

# bushland news



Issue 120 **Summer** 2021-22 *Time of Birak and Bunuru in the Noongar calendar.*

## Connecting Noongar-Wudjari and Western science knowledge

Photo – Noongar Boodjar Language Centre.



Department of Biodiversity,  
Conservation and Attractions



*Bushland News* is a quarterly newsletter of Urban Nature, a Department of Biodiversity, Conservation and Attractions Parks and Wildlife Service program to support community involvement in bushland conservation.



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## Next issue

### Autumn *Bushland News*

Autumn *Bushland News* contributions should be sent to [Urban Nature](#) by **9 March 2022**. *Bushland News* seeks original contributions. If your submission has been or may be published elsewhere please let us know. Compiled and edited by Anna Wisolith.



# Connecting Noongar-Wudjari and Western science knowledge

By Nat Raisbeck-Brown and Denise Smith-Ali

In 2020, the [Noongar Boodjar Language Centre](#) in Perth partnered with the [Atlas of Living Australia](#) (ALA) to create the [Noongar Boodjar Plant and Animal Online Encyclopedia](#). This project linked [Noongar-Wudjari](#) ecological knowledge and language of plants and animals with Western science knowledge. It focused on the Noongar-Wudjari clan from the south coast of Western Australia. We worked specifically with traditional knowledge custodians of the bloodline of Wudjari Nation, Lynette Knapp and Gail Yorkshire, to record, preserve and share their ancestral language and knowledge about plants and animals.

Noongar-Wudjari names and knowledge for [90 plants and animals](#) have now been published through the ALA.

## What is the project?

The Noongar Boodjar Plant and Animal Online Encyclopedia project is part of the ALA's [Indigenous Ecological Knowledge](#) program which started in 2016, and aims to promote Indigenous knowledge and language through inclusion in the ALA.

ALA is an online biodiversity website that is free to use. You can search the name of a plant or animal to access information, photos and distribution maps.

*Cover photo: Lynette Knapp (left) and Gail Yorkshire at Fitzgerald River National Park sharing language and knowledge for the Noongar Boodjar Plants and Animals online encyclopedia, August 2020. Photo – Noongar Boodjar Language Centre.*

There are currently over 100,000 records in the ALA acquired from Australian museums, research organisations, parks and wildlife managers including the Department of Biodiversity, Conservation and Attractions (DBCA), and citizen scientists. Last year the ALA was accessed more than two million times.

In 2019 we worked with four knowledge holders from the Kamilaroi Nation in New South Wales to document 690 names for 304 species in the three Kamilaroi languages (Gamilaraay/Gamilaroi/Kamilaroi, Yuwaalayaay, and Yuwaalaraay), which were published on the ALA in August 2019. Kamilaroi knowledge holders are currently working to add their knowledge and stories for these species to the ALA.

## Who is involved?

The Noongar Boodjar Plant and Animal Online Encyclopedia is a co-innovation, co-design project created by the Noongar Boodjar Language Centre and the ALA.

The Noongar Boodjar Language Centre is key to Noongar language revival and survival. They have been working hard to bring language back to Noongar people and reclaim cultural understanding and meaning through language development. Over the last 10 years they have been responsible for an increase in Noongar people speaking language and the pride that is instilled within Noongar culture today.



*Gail Yorkshire harvesting baardi. Photo – Noongar Boodjar Language Centre.*

Lynette Knapp and Gail Yorkshire are Noongar-Wudjari knowledge custodians. They have known each other their entire lives. They were in the mission together as young children, and then later at school when Lynette lived with her family, she would share damper, stories, language and culture with Gail, even though they were not allowed to do so. It is important to Lynette and Gail that their knowledge is collected, protected and shared publicly through the ALA. They own this knowledge, not the ALA. They consented to all knowledge shared and can ask for it to be changed or removed from the ALA at any time.

*Continued next page ...*



## How we worked

A crucial component of this project was to visit Wudjari Country – Fitzgerald River National Park on the south coast of Western Australia, with the knowledge custodians Lynette Knapp and Gail Yorkshire. Going back on Country is healing and nurturing for Indigenous people, because they are part of the environment, not separate from it, and their knowledge is embedded in land, language and culture. Being on Country helps revive knowledge by sparking memories of people, places, plants and animals. It is vital to document and share this knowledge to ensure it is not lost, so that future generations can access it to learn about their past and manage Country for our future.

Working together was essential for the success of this project. This means Lynette and Gail working together, as well as collaborating with scientists, the Noongar Boodjar Language Centre and the ALA to collect, protect and share their knowledge.



Gail Yorkshire (third from left) shows Annelise Janson, Tessia Moulton, and Alison Lullfitz how to remove algae from a freshwater spring so it can flow properly. Photo – Noongar Boodjar Language Centre.



*Baardi* is the Noongar Boodjar language name for witchetty grub (genus *Endoxyla*). Photo – Noongar Boodjar Language Centre.

Lynette and Gail's language and knowledge comes from their life experience, being part of the land and accessing knowledge from 75,000 years of oral tradition. Bringing Lynette and Gail together, on Wudjari Country, activated their language brain and their bilingual and autobiographic memory, meaning the more they discussed stories of plants and animals, the more they remembered.

Scientists including Professor Stephen Hopper and Alison Lullfitz from the University of Western Australia's Albany Campus have been working with Lynette and Gail for many years documenting and preserving their language and knowledge for plants and animals. We also worked with Australia's only Aboriginal ethno-botanist, Gerry Turpin, who joined us from Cairns, Queensland. Gerry, Lynette and Gail discussed the similarities and differences in the plants and their uses between the North Queensland and Wudjari Country, and how ethno-botany is helping communities revive and protect their traditional language and knowledge.



Lynette Knapp at the ochre pits. Photo – Noongar Boodjar Language Centre.

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## What did we create?

For Lynette and Gail, the value of this project lay in getting their language and knowledge out to the public and documented in a way that would be easily accessible by their families and communities.

The [Noongar Boodjar Plant and Animal Online Encyclopedia](#) was recently launched on the ALA and includes Noongar-Wudjari language and knowledge for [90 plants and animals](#). Now when you look up one of these plants or animals on the ALA you will see the Wudjari name along with the Latin, common, and Kamilaroi names. You can also navigate to a species page by searching the Wudjari name.

The Noongar-Wudjari knowledge collected for each plant and animal is also available on the encyclopedia. This is different to the Western science knowledge and includes information about what it looks like, feels like, smells like, and tastes like, its connection to people, Country, season and other plants and animals, its uses (food, medicine), its cultural significance, and how it is managed for sustainability as a resource and for the environment.

## What's next?

The ALA Indigenous Ecological Knowledge program is now also working with two other Noongar Nation clans (Yuat and Nyoongar) and communities in South East Arnhem Land, Far North Queensland, the Gascoyne, and the Kimberley. The South East Arnhem Land Plant and Animal Encyclopedia will be published in the next couple of months.

The United Nations, in recognition of the importance of protecting, revitalising, preserving and promoting Indigenous languages, has declared 2022 the start of the [International Decade of Indigenous Languages](#). More than a communication tool, languages are an inherent part of culture, and connect people with their identity, past, knowledge and traditions. Keeping Indigenous languages alive brings benefits to both individuals and community, and we all stand to gain from the different perspectives and knowledge that come from maintaining a richness of linguistic diversity.

If you have any questions about this project or Noongar languages, please contact the Noongar Boodjar Language Centre or the Atlas of Living Australia.



**Dromaius novaehollandiae (Latham, 1790)**  
species Accepted Name authority: AFD

**Emu**  
**Bagabaga** in Yuwaalayaay  
**Barrgay** in Gamilaraay / Gamilaroi / Kamilaroi  
**Dhinawan** in Gamilaraay / Gamilaroi / Kamilaroi  
**Dhinawan** in Yuwaalayaay

**Barrgay** in Yuwaalaraay  
**Barrgay** in Yuwaalayaay  
**Dhinawan** in Yuwaalayaay  
**Waitj** in Wudjari

Overview Gallery **Names** Classification Records Literature Sequences Data Partners

Compiled distribution map

Compiled distribution map provided by BirdLife International species range maps

When you search the ALA, you will now see Noongar-Wudjari names and knowledge included for 90 plants and animals. For example, on the webpage for the [emu](#) (*Dromaius novaehollandiae*) you can see the Wudjari name 'Waitj' listed, along with the English common name and names from three Kamilaroi Nation languages. You can also search the ALA using the Wudjari name – Waitj, to get to this same species page. You can access the Noongar-Wudjari knowledge by clicking the 'Names' tab and scrolling down to the Waitj link (in orange) that will take you through to the online [Waitj encyclopedia page](#). Image – ALA.

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## Ending the year on a good note By Grazyna Paczkowska

[Previously we reported](#) on a commencement of fluproponate herbicide trials on [African lovegrass](#) (*Eragrostis curvula*).

We are happy to report that the study has been completed and the final rescore of the trials was done in November this year. The initial set-up of the trials and subsequent scoring and spraying proved to be a challenging task, and the recent follow-up fieldwork had its challenges as well. The selected site of the trials is a narrow railway reserve north of Bullsbrook, with degraded

vegetation condition overgrown with African lovegrass. The grass is summer growing, and most of the work needs to be done when it is in active growth. November in that part of Perth metro area can be quite hot and spending the whole day in full sun with little or no overstorey cover can be exhausting. The preliminary results of the herbicide trials look promising, and we will provide an update once the data is analysed and published.



