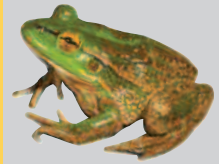


WINTER 2019  
Newsletter No.57



Production of this newsletter is funded through  
Melbourne Water's Community Grants Scheme

# Newham & District Landcare Group



Working towards a  
healthier environment

Address – PO Box 314, WOODEND, 3442



## **Predation in an ecosystem**

# DIARY OF EVENTS

## OCTOBER

### Sunday 6

Hanging Rock Reserve hands-on session.

Date to be confirmed. 9.30 – 12.30 with BBQ lunch to follow.

## NOVEMBER

### Sunday 10

Kolora: Sustainable land management day

9.45 – 2pm lunch included.

A review of 30 years of landcare on a farm at Newham covering many different areas, including the following:

- Plantings for biodiversity/agroforestry/honey bees.
- Land management for mitigation of fire risk.
- Wildlife – camera monitoring, insectariums, birds on farms, kangaroo exclosures
- Water management – Creekside rehabilitation, water quality monitoring, willows, floating islands

RSVP: to Penny [penroberts@bigpond.com](mailto:penroberts@bigpond.com) / 0418396837.

### Saturday 30

End-of-year gathering at Wesley Park

**NOT** the first Saturday in December this year due to the Fanny Lumsden event at the hall.

## Election of new committee members

**At our very well attended AGM on 16 August the new committee for 2019–20 was elected as follows:**

**President:** Howard Stirling 0432 809 314.

**Vice-President:** Karl Kny 0409 543 061.

**Treasurer:** Rob Lawrence 0407 343 256. *Welcome Rob, and thanks to Hilary Roberts for his many years as Treasurer.*

**Secretary, Website:** Helen Scott 0412 582 526.

**Committee members:** Doug Dalgleish, Nick Massie 0419 898 065, Hilary Roberts 0409 543 061, Penny Roberts 0418 396 837 and Jim Sansom.

**Please consider nominating for the committee as there are positions vacant.**

Our next issue will publish an article on the great presentation by our guest speaker, Ian Temby, on the problems and solutions to living with wildlife.

The committee meets on the first Monday of the month (February to December) between 7.30 – 9pm in Newham. All members are welcome to attend the Committee meetings to become more involved or raise specific matters. Please advise a committee member if you wish to attend. Meetings start and finish on time... and we enjoy them!





The Roadside Management Group, aka, the Weedies, has been active during recent months in our very own Game of Weeds, dealing with three invaders, gorse, broom and blackberry plus some other smaller insurgents of briar rose, hawthorn, and holly.



**Spring is coming and the Weedies will be out patrolling the borders again.**

invader, on 27/03/19, the group launched a sustained return attack for two hours to ensure all gorse was smothered by our projectiles.

Very persistent stuff gorse, so even on dead-looking bushes green growth still appeared, so we had one last working

We decided to concentrate our campaign in the defence of Shelton's Road, the jewel road in Newham's crown, which each spring gives a magnificent display of various wildflowers over several weeks.

On 7/11/18 our forces gathered at Shelton's Road east of Hennerberg's Lane to commence battle and worked eastwards for two hours striking a blow against the gorse invader.

In view of the intense concentration of the invader and its attendants broom, briar rose and blackberry, the Weedies regrouped on 27/11/18 to recommence our attack and battle ensued for the next two and a half hours.

Again on 3/12/18, a further short attack was undertaken to quell new gorse recruits which had appeared on the battle ground.

In view of the extreme resistance by the gorse

bee for the season on 14/05/19 to really give it another knock. Several wildings were also cut down and other weeds like broom also poisoned or pulled.

A major blow has been struck to preserve the beauty of Shelton's Road, but the war is not yet over and winter is coming.

**By Sue Massie**, May 2019, with apologies to 'Game of Thrones'.

*P.S. by Helen Scott: The indefatigable Sue Massie as Roadside Management Group convenor and record keeper calculates total person hours for this work at 40 hours and 15 minutes. At the official Landcare volunteer rate of \$30 per hour this comes to \$1,207.50.*

*The poison used is Garlon which doesn't kill the native grasses, mixed with red dye to mark the areas sprayed.*





***Towards the end of last term here at Newham Primary we had our Garden Specialise Session focusing on worms in our environment. The kids LOVED the session with Sam and we would love to express a HUGE thank you for helping to fund the session as they learnt so much. Here is a small snippet of appreciation from our students and a summary of what they covered....***

## **NPS Garden specialist session**

Last garden session our focus was worms and how they help earth. We were mainly focusing on earth worms, we saw a film clip that showed us how earth worms help the environment. We made plasticine worms and used magnifying glasses to examine the features of the worm. We saw them moving with the help of their hairs, the saddle, and we noticed the small details in colour of the different types.

We were seeing if different worms preferred dry or damp surfaces to crawl on. Our results showed that damp surfaces are easier to crawl on.

We would like to thank Sam Harrison for presenting, as well as the district Landcare group for funding the session.

Thank you Carol for organising the garden session, we really enjoyed it!

Once again thank you to NDLG, we are very lucky at NPS to have great support from you.

**Tim Furphy**

Grade 4-5 Teacher.



# Windbreaks to habitat

*the story of the Roberts front paddock, and more.*

Oh how I wish I still had the energy and capacity of 30 years ago – to implement hard-earned knowledge/wisdom.

Is it possible to learn from history, or the experiences of others?

'Best practice' changes with time, advancing knowledge and changing circumstances.

I can remember when DPI recommended windbreaks consisting of 3 rows of plants – one of Eucalypts, one of an understorey tree (e.g. Blackwood) and another of a tall shrub (e.g. River bottlebrush) – this was to create a windbreak that started at ground level, filtered wind and was effective for a reasonable distance.

