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**FROM THE  
 PRESIDENT  
 Patrick  
 Flanagan**

This newsletter is well-timed from a Covid-19 perspective, as the recent relaxation of the restrictions on movement and congregating occurs. We will need to continue to conduct indoor activities (e.g., committee meetings) using non face-to-face methods but we should be able to resume weeding, camera monitoring and our other outdoor activities (within the remaining restrictions on physical distancing and number of attendees), once we get clearance from Parks. We hope that is not too far away. We are disappointed that our environmental work with MacKillop College won't go ahead, this year and that we missed out on our planned excursions to Erskine Falls/Lemonade Creek, Jamiesons Track and Kelsalls Rock. We hope you can join

us at these and our other activities once they resume in full.

As individuals we have been keeping an eye on the Park for you (if you haven't been able to enjoy it yourselves) and the recent rains ensured we had a spectacular start to autumn, with large numbers and varieties of fungi in the area. Margaret has continued to be out and about, monitoring our special orchids such as Banded and Striped Greenhoods. She and Kaye also pointed me towards a fine display of Fringed Hare Orchids in the Elizabeth St Reserve. There were still some late specimens of Rosy Hyacinth Orchids to see and I was alerted to a colony of Mosquito Orchids in Ironbark Basin by members of the Friends. We have been informed in the last few days that our Ethics approval to undertake the camera monitoring is very close. Once we apply for and obtain a Wildlife permit, we can start to put the cameras out in the Heath again. We hope to see you at our activities once they resume in full.

### GREAT OCEAN ROAD ACTION PLAN

Legislation has passed the Lower House of the Victorian Parliament and is currently before the Upper House that will create the Great Ocean Road Coast and Parks Authority (GORCAPA). This new Authority will assume control of public lands between the Great Ocean Road and the coast from just east of Torquay (at Point Impossible) through to Allansford (east of Warrnambool). According to press releases, GORCAPA will be modelled on the Great Barrier Reef Marine Park Authority. One difference I see is the GBRMPA area of influence



begins at the coast and extends offshore, where GORCAPA will mostly be responsible for onshore areas (except for the Marine National Parks mentioned above). The difference in management of largely marine versus largely coastal environments will require different strategies.

GORCAPA will have its headquarters in Torquay, the current headquarters of the Great Ocean Road Coast Committee (GORCC), with district offices in Apollo Bay and Port Campbell. Initially the new Authority will combine GORCC and the Otway Coast Committee (OCC), but over time its remit will extend to the west from Marengo to Allansford.

Currently there are 11 different Crown Land managers along the GOR and a selling point for the new Authority according to the Victorian Government, is that the rationalisation will produce a more coordinated and sustainable approach to land and visitor management. There will, however, be winners and losers. One winner may well be our Hoodies as a single land manager on the coastal beaches eventually should produce consistent rules about dogs on beaches - a very good thing. In our area, e.g. around Urquhart Bluff, the rules are different, inexplicably from near the top path down to the beach between to the east and the west. Dog owners, some not diligent readers of dog restriction signs, won't be as easily able to plead ignorance about what is allowed where (and when).

The Government has given an undertaking that all staff working for GORCC and OCC will retain their jobs, conditions and working locations, so they, in a sense neither win nor lose. Parks Victoria will retain responsibility for broad-acre park management but will cede control of affected land to the new authority, however may provide management services to GORCAPA for field operations in these areas. This role for Parks is important in areas such as the Eumeralla mountain bike area - while the land will move into the new authority we can only presume management will stay the responsibility of Parks.

It's not clear what role Parks-affiliated Friends groups will have working on land currently managed by Parks, that will move over to the new authority. One clear example is the Friends of Point Addis whose entire area of interest will move over to the new authority. Will this mean they can no longer work in that area, or will Parks management of the area give them a clear rationale for continuing their work? A similar issue will affect us in parts of our area of interest. Here, I am thinking principally about the Surf Coast Walk above Urquhart Bluff through to Aireys Inlet, which will also move over to the new authority. So it raises the question whether it becomes an area we no longer work in or will Parks still have some management role that they can share with us. These questions will no doubt be answered in time. If you wish to read the GOR Action Plan, which includes finer-scale maps than the one above, a copy is available at the following link. **Patrick Flanagan** [planning.vic.gov.au/policy-and-strategy/great-ocean-road-action-plan](http://planning.vic.gov.au/policy-and-strategy/great-ocean-road-action-plan).