DBCA officers Anne Harris and Ebony Skey in the process of rescoring a plot using the point intercept method. This is a treatment plot where grass selective herbicide fluproponate was used to control African lovegrass. The vegetation sampling within the plot will inform us about the effectiveness of the herbicide and assess if there has been any off-target damage to the few native plant species present at the site. Megan Young (in the background under the bushes) volunteered to help with the works, and it was good to [have her back](#). Photo – Julia Cullity.



Above: DBCA staff Carl Gosper and Sandra Williamson sampling the vegetation at the control plot where no herbicide spraying occurred.

Right: Done. After a hot day in the field (hard to show the heat, sweat and flies in photos) and the completion of three years of the project, it was time to celebrate with a cold drink, strawberries and Tim Tams and thank the volunteers that assisted. (Disclaimer – it was an alcohol-free drink!). Photos – Grazyna Paczkowska.



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## WALGA field training day By Karen Clarke

On 26 August 2021, WALGA ran a field training day for local government staff titled 'Plant Recognition and Restoration Practices in Natural Areas', attended by 35 staff from local government and partner organisations. The training aimed to demonstrate the characteristics of different ecological communities on the Swan Coastal Plain, provide skills in identifying native and weed plant species, discuss management of natural areas by State, local government, and community groups, and showcase large-scale restoration techniques and challenges.

The field day focused on three large Bush Forever Reference Sites – Forrestdale Lake, Brickwood Reserve and Cardup Nature Reserve. We also visited both the restoration and reference sites at Forrestdale Lake of DBCA's [Banksia Woodland Restoration Project](#), one of two sites established to offset clearing at Jandakot Airport.



*Karen Clarke (with umbrella) discusses the key species that characterise the Eastern Banksia attenuata and/or Eucalyptus marginata woodlands TEC (FCT 20b) of Perth's foothills, Cardup Nature Reserve. Photo – WALGA.*

I helped to lead the training together with WALGA, local government and community groups involved in the management of each site. The training covered eight different vegetation communities on the Swan Coastal Plain, moving from the Bassendean Dunes through to the Pinjarra Plain and foothills of the Darling Scarp. All sites visited were Threatened Ecological Communities (TECs) including several forms of the Commonwealth listed Banksia Woodlands of the Swan Coastal Plain TEC, as well as several conservation category wetlands.

WALGA offers the field training to local government in both metropolitan and regional locations each spring. To register your interest in attending or leading a site visit, please contact the WALGA Environment Team by [email](#) or phone (9213 2065).

### Contact

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*Karl Titelius from the Friends of Brickwood Reserve discusses dieback management to protect the Corymbia calophylla – Kingia australis woodlands on heavy soils TEC (FCT 3a). Photo – WALGA.*



# Paterson's curse (*Echium plantagineum*)



Paterson's curse at Jandakot Regional Park, Wandi.  
Photo – Anna Wisolith.

By Anna Wisolith

**One of Australia's best-known weeds, Paterson's curse (*Echium plantagineum*) can be easily spotted in spring when large infestations colour the landscape with their purple flowers. It belongs to the Boraginaceae family – the borage or forget-me-not family of flowering plants, and other common names used for this weed include salvation Jane, blueweed, Lady Campbell weed or Riverina bluebell. Though Paterson's curse is often admired for being Instagrammable, in reality it is a highly undesirable, noxious weed.**

## Description

Paterson's curse is a large annual or biennial herb. It usually germinates in early autumn and flowers in late winter and spring but can germinate or flower at other times of the year under favourable conditions. It first develops a basal rosette of large, stalked, lance-shaped leaves, from which one or several flowering stems arise. The stems are branched and bristly, covered with stiff white hairs and bearing leaves that are stalkless, smaller and narrower than the rosette leaves. Numerous purple (and rarely, pink or white) flowers are produced, mainly from September to December or January. The flowers are 2–3cm long, trumpet-shaped, and highly attractive to pollinating insects including the European honey bee. With its flowering stems, Paterson's curse commonly grows 30–60cm tall but can reach up to 2m. The seeds are 2–3mm, brown to grey, and have rough, wrinkled seed coats that adhere easily to wool, fur and clothing.

## Origin and introduction

Originating from the Iberian Peninsula, Paterson's curse also occurs in other parts of Europe, northern Africa, and south-western Asia. It has been introduced to all continents, and is a weed in Australia, New Zealand, South Africa, and North and South America.

It was introduced deliberately into Australia as a garden ornamental in the mid-1800s, being available for purchase through mail order gardening catalogues. The common names 'Paterson's curse' (a name used nationally) and 'Lady Campbell weed' (a name confined to Western Australia) point blame for its introduction as a garden flower and subsequent spread from the properties of the Paterson family in Albury, New South Wales, and Lady Campbell in Broomehill, Western Australia. In reality, these were not the first introductions of the weed to the country or State, and its naturalisation is likely the result of numerous introductions from private and public garden escapes, as well as repeated accidental importation of seed through contaminated fodder and the fleeces of livestock.

## Distribution and impact

Paterson's curse is present in all states and territories of Australia. It has become abundant here due to the predominance of acid sandy soils, which it prefers – although it can grow on a wide range of soil types. It is particularly well suited to the Mediterranean-type climatic conditions found across large parts of southern Australia. Thriving in open, disturbed sites, Paterson's curse can be found along roadsides, railroad tracks, on agricultural land, and in natural habitats such as grasslands, open woodlands and heathlands. It can quickly dominate areas, forming dense monocultures that outcompete smaller native plants and can hinder the regeneration of overstorey.

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In Western Australia, Paterson's curse is a [declared pest](#), and can be found throughout the south-west from Shark Bay in the north to the South Australian border in the east, and is spreading into the Western Australian [mulga shrublands](#) where it is displacing native annuals such as everlasting daisies. It is most abundant around the Geraldton area, and in the Swan and Avon valleys. As an environmental weed, it has been recorded in national parks, nature reserves and State forest. For example, it is a weed in terrestrial reserves in the Shark Bay region, and is common in threatened eucalypt woodland communities in the Avon Wheatbelt region.

With a long growing season, Paterson's curse can form dense, dominant, and persistent populations, particularly in areas with low grazing pressure and high soil fertility. Seedlings are fast-growing, drought resistant, and form a stout taproot and broad smothering rosette leaves which make them fierce competitors of both native and pasture species.

An estimated 33 million hectares of land across Australia is infested with Paterson's curse. It is perhaps the most widespread broad-leaved pasture weed of southern Australia, costing sheep and cattle producers millions annually through lost productivity, wool contamination, and control costs. It is also toxic to mammals, causing cumulative and often fatal liver damage to livestock, particularly horses and other non-ruminants.

## Dispersal and fire response

Each plant can produce prolific quantities of seed, which can remain viable for up to six years. Areas that are densely infested may form a soil seed bank with as many as 30,000 seeds per square metre. Seeds are spread by water, vehicles, animals (through manure and adhesion on fur), humans (via clothing and footwear), and contaminated soil, hay and grain.

Smoke can stimulate the emergence of seedlings.

## Control

### Biological control

Paterson's curse was the target of the first national biological control program, initially coordinated by state government agencies and CSIRO, and now managed by landowner groups at a local level. Biological control does not aim to eradicate but rather limit the dominance of Paterson's curse, particularly in agricultural areas to manage large, economically damaging infestations. Four insects (the root weevil, crown weevil, flea beetle, and pollen beetle) are currently used as biological control agents across southern Australia, each attacking a different life stage of the plant, with significant success achieved in some areas.

### Chemical control

Paterson's curse is susceptible to several herbicides, though [resistance to Group B/2 herbicides](#) has been recorded in Western Australia. [Herbicide treatment](#) is most effective when plants are young, at the seedling or rosette stage and when actively growing. Spot spray with 0.5g/10L chlorsulfuron and wetting agent in late autumn or winter (May to August, occasionally September) when most seed has germinated – this will also help inhibit further germination. To control existing plants, apply glyphosate at 75ml–100ml/15L or metsulfuron methyl 5g/100L at the early flowering stage.

### Physical control

Manual removal via grubbing and cutting is suitable for young or isolated plants from May to October (occasionally November to April). Ensure to remove at least the growing point and the top 20mm–40mm of taproot to prevent regrowth. Do not leave flowering



*The basal rosette of Paterson's curse has large, lance-shaped leaves that grow broadly when uncrowded or upright in dense infestations. Herbicide control is most effective at the seedling or rosette stage before the flowering stems develop. Photo – Anna Wisolith.*

plants on site as seed will continue to mature after plants are cut or pulled. Slashing or mowing is not recommended as it can cause out of season flowering and seed production. Pollen from Paterson's curse can trigger hayfever, and the whole plant is covered with abrasive hairs that can cause dermatitis, itching and inflammation, so be sure to wear appropriate protective gear.

Eradicate small infestations before they have a chance to become a big problem, and remember to practice good biosecurity so you don't inadvertently spread the curse to other areas!

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# Citizen science survey of western ringtail possums *By GeoCatch*

The Ringtail Tally was established by [GeoCatch](#) in 2016 in partnership with DBCA to improve our knowledge and awareness of critically endangered western ringtail possums living in urban areas. Citizen scientists are engaged to record sightings of possums in their local area over a four-week period during April to May. The results are shared with the wider community in the form of an infographic and recorded on the Western Australian Threatened Species Database. This year's results can be seen in the pictured infographic.

