

April 2023



# Biddip



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Newsletter of the Toodyay Friends of the River

Volume 17, Issue 1

## Catchments, Carnabies and Chuditch of the Julimar Forest



The Toodyay Friends of the River (TFOR) invite members of the public to a Community Forum to be held on  
Saturday 11 March 2023  
at 2.00 pm in the Toodyay Recreation Centre

### Presenters

Dr Liz Kington Toodyay Friends of the River  
Ron Johnstone, OAM WA Museum  
Greg Warburton Toodyay Friends of the River

AFTERNOON TEA WILL BE PROVIDED

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*We sincerely 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.*

## *President's message by Jennifer White*

IT seems that New Year's Day was just a few weeks past and here we are already well into autumn, Easter with its chocolate indulgences is behind us, and we're looking forward to getting hands and knees dirty for our first working bee planting days.

A lot has been happening for TFOR through the long, dry summer period, until recent rains refreshed the river flow, as well as the bush, our gardens, ourselves and the creatures we love.

There was a flurry of urgent activity in December as TFOR, together with like-minded groups and some dedicated individuals, wrote submissions to the "Draft Forest Management Plan 2024 – 2033". This was a huge task at a particularly busy time of year. Well done all who contributed.

New Year's Day 2023 was a notable one with foundation TFOR members, Desrae and Wayne Clarke, being recognized for their many years of dedicated service to the community in being chosen as Toodyay's Senior Citizens of the Year 2023.

Our February event was a very interesting Meet and Greet, at which Wayne Clarke spoke on the history of the Avon River Management, noting the dire effects on the river of the River Training Scheme, including loss of the many natural pools along the river. After Wayne's presentation, Nikkola Palmer facilitated an interactive activity which focussed on the importance of the river and why we Friends remained committed and involved with caring for it. Nikkola brought our ideas together in a short video, now available on our Facebook page.

We had a heartening response to our March Forum, "Catchments, Carnabies and Chuditch of the Julimar Forest", with over fifty people attending, of which more than half were non-TFOR members. Our three speakers, Liz Kington, Greg Warburton and Ron Johnston presented us with a wealth of information and fantastic visuals. Do read the summaries of their talks in this edition of BIDDIP.

The Cockatoo Crisis documentary film was screened in the Town Hall on April 22nd. Work continues apace on the Walk Trail Hub project, the website, and planning interpretive signage along the Millard Pool section of the Bilya Walk Track. May heralds the first of this year's working bee planting days on May 14th and 15th – details to be found on the notice board at Drummond House and email to members closer to the date.

I would like to say, that in preparing what to write for this first BIDDIP edition for 2023 and my first as President, I had a good read through the last 2022 edition and I was once again impressed with how interesting, informative and educational the articles were. All were contributed by TFOR members and beautifully brought together by Editor, Desrae.

Back copies of BIDDIP are really worth reading, and confirm the value of the work done by TFOR over almost 30 years since its first meeting.

*Cover - Left: The Poster/Flyer for the event    Right: The excellent display set up by Max Howard and Elaine Hall.*

# Nesting boxes installed for micro-bats

by Dimity Boggs

LAND-USE change has reduced the natural habitat for bats worldwide. To offset habitat loss, Toodyay Friends of the River has recently installed three bat nesting boxes in revegetation areas adjacent to the Boyagerring Brook confluence.

The boxes were supplied by **Wheatbelt NRM** as part of two separate projects; one funded by the Department of Water and Environmental Regulation focused on waterways management and the other funded by the Department of Biodiversity, Conservation and Attraction's "Healthy, Soils, Healthy Rivers" program.

The boxes are designed to create habitat for the local micro-bat population and have very small chambers (baffles) as the bats preserve body heat by clustering tightly together. To maximise uptake by bats, it is recommended that boxes are installed in clusters and at different orientations around the chosen trees to give bats roosting options with seasonal fluctuations in temperature. Installation in revegetation rather than mature remnants gives the boxes further value as they augment habitat that would otherwise potentially take hundreds of years to develop suitable hollows for bats.

Micro-bats are fantastic insect predators and valuable pollinators providing a range of ecosystem services. By encouraging them to roost in the revegetation area TFOR are effectively outsourcing some of the work of riparian management. Monitoring the boxes for use is as simple as looking in them during the day while the bats rest and this activity should become part of TFOR's long-term monitoring activities. For more sophisticated monitoring there are [commercially available](#) bat detectors available that make recordings of the bat's ultrasonic calls. Unfortunately, the devices cannot currently automatically identify bat species but the sound recordings can be referred to one of the talented bat experts that live in WA, for example [Joe Tonga](#) or [Bob Bullen](#).