*Above: Autumn weeding Friends in the heathy woodland area Urquhart Bluff before Covid-19 closed the program down.*

### **SUDDEN HALT TO AUTUMN WEEDING PROGRAM**

Our autumn environmental weeding program came to a sudden halt with the introduction of the COVID-19 restrictions. We did manage our first autumn session on Tuesday March 10 when about 10 of our members joined us in the heathy woodland area at Urquhart Bluff, the site nominated for our autumn program. We were pleased to have Lynn and Chris Bull with us once again. Lynn and Chris are regular weeders whenever they visit Anglesea.

The weather was perfect and we indeed felt it was a privilege to weed in such a beautiful area with high biodiversity of the Great Otway National Park flora. Two of the treasures we reaped as rewards were an extensive colony of Parson's Bands orchids and some brilliant specimens of Twining Glycine, one of the rarer heathland plants, and a Hyacinth Orchid. We know that the weeds will wait for our return, and we look forward to our next visit to the site once the COVID-19 restrictions have been lifted – who knows when that will be!



### **MACKILLOP COLLEGE ENVIRONMENTAL CARE PROJECT**

Unfortunately, as with all our other planned programs for 2020, this program has been put on hold because of the COVID-19 restrictions. It is disappointing from the students' side and it is also disappointing for us as we enjoyed the experience of working with the College in 2019, hopefully influencing some of these young students to develop positive attitudes towards caring for the natural environment. We will keep you informed if and when the program might commence in 2020. **Margaret MacDonald.**



## FRIENDS' ACTIVITIES SINCE OUR LAST NEWSLETTER

### SENSING OUR ENVIRONMENT – 23 April 2020

This year the SWIFFT Seminar was run entirely online using Zoom video conferencing software. I was impressed at how smoothly it worked even though more than 200 participants, most of whom like me and several other members of the Friends, monitored proceedings passively.

The seminar consisted of five presentations all of which used electronic sensors to gather data to monitor the terrestrial environment, from satellite technology to measure soil moisture over space and time to provide forecasts of vegetation conditions, through the use of drones to track radio-tagged wildlife (principally the Swift Parrot in its winter habitat), autonomous sensing robots for various uses, acoustic monitoring of the Plains Wanderer on Victoria's northern plains, another on Australia-wide acoustic monitoring using microphones to capture information about birds, insects and weather-related acoustic signatures (rain, lightning, etc) through long-term sound recordings. All the presentations were similar in that HUGE amounts of data collected needed to be reduced to bite-sized and meaningful chunks to describe and summarise the information of prime interest. To check out the presentations at this seminar and earlier ones, go to [swiff.net.au](http://swiff.net.au) and follow their very clear menu system.

As I don't have room to summarise all the presentations, I'll concentrate on the two that used acoustic recording for environmental monitoring as that is not that far from my past academic interests. The presenters were Bec James (DELWP, Loddon-Mallee) on acoustic recording to help monitor the Plains Wanderer (*Pedionomus toquatus*) and David Watson (Charles Sturt University, The Australian Acoustic Observatory) on automated acoustic recording.

The Plains Wanderer is Critically Endangered according to the IUCN Red List, Australian EPBC Act, the Victorian FFG Act and Endangered according to the NSW TSC Act. There are thought to be less than 1000 left in the wild, with a captive breeding program at the Taronga Western Plains Zoo at Dubbo to help increase their numbers.

The principal cause of its difficulties is that its native grasslands and habitat has been drastically reduced through land clearing for agriculture in the Mallee and Riverina areas in NSW and Victoria. Of course, as a ground-dwelling bird, predation by foxes is also a major threat to its survival. Their preferred habitat needs to follow the 'Goldilocks principle' with vegetation density just right, not too long to conceal predators and not too short to provide their preferred food, which is seed from grasses.