Such windbreaks were designed to minimize the area required and maximize the effectiveness, but more recent research showed it was possible to make a far more effective windbreak, of a width that allowed it to function as habitat for fauna, whilst increasing the productivity of adjacent land used for farming. In fact a wider, mixed windbreak has been shown to have multiple benefits for agriculture – including pest control by birds and bats using the habitat created, improved fertility and increased productivity.

Wider windbreaks can also be **self-sustaining**. If a 3 species windbreak loses one of its rows the windbreak will cease to be effective

**Why not a single line of Cypress or Pinus radiata?** Let me count the reasons!\*



- \* minimal habitat values – insects and cones provide a food resource, perching/nesting opportunities – but these tree lines do not provide habitat for our threatened species and are not attractive areas for a range of fauna to pass through
- \* planted close to property boundaries these become a public liability – fire risk, trimming costs – and result in the loss of roadside remnant vegetation, a public asset even if undervalued.

**So .... to the front paddock of #159 Dons Road.**

Some of you may have noticed the changes in our front paddock over the years. . . changes that reflect what we have learnt over the last 25 years.

**Early on** we planted out a 5m strip along the roadside as a screen/windbreak – that's what you do, isn't it?

We used native plants, some of which were indigenous to this area. . . but we included some species that are considered 'weedy' in this area, too many Eucalypts and no ground layer plants. And we used barbed wire on the fencing. Time has resulted in the death of some of the weedy understorey Acacia, Powercorp has taken care of many of the Eucalypts (planted inappropriately close to the power lines!) and the barbed wire has been removed. This area is one I survey for 'Birds on Farms' and it surprised me how many species use even this narrow strip – possibly the mature Eucalypts and areas of reasonable roadside remnant nearby make it 'accessible'. No koalas yet, but these are using our driveway Eucalypts, much to our delight.

**Over 2014 – 2015** we planted 2,000 tubestock on the slopes – a broader mix of species and with far, far fewer Eucalypts than we had put into our early plantings. This time we were aiming for 'woodland' and understorey



trees predominate (think Wattles, Banksia, Hakea, Olearia, Pomaderris) but many shrub and robust ground layer species were included in the mix.

Next we tried some direct seeding lines, placed 30m apart to allow for more open spaces and addition of smaller species later. 'Successful' direct seeding tends to result in a linear forest of Eucalypt and Acacia species (these having abundant, readily available seed), so the loss of many early germinants due to inundation of the area and subsequent scorching of the next round resulted in a much more desirable density of plants along the lines. . . a better long term outcome!

**In 2016 – 2017** we added more plantings between the direct seeding lines – this time supported by 'Million Trees' funding. Tubestock was planted from April – mid-November (with careful attention to technique: they received NO follow-up watering as we don't revisit until the next Autumn, when we deal with any weeds around the plants and remove hardware).



**What was our aim?** To provide habitat for threatened species and an important 'node' to the Cobaw Biolink.

**How will we judge our success?** Bird surveys will show an increasing number of species using the area, including woodland species that depend on larger blocks of diverse vegetation. Fauna will be recorded in the area – 'captured' via night time spotlighting and motion-sensor cameras. Flora species planted as tubestock will reproduce within the area and establish more natural distributions.

**Alas** we will probably never be able to restore a rich ground layer – we now know we should have attempted this BEFORE we planted any larger species!! Dr Paul Gibson-Roy researched this and demonstrated it could be done in Australia (see article on recreating native grasslands in Newsletter #55 on NDLG website). In the United States of America a strong industry has grown, supported by Government policy, to recreate roadside grasslands.

Our approach had dramatically altered over the years, especially after hearing Stephen Murphy speak about sustainable landscapes (his book *Recreating Country: A blueprint for the design of sustainable landscapes* is available from the Landcare library). He describes 10 design principles for biorich native plantation.

**What has changed?** *Our plantings became more diverse* and considered as a potential food resource for native fauna

- the number of species included has increased
- attention is given to the number of genera and families included.

*And they got wider. 5m > 10m > 30m >>> hectares, for the joy of watching it transformed, and in the knowledge that it works. We can replace habitat lost due to historical clearing.*

*We took to 'cluster' planting – a minimum of 25 plants of any species planted in a cluster. This makes the revegetation area more 'natural-looking' and allows for better cross-pollination, resulting in more viable seed and a greater chance of natural regeneration in the area.*

*The number of structural layers increased – we finally started seriously on the ground layer!*

*We started to add missing habitat features to add diversity – bringing in large woody debris and 'toppings', adding rock.*

*We consider the need for permanent water and 'connectivity' to other areas of habitat.*

*And we were hooked by the results – areas we could lose ourselves in, delighting in close observance of 'nature'. Fledgling birds, flora species reappearing after years of heavy grazing and supposed loss to the areas. Koalas, Echidnas, Sugar Gliders, Possums and many bird species have been the first to use our recreated bush.*

*Native grasses are recovering and starting to take over areas previously containing Phalaris and Thistle. In Summer, a walk in the revegetation strip north of our drive results in a cloud of butterflies lifting from the flowering Sweet Bursaria, the sweet scent of the flowers is pervasive and a closer look reveals many iridescent blue native bees.*

***Congratulations Penny and Hilary – your work is an inspiration to us all.***



***The Build-your-own-nestbox workshop, with Miles Geldard, was held on 4 August and resulted in the production of 14 boxes.***

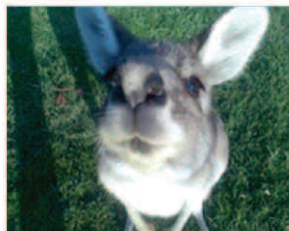
***Unfortunately time didn't allow them to be painted like the illustrated ones shown.***

***These boxes will be installed on private land across the Cobaw Biolink area, and monitoring will be undertaken annually using the pole camera purchased through the current Biodiversity On-ground Action grant.***





## Brigitte's Wildlife Blog



Wallabies, kangaroos and each and every one of all the other little hopping critters I have encountered are definitely at the top of the list of my favourite Australian animals. There is something with them that just melts my heart and triggers some ancient must-nurture desire in me.