According to the [Australasian Bat Society bat map](#), there are 6 bat species found within 10 km of the Toodyay townsite including: *Austronomus australis*, *Chalinolobus gouldii*, *Chalinolobus morio*, *Nyctophilus geoffroyi*, *Ozimops kitcheneri* and *Vespadelus regulus*.

For more reading about bats and bat related management and monitoring:

## Bat detectors

<https://www.funatech.com.au/>

<https://www.titley-scientific.com/au/>

## Bat species distribution

<https://www.ausbats.org.au/batmap.html>

## Bat species fact sheets:

<https://australian.museum/learn/animals/bats/>

*Austronomus (Tadarida) australis* - <https://australian.museum/learn/animals/bats/white-striped-freetail-bat/>

*Chalinolobus gouldii* - <https://australian.museum/learn/animals/bats/goulds-wattled-bat/>

*Chalinolobus morio* - <https://australian.museum/learn/animals/bats/chocolate-wattled-bat/>

*Nyctophilus geoffroyi* - <https://australian.museum/learn/animals/bats/lesser-long-eared-bat/>

*Ozimops kitcheneri* - <https://australian.museum/learn/animals/bats/south-western-freetail-bat/>

*Vespadelus regulus* - <https://australian.museum/learn/animals/bats/southern-forest-bat/>

## Bat rescue

<https://www.wires.org.au/wildlife-information/microbats>

## Build your own bat box

<https://www.milkwood.net/2015/09/21/how-to-build-a-microbat-box/>

See Page 4 for photographs of nesting boxes installed

## Nesting boxes installed for micro-bats



Above left: Nesting box high in the canopy



Above right: One of the nesting boxes installed

Photos: Greg Warburton



Left: The recently installed steel fabricated step over the water pipeline.

Photo: Greg Warburton

### Lloyd Reserve Access

NEWS in the Project Officer's world includes the installation of a fabricated step over the water pipeline to access Lloyd Reserve and Red Banks Pool.

Several years ago, we had an onsite meeting with Watercorp who gave us the design requirements for such a step.

Recently, a work request came to the Shire highlighting a potential safety hazard and this prompted the improvement.

Thank you to the Shire and Kai Shanks for making it happen.

# *A Breath of Fresh Air*

*by Robyn Taylor*

IT'S early morning and before the late summer heat starts to build up a cool easterly breeze is channelling through the Avon River valley. It's the best time for a walk when you can exchange pleasantries with other walkers, especially if there are dogs to be admired. It's also a time for tranquil thoughts - casually observing the bush, the trunks of the river gums lit up by the sun, the myriad birdlife, and breathing deeply the sweet air that flows with the river.

There is a popular walking and running track that links the town's Newcastle Bridge and the school footbridge via what is now known as the Murray Walk Track. This goes through a former farming property and adjacent bushland that reaches down to the river. Two bush tracks have been added that include crossing the Boyagerring Brook and are now part of the recently established Newcastle Parkrun.

Crossing the Avon over both bridges provides a great opportunity to observe the water birds that inhabit the river; pelicans, white faced herons, ducks, coots and swallows to name a few. A family with late season ducklings had preference for the upstream side of Newcastle Bridge, while a family with six baby coots chose the downriver side of the footbridge. Regular walkers did head counts hoping for a good survival rate.

After our General Meeting on Sunday 12 February, I was thinking about how lucky we are to have the Avon River and why the meeting was so satisfying. To begin with, Wayne's talk about the history of river management was refreshing because he didn't need to use technology to illustrate. With his deeply personal experience about the river's history and ability to tell it with quiet passion, it was a reminder of how stories used to be told where the teller had the listeners' full attention. The pace then changed with a creative activity organised by member Nikkola Palmer. Using a white-board we were asked to provide our thoughts about the river and our involvement such as being a voice for the river, to educate others about its history; and our practical involvement through working bees undertaking revegetation and weed management.

We were then given squares of paper and marker pens and asked to sit, with eyes closed, and think about what the Avon River means to us. We then shared our thoughts with those around our table before writing them down.

After some deep and meaningful exchanges, the discussion soon took off into an enjoyable romp of childhood memories about learning to swim and play in creeks and rivers until it was time to go home for dinner. The absence of parents or anyone in authority added to the joy of childhood freedom. These cherished memories, probably viewed with rosy spectacles with the dangers conveniently forgotten, run deep in us.

Water, whether ocean, river or stream holds a deep primal attraction. Watching a flowing river brings peace of mind. The word many of us felt captured our feelings was 'tranquillity'. Something not easily captured these days, but good to know it's always there if the time is taken to find and simply enjoy it.