Now in its sixth year, the tally has expanded beyond the original Geographe Bay Catchment area. [Nature Conservation Margaret River](#), [Leschenault Catchment Council](#) and [Wirambi Landcare](#) now run the project with their local communities, making it a truly regional event.

The tally is building a reliable set of observation data that will improve our knowledge about where western ringtail possums are found and in what numbers, to inform future planning decisions and conservation projects. A [summary report](#) collates the data findings from the first seven tallies completed.

The tally is a fun way for community members of all ages to engage in science and the conservation of a critically endangered species. If you are interested in taking part in the 2022 autumn survey, keep an eye on the [GeoCatch website](#) for details or contact [GeoCatch](#).

## Contact

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phone 9781 0111



Western ringtail possum  
(*Pseudocheirus occidentalis*).  
Photo – Geocatch.

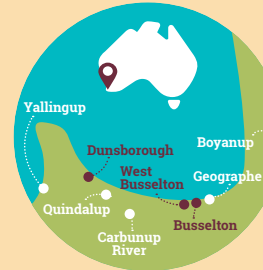
## GEOGRAPHE BAY CATCHMENT

# Ringtail Tally Results Autumn 2021

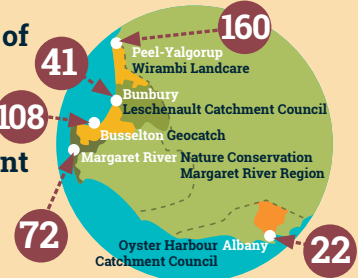
A survey of ngurare (nah-ren), western ringtail possum.  
**A snapshot of results April-May**



### Where we saw ringtails



### Number of ringtails seen in each catchment



**22** sites were observed with young

**85%** of 20 sites had ringtails!

**458** possum sightings of which **108** were identified as different individuals

a total of **56 hours** were spent looking out for possums, across **144** evening surveys

**45%** of sites had evidence of dreys or scats  
Dreys are nests built by possums, scats= possum poo

**3.2** average number seen during a survey

**20** residents took part in the Tally

of **12** reported deaths (seen this year), **75%** were due to road kills, **8%** cats, **17%** unknown

### Did you know

The ngurare (nah-ren) was declared critically endangered in 2017.

### Conservation: How can we help?

To protect our ringtails, keep cats and dogs inside at night at a minimum, protect your peppermint, marri and jarrah trees, plant native gardens and drive carefully at night.

### Missed the tally?

Send any sighting info to [fauna@dbca.wa.gov.au](mailto:fauna@dbca.wa.gov.au) where your important data will be added to the western ringtail possum database or participate in the next possum tally.

**NEXT SURVEY:** Keep an eye out for our 2022 Autumn Survey online at [www.geocatch.asn.au](http://www.geocatch.asn.au) or contact GeoCatch on 9781 0111 or [geocatch@dwer.wa.gov.au](mailto:geocatch@dwer.wa.gov.au).



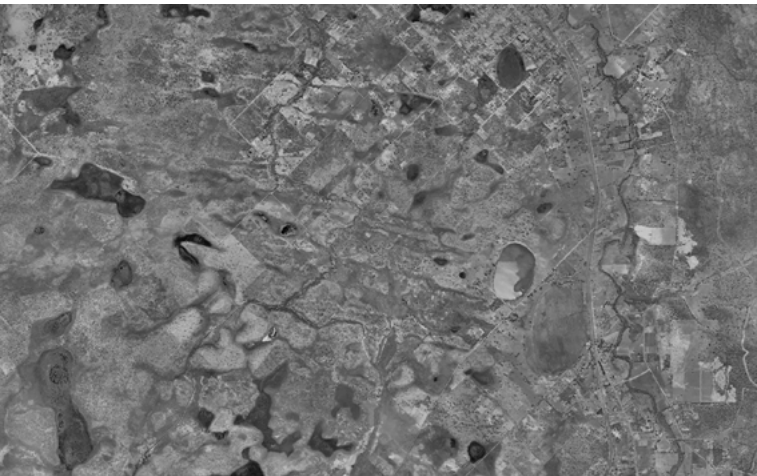
This project is delivered by GeoCatch, in partnership with Department of Biodiversity, Conservation and Attractions, and supported by the South West Catchments Council, through funding from the Australian Government's National Landcare Program



# Do you have old or historical photos of the wetlands and waterways of the Djarlgarro Beeliar catchment?

By *Cristina Ramalho*

The Djarlgarro Beeliar (Canning River) is one of the main natural arteries that sustains Perth's southern landscapes. From the confluence with the Derbarl Yerrigan (Swan River) to its headwaters in the hills, the Djarlgarro Beeliar captures the water flowing through several creeks, including the Yule and Bickley brooks to the North, and Neerigen Brook, Wungong and Southern rivers to the south. The river, its tributaries, the many wetlands and swamps – and the invisible, sustaining groundwater – are a fundamental part of the local environment and hold enormous cultural value.



*Aerial photograph of the Southern River area in 1953. The large lake to the right is Wright Lake, nestled between the Southern and Canning Rivers, and which was transformed into a rowing course in the early 2000s (nowadays called Champion Lakes). These landscapes have changed enormously in the last decades and we are interested in finding photographic evidence of what places looked like before and during urbanisation. Photo – Landgate.*

We are conducting a collaborative, interdisciplinary, [Noongar co-led project](#) that is gathering archived information about Noongar values associated with the wetlands and waterways of the Djarlgarro Beeliar catchment. The project is collaborating with the Noongar community to interpret, map and discuss the information gathered. Ultimately, the project aims to celebrate the ancient and unbroken connection that Noongar people hold to these landscapes, and the unique cultural and ecological heritage we all owe to look after together.

We would love to hear from residents and visitors that may have old or historical photographs of the wetlands and waterways in the Canning River catchment. Historical images help us understand what has been changed or lost and what we need to hold dear going forward. They also help us understand the places we live, and how we can care for them. If you are a keen photographer and have good quality photos of current places, we would love to hear from you too. We are planning to use the photographs in a book, where photographers will be acknowledged for their contribution.

Maybe it's a photograph taken during a family picnic by the river, or during a bushwalk, work field visit, at the old family farm, or even an aerial perspective? If these were taken in the local government areas of Canning, Gosnells, Armadale, but also South Perth, Melville, and Cockburn, chances are that they were taken within the project's study area and that we may have gathered other information about the places you photographed.



*Hilbert Road swamp in 2013 prior to urban development. Photo – Pat Hart.*

Please get in touch if you think you can help us by contacting Cristina by phone (6488 4565) or [email](#).

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# New quenda bungalows in Dianella

## By the City of Stirling

A partnership between the City of Stirling, the Stirling Community Men's Shed and DBCA has seen the installation of 11 new quenda bungalows in Dianella.

Cottonwood Bushland Reserve has been restored in recent years and serves as an ideal site for the reintroduction of quendas, a species of bandicoot endemic to the Perth area.

Made by members of the Stirling Men's Shed from wooden pallets, chicken wire and branches, the bungalows are designed to boost quenda survival by providing them a place to shelter from predators.



One of the quenda bungalows installed at Cottonwood Bushland Reserve. Photo – City of Stirling.

The bungalows were installed in mid-September, with a total of 21 quendas later released into the Dianella area to help increase the population and chance of survival of the local native species.

Mayor Mark Irwin said the quenda bungalows came about after the city identified a need to augment the habitat for these native animals.

"The quenda bungalows are one of the many conservation efforts the city undertakes and by installing these, we hope to aid their survival from predators, which can include foxes, dogs and cats," he said.

"Using two wildlife cameras, we will monitor the bungalows to observe their use and – hopefully – their success. The city has a Quenda Recovery Program which works in conjunction with our feral animal control programs, so we hope to see an increase in quenda presence and activity.

"To help provide their best chance of survival, the community is encouraged to keep their dogs on a leash and contain cats indoors where



Stirling Men's Shed coordinator Guy Bongiorno, DBCA's Regional Ecologist Geoff Barrett and Stirling Mayor Mark Irwin with the new quenda bungalows. Photo – City of Stirling.

possible, near quenda habitat areas, and to avoid feeding quendas, as this can lead to obesity and related diseases and health issues."

Quendas are a Priority 4 species in Western Australia and are protected under the *Biodiversity Conservation Act 2016*. Plants and animals that are conservation dependent require ongoing active management to ensure their preservation.

There are several other quenda habitat areas in the City of Stirling, including Star Swamp Reserve in North Beach, Trigg Bushland and Dianella Regional Open Space.

## Contact

### Gabriela Eiris

City of Stirling

email [Gabriela.Eiris@stirling.wa.gov.au](mailto:Gabriela.Eiris@stirling.wa.gov.au)

phone 9205 8450



# Opportunities to have your say

Southern right whales at Point Ann, Fitzgerald River National Park. Photo – Peter Nicholas/DBCA.

**Public comment is being sought by the McGowan Government on a number of draft plans and proposals, so be sure to have your say by making a submission on the issues that matter to you.**

## Bold Park Management Plan 2022–2027

Bold Park is one of the largest remaining urban bushland areas in Perth and is an A-class reserve with significant conservation and recreational values. The draft Bold Park Management Plan 2022–2027 will guide initiatives to protect the iconic park over the next five years under four management categories: Community Engagement and Participation, Visitor Experiences, Science

and Environmental Conservation, and Amenity and Infrastructure.