I like birds too. They are colourful, sing and squabble and eat insects in my veggie garden. Mind you they also swoop me in spring, rip into my berries and pull out freshly planted seedlings. And over all those years as a wildlife carer I have cared for and raised a multitude of injured and orphaned birds.

But to properly identify them was never really my strength. Once I got this baby LBB (little brown bird) and thinking it was some sort of a wattlebird raised him on a diet of bananas and nectar mix. A few weeks later when he got a few more proper feathers I realised that it was actually a butcherbird, a meat eater. No wonder the poor sod gagged every time I fed him the bananas.



As my bird ID skills had never really improved I was more than sceptical when Karl announced that he had signed us up to participate in a regular formal "birds-on-farms" survey with Birdlife Australia. He had become really enthusiastic about birds after attending several presentations at Newham Landcare – the one about bird songs and fairy wrens with their 10 times our metabolism rate being especially memorable. And yes – our findings would go on a national database.



Luckily Birdlife Australia did send an expert to assist us and he immediately spotted, identified and recorded a huge variety of LBB's while Karl and I only saw little things zipping and chirping thru the canopy.

Even though I managed eventually to focus the binoculars long enough to get a quick glimpse of one of those tiny birds it was unbelievably difficult to properly see the difference between a Striated Thornbill, a Yellow-rumped or just a plain Yellow one.

So I invested in a snazzy camera with this almighty zoom as I intended to take all these photos and then leisurely identify the birds at home. Needless to say that I have hundreds of mostly blurry pictures of leaves, branches and bark with the occasional fuzzy image of something that could be a bird.

But occasionally I do hit the jackpot and get a lucky photo like the



one of a Yellow-tailed Black-Cockatoo, a juvenile Brown Goshawk or recently of a very special and unique visitor – the endangered Powerful Owl.

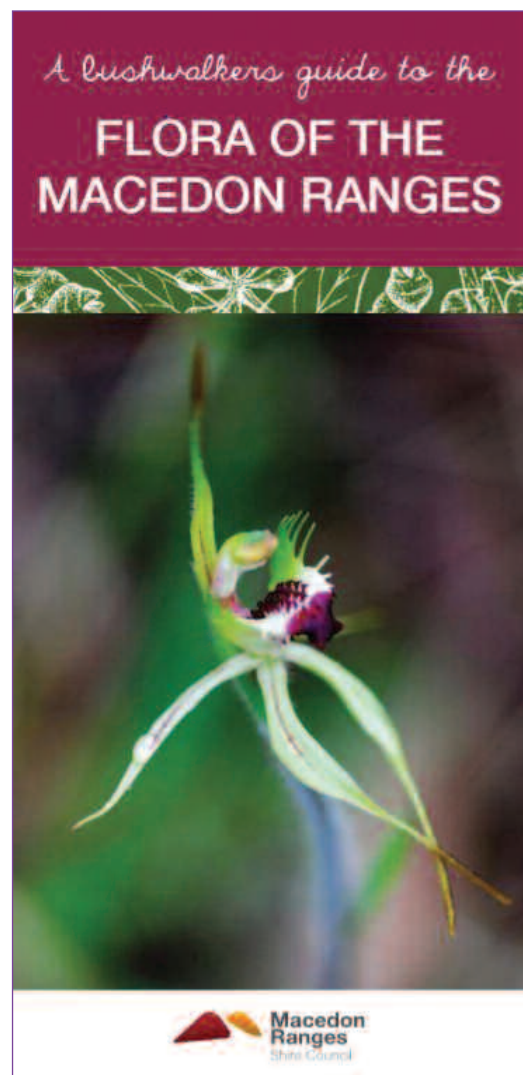
An expert from Birdlife Australia is still coming 4 times a year and assists us with the survey. We are now a pretty efficient team with her the identifier, me the spotter and Karl the recorder. But what Karl and I have learned is to be a lot more observant of our surrounds and tell-tale signs in nature. You never know what else might be hidden in Newham's canopy.



This useful booklet prepared by Macedon Ranges Shire Council says it is intended for beginners who are new to learning about indigenous plant species, but with good descriptions, photos and usage notes it's pretty handy for the initiated also. It contains only a small selection of the many hundreds of flora species found in the Macedon Ranges area but makes up a list of the most common species the bushwalker is likely to encounter, and can also be used to learn more about local plant species and their uses in a native garden setting. Contents include Trees, Shrubs, Parasite, Climbers, Herbs (wildflowers), Orchids, Lilies, Grasses, sedges and rushes, Ferns, Aquatic plants.

You can pick up a free copy from the Kyneton and Gisborne Administration Centres, Woodend Community Centre and Romsey Community Hub, or download from MRSC website or NDLG's Library page at:

<https://newhamlandcare.info/library/> under Native Plants.



# Walks in our area with a wildflower focus

*The following walks are some explored by the Newham Walking Group.*

## Shelton's Road, between Bolger's Road to Hennerberg's Lane Newham.

This roadside is one of the best for wildflower viewing in our area. The Landcare Weedies group have been systematically cleaning up the gorse and broom from the road sides and it is the only place which really shows the amazing variety of local wildflowers.



**Pink-bells (*Tetratheca ciliata*)**

Best viewed in November, there are flax-lilies, milkmaids, common rice-flower, pink-bells, clustered everlasting, creamy candles, chocolate lilies, bulbine lilies, common fringe-lilies, and blue pincushions, to name just a few.

