NEWSLETTER NO 43 DECEMBER 2022

http://www.devilbendfoundation.org.au/

Bunurong Country

From the President

G'day one and all, as 2022 draws nigh we begin to think about 2023, with many making rash resolutions that will fail to reach fruition. Congratulations to those who do not normally fail. I do not count myself in that category!

Will we achieve more than we did this year, about the same or procrastinate in our daily lives? "Procrastination is the thief of time", so the saying goes, however it does catch up eventually. I remember when the European wasp first appeared and at the time you could contact your council who would send someone to remove them. That stopped after a relatively short time and generally afterwards, for whatever reason, people with wasps didn't bother doing anything should they find the nest. Nowadays the European wasp is in the too-hard basket along with fire ants and Argentine ants et al.

The Devilbend pittosporum population is being dealt a minor blow with the ongoing work by FOD, but there's so much more of it across the reserve. Spanish heath and blackberries look about to reach the too-hard basket: with too few boots on the ground and lack of sufficient funding, plus the needs of the other Parks Vic peninsula reserves, create a thinly spread workforce. I imagine it must be difficult for PV staff who see things that need attention but are unable to deal with them due to lack of resources. But still, I say good on you for what you do manage to achieve!

A random act of kindness

After a recent waterwatch day I was chatting with Adam Magennis who was adding to, and repairing the artwork on the DB picnic ground water tank when a nearby picnicker brought him some lunch. It's good to see kind people are about and lovely to see such acts firsthand.

When completed, the tank artwork will have a sealant applied to protect it from the weather and further tagging.

I'd like to take this opportunity to thank the newsletter contributors. And thanks to the FOD Bush Maintenance Team for turning out in all weathers; not forgetting the Waterwatch Team which deals with fluctuating water levels, mud, wind, drizzle, flies and mozzies. What a sterling lot you/we all are!

Marnie Fitzsimons

President

Contents

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2021-2022 DFI Council:

Marnie Fitzsimons (President & FOD Co-ordinator), Jill McIver (Secretary), Sue Milton (Treasurer), Jamie Edgerton, Liz Sarrailhe Michael Mann, Annabel Richards.

The following 2021-2022 member groups are represented on Committee:

Birdlife Australia; Friends of Kangerong Flora Reserve; Mornington Environment Assn.; Peninsula Field Naturalists Club; Southern Peninsula Indigenous Flora & Fauna Assn; Westernport & Peninsula Protection Council, BERG

To join the Friends of Daangean (FOD) contact Marnie Fitzsimons devilbendfoundation@gmail.com

EDITORS NOTE

On a wander around Bittern Reservoir after all the rain in November I discovered a Horned Orchid beside the catch drain. It was the first I've seen and most impressive. The kangaroo grass on the Bittern wall moved in waves in the winds. I suppose it's all been mown now just before seed drop.

FOUNDATION NEWS

FRIENDS of DAANGEAN (FOD)

September 24th was Grand Final Day between Geelong and Sydney and, not being a footy fan, I can't remember who won. Five of us got into stuck into the weeding task: Sue M, Annabel, Roger, Les and myself. I struck a patch of gorse seedlings and small bushes, and sallow wattle. I laboured in this gorse patch but it wasn't as satisfying as seeing a trail of fallen pittos in one's wake. The rest of the team was engulfed in the pitto forest but emerged unscathed at smoko. Annabel and I brandished our bush finds; she a plastic bucket and me a bent metal bucket full of bullet holes. The buckets weren't quite as exciting as the pushbike Annabel and Graham found in the water on one waterwatch occasion.

Fringed Lily - ***MF***

Common Everlasting with Moths - ***MF***

The weather was fine and pleasant with lots of spring activity.

November Team- Roger, Sue, Annabel & Marnie - ***HW***

October 29th was to be the next bush maintenance day. However, due to the raging winds I called it off on the Friday due to the dangers of working among large trees. As it turned out the Saturday was fine and the highlight of the day, if you could call it that, was the death of Jerry Lee Lewis aged 82.

November 26th had a team of five who managed to do good works, as usual. Spring flowering plants were: Stipa, et al, kangaroo grass, bluebells, native violets, budding dogwood and a small grass tree with its cream-coloured spike pointing skyward. Towards knock-off time the day became quite hot. Hansi called in after his turtle survey session.

December Team with Gold Doubloons for Services Rendered - *MF*

Woodland Break Gahnia Free of Pittosporum - *MF*

After returning the weeding equipment to the MW lockup I went to Bittern Reservoir to check on the horned orchid for further flowering development. The bottom flower was out and the next one up was just starting. The stem was about 35cm high and stood on its own beside the catch drain. The dam wall was a waving mass of kangaroo grass. *Disa bracteata* was growing on the dam wall and I managed to get all but one of them, then later a good number at the picnic area surrounds. Over two sessions at Bittern I removed 41 of the orchids. While at Bittern I saw the White-bellied Sea Eagle circling over the low-lying ground beside Hodgins Rd normally dry but now with water. The last time I saw water lying in this area

would've been in the 1990s.

December 10th was a weed sweep day to make up for missing the October session. Seven of us fought our way through the Gahnia, which I think dislikes any mammalian creature. There were more pittos in that section of Woodland Break than I thought there would be, but most only required the loppers. Some were bearing very green fruit; however, there were no tiny seedlings to be seen; a very good thing as it was around five years ago that we were in this particular section. Jack dealt with some cape wattle that were growing to some size, but through the bush towards Woodlands Rd more of them were visible above the undergrowth. I feel the day was a fruitful one.