Read a copy of the [draft plan](#) and make a submission [online](#), by [email](#), or by post:

Planning Officer  
Botanic Gardens and Parks Authority  
1 Kattidj Close, Kings Park WA 6005

Submissions close **31 January 2022**.

## Gnangara groundwater allocation plan

The Gnangara groundwater system supports ecosystems including caves, wetlands and bushland, as well as supplying up to 40 percent of Perth’s drinking water and water for industry, horticulture, garden bores, parks and other green spaces. The draft Gnangara groundwater allocation plan proposes adjustments to most licensed water users’ entitlements to ensure the

long-term environmental sustainability of the Gnangara system while ensuring users certainty of ongoing supply.

Read a copy of the [draft plan](#) and make a submission [online](#), by [email](#), or by post:

Branch Manager  
Water Allocation Planning  
Locked Bag 10, Joondalup DC WA 6919  
Submissions close **28 February 2022**.

## Aligning domestic garden bore sprinkler roster with scheme water roster

Currently, domestic garden bores can be used for garden watering three days a week in spring, summer and autumn, collectively abstracting around 90GL per year, which makes up 22 percent of all water abstracted from our groundwater system. A proposal has been made for domestic garden bore sprinkler roster changes to bring it in line with the two-day-a-week scheme water roster by 1 September 2022. This proposal will

save up to 30GL of groundwater annually, stabilising water tables to the benefit of street trees and urban wetlands.

Read more about the [proposal](#) and make a submission [online](#), by [email](#), or by post:

Sprinkler roster changes  
Department of Water and  
Environmental Regulation  
Locked Bag 10, Joondalup DC WA 6919  
Submissions close **28 February 2022**.

## Proposed south coast marine park

A proposed marine park is being considered for Western Australia’s south coast to ensure protection of its unique ecological and cultural heritage values. The location and boundary of the marine park will be developed as part of the consultation process, with a study area under consideration stretching from Bremer Bay eastward to the South Australian border, and offshore to the

limit of State waters. It is intended that the proposed south coast marine park will be jointly managed between DBCA and the area’s Traditional Owners.

Get involved and stay up-to-date by visiting the [website](#) and signing up to the [newsletter](#). Stakeholders will be consulted throughout the planning process which is due for completion in **February 2024**.





*Tingles in the mist – Valley of the Giants. Photo – DBCA.*

## Immersing in forest calm By Ainslie de Vos

*Edited reprint with thanks to the WA Parks Foundation*

“The forest is the therapist”, says Belinda Rowland when introducing her Forest Bathing groups to a mindful nature experience in the Ancient Empire Walk within Walpole’s famed Valley of the Giants.

“Quietly acknowledge everything the forest gives you – the invitations of bird song, gratitude for the signs of the forest quokka. The tingle trees for their age and beauty. The wildflowers for their colour and the leaf litter for its shapes and recycling.”

Inspired by the Shinto reverence (indigenous belief system) for nature, Japanese government-backed research in the 1980s looked at measurable health benefits of walking in the forest. A formal therapy was called Shinrin-Yoku (forest bathing). Already widely popular in Japan, Europe, UK and the USA, it’s becoming increasingly popular in Australia, including here in Western Australia.

Belinda, who works for DBCA as an Eco Tour Guide, has a commerce degree major in tourism, has completed a mental first aid course and is continuing her studies to further develop her knowledge in tourism and business processes.

“Forest bathing enhances wellbeing and connection with nature by being present with all our senses”, Belinda explains.

“It’s an eco-antidote to tech-boom burnout – a practice of mindfulness leading people on sensory walks to gain increased benefit from being in nature, to slow down, reduce stress and connect themselves with nature.



*Forest bathing is a contemplative practice that takes in all of the senses. Photo – Pauline Cook.*

“In a calm and relaxing environment, it is a simple yet powerful form of ecotherapy that also improves mood, focus and energy.”

A short and easy walk on a section of the Bibbulmun Track is another option for the Forest Bathing tours with Belinda as your guide. Tree Top Walk has a range of activities during the school holidays which change seasonally. For more information, visit the Tree Top Walk [website](#).

### Contact

#### **Valley of the Giants Tree Top Walk**

website [treetopwalk.com.au](http://treetopwalk.com.au)

email [ttw@dbca.wa.gov.au](mailto:ttw@dbca.wa.gov.au)

phone 9840 8263



# WA Parks Foundation membership offer to help conserve Western Australia's parks

By Fiona Cooper Smyth

With summer holidays now upon us, the [WA Parks Foundation](#) has introduced an attractive membership package which, with the support of DBCA, continues to include a 50% discount on annual national parks passes.

At \$30–\$50 for individuals and \$90 for families, membership fees now also offer a complimentary copy of [Landscape magazine](#), discounts to DBCA's [WA Naturally online gift shop](#) and discounts to adventure treks and tours by organisations such as The Hike Collective, Pemberton Discovery Tours, Midwest Adventure Tours, Margaret River Discovery Tours, Trek Ningaloo, and Transcend Trails.

In return, the [WA Parks Foundation](#) will cross promote businesses in the adventure and nature tourism industry through the Foundation's own social media and communication channels.

Membership of the Foundation is also being promoted as a great Christmas gift idea.

WA Parks Foundation Chair, the Hon Kerry Sanderson AC CVO said building the WA Parks Foundation membership helped to encourage people to visit the State's national parks and reserves.

"Growing our membership base through additional incentives also supports our efforts to raise much-needed funds for conservation projects as well as helping to promote and support regional businesses that align with WA Parks Foundation values.

"Our mission is to connect people with WA's 31 million hectares of parks and, through collaboration, deliver



*The WA Parks Foundation helps connect people to our spectacular parks, promoting and protecting our natural heritage for future generations. Pictured here is Nature's Window in Kalbarri National Park by [David Ashley](#), winner of the WA Parks Foundation's 'Hidden Corners' photo competition. Photo – David Ashley.*

projects that celebrate, increase understanding of and protect these wonderful natural assets for future generations," Kerry Sanderson said.

"We collaborate with others and are the official charity partner of the State's national parks and other conservation reserves.

"To be a member of the WA Parks Foundation and to give someone special the gift of membership you are helping conserve our precious parks and reserves with their diversity of flora and endangered fauna, including endemic species."

Visit the WA Parks Foundation's [website](#) for more details on membership or to subscribe to the monthly newsletter.



# Artistic skyway to save possum lives

By Nicole Lincoln

The creation of a western ringtail possum mural artwork is now complete on the recently constructed possum rope bridge, spanning Marine Terrace in Busselton.

Creative Culture artist Lea Taylor was selected to complete the works, in consultation with the Undalup Association.

The mural expresses the significance of the ringtail possum to the traditional custodians of this area, the Wadandi people. Supporting signage will include further information about the traditional significance of this species and the role of the possum rope bridge.

GeoCatch Project Officer Nicole Lincoln said that engaging the Aboriginal community in the project was important.

“Ringtails have co-existed with the local Wadandi people in this region for thousands of years,” she said.

“Understanding their cultural significance and telling that story through art helps us on our journey to protect this critically endangered species.”

The possum bridge was constructed by [South West Catchments Council](#) earlier this year to allow western ringtail possums to cross Marine Terrace safely, without the risk of being hit by vehicles.

“Motor vehicles are responsible for significant death and injury to our local possum population, so we urge drivers slow down and watch out for wildlife, especially from dusk till dawn,” said Nicole.

The bridge has been fitted with cameras to allow South West Catchments Council to monitor the possum traffic.

The construction of this safe crossing and the possum mural helps raise awareness of the critically endangered western ringtail possum and is an apt way to celebrate this iconic species with the community and tourists visiting the region.

This project is supported by the South West Catchments Council, with funding from the Australian Government’s National Landcare Program, Undalup Association and City of Busselton.

Visit the [GeoCatch website](#) to find out more about the western ringtail possum.

## Contact

**Nicole Lincoln**

GeoCatch

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phone 9781 0111



Bibbulmun artist Lea Taylor from Wadandi, Menang and Koreng nations of Western Australia with her artwork on the possum bridge on Marine Terrace. Photo – Nicole Lincoln.