**Creamy candles (*Stackhousia monogyna*)**



## Black Hill Reserve (just outside Kyneton)

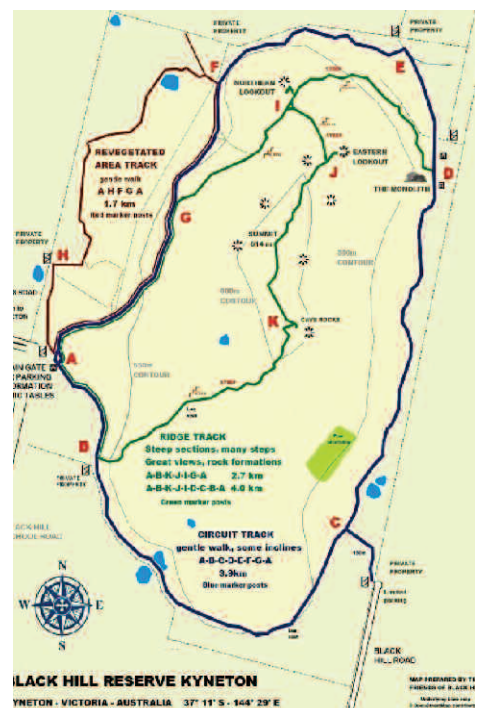
This walk is along signed tracks through natural and revegetated bushland and is full of wild flowers and local wildlife. There are magnificent views and imposing rock formations like The Monolith, one of the biggest granite features in Victoria.

While large sections of the reserve are still in a very fragile condition (after bushfire in 2015), walkers can see regeneration of native forest.

There are several walks available (check website) but dogs must be on a leash at all times. There are picnic tables but **no toilets or water**.

(From website)

**Circuit Track:** A gentle 3.9 km walk with only a few inclines. You might find it easier to walk in a counter clockwise direction, it just seems easier that way! Picnic tables are provided half way around the track, below the large Monolith rock in the north-east corner. Allow a good hour for this walk, more if you spend time enjoying the views or a picnic. In the spring look out for the wild flowers and orchids in the south-east section of this walk. Kangaroos are often seen in the paddocks adjoining the reserve, echidnas may be seen searching for ants, and sometimes





wallabies come down from the higher parts of the reserve. Find a rock or a fallen tree to sit on, and enjoy the many varieties of birds that are all around you.

**Ridge Track:** A more strenuous 2.7 km walk with some steep sections and well over 250 steps along the way. Going clockwise you will have a short steep climb between points 'I' and 'J' shown on the map, then an enjoyable stroll along the ridge. Going counter clockwise, there is a longer gentler climb between points 'B' and 'K'. You will encounter lots of rock formations, huge granite boulders sculpted by erosion, particularly around Cave Rocks and the Eastern Lookout. Explore off the track near the summit for some great views.

**Revegetated Area Track:** An easy 1.7 km walk through an area where 17,000+ trees have been planted. This planting has restored an area quarried for gravel back in the 1950s and 1960s. This is a popular area for kangaroos seeking shade in hot weather.

[https://www.visitmacedonranges.com/tourism\\_listing/black-hill-reserve/](https://www.visitmacedonranges.com/tourism_listing/black-hill-reserve/)

## Conglomerate Gully

123 Wheelwrights Rd, Riddells Creek Vic 3431

This is a nature reserve, located at the back of Riddells Creek where the Western Grassland Plains meet the hills of the Macedon Ranges. There are conglomerate rock formations and a small seasonal waterfall. The walk goes past much native fauna and flora including the rare tiger orchid. This 2.9 km walk can be completed within an hour and takes you through dry forest and grassy dry forest vegetation types. The parklands are home to kangaroos, echidnas and currawongs.

It is advisable to wear a good pair of hiking shoes and trekking poles as the track is very rough. There are no picnic tables but a small lean-to shelter. **No toilets or water.**

[https://www.visitmacedonranges.com/tourism\\_listing/conglomerate-gully-flora-reserve/](https://www.visitmacedonranges.com/tourism_listing/conglomerate-gully-flora-reserve/)

This is the first of a series of suggested walks in our area.

## Fran Spain.



*Do check out our new website. Helen is working on the Photo Gallery, you might spot yourself! Our area has some of the most beautiful flora, birds and wildlife in Australia – consider sending her your photos to showcase here, [orseda@outlook.com](mailto:orseda@outlook.com)*

*And if you have a story, helpful hint or photo you would like to share with members in the newsletter, please drop Helen or Penny a line. Alice Aird for example, has written the article on page 19 recording her experiences with the European Wasp.*

# Helen's Snippets from Connecting Country

Connecting Country in Mt Alexander Shire has a marvellous website <https://connectingcountry.org.au/> Its posts are worth signing up to. For example they have great series of videos via <https://connectingcountry.org.au/connecting-with-videos/>, such as 'Make a Rabbit Bait Station', 'Applying traditional fire knowledge to pasture management, 'Agroforestry and Landcare'.

Here are some posts I've enjoyed.

## Listening to Nature: a sonic landscape

Do you love listening to nature? If so you might like the first video featuring nocturnal bird calls from the Mount Alexander region (our Newham area has most of the birds recorded) using song meter audio recorders – at <https://connectingcountry.org.au/listening-to-nature-a-sonic-landscape/>

It was a 'Communities Listening for Nature' project run by Victoria National Parks Association (VNPA) in partnership with Museums Victoria and assistance from Connecting Country.

Some of you may remember a Newham Landcare evening with naturalist and sound recordist **Andrew Skeoch** of Listening Earth in November 2017. At the website you can listen free to arrange of natural soundscape recordings from around the world, the Australian ones are marvellous. As I write I am listening to the Pied Butcherbird, renowned as being among the most musical in the avian world, recorded by Andrew at Ormiston Gorge. Go to <https://www.listeningearth.com> – at the Explore menu it looks as if albums are only for purchase but each one has a free sound clip, notes and accompanying photos by his partner Sarah Koschak.



