MOUNT COLE STILL ON CHOPPING BLOCK
LIVING WITH FIRE
NEW PARK FOR THE BASS COAST
COMMUNITIES LISTENING FOR NATURE
SPECIAL SPECIES: WHITE MANGROVE

MARCH 2020 NO 280



VICTORIAN
NATIONAL PARKS
ASSOCIATION
Be part of nature



Be part of nature

PRESIDENT Bruce McGregor

DIRECTOR Matt Ruchel

Level 3, 60 Leicester St, Carlton, VIC 3053

ABN 34 217 717 593

Telephone: (03) 9341 6500

Email: vnpa@vnpa.org.au

Web: www.vnpa.org.au

OUR VISION

The Victorian National Parks Association vision is to ensure Victoria is a place with a diverse and healthy natural environment that is protected, respected and enjoyed by all.

Everyone can help in the conservation of Victoria's wild and beautiful places. To find out how you can help, visit www.vnpa.org.au/support or call us on (03) 9341 6500.

EDITOR Meg Sobey

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You're always welcome to contact the editor to discuss ideas for articles.

Phone the VNPA or email meg@vnpa.org.au

COPY DEADLINE for June 2020 *Park Watch* is 17 April 2020.

DESIGN South Star Design **PRINTING** Adams Print

FRONT COVER

The furry eared, fuzzy tailed Greater Glider.

Read about these loveable creatures and their important forest refuges on pages 5–7.

Photo by Josh Bowell.

Park Watch ISSN 1324-4361

Authorised by Matt Ruchel, Executive Director, Victorian National Parks Association.

Level 3, 60 Leicester St, Carlton, VIC 3053.

Park Watch
is printed on
FSC certified
paper.

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From the President

We live in challenging times, and the impact of COVID-19 and the landscape-scale fires create a new sense of urgency to protect the bush for the future.

At the end of 2019 and the beginning of 2020, Victoria experienced catastrophic bushfires over more than 1.5 million hectares, or in Victorian speak, 660,000 times the area of the MCG. Many national parks were burnt, and in some cases large forests were completely burnt-out. Over 100 species of animal are at serious risk of extinction. Fortunately, damage to property and people was far less than might have been expected. We extend our condolences to those who lost family, friends and homes, and thank all those who worked on minimising the extent of the damage.

Large fires are to be expected in areas experiencing very dry conditions. The impact of climate change, a warmer Tasman Sea, and very hot, strong winds resulted in large parts of eastern Victoria, New South Wales, and Kangaroo Island in South Australia being burnt over many weeks. Much of southern Victoria experienced severe atmospheric pollution, and it would have been near-suffocating in the fire-impacted areas.

Most, but not all, of Victoria's ecosystems need fire to function – but at appropriate ecological intervals. Too frequent fire or complete burning of an ecosystem is not sustainable, and results in long-term changes in the structure and function of an ecosystem, with some becoming extinct. This summer, many areas which have been burnt in the past ten years were burnt again. This is not good for nature. Hazard reduction burning in recent years did little to reduce the severity of the recent fires. Chief Fire Officers all agree that hazard reduction is not the panacea promoted by some sections of society.

VNPA is most concerned about the impact of repeated fires and attempts by the self-interested logging industry to 'salvage log' burnt areas. 'Salvage logging' requires large heavy machinery, which results in damaging fragile soils, compressing soils, causing ruts and channels which increase water erosion, sediment flows to rivers and leach nutrients.

Yet burnt trees provide important habitat. Most eucalypts are not killed by the fires and quickly regrow from shoots protected by their thick bark. I first learnt this after the Gariwerd/Grampian fires in 1960 as a small boy watching the shoots emerging from the blackened bark. Salvage logging can effectively fragment the forest, causing further ecological disruption.

The impact on birds and animals has been severe and Victorians – and others across the world – have generously donated to help rescue injured, isolated and starving wildlife. Our family friend at Mallacoota, former ranger and long-term ornithologist Bob Semmens said that he counted over 30 species of birds washed up along the ocean beach. In the days after the fires, Lyrebirds, normally lurking in the darker wetter forest, were seen scrounging around the lawns on the edge of the town.

The Victorian Government is to be commended for quickly allocating \$17.5 million for threatened species. Significantly more funding will be needed, however. And this should be seen in light of other expenditure – the state government recently gave \$30 million to increase prize money at the Spring Racing Carnival. The catastrophic fires highlight the critical need to properly fund species recovery plans. Too many species have no plan, and plans that exist are often out of date and many plans are never implemented. More staff and more operating funds are needed. It is time the budget office stopped playing games with the Victorian environment. If the government was in any doubt about the public feeling on this matter, they need to look no further than the massive level of donations, engagement and volunteering which is going on to help wildlife.

Australians have been warned for decades about the risks associated with hotter summers, climate change and extreme weather. Our governments need to focus on their legislated responsibilities of protection of our unique, endangered and important

plants and animals. Indeed, most tourists to Australia come here to see our landscapes and nature.

It was difficult for everyone to have a relaxing holiday season with the extreme weather and fires. My family "accidentally" escaped the weather while visiting family in Kentucky USA, in below zero conditions. The stress was there however, as the VicEmergency app showed fires threatening, but fortunately missing, our family's rural hideaway.

The fires highlight the important role that VNPA plays in advocating for nature protection, better policies, better funding and ecological management. We thank our members, supporters, and the funding bodies who support our work.

Read our full coverage of the fires in this *Park Watch's* feature 'Living with fire' pages 11–20). • PW

Bruce McGregor, VNPA President

Coronavirus (COVID-19) update

Still reeling from the devastating fires, we now face the coronavirus pandemic. Our thoughts are with you, your families and communities, and I hope you can take some solace in these uncertain times by safely visiting your favourite place in nature.

We want to reassure you that the safety and health of our members, volunteers, participants, supporters and staff are our first priority, and that we are following the advice of health experts and government.

VNPA is putting in place measures to minimise the exposure of our people to the virus while continuing our work protecting nature across the state. We are postponing or cancelling events, meetings and activities, including bushwalking activities we had planned from now until the end of June 2020. But we will look for opportunities to encourage people to enjoy nature safely. See enclosed insert or visit vnpa.org.au/covid-19

We are all uncertain about the future right now, and like you, I hope the impact of the coronavirus doesn't last too long.

But no matter how long this crisis lasts, the reality is that it is now more important than ever to stand up for national parks and all the nature they support.

With that in mind, we hope that the VNPA community will continue to give generously throughout the current crisis to protect Victoria's nature.

Nature for Life Rally!



PHOTO: SANDY SCHEITEMA

Hundreds of nature lovers joined the Victorian National Parks Association on Parliament steps for the Nature for Life Rally on 28 November 2019 to call for urgent action from the Andrews Government to better protect Victoria's nature.

It was a truly heart-warming show of care for our precious native plants and animals and our collective future – and an incredible display of costumes, spectacular hand-painted signs and banners, an amazing whale puppet, and an eighty-metre hand-printed textile artwork of a Mountain Ash tree!

Victorians from over 40 local groups travelled to Parliament – from Warrnambool, Port Fairy, Warburton, Healesville, Kinglake, Toolangi, Strathbogies, Bendigo, Daylesford, East Gippsland, Morwell, Mirboo North, Westernport and Mornington Peninsula – to stand united with state and national environment groups.

The atmosphere of coming together as Victorians passionately working to protect nature was truly uplifting. Many people commented on how good it felt to connect with others from across the state, especially as it can sometimes feel quite isolating as small groups and individuals caring and campaigning for their local natural places.

Thank you so much to everyone who helped organise, spread the word and showed up to make this such a special day.

We are still calling on the Andrews Government to do more to protect nature and approve the recommendations to create new national parks in the central west of Victoria – read more on the following pages. • PW

New staff join the team

We are so pleased to welcome several new staff to VNPA team. They are:

- **Jordan Crook**, Nature Conservation Campaigner, is working on forest and grassland protection.
- **Emily Cork** is our new Administrative Assistant, you may speak to her next time you call the VNPA office.
- **John Kotsiaris**, Nature Conservation Campaigner, is working on fire policy.
- **Jessie Borrelle**, Digital Campaigner, has been focusing on communications for our campaign to create new national parks in central west Victoria.
- **Kristen Agosta**, NatureWatch Project Officer, is helping out with our camera monitoring and tagwatching projects.

We are very grateful to the donors and philanthropic organisations who have helped ensure we have extra staff at a time when nature in Victoria especially needs our efforts. • PW

Environmentalists honoured

Congratulations to all those who have recently received Medals of the Order of Australia for services to the environment, including two people we know of who are part of the VNPA community:

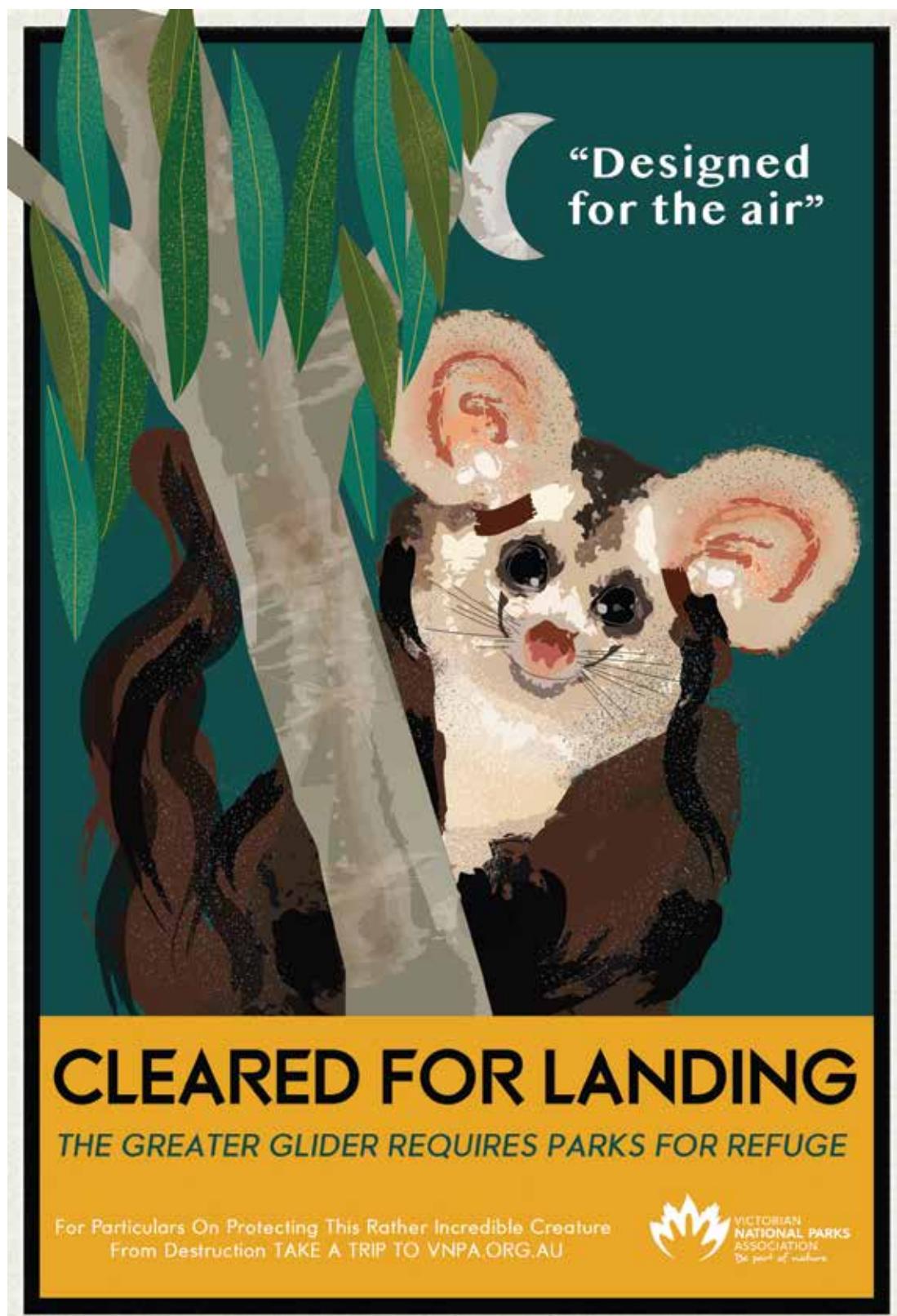
Carl Rayner OAM – Among involvement in many conservation groups over the past 40 years, Carl has been a member of VNPA since the late 1970s and was the convenor of the bushwalking group in the mid-1980s. He was co-founder of the first 'Friends' group in Victoria at Organ Pipes National Park and was involved in revegetation of that park for a number of years. In 1997 he was given the 'Best Friend' Award.

Amanda Martin OAM – Amanda has contributed to environmental conservation, especially through philanthropy, for over 20 years through various roles, including Executive Director of VNPA from 1997 to 2003. She co-founded and has been Chief Executive of the Australian Environmental Grantmakers Network since 2009.

Congratulations also to Daryl Akers, Elaine Carbines, Eileen Collins, Elizabeth Corke, Peter Forster, Joan Grigg and William Incoll for their awards for service to conservation and environment in Victoria. • PW

A Greater Refuge for Gliders

IN THE TALL TREES OF THE CENTRAL WEST LIVES A QUIET YET ENIGMATIC CREATURE,
WRITES NATURE CONSERVATION CAMPAIGNER **JORDAN CROOK**.



VNPA produced street posters to increase community awareness of our campaign to protect the central west forests, including the Greater Glider. See the others on the following pages.

During the day they curl up in a ball inside hollows. But at night this large animal comes out to glide from tree to tree in the highest canopy.

The Greater Glider (*Petauroides volans*) is the largest gliding mammal in Australia – and the second largest in the world! Growing to a metre in length, the Greater Glider really is a sight to behold from its long fluffy tail to its furry ears.

These forest-dependent marsupials call the forests of Australia's east coast home, with a distribution from central Queensland to Victoria. The Wombat Forest near Daylesford, only slightly more than one hour from Melbourne, is its western-most range.

Sadly, populations in Victoria are in decline and the species is listed as threatened. In a 12-year period, their numbers have reducing by 50 per cent in East Gippsland, and by 8.8 per cent each year in the montane ash forests of the Victorian Central Highlands. This is due to habitat loss and fragmentation from clearing, logging and bushfires.

At least a quarter of Greater Glider numbers have been impacted by the unprecedented bushfires in the east of Victoria. This makes the protection of unburnt habitat vital to the species future.

Citizen scientists from Wombat Forestcare have been surveying Greater Glider populations in the Wombat Forests since 2010, and in that time they have documented 278 individual gliders in 212 records.

A recently released report commissioned by the Victorian National Parks Association and Wombat Forestcare crunched the numbers.

You can read the report *Wombat Forest, A Greater Refuge for Gliders* on our website: www.vnpa.org.au/wombat-forest-a-greater-refuge-for-gliders

The report reveals densities of Greater Gliders within the Wombat Forest are large and regionally significant. Similarly high densities in East Gippsland and the Strathbogie Ranges led to the protection of glider habitat in those locations in November 2019, as part of the conservation measures within the Victorian Greater Glider Action Statement.

The nearest population of Greater Gliders from Wombat Forest is 80 kilometres east in the Central Highlands. The Wombat Forest gliders should be seen as an 'Insurance Policy' for the species in Victoria, thanks to their relative isolation which means they could be safer in the context of landscape-scale fires, which will increase with our changing climate.

