



Toodyay Naturalists' Club Inc.

THE TNC NEWSLETTER

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We gratefully acknowledge the Ballardong, Yued and Whadjuk Peoples as the traditional custodians of this land and duly respect a deep and unbroken connection to their cultural, physical and spiritual existence. We pay respect to their Elders, both past and present, and emerging.

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President's Report

by Greg Warburton

The past few months seem to have flown by and going back over my diary tells me much has happened. I will start with the Shire's Local Biodiversity Strategy which was put out for public comment late last year. Although the Club were generally supportive of the document a raft of changes were requested. We were able to put our suggestions forward at a special meeting in Chambers. Both Zenab Azam, the Shire's Environmental & Sustainability Officer, author of the strategy and Shire CEO Aaron Bowman present. Most of the requested changes were approved and the strategy was duly adopted by council in December. We hope this document will not only provide a way forward for protecting the natural environment in our Shire but will also lead to the long anticipated environmental policy.

Next came the planning meeting on December 14th held at Desrae and Wayne's home. Lots of ideas were forthcoming from the enthusiastic group and they formed the draft of our 2025 calendar. We appreciated the welcoming venue and afternoon tea of course.

With the festive season behind us the first meeting for the New Year was held in February. Despite a long list of apologies we had a good attendance for an engaging presentation on the Biodiversity of Costa Rica. To know member Lindsay was on the same Coate's Wildlife tour as the presenter gave the evening a special connection. An illustrated report features in this issue.

March 1st saw the Club's annual "Clean Up Australia Day" event at Dawn Atwell Reserve. A large group gathered on the Saturday morning including members of the Toodyay Friends of the River. 35 bags of rubbish were collected along the 2 kilometre Adopt-a - Spot. All that litter in the last 12 months! Thanks to Reserve Management Officer Wes for putting out the safety signs prior and those who brought along refreshments for the litter crews afterwards.

Because of the involvement of several of our members with Toodyay Friends of the River Community Forum it served well as our March event. The theme of the afternoon was "The Biodiversity of Toodyay's Waterways" so plenty there for the "Nats". Presentations on the environmental history of the Avon Valley, Birds of the Avon River and intriguing findings about the *Rakali* made for an informative and entertaining session. It was topped off with a delicious afternoon tea. Congratulations to TFOR on their fourth forum in a successful series.

It was with great sadness that the Club heard of the passing of our esteemed patron John Dell. John had served the role of Patron for 30 years and was a regular visitor to our meetings and events. I first met John over in the early 1970s when he recruited me to the WA Naturalists' Club. John Dell dedicated a lifetime to wildlife conservation and research while enthusiastically promoting the wonders of our natural environment to the community. He produced over a hundred scientific papers and his long career with the WA Museum and later the Environment Protection Authority saw him awarded a public service medal. I was proud to represent the Club along with other members at his funeral on the 12th of March. He was described during the service as "one of Australia's greatest Naturalists".

Melissa Adams and Wayne Clarke have been working on the Club's new website and we look forward to it going live any day now. We encourage members to record their sightings on the website to ensure this important database is continuously updated.

Talking about Wayne, we wish our stalwart member a speedy recovery after his recent stint in hospital.

Cover Photo: Children's opinions on the environment at the 2024 Toodyay Agricultural Show

Photo: Lynn Phillips

Julimar Conservation and Forest Alliance

by Lynn Phillips

In the last two years, at the Environment Matters marquee at the Toodyay Agricultural Show, we have had the wonderful opportunity to talk with our younger generations and hear what **they** perceive is happening in our natural environment. More importantly, they gave us their perspective of what we should be doing about it. Since these young people are the ones who will inherit what we leave behind, for better or for worse, it is fitting that we listen to what they have to say. While engaging with the youngsters, whose ages ranged from 6 months (with much input from Mum) to young teens, it seemed to us that they are more alert to what is happening in our natural world than many adults. That includes, dare I say it, those in our governments of all levels and persuasions. One day they will be voters so **look out!**

In 2023, when asked why they think forests are important, the children gave us some great responses which they wrote on colourful cardboard leaves. They then illustrated the leaves and hung them on our message tree.