Before returning the equipment I went seed collecting. The Stipa was ripe enough to collect, however the kangaroo grass was still flowering. Hansi called in after fetching some of his turtle mesh spikes that had been used as darts and were thrown across the catch drain. He gave me a hand to put away our gear. He said mowing had taken place everywhere and the kangaroo grass on Bittern dam wall was gone too, which meant so too was the horned orchid.

Marnie Fitzsimons

DEVILBEND TOXICOLOGY STUDY NEARING COMPLETION

In the last DFI News, we reported that the Toxicology Study of Devilbend Reservoir had finally been initiated after extended delays. A research arm of RMIT University, AQUEST, had been engaged to undertake the study, in collaboration with our Friends of Daangean group. Sediment samples were taken in August at four sites around the reservoir. Comparable sediment samples were taken at a control site in the upper Yarra region.

Amphipod

Samples of the collected sediments were sent by AQUEST for chemical analysis to test for the levels of pesticides, metals and hydrocarbons. The toxicity of the sediments was further measured by rigorous laboratory tests involving the use of small freshwater crustaceans (Amphipods, see accompanying photo), These were allowed to feed for 5 days on the sample sediments in glass beakers under controlled conditions, The Amphipod survival rate in each of the many test beakers was then measured.

AQUEST has submitted a draft report to DFI. This will be reviewed by DFI committee members and Parks Victoria before being finalised early in the New Year. The results will be reported in our next edition of DFI News.

Jamie Edgerton, Devilbend Toxicology Study Coordinator

VOLUNTEER WATER-QUALITY SURVEYING

Submerged Ambassador Seat - *MF*

Waterwatch Report

The waterwatch team has been heading out each month to do our regular water sampling and testing. On last couple of outings the weather has been windy and

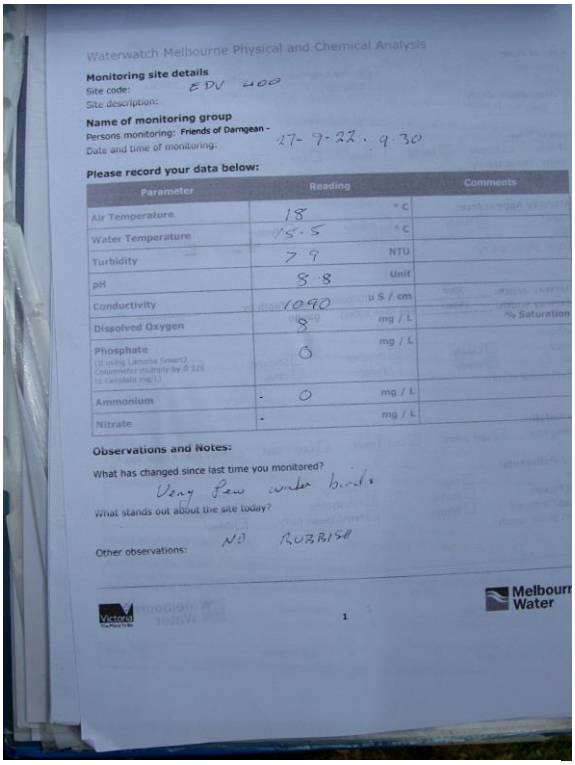
Helen, Marnie & Annabel Weathering the Weather - *GW*

wet making it a bit less pleasant than it could be. With the water being at the highest level that I have seen it since starting monitoring, it is a challenge to get to our normal testing sites as the pathways are very muddy and underwater, requiring us to put on our gumboots and make our way very carefully through the water and mud. Also, the grass has not been mown for some time and is very long making it difficult to walk or drive through to get to the sites. At the site near the fishing platforms some timber seats had been installed well away from the edge of the water, but and are now almost submerged.

Discarded Fishing Line - ***GW***

With summer on its way the water levels are sure to drop fairly quickly. Perhaps with climate change etc. this may very well be the new normal. All the water that flows from the surrounding paddocks and through the scrub ends up flowing down the catch drains and into the creek below the dam wall, so it does not have any impact on the water quality of the main reservoirs, which is still very good.

The final WW survey for 2022 was on December 20th. At Site 1 (EDV 400) at the fishing platforms a very large and healthy-looking goldfish was spotted amongst the Cumbungi. Rubbish was spotted around the edge of the quarry at the platform. Some of the fishing people are behaving irresponsibly and leaving line around for bird entanglement.



Waterwatch Melbourne Physical and Chemical Analysis

Monitoring site details
Site code: EDV 400
Site description:

Name of monitoring group
Persons monitoring: Friends of Darngean -
Date and time of monitoring: 27-9-22. 9.30

Please record your data below:

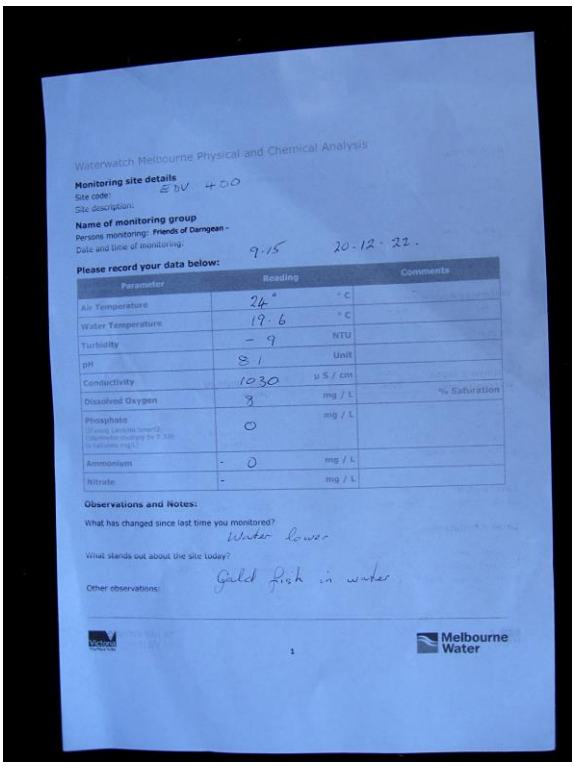
Parameter	Reading		Comments
Air Temperature	18	°C	
Water Temperature	15.5	°C	
Turbidity	79	NTU	
pH	8.8	Unit	
Conductivity	1090	µS / cm	
Dissolved Oxygen	8	mg / L	% Saturation
Phosphate (if using Lamotte Smart3 Colorimeter multiply by 0.326 to calculate mg/L)	0	mg / L	
Ammonium	- 0	mg / L	
Nitrate	-	mg / L	

Observations and Notes:
What has changed since last time you monitored?
Very few water birds.
What stands out about the site today?
Other observations: NO RUBBISH

1

Melbourne Water

September WW Sheet EDV 400 - ***MF***



Waterwatch Melbourne Physical and Chemical Analysis

Monitoring site details
Site code: EDV 400
Site description:

Name of monitoring group
Persons monitoring: Friends of Darngean -
Date and time of monitoring: 9.15 20-12-22.

Please record your data below:

Parameter	Reading		Comments
Air Temperature	24	°C	
Water Temperature	19.6	°C	
Turbidity	- 9	NTU	
pH	8.1	Unit	
Conductivity	1030	µS / cm	
Dissolved Oxygen	8	mg / L	% Saturation
Phosphate (if using Lamotte Smart3 Colorimeter multiply by 0.326 to calculate mg/L)	0	mg / L	
Ammonium	- 0	mg / L	
Nitrate	-	mg / L	

Observations and Notes:
What has changed since last time you monitored?
Water lower
What stands out about the site today?
Other observations: Gold fish in water

1

Melbourne Water

December WW Sheet EDV 400 - ***MF***

WW Team Performing Careful Works - *MF*

The water levels are still high at both dams with gumboots being necessary footwear. Melbourne Water is doing works in the area where we go in to Devilbend Site 2 (EBI 100). One of the workmen came down to us, curious as to what we were up to. At least by the workmen and their vehicles being in the vicinity the gate, normally difficult to unlock, was open so we could merely drive in to where we set up the table and equipment.

Cheers *Graham White*

Macroinvertebrate Monitoring

On Tuesday 29th November we headed off to Devilbend and Bittern reservoirs to carry out the spring macroinvertebrates monitoring. It is normally carried out twice a year: once in autumn and again in spring. The testing had not been done for a while as the previous group doing it decided not to continue with it. The bugs in the water also give a good indication of water quality and diversity in each reservoir. Because the water levels are very high, we had to carefully make our way to a suitable area in our gumboots to get some samples with the water threatening to flow over the tops of our boots.

With the samples taken it was back to our worktable and equipment to separate and identify the different types of bugs. Devilbend had a small variety of different bugs but large numbers of each, whereas Bittern had a greater variety but each not in such numbers. It will be interesting as the water drops over summer what the difference will be with regards to the different species and numbers.

Annabel's Legs on the Track to WW Site 2 - *MF*

The weather on the day was cool and wet, so we may consider doing another test day in better weather. Near the fishing platform at Devilbend we sighted a snake which slithered into the grass beside the water and disappeared: so now the snakes are active we all need to be alert.

Graham White

Graham was nominated as the MI sample collector and the rest of us were ready to plunge in to save him if he sank out of sight. Fortunately for all nothing so dire occurred. At the fishing platform site (EDV400) rain threatened so we packed up the equipment and did the survey under cover at one of the picnic tables, where we were dry: but the wind did its best to blow away the paperwork. It also kept moving the water surface, so it was difficult to see the very tiny lifeforms. Gambusia was the most prevalent aquatic species at Devilbend.

Captive Gambusia - *MF*

At Bittern the best access to reeds was from the rocks at the base of the dam wall (EBI200). The critters need to be gathered from among the base of the aquatic plants where they mostly live. The Bittern water sample produced a leech, which made is way around the tray looking for an escape route. It was brown, flat and larger than those that fall out of trees onto you and also find their way into your socks. Graham removed a *Disa bracteata* from below the waterline, however, several more growing well above the water were also removed.

A purple swamp hen cautiously passed by at a discreet distance, and reed warblers were vocal in the Cumbungi growing in the water.

Marnie Fitzsimons

BIRD MONITORING REPORT

Spring is here at Devilbend and Woods Reserves

Roger Richards 16 December 2022

Competition for nesting hollows, brood-parasitic cuckoos, roadkill and koalas

As Devilbend and Woods Reserves are adjacent, we count the birds about the same time monthly. This is our 18th year.

Spring is an exciting and busy time. Birds compete for nesting sites. Nest building occupies many hours and days. Small dome builders such as fairy-wrens, thornbills and scrubwrens must be wary of cuckoos.

At Woods Reserve a Striated Pardalote had nested in a small tree hollow. But that same small hole has captured the interest of both a pair of King Parrots and some Crimson Rosellas. Maybe they had designs on enlarging the entrance and hole for their own use.