## Frogs

Many of us signed up to the **Frog Census app** at Melbourne Water after a froggy evening with Richard Akers in September 2016 at Newham – see Grandma Penny's article in Newsletter no.48 p.10 about the fun she had with a grandson using the App. [https://newhamlandcare.info/wp-content/uploads/2019/01/48-NDLG-Newsletter-Spring\\_Summer\\_2016.pdf](https://newhamlandcare.info/wp-content/uploads/2019/01/48-NDLG-Newsletter-Spring_Summer_2016.pdf)

Since then **FrogID**, Australia's first national citizen science frog identification initiative has reported on the data from its first year at <https://connectingcountry.org.au/frogid-apps-first-year-what-the-data-tells-us/> You can use this App to create a profile, record frog calls and match your calls to the frog calls on the app, then upload your records to the Australian Museum frog experts for species verification. The app has generated the equivalent of 13% of all frog records collected in Australia over the last 240 years. The submitted recordings have resulted in over 66,000 validated calls and detected 175 of Australia's 240 known native frogs. The data has provided information about:

- Impacts of climate change and pollution on Australia's frogs including the first evidence of the decline in Sydney of the Australian Green Tree Frog.
- Spread of the invasive Cane Toad.
- Breeding populations of 28 globally threatened and 13 nationally threatened frog species.

Get the app at <https://www.frogid.net.au/>

## Safe Cat, Safe Wildlife

This is an initiative from Melbourne Zoo and the RSPCA with Birdlife and Wildlife Victoria as official campaign collaborators, with a growing list of supporters signing up. It aims to provide cat owners with the latest advice, tips and tools to keep their cats safe at home without roaming and destroying wildlife. Would that our Council would not delay the cat curfew until July 2020!

See the website at [www.safecat.org.au](http://www.safecat.org.au)



# Newham rainfall report

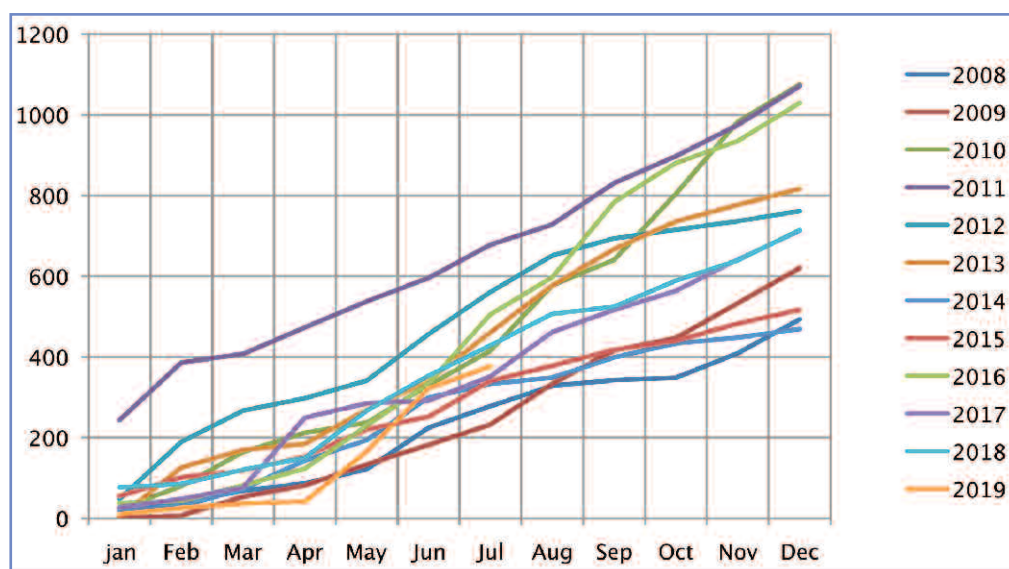
**Nick Massie**

Rainfall this calendar year to end of July is 376.8 mm. Heavy rainfall events in May and June compensated for the very low rainfall for the first 3 months of the year, returning the accumulated totals to the average. In August to 15th rainfall has been 42 mm with a lovely snow event on 11 August.

The table below lists the monthly totals since 2008.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>2008</b>	25.5	12.5	30.5	18.0	35.0	103.0	53.5	50.5	14.0	6.0	60.5	84.0	493.0
<b>2009</b>	0	7.0	46.5	28.0	52.0	48.5	50.5	101.0	82.5	31.0	86.0	87.0	620.0
<b>2010</b>	23.5	56.0	85.0	47.5	25.0	93.0	85.0	162.5	63.0	163.9	178.4	92.0	1074.8
<b>2011</b>	243.4	142.4	21.6	65.6	64.5	58.3	82.2	50.2	102.6	66.6	77.4	96.2	1071.0
<b>2012</b>	47.6	141.8	77.6	30.6	43.8	115.0	104.4	90.4	42.6	21.4	21.0	25.2	761.4
<b>2013</b>	3.6	122.4	43.2	15.4	85.0	71.0	120.2	116.4	90.2	68.0	41.4	39.6	816.4
<b>2014</b>	18.2	11.2	43.6	70.2	50.6	105.6	33.8	15.6	49.8	34.8	14.6	21.0	469.0
<b>2015</b>	55.2	46.4	16.2	35.8	66.4	32.0	88.6	37.4	39.4	22.4	42.8	34.2	516.8
<b>2016</b>	37.6	5.2	38.8	41.4	106.6	105.6	170.0	92.2	186.0	97.4	54.2	94.6	1029.6
<b>2017</b>	27.0	21.0	28.2	173.2	35.6	7.0	59.6	110.0	55.0	47.0	78.0	70.6	712.2
<b>2018</b>	76.8	8.2	35.4	29.4	117.0	86.8	74.8	78.4	17.4	64.8	50.4	75.0	714.4
<b>2019</b>	10.2	15.4	11.0	4.6	124.8	156.2	54.6						376.8

The cumulative monthly totals are below.