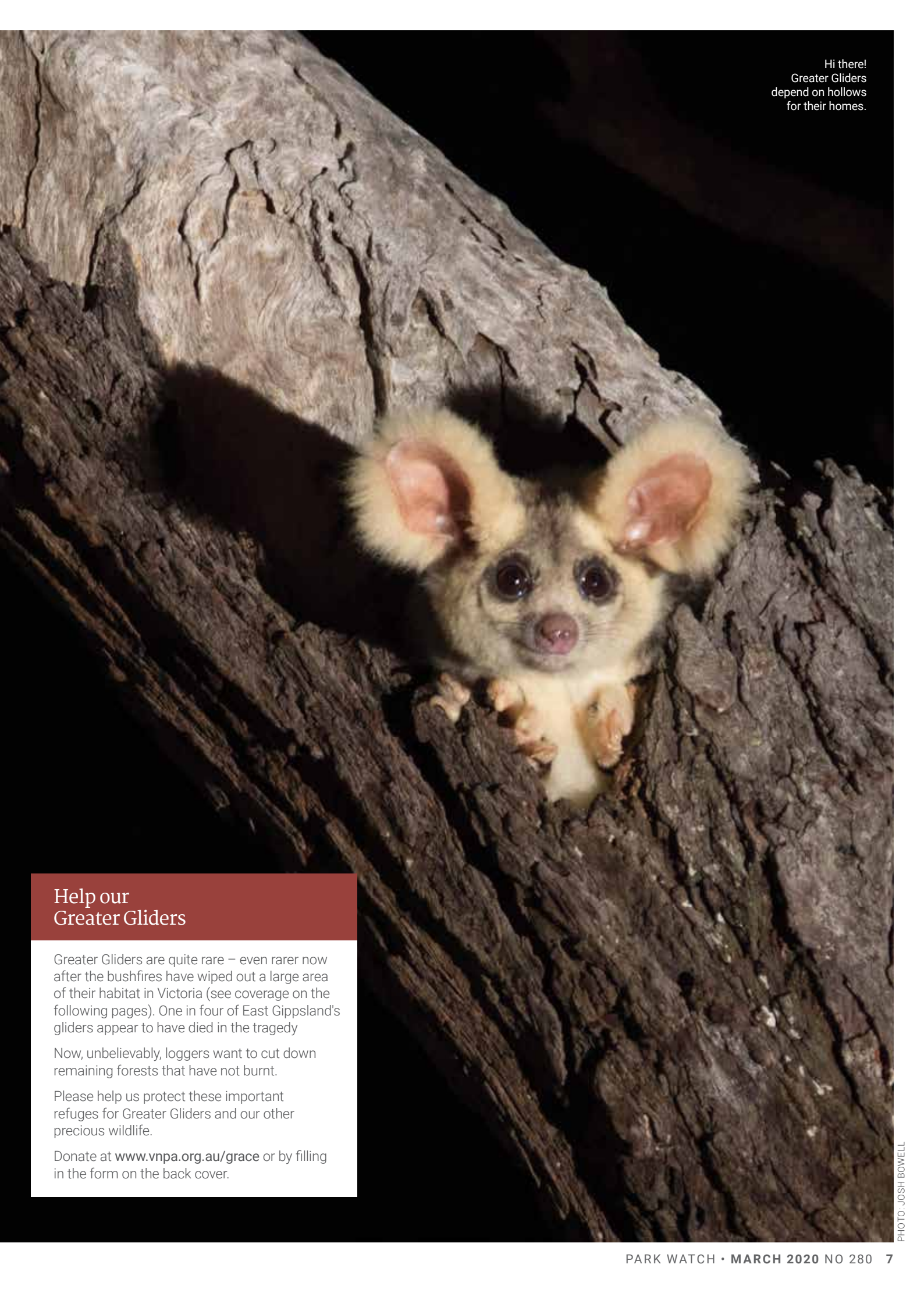
The high numbers of Greater Gliders in the Wombat Forest support the recommendation for permanent protection of this habitat. The proposed Wombat-Lerderderg National Park would secure the glider's future in the west of the state. You can help support the creation of these new national parks and reserves in the central west here: www.vnpa.org.au/central-west

The Greater Glider is a wonder of the natural world and a true treasure of the Victorian bush – we must protect this loveable creature. • PW



Greatness knows no limits – facts about Greater Gliders

- Greater Gliders are nocturnal, largely silent and solitary.
- Their body grows up to 45cm, with a tail up to 60cm.
- Their soft fuzzy fur ranges in colour from pure white to black, with some mottled grey.
- A membrane of skin stretches between each elbow and ankle.
- They are able to glide more than 100 metres.
- Their body forms a triangle when gliding, and their tail is used for steering.
- Graceful in the air, they are clumsy on the ground.
- They prefer moist forest types and older trees with hollows for nesting.
- They feed only on gum leaves and buds from their favourite eucalypts.
- They rarely interact except when mating.
- Mature females will give birth to a single joey each year, typically in late autumn or early winter. It will suckle and develop in her pouch.
- Each adult inhabits up to twenty different dens in tree hollows within its home range.
- The individual's territory will be larger and smaller, depending on the respective size of the patch of forest.
- Extra fun fact known to many citizen scientists: when spotted with a torch their eyes reflect a very bright light!

A close-up photograph of a Greater Glider, a marsupial, perched on a tree trunk. The glider has large, prominent ears with a yellowish-orange inner lining and a greyish-brown body. It is looking directly at the camera with large, dark eyes. The tree trunk has a rough, textured bark. The background is dark, suggesting a nighttime setting.

Hi there!
Greater Gliders
depend on hollows
for their homes.

Help our Greater Gliders

Greater Gliders are quite rare – even rarer now after the bushfires have wiped out a large area of their habitat in Victoria (see coverage on the following pages). One in four of East Gippsland's gliders appear to have died in the tragedy

Now, unbelievably, loggers want to cut down remaining forests that have not burnt.

Please help us protect these important refuges for Greater Gliders and our other precious wildlife.

Donate at www.vnpa.org.au/grace or by filling in the form on the back cover.

PHOTO: JOSH BOWELL

Andrews Government late for an important date

WITH THE ANDREWS GOVERNMENT MISSING THEIR DEADLINE TO AGREE TO THE CREATION OF 60,000 HECTARES OF NATIONAL PARKS AND RESERVES, OPPONENTS ARE NOW LOBBYING HARD TO STOP ANY PROGRESS ON PROTECTION IN PARKS. BY VNPA DIRECTOR **MATT RUCHEL**.

The forests of the central west don't belong to the timber industry or special interest groups. They are a haven for all Victorian nature lovers, and especially for the vulnerable animals and plants that wouldn't survive without them.

Yet there are, shockingly, imminent plans to clearfell log areas within the what is a proposed new national park for Mount Cole (see following pages).

These new parks were recommended by the Victorian Environmental Assessment Council (VEAC) final report on its Central West Investigation. This report was released 21 June 2019, and tabled in Parliament in on 15 August 2019. Under legislation the Victoria Government must respond "... not later than the first sitting day after the period of 6 months after the sitting day on which the report was laid before each House of the Parliament."

By our calculations, this would mean the government's response should have been tabled in Parliament's sitting week of 18 February 2020. At the time of writing a response is overdue and thus in breach of the legislative timelines.

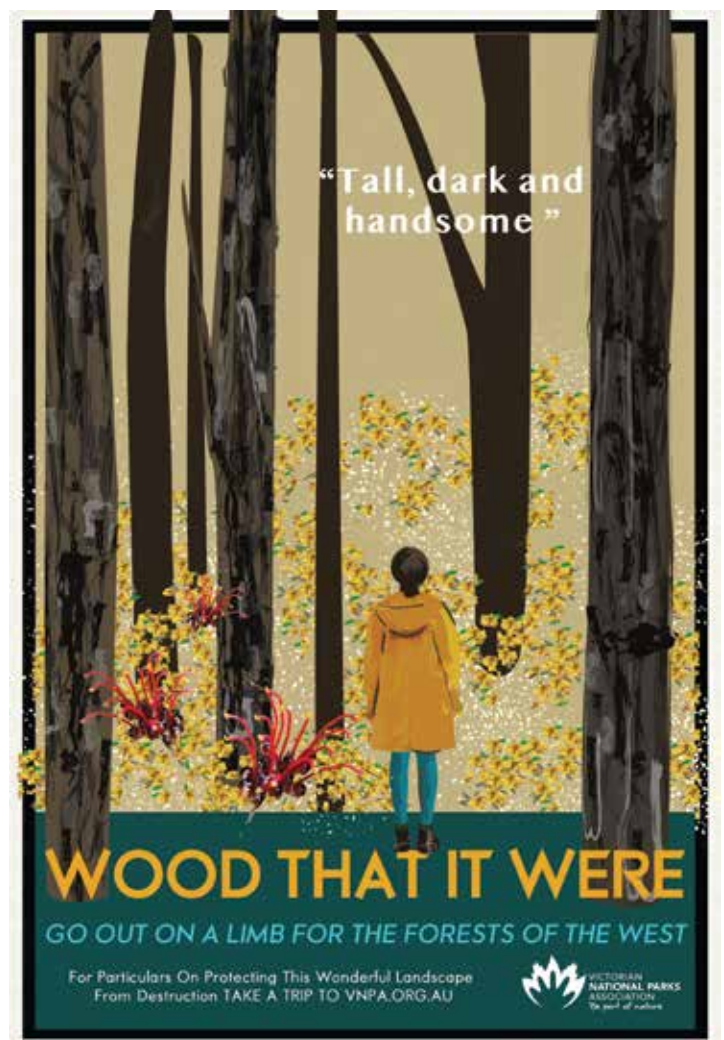
And the forests in the central west remain wide open for logging.

When asked in Parliament on 4 March for the lateness, the Victorian Environment Minister Lily D'Ambrosio answered that the government had been very busy with bushfires and would respond to the report "at the most appropriate time". Similar questions were also asked in the Upper House, with similarly vague replies.

A letter from the Office of Minister for Tourism, Sport and Major Events to a VNPA member stated that a response was planned in March 2020 in which a "... broad range of community views will be considered".

The Victorian Environment Assessment Council's role is to conduct investigations requested by the state government, and provide independent assessment and advice on the management of public land.

Over three years ago, in November 2016, the Victorian Government initiated the Central West Investigation by inviting public comments on a proposed Terms of Reference. These were released in March 2017 with a call for submissions from the public. A draft proposal paper was released in August 2018, followed by 60 days



of consultation. The investigation was informed by over 3000 submissions, as well as specific focused consultation with Traditional Owners, a community reference group and a socio-economic impact assessment. The final report was publicly released in June last year.

The Andrews Government has now had six months to consider the recommendations. Statewide polling consistently shows widespread support (over 70 per cent support or strongly support new national parks) – so what is there to think about? • PW

Join the push to create new national parks!

Urge the Andrews Government to announce new national parks and reserves for our state now – after a two-year thorough consultation and clear recommendations, what is there to think about?

The forests of the central west need you to contact the Deputy Premier and Environment Minister to send them messages of overwhelming support to encourage a strong response from our government (currently they are receiving messages of opposition).

Call the Deputy Premier James Merlino:
www.vnpa.org.au/deputy

Call the Environment Minister Lily D'Ambrosio:
www.vnpa.org.au/envirominister

Please also send the postcard included in this edition to **Park Watch**. Just add your name, suburb, postcode, write a personal message, put a stamp on it and put in the post!

Mount Cole still on the chopping block

VICFOREST'S PLANS FOR CLEARFELL LOGGING IN AREAS OF PROPOSED NATIONAL PARK MUST BE HALTED, ARGUES **MATT RUCHEL**.

Community assets and natural values protected – or not?

The Mount Cole range forms the western extremity of the Great Dividing Range. Rising to almost 1000 metres, it contains species and communities found more commonly in the cooler and wetter eastern highlands of Victoria. There are extensive patches of montane woodland dominated by Snow Gum and tree ferns. It is home to the westernmost population of Mountain Brushtail Possum.

Due to its height and location, Mount Cole will be incredibly important nature refuge in a changing climate.

VEAC recommended for this area a new Mount Buangor National Park – expanded from the existing Mount Buangor State Park and an addition of 2784 hectares from Mount Cole state forest.

Also recommended is a new Ben Nevis Nature Reserve to the north, and new heritage river designation in the upper reaches of the Wimmera River within Mount Cole.

This new Mount Buangor National Park would include the popular Beeripmo Walk, a 21-kilometre walking trail which can be done in sections or over two days.

It would also protect the Mount Cole Grevillea – a spectacular flowering shrub entirely restricted to the Mount Cole Range, where it occupies an extremely narrow and rapidly declining area. It was officially listed as a threatened species under the *Flora and Fauna Guarantee Act* (after nomination by VNPA) just a few months ago on 25 October 2019. It is recognised as being vulnerable to logging.

While proposals for these new parks have been developing for some years, to the point that the VEAC final report recommending them had been tabled in Parliament – the state government's logging agency VicForests decided in November to increase the number and intensity of proposed logging in this area.

They plan four new logging coupes, and for three existing to have increased intensive clear fell (even stand management); a total area of over 200 hectares. This would be logging forests within the boundary of the proposed Mount Buangor National Park and overlapping both the Beeripmo Walk and the Mount Cole Grevillea's location.

VNPA made a submission opposing these new coupes,



especially as a decision on creating the new parks is imminent. But our submission appeared to be ignored, and two weeks later on Christmas eve the Timber Utilisation Plan 2019–2023 was released seemingly without change. We worked with *The Age* on a piece on 28 December highlighting the concerns about the impact on logging on the Beeripmo Walk and proposed park: <https://amp.theage.com.au/politics/victoria/losing-the-woods-for-the-trees-green-light-for-logging-near-popular-hiking-track-20191228-p53nb0.html>

Victoria is the most cleared state in Australia, and much of our key habitat remains on public land. While public land only covers 40 per cent of the state, it contains 70 per cent of the highest biodiversity values. In the region that Mount Cole and some of the nearby Pyrenees Ranges sit, more than 55 per cent of the landscape has been cleared. Public land makes up only 17 per cent of that particular region, and just 4.4 per cent is in an existing park or reserve – the rest is unprotected state forest. Given this, clearly there is a need to better protect more of our public lands, particularly in the central west.

Native forest logging ending – or not?

Park Watch readers would know that the Andrews Government in November 2019 announced it will end native forest logging by 2030. However, this announcement is incongruous with VicForest's plans to log Mount Cole. VicForests argued in *The Age* that it only logged 4.7 hectares of its total 10-hectare logging allocation for the Mount Cole region in 2018/19.

Continued overleaf

Immediately outside the proposed park boundary at Mount Cole there are 448 hectares of logging coupes listed on the new Timber Utilisation Plan 2019-2023 (this is approximately 186 MCG fields in size). If the figures are right, that is enough for 40 years of logging at 10 hectares a year, or 90 years at 4.7 hectares per year – well past the Andrews Government phase out deadline of 2030. Even if they log half the area allocated, it is still well more than enough to supply the small western logging industry past 2030.

The native forest logging industry in the west of Victoria is small, declining and largely funded by our taxpayer dollars. In 2014 VicForests received a \$3.3 million government grant in advance to run the so-called 'Western Community Forestry'. In their 2018-19 Annual Report, VicForests reported total revenue from the western native forests (a huge area covering west of the Hume Highway to the South Australian border) was around just \$700,000. State government funding to VicForests' 'Western Community Forestry' in 2018-2019 was \$678,000. That's a surplus of only \$22,000, on behalf of Victorian taxpayers.