We were fascinated by a male Fantail Cuckoo sitting and calling while perched on an exposed bough. Occasionally it left its perch to prey on a caterpillar or flying insect. It was being hassled by a pair of small but furious Grey Fantails. Above and more out of sight was the cuckoo's female mate. The number of this partially sedentary/partially migratory cuckoo increases markedly at Devilbend at this time of year (August to December), but most go north during the non-breeding season. Why then do some of them migrate as far as Papua? Not sure. They usually parasitise host species that build domed nests such as White-browed Scrubwrens. Cuckoos' eggs are placed into the nest using their bill or a foot.

A bit further along we came across a very busy pair of Galahs who have selected a hole in a broken off tree trunk. Galahs (and Australian Magpies) have prospered as the landscape has changed over the last 200 years. Although you see some Galahs amongst the roadkill, once they reach adulthood they generally live for many years. I have just read that only one in ten survive to breed.

Talking about roadkill, I did see some Galahs amongst other dead bird species on the Hume Highway last week. I also saw a few dead wombats on the Yea to Mansfield Road. I do wonder about the overall impact of our increasing vehicular traffic on our declining wildlife, particularly koalas, in places like the Mornington Peninsula. We did see two koalas in Woods Reserve, not far from where Friends of Daangean have been working on *Pittosporum* removal for the past 15 years.

Grey-crowned Babblers - pinterest

A few hundred metres away, high in the gumtrees, was a pair of Wedge-tailed Eagles roosting calmly. Even at this distance the female bird was noticeably larger than the male. Their territory abuts that of the White-bellied Sea Eagles that nest at Devilbend Reserve.

Overhead, flocks of Straw-necked Ibis in V-formation flew past. With the paddocks so wet, feeding choices are many.

We then counted Devilbend Reserve, firstly around Bittern Reservoir followed by the larger Devilbend Reservoir area.

At the Bittern Reservoir entrance we spotted a well camouflaged nesting Tawny Frogmouth on a typical rough nest of a few sticks in a forked branch. They have used this spot for two or three years but are easily missed.

We could hear the sound of Australian Reed Warblers which have returned from as far as northern Queensland to nest in the reed beds. From the calls we estimated over 40 birds. We also heard the melancholy territorial whistle of only one Little Grassbird. A breeding pair occupies about a hectare. They are notoriously hard to find: they are silent over winter though they are probably present.

Another rare sighting for us was a solitary Bassian Thrush. Some confusion has existed about this species. It was once considered a race of the Scaly Thrush that spreads through southern Asia and New Guinea. The bird we saw was calling about 4 metres from the ground, but they spend much time on the ground turning over leaf litter. In the middle of the reservoir a pair of Black Swans swam with 7 two week old cygnets, while pair of Musk Ducks, three Australasian Grebes, and a Little Pied Cormorant were all busy diving for food.

In the distance was a hovering Black-winged Kite. Nearer to us a Swamp Harrier flew across the Reservoir being hassled by two Little Ravens.

Now getting to Devilbend Reservoir, north of Hodgins Road

Since we started in May 2004 we have never previously recorded Bell Miners in Devilbend Reserve, although a colony took up residence in Woods Reserve in the summer of 2007/2008. Although closely related to the Noisy Miner they have different and very specific food preferences. They are active and aggressive to other species and forage and apparently farm *lerps* (sweet crystallised honey dew formed by psyllid larvae on the tree leaves). The lerp infected trees at Woods Reserve have mainly died and now Bell Miners have found some good quality eucalypt woodland at the eastern edge of Devilbend Reserve just north of Hodgins Road. We counted four birds in November growing to approximately 10 in December. To

me this could be highly significant, as the location for a new long-term Bell Miner colony and probable slow death of many trees in that zone.

The current water level in Devilbend Reservoir is higher than we have ever seen it. Yet the waterbirds are in very small numbers. The opportunities for them throughout the rest of the continent are huge. We have found Devilbend Reservoir is a great refuge in times of drought but it has comparatively few birds at times of high rainfall.

In November we recorded 45 species at Woods Reserve and 68 in Devilbend Reserve.

I would like to thank all those many people involved in the monthly bird counts at both Devilbend and Woods Reserves over the past 18 years. It has been a lot of fun.

Brown Thornbill - *MM*

Rufus Whistler – *MM*

Ravens & Swamp Harrier – *MM*

White-bellied Sea Eagle – *MM*

Eastern Spinebill with Dragonfly – *MM*

Sulphur-Crested Cockatoo - *MM*

Tawny Frogmouths with Young on Nest – *MM*

Koala - *MM*

PARKS VIC NEWS

Devilbend Update

As you would all be aware, it's been **VERY** wet at Devilbend of late. Everything seems to be flourishing – native and pest plants, native and pest animals. Vehicular access has been limited at times and we now have bench seats literally surrounded by the water! You can splash your feet while you have a rest!

Lots of things are happening around the park, including South African Weed Orchid checks/treatment; turtle nest monitoring; bird monitoring, and pest animal programs amongst other things.

The deer program was a joint effort between Parks Victoria, the Sporting Shooters Association of Australia (SSAA) and Australia Deer Association (ADA). Volunteer shooters gave up 5 of their Thursday nights (dusk to midnight) to come out to the reserve and hunt the fallow deer. We ended up with four deer and three foxes. If you are interested, you can register your pest animal sightings at FeralScan: www.feralscan.org.au or download the app to your phone!

Fox baiting is being conducted in Woods Bushland Reserve by the Mornington Peninsula Shire. This commenced in July this year and will continue until June next year. They are using Canid pest ejectors (poisoned baits). This technique does not attain instant results (unlike trapping), but due to the length of the program it is hoped it will make an impact.