Photo credit: David Parker, NSW



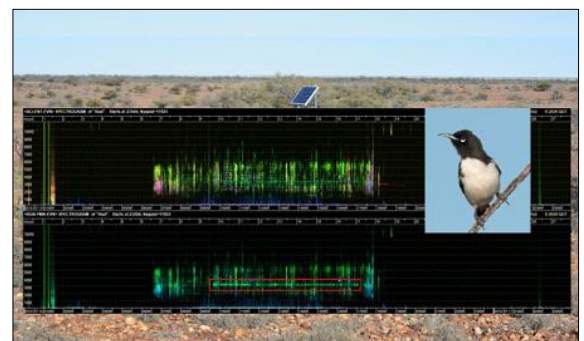
Above: Bec James setting up a song meter.

The project occurred in the Lower Avoca, Bunguluke and Patho Plains Conservation Reserves, which lie roughly within a triangle between Swan Hill, Wycheproof and Echuca. Up to 60 acoustic monitors (or Song Meters) were deployed to record the soundscape for two hours in the morning and again in the evening. The cards were collected every six months and the data analysed using specialised software to recognise the call of the Plains Wanderer (which has been described as the 'moo' of a distant cow). The Song Meters successfully recorded the bird call at 50% or more of the sites during the spring/summer seasons from 2017-20 and during the autumn/winter seasons from 2018-19. There was some evidence that the birds expanded their range from the Patho Plains into the Lower Avoca Plains, moving into areas of enhanced habitat management. The funding for the project finishes in June this year. Efforts by community groups at biomass management seem to have been successful at modifying vegetation to provide the birds preferred habitat type.

David Watson (and colleagues) project is quite ambitious as it requires the placement of 400 sensors at 100 sites over the whole continent, with some emphasis on sites in Eastern Australia. The acoustic monitoring is ongoing, and the researchers estimate that in 10 years the amount of data obtained will be as large as the entire internet 10 years ago. To deal with the huge problem of data management and analysis, the researchers are storing it in cloud-based open access storage, so that it is available for future interested researchers to analyse for them.

Dave used a case study to illustrate the project, from recording microphones placed in the Sturt National Park (in the north west of NSW) around Tibooorra to gather information about another difficult to study, nomadic bird, the Pied Honeyeater *Certhionyx variegatus* that inhabits large areas of the arid zone occurring occasionally in some areas, before moving on, presumably following food sources. Data collected over 14 years of 24-hour a day, 7-day a week recording at one site required 17 hours of analysis by computer.

The data were presented as sonograms (shown at right) which shows Time along the horizontal axis, increasing Frequency up the vertical axis and Amplitude (or loudness) as colour. The call of the Pied Honeyeater is illustrated in the lower plot, marked by a red rectangle. The presence of Pied Honeyeaters at the site was more likely after rain events and when *Eremophila* plants were flowering. The broader implications of the acoustic monitoring technique suggested it could also be useful for measuring climate-change related events (such as rain and lightning events) that can be identified from the recordings. **Patrick Flanagan.**





## FRIENDS' ACTIVITIES SINCE OUR LAST NEWSLETTER

### CAMERA TRAPPING IN THE ANGLESEA VALLEY

We were very keen to set camera traps in the same area where, last June, we 'captured' a White-footed Dunnart and an Agile Antechinus as well as the more common echidna and swamp wallabies. However, the only small mammals we caught were swamp wallabies and a cat. One good thing is that we can confirm that there is definitely more than one swamp wallaby as we caught 2 in the one image. And this time we did not see any foxes and only one cat. We enjoyed talking to the contractor working on the walking connection between Harrison's Tracks South and North. It is looking good. **Gretel Lamont.**



### MAMMAL SURVEYS



### MESSAGE FROM THE TREASURER

To the members who have paid their annual subscriptions of \$15.00 and also kindly donated \$240, thank you very much from all the Committee. To those members who have not renewed their membership for whatever reason please consider doing so. We do depend entirely on your support for the ongoing efforts to protect our environment.