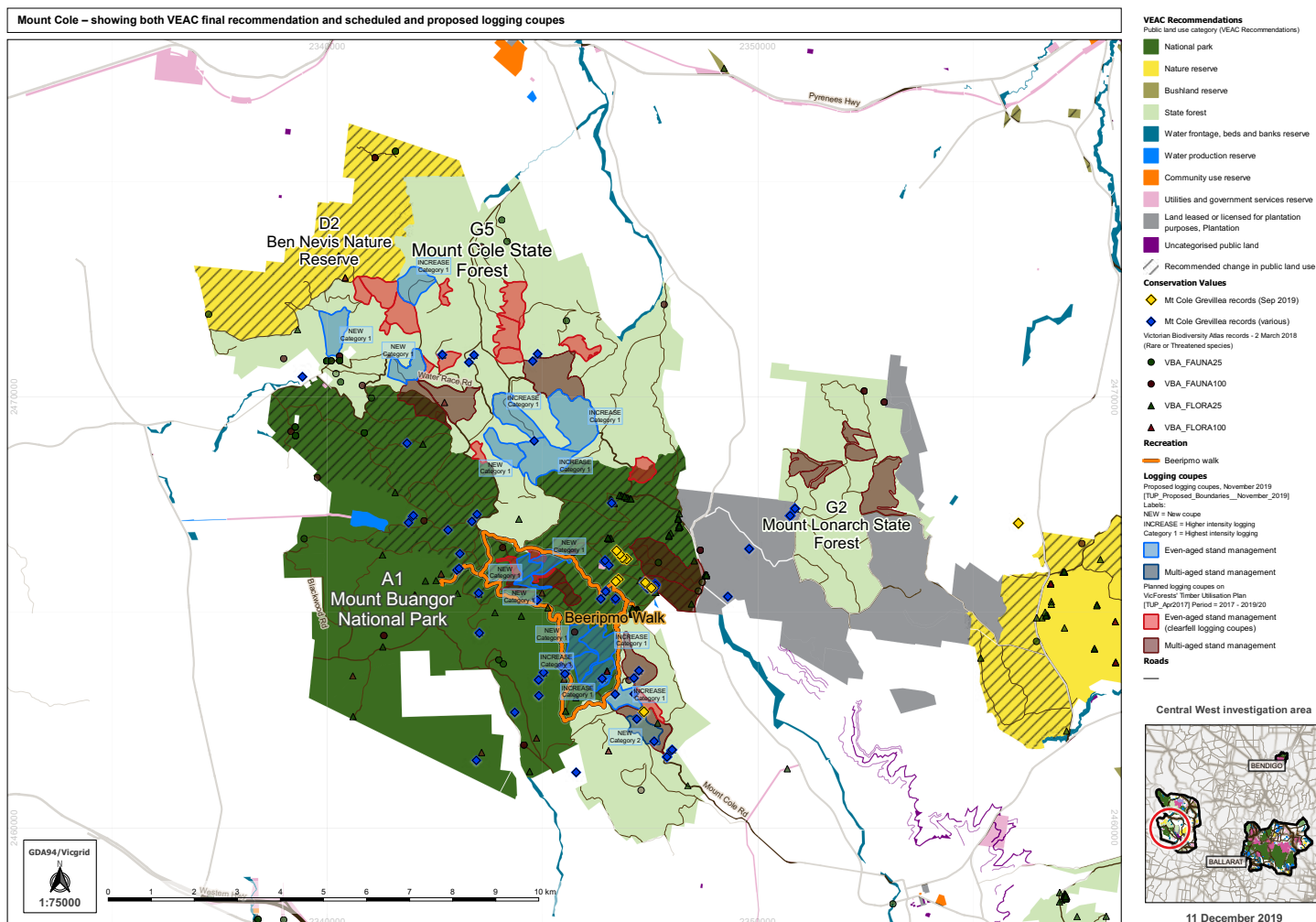
The grant for the 'Western Community Forestry' is due to run out at the end of this financial year, and in keeping with the Andrews Government's announcement to end native forest logging, this subsidy should not be renewed. If small

scale forestry is to be undertaken, its management should be returned to the Department of Environment, Land, Water and Planning (DELWP) rather than VicForests – but ideally it should not continue at all.

Mount Cole is the only place in the west of the state where destructive clearfell logging still occurs. While it claims to be 'community-focused', if the planned coupes proceed in the areas proposed to become a national park, they will in fact destroy the amenity and ambience of the long-term community asset the Beeripmo Walk, not to mention the impact on threatened species such as the rare Mount Cole Grevillea.

It seems provocative to schedule new logging coupes in an area well-known to be proposed national park. The motivation from VicForests is unclear. They deny it is a pitch for compensation if a new park is created. They have committed to "... comply with any determination made by the Victorian Government in relation to this matter" – not that they really have a choice once legislation is passed.

VicForests have agreed to give VNPA two weeks' notice of proposed logging in Mount Cole and the Pyrenees Ranges until mid-year. The first logging is expected to commence in March at Mount Cole in areas outside the proposed park. We will keep you updated on developments. • PW



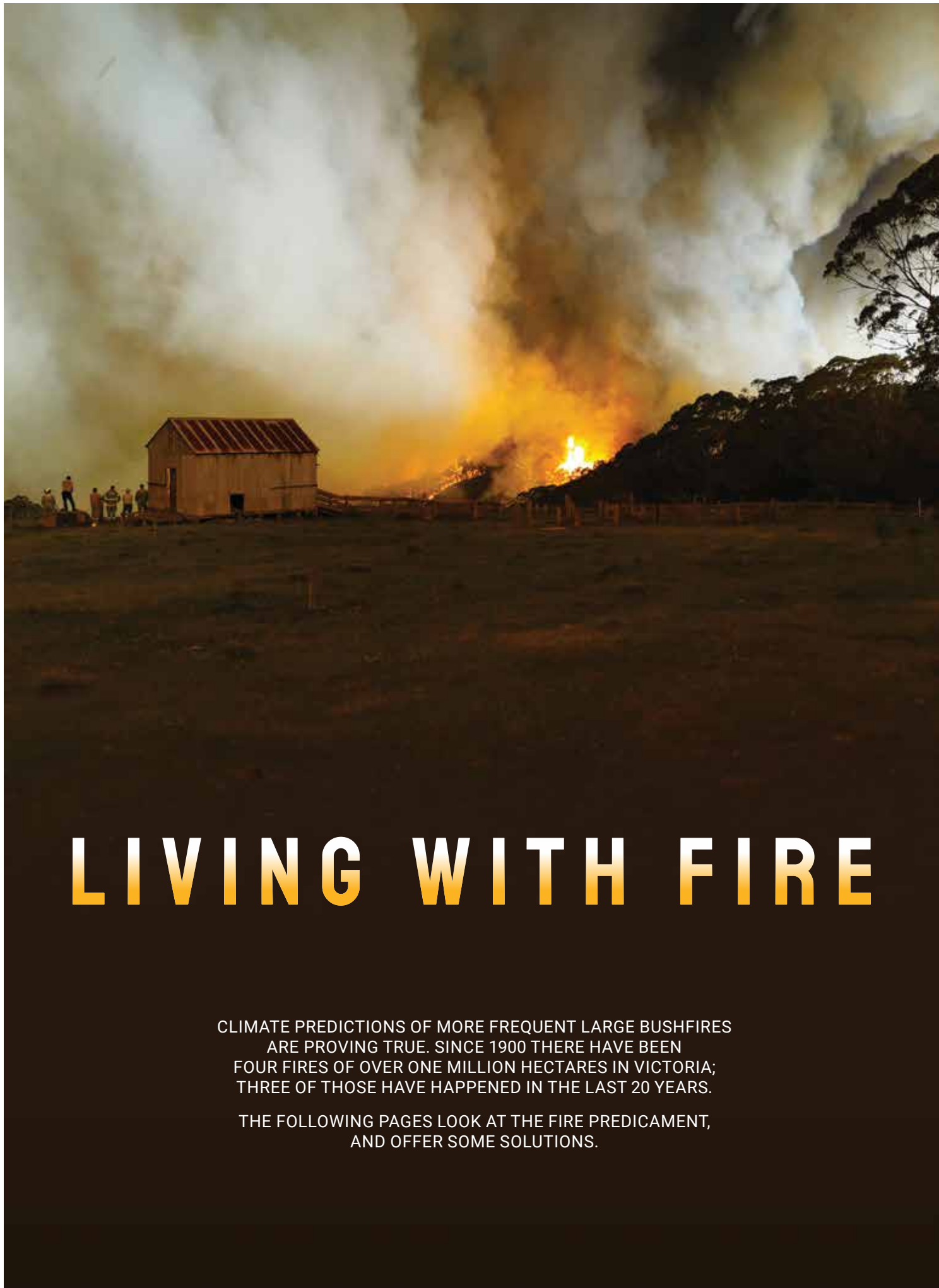


PHOTO: IAN RAYMOND

LIVING WITH FIRE

CLIMATE PREDICTIONS OF MORE FREQUENT LARGE BUSHFIRES
ARE PROVING TRUE. SINCE 1900 THERE HAVE BEEN
FOUR FIRES OF OVER ONE MILLION HECTARES IN VICTORIA;
THREE OF THOSE HAVE HAPPENED IN THE LAST 20 YEARS.

THE FOLLOWING PAGES LOOK AT THE FIRE PREDICAMENT,
AND OFFER SOME SOLUTIONS.

This summer's fire

OUR NATIVE PLANTS AND ANIMALS HAVE HAD A LONG AND TROUBLED PARENT-CHILD RELATIONSHIP WITH FIRE. IT MIGHT BE BECOMING AN IRRECONCILABLE ONE, WRITES VNPA PARKS PROTECTION CAMPAIGNER **PHIL INGAMELLS**.

Since July last year, fires have burned through nearly 16 million hectares of Queensland, NSW, Victoria, WA, SA, Tasmania and the ACT. About 1.5 million hectares of that was in Victoria.

This has been, unquestionably, an unprecedented event since records have been kept. Some 3,500 homes have been destroyed and 33 people lost their lives. It was something of a miracle more lives weren't lost.

The Australian flora we love, the eucalypts, bottlebrushes and more, have largely evolved in response to fire. Yet fire seems unsatisfied with that achievement; it will not abandon its harsh but nurturing role. It even seems to have taken vengeance on its creation, periodically burning the bush to a crisp and having a good go at us in the process.

Fire, this most primal of elements, this searing expression of the sun's energy on Earth, is getting increasingly hard to live with.

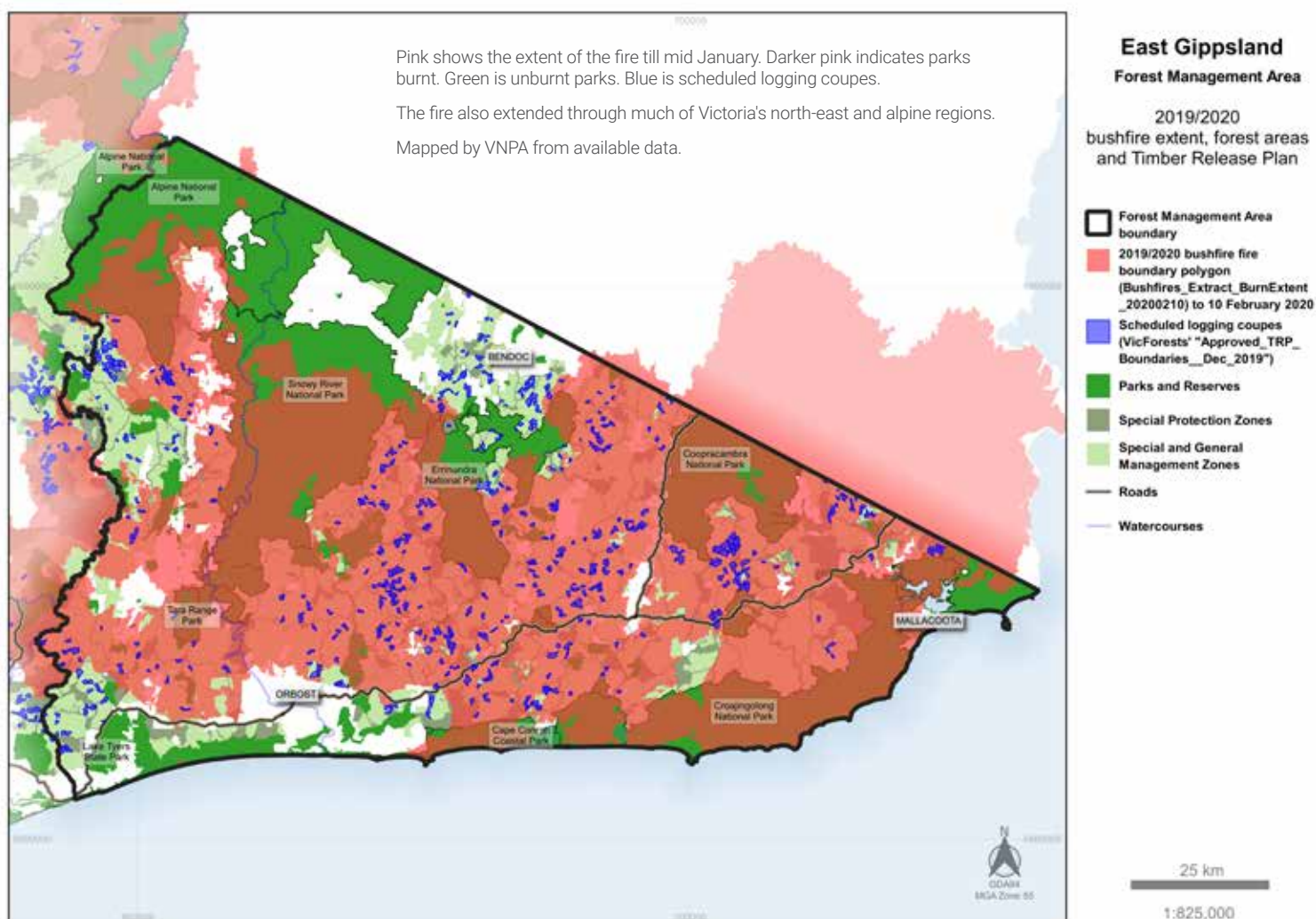
It started late last year with the burning of the previously 'unburnable' subtropical rainforests of Terania Creek and Lamington National Park in NSW. Then, later that summer, as a final gesture, flames incinerated a great many pockets of East Gippsland's warm-temperate rainforests and had a good bite at the Errinundra Plateau's cool-temperate rainforests.

The assault on our rainforests was just one of many impacts on nature, but perhaps the cruellest stroke.

Botanists know that 'rainforest' is a misnomer, and would rather call them 'fire-free forests'. These ferny patches of green that we mainly find in sheltered valleys in Victoria are truly ancient forests. They are surviving patches of the great misty forests of Gondwana, the one-time single landmass of the Earth's southern hemisphere.

Their canopy trees, like Lilly Pilly, Southern Sassafras, Muttonwood and Olive-berry, obligingly hold their leaves

This summer's fire through East Gippsland



Fairy Dell warm-temperate rainforest near Bruthen, is one of East Gippsland's tourist attractions.



Below: The same Fairy Dell rainforest after this summer's fires. Many rainforest pockets, most of them tiny refuges for ancient Gondwanan plants, have been torched this summer. Rainforests recover slowly, if ever, from fire.

horizontally, sheltering a moist understory of even more ancient plants: an abundance of spore-shedding mosses and ferns, and their more primitive ancestors in turn. They are, indeed, living museums of ancient flora.

Now just tiny remnants of their former extent, these rainforests have been sheltering perilously from fire for some 45 million years. The flames that randomly trickled or roared through the newly evolved 'Australian' forests, dominated by more recently evolved plants like eucalypts and wattles, generally skipped over deep valleys leaving the Gondwanan forests unscathed.