Warning Sign on Gate - *MF*

Parks Victoria would like to thank all the dedicated Volunteers for all their hard work and efforts over 2022. Thank you for persevering through COVID lockdowns over the past couple of years. Let's hope 2023 is a great year for improving habitat and reducing pest flora and fauna.

Wishing everyone a Merry Christmas and Happy New Year

Manda Henderson

Ranger Team Leader - Northern Peninsula Parks and Reserves – Southern & Maritime Region

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Work Days – Monday to Thursday

"Parks Victoria respectfully acknowledges Traditional Owners, their cultures, knowledge and their continuing connection to and cultural obligations to care for their Country"

BIOLINKS UPDATE

Creating links for nature across the Mornington Peninsula

DEVILBEND-HASTINGS BIOLINK

Report held over until next issue

For more information, contact Project Coordinator *Chantal Morton*: chantal.morton@mornpen.vic.gov.au

TURTLES

The Daangean Turtle Project is a broad citizen-science community project that DFI / FOD supports. We encourage others to become involved: it provides a fantastic opportunity to make a real impact on turtle habitat and protection. For more information on how to be involved, contact the Daangean Turtle Project coordinator Hansi Wegner at thecrewatdaangean@gmail.com, or devilbendfoundation@gmail.com, and we will be happy to pass on your details.

Hansi rescued two turtles leisurely making their way along Hodgins Rd

Hansi with Rescued Turtles - *MF*

OPINIONS & OTHER COMMENTS CORNER

Disclaimer: The views expressed in here do not necessarily reflect those of the editor or DFI

THE BAT CAVE at NOWA NOWA

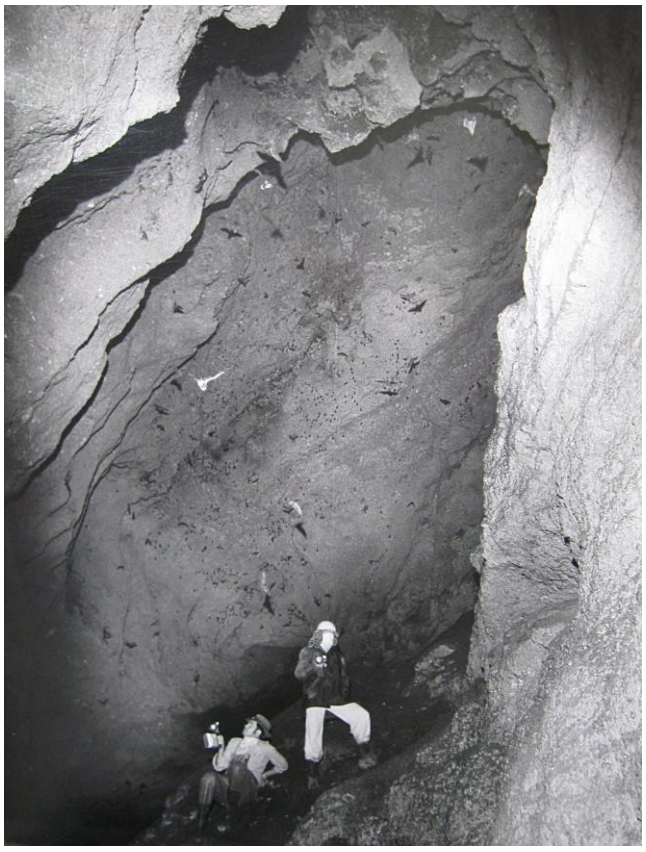
There is a small cave system in the forest at Nowa Nowa that plays an important role in the life cycle of the Eastern Bent Wing Bat. Bent wing bats like other cave bats, shelter and raise their young in caves and cave-

like structures. The cave at Nowa Nowa contains the only breeding chamber that exists in Victoria for the eastern race of bent wings. In the early 1900s the cave was first brought to the attention of white settlers by local Aborigines. Indigenous people were reluctant to enter the cave for fear of the Nargun, a mythological creature of Aboriginal legend.

The bushfires that ravaged parts of eastern Victoria in 2019/2020 resulted in a disastrous loss of wildlife, including the small micro bats that generally shelter in tree hollows, under bark and in abandoned bird nests. While cave bats may have initially escaped the ravages of the fires, the smaller forest dwelling bats would have had little chance. Eastern Bent Wing Bats, because they shelter in caves were possibly more affected by the destruction of the forest and the insect life found there.

Research staff from the Arthur Rylah Institute (ARI) have been monitoring the bat cave and indications are that the population appears stable; however, bats were travelling further afield to feed because of the destruction of so much of the East Gippsland coastal forests. The Nowa Nowa cave consists of a front and rear passage both leading to a quite large breeding chamber. During my time in East Gippsland the bats favoured the front entrance to the cave; however, I am advised by ARI staff that the bats now consistently use the rear entrance to the cave. They also mentioned that there was an increase in visits to the cave by members of the public, which is something of a concern because there has been past evidence of vandalism within the cave. Some years ago, a door was fitted to the front entrance in order to restrict unauthorised visitors; however, I am not sure if the door is still in place. The door had a grill to enable movement of the bats in and out of the cave.