## Did you Know?

**The wind doesn't make a sound until it blows against an object?**



## BOOK REVIEW

# SLUDGE

## DISASTER ON VICTORIA'S GOLDFIELDS

The fascinating, troubling legacy of the gold rush.

Everyone knows gold made Victoria rich. But did you know gold mining was disastrous for the land, engulfing it in floods of sand, gravel and silt that gushed out of the mines?

Or that this environmental devastation still affects our rivers and floodplains? Victorians had a name for this mining waste: 'sludge'. Sludge submerged Victoria's best grapevines near Bendigo, filled Laanecoorie Reservoir on the Loddon River and flowed down from Beechworth over thousands of hectares of rich agricultural land. Children and animals drowned in sludge lakes. Mining effluent contaminated three-quarters of Victoria's creeks and rivers.

Published by BlackInc Books and launched on 9 August 2019 at La Trobe University.

In February this year Professor Susan Lawrence gave a presentation at Newham on the disastrous legacy of the gold mining era. Massive amounts of tailings (sludge) swept across many floodplains and was a big issue for farmers in Victoria. The original braided floodplains and chains of ponds, and the pastures and crops on this most fertile land, were replaced by infertile sludge that filled in the valleys then rapidly eroded into incised creeks with water tables well below the surface.

Susan said that *'We look at our rivers today and we know there's been a bit of damage but we think they're pretty nice, natural places'* but *'75% of Victoria's catchments were affected by mining waste'* and *'in the 19th century they resembled the current images of mining seen in third world countries where there are no environmental controls'*.

**Can you visualize a 650 million cubic metres?** This is the volume of sludge that was dumped into the waterways of Victoria by the gold mining industry in the period 1851–1900. On top of that another 175 million cubic metres was the result of bucket dredging between 1900 and the 1950s. (Try this... if it were spread 100m wide and 10m tall it would extend from Melbourne CBD almost to Sydney).

Dr Lawrence is an industrial archaeologist and directed the **Rivers of Gold project**. The project was a collaboration between archaeologists, geomorphologists and geochemists (La Trobe University, University of Melbourne and Lincoln University UK). The project evaluated the legacy of gold mining tailings at catchment scale in the Loddon, Ovens and Leigh river catchments. It identified and reconstructed the pre-European floodplain surfaces in mining-affected catchments and through this modify our understanding of 'reference condition'.

Mining sludge was a major issue for farmers who saw their land being covered – often repeatedly – by the sludge. Numerous petitions were sent to the State Government seeking that tailings be retained at mine sites and that their water supplies will be *'free of injurious polluting influences placed in it by the gold mining companies'*. Such petitions were included in several inquiries and royal commissions into the sludge question.

The techniques used to extract gold varied in different districts, but all used water. The total amount of alluvium produced between 1851 and 1900 was 650 million cubic metres. In addition, the goldfields were denuded of vegetation and that would have added to the sludge entering local waterways. Bucket dredging undertaken between 1900 and 1955 produced around 175 million cubic metres of sediment.

As a result, complaints about the sludge damage were widespread along all the main river valleys where mining occurred across Victoria. The degree of damage can be seen in this photo of Leigh River at Shelford in 1909. Farmers recorded building fences above fences above fences, as the depth of sludge increased.





*Leigh River at Shelford, 1909.*

Along these waterways the natural chains of ponds and braided valleys were filled with sludge and the waterways became deep gullies sliced through the sludge and underlying valley deposits. The watertables were now well below the land surface. With the original vegetation covered with sludge, the diversity of plants was reduced with a few older surviving red gums poking up through the sludge. *'This is part of our legacy from that time'*. Peter Mitchell, Board member Biolinks Alliance.

The Biolinks Alliance was formed in 2010 by community conservation groups in Central Victoria in recognition that in order to halt environmental and species decline in Victoria, large-scale landscape restoration was necessary. This scale of work would require coordination of effort, knowledge as well as new and innovative approaches.

The Alliance is currently comprised of 18 member networks, including the two networks that Newham & District Landcare participates in (Upper Campaspe and Upper Deep Creek Landcare networks). The reach of these groups is from the Grampians across to the Australian Alps and from the Dividing Ranges to the Murray River.

The Biolinks Alliance has identified a unique role for itself as a capacity and partnership building organisation that will ensure that the significant momentum there is for community-driven conservation on public and private land in Central Victoria is supported, coordinated and amplified.

**The Knowledge Hub**, on the Biolinks Alliance website [www.biolinks.alliance.org](http://www.biolinks.alliance.org) is being developed as a clearing house of science and practical know-how needed to protect, restore and connect central Victoria's special species and important places in the smartest and most effective ways. Since 2016 the Biolinks Alliance has held annual symposiums and summaries of these are available online, including the 2018 symposium on 'Water: the great connector' at which Susan Lawrence was a presenter.

Our next newsletter will have a report on their 2019 symposium 'Bolstering the refuges' in Euroa, which I attended with Helen and Ian Scott.

**Penny Roberts.**



*Loddon River at Baringhup, eroded bank shows depth of sludge.*

# Exploring what changes can unfold when predators are excluded from our ecosystems

On 12 July we again welcomed Mark Bachmann, Principal Ecologist and Manager of Nature Glenelg Trust, to talk about forgotten fauna and the relationship between small mammals and predation.