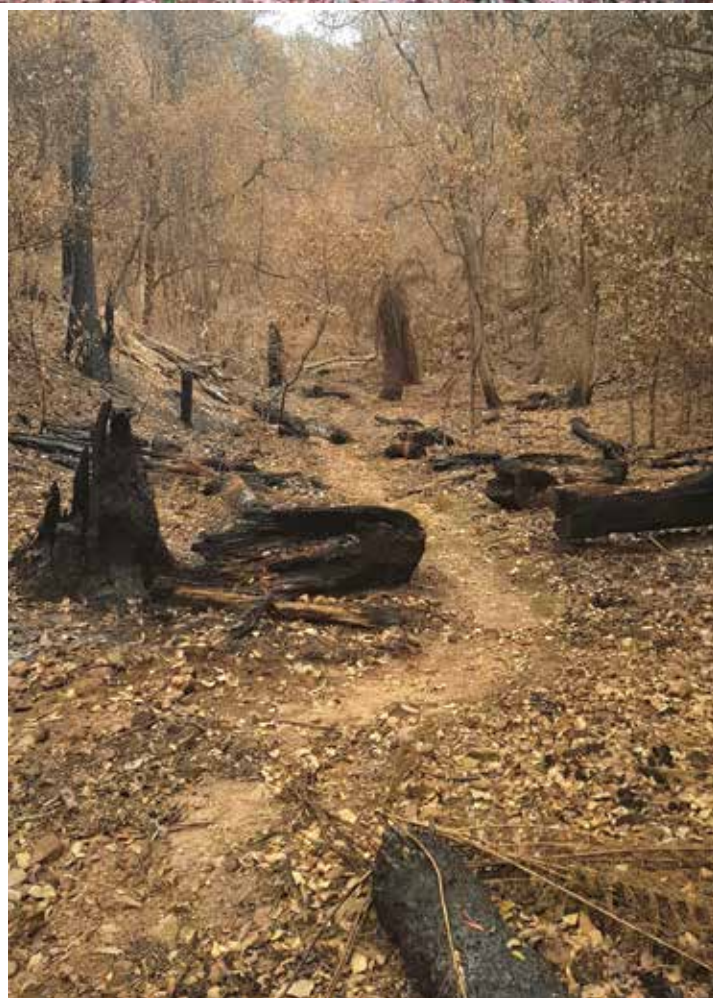
Or, if fire did occasionally burn into these ferny dells, they would need a very long fire-free period to recover, not having evolved good fire-recovery strategies.

Victoria's most extensive patch of warm-temperate rainforest, East Gippsland's Jones Creek, burnt extensively in 1983, and a 2013 study of its recovery said that if another fire returned in less than 40–50 years, it would cause progressive decline, returning it to a eucalypt dominated forest. This summer's fire has brought that scenario close.

It's not just rainforests that have been hit by frequent fire; repeated blazes can seriously test the capacity of many of the fire-adapted species to hang on.

Snow Gums, the much-loved, beautifully twisted and gnarled eucalypt species of Victoria's high country, can live for centuries. A Snow Gum can quickly resprout from a large underground lignotuber when an occasional alpine fire has killed the above-ground parts of the tree. Yet three fires in close succession can weaken and kill them. This scenario has happened now around The Horn in Mount Buffalo National Park, and in the southern parts of the Bogong High Plains in the Alpine National Park.

Victoria's Department of Environment, Land, Water and Planning's biodiversity response crew has estimated that some 170 already rare or threatened species have been impacted by the roughly 1,500,000 hectares of this summer's



PHOTOS: TOM CROOK

fires in eastern Victoria. They include animals like the Barred Galaxias, Long-footed Potoroo and Diamond Python, and plants like Buff Hazlewood and Betka Bottlebrush.

We are in a new paradigm. Climate change, and the more frequent fire it brings, is changing our landscape, and not over evolution's necessary aeons; it's happening now, before our eyes. • PW



The next fire

PHOTO: IAN RAYMOND

CAN WE CONTROL FIRE WITH FIRE? WILL MORE FUEL REDUCTION BURNING REALLY SAVE US AND THE BUSH WE LOVE? IT'S TIME FOR A NEW APPROACH, NOT FAILED REMEDIES, SAYS **PHIL INGAMELLS**.

We learnt as children that fire is a good friend and a bad master.

And we've managed to tame fire in so many ways in our daily lives. But the relationship between fire, the Australian bush, and the people who live there is increasingly a fraught one.

Fire is undoubtedly master whenever the weather suits it, and the weather will be suiting fire more and more in the years ahead.

For many decades now the prime tool for fire management has been reducing the abundance of understory fuel, our shrubs and grasses, through planned burning and other means. It does seem to make sense – burning or clearing the fuel before a bushfire does – if you can actually do it.

But in most ecosystems there is observed, as well as recorded and published, evidence that while a planned burn can reduce understory fuel for a year or three, in many or most ecosystems the post-fire growth of shrubs

produces a significant increase in flammable shrubs over the next decade or more.

Let's be clear about that. Fuel reduction burns can reduce the understory a lot for one year, and a bit for the next few years, but then they can actually increase the shrubby understory for many years. Eventually, over time (and this period varies), those shrubs gradually die off, and the understory becomes relatively low in fuel. Without more fire, it can stay that way for many years.

This 'long-since-fire' low fuel scenario is likely to be the explanation for many of the more open woodlands recorded by early European 'explorers'. Frequently repeated Indigenous burning may well have contributed some of that open country, but not across the broad landscape.

Our understanding of how much this is true in different ecosystems, and under different burn and climate scenarios, would be very strong if fire managers systematically recorded the change in fuel levels in the years following fuel reduction burns. But that simple monitoring program hasn't been happening.

It would be a serious enough omission in monitoring if this was only an issue of public safety, but it's also an issue of protecting something like 100,000 native species. The fuel that threatens us is, at the same time, our invaluable, ancient, natural heritage.

Independent published research, however, such as that performed recently in the Australian Alps National Parks, makes this process clear (see diagram this page).

How effective has fuel reduction been?

Over the last decade, Victoria's annual Fuel Management reports estimated a possible reduction in risk to life and property of up to 20 per cent maximum. But that would only be if all planned fuel reduction programs could be safely implemented.

That's helpful but not much comfort, particularly when we know that in acute fire weather fuel-reduced areas actually do little to lessen the extent or severity of fire.

And though we've never managed to reduce fuel to any truly 'safe' level with planned burns, it somehow remains the chief fire management tool in the public's mind, and also in the minds of many fire managers and politicians.

If we step back and look at things afresh, there are far more useful things we can do.

Protecting life

The over-riding priority for fire management is the protection of human life.

Unfortunately Forest Fire Victoria, in its planning, actually use buildings as a surrogate for human life. Why anyone would need such a weak proxy for such a critical and clear objective is a mystery; it's possible to save buildings but lose lives, and possible to lose buildings while saving lives.

If we dump the surrogate, more effective life-saving options come into the picture.

Compulsory evacuation

While Victoria belatedly came close to compulsory evacuation in this summer's fires, we still lack the necessary legal clout to achieve it. Fire managers should have the authority to evacuate homes, hospitals and even whole towns if necessary, and all regions should have well-developed evacuation strategies in advance of any fire season.

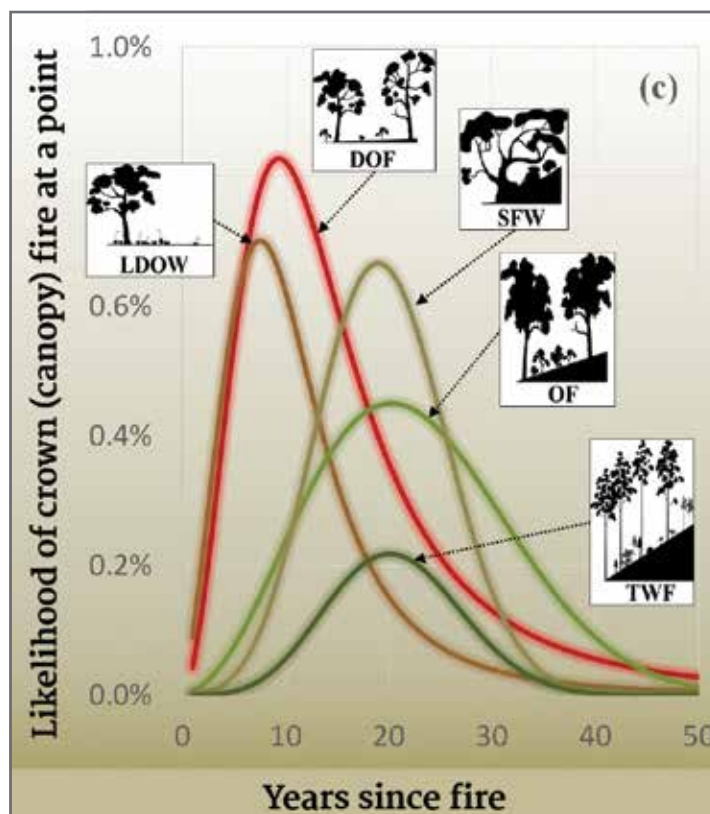
In the USA and Canada, compulsory evacuation is well established. In 2006, the 88,000 citizens of the Canadian town of Fort Murray were evacuated in the face of a several hundred-kilometre fire front. The town was lost, but everyone lived.

Private bushfire bunkers

The Victorian Bushfires Royal Commission found that half of the people who relied on private bunkers during the Black Saturday fires survived, but half tragically perished in them. The Commission put out an urgent interim report asking for an approved Australian standard design for private shelters, and that standard was published before the Commission's final report.

However, this critical information has never been communicated to Victorians, and there has been no support for people wanting to install approved shelters. They should, at least, be compulsory for any new building in a high fire-prone area.

How fire can increase fuel



Immediately after a fire, understory flammable shrubs etc are largely gone (year zero here), so any new fire is unlikely to generate enough flame height to reach the canopy. However the shrub layer quickly regenerates after a fire, soon greatly increasing the possibility of a canopy fire developing. In long-unburnt forests, the flammable shrubs die off, reducing the likelihood of a canopy fire.

LDOW = Low, dry open woodland.
DOF = Dry open forest.
SWF = subalpine forest and woodland.
OF = Open forest.
TWF = Tall wet forest.

Source: Zylstra, P.J. *Flammability dynamics in the Australian Alps*.
 Austral Ecology 2018.

Continued overleaf

Continued from previous page

These are among a few very employable strategies that can effectively contribute to safety.

But there is one seriously big investment that might radically change fire management in the state.

Rapid attack capability

Fires ravaged Tasmania in 2016, burning the previously unburnable high tablelands and incinerating Pencil Pines that had been unburnt for a thousand or more years. But the Tasmanian government was poorly equipped to handle fire in these remote areas, and had to rely on aircraft coming across Bass Strait from Victoria. They arrived far too late to avoid disaster.

Around Melbourne however, faced with the prospect of catastrophic loss of life in the Dandenongs, Warrandyte or the Mornington Peninsula, we now have the capacity to get three aircraft to an ignition point within 10–15 minutes of notification of a fire.

Our aerial attack capacity has increased steadily since 2009's Black Saturday fires, but rolling out a truly effective aerial point of ignition capacity across Victoria would be expensive, possibly a billion dollars or more. However Black Saturday cost Victoria over \$4 billion, and 173 lives, and this summer's fires have been more expensive.

This is a highly technological solution, but in the face of climate change, it may be the only effective way to seriously reduce the rate of fire in the landscape. We won't stop every fire, but we should set about establishing a far greater level of control than we currently have.

There are other ways to help control ignitions, such as burying power lines, a recommendation of the Royal Commission and later rejected by our state government, or encouraging local power generation (which is also good for the climate). And better strategies to control arson could also help.

Investing seriously in ignition control could have many benefits, increasing:

- public safety
- public health
- protection of infrastructure
- protection for agriculture
- protection for tourism
- viability for insurance companies
- reduced carbon emissions
- And ... long-term benefits for biodiversity

That has to look like a good return on such a solid investment.



Barely a month after fire ravaged the Buchan region, eucalypts are sprouting from epicormic buds.

PHOTO: IAN RAYMOND

If we reduce the frequency of severe fire, we should be able to decrease impacts on both lives, infrastructure and the environment. And in the long-term, though this might be difficult under climate change, we could potentially decrease the flammability of much of the landscape.

Fuel reduction will always have a place in managing bushfires, especially when it is performed strategically close to assets in need of protection.

But increasing management burns across the landscape won't be the panacea many are claiming, even if it were possible to achieve the task. • PW



PHOTO: SARAH DAY

Initial response must be sustained

THE VICTORIAN GOVERNMENT'S FIRE RESPONSE AND RECOVERY PACKAGE FOR NATURE IS A WELCOME FIRST STEP, SAYS VNPA EXECUTIVE DIRECTOR **MATT RUCHEL**.

Fire-impacted parts of Gippsland.

The bushfires this summer hugely impacted regional communities, but also damaged extensive areas of the habitats of already highly vulnerable native species.

A strong response is vital if we are to help the bush, and the many remarkable native animals that depend on it, recover.

The announcement on 23 January of a \$17.5 million investment by the Victorian Government over the critical next six months is a much needed and very welcome first step.

The situation is dire. An estimated 185 of Victoria's species, many of them rare and threatened, have been impacted by the fire. Half of the habitat of around 20 rare native animals and 160 rare native plants has burnt; some have lost almost their entire habitat.

Most of East Gippsland's remarkable rainforests, remnants of the ancient Gondwanan forests and normally too wet to burn, have been severely impacted.

Among the many affected species are Long-footed Potoroos, Brown Tree Frogs, Greater Gliders, and several forest owls. A number of rare and highly localised native fish species have been impacted.

An ongoing recovery effort will not just help a large number of threatened animals; it will also support regional economies.

The key actions identified as priorities for immediate and short-term implementation (within the next six months) are:

Fire Recovery Funding Initiatives	Victorian Government Funding
1 Immediate reconnaissance of critical fauna, flora and habitat for targeted actions	\$1,850,000
2 Wildlife welfare	\$1,000,000
3 Emergency extraction to prevent extinction and limit species decline	\$2,400,000
4 Intensified and sustained management of threats	\$7,000,000
5 Maximise long term resilience	\$3,000,000
6 Knowledge, data and program management	\$2,250,000
Total	\$17,500,000

www.wildlife.vic.gov.au/home/biodiversity-bushfire-response-and-recovery

The effort will have to be a sustained one if we are to control predators and herbivores taking advantage of the catastrophic situation.

Victoria's exploding deer population, for example, has already had an enormous impact on habitats in eastern Victoria. They will eat new shoots as soon as they emerge and continue to wallow in already damaged wetlands and streams. However, the lack of cover as they colonise regrowing areas presents an unprecedented opportunity to control them.

Given the broad extent of these fires, it is more than ever important to protect all remaining unburnt, or less severely burnt, patches of habitat.

We are deeply alarmed by calls for extensive post-fire salvage logging of native forests, which will remove tree hollows, critical habitat features for Greater Gliders and many owls, as the forests recover. Salvage logging and thinning in national parks and other areas of native bush must be ruled out immediately.

The Victorian Government's recovery response for nature has been much better than it has been for previous large scale fires. It would be good if the federal government would, at least, match the state commitment. • PW



An Australian Owlet-nightjar peering out from a tree hollow. Salvage logging destroys hollow-bearing trees.

Victoria is already Australia's most cleared state. Now over 1.4 million hectares have burnt in this tragic fire season. And this comes in addition to planned fire increasing significantly in recent years, with around 740,000 hectares across our state treated in the last five years alone.

Due to so much recent fire in the landscape, there are very limited areas of mature and old-growth forests remaining. Vast areas of our temperate forests are being homogenised into young post-fire regrowth; regrowth which is often more flammable than older forests.

In the highly impacted Gippsland region where rainforests and other areas with no recorded fire history have now been burned, patches of unburnt and partially burnt vegetation both within and outside the boundaries of the fires must be protected. These are now vital areas of high conservation value serving as both refuge areas for wildlife and beacons of biodiversity recovery.

An urgent threat to the post-fire recovery of Victoria's forests is that of salvage logging – a damaging practice historically pushed by logging industries in an effort to reduce economic impacts and/or take financial advantage of wildfire and other natural disasters.