# Bring nature home with ReWild Perth

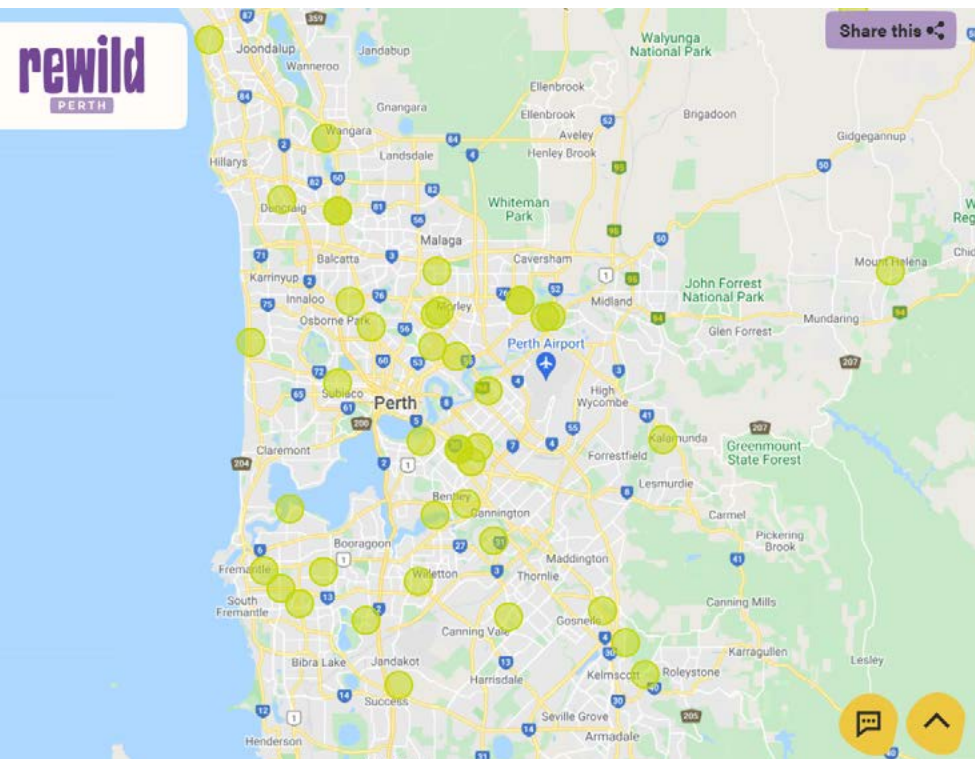
By Sabian Wilde

You may have heard whispers about a new resource that helps people 'bring nature home' over the last couple of years at [Perth NRM](#) events and gatherings. [ReWild Perth](#) is this long-awaited online tool for creating urban habitat, and readers of *Bushland News* are being invited to take a sneak peek before the website's official launch in January 2022.

Developed by Perth NRM and [BirdLife Western Australia](#) through funding from Lotterywest, ReWild Perth has been designed to make it easy for the average household to turn their available garden space into habitat for wildlife – even on an upper storey balcony.



Bring nature home with ReWild Perth. Photo – [Colm Doyle](#).



ReWild Perth user map, November 2021. This screenshot shows less than 50 ReWild sites, so it is easy to imagine the impact 1,000 users could have on increased biodiversity value across the landscape. Image – Perth NRM.

Behind the scenes, the website can generate plant lists based on the user's ReWild site location, filtering options suitable for the dominant soil type (Bassendean Dunes, Darling Scarp, Pinjarra Plains, Quindalup Dunes, Spearwood Dunes). The website then recommends plant species suitable to the history and conditions of the site, and provides suggested ReWilding actions members of the community can take to encourage pollinators and native fauna to find resources and refuge within their gardens.

Following the principle of 'every bit counts', the creators have estimated if only one percent of metropolitan Perth's local road verges were converted from lawn to a habitat garden and one percent of private dwellings installed a banksia, a birdbath or a bee hotel, this could provide an additional 100ha and 8,100 new points of habitat scattered across the metro area, providing very valuable connections between remnant vegetation.

Green corridors are an ideal option for connecting remnant nature spaces, but ReWild Perth can help by introducing urban permeability, making it easier for wildlife to traverse human living spaces.

An advance group of ReWild Pioneers have already been using the site for a couple of months, helping to iron out the kinks, and demonstrating one of the tool's greatest strengths – the ability to visualise our collective impact as ReWilders.

If you would like to get in early and be a part of the ReWild Perth movement, you can head to the [website](#) and start participating now. Please be aware the site is still a beta version and will change in response to feedback as the project continues.

## Contact

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# Coming together to discover nature in our parks and reserves

By Angela Rossen

Our parks and reserves, which are often places of stunning beauty and high biodiversity value, are the perfect catalyst to bring people with a shared interest together to grow community and sense of ownership.

Remnant stands of woodland and wetland provide essential refuges for our native animals and plants. As the climate warms all such natural areas within urban settings will contribute green canopy to cool, and drainage to ameliorate the flooding associated with more frequent stronger storm events. The conservation and remediation of these precious shared spaces is important not only for these essential services they provide but also as places of calm and beauty for the communities that live nearby.

Our native plants and animals are, of course, a delight to discover. Insects that carve sculptural patterns in tree trunks, native bees emerging from sand burrows, willie wagtails with nests full of hungry chicks, a tawny frogmouth sitting stock still on a branch, stunningly beautiful flowers and grasses with elegant seed dispersal mechanisms, these wonders are all around us. Often people just need to be shown how to slow down and see.

Children exploring nature find out for themselves that different species live in particular places and rely on other species for their survival. They also come to realise that parks and reserves and indeed their own gardens are essential to the survival of many native plants and animals.

For over a decade I have presented [community biodiversity field surveys, workshops and festivals](#) in which people discover and document the biota of their own parks and reserves. It is from these sorts of experiences that people reconnect with nature and can become involved with friends groups to volunteer their time and energy to manage and care for these shared natural places. For children, discovering living things and their tiny details under magnification can be the door that opens their interest in the biological sciences and may influence career decisions later.

On a sunny Saturday afternoon in October the community came together to celebrate the revegetation of the Cockburn Wildlife Corridor. This is the area that was partially cleared to make way for the proposed Roe 8 highway extension, a controversial project which the community protested against and rallied to protect the area from further clearing. The remediation is progressing well and this event was sponsored by the [Rehabilitating Roe 8 Project](#). Late rains meant there was still a stunning show of flowers and orchids. On the day I spotted many different species of birds including Carnaby's cockatoos, a striated pardalote and many species of honeyeaters. During our nature ramble we drew and photographed the plants by the path and viewed and photographed specimens under magnification. We shared a morning tea, got talking and made some great connections.

Angela Rossen acknowledges and looks to learn from the Noongar people of Beeliar Boodjar and pays respect to their leaders past, present and those to come.

Please send us your regional report (400 words) and one or two photos by Wednesday 9 March 2022. Text may be edited in response to volume of submitted reports.



Angela Rossen drawing from nature with a young naturalist. Photo – Sue Job.



Discovering nature's tiny secrets with an [iScopeStand](#), which enables a smartphone or tablet to be used as an electronic microscope. Photo – Sue Job.

## Contact

### Angela Rossen

Artist and Biodiversity Educator

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website [angelarossen.com](http://angelarossen.com)



# Dookoorniny Boodjar – Caring for Country Our Way

By Sister Kate's Home Kids Aboriginal Corporation

In 2020 Sister Kate's Home Kids Aboriginal Corporation (SKHKAC) received a three-year state NRM grant for *Dookoorniny Boodjar – Caring for Country Our Way*. Part of the grant is for the restoration of banksia woodland on their Bush Block, a 2.1ha site in Queens Park, adjacent to the original Sister Kate's Children's Home, that was purchased from the Uniting Church in 2006. Many were traumatised by the horrific past of the children's home that operated in various forms from 1934 and across four decades. SKHKAC explain that the Bush Block "holds great significance for those who lived at Sister Kate's as children, [it] was a safe place where the children would play, and families who came to Perth would secretly camp to visit their children in the home." SKHKAC have developed an inspirational plan to create a [Place of Healing](#) at the Bush Block to support and heal the Stolen Generations, their descendants, and the wider community.

As part of the grant, DBCA is providing support for the restoration of banksia woodland on their land in Queens Park. Karen Clarke (DBCA) has been working with Ms Tjalaminu Mia (TJ), the CEO of SKHKAC, and their Environment Coordinator – Place of Healing Programs and Events, Jenni Andrews, to develop species lists and choose reference sites to guide the restoration of the banksia woodland at their Place of Healing. The banksia woodland itself is less than 2ha and is in a degraded condition with many serious environmental weeds in both the overstorey and understorey so it is going to be a significant challenge.

As part of the project, [Dr Glen Stasiuk](#), a Minang-Wadjari Nyungar and lecturer in Media Studies at Murdoch University is working with Sister Kate's Home Kids Aboriginal Corporation to produce an environmental documentary across the Noongar six seasons about the restoration of the Place of Healing. Queens Park Bushland nearby is being used as one of the reference sites to help guide the reintroduction of appropriate plant species. Sian Mawson from the [Friends of Queens Park Bushland](#) and Karen Clarke were filmed during Djilba (August – September) in this reference site talking about some of the species that could be reintroduced to the Place of Healing.



*Sister Kate's Home Kids and Descendants gathering on the Bush Block Place of Healing in 2020. Photo – SKHKAC.*



*Filming at Queens Park Bushland as part of the Dookoorniny Boodjar – Caring for Country Our Way project. L-R: Tim Eng, Sian Mawson (Friends of Queens Park Bushland) and Karen Clarke (DBCA). Photo – Jenni Andrews.*

## Contact

Sister Kate's Home Kids Aboriginal Corporation  
**Jenni Andrews** email [jenni@skhkac.org.au](mailto:jenni@skhkac.org.au)  
**Tjalaminu Mia** email [tj@skhkac.org.au](mailto:tj@skhkac.org.au)

Dr Glen Stasiuk has recently released a documentary about Sister Kate's, titled *A Crying Shame*. It is currently showing at film festivals and has been officially selected for the International Shorts Film Festival being held in Melbourne this December.

For more information about the project or documentaries please contact Sister Kate's Home Kids Aboriginal Corporation Environment Coordinator – Place of Healing Programs and Events, [Jenni Andrews](#) or Chief Executive Officer, [Tjalaminu Mia](#).