Mark's talk was a real 'ear-opener' and as is usual with new research, causes us to question assumptions and 'accepted wisdom'. I've added some extra comments largely from Mark's posts on Nature Glenelg Trust's website.

He set the scene by defining the problem of 'Shifting Baselines': they shift with every generation because humans have short-life-spans and faulty memories. In other words what we see as pristine would be seen by our ancestors as hopelessly degraded. Compare this to the stories/memories of indigenous people, especially in northern Australia where traditional cultural knowledge is uninterrupted.

Mark's childhood interest was Australian mammals, especially quolls. His Honours thesis studied the Swamp Antechinus in South Australia, eventually trapping either side of the Glenelg River near the Victorian / SA border from 2001, finding a great diversity of small mammals, including four species of Antechinus, in Lower Glenelg River Conservation Park, an area of intact SA bushland wedged between the river and lower Glenelg National Park in Victoria. However, his ongoing trapping and monitoring in the same area from 2007 to 2018, during period of targeted continuous fox control (via a Victorian Government program called Glenelg Ark) showed that numbers have declined for almost all species of small mammals: Antechinus, Potoroos, Bandicoots, Bush rats – but Brushtail possums have increased.

Australian ecosystems evolved with intense top-down predation and competition – Aboriginal hunting and predation, Thylacines which were on the mainland until 4,000 years ago, the Devil until several hundred years ago, and the Eastern quoll until 100 years ago, being very common before then; the Tiger quoll is now functionally extinct. The three specialist mammal predators 200 years ago when Europeans arrived were the dingo, tiger quoll and eastern quoll.

## The modern players:

- **Dingoes** displaced Thylacines and Devils from ca. 4,000 years ago until the 1840s but have been fenced, hunted, and poisoned to extinction, mostly to protect livestock, by 1900 in south-eastern Australia.
- **Foxes** were released in 1871 and quickly assumed the position at the top of the food chain, (noting that wolves regulate them in Europe), and within 20 years the Eastern quoll, Tasmanian pademelon and Eastern bettong had virtually disappeared in Victoria after the fox arrived in the 1880s and 1890s.

Mark made a strong point that modern science needs to use social research methods such as newspaper records: local papers were full of reports of how prolific 'native cats' (Eastern quolls) were in the days of white settlement.

- **Cats** have been in Australia since earliest European settlement and have co-existed with Devils in Tasmania where no small mammal extinctions have occurred (yet). However they are no longer suppressed by Dingo or Fox behaviour in the Glenelg Ark project area (the subject of Mark's research),





and in that area have become the joint top scale predator – with:

- **Brush-tail possums.** Since 2005 in the Lower Glenelg area, because of the absence of foxes, which were then controlled by baiting programs (Glenelg Ark), the behaviour and abundance of brush-tail possums has dramatically increased. As an omnivore, the possum now appears to be behaving as a top-order predator in the Lower Glenelg area.



Mark then posed the question: ‘What is the function of predation in an ecosystem?’ Having seen that the removal of foxes, without replacement by a native predator, has had knock-on unforeseen, ‘cascading’ effects.

### So what next?

Do we keep trying to suppress feral species? OR Trial alternatives for a self-sustaining solution?

People have very ‘black and white’ arguments about predators in our landscape. The argument is often that the only way to curb the impact of feral predators on our native fauna is for humans to try to eradicate or continuously suppress them. This is a very expensive, never-ending exercise and any benefit that is derived (outside of islands, exclosures or fenced peninsulas) is not lasting if you stop intervening, due to rapid recolonization from the surrounding landscape. However, inside large exclosures, such as those managed by Australian Wildlife Conservancy, you can also end up with an overabundance of some threatened species like the bettong due to there being no predation pressure at all – a bit of a conundrum! (<http://natureglenelg.org.au/an-interesting-article-on-the-devil-and-a-possible-influence-on-feral-cat-behaviour/>)

Mark summarised his work in the Lower Glenelg River Conservation Park, a small South Australian reserve, and in Lower Glenelg National Park in Victoria. The Glenelg Ark project covering these areas has been successful in meeting its goal of controlling foxes via a comprehensive baiting program but this has not resulted in clear



*Eastern quoll*



ecological improvements – a series of unforeseen impacts on the small mammal community are now being observed. He argues that the perfect ingredients for a trial are now in place to restore function plus declining and lost mainland species. Much of Victoria is an ecosystem out of balance and without the normal regulating effects caused by native predators – note the proliferation of kangaroos.

### Who are the only real candidates?

The Dingo? They are lost from most of Victoria where they are still considered a pest and while they have been shown to help restore some arid ecosystems in other States, there are still problems of grazer and community resistance, cross breeding with dogs.



*Southern brown bandicoot*

Guardian dogs such as Meremmas? These have a proven role in farming. Could they be used to regulate the impact of kangaroos and provide a protective effect from foxes and cats in some circumstances for biodiversity benefit?

Devils? They are a missing mainland species. Tasmania is a reference point because it still has populations of species lost from adjacent temperate areas of the mainland. The Devil for 200 years repelled foxes, regulated cat behaviour and helped protect the loss of small mammal species like quolls. When released on Maria Island (off the coast of Tasmania), they caused an immediate change in Brushtail possum abundance and behaviour (they are back up the trees, rather than foraging on the ground). Negative cascading effects are being seen on mainland Tasmania however where Devils are being lost to ecosystems due to the facial tumour disease.

University of NSW research suggests the possibility of rewilding with Devils from Tasmania and this is further explored at [http://natureglenelg.org.au/wp-content/uploads/2015/04/Can-Tassie-devils-control-feral-cats\\_-The-devil-is-in-the-detail.pdf](http://natureglenelg.org.au/wp-content/uploads/2015/04/Can-Tassie-devils-control-feral-cats_-The-devil-is-in-the-detail.pdf)

Mark asks 'While Australia still has the devil (a threatened species in its own right), we have the opportunity to give this concept a try – what do you think? It is a long shot, but do we really have anything to lose?'