The Passage to the Breeding Chamber

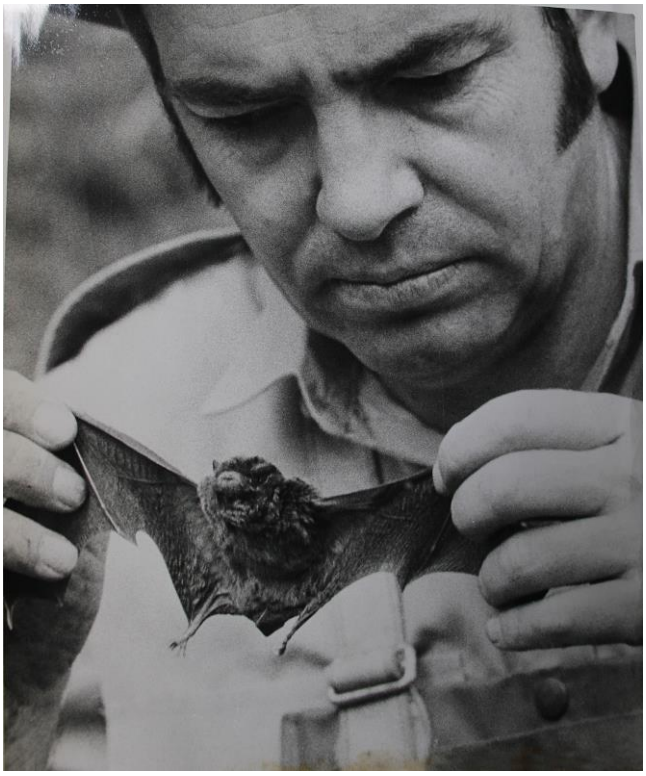


In the Breeding Chamber

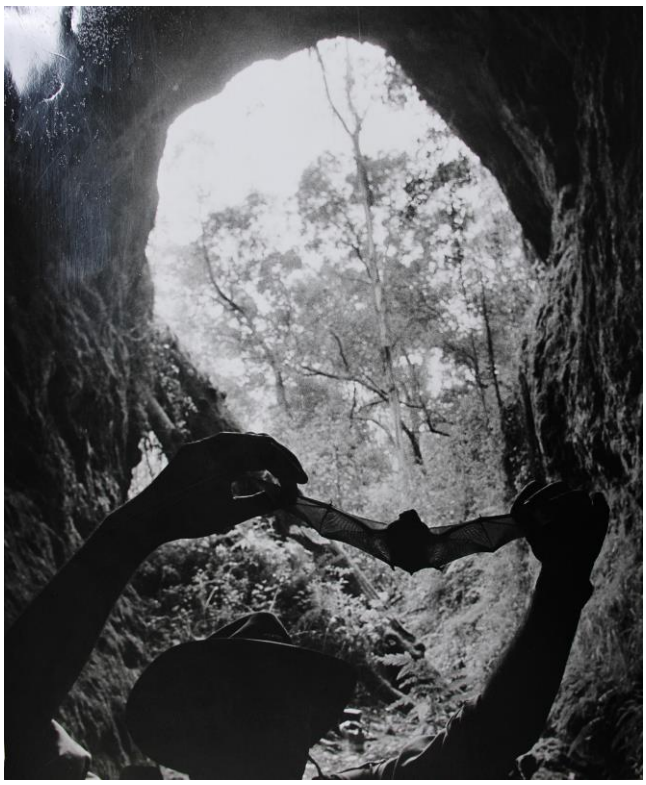
Caves and cave-like structures are not plentiful in Far East Gippsland, and I have observed a colony of cave bats at only one other location. That was a semi-underground storage bunker built when the RAAF had a squadron stationed at Mallacoota airport during the Second World War. Unfortunately for the bats, the locals decided some years ago to turn the bunker into some sort of folk museum and the bats were evicted. No thought was given to the welfare of these animals who happened to be members of a critically endangered species.

There is a problem with wildlife legislation in Victoria, and possibly Australia generally. Conservation legislation purports to protect wildlife species but does little to protect the habitat when the golden rule of wildlife conservation is “Protect the Habitat”.

The attached photographs were taken in late 1960 when I took a reporter and photographer from the old *Sun* newspaper into the cave and the paper ran a story on the bats and the importance of the cave system to the bent wing bat population.



KS with Bent Wing Bat



At the Mouth of the Cave with Bent Wing Bat

Kevin Street

HOLIDAY READING FOR OUR BIODIVERSITY PROTECTION

It seems that every time we address our inadequate nature protection laws, we have to explain to a new raft of politicians the nature and relevance of biodiversity. Professor David Lindenmeyer has been pointing out to various Victorian governments the disastrous biodiversity effects of Vicforests over-clearing of old-growth and alpine native forests in Gippsland. Professor Richard Kingsford and the Wentworth group of Concerned Scientists have been demonstrating the adverse avian and aquatic biodiversity consequences of extracting too much water from the Murray-Darling to irrigate cotton, rice and almonds. Professor Charlie Veron has been diving among the corals of the Great Barrier Reef for 50 years and is at the heart of a bold plan to create a coral biobank or "coral ark". Man-made Climate Change is accepted by both federal government and scientists as its greatest threat. When the water is too warm it upsets the symbiotic relationship and its resident algae, causing bleaching. Coral reefs worldwide will be mostly wiped out by a 1.5 degree Celsius temp rise. This is expected by 2035 *(IPCC report*).

Both the federal Environment Protection and Biodiversity Act 1999 *(EPBC)* and the Victorian Flora and Fauna Guarantee Act 1988 *(FFG Act),* are yet again under review and yet again will prove woefully inadequate under the onslaught of development, extraction and human avarice.

Monthly bird monitoring over 18 years at Devilbend and Woods Reserves has indicated various declines in woodland, wetland and predator species (e.g. Scarlet Robins, Grey-crowned Babblers, Great Crested Grebes, and Nankeen Kestrels). The EPBC and FFG Acts have proven to be woefully inadequate for the task we impose upon them.