# Friends of Hillarys and Kallaroo Foreshore By Natasha Mikich

As you enter the Hillarys Foreshore Reserve you are surrounded by a beautifully diverse range of native vegetation, with tall tuart trees welcoming you upon arrival and a chorus of motorbike frogs who've made the wetland their home. Melaleucas and acacias surround the wetland and if you look close enough, nestled amongst the trees, a nocturnal night feeder the nankeen night heron hides amongst the native foliage until dusk when it's time to feed. The bushland pops with colour from the bright yellow flowers of the acacias, the dark green foliage of the coastal sword sedges, the silver of the coastal daisybush and blue flowers of the cushion fan flower, all contrasting beautifully against each other. As you walk through the reserve, the sound of crunching leaves signifies the scurrying movement of bobtails and skinks as they soak up the sun. The osprey calls out, he's nestled amongst the dune vegetation gazing upon the ocean. The wrens chirrup in song as you continue further north towards the Kallaroo Foreshore and once reached you are greeted with the coastal heathlands. Tussock grasses, mat rushes, basket bushes and creamy candlesticks are found scattered between the tall flowers of the coastal spear grass and bright red fruits of the quandong. Upon the end of your coastal walk and if luck is on your side, you may see a special resident perched up high, the black-shouldered kite.

Hillarys and Kallaroo Foreshore is the home of biologically unique flora and fauna species but is under threat from invasive weed species, coastal erosion, and rubbish dumping. As the [Friends of Hillarys and Kallaroo Foreshore](#), our aim is to work symbiotically with our local community, local government, and not-for-profits to ensure its conservation and the sustainable use of its natural assets.

Established in October of last year, we have received the following grants to assist us with our work:

- DBCA – \$7,331 for monitoring equipment and tools
- Coastwest – \$11,245 for community engagement projects, specialist contractors, revegetation, erosion control materials and windbreak fencing.

We are always on the lookout for more volunteers to assist us with our weekly coastal restoration and environmental monitoring activities. Our summer events are always followed with a delightful swim in the clear, blue waters! If you're interested in getting involved, send us an [email](#) or find us on [Facebook](#) or [Instagram](#).

## Contact

### **Natasha Mikich**

Friends of Hillarys and Kallaroo Foreshore  
email [friendsofhkforeshore@gmail.com](mailto:friendsofhkforeshore@gmail.com)  
phone 0476 929 980



*Our lovely volunteers at the WA Beach Clean Up Event with Tangaroa Blue and Keep Australia Beautiful in October. Group coordinators Tim and Tash are front and centre. Photo – Natasha Mikich.*



*North Metro TAFE Students studying Horticulture and Conservation Land Management – Ben Ecker, Madeline Fong & Nicole Windus assisting with revegetation activities at Whitfords Nodes. Photo – Natasha Mikich.*



# Australian Citizen Science Association WA chapter relaunch *By Alex Chapman*

*Edited reprint with thanks to ACSA-WA*

The [Australian Citizen Science Association WA Chapter](#) (ACSA-WA) relaunch event on Saturday 23 October at the new Education Centre in Kings Park and Botanic Garden had a great turnout to hear wonderful speakers.

Starting with an Acknowledgement of Country, a fascinating video by our patron Professor Lyn Beazley, an introduction to our four Chapter committee members, and on to wide-ranging presentations on local citizen science practitioners, the event was a great success.

Thanks to our speakers Marnie Giroud ([Gilbert's Potoroo Action Group](#)), Dr Kerry Trayler ([River Guardians](#), DBCA), Dr Tegan Douglas ([BirdLife Western Australia](#)), Dr Kevin Vinsen and Dr Lisa Evans ([The International Centre for Radio Astronomy Research](#)) and Dr Nic Dunlop ([Conservation Council of Western Australia](#)). The event finished with a short walk along one of Kings Park's [ClimateWatch trails](#), led by Kiely O'Flaherty from their Education Centre.

The ACSA-WA committee subsequently hosted a successful stall at BirdLife Western Australia's BirdFest 2021 community festival the following fortnight. Thanks to everyone who came along to chat with us about Citizen Science!

For further information on our WA Chapter visit our [website](#), or follow us on [Facebook](#).

## Contact

**Alex Chapman**

ACSA-WA

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*Nic Dunlop presents to the audience on a range of Conservation Council of Western Australia citizen science projects. Photo – Alex Chapman.*



*Kiely O'Flaherty leading a walk on the ClimateWatch trail at Kings Park. Photo – Alex Chapman.*



# Rakali, Riparian and River Health Project funded

By Maryanne Crook

The [River Conservation Society](#) is very pleased to announce that we have been successful with our State Natural Resource Management Community Stewardship Grant application. The funding of \$43,495 will enable us to carry out a three-year Rakali, Riparian and River Health Project.

[Rakali](#) (*Hydromys chrysogaster*) were in the past known commonly as water rats, however they are more akin to platypus or otters than land rats. They are semiaquatic with water-repellent, black to brown fur, partially webbed hind feet and a distinct white-tipped tail.



John Crook, River Conservation Society chairperson, setting up a wildlife camera. Photo – Maryanne Crook.

Rakali are listed by the State Government as a Priority 4 species (Rare, Near Threatened and other species in need of monitoring). There is little current information on rakali in the Wheatbelt, and they were believed to be locally extinct until being rediscovered in 2015 in pools on the Avon River in York. As an apex predator of our York Avon River ecosystem, the rakali is in dire need of being brought back from the brink of extinction here. Rakali in the Wheatbelt are under threat from habitat clearing, poor water quality and feral cats and foxes. Since their rediscovery in 2015, several rakali have been recorded on our wildlife cameras and now we will be further adding to knowledge gained from these camera detections with a survey to be carried out over three years.

Commencing in 2022, River Conservation Society volunteers will engage in a combination of on-ground and water-based surveys on a regular basis on all the remaining pools on the Avon River within the Shire of York. They will be looking for and recording evidence of rakali presence and habitat, the health and extent of existing riparian vegetation and the presence of invasive weeds and feral animals. This information will then be shared with the Department of Water and Environmental Regulation (DWER) as part of their [Healthy Rivers](#) program.

The aim of the project is to establish the range and health of the local rakali population and identify threats to its continued existence.



A rakali, or water rat (*Hydromys chrysogaster*). Goulburn River, Victoria. Photo – David Paul. © [Museums Victoria CC BY-NC 4.0](#).

A management plan will be formulated with assistance from DWER and DBCA, to protect and rehabilitate rakali and their habitat, control and monitor weeds, identify areas for revegetation, and report feral animal presence.

We welcome anyone who would like to become involved in this project – please contact our Rakali, Riparian and River Health Project Manager, [John Crook](#).

## Contact

**John Crook**

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phone 0429 799 450



# Black swans return home to South Perth

*By the City of South Perth*

The City of South Perth celebrated one of its most significant environmental projects this year, with the completion of the [Black Swan Habitat](#) at South Perth Foreshore. The project has enhanced the foreshore reserve, created habitat for native waterbirds and will protect the riverbank from erosion, while providing a retreat for bird watching, nesting, ecology, and learning.

The \$1.5 million Black Swan Habitat project forms part of the [South Perth Foreshore Strategy and Management Plan](#) and is jointly funded by the city and DBCA through their [Riverbank Program](#).



*The city skyline makes a great backdrop to the new Black Swan Habitat in South Perth, which consists of an island, two vegetated headlands, a beach and a planted rock revetment. The area now provides improved habitat for native waterbirds while providing a retreat for bird watching, breeding, ecology, and learning. Photo – City of South Perth.*

Covering an area of 5,000m<sup>2</sup>, the Black Swan Habitat comprises a sheltered island for birds to nest safely, two vegetated headlands and a beach.

The habitat island is proudly named Djirda Miya Island (pronounced 'Jeer-da Myer'), a Whadjuk Noongar phrase meaning 'home of the birds'. This name was chosen to show respect to the traditional custodians of the land and reflect the significance of the river as a sacred place for Noongar people.

The first cygnet hatched on Djirda Miya Island was spotted less than a week after opening, and the habitat has been brimming with birdlife since. It has become a popular spot for birdwatching and local schools have incorporated the Black Swan Habitat as part of their environmental studies.

Local community group, [Friends of the South Perth Wetlands](#), volunteered their time to monitor bird numbers, species, breeding and migration around the Black Swan Habitat to help assess the effectiveness of the project.

## Why build a habitat for swans?

Black swans (*Cygnus atratus*) have considerable significance for Western Australians. They were among the first birds to be seen and described by European explorers with records dating back to sightings in July 1635 from Shark Bay. Their presence led to the naming of the Swan River and the Swan River Colony and the black swan became the emblem of the colony and later the State of Western Australia.



*The Friends of the South Perth Wetlands. Impromptu visits to the wetlands of like-minded individuals to view the diverse range of wildlife eventually led to the formation of this group. The Friends assisted in the construction project by monitoring bird numbers during the building of Djirda Miya Island. The group meets monthly to discuss environmental issues and have made a large impact in their efforts to rehabilitate adjacent wetlands. Photo – City of South Perth.*

Much of the black swan's original habitat was adversely affected by reclamation or dredging of shallow areas of foreshore and removal of fringing vegetation. Concrete walls built to retain the river edge in the 1950s made matters worse by hindering access to the water.

History tells us there have been many attempts to attract black swans back to the river. One early attempt in 1896 involved fencing the entire Millers Pool area and clipping the wings of swans to stop them from escaping. This attempt unsurprisingly failed, and we are thankful that wildlife conservation has come a long way since then.