Here are some examples of the children's contributions:

- *The trees give vital protection for animals and oxygen*
- *We need trees to breath and trees also give habitat to animals*
- *They protect us, animals and the climate from devastation*
- *If we did not have trees we would die because they give us everything*
- *They give us shade and pleasure*

One response from a young teen stated:

- *It's 2023, we are already facing a global crisis of global warming and now the destruction of forests. We still need forest otherwise our ecosystem will suffer.*

In 2024, when we repeated the exercise and asked the children what they wanted to see in Julimar Forest as a National Park, they had an overwhelming desire to see:

- *more native animals, wildflowers, places to camp, trails for bush walks, big healthy trees, mushrooms and fungi, lady birds and butterflies, snakes, bobtails and thorny devils.*

One heart felt message simply read "*help me please save the forest*".

I think David Attenborough would be proud of our young people, I know I am.

But surely it is not up to our children to take on the burden of changing the world. As we know, one Swedish teenager did just that, and very successfully I might add, but it is not something we would or should expect of our young people. They should be able to trust their elders to provide a happy, healthy and safe place to grow up. As adults, the responsibility lies fairly and squarely on **our** shoulders. We are the ones who need to be making the difference, contacting our political representatives and pointing out to them the obvious environmental and social problems. We need to be telling them, in no uncertain terms, what we expect them to do about it. What better time than the lead up to our Federal elections. As we know, the opinions and actions of voters can be very powerful so please Mums and Dads, make the push for a better future for our kids!

As a local organisation based in Toodyay, Julimar Conservation and Forest Alliance is working hard to do just that. JCAFA has been rallying public support with a movie night, information stalls at local events and creating and submitting a public petition asking our state government to protect Julimar State Forest as a National Park. Our dedicated band of conservation- minded members realises the rarity and intrinsic value of this vast local asset and is determined to save it from misuse and neglect. Not only are we doing this for the sake of the forest and every living thing that depends on it for their very existence, we are doing it to ensure a healthy future for our children, grandchildren and great grandchildren. 28,600 hectares of unspoilt forest offers enormous opportunities for positive family time, adventure, education and relaxation. As a managed National Park it could do so much more.

Mugarlgurruk - the Woody Pear

by Rob Boase

‘Mugarlgurruk’ is believed to be the name that for thousands of years local Ballardong people called the sandplain tree that science now classifies as *Xylomelum angustifolium*, and is also known by the common name as ‘Sandplain Woody Pear’. The seeds of ‘Mugarlgurruk’ were an important part of the diet obtained from the sandplains by Ballardong people. To release the seeds from the hard wooden “Pear”, the first nation people would heat it in a fire and then wait for it to split open.



Above: Mature fruit



Above: Typical habitat

The *Xylomelum* genus is included in the Proteaceae family along with other members like *Banksia*, *Hakea*, *Grevillea* and many more. The genus *Xylomelum* was first named in 1798 by James Edward Smith. Before that date the genus was known as *Banksia*.

The genus *Xylomelum* contains four species in Australia. Two in the Eastern states and our two here in the West. *Xylomelum angustifolium* occurs in the W.A. wheatbelt from about Kalbarri to about Kondinin, and *Xylomelum occidentale* is found closer to the coast from about Wanneroo to Augusta. Both have a hard pear-shaped wooden fruit containing two winged seeds hence the common name “Woody Pear”.

James Drummond collected the type specimen of *X.angustifolium* and labelled it from the Swan River Colony. It was formally named by Meisner & Kippist in 1856. I think we can presume Drummond would have collected the type specimen somewhere in the sandplains near his residence at ‘Hawthornden’ close to the present town of Toodyay.

The meaning of the genus name *Xylomelum* is, Xylon = wood and melum = tree fruit. The meaning of the species name *angustifolium* is, angust = narrow and folium = leaf. The first few leaves after germination are broad short and serrated which look nothing like the long narrow smooth leaves that the species name refers to.

The serrated leaves can be seen in the photo of the tray of seedlings. Long narrow adult leaves develop later.

Below: The flowers together with fruit



Above: The ‘winged seeds’ and fruit cases

Mugarlgurruk cont.

Photos: Rob Boase

In the Central Wheatbelt *Xylomelum angustifolium* flowers late December to early January with a spectacular display of creamy white hanging tubular flowers. Unfortunately the flowers are very short lived and only last a few days. The extreme insect activity around the newly opened flowers shows they obviously do not need a long flowering time to be fertilised. Fortunately all of the trees do not flower at the same time so flowering trees can usually be found over a period of four to five weeks. After fertilization the two seeds and their hard wooden case take about two years to mature. The seeds in their hard wooden container can then remain unopened on the tree for decades or until a fire or the tree dies. Unfortunately the seeds lose viability after a period of time so it is puzzling why the tree keeps retaining and maintaining the wooden capsule.