One day, and we hope soon, we will be able to resume all our popular activities, including walking in the Parks, weeding, camera monitoring and the occasional planting of native plants, but there will be catch up to make up for lost time and we will probably need some outside help and this costs money.

To pay fees by bank transfer: Bendigo Bank BSB 633-000 - Account Number 150830826 Account Name "Friends of Eastern Otways" Please ensure you include the first 5 letters of your surname to ID your payment.

Alternatively, make your cheque payable to "Friends of Eastern Otways" and mail to the Treasurer, P.O. Box 140, Anglesea, 3230.

Not sure if you have renewed? If you receive your Newsletter by mail and the year shown on the address label is 2019 or earlier, your subscription has not been paid. If you receive your newsletter by email please do not hesitate to contact us.

Thank you for taking the time to read this missive and trust it not too far away that we may be able to meet again on one of our activities, be it walking in our wonderful parks, or keeping weeds under some sort of control. **Ross Davey, Hon. Treasurer.**

### STRIPED GREENHOODS ARE BACK

Last year in July the Friends weeding group were excited to find a colony of Striped Greenhoods *Pterostylis striata* while weeding near O'Donohue Rd Anglesea. This year they are there again in increased numbers - over 50 flowers and buds. These orchids are rare in our area and have a distinctively green and white striped flower, at times almost luminescent, with forward facing lateral sepals. They are making an impressive display in the late autumn weather. Also resplendent near Aireys Inlet this month was my favourite fungi, Emperor Web-cap *Cortinarius archeri*. **Alison Watson.**





## NATIVE WATER RATS WORK OUT HOW TO SAFELY EAT CANE TOADS

Authors: Marissa Parrott, University of Melbourne, Sean Doodly, University of Newcastle and Simon Clulow, Macquarie University; article published in *The Conversation*.



Australia's water rats, or Rakali, are one of Australia's beautiful but lesser-known native rodents. And these intelligent, semi-aquatic rats have revealed another talent: they are one of the only Australian mammals to safely eat toxic cane toads. Research published in *Australian Mammalogy* found water rats in Western Australia adapted to hunt the highly poisonous toads less than two years after the toads moved into the rats' territory. The rats, which can grow to over 1kg, are the only mammal found to specifically target large toads, neatly dissecting the toads to eat their hearts and livers while avoiding the poisonous skin and glands.

Water rats are nocturnal and specially adapted to live in waterways, with webbed feet and soft water-resistant fur. Their fur is so impressive there was once a thriving water rat fur industry in Australia. They can be found in lakes, rivers and estuaries, often living alongside people, in New South Wales, Queensland, Tasmania, South

Australia, far north and southwest Western Australia, the Northern Territory, and Victoria, where they can even be seen along St Kilda Pier. Water rats are also highly intelligent, as shown by their rapid adaptation to hunting and eating one of Australia's most toxic introduced species – the invasive cane toad.

Cane toads were introduced to Australia in 1935 in an ill-fated attempt to control the cane beetle. They have spread across the north of the country at up to 60km per year, leaving devastation in their wake. Many native species, such as northern quolls, yellow-spotted monitors, and crocodiles, have suffered widespread declines, and in some cases local extinctions, as a result of eating cane toads.

The toads secrete a toxin in their parotoid glands (on the back, neck and shoulders) that can be fatal even in very small doses. Cane toads arrived in the Kimberley (pictured right), Western Australia, in 2011-12, leading to a crash in the populations of predators including numerous lizards and northern quolls. However, in 2014 we found a creek dotted with the bodies of cane toads that had clearly been attacked. Every morning we discovered up to five new dead toads with small, near-identical incisions down their chest in just a five-metre stretch of creek. What was using almost surgical precision to attack these toads?



Post-mortem analysis showed that in larger toads the heart and liver had been removed, and the gall bladder (which contains toxic bile salts) neatly moved outside the chest cavity. In medium-sized toads, besides the removal of the heart and liver, one or both back legs had been stripped of their toxic skin and the muscle also eaten. The finding intrigued us enough to dissect waterlogged and rotting toad bodies in 40°C heat. Using remote infrared camera footage and analysis of the bites left on the muscle, we found our clever attacker – the native water rat!