*Continued next page ...*





Three days after the official opening, the name of Djirda Miya Island, meaning 'home of the birds', became a reality for one small black swan cygnet as it entered the world, becoming the first swan born on the island. We all hope this tiny cygnet grows up big and strong before making it back to the island one day to provide for a family of their own. Photo – City of South Perth.

## How the habitat supports wildlife

The Black Swan Habitat has been designed to create a safe haven for birds while restoring the riverbank back to a more natural state.

### Shelter

Protection provided by the habitat island has created a safe place for birds to take off and land on windy days. Further protection will be provided as the vegetation grows.

### Access

A 40-metre-long beach has replaced damaged river walls to create sloped access that allows birds to enter the water and forage for food more easily.

### Safety

The island is completely separated from the foreshore, making it a safe place for birds to nest away from people and dogs. Logs, rocks and vegetation offer further protection.

### Vegetation

Approximately 11,000 native plants and 20 trees grown at the city's own nursery have been planted. Native sedges and rushes have been selected to support biodiversity and provide shelter for wildlife.

### Connected habitats

Lakes Hurlingham, Douglas and Tondut are now better connected to the Swan River, allowing birds to move between the freshwater and saltwater environments.

### Underwater habitat

By creating a shallow section of river, the habitat caters for a wide variety of flora and fauna including the threatened fairy tern (*Sternula nereis*). It also provides a structure for shellfish reefs to form.

In 2000, the State Government released a report called [Bringing Back the Swans](#), which set out to increase the number of black swans on the river that bears their name by creating habitats along the foreshore. The city's Black Swan Habitat completes the last outstanding recommendation of this report.

You will find the Black Swan Habitat and Djirda Miya Island near the end of Coode Street along South Perth Foreshore. Visit the [website](#) if you would like to learn more about the project.



The new bird habitat has proven a smash hit with both locals and people from all over the metro area. The island and surrounding parklands provide a safe environment where families can visit and view birds in their natural setting. Photo – City of South Perth.

## Contact

### City of South Perth

email [enquiries@southperth.wa.gov.au](mailto:enquiries@southperth.wa.gov.au)

phone 9474 0777



# Cambridge Coastcare *By Meg Anklesaria*



[Cambridge Coastcare](#) has been leading coastal rehabilitation work along the 5km length of natural coastal dunes within the Town of Cambridge continuously since 1998. The coastal bushland reserve covers approximately 53ha. It is located 11km west-northwest of the Perth CBD, from the City of Stirling boundary in the north to Challenger Parade south up to the boundary with the Department of Defence land at Campbell Barracks. The area has been identified as regionally significant through its inclusion in Bush Forever Sites 310 and 315 and forms an important linkage to the regionally significant bushland of Bold Park to the south and coastal bushland to the north. The founding members of the group, which included Professor Kingsley Dixon, Lionel Johnstone, Ivo Davies, Dr David Merritt and Stuart Knott, shared their deep knowledge of local biodiversity and landcare management to guide the activities of volunteers as they worked to improve the ecological functioning and connectivity of the coastal vegetation within the Town of Cambridge.

Three of our founding members, Kingsley, Lionel and Ivo, and seven other committee members (Anna Napier, Peter Olden, Jo Wagner, Isabel Inkster, Keith Meadows, David Forbes and Meg Anklesaria) continue to manage the group. John Campbell has recently retired from the committee after 12 years active service. There are approximately 70 members currently in the group.



*In winter 2021, Cambridge Coastcare members and volunteers planted alongside a new path which was constructed to direct foot traffic and minimise the dune erosion and vegetation destruction caused by people climbing up and down the steep dune. Photo – John Campbell.*



*Weeding in November 2021 adjacent to Floreat Beach main car park resulted in 35 bags of weeds – including white arctotis, beach evening primrose, rose pelargonium, and dune onion weed. Photo – Anna Napier.*



*Volunteers in action weeding at City Beach. Photo – John Campbell.*



*Completing work on drift fencing in 2017. Photo – John Campbell.*

*Continued next page ...*



## How we respond to coastal issues

Cambridge Coastcare has focused on strategies and actions to achieve biodiversity enrichment on the coastal dunes. Since 1998, we have sought and received over \$458,000 in funding to put into action six key strategies:

**Strategy 1: Create a benchmark for biodiversity enrichment and conservation of the coastal dunes within the town.**

**Strategy 2: Develop successful (best practice) methods to enhance the coastal vegetation.**

The first major sites to be rehabilitated included the degraded areas surrounding the south City Beach car parks, with successful methods employed such as:

- stabilisation of bare sand and blowouts using strategic fencing parallel to the beach to reduce wind speeds and jute matting to minimise erosion
- control of large woody weeds (removed by hand with the help of contractors) and herbaceous annual and perennial weeds (controlled by spot-spraying and hand removal)
- planting native vegetation using locally derived material (winter months)
- collection of seed and cuttings from the high-quality coastal vegetation in the northern coastal regions of the town (summer months) for germination and plant propagation by commercial nurseries
- tailoring the exact mix of species to the particular works site, generally 10–12 species and up to 10,000 plants.

**Strategy 3: Develop a strategic plan and systematic approach to targeting the particularly degraded dunes.**

This initiative produced the *Coastal Natural Areas Management Plan 2006–2010*, a collaborative effort

between Cambridge Coastcare and the Town of Cambridge, with funding from the Australian Government Envirofund. This plan continues to guide our activity in degraded areas including Fred Burton Drive, City Beach and the Floreat coastline. Significant volumes of pernicious weeds were removed – the woody weed [Victorian teatree](#) (*Leptospermum laevigatum*), and [white weeping broom](#) (*Retama raetam*) – with planting of between 4,000 and 9,000 local native plants each year. In 2015, a major milestone was achieved with 100,000 plants ‘in the ground’, and our planting methods were modified to include a fertiliser tablet to enhance survival rates.

Since 2016 after a few dry summers, seed collection by Cambridge Coastcare has been discontinued and we now source our plant stock from a native plant supplier.

**Strategy 4: Community extension and education.**

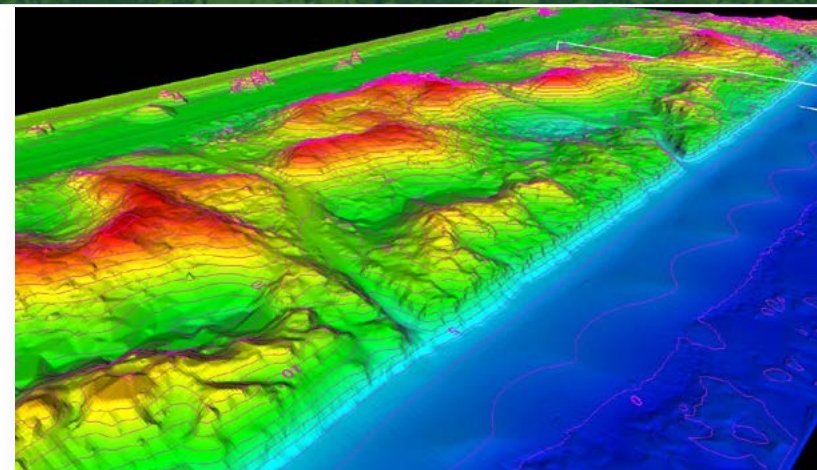
To keep the community and our volunteers informed we have developed electronic newsletters, a [website](#) and [Facebook page](#), and engage with many other stakeholders.

Since 2017 and a series of winter storms which exacerbated dune blowouts, two more strategies were defined.

**Strategy 5: Lateral fencing to collect and hold sand at the base of the dune as a supplement to matting and planting of dune blowout areas.**

**Strategy 6: Coastal dune monitoring using high precision aerial surveying technology.**

The first trial of aerial survey monitoring was in 2018, and the second trial is currently underway. A drone equipped with a sophisticated camera and LIDAR



*The aerial monitoring project currently underway will use sophisticated drone photogrammetric images and LIDAR (pulsed laser imaging and ranging sensors) to quantify dune erosion and vegetation success rates from the baseline set in 2018. Image – Omnidrone.*

technology is used to produce high resolution vegetation maps and 3D models, allowing for more detailed analysis of revegetation success rates, sand encroachment and erosion, which in turn will inform future management efforts.

Cambridge Coastcare has also been undertaking an annual rubbish clean-up in the dunes for the last three years.

We are proud of the efforts of the founders, committees and volunteers who have enhanced many areas of the target coastline since 1998. We are currently developing our 2022 plan for planting, weeding, fencing and beach clean-ups. Our group has a wonderful camaraderie and shared sense of accomplishment. New members and volunteers are very welcome especially if you have botany, rehabilitation, fencing and landcare skills and/or wish to learn!

