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# Friends of Morwell National Park Inc.

## *Newsletter – October 2019*

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Hello everyone and welcome to this month's newsletter. This month we have a special article from Ken about the March bushfire and the effects on insects which has been reposted from the Victorian Entomologist. This can be found at the end of the newsletter.

Our next activity will run a week later than planned. Our Orchid Walk and Koala Count will now be on Sunday 27<sup>th</sup> October. The change is happening because a number of the group will be at a Field Naturalists activity on the same day as our original activity.

Looking through both the membership and email lists it has been found that we have many people who were previously members and are still receiving the newsletter. We will need to follow up these people to see whether they want to renew their memberships and/or receive the newsletter. A number of other people have previously requested a newsletter but now have no involvement with the group. Most people who receive the newsletter receive it via email, but a few still receive it via mail. For many years Parks staff would send these newsletters out to a few members without email. Over the last year only one newsletter has been sent via post. It would seem that they have stopped doing this (or have forgotten) so we will now need to do a mail out to keep these members informed.

### September Activity Report

At this month's activity we had Beryl, Ken, Wayne, Grant, Mike, Cathy, Graeme, Matt, Rose, Hayley, Joan, Chris and Darren. We had an apology from Tamara.

Over the last month we have had a few groups visiting the park as part of their activities. Ken took a group of Lavalla College students on a biodiversity study at both Billy's Creek and Fosters Gully. They found many weed species at Billy's Creek and few in Fosters Gully. Matt supported a Federation University group looking at weed species found in the park. ClimateWatch did a walk around Fosters Gully on 25<sup>th</sup> September where they took a group to engage them in the ClimateWatch in parks program and to collect field data. The ClimateWatch program aims to understand the effects of climate change.

Over September it has been wet and windy. As a result there are many trees down in the park. Many tracks have trees down across or near the tracks. We need Parks' rangers to come in to remove these so that walkers can get around the park safely. One tree branch came down in the Kerry Road car park falling

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on one of picnic tables. The branch was removed but the table still needs to be repaired. Interestingly the BBQ is still not working. It has been broken for over a year and it is a large disappointment to anybody wanting to use the park. It seriously needs to be fixed.

For a period of time a number of visitors have been bringing their dogs, horses and trail bikes regularly into the park. The people who bring these animals and bikes into the park are having a negative impact on the environment. Matt has spoken to a number of locals and visitors and a number of them have complained about the state of the park. Many have expressed disappointment about the state of the park and how little the Parks Rangers are doing in the park.

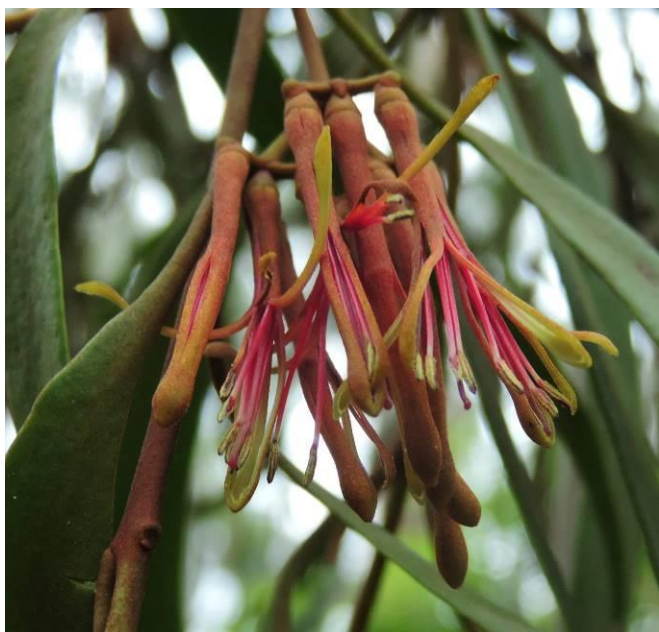
The activity for the day was to complete some repairs to the nesting boxes. Many boxes needed repairs or reattachment to the trees and a few boxes needed replacement. Matt, Graeme and Rose had brought ladders and tools to climb the trees and secure the boxes. The group started in the carpark and slowly worked into the park. The pole mounted camera was firstly used to check that each box was animal free. In some boxes we were able to repurpose lids and strapping from other boxes.

Over the day about a dozen boxes were repaired. Generally with Wayne and Grant on top of the two ladders, excess bark was removed and old boxes cleaned up. Additional screws were used to fix the boxes securely to the tree. Five new boxes constructed by the students from Lavalla College were put up to replace broken boxes which were beyond repair. The Lavalla students have done an outstanding job in constructing and labeling of these boxes.



Before completing the last boxes, lunch was taken. Ken was able to wander off to find a fallen tree where the box was above the break in the tree. This box was moved to an adjacent tree. A patch of ivy was found and removed. Cathy found a few mistletoe in flower. The first photo that follows is of a Box Mistletoe (*Amyema miquelii*). Thanks to Cathy for all of the photos she collected over the day which are in this newsletter.