Mark concluded with a brief update on the wetland restoration project at Walker Swamp, the subject of his talk to us at last year's AGM (see Newsletter no. 24, Spring 2018 p6-8, [https://newhamlandcare.info/wp-content/uploads/2019/01/54-NDLG-Newsletter-Spring\\_2018.pdf](https://newhamlandcare.info/wp-content/uploads/2019/01/54-NDLG-Newsletter-Spring_2018.pdf)).



*Brushtail possum*

Since then, Blue gums have been removed (with a small amount of income made from the timber), a secure boundary achieved by repairing fencing, most drains filled to restore wetland and flood plains, an outflow regulator restored, and a bird watching tower put in place. The appeal target of \$150,000 to clear the land purchase debt is nearly there (Newham Landcare has contributed).

NDLG members are invited to the celebration of World Rivers Day at Walker Swamp on Sunday 29 September. <http://natureglenelg.org.au/>

**Helen Scott.**





## What to do about wasps – and why

Recently we had a European wasp nest in the wall of our house and could see them flying in out and out in great numbers. The nest entrance was visible and accessible, just a crack that had opened up between the weatherboards. The pesky things were getting inside regularly but not really bothering us, until one morning at breakfast, I put my hand on the arm of my chair and was stung – it hurt like hell! But more seriously, our baby grandson Mac was in the house and it could easily have been him. Time to do something.

After researching, I decided to buy Yates Ant and Wasp Dust (active ingredient 10g/kg permethrin) from Home Hardware in Kyneton and got some good tips from the assistant too, such as to not seal the hole until after the nest had no wasps going in and out. If you block their escape to the outside immediately after treatment you may drive them to find another way out of the wall and into the interior of the house. Next day, after dark when there was no activity, Bruce puffed the dust into the crack. In the morning we were amazed to see only one or two wasps near the hole and they seemed disoriented. We repeated the process the following day to make sure. After a couple more days of seeing no wasps going in or out we sealed the crack with a gap sealant gun. And that was that. EXCEPT that after researching the toxicity, I found it is not toxic to humans, slightly toxic to dogs and very toxic to cats. Be warned if you have a cat – we don't.

There were still wasps about so I went looking further afield and noticed lots buzzing around two willow trees about 50 metres below the house, apparently feeding on something. I wanted to record this activity and the location so I searched on my phone for an app. (inspired by recent experience with the FeralScan app. that Sue Barker introduced a few of us to for mapping and tracking rabbit activity and control). Guess what, I found a wasp app! It's called eWasp. I downloaded it there and then in the paddock, and reported the feeding activity around the willows, which was quite easy to do. Over Easter I forgot all about the app. and was very surprised to receive a personal call in response to my reporting of the wasp activity, from Jim at CoreEnviro Solutions. CoreEnviro Solutions are based in Canberra and contracted to the ACT Government to run the eWasp app. and Wasp Hotline. They have voluntarily taken on mapping the European wasp Australia-wide, so as to gather data that can be used to lobby governments for funding to control the problem.

In conversation with Jim I learned a lot. Firstly that the wasps swarming around the willows would be feeding on the honeydew produced by scale insects on the trees. Apparently they like to feed first on a carbohydrate such as honeydew, then fly a search pattern to find protein. To find the nest Jim suggested putting out some cooked chicken (white meat preferably, as the colour makes it easy for them to find) about 50m from where they're feeding. They will chew off pieces and head straight back to their nest. If



you watch for 10 minutes or so on a fairly still day you can see a stream of them heading home and you can follow them to find the nest. I haven't had a chance to try this yet!

Wasp facts that will make you want to get rid of all the nests at your place.

- \* Each nest can have up to 1,000 queens, 300 of these queens are likely to survive predation by large birds and rats, 30 queens will make a viable nest.
- \* Research in Australia has been minimal, no government has funded it properly. New Zealand in contrast has done extensive research, see: <https://www.landcareresearch.co.nz>
- \* Wasps compete with native species for honeydew and also feed on insect larvae and adult insects and spiders, which are food for many native species. The impacts on biodiversity are devastating. For example, in a New Zealand beech forest study 8–34 wasp nests per hectare were found and an average biomass of 3.8kg of wasps per hectare which is greater than the combined biomass of birds and (introduced) mammals. Wasps by competing for the honeydew can also affect nutrient cycling to microorganisms in the soil and soil solution chemistry in beech forests.

We need similar studies in Australia! There's no reason to think that the effects here will be any less than in New Zealand.

The eWasp folks discourage DIY destruction of nests as they say it's very often not done effectively. I want to hear how NDLG members are successfully treating pest wasp nests. I'm sure we Landcarers can do it well if we share our experience!

I encourage everyone who sees wasp activity to download the eWasp app and do their bit to map and control this pest species. It may be too late in the year now, but let's get ready for a big effort to tackle the European wasp in the spring.

### Alice Aird

P.S. NDLG encourages 'letters to the editor' for the next issue on your thoughts and experiences. Send to Helen or Penny.



### Smoke Identification Unit — now available for use by members.

Identifying every opening in a rabbit warren is critical to successful fumigation with Aluminium phosphide tablets. Even a small opening will allow significant quantities of the gas to escape and reduce the effectiveness of fumigation.

The Jensen Smoker Unit is powered by a modified Stihl BG65 Leaf Blower. Oil is fed into the exhaust manifold and then transferred to the main airflow in order to produce a high flow of smoke.

Fumigation / ripping of warrens is an important component of an integrated rabbit management plan, as is the elimination of 'safe harbor'.

For advice on rabbit control contact our pest co-ordinator, Sue Barker, on 0417933385.