Salvage logging harvests burnt trees. It subjects native forests to the mechanical pressures of logging during the post-fire recovery stage of the vegetation, compounding various disturbance pressures of both fire and logging. Added claims that salvage logging assists with fuel reduction are contrary to studies which show that it can actually increase bushfire risk, because the salvage logging slash increases fine surface fuels on the ground.

Trees wanted dead or alive

The Victorian Government estimates that in East Gippsland at least 50 per cent of the trees in logging coupes on the current Timber Release Plan have been impacted by the recent bushfires. Despite the now extra importance of any unburnt and partially burnt

SAVE OR SALVAGE

PHOTO: DAMIAN KELLY

SHORT-TERM ECONOMIC GAIN, LONG-TERM ECOLOGICAL
DAMAGE – VNPA NATURE CONSERVATION CAMPAIGNER
JOHN KOTSIARIS DENOUNCES SALVAGE LOGGING.

vegetation in the region, the native forest logging industry is continuing its push for logging and salvage logging. There is also “salvage-like” logging happening along roads and fire tracks with reports that sawmills are expecting to share 15,000 tonnes of timber from trees felled in the operation to re-open the Princes Highway and other regional roads.

The Institute of Foresters of Australia, while acknowledging the negative ecological impacts of salvage logging, is pushing for the salvaging of timber from fire affected trees within logging coupes. Others go one step further, with East Gippsland sawmills, the Australian Forest Products Association and some politicians calling for governments to support salvaging timber from all burnt forests and across all impacted land tenures, including within nature reserves and national parks.

However, salvage logging and associated mechanical disturbances to vegetation significantly affects the natural post-fire recovery

processes of forests. It's inconsistent with the management objectives of protected areas.

After a fire, both living and dead trees serve critical ecological functions within a recovering forest ecosystem. Most of Victoria's eucalypts are excellent resprouters and can fairly rapidly re-establish an extensive elevated leaf area after medium and even high-intensity fires. This simultaneously shades lower recovering vegetation, including other resprouting plants and seedlings. However, a few eucalypts are relatively poor resprouters and are easily killed by large fire. Victoria's much-logged Mountain Ash and Alpine Ash trees typically regenerate from seed after high severity fires.

Dead trees, both standing and fallen, provide important habitat for wildlife (e.g. hollows), contribute significant organic matter to the soil, and promote wood-boring insects which are a post-fire food source for other animals. Clusters of burned fallen trees also protect young regenerating seedlings from browsing by herbivores.

Salvage logging can also undermine efforts to protect any small remaining areas of mature trees within the burn area. This “island retention” is crucial in the aftermath of a broadscale natural disaster like we are currently experiencing in Victoria. Patches of unburned green trees, and patches with green trees intermixed with dead trees, need urgent protection and careful management.

Salvage logging can further increase fire risk at a time when frequent fire is at the forefront of land management challenges.

Fire suppression, ignition control, and retaining older growth forests are all paramount in curtailing the collapse of Australia's temperate forests and avoiding their transition into more fire-prone vegetation types.

Salvage logging only adds extra pressure to forests already under threat from frequent wildfire, inappropriate planned burning regimes, and a warming climate. • PW

Ecological impacts of salvage logging after fire in Victoria's Mountain Ash forests

Flora and fauna	<ul style="list-style-type: none"> • Simplifies forest structure and species composition. • Results in a disproportionate loss of ferns and midstorey trees e.g. Myrtle Beech, Banyalla, Blanket Leaf, Rough Tree Fern, Australian Mulberry, Forest Lomatia, Native Olive, Tasmanian Pepperberry. • Encourages growth of bracken and shrubs. • Decreases abundance of wood-boring insects which are a post-fire food source for insectivorous birds and mammals. • Destroys old and dead hollow-bearing trees important for forest animals such as possums, gliders, owls and parrots. • Reduces bird species richness, even more so than fire and logging on their own.
Soil	<ul style="list-style-type: none"> • High intensity combination of physical disturbance and fire: <ul style="list-style-type: none"> ▪ exposes the forest floor ▪ compacts the soil ▪ volatilizes soil nutrients ▪ redistributes organic matter • Significantly lowers concentrations of key nutrients such as nitrates and available phosphorus for many decades.
Water	<ul style="list-style-type: none"> • Increases siltation of rivers and streams. • May reduce water quality in water catchments.

Reporting for recovery

NOW IS AN IMPORTANT TIME FOR ONLINE REPORTING OF WILDLIFE, SAYS OUR NATUREWATCH PROGRAM'S **SERA BLAIR** AND **KRISTEN AGOSTA**.

The aftermath of bushfires is an overwhelming time for everyone in the community – but fortunately, we can all help in the recovery by being citizen scientists.

Here we give you a brief guide to getting started.

There is a variety of easy to use online reporting systems where you can share information about plants and animals you encounter in your daily life or while on adventures, which can then be publicly available and used for land management planning.

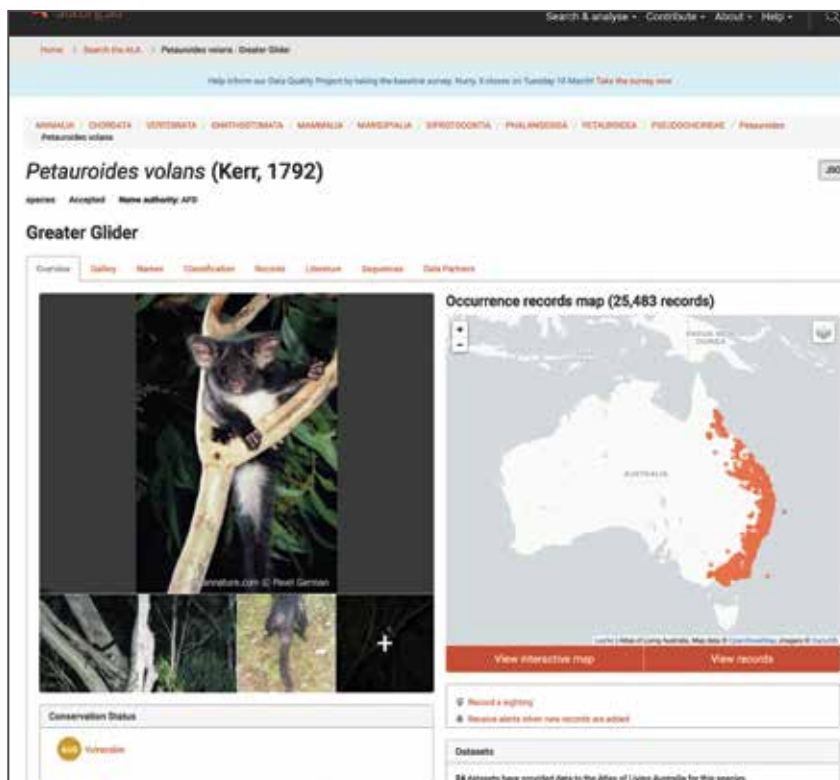
These databases are also a great way to search for existing records of plants and animals in your area of interest. For example, you can search for existing verified records for a particular national park, or learn where a specific plant or animal is found.

Most online reporting platforms require you to set up an account. You can then add a range of data including location, date, time, photo or sound evidence, additional observations and information (e.g. number of individuals, behaviour) to assist with verification.

Popular online reporting platforms

Victorian Biodiversity Atlas

The Victorian Biodiversity Atlas is the Victorian Government's database of native and introduced plant and animal records. It is used as the official record and informs a range of species distribution models and NaturePrint tools that are used by the



government in regulatory and planning decisions – such as its Biodiversity 2037 strategy for biodiversity management at the landscape level.

www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas/vba-go

- VBA Go is a quick version to use while mobile.
- Input from government staff and partners, conservation organisations, ecological consultants, researchers, students, community groups, and citizen scientists.
- New records are verified by appropriate experts.
- Sensitive species (e.g. at risk of illegal collecting or hunting) are not shown to the public.
- Calculates geographic data so you can only use it at your current location. To enter records from another area or at another time, collect all the relevant information and enter in VBA online.
- VNPA adds all of our NatureWatch wildlife records to the VBA.

The following additional reporting systems, while not the state government's official records, are invaluable for science.

iNaturalist

www.inaturalist.org

- iPhone and Android app.
- Allows you to quickly record and share your sightings from your mobile.
- It's very simple. All you need is a photo or a sound recording of a species, the date, time and location.

- The online community will provide input to assist with identification, and you can discuss your findings with fellow citizen scientists!
- You can also register for various local and national data collection projects.
- iNaturalist reports sightings to the Atlas of Living Australia.

Atlas of Living Australia (ALA)

www.ala.org.au

- Web-based database.
- Sightings recorded on iNaturalist will be listed to Atlas of Living Australia.
- Includes species information to help with identification.
- Interactive map of species occurrence records (by year and month).
- Gallery of photos.

Birdata

birdata.birdlife.org.au

If you are specifically interested in monitoring birds, we recommend Birdata app or web portal by Birdlife Australia. This is an excellent tool for investigating bird populations across Australia with many search categories and you can discover the best time of year to see certain species in an area.

Citizen science is a very important element of knowing more about our wildlife in Victoria – and therefore is an essential part of protection. Online reporting is one way we can all assist nature now and into the future. • PW

HOW WELL DO YOU KNOW VICTORIA'S MARVELOUS MAMMALS?

- 1** How many species of native mammals live in Victoria?
 - a. 54
 - b. 76
 - c. 139
- 2** How many species of kangaroo live in Victoria?
- 3** What is another name for the Spot-tailed Quoll?
 - a. Northern Quoll
 - b. Eastern Quoll
 - c. Tiger Quoll
- 4** What is a baby dolphin called?
 - a. pup
 - b. calf
 - c. puggle
- 5** Which mammal is the faunal emblem of Victoria?
 - a. Southern Brown Bandicoot
 - b. Brush-tailed Phascogale
 - c. Leadbeater's Possum
- 6** Both found in Victoria, platypus and echidna belong to which group of mammals?
 - a. Marsupial
 - b. Monotreme
 - c. Placental
- 7** How many species of possum are found in Victoria?
- 8** What is the largest mammal found in Victoria?
- 9** Which mammal proudly displays piles of cube-shaped poo?
- 10** What is the difference between sea lions and seals?
- 11** What Victorian bat is named after a tasty treat?
- 12** What kind of animal would you be if you were called 'agile', 'dusky' or 'yellow-footed'?

Answers: see page 38.



Toward the finish line?

PHOTO: CHRIS FARRELL

Belfast Coastal Reserve.

NATURE CONSERVATION CAMPAIGNER **SHANNON HURLEY** SHARES THE POWER OF PERSISTENCE IN THE BATTLE OVER THE BELFAST COASTAL RESERVE.

The efforts to protect Warrnambool's pristine beaches against destructive commercial racehorse training have faced many challenges over the past four-year-long campaign. But at long last it seems we may be nearing the final bend.

The past couple of months, in particular, has shown that consistent pressure from both a local and state level is seeing positive results.

Main training area off the books – December 2019

In January 2019 the Victorian Planning Minister Richard Wynne overturned the Warrnambool Planning Scheme (which deemed commercial racehorse training on beaches to be illegal) to give the go-ahead to the racing industry to access Levys Beach. The Warrnambool Racing Club had until November 2019 to get their relevant approvals ticked off.

Fast forward over 12 months later; this deadline has now passed, and the planning scheme amendment has

expired. VNPA's correspondence with the Minister confirms that the racing club no longer have their eyes set on Levys Beach.

This means one of two main commercial racehorse training sites along Warrnambool's beaches is free from pounding hooves!

However, access to nearby Spookys Beach further west is still a live issue – despite the fact racehorses were never meant to be there at all. Unlike Levys Beach, Spookys Beach was not actually identified as a training area in the Belfast Coastal Reserve Management Plan finalised in 2018, and seems to have been a late, unofficial addition – showing just how far special allowances for the racing industry can stretch.

Local politics faltering – February 2020

Regardless of any involvement from the state government, the overriding question has always been whether the local Warrnambool City Council

would permit racehorse training – and the associated commercialisation of Warrnambool's beaches – to occur in the groups such as VNPA, have ensured any move made by the Council to welcome the racing industry has met with firm opposition. At the latest Warrnambool City Council meeting the public floor was filled with local dissenters, and what started out as moving to progress approvals ended up instead in a decision to meet stakeholders to discuss the issue further.

Good sense is even beginning to prevail in a more unlikely arena, with local journalists reporting that support from the local racing industry for commercial racehorse training within the Belfast Coastal Reserve seems to be waning.

As we continue to call on the racing industry to halt their pursuit of Spookys Beach just as with Levys Beach, let's take the time to celebrate the protection of the Belfast Coastal Reserve to date, and for everyone who has stuck with this campaign this far. Persistence is proving powerful! • PW

Future for our seas and shores

SHANNON HURLEY GIVES AN OVERVIEW OF THE NEW BLUEPRINT FOR OUR BLUE COMMONS.

The final Marine and Coastal Policy for Victoria was released in early March, building on the legacy established through successive Victorian Coastal Strategies, but now with a greater focus on the marine environment.

VNPA was highly invested in ensuring this policy was as strong as possible to adequately protect our 'blue commons' – our largest publicly-owned space in Victoria. VNPA was a member of the stakeholder reference group that had input in shaping the policy, and we also put in a detailed submission and gave guidance for our supporters to also have input during the public consultation last year.

We welcome significant improvements in protections along the coast that recognise the importance of valuing and protecting our seas and shores.

Strengths of the policy include:

- The need for buildings and structures on marine and coastal Crown land to have a functional need to be near or in the water and provide significant public benefit.
- The need for industry such as fishing, ports and energy to reduce environmental impacts.
- Strengthened policy around enhancing our marine national parks and sanctuaries.
- Banning canal estates.
- Ensuring clarity on improving the condition of wetlands (including Ramsar sites) where there are marine areas at those sites.

- Aligning the policy with international goals (UN Sustainable Development Goals)
- Includes Victoria's first Marine Spatial Planning Framework.

However, it is not perfect, with some policies watered down, including:

- Weaker policy on access to and tourism facilities on public land along our coasts.
- Missing from the previous Victorian Coastal Strategy is clarity around fishing stocks to be comprehensively assessed and managed.
- Recreational fishing is mentioned once throughout the entire policy, despite appearing to be a top priority for the Andrews Government considering their 'Target 1 million Plan' to get 1 million recreational anglers out on the water.

Victoria's new Marine and Coastal Policy should adequately guide the proper planning and management for our highly valuable and unique coastal and marine environments – so they can teem with life, and in turn continue to provide air we breathe, food we eat, and shelter from our changing climate.

The real test will be in how managers and decision-makers use the policy, and how they weigh protecting environmental values against commercial and tourism interests.

The package of marine and coastal reforms does not stop with this

new policy. This year will also see the development of the marine and coastal strategy, which will set out the actions required to implement the policy, and timeframes and agencies responsible for delivering those actions.

Thank you to everyone who put in a submission into the draft policy – we were pleased to see many of our collective comments reflected in the final policy. • PW

Ecotours and walking in the High Country, East Gippsland and beyond

Are you curious about the natural world? Imagine immersing yourself in nature while we share our love and knowledge of the environment with you.

Let us arrange the accommodation, the driving, the walks and talks. Even your meals appear like magic. Enjoy the companionship of a small group of like-minded nature lovers and return home refreshed, informed and invigorated.

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www.gippslandhighcountrytours.com.au

Advanced Ecotourism Certification. Est. 1987

Follow the money, not the promises

PHOTO: IT'S A WILDLIFE

NEW GRASSLAND REVENUE BILL PASSES PARLIAMENT.

The *Melbourne Strategic Assessment (Environment Mitigation Levy) Bill 2019* passed the Victorian Parliament in early February.