Above: A water rat caught on camera hunting for cane toads in the Kimberley.

While there have been anecdotal reports of water rats eating toads in Queensland and the Northern Territory, there were no published reports of this in Western Australia, where the toad was a more recent arrival. We also didn't know whether rats could tolerate the toad toxins, or were targeting non-toxic parts of the body. And we wanted to find out whether the rats were targeting small (and less toxic) toads, as some other rodent species do, or were deliberately going after larger toads which are a better source of food.

During our study we captured and measured more than 1,800 cane toads in just 15 days in the vicinity of the water rats' creek. The vast majority, 94%, were medium-sized; 3.5% were small (less than 4cm long); and just 2.5% were large (greater than 10cm long). But despite medium toads being far more common, three quarters of the dead toads we found were large, and the remainder were medium. No small toad bodies were found or observed being attacked.

While some species, such as keelback snakes and several birds (including black and whistling kites, and crows) can eat cane toads, there has been less evidence of mammals hunting this new type of prey and living to tell the tale. Some rodents can eat small juvenile toads, but no rodents have been documented specifically targeting large toads. In our case, water rats preferred to eat large toads, despite medium-sized toads outnumbering them by 27 to 1.

We're not sure whether water rats have very rapidly learned how to safely attack and eat cane toads, or if they are adapting a similar long-term hunting strategy that they may use to eat toxic native frogs.

Water rats are very well placed to pass on hunting strategies, as they care for their offspring for at least four weeks after they finish producing milk. This could help spread the knowledge of toad hunting across streams and creeks over time. While this behaviour seems to be confined to local populations, if these tactics spread, water rats may be able to suppress toad populations when they reach water bodies – another small line of defence against this toxic killer.



### OTHER POLLINATORS OF THE HEATHLANDS – John Lenagan

With the recent isolation guidelines it has been a great opportunity to disappear into the heath and forage and meditate. As usual I could not help having my macro viewing goggles on and observing all the smaller creatures going on with their lives as normal. It was an unusual wet ending to summer and across the whole east coast of Australia there was an abundance of various species of Butterflies coming out for the late flowering shrubs, you may have noticed the Cabbage White butterflies and the blue Damsels of late.

Here are just a few of the Butterflies to be seen within the Heathlands and along the Coast although their numbers are starting to decline as the cooler autumn season sets in.



Above from left: Cabbage white *Pieris rapae*, Painted Lady, *Vanessa kershawi* and Sword Grass Brown *Tisiphone Abeona*. It should be noted that the Sword Grass Browns are typically found in the boggy swamp peat grounds and do not readily move up and out into the heathlands.

Right: Male and female Common Brown Butterfly *Heteronympha merope*



Below from left: Meadow Argus *Juonia villida*, Australian Admiral *Vanessa itea*, and Imperial Jezzabel *Dalias harpalyce*.





## "FRIENDLY" NEWS



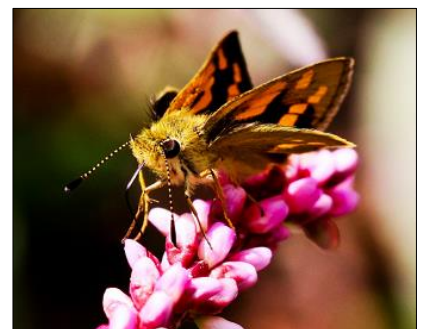
Grass Blue Butterflies from left:

*Zizina labradus*,  
*Theclinesstes sulphitius* and  
*Zizeeria karsandra*

There are also many species of Grass Blue Butterflies through the Heathlands, with the different species emerging from their ant nests at different times from early Spring to Early Autumn and typically linked in with the ant's seasonal activities.