During the supper break, Nik invited us outside under the river gums to have our photo taken with our sheet of paper. The video she compiled from her photos can be seen on TFOR's Facebook page -

<https://www.facebook.com/people/Toodyay-Friends-of-the-River/100081786100362/>

# Sorting out the past/Signage Project

by Greg Warburton

## Old records and library from the former Department of Water (now DWER)

A challenging project awaits TFOR - that of the sorting and culling of the Department of Water records, library and other impedimenta. It is currently stored in the former seed orchard shed at the RSL property under agreement for a limited time



*Above: Some of the library and records needing to be sorted and culled.*

*Photo: Greg Warburton*

*Right: The 17 hectare Julimar Brook Reserve (see article on Catchments Page 7)*

## Signage Project

THE Millard's Pool sign project is progressing with a bleary-eyed Project Officer having completed most of the text for the 10 proposed signs. Some historical details are currently being confirmed or "red penned" by Robyn Taylor before the words and graphics are sent to the sign maker.

These signs promise to provide a valuable layer of interest along this popular part of the Bilya Walk Track.

The project is funded by WBNRM.

# *Catchments, Carnabies and Chuditch of the Julimar Forest*

ON Saturday 11th March 2023, the Toodyay Friends of the River (TFOR) held a very successful Forum titled 'Catchments, Carnabies and Chuditch of the Julimar Forest' in the Toodyay Recreation Centre. Presenters were Dr. Liz Kington (from TFOR), Ron Johnson (WA Museum) and Greg Warburton (TFOR). A brief summary of each talk follows on Pages 7 to 11

## *Catchments*

*by Dr Liz Kington*

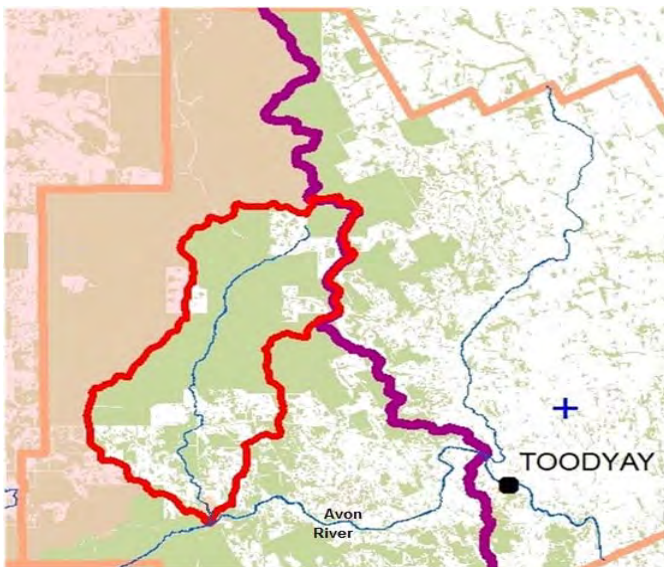
THE water flowing through the Julimar Forest within the Shire of Toodyay is part of both the Swan-Canning and Avon River catchment system. Within the forest, winter rain waters flow both south and west, with the Julimar Brook forming the largest catchment flowing south.

To the west, rainfall water flows down the Spice Brook, Biggs Brook and Munyerring Brook into the Brockman River, and the Brockman enters the Avon River upstream of the Walyunga National Park visitors' area. To the north is the Bindoon Springs Nature Reserve (A3156).

The management needs of the Julimar Forest Brooks are low due to them being within largely uncleared landscapes, are ephemeral, and wild. They contribute fresh water to the salty Brockman and Avon Rivers.

An area of approximately 12,000 ha, the Julimar Brook catchment is largely vegetated with jarrah-marri, wandoo and powderbark wandoo woodlands. Located at the edge of the Swan-Canning catchment, the Julimar Brook appears to have '*fallen through the cracks*' when it comes to the attention of government and catchment management organisations. The Brook water is not monitored and the catchment has received no management.

The Toodyay Friends of the River are keen to see the area recognised as a pristine area of high biodiversity value with conservation protection for their cultural and natural values



*Above: The Julimar Brook catchment (red), Swan-Canning catchment boundary (purple) and Shire boundary (orange), water (blue), native vegetation (green)*

*Right: Julimar Brook high-flows, Winter 2022*

*Photo Bridget Leggett*



# Black Cockatoos *An unfolding Crisis*

by Ron Johnstone OAM<sup>1</sup> and Tony Kirkby

Baudin's Cockatoo *Calyptorhynchus baudinii*, Carnaby's Cockatoo *C. latirostris* and the Forest Red-tailed Black Cockatoo *C. banksii naso* are large, iconic, forest and woodland cockatoos, endemic to the south-west corner of Western Australia. Baudin's Cockatoo is currently listed as **Critically Endangered**, Carnaby's Cockatoo as **Endangered** and the Forest Red-tailed Black Cockatoo as **Threatened** and all have suffered a substantial loss of habitat and a decline in numbers in the past 50 years.

Direct causes of population decline include the large numbers shot by orchardists (mainly Baudin's Cockatoo), clearing and fragmentation of habitat (especially the loss of breeding hollows), fire, and the impact of hollow competitors (feral honeybees and invasive species) and climate change.