VNPA supported the Bill, but remain deeply concerned that promises to protect grasslands and other habitats threatened by urban sprawl have still not been delivered.

This new law is largely about collecting and expending revenue from levies from the clearing of threatened species habitats; such as the critically endangered Native Temperate Grasslands of the Victorian Volcanic Plain.

These were proposed as trade-offs in the now decade-old Melbourne Strategic Assessment. The MSA was a joint Commonwealth and Victorian Government agreement on

approvals for environmental impacts on nationally threatened species from urban growth around Melbourne's west and north, and some parts of the south-east. It has an expected price tag of almost \$1 billion over 40 years.

The Bill is mostly focused on the machinery of collecting revenue, but has some useful improvements to governance, such as a regular audit by the Commissioner for Environmental Sustainability. It, however, does not deal with the fundamental flaws and failed delivery of key promises in the MSA. For example, after ten years the state government has failed to deliver on promises in the MSA to protect grasslands and create large grassland reserves by 2020.

In 2010 the MSA clearly stated that the state and federal governments

would: "... increase the extent of protection of Natural Temperate Grassland of the Victorian Volcanic Plain from two per cent to 20 per cent" and "the Department of Sustainability and Environment will be the acquiring authority and will acquire all freehold land (excluding quarries) and reserve it by 2020".

These statements relate to one of the key deliverables promised in the MSA – that a 15,000-hectare grassland reserve was purchased, established and managed between Werribee and Melton by 2020. To date, less than 10 per cent of this has been purchased, so it will be a real test of both the state government's capacity to deliver long-term multi-term commitments, and of the federal environmental laws which underpin the whole program. • PW

This year's four planting sites are adjacent to the Wimmera River.

Project Hindmarsh – save the date

The annual Project Hindmarsh 2020 planting weekend will be held this year in Dimboola on the weekend of **3–5 July**. We will be planting four sites adjacent to the Wimmera River, between Dimboola and Jeparit. Volunteers are needed to help plant 12,000 trees, shrubs, herbs and grasses. For more information contact Hindmarsh Landcare Network on **0429 006 936**, check out our website at www.hindmarshlandcare.org.au, and follow us on Facebook. Supported by VNPA.



PHOTO COURTESY OF HINDMARSH LANDCARE NETWORK



The Great Obfuscation Road

The floor of Parliament House lobby.

PROPOSED GREAT OCEAN ROAD LEGISLATION IS STILL UNCLEAR, SAYS **PHIL INGAMELLS**.

Tiled boldly into the floor of Victoria's Parliament House lobby are the words:

"Where no counsel is the people fall, but in the multitude of counsellors there is safety."

Since the 1850s, these words have reminded our parliamentarians that good decisions are made when proposed legislation is open to informed scrutiny by the public.

Unfortunately, the Great Ocean Road Environs and Protection Bill, due before the Legislative Council in May, has failed to honour that objective. The lengthy public "consultation" leading to the framing of this legislation has been marked by obfuscation and misinformation (see *Park Watch* December 2019).

Despite three rounds of so-called consultation, including meetings and online questionnaires, the public has never been told that the intention is to set up a Great Ocean Road Coast and Parks Authority that will oversee, and

override, Parks Victoria's management of our national parks.

There has been no suggestion or discussion of a far better alternative, a coordinating agency that can simply plan and recommend consistent management options for the road.

The Department of Environment, Land, Water and Planning (DELWP) has continued to tell anyone who asks (including our members of Parliament) that the new authority has a precedent in the management of the Great Barrier Reef, but that claim, as with most of the information in this process, is hogwash.

The Commonwealth Government, charged with managing the reef and islands in Commonwealth waters, contracts the Queensland Parks and Wildlife Service to do the on-ground management of the reef – avoiding a duplication of effort and expertise. The Great Ocean Road proposal is quite the opposite proposition. It sets up a new tourism-focussed state agency above the existing state agency

Parks Victoria, effectively duplicating management planning and expertise for national park management along the Otway coast.

More worryingly, however, is that the new legislation actually inserts new clauses into Victoria's tried and true *National Parks Act 1975*, weakening Parks Victoria's focus on ecological management.

Those words tiled into our Parliament's floor should be compulsory reading for the group in DELWP who are trying to lever this dangerous Bill through.

You might write to our Environment Minister Lily D'Ambrosio, asking her to completely rethink the Great Ocean Road Environs and Protection Bill. Tell her she must not, in any way, compromise the conservation objectives of the *National Parks Act*. • PW

The Hon. Lily D'Ambrosio,
Minister for Energy, Environment
and Climate Change.
Level 16, 8 Nicholson Street,
East Melbourne, VIC 3002.

All about that BASS



PHOTOS: MATT BROWNE

The beauty of the Bass Coast will be protected in the new Yallock-Bulluk Marine and Coastal Park.

WE CELEBRATE THE CREATION OF THE NEW YALLOCK-BULLUK
MARINE AND COASTAL PARK TO PROTECT A BELOVED COASTLINE.
BY **SHANNON HURLEY**.

Boasting rugged sandstone cliffs, rich geological sites (where many dinosaur bones have been found), sandy beaches, heathlands, and home to significant wildlife such as the Hooded Plover shorebird – the Bass Coast is truly spectacular.

Which is why we are so pleased by the creation of a new Yallock-Bulluk Marine and Coastal Park for the 40-kilometres of coastline between San Remo and Inverloch.

The new park's name honours the Yallock-Bulluk Clan of the Bunurong People whose Country includes the park areas.

The new park will provide a higher level of protection (except the existing Bunurong Marine Park, where protection will be the same) for the coastal and marine environment while encouraging visitors to the already popular tourism spot, including the ability to camp in designated areas for the first time.

In the 2018 state election, the Andrews Government committed to creating a new "Bass Coast Marine and Coastal Park", one of its few election commitments for new parks.

It promised a 19.6 million investment including at least \$10 million to purchase land and around \$9.6 million to build "new campgrounds, paths to access beaches, walking paths and to undertake revegetation works".

The Environment Minister Lily D'Ambrosio introduced a Bill into Parliament last November, and now it just needs to pass through the Upper House – hopefully as soon as possible this year.

The following existing parks and reserves between San Remo and Inverloch are being amalgamated in full into the new marine and coastal park under schedule 3 of the *National Parks Act 1975*, ensuring equal or higher level of protection:

- Bunurong Marine Park
- Bunurong Coastal Reserve
- Punchbowl Coastal Reserve
- Kilcunda-Harmers Haven Coastal Reserve
- Wonthaggi Heathlands Nature Conservation Reserve

Small sections of the Kilcunda Foreshore Reserve and Cape Paterson Foreshore Reserve will also be bounded

by the new park. Foreshore reserves in front of towns will be left out. The Bunurong Marine National Park will remain separate to retain its higher level of protection.

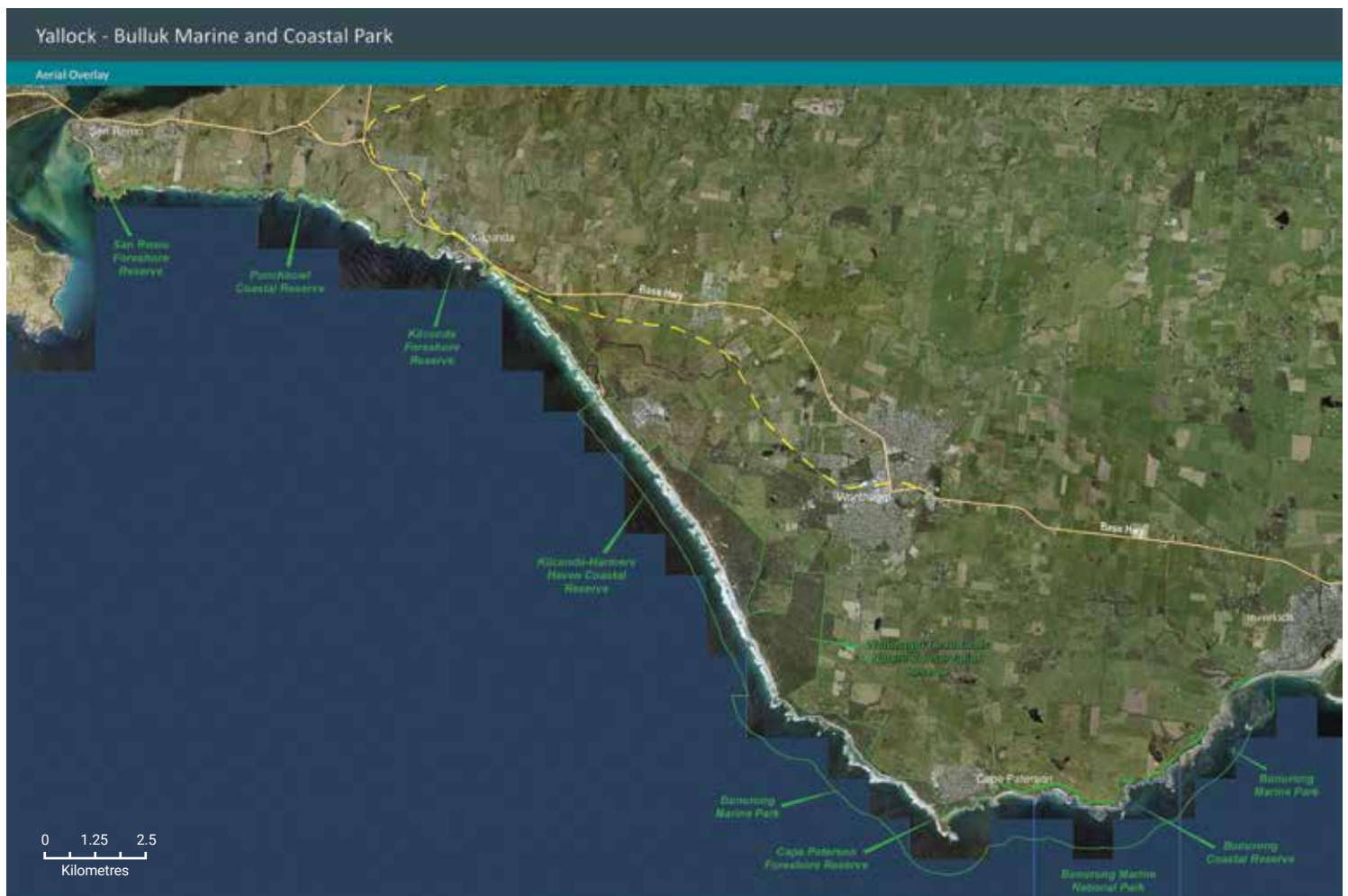
It is unclear at this stage what private land will be purchased. VNPA's 2014 *Nature Conservation Review* recommended creating the new coastal park, but with the additional inclusion of the Kilcunda Nature Conservation Reserve.

The initial phase will be to consider environmental and cultural values to provide best options for the location of walking tracks, access points, trail heads, car parks and signage (including for the extension of the George Bass Coastal Walk). There will be public consultation throughout this phase.

The new park is expected to be created by the end of 2020.

Like many other areas along Victoria's coast, these coastal towns are experiencing high growth rates and increasing urban development pressures, making increased protection essential to ensure coastal preservation.

The Yallock-Bulluk Marine and Coastal Park will make a fantastic addition to Victoria's marine and coastal estate when complete. Let's hope there are more to come for the rest of our coastal public land also in dire need of greater protection, such as the close to 30 per cent of public land currently making up coastal reserves. • PW



Sing Out!



A Superb Fairy-wren
tweeting its tiny heart out.

PHOTO: ANDREW HAYSOM

OUR NATUREWATCH COORDINATOR **SERA BLAIR** INVITES US TO LISTEN IN ON AN EPIC JOURNEY INTO UNDERSTANDING BIRD POPULATIONS IN VICTORIA THROUGH SOUND.

Monitoring bird populations is an effective way to evaluate local biodiversity and corresponding habitat condition. However, it is time-consuming to both collect and analyse bird sightings or bird call data.

Which is why VNPA's citizen science program NatureWatch established its Communities Listening for Nature project focussing on eco-acoustic bird call data. This project allowed for collection across large areas and over an extended period of time with minimal volunteer time in the field.

At five areas in Victoria, we partnered with local groups and land managers to investigate a specific topic in land management through bird populations. Community citizen scientists then monitored birds in their local area to assist with active management and conservation planning in their area.

Now, after three incredible years the preliminary phase of our Communities Listening for Nature project has come to a conclusion.

Let's look back on what we heard during that time!

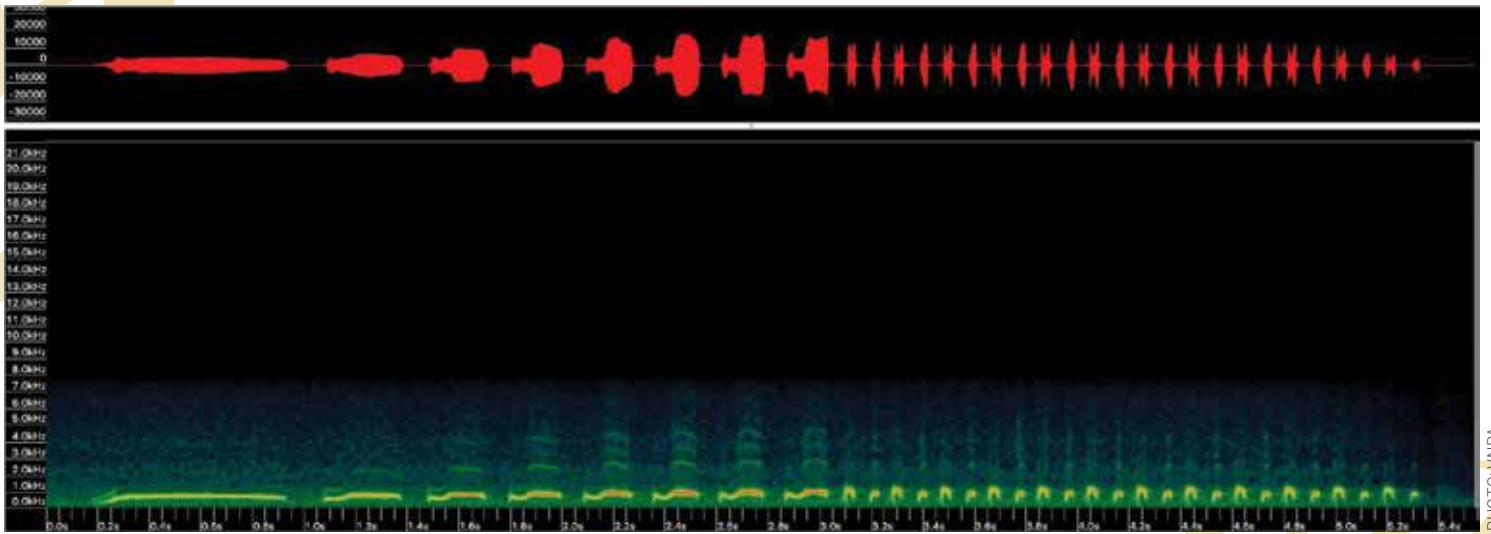


PHOTO: VNPA

Spectrogram of a Spotted Nightjar call.



PHOTO: VNPA

Volunteer and VNPA Councillor Euan Moore setting up a song meter.

Project Aims:

In each project area the local group, land managers, VNPA and Museums Victoria established a different set of research aims to support their specific needs in improving land management and biodiversity outcomes. At Mount Worth State Park and on neighbouring Landcare properties we monitored the effects of habitat restoration efforts over time on bird assemblages. In Bunyip State Park we investigated key

fire response species and differences between the dawn and dusk bird chorus. In Wombat State Forest we looked at seasonal variability and the presence of threatened species. The Mount Alexander region project focussed on detecting target night birds in three of Birdlife International's Bendigo Box-Ironbark Key Biodiversity Areas and nearby private land. Finally, in Brisbane Ranges National Park we monitored habitat for night birds in and around the park, with a focus on Powerful Owls.