For holiday reading, I suggest we go back to first principles and look at the biological and genetic diversity of all living things and eco systems on the planet. *(Its Biodiversity).* The following article from *Deutsche Welle* is essential reading for all.

What is biodiversity and why is it so important?

Jeannette Cwienk *DW 9 Dec 22*

Delegates from nearly 200 countries are in Montreal to find a way to protect the world's nature. But what's at risk when ecosystems are lost, and animals and plants go extinct?

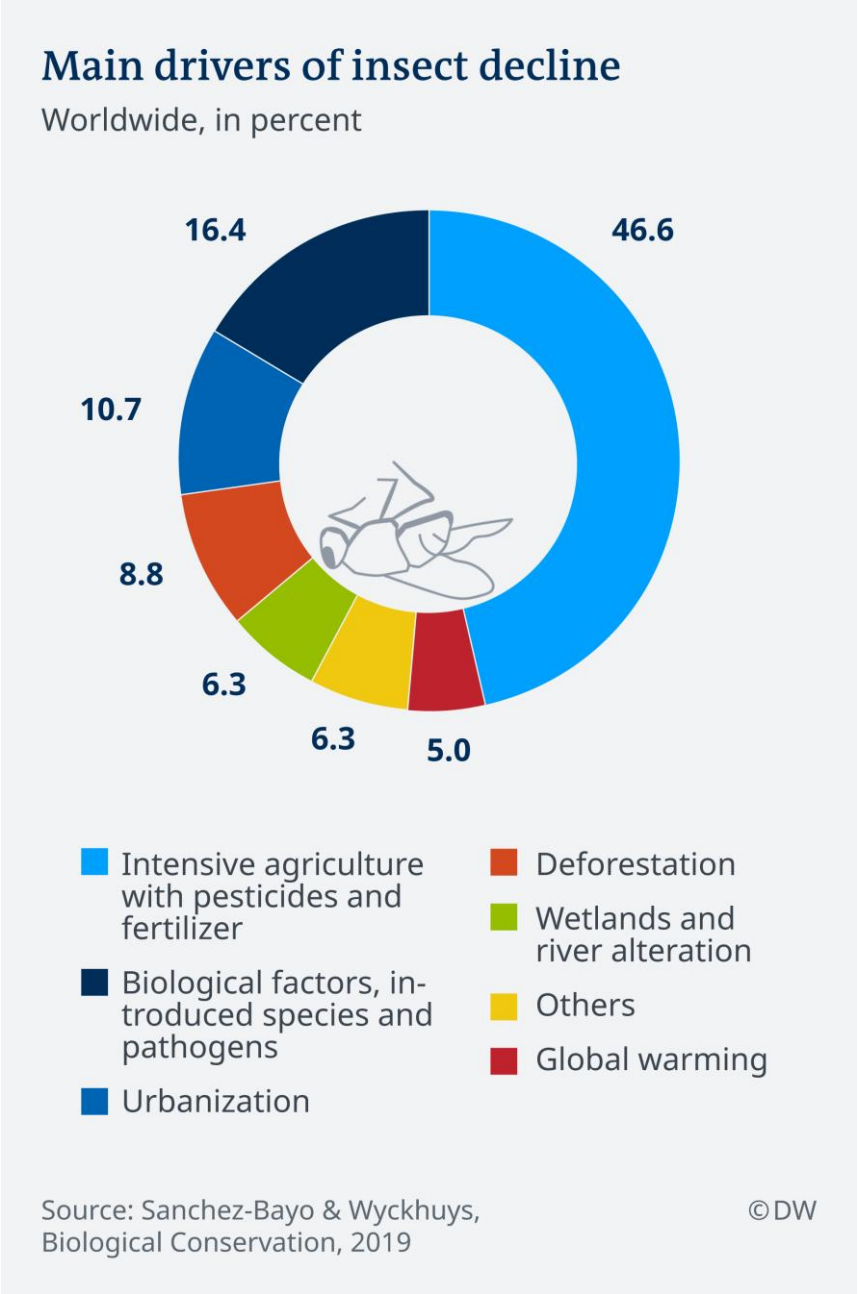
Living things include plants and animals, as well as fungi and microorganisms found in the soil. They're part of a wide range of ecosystems that include the frozen Antarctic, tropical rainforests, the Sahara Desert, mangrove wetlands, the old-growth beech forests of Central Europe and diverse marine and coastal regions around the world.

These habitats provide humans with many things needed to live, such as water, food, clean air and medicine. Collectively, they're known as ecosystem services — and they also depend on the interplay of species diversity. If any individual element disappears, for example when a species goes extinct, these services provided by nature can, in the worst case, also vanish forever.

How does our life depend on nature?

Without algae or trees, there would be no oxygen. And without **insects to pollinate plants**, our harvests would be meagre at best. More than two-thirds of all crops, including many fruits and vegetables, coffee and cocoa, depend on natural pollinators like insects. But already today, one-third of all insect species worldwide are threatened with extinction.

Although we owe our very existence to the services that nature provides, we usually take them for granted, said Dave Hole a climate change and biodiversity scientist at US-based Conservation International. An expert on ecological genetics, he has co-authored a new study that sheds light on the importance of ecosystem services.



“When we have a bowl of cereal in the morning, we’re not thinking about how nature helped to pollinate the crops [that have] gone into making that cereal,” Hole told DW. “We are often blind to what nature is doing for us on an everyday basis.”

According to the study, up to 70% of the world’s harvests are directly or indirectly dependent on intact polders and **mangrove swamps**, in part because they protect land used to grow food crops from flooding.