Over the past 23 years the WA Museum with support from other State and local governments departments, community groups, volunteers and the general public have been able to sustain important research into the breeding biology of these cockatoos.

Information has been gathered on the current distribution, status, relative abundance, habitat preferences, breeding season, feeding ecology, social organisation and migration and movements for these cockatoos in the south-west. The public program *Cockatoo Care* has also been outstanding in raising public awareness of the plight of these cockatoos on the web.

The conservation of Baudin's Cockatoo in particular provides us with a great challenge for the future, although listed as Critically Endangered it is also a declared pest of agriculture because it damages commercial fruits.



Left: Male Baudin's  
Cockatoo

Photo: Tony Kirkby



# *Black Cockatoos An unfolding Crisis*

*(cont)*

Right:  
Carnaby's Cockatoo  
in flight

Below:  
Forest Red-tailed  
Black Cockatoo, male  
& female at nest

Photos: Tony Kirkby



Our work on all three species has encompassed a range of conservation issues including the identification of threats, protection of critical habitat, establishment of recovery and management plans and has greatly improved our understanding of their breeding biology and requirements.



<sup>1</sup> Ron Johnstone is from the WA Museum Collection & Research Centre; Photographs by Tony Kirkby

# Chuditch

by Greg Warburton

I was delighted to be one of the speakers at the 'Catchments, Carnabies and Chuditch' forum hosted by TFOR and held at the Community Pavilion on the 11th of March. I certainly was in esteemed company with Dr. Liz Kington and the legendary Ron Johnson from the WA Museum. Liz talked about catchments and waterways associated with the Julimar Forest. Ron, one of the state's leading experts on Black Cockatoos highlighted the significance of the Julimar forest for Black Cockatoo breeding and habitat.

I spoke about that other important resident of the of the Julimar forest, the Chuditch, also known as the Western Quoll. Post World War Two the Chuditch all but disappeared from the forest so in the early 90's the then CALM launched a reintroduction program. Subsequent trapping surveys indicated that the initiative was successful. Today sighting reports are regular and Julimar is now a vital conservation location for this threatened species.

Five species of Quoll are found in Australia and New Guinea the largest being the Spotted tail quoll which can weigh in at four kilos. Quoll's distinctive white spots make them easy to identify. They all belong to a large family of marsupials called the *Dasyurids*, the carnivorous Australian marsupials. Some sixty species are found in Australia from the miniature Planigale to the formidable Tasmanian Devil. The Thylacine, the largest of the group is now thought extinct.

Chuditch, which is the Noongar name for the species are solitary, nocturnal hunters that range across large territories. Equally at home on the ground as in the trees it will shelter in both hollows and burrows. They breed in Autumn and early winter and produce two to six pouch young which are usually independent at about eighteen weeks.

As with our previous forum the event was a great success and we look forward to presenting another one next year.

## Chuditch, Western Quoll, Western Native Cat

*Dasyurus geoffroii* (Gould 1841)



**Near Threatened**

# *Catchments, Carnabies and Chuditch of the Julimar Forest*



*Above: President Jennifer White summing up and taking questions*

*Photo: John White*



*Left: Julimar State Forest signage depicting the area as a (protected) Conservation Park.*

*Photo: Dr. Liz Kington*

**Newsletter of the  
Toodyay Fiends of the River (Inc.)**

**WORKING FOR THE HEALTH OF THE  
AVON RIVER**

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[www.toodyayfor.org.au](http://www.toodyayfor.org.au)**

## The Back Page

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### *River-talk: Understanding the terminology* **FLOOD FREQUENCY**

A flood level that has a specified percent chance of being equalled or exceeded in any given year. For example, a 100-year flood occurs on average once every 100 years and thus has a one percent chance of occurring in a given year

Similarly a 5,000-year flood (similar to what occurred in Eugowra, N.S.W. on 14 November 2022) is a flood of significant magnitude that has a one five-hundredth percent chance of occurring in a given year. However multiple events could happen over shorter periods, particularly with the current climate change patterns.

### **ANNUAL EXCEEDENCE PROBABILITY (AEP)**

The probability or likelihood that a given rainfall total over a given duration will be exceeded in any one year. This is expressed as a percentage - that is, a 1% AEP is a 1 in 100 chance of a flood of that size (or larger) occurring in that year. It doesn't mean that if it floods in one year it won't flood for another 99 years

### **ANNUAL RECURRENCE INTERVAL (ARI)**

The interval based on the probability that a given event will be equalled or exceeded in any given year. For example, assume there is a 1 in 50 chance that 100mm of rain will fall in a certain area in a 24-hour period during any given year. The intervals between events that exceed any previous events are generally random

*Data from the Bureau of Meteorology*

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