Community partners provided local expertise in project design and data collection with the support of VNPA.

Acoustic data was collected using song meter recording devices attached to trees on project sites. They were programmed to record at certain times of the day and for different periods of time depending on the project aims. You can learn how to set-up a song meter by viewing our video at www.youtube.com/user/VNPATV

The acoustic data was then analysed by Museums Victoria experts Dr Karen Rowe and Dr Amy Adams using specialised software to interpret sound frequencies as visual displays called spectrograms (see image above). These were then run through autodetection software that extracts patterns for specific species against models developed from previous, verified identifications.

Continued overleaf



A Tawny Frogmouth adds its call to the sounds of nature.

Continued from previous page

Project Outcomes:

Communities Listening for Nature is an excellent example of the NatureWatch program model, bringing together the local community with scientists and land managers to develop citizen science projects. Importantly it has improved our collective understanding of local bird species and habitat use to inform active conservation efforts. Likewise, it has proved to be an engaging way to increase expertise in local wildlife and environment requirements, as well as increasing awareness of the value of well-managed private land and protected areas in preserving local biodiversity.

This bird call data will now become a part of Museums Victoria's permanent collections and contribute to their development of bird call recognisers software. This is a considerable contribution to the Museum's curated sound reference library of Victorian birds, and will be valuable for monitoring species conservation and further analysis into perpetuity.

These bird records have also been added to the Victorian Biodiversity Atlas accessible for government agencies, consultants, researchers and the public.

Findings for each location were collated into reports that addressed each local project's question. These reports were provided to land managers including private landowners, community participants and Museums Victoria.

Full project reports for each location, as well as project videos, are available on our website at www.vnpa.org.au/programs/communities-listening-for-nature and www.youtube.com/user/VNPATV

Community Partners:

- Mount Worth and District Landcare, and Friends of Mount Worth State Park
- Friends of Bunyip State Park, and Friends of Kurth Kiln
- Wombat Forestcare Inc.
- Friends of Brisbane Ranges National Park
- Connecting Country (Mount Alexander Region)

Birds detected in this project, across all research areas (visit the Museums Victoria Field Guide to Victorian Fauna app to learn more about these birds and listen to their calls. Available at: museums victoria.com.au/apps/field-guide-app-to-victorian-fauna).

Australian King Parrot	Magpie-lark
Australian Magpie	Masked Lapwing
Australian Owlet-nightjar	Noisy Miner
Australian Raven	Olive Whistler
Barking Owl	Pacific Black Duck
Bassian Thrush	Pied Currawong
Black-faced Cuckoo-shrike	Pilotbird
Bronzewing species	Powerful Owl
Brown Thornbill	Raven species
Brush Bronzewing	Red Wattlebird
Common Blackbird (introduced)	Rose Robin
Common Bronzewing	Rufous Whistler
Corella species	Satin Flycatcher
Crimson Rosella	Scarlet Robin
Duck species	Sooty Owl
Eastern Koel	Southern Boobook
Eastern Whipbird	Striated Pardalote
Eastern Yellow Robin	Sulphur-crested Cockatoo
Fan-tailed Cuckoo	Superb Fairy-wren
Flame Robin, Galah	Superb Lyrebird
Gang-gang Cockatoo	Tawny Frogmouth
Golden Whistler	Tyto species
Grey Butcherbird	White-browed Scrubwren
Grey Currawong	White-eared Honeyeater
Grey Fantail	White-throated Nightjar
Grey Shrike-thrush	White-throated Treecreeper
Horsfield's Bronze Cuckoo	Willie Wagtail
Laughing Kookaburra	Yellow-faced Honeyeater
Long-billed Corella	Yellow-tailed Black-cockatoo

Project stats:

- Community volunteer days of field work = 734
- Community volunteer project support (planning equipment management, data analysis etc.) = 523
- Number of days song meters were in the field = 1,215
- Different types of Ecological Vegetation Classes (EVC's) monitored for birds = 18
- Number of hours of bird calls collected = 32,282
- Number of terabytes of audio data collected = 10.4
- Number of bird species detected and verified = 59



PHOTOS: ANDREW HAYSOM

A little Grey Fantail with a big whistle.

What we have learned:

We learnt a range of local lessons at each of the five sites we surveyed. **Some highlights:**

Data

- Eco-acoustic projects are a great way to monitor bird populations as they deliver high rates of permanent reviewable records. They complement traditional bird survey methods.
- Large volumes of audio data are cumbersome to store and take a long time to analyse.
- Setting song meters for targeted periods of time makes the data infinitely easier to manage, store and analyse. Continual recording should be used sparingly.
- Data analysis still requires expertise and advanced computer capacity.

Habitat and conservation

- Protected areas of habitat across Victoria are vital habitat for a wide range of indigenous bird species.
- Private land also plays an important role in providing habitat to indigenous birds.
- Multi-aged revegetation in an area will support a broader diversity of bird species from early colonisers who persist on grasses and shrubs through to larger, hollow-dependent species.
- When landholders know what birds they have on their property, or which ones they should have but are missing, they can target their revegetation and habitat restoration activities more accurately.

Community

- Many communities in Victoria have groups of dedicated volunteers who are passionate about learning about their local environment and helping to protect it.
- Community volunteers are very capable of collecting audio data using song meters, but central coordination of data is essential to keep it organised.



PHOTO: VNPA

Former NatureWatch Coordinator Christine Connolly introducing community volunteers to a song meter.

Our Communities Listening for Nature project was supported by a generous grant from the Helen Macpherson Smith Trust.

Thank you to all our project partners and community supporters for the huge collaborative effort in this program. We also thank the landholders who kindly allowed song meters to be placed on their properties. Finally, a special thank you to the Mount Alexander region volunteers and landholders who gave another two days of their time to help us create a project video. • PW



Wetlands at Braeside Metropolitan Park.

A RARE GEM

AN URBAN PARK ABUNDANT
IN NATURE IS UNDER PRESSURE.
BY **LUCY FARMER.**

There are few places left in Melbourne where you could see a turtle lay her eggs, an echidna forage for ants or a Black-Shouldered Kite take a mouse.

Braeside Metropolitan Park is a rare gem where to see all this and more is possible on an evening stroll. Located in the south-eastern Sandbelt region and just 25 kilometres from Melbourne's CBD, Braeside boasts important wetlands, heathlands and red gum woodland. It also harbours species considered endangered in Victoria such as the Blue-Billed Duck, Freckled Duck and Australasian Bittern.

Despite this, Parks Victoria has foreshadowed a precinct plan and opened a consultation process canvassing views on admitting dogs, holding public events and other activities squarely aimed at boosting human traffic.

Braeside is already under intense pressure from the Mordialloc Bypass under construction along its western boundary. Over the past 15 years housing development and industrial parks have ringed the park and the new road will traverse adjacent wetlands to the south.

At this critical time when the park's habitats and wildlife are under intense pressure, rather than strengthen protection, it appears moves are afoot to weaken it.

The draft Precinct Plan is due out in April for finalisation in July. With much of Victoria's wildlife in a parlous state and so few refuges surviving in the metropolitan area, it's vital that Braeside's habitats and native species are not held hostage to populism or commercial interests. Dogs in an area with ground-nesting birds, reptiles and amphibians would be the last straw. • PW

An Eastern Long-neck Turtle laying eggs beside a walking trail.

Black-shouldered Kites are among the raptor often seen.

Spotted pardalote collecting material for nest.

Tribute

DIANA SNAPE

6 MAY 1937 – 18 SEPTEMBER 2019

We celebrate and remember Diana Snape – a dedicated member and generous supporter of the Victorian National Parks Association, and a leading environmental philanthropist.

Together with her husband Brian Snape, Diana joined as a member of the Victorian National Parks Association in 1968, shortly after moving to Victoria.

Diana met Brian at university in Sydney where they were both studying science. From then on they were a perfect team in every way and great mates, who pursued their love of nature by going on adventures together. One of their favourite weekend escapes was a scrubby place called the Little Desert in western Victoria. They immersed themselves in this haven for wildlife, observing plants and respectfully spying on 'Romeo and Juliet', a pair of malleefowl. In the late 1960s they learned the Little Desert was under threat from subdivision for farming. It's no surprise that Diana and Brian joined conservation groups, including VNPA, to fight for the Little Desert – which thankfully led to its permanent protection as a



national park. The Little Desert dispute also changed the Victorian political landscape by putting nature conservation and community consultation on the party-political agenda. This was no doubt part of the inspiration for Diana to make supporting nature conservation one of her priorities in life.

Diana and Brian generously support over a dozen environmental organisations, including VNPA. They also made a significant contribution which created Trust for Nature's Snape Reserve in 2002. This 864-hectare reserve adjacent to the Little Desert National Park provides valuable habitat for the endangered south-eastern red-tailed black cockatoo.

Diana and Brian had a special interest in native plants. The first organisation they joined together was in 1959, the newly formed Society for Growing Australian Plants, now called the Australian Plants Society. They later bought a house in Hawthorn and established an incredible Australian native garden. For many years Diana wrote for gardening magazines, journals and *The Age*, and also wrote two books about Australian native gardens.

Diana was a well-respected teacher, who taught her students about climate change well before others. She was also a talented artist, with plants and nature a favourite subject.

Diana was described as someone who had the unique ability to see the big picture, as well having good attention to detail. These skills were invaluable to her excellent understanding of the issues faced by the natural environment and her role in providing solutions.

At the celebration of Diana's life, former Executive Director of VNPA Doug Humann said "Diana was a gem of a lady. I admired her greatly for her charm, her intellect and her enthusiastic support, along with her dedication for a healthier planet."

Diana's love of nature, and outstanding contribution to protecting it, will not be forgotten. • PW

A celebration of Diana's life was held on the 15 October 2019. Special thanks to Doug Humann for speaking on behalf of the many environment groups Diana supported.

Lower Goulburn National Park

GEOFF DURHAM VISITS A NATIONAL PARK PROTECTING ONE OF OUR HERITAGE RIVERS AND ICONIC RED RIVER GUMS.

The magnificence of a Red River Gum along the Goulburn River.

PHOTO: GEOFF DURHAM

Very few people would know the Lower Goulburn National Park, which came into existence in 2010 as a result of the Victorian Environmental Assessment Council's River Red Gum Forests Investigation. The national park is the public land along that section of the river downstream from Shepparton to the Murray River Reserve. It is a narrow sinuous strip of varying width, in area 9321 hectares, of which 7132 hectares is Riverine Forest and Wetland and 1099 hectares is Permanent Freshwater Wetland.

The Goulburn River

At 654 kilometres, the Goulburn River is the longest river in Victoria. It rises in the Victorian Alps near Woods Point and flows through Alexandra, Seymour, Nagambie and Shepparton, then approximately north-west to its confluence with the Murray between Barmah and Echuca. The river was named by Hume and Hovell in 1824

after Henry Goulburn, Under Secretary for Colonies. It is one of Victoria's 18 Heritage Rivers. It has a very wide floodplain with several anabranch and effluent systems.

River boats commenced on the Murray in 1853, and between 1878 and 1890 they operated on the Goulburn between Shepparton and Echuca.

Construction of the original storage on the river, known as Sugarloaf Reservoir, commenced in 1915. The dam was enlarged in the 1950s and named Lake Eildon. Goulburn River water is also stored in the Goulburn Weir near Nagambie and the Waranga Basin near Rushworth. These storages provide irrigation water for the northern plains, and some water is diverted to supply Melbourne. The supply of water in summer has reversed the seasonality of flows.

The River Red Gum

'River' because it grows along rivers; 'Red gum' because the wood is red.

It is my favourite tree. At my home town of Bacchus Marsh it grows on the river flats, and the first eucalypt I identified was a River Red Gum on which was suspended the state school bell.

The Red River Gum is the most widespread eucalypt in mainland Australia. Aged trees have massive trunks. Author Murray Bail in his novel *Eucalyptus* describes them as "overbearingly masculine; covered with grandfatherly warts and carbuncles". While this can be said of some old trees (they can live for more than 500 years), younger trees can be elegant, even graceful. A feature is the beautiful, subtle, colouration of the smooth bark. It is ironic that the botanical name of this Indigenous iconic Australian tree, *camaldulensis*, comes from a specimen

tree growing in the gardens of the Count of Camaldula near Naples, Italy.

Its timber is dense and a favoured firewood. It powered the paddle-steamer river boats, was harvested for timber and provided long-lasting fencing material and railway sleepers. There is much evidence in this park of tree removal.

The Land Conservation Council Rivers and Streams Special Investigation Report states:

“River red gum forests provide important habitat for many animals, particularly those that depend on hollows in mature trees. Animals that nest in these sites include possums, gliders, parrots, kingfishers, treecreepers, owls, bats, and carpet snakes. In the Murray Valley, where river red gums support a high diversity of animals, several rare species that use hollows are found. For example, the mature river red gum and box woodlands that occur adjacent to the Goulburn River, and near its confluence with the Murray River, are important strongholds for the rare squirrel glider. ... Whether for breeding, feeding, or sheltering, river red gum hollows are vitally important to the animals that live along our inland rivers.”

The park

The park is Yorta Yorta Country and covered by the 2004 Cooperative Management Agreement with Parks Victoria.

My personal experience of the park is limited to a two-day visit in January this year. A highlight was the huge number and variety of birds at Reedy Swamp, near Shepparton, where there is a fenced area with a walking track, picnic tables and good interpretive signs.

As well as bird watching, Parks Victoria's River Red Gum Parks Management Plan lists as recreation activities: boating, bushwalking, car touring, cycling, fishing, and dispersed camping with camp fires.

Camping is mostly above the steep river banks and at the few sandy beaches. Camping is free with no pre-booking. There are no facilities. Campers should be aware that trees can shed branches without warning.



PHOTO: FRANKZED, WIKIMEDIA COMMONS



PHOTO: GEOFF DURHAM



PHOTO: GEOFF DURHAM

Clockwise from top left:

Royal Spoonbill

Red River Gum forest along the river banks

The Goulburn–Murray rivers junction

Reedy Swamp



PHOTO: LEON COSTERMANS

There are various points of entry and only three bridges across the river. Within the park there is a labyrinth of informal dirt tracks, often rutted and some suitable for 2WD vehicles, but only in dry weather conditions.

The following is taken from the management plan:

“The Riverine Forest and Woodland Sub-ecosystem consists mainly of floodplain forests dominated by River Red Gum. On higher ground, where flooding is less frequent, Black Box is the dominant tree species. The understorey is typically open and dominated by grasses, sedges and herbs.”

“The development of river regulation, and irrigation infrastructure such as regulators, canals and levees, have drastically altered stream flows and flooding regimes on the floodplains, resulting in a decline in the health of the River Red Gum forests, streams and wetlands as well as

the species that depend on them for their continuing survival.”

“Park managers face a high degree of complexity and considerable uncertainty in managing the natural environment, particularly in the face of climate change (which is) expected to cause further stress to waterways and floodplain ecosystems.”

Threats identified in the plan are: rabbits, goats, pigs, deer, feral cattle, wandering stock, carp and weeds. Dogs, grazing, timber removal and mining are not permitted in the park.

The management challenges are many, boundary issues being one of them. Clearly, Parks Victoria has not been resourced to deal adequately with them.

The significance of this park is its long-term protection of the River Red Gum and other communities, and as a flora and fauna corridor (although convoluted) through the vast, flat, expanse of what is now farmland. • PW

WHITE MANGROVE

Mangroves are flowering trees that usually grow between the low and high tide marks on the coast and along estuaries.

Only one species, the White Mangrove, (*Avicennia marina* var. *australasica*), occurs in Victoria. It is estimated that there are a little over 60 square kilometres of mangroves in our state.