All morning we enjoyed sunshine but the clouds came in and we had a little rain when we returned to the car park. It was a great time to finish.



## October Activities

Sunday 27<sup>th</sup> October

### **Activity 1 – Orchid Walk**

**10.00am**

The first activity will be a walk of around Fosters Gully or Stringybark Track to search for the orchids which can be found at this time of the year. You will need to bring clothing suitable for the weather conditions on the day.

If you are staying for the koala count you will need to bring your lunch, which can be eaten in the Kerry Road picnic area between the activities.

### **Activity 2 - Koala Count**

**1.30pm**

The Friends of Morwell National Park will be carrying out the annual 'Koala Count in the Park'. Willing participants are requested to meet at the Kerry Road - Fosters Gully car park at 1.30pm to commence the Koala count.

The 'Koala Count in the Park' event is part of the long term strategy to document the numbers and measure the general health of the koalas within Morwell National Park.

Bring your family and friends and enjoy a pleasant stroll in the park while simultaneously helping the team in spotting the resident koalas that may be found in the park.

Participants are advised to bring suitable clothing and footwear applicable for the weather conditions, and if possible, bring a pair of binoculars as it certainly makes it easier to spot the koalas.

## Effect of a Recent Wildfire on the Insect Life in Morwell National Park

Ken Harris, David Mules, Matt Campbell

### Introduction

On 2<sup>nd</sup> March 2019, a bush fire started just SE of Yinnar South. It was quite a hot fire in some areas, but it burned more slowly towards the North. It got into the SW corner of Morwell National Park, burned across Silvertop Hill, spread east into a less accessible part of the park and climbed the hill to the north to the Stringybark Ridge. We feared that the fire would reach Fosters Gully and threaten the Butterfly Orchid population, but the fire fighters did a great job and bulldozed a firebreak across the top of the Stringybark Ridge Track and succeeded in preventing the fire from crossing the firebreak.

It burned for at least a week, and it was not until 21st April that we got to explore the burnt area and assess the damage. On Stringybark Ridge the fire had not burned the canopy. Messmate (*Eucalyptus obliqua*) and Yertchuk (*Eucalyptus considenia*), both had their leaves killed by the heat, but not burnt. On the other hand, the Mountain Grey Gums (*Eucalyptus cypellocarpa*) with smooth bark retained all their leaves. We even found a Koala in one of the Mountain Grey Gums. There was practically no regrowth yet after the fire, although a few bracken plants were emerging and a few Spiny-headed mat-rush (*Lomandra longifolia*) were visible.

We were keen to monitor the recovery from the fire and I wanted to do an immediate light-trapping for moths in the burnt area. My permit was out of date and I was in the process of getting it renewed and did not expect to have it active for quite a while, but at the end of March, I learned that my permit had been issued. I immediately sought permission from Parks Victoria to carry out a mothing session in the burnt area, which was still



Figure 1 *Eucalyptus cypellocarpa* after the fire



Figure 2 31st December 1999



Figure 3 Survey site on 6th June 2019

closed to the public.

Checking my records, I found that one section at the end of Stringybark Ridge had been sampled previously, on 5<sup>th</sup> May 2016. This provided an opportunity to compare a pre-fire survey with a survey soon after the fire and explore whether the moth fauna was unchanged by the recent bushfire. The best day weatherwise, was 7<sup>th</sup> May, almost exactly three years after the previous session. David Mules, Matt Campbell and I drove up to that site on the evening of 7<sup>th</sup> May and set up the light sheets ready to start at sunset.

### Results

The first half hour was very slow with only a few tiny flies. The first arrival was a little Tortricid moth and it proved to be *Holocola triangulana*, a species not previously recorded in the park. We subsequently saw three or four of the same species. We have already recorded 674 moth species in the park, so the chance of a new species seemed pretty low. To our amazement, in the 2½ hours that we kept the light on, we found a total of 11 moth species not previously recorded in the park. We also found a crane fly and a tiny little Cicadellid leafhopper – *Eurymeloides minutum*, which were also new to the park. From that slow beginning, things accelerated and in the end 58 different moth species appeared. The two most spectacular were the two species of *Chelepteryx* in the Anthelidae, the White-stemmed Gum-moth (*Chelepteryx chalypteryx*) and the Batwing Moth (*Chelepteryx collesi*), one of each occurring during the evening. Both have only been recorded twice previously in the park. One of the two earlier *Chelepteryx collesi* was found at the same site three years previously. The weather was still and dry but not very warm and we closed a bit early at 10.45 pm



Figure 4 *Chelepteryx chelepteryx* Female



Figure 5 *Chelepteryx collesi* Male

Here is a list of the 11 moths and two other insects that were new records for the park:

Family	Species
Geometridae	<i>Fisera hypoleuca</i>
	<i>Mnesampela privata</i> (Figure 6)
	<i>Prasinocyma</i> MoV sp. (1)
Noctuidae	<i>Proteuxoa paratorna</i>
	<i>Proteuxoa</i> MNP sp. (2)
Tortricidae	<i>Herminias rivulifera</i>
	<i>Holocola</i> sp.KH02
	<i>Holocola triangulana</i>
	<i>Strepsicrates infensa</i>
Unknown Moths	<i>Moth KH628</i>
	<i>Moth KH629</i>
Cicadellidae	<i>Eurymeloides minutum</i> (Figure 7)
Tipulidae	<i>Dolichozeza</i> sp.