When growing them commercially for revegetation projects, we tried to collect woody seed capsules that were about 3-5 years old. Anything older than 10-12 years was not reliable.

There are two theories as to why 'Mugarlgurruk' have evolved to have such hard woody cases around their seeds. One theory is that it is for protection from predators and the other is protection from fire. The fire theory looks most likely as the tree has no lignotuber, so is killed by fire. The hard wood case would certainly protect the seed until the fire passed. Over the next few days after the fire the hard case slowly splits open to release the two contained seeds onto a cool ash bed. They are then ready to germinate after sufficient rain, and start the life cycle again. The winged seeds spin like little helicopters as they fall and can land many metres from the parent plant, ensuring a wide distribution and less chance of close competition for nutrients and moisture.

The 'Mugarlgurruk' was once very common on the sandplains throughout the agriculture area, but due to the over clearing of this lighter land, both the 'Mugarlgurruk' and all its associated species are now restricted to a few reserves, isolated patches and the occasional aged tree on fencelines. The tree also suffers when its unique pear shaped fruits are picked (often illegally!) for the cut flower industry.

The 'Mugarlgurruk' is an easy plant to grow, so it would be great to see it included in orders for the revegetation of suitable soils. Unlike most members of the Proteaceae family, *Xylomelum angustifolium* can tolerate low levels of phosphorous in a fertilizer but a fertilizer suitable for Proteaceae is recommended.

For anyone wishing to grow 'Mugarlgurruk', the following may be some help.

These days there is a great range of ready mixed soils in places like Bunnings or various other hardware stores. The best soil to use for the Woody Pears (or any other native plants) is a seed raising mix without fertilizer added, and then add your own Proteaceae fertilizer.

There are many different pots and trays available to choose from. The best ones have some form of root training built in during manufacture. The most common are side slits or ridges. A mistake when choosing pots is to go too large. Something about the size of the individual cells in the tray of seedling Woody Pears in this photo works well.

When planting the seeds, push the seed into the soil just past where the seed attaches to the wing and leave the wing standing up as in the photo. Keep moist but not wet and the first two cotyledons should emerge in about 20-30 days.



Above: A tray of Woody Pear seedlings



Above: Wings standing up in the pots

Coate's Wildlife Tour of Costa Rica

by Greg Warburton

The Club launched into the 2025 program with a scintillating presentation by wildlife tour assistant (guide), Dianna Papenfus, on the mind blowing biodiversity of the tiny central American country of Costa Rica. Dianna and Club member Lindsay were part of a Coate's Wildlife tour there in October last year and had much to report on.

The audience were taken on a journey to rainforest clad mountains, volcanoes, rushing rivers and waterfalls.

Right: The dense rainforests of Costa Rica are home to a myriad of animals - mammal species (210 listed), birds (948 species listed), reptiles (245 named species) and amphibians (194 species listed).

Photo: Lindsay White



Images of a vast array of wildlife including dazzling bird species like the legendary Quetzal kept us all enthralled.

Despite its tiny size, only 51,000 square kilometres, it is home to more species of native birds than the entire Australian Continent! In fact, Costa Rica is the most biodiverse country in Latin America.

Jaguars still prowl the jungles which is also home to other mammals such as the strange Tapir the two toed and three toed sloths. Colourful frogs and reptiles add to the seemingly endless variety.

The Costa Rican government dispensed with its military in 1948 and instead now invests in tourism, environmental sustainability, renewable energy, conservation and education. An enviable model that benefits the people and the wildlife.

Clean Up Australia Day

by Emily and Gabriella Schmidt

On March 1st Toodyay Friends Of The River and Toodyay Naturalist Club volunteers gathered at the Dawn Atwell Reserve to participate in Clean Up Australia Day. Clean Up Australia Day is an annual day when Australians all over the country gather to clean up their local environments. It was started by Ian Kiernan on October the 4 1993. He started it when he was on a solo sailing trip around the world where he was disgusted and saddened by the pollution in the water. Instead of despair, he turned to action and Clean Up Australia Day was born. Each year there are around 1,077,127 volunteers from all over Australia who participate.

The most common rubbish items we found as part of our Toodyay Clean Up at the Dawn Atwell Reserve included farm machinery parts, a car bonnet, plastic bottles, soft drink cans, wire, fencing and old tires. Afterwards a morning tea was served before a quick briefing. All in all there was a pretty good turn out, and it was so good to see all the amazing volunteers giving up their morning to take care of our beautiful environment.