Living in a challenging environment

White Mangroves are inundated by salt water at high tide and exposed to air at low tide. As such, they have many fascinating adaptations for living in salty and tidal environments.

This includes their special aerial root system known as pneumatophores (pronounced 'new-mat-o-fores') which they spread wide around the trees, sticking upwards 20–30 centimetres above the soil. These pneumatophores have special pores that allow the roots to take up air into spongy tissues and to breathe in waterlogged soils. A single mangrove tree can have thousands of individual pneumatophores.

White Mangrove leaves are very thick and glossy and excrete salt through glands on the underside of the leaves. They can also drop leaves where too much salt has accumulated.

The propagules (plant material with the purpose of propagation) of White Mangroves float, which is a very practical adaptation for living in a tidal environment. Many wash up to the shore near the parent plant (see inset image). Some propagules can travel on ocean currents to new sites.

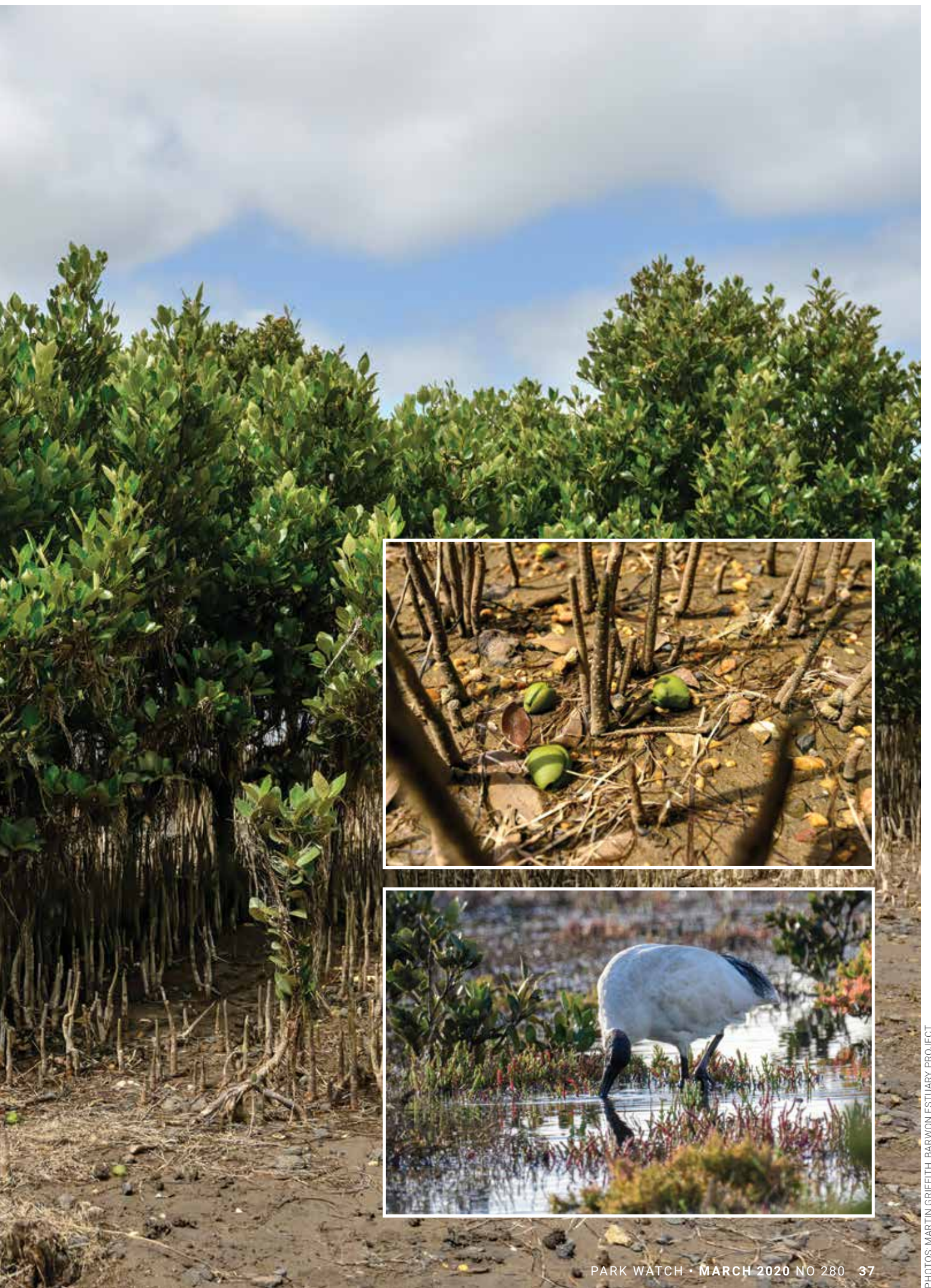
Important providers

Mangroves provide valuable habitat for marine and estuarine wildlife such as juvenile and adult fish, wading birds, and a huge range of tiny marine invertebrates including crabs, snails, and worms. The pneumatophores also provide hard structures for barnacles and algae to grow on.

Mangroves are critical for preventing soil erosion and protecting coasts from damaging storms, winds, waves and floods. They also have important roles in filtering water and storing carbon.

Spending time with mangroves

There are many wonderful places along Victoria's coastline to see White Mangroves. These include the most southerly location of White Mangroves in the world at Millers Landing at Wilson's Promontory National Park/Corner Inlet Marine National Park; Lake Connewarre State Game Reserve on the Barwon Estuary (Barwon Heads); French Island National Park in Western Port Bay; and Jawbone Marine Sanctuary at Williamstown. • PW



This is who was
hiding on page 21 –
the Dusky Antechinus!

QUIZ ANSWERS

(From page 21)

- 1 139 species!
- 2 Three: Eastern Grey Kangaroo, Western Grey Kangaroo and Red Kangaroo. The Eastern Grey Kangaroo is the most common and widespread in our state.
- 3 Tiger Quoll. Spot-tailed Quolls are the last naturally occurring species of quoll found in Victoria. They are the only species of quoll with distinctive spots on their tail.
- 4 A baby whale or dolphin is called a **calf**. A baby seal is a **pup**, and a baby echidna is a **puggle**.
- 5 Leadbeater's Possum. They live in tree hollows found in old growth trees and are now listed as critically endangered due to logging and bushfires. Southern Brown Bandicoots and Brush-tailed Phascogales are also fascinating yet endangered species in Victoria – look them up!
- 6 Monotreme. Monotremes are the only mammals that lay eggs, but also feed their young milk.
- 7 Thirteen, the two most common being the Brush-tailed Possum and the Ring-tailed Possum. Two critically endangered possums are Mountain Pygmy Possum and Leadbeater's Possum.
- 8 The Blue Whale. In fact they are the largest animal ever known, growing up to 30 metres in length and able to travel up to 50 kilometres per hour. The best place to see a Blue Whale in Victoria is at Portland (and along the south coast), during their migration between November and April.
- 9 The common wombat. They like to live alone so they display their cubes of poo in obvious places, like up on a rock or log, to help mark their territory.
- 10 Sea lions are a bit larger than seals, they can 'walk' up on their flippers more while seals tend to wriggle, and sea lions have more visible external ear flap than most seals.
- 11 The Chocolate Wattle Bat. It is named for its milk chocolate colouring and the flap of skin that goes from the base of their ear to their chin, their 'wattle'.
- 12 An Antechinus. These small, carnivorous marsupials love to nibble on beetles, spiders and small lizards.



Photo: Catching The Eye, Flickr CC



Echidna. Photo: Adrian Midgley, Flickr CC



Dolphin. Photo: Ed Dunens, Flickr CC



Eastern Grey Kangaroo. Photo: Robin Agarwal, Flickr CC



Chocolate Wattle Bat. Photo: Peter Kavanagh, Flickr CC



Spot-tailed Quoll. Photo: David Paul, Museums Victoria



Australian Sea Lion. Photo: Diana Padron, Flickr CC

Rockpooling!

WILD FAMILIES COORDINATOR
CAITLIN GRIFFITH INVITES
FAMILIES TO HUNT
FOR MARINE
TREASURE.



What is a rockpool?

Rockpools are mini marine worlds filled with seawater and teeming with marine life.

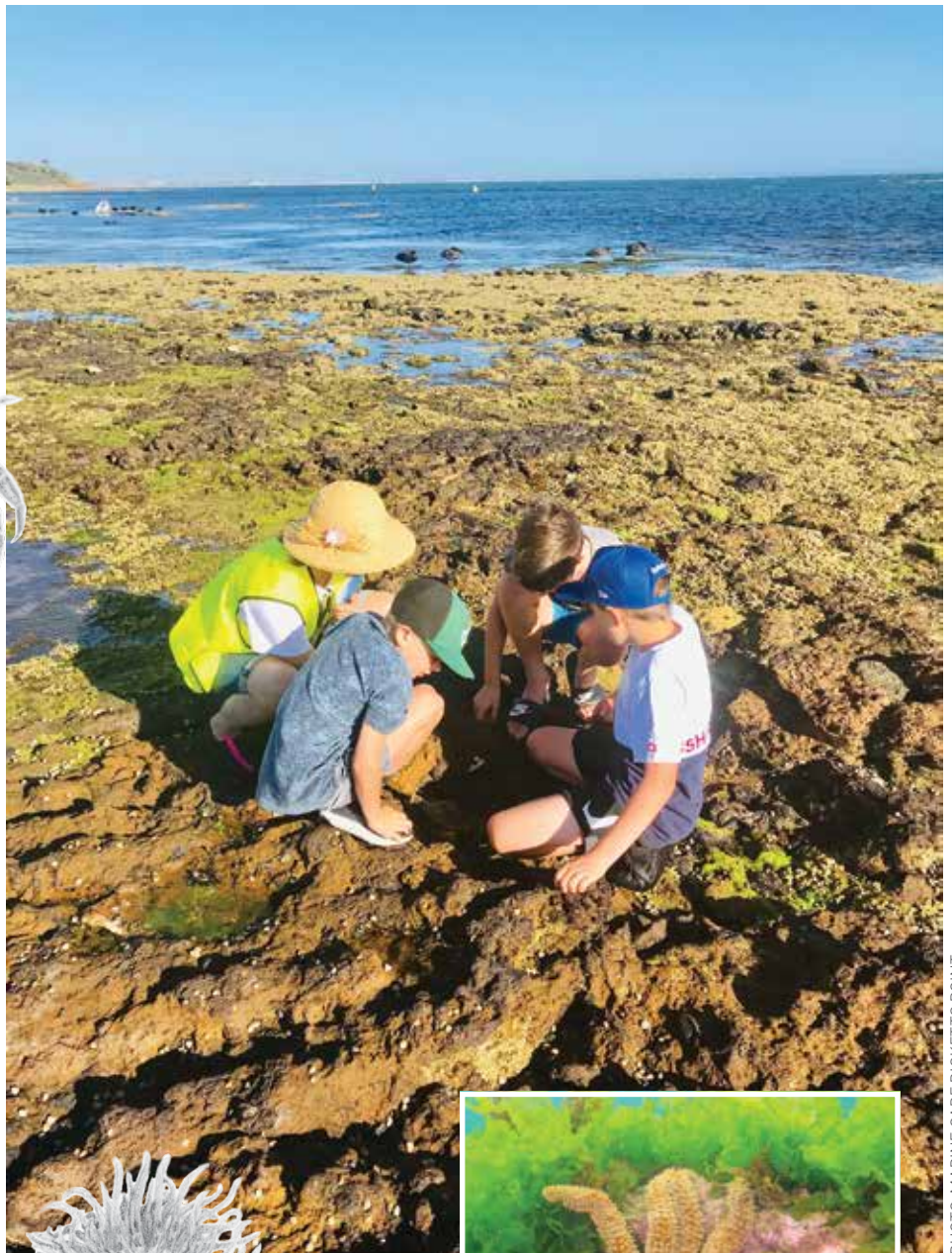
Rockpools can be found on rocky coastal areas between high and low tide. There are rockpool habitats at hundreds of locations along Victorian beaches. They are sometimes completely covered by the sea and sometimes completely exposed.

Rockpool rambling

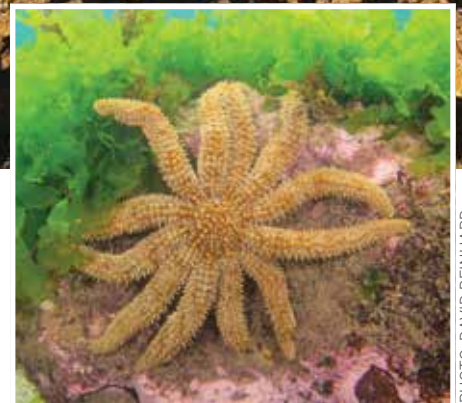
Rockpool rambling involves clambering, searching, sometimes even snorkelling, to discover hidden treasures.

Use these 10 simple tips for an exciting rockpool ramble:

1. Do some research on great rockpooling spots. If you come across rocky sections on the beach, take a closer look, they may be home to a wonderful collection of marine creatures.
2. Check the tides at www.tides.willyweather.com.au. It is usually easiest to rockpool ramble when the tide is out.
3. Try our rockpool rambling 'spotto' game on the latest Wild Families activity sheet at www.vnpa.org.au/wild-families and see how many of these living things you can find.
4. Look closely, carefully and keep still. If you keep still you will get your eye in and creatures may crawl or swim out from hiding places in the pool.



ILLUSTRATIONS BY
NICOLE MERTENS



You might spot an Eleven Armed Seastar!

5. Look all the way from the sea's edge to the furthest inland rocks. Are the creatures found in close to the sea's edge the same as those further inland?
6. Use a book or app. to see if you can figure out what all the marine creatures are, e.g. the Museum Victoria Field Guide to Victorian Fauna app.
7. Make a plan together to stay safe, and always supervise children around water.
8. Always watch for incoming waves and tides.
9. Always keep your hands where you can see them as many creatures are hiding amongst algae and in rock crevices and some creatures can sting, nip or bite, including Blue-ringed Octopus.

For more about rockpool rambling with the family, including caring for rockpools, and all about the Eleven-armed Seastar, check out our latest Wild Families activity sheet at www.vnpa.org.au/wild-families. • PW



GREATER GLIDER. PHOTO: JOSH BOWELL. CENTRAL HIGHLANDS. PHOTO: EMILY CORK.

**I'm Grace,
the Greater Glider.**

**Please help save the last
of our habitat.**

Victoria's Greater Gliders are quite rare – even more so now that the fires have wiped out a huge chunk of their forest homes in East Gippsland.

And now loggers want to cut down the trees still standing after the flames. Donate now to stop the loggers.

☒ **Yes, I want to protect Victoria's remaining forests**

☐ \$50 ☐ \$100 ☐ \$500 ☐ \$5,000 ☐ \$_____
My choice

My contact details

Dr/Mr/Mrs/Ms/Other _____ First name _____ Surname _____

Address _____

Suburb/Town _____ State _____ Postcode _____

Phone _____ Email _____ Date of birth ____ / ____ / ____

Payment method

☐ **Cheque/money order** payable to 'Victorian National Parks Association' is enclosed.

☐ **Credit card** ☐ Visa ☐ MasterCard

Card no _____ / _____ / _____ / _____ Expiry Date ____ / ____

Cardholder name _____ Signature _____

Please post with payment to Victorian National Parks Association, Level 3, 60 Leicester St, Carlton VIC 3053, call us on 03 9341 6500 or visit www.vnpa.org.au/grace

Authorised by Matt Ruchel, Executive Director, Victorian National Parks Association.

Level 3, 60 Leicester St, Carlton VIC 3053 | **PH:** 03 9341 6500 | **EMAIL:** vnpa@vnpa.org.au | **WEB:** vnpa.org.au

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