Figure 6 *Mnesampela privata*



Figure 7 *Eurymeloides minutum*

Table 1: Insect species new to Morwell National Park

## Comparison

Hewish et al. (2019) presented a comparison between moths in an unburnt site and a nearby site burnt in a wildfire. The fire had been about three years earlier, whereas in our case the fire was only two months before our survey. We do have an earlier pre-fire survey of the identical site three years and two days before the current survey. Here I make a comparison between our 2016 and 2019 surveys, following and comparing with Hewish et al.'s results.

Firstly, the methods varied a little between the two surveys. In 2016 a single vertical sheet was suspended with a 250w mercury vapour light suspended in front of it. The same set-up was used in 2019, but an additional smaller sheet was set up 100m east of it with a Hitachi 8-watt long-wave ultra-violet light. The two sheets attracted some different moths, but the mercury vapour light attracted approximately the same number of moth species on the two occasions.

The number of species common to both surveys was remarkably low amounting to only 15 moth species. In total, the 2016 survey found 44 moth species and the 2019 survey found 58 moth species. There was therefore no evidence of a loss of Lepidoptera as a result of the fire, although some other insect orders show different results (see below).

Following Hewish et al., I have prepared a table comparing the number of species in each Lepidoptera family on each occasion:

Family	Species in pre-fire survey 2016	Species in post-fire survey 2019
Anthelidae	1	2
Arctiidae	3	3
Carposinidae	2	
Cossidae	1	
Crambidae	1	2
Gelechiidae	3	4
Geometridae	11 (25%)	23 (40%)
Gracillariidae	1	
Noctuidae	4	5
Nolidae	1	2
Notodontidae	1	

Oecophoridae	4 (9%)	4 (7%)
Psychidae		1
Pyralidae	4	2
Tineidae	1	
Tortricidae	2 (4.5%)	7 (12%)
Unidentified	4	3
<b>Total</b>	<b>44</b>	<b>58</b>

Table 2: Number of species in each Lepidoptera family

Hewish et al. commented that there were significantly more species in the Geometridae in the burnt area. We found the same effect but even more strongly. Eleven Geometrid species in 2016 (25% of the moth species,) increased to 23 species (40%). The 2019 percentage is probably the highest I have ever seen in a single evening surveying moths. Hewish et al. also saw the opposite effect with the Oecophoridae, with fewer species in the burnt area. This effect was not so marked, with four species on each night, but that does represent a drop from 9% to 7%. Many Oecophorid moths feed on leaf litter, which will have been very significantly reduced by the fire. There was a significant drop in the number of families represented, with 15 families in 2016 reducing to only 11 families in 2019. One other family is worth noting. Our 2019 survey showed a big increase in members of the Tortricidae. Seven Tortricid species (four of them new to the park) were found in 2019, compared with only two in 2016.

It was very pleasing to see a significant moth population so soon after the fire.

In addition to examining the moth fauna, I was interested to see any noticeable effects to other insect orders, so I drew up a table of species numbers by Order for the two surveys:

Order	Species in pre-fire survey 2016	Species in post-fire survey 2019
Coleoptera	2	1
Diptera	9	3
Hemiptera	2	1
Hymenoptera	2	2
Lepidoptera	44	58
Neuroptera	3	
Trichoptera	1	1

Table 3: Number of species in each Order

The number of orders represented is reduced with seven in 2016 and only six in 2019. In 2016 there were three lacewing species (Neuroptera) and none in 2019. Lacewings are predators, mainly on small insects and insect larvae and it is quite possible that their prey was significantly reduced by the fire. Only one beetle, Coleoptera, was present in 2019. It was a tiny little beetle (about 2mm long) possibly a Shining Flower Beetle in the



Figure 8 *Phalacridae* sp. Beetle

family Phalacridae (Figure 8). Beetles are usually an obvious component of the visitors to the light sheet, but one so small would often have been overlooked. The bugs (Hemiptera) were reduced from two in 2016 to just one very small leafhopper in 2019, although that one, *Eurymeloides minutum* (Fig 7) was a new species for the park. The biggest reduction was in the flies (Diptera). Nine species in 2016 reduced to only three in 2018. Neither figure will be accurate as most small flies and mosquitoes are rarely recorded, but there were a lot fewer small insects than is usual when light-trapping. The reduced numbers of Diptera species is probably an effect of the fire.

All the insects photographed in the 2019 survey are on the iNaturalist page listed in the references below.

## Acknowledgements

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## References

iNaturalist: [https://www.inaturalist.org/observations?on=2019-05-07&place\\_id=140034&subview=table](https://www.inaturalist.org/observations?on=2019-05-07&place_id=140034&subview=table)

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