Clean Up Australia Day ... cont

Although we don't know yet how much rubbish was collected in total this year, in 2024 there were 4,995 bags of rubbish and pollution found. 80.7% of that rubbish was hard and soft plastics. All together in 2024 there were 16,320 clean up events across Australia.

The Plastic Issue

Plastic never really breaks down because it's made of polymers. Over around 200 years it becomes micro plastics and then later dissolves further into nanoplastics. Unfortunately this long life span leaves heaps of time for it to affect waterways such as rivers, dams, oceans and even glaciers. Aside from that there are dozens of ways any form of plastic can hurt or affect both marine and land animals. It may scare you to know that nano and micro plastics are now being found inside humans, including in our brains. It really is a plastic epidemic and we all need to play a part in the solutions.

Clean Up Australia Day

We clean up Australia because it's our home and it is really important that we all work together to keep it clean and healthy. It's a day for all Australians to come together and for everyone to help out, volunteering to help clean up Australia; whether it's in waterways, parks, beaches, roads or out in the bush like we were. Around your local playground is a great place to clean!

Top Tips For Reducing Your Impact

A lot of rubbish comes from single use plastic waste. But with some quick changes you can greatly reduce your household impact. For example by using cloth or paper bags when shopping you reduce your use of plastics. You can also avoid using single use plastic containers by using Tupperware and BYO containers. By moving away from soft drinks and junk foods (food that is bad for you anyway AND is plastic wrapped) your soft plastic impact is greatly reduced. Just by taking some simple steps - your household waste can quickly be reduced.

There are also simple steps local councils can take such as having accessible water bottle refill points in towns and cities and having recycling bins accessible, but at the end of the day - it's all about the choices that we make as individuals. There is never a good situation for littering, and it's never ok to just throw something away. We can all choose to be the kind of people who pick up litter when we see it, and contribute to making the world a better place every single day.



If you know that soft drink is a temptation for you, but you want to reduce the amount of waste you produce - you might like to try this delicious recipe for our favorite Summer Lemon & Lime drink.

- Three limes
 - Four lemons
 - Honey to sweeten
 - Two cups full of hot water
- Serve this deliciousness with ice and a hand full of mint
MAKES FIVE CUPS

Above: Young girls and Mum Verity helped collect a car bonnet from the bush

Photo: Desraé Clarke

Members Gallery



Left: The late John Dell APSM, Patron of the Toodyay Naturalists' Club since 1994. John had been an untiring supporter of the Club since the mid-1980s. John led many of our excursions, and was always willing to impart his incredible knowledge on the flora and fauna of Western Australia, particularly herpetofauna. He was awarded the Australian Natural History Medallion in 1988 and the Australian Public Service Medal (APSM) in 2011. He will be sadly missed by all those who knew him. The TNC is enriched by having John as a Patron and advisor.

The photo at left shows John and Vicky Warburton in the Wongamine Nature Reserve during the TNC 40 year celebrations in 2008.

Photo: Greg Warburton



Above: Photo: Beth Frayne of a Spider at home



Above: Wolf spider guarding egg sacs Photo: Lyn Phillips



Left: Juvenile Barn Owl picked up in the car headlights.

Photo: Lynn Phillips

Masked owls are from the same genus as the barn owl (Tyto) but can be distinguished from the barn owl by being larger and heavier with a bold edging to its facial disc. The barn owl has a high-pitched scream while the masked owl gives a drawn out, harsh, unwavering screech, stronger and deeper than the barn owl.

Members Gallery



Above: A carpet python sharing a mouse meal with some meat ants.

Photos: Sharon Richards



Above left: Eucalypt seedlings Above right: First flowers on tree grown from seed,2022 - Euc leucoxylen subsp rosea,

Photos: Lyn Phillips



DPaW's prescribed burning program protects lives, property and infrastructure from bushfires. Or does it?

Left: 20 April 2025:

Parks and Wildlife Service (DPaW) Prescribed Burn, Munyerring, Fauls and Gallagher Blocks in the Julimar State Forest (also known as the Julimar Conservation Park).

A Smoke Alert was issued for Bindoon, Muchea, Guilderton and surrounding areas north of Joondalup in the northern Perth Metropolitan Area. Includes Yanchep and Two Rocks. Smoke will impact these areas from early afternoon and should clear overnight.

The smoke is the result of DPaW officers completing an active prescribed burn in Julimar State Forest (see article Page 10). (

*Photo of burn: Wayne Clarke taken from Majestic Heights
20 April 2025*

Prescribed Burning -Is a new approach needed *by Sharon Richards*

Julimar State Forest is subject to the Department of Conservation Biodiversity and Attractions (DBCAs) prescribed burning regime whereby they have a mandate to ensure that at any particular time 45% of Western Australian forest/bushland is less than 5 years old.