The butterflies from the *Hesperiidae* family including the Ochre, Skipper and Grass Dart Butterflies are one of the most difficult butterflies to ID, as they have very similar yet distinctly differing patterning on their hind and fore wings, there are over 15 species that reside down on the Surf Coast, the key difference between the Genus is in their antennae lobes and flight style, should you be able to get that close.

*Below:* Ochres, Skippers and Grass Darts from left - *Trapezites symmumus*, *Hesperilla chrysotricha*, *Ocybadistes walkeri*.



On recent walks the Silver Banksias which have now grown back after the 2016 burn-offs to the northern side of Harvey Street are in their first real bloom of buds with their flowers in various stages of sculptural display, and those that are full of nectar are a great refill station for the many insects who cannot resist. *Below:* Silver banksia flower with various nectar feeders, including species of smaller native bees (right).



As things start to cool down the Sugar Lerps on the Gum trees seem to be receding with few to be seen, but you can always find a few Sugar and Meat Ants tending to them and trying to keep the raiding Bull Ants away, although the odd one is stolen by the Jumping Jack Bull Ants *Myrmecia pilosula* and taken back to their larder. *Below from left:* Small Meat Ant *Iridomyrmex* sp., Golden Bearded Sugar Ants, and Jumping Jack *Myrmecia pilosula*.



Hello everyone,

By far this is the weirdest ranger report I have had to write so far, normally I would be encouraging you to get out and check out the park and the work that we have been up to. However, hopefully I can fill you in on what the Parks Victoria Rangers have been up to in this odd time. Also, if you are out in the park enjoying some fresh air or exercising, please stay safe and hygienic.

As everyone is aware, social distancing and the current state of emergency has changed every aspect of life. For Parks Victoria it has dramatically changed how we provide public space such as campgrounds and picnic grounds. All the closures to visitor sites are unprecedented and very weird for our staff, especially telling visitors to move on from sites that we normally welcome them to.



*Above and far right: Matt Russell removing plants as part of the invasive plant program.*

things return to normal we can do some of the new walk, and have a BBQ on the new facilities.

As for our day to day work, we were fortunate to be considered as essential by the government. So, like every workplace, we have had to figure out how to work and provide hygiene standards that fit the requirements to stop the spread. We restricted the time we spent in the office by working from home when possible, cleaning down work common use areas, and allocating



vehicles for the use of two individuals. On the flipside to Covid-19 restrictions is that PV staff have been able to get out in the park to do so much needed maintenance. Personally, Ruby and I have enjoyed the chance to do some weed work in areas that don't fit into the objectives of our invasive plant program. Furthermore, we have been weeding in high use areas, such as the Great Ocean Road which, as you can imagine, is usually tricky to do safely under normal conditions.

The Fire and Emergency team have also been busy constructing fuel breaks in elevated risk areas, which some of you may have seen in your daily walks. Personally, I am really happy about the break on Camp Road in Anglesea, which has removed a large infestation of Sallow Wattle (below). This area should recover nicely and complement the work that both ANGAIR and the Friends have put into this area. Thank you to all the Friends. Stay safe. Hopefully we will be back to normal soon and running our activities. **Matt Russell, Ranger, Lorne.**



This week we have been directed to open most of our public sites to day use, however campgrounds will remain shut. One positive that Parks Victoria staff have observed in the last month of lockdown is the role that parks play in general wellbeing and mental health.

Walking tracks in the National Park such as Distillery Creek, Moggs Creek, and especially Ironbark Basin have been increasingly used and I wonder if this new-found enjoyment of bushwalking will continue for people after this is over. There has also been more use of our coastal visitor sites when there have been favourable surf conditions, which you may remember did make the media.

Parks Victoria campgrounds remain shut, including Allenvale, Sharps Track, Big Hill Track, Hammonds North and South. On a side note, Jamieson Campground is on track to be finished soon, however the date that it will be open to the public has understandably been put on hold. I am sorry that members of the Friends of the Eastern Otways missed the opportunity to plant trees in Jamieson

Campground, However, when



conducting a large burn program during these conditions, which means there have been some fuel reduction burns performed by local staff in the open heath in cool conditions when fire behavior is lowered and vegetation in gullies and tree lines remains unburnt.