Biodiversity worldwide under extreme threat

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services — IPBES for short — estimates there are at least 8 million species worldwide, but has warned that up to 1 million could go extinct by 2030.**Biodiversity loss** has already reached an alarming rate: one species, on average, is vanishing every 10 minutes. According to researchers, we are in the midst of the **world’s sixth mass extinction**.

In Germany alone, the number of winged insects fell by three-quarters between 2008 and 2017. Worldwide, the population of wild mammals has dropped by 82%, according to IPBES. It’s even worse for freshwater plants and animals, which have declined by 83% over the past 50 years — in Central and South America, that figure is as high as 94%, according to the environmental group WWF.

And, according to Hole’s observations, the rate of biodiversity loss is accelerating.

Humans are responsible for species extinction

Research backs this up: through **agriculture**, **soil sealing**, the clear-cutting of forests, overfishing, the introduction of toxins into nature and the spread of invasive species by humans, the extinction rate today is up to 100 times higher than it would be without human interference.

Elizabeth Maruma Mrema, executive secretary of the UN Convention on Biological Diversity, is quite clear in her view that we are to blame. “Ninety-seven percent of the global biodiversity is degraded as a result of human action on that biodiversity,” she told DW.

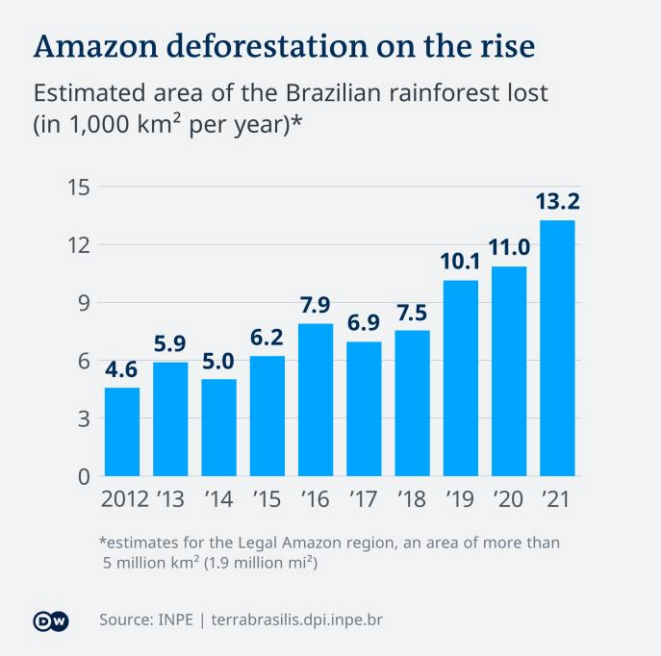
Her list of statistics is alarming: 75% of Earth's land area and 66% of the world’s oceans are currently degraded, 85% of all wetlands are degraded or have already disappeared and half of all coral reefs have died off. And these figures don’t even take into account how much of the planet is littered with plastic, Mrema added.

Biodiversity loss threatens future of humanity

"The advancing loss of our natural capital poses the greatest threat to all of humanity,” said Klement Tockner, director general of the Senckenberg Society for Nature Research. “Once it's lost, it’s lost forever.”

The balance of nature doesn’t collapse overnight when a species disappears from an ecosystem, but it does begin to change. “The more we reduce the number of species, the more susceptible a system becomes to disruption,” said Andrea Perino of the German Centre for Integrative Biodiversity Research Halle-Jena-Leipzig, in eastern Germany.

Ecosystems, like the climate, also have tipping points which can result in the radical and unstoppable transformation of our world, said Hole. One example is the **Amazon rainforest**. After the forest has been extensively cleared, the isolated pockets which remain find it increasingly difficult to recover. That, in turn, increases the risk that the entire rainforest will collapse.



And yet, tropical rainforests like the Amazon are home to around two-thirds of all known species worldwide — and are extremely important when it comes to regulating the global climate.

Protecting nature is in our own interest

Without a massive effort to halt the ongoing biodiversity collapse, the natural foundation of human life will be lost at an unprecedented rate — with long-term consequences for virtually all facets of life on Earth.

Half of all global economic output is directly dependent on nature, said Mrema of the UN Convention on Biological Diversity. “We are **killing that biodiversity**, [even though] our life, our economy and our health is dependent on it.”

Roger Richards 9 Dec 2022

Websites to peruse:

Mornington Environment Assoc Inc – www.morningtonenviro.org.au
https://www.wildlife.vic.gov.au
Wiley Online Library – https://onlinelibrary.wiley.com/doi/10.1111/emr.12467
Echidna Research & Conservation – echidnacsi@adelaide.edu.au
Dirt Radio – https://www.3cr.org.au
https://www.thebushfirefoundation.org
https://www.dungbeetles.com.au
https://weeds.org.au
https://invasives.com.au
www.pestsmart.org.au
https://www.nature.com
http://www.wildthingsaustralia.org.au

birdwhisperer committed a **taxon swap** affecting Calyptorhynchus funereus

Calyptorhynchus funereus

replaced with

Zanda funerea

Change the scientific name of Yellow-tailed Black-Cockatoo from *Calyptorhynchus funereus* to *Zanda funerea*, following White et al. (2011) and Smith et al. (2022).

Taxon changes represent changes to iNaturalist's taxonomy. Most of the time iNaturalist will automatically keep your content up-to-date when these changes happen (unless you've opted-out), but we still want to let you know when and how your data is changing. Your content related to these taxa will be updated automatically.

13 December 2022 *iNaturalist*

I thought this was worth including in the newsletter as a matter of interest.

Marnie Fitzsimons

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