In April the Toodyay Naturalists Club hosted a zoom meeting with Dr Philip Zylstra who came into bushfire research from a career in fire management and specialist remote area fire fighting. During this period, he helped to pioneer the modern role of Fire Behaviour Analyst, developing the first software used to guide efforts to contain large fires by using predictions of behaviour.

Dr Zylstra explained how his research revealed that our current prescribed burning regime was based on science from a paper written in 2009 which has since been refuted and is causing more harm than good to more than just the bush.

His research determined that it is the weather, wind, height and density of the understorey that drives the intensity and controllability of a bush fire, not the ground fuel load. Consider then, if we keep burning that understorey every 5 years or so, it is in a permanent state of regrowth and providing more fuel, producing a more intense fire.

According to Dr Zylstra forest/bushland will reach a point where it will start to self-thin at around 25 years, the density of the tree canopy will reduce light levels, the understorey will reduce and the forest will become less of a bushfire risk and easier to navigate for firefighters, often referred to as Ecological Control Theory.

Prescribed burns in WA are often lit by incendiary devices thrown from a helicopter, not the most accurate approach, but apparently cheaper than putting rangers on the ground lighting the fire. In recent years there has been a number of these prescribed burns which have devastated local wildlife in the South West of WA, a numbat colony was decimated in the Shire of Manjimup in 2021. In 2023 in the Great Southern, just north of Denmark, endangered peat swamplands which had recently been placed on the ecological threatened communities list, were still smouldering 2 weeks after a prescribed burn in the area. In the last couple of years, a controlled burn was undertaken in Julimar Forest in spring, just after the Carnaby Black Cockatoos had returned looking for nesting hollows, the burn severely damaged much needed foraging/feeding areas that are vital to a successful breeding season.

The ideal weather conditions for a prescribed burn, calm no wind, means that the generated smoke lays around for days, the advice we get is to stay indoors if we have respiratory or chronic heart conditions, yet studies have shown there are still increased presentations to the hospital Emergency Departments and even deaths attributed to the severe smoke haze produced. This significant effect of prescribed burning on human health is not often revealed. Our brave and dedicated firefighters deserve more than to be put at risk when there could be a better way forward.

There are currently a number of technological companies that are researching and developing early detection strategies, using highly sensitive sensors which can report back via satellite and or drones the presence of smoke, enabling a much faster response to a potential bush fire, especially in our more remote bushland. One company is already undertaking trials in Thailand with very promising results. Wouldn't something like this be worth investigating?

Bushfires and controlled burning are an emotive topic, often what the general populous experiences is the graphic and devastating vision on the news of when a fire has razed an area, wildlife has been burned to death and the fire has posed a serious threat to lives and homes. Maybe if we didn't keep increasing the fuel load and could detect and respond to them earlier both our wildlife and human population would be healthier and happier.

Prescribed Burning - Philip Zylstra



Above: Philip Zylstra - image captured during Zoom presentation

Photo: Desraé Clarke

Natural Pest Control

by Sharon Richards

IN December I was greeted at the back door by a young South West Carpet Python who I initially thought was dead. It was very small, probably only 45cms long, and not moving. When I got a little closer I could see it had a small partially furred mouse in its mouth, with another dead one laying a few inches away. I had clearly interrupted breakfast!

This just has to be the best kind of rodent control a person could have. On closer inspection, the snake had a significant bulge further along the body, it seems there had been a third mouse! Young growing pythons usually need to eat every 5-7 days, approximately 15% of their body weight, unlike their older parents who might have weeks between feeds.

I didn't disturb it, but did put a plastic chair over it as it was daylight and I felt it could be vulnerable to aerial attack. By the time I got home from work, both mice and python were gone, but I hope it comes back and keeps up the good work it will always be welcome here!

(See page 9 for image)

DID YOU KNOW...

... that in April 2025 the Climate Council listed the Federal electorate of Bullwinkel as the eighth highest 'at-risk electorate' in the Country for losing access to insurance cover, due to climate change; Toodyay is in the Bullwinkel electorate.

ENVIRONMENT MATTERS



Above: A fast-flowing stream in Costa Rica, where the environment really does matter to the people. Since 1948 the government has invested in environmental sustainability and conservation rather than its military. It is 98% free of deforestation, and enviable commitment to the health of its nation.

Photo: Lindsay White. See article Page 6

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