## Contact

**Meg Anklesaria**

Cambridge Coastcare























email [cambridgecoastcare@gmail.com](mailto:cambridgecoastcare@gmail.com)

phone 0439 919 562



## Recurrent activities

**Opportunities for you to participate! Visitors always welcome but please confirm activities with contact person. Most activities are FREE!**

- 
**Saturdays 15 minutes before sunrise**  
**Research into bird populations** with the **Herdsmen Lake** Bird Banding Group. Contact: Bill 0438 910 252 [calidris@inet.net.au](mailto:calidris@inet.net.au)
- 
**Saturdays 8am–9am**  
**Guided walks** with Friends of **Koondoola**. Second Saturday of each month. Meet Gate 2, corner Koondoola Ave and Burbridge Ave, Koondoola. Contact: David 9448 9192
- 
**Saturdays 8am–9am**  
**Guided walks** with Friends of **Lake Gwelup** naturalist David Pike. Third Saturday of each month. Meet at Scout Hall Carpark (near the tennis courts), Huntriss Rd, Gwelup. Contact: [friendsoflakegwelup@gmail.com](mailto:friendsoflakegwelup@gmail.com)
- 
**Saturdays 8am–9am**  
**Guided walks** and meeting with Friends of **Landsdale**. First Saturday of each month. Meet at third gate Landsdale Rd, east of Landsdale Farm School, Darch. Contact: David 9448 9192
- 
**Saturdays 8am–9am**  
**Guided walks** with Friends of **Star Swamp**. Fourth Saturday of each month. Meet at the Henderson Environment Centre in Groat St, North Beach. Contact: Christine 0430 013 364
- 
**Saturdays 8am–9am**  
**Guided walks** with Friends of **Trigg** Bushland. Fifth Saturday of each month. Meet in St Mary's School carpark, off Elliot Rd Karrynup. Contact: David 9448 9192
- 
**Saturdays 8am–10am**  
**Bushcare activities** with Swan Estuary Reserves Action Group at **Alfred Cove** Nature Reserve. Fourth Saturday of each month. Contact: Cathie 9339 2439 [oneillc@westnet.com.au](mailto:oneillc@westnet.com.au)
- 
**Saturdays 8:30am–10:30am**  
**Bushcare activities** with Swan Estuary Reserves Action Group at **Pelican Point**, Crawley. First Saturday of each month. Contact: Cathie 9339 2439 [oneillc@westnet.com.au](mailto:oneillc@westnet.com.au)
- 
**Saturdays 9am**  
**Bushcare activities** with Friends of **Brixton Street** Wetlands. Third Saturday of each month. Meet Alton St, Kenwick. Contact: Regina 9459 2964 [tjdrd@bigpond.net.au](mailto:tjdrd@bigpond.net.au)
- 
**Saturdays**  
**Bushcare activities** with Friends of **John Forrest** National Park. Equipment, instruction and morning tea provided. Starting times and tasks change according to the season. Contact: Jan 0409 299 861 [joejanking1@bigpond.com](mailto:joejanking1@bigpond.com)
- 
**Saturdays and Tuesdays 9am–12 noon**  
**Bushcare activities** with Friends of **Yellagonga** Regional Park. Nursery and project work each Saturday and Tuesday morning, regular workdays on the middle and last Saturday of each month from April to November. Contact: [friendsofyellagonga@bigpond.com](mailto:friendsofyellagonga@bigpond.com)
- 
**Saturdays, Sundays 9am–12 noon**  
**Koala maintenance** at **Yanchep** National Park. Contact: Ciara 9303 7771
- 
**Sundays 7am (summer) or 8am (winter)**  
**Bushcare** most Sundays with **Friends of Point Peron**. Look for the signs Point Peron Rd or Safety Bay Rd Rockingham. Bring your own gloves, water and dress for the bush. Contact: James 0427 229 166 [jgmumme@live.com.au](mailto:jgmumme@live.com.au)
- 
**Sundays 8am–10am**  
**Bushcare activities** every Sunday with Friends of **Shenton Park** Bushland. Contact: Dani 0420 334 601 [bojel@inet.net.au](mailto:bojel@inet.net.au)
- 
**Sundays 8:30am**  
**Bushcare activities** with Friends of **Wireless Hill**. Second and fourth Sunday of each month. Meet at main carpark. Contact: Margaret 0402 105 649 [s3mmatthews@hotmail.com](mailto:s3mmatthews@hotmail.com)
- 
**Sundays 9am–11am**  
**Friends of Lake Claremont busy bee** and morning tea, second Sunday of each month. Meet at the south end of Strickland St, Swanbourne. Gloves and tools provided. Contact: 0416 614 696 [www.friendsoflakeclaremont.org](http://www.friendsoflakeclaremont.org)
- 
**Sundays 9am–11am**  
**Bushcare activities** with **Cottesloe** Coastcare. First Sunday of each month. Contact: Robyn 9384 7668, [info@cottesloecoastcare.org](mailto:info@cottesloecoastcare.org) [website](http://cottesloecoastcare.org)
- 
**Sundays 9am–12 noon**  
**Bushcare activities** with the Friends of the **Spectacles** (Kwinana). Third Sunday of each month. Contact: Lynda 0419 983 956 [fotsmail@gmail.com](mailto:fotsmail@gmail.com)
- 
**Sundays 9am**  
**Bushcare activities** with the Friends of **Samphire Cove** Nature Reserve, Halls Head. Last Sunday of each month. Contact: Barry [bjsdoongin@gmail.com](mailto:bjsdoongin@gmail.com) [Facebook](https://www.facebook.com/bjsdoongin)
- 
**Sundays 9:45am–12 noon**  
**Bushcare activities** with the Friends of **Piesse Brook**. Third Sunday of each month. Contact: Ken 9293 3159 [bibbulman@hotmail.com](mailto:bibbulman@hotmail.com) 0402 243 351
- 
**Sundays 1pm–4pm**  
**WA Gould League's Herdsmen Lake Wildlife Centre holds family nature days**. First Sunday of each month. \$5/\$20 family. Corner Selby St and Flynn St Wembley. Contact: 9387 6079 or [register](http://register.wildlife.org.au)
- 
**Sundays**  
**Wilson Wetlands** Action Group undertakes regular **work mornings** throughout the year on Sunday mornings. Contact: 0407 135 412 [wilsonwetland@gmail.com](mailto:wilsonwetland@gmail.com)

### Activities Key



**Hands on** – bushland and wetland management activities.



**Walks and tours** – look, listen and enjoy guided walks and excursions



























**Skills development activities** – talks, presentations, training courses and workshops.



**Meetings and events** – group meetings, expos, festivals and conferences.



## Recurrent activities

-  **Mondays 7am–8am**  
Norma's Monday Morning **Weeding Group**. Friends of **Lake Claremont** weekly hand weeding. Learn basic weeding techniques and identification. Meet at south end of Strickland St. Contact: 0413 282 515
-  **Mondays 8am–10am**  
**Litter collection** with Swan Estuary Reserves Action Group at **Milyu** Nature Reserve, South Perth. Second Monday of each month. Contact: Cathie 9339 2439 [oneillc@westnet.com.au](mailto:oneillc@westnet.com.au)
-  **Mondays**  
**Plant learners' group** with **Eastern Hills Wildflower Society** meets twice a month in a self-learning environment to identify plants and expand knowledge. Contact: Pam [eastern.hills.branch@wildflowersocietywa.org.au](mailto:eastern.hills.branch@wildflowersocietywa.org.au)
-  **Mondays**  
**Propagation group** with **Eastern Hills Wildflower Society** meets twice a month to share knowledge about propagating native plants. Contact: Sandy [eastern.hills.branch@wildflowersocietywa.org.au](mailto:eastern.hills.branch@wildflowersocietywa.org.au)
-  **Mondays, Wednesdays, Fridays 9am–12 noon**  
**Bushcare activities** and wetlands walk trail maintenance with **Yanchep** National Park Volunteers. Contact: Ciara 9303 7771
-  **Tuesdays 7am–9am**  
**Bushcare activities** with Swan Estuary Reserves Action Group at **Alfred Cove** Nature Reserve each Tuesday. Contact: Margaret 9330 1791
-  **Tuesdays 9am–11am and Saturday**  
**Bushcare** with Friends of **Allen Park** every Tuesday and first Saturday of the month. Contact: Lesley 9384 7983 Judy 9383 1501, [foapbg@gmail.com](mailto:foapbg@gmail.com) or [Facebook](#)
-  **Tuesdays and Thursdays, 8am–10am**  
**Coastcare activities** with **Stirling** Natural Environment CoastCare (SNEC). Contact: Sheldon 0488 190 651 Rae 0419 191 710 [website](#)
-  **Wednesdays**  
**Seed cleaning group** with **Eastern Hills Wildflower Society** meets fortnightly to prepare seeds for propagation. Contact: June [eastern.hills.branch@wildflowersocietywa.org.au](mailto:eastern.hills.branch@wildflowersocietywa.org.au)
-  **Thursdays 7:30am–9am**  
**Bushcare activities** with **Bicton** Environmental Action Group. Planting, weeding and foreshore clean-up. Various dates. Contact: Peter 0439 467 855 [pneesham1@hotmail.com](mailto:pneesham1@hotmail.com) [website](#)
-  **Thursdays 7:30am–9:30am and some Saturdays 8:30am–12 noon**  
**Coastcare activities** with Friends of **Sorrento Beach** and **Marmion Foreshore** followed by morning tea. Contact: Mike 0438 710 527
-  **Thursdays 8am–9am**  
**Bushcare activities** every Thursday with **Byford** Enviro-Link. Contact: Kristy 9526 0199
-  **Thursdays, Saturdays and Sundays 9am**  
**Morning walks** with Friends of **Bold Park** Bushland Volunteer Guides. Various dates. Contact: 9480 3996 [friendsbp@bgpa.wa.gov.au](http://friendsbp@bgpa.wa.gov.au) [website](#)
-  **Thursdays and Sundays 10am–12 noon**  
**Kanyana Wildlife** Centre, Discovery Centre **Tours**. Close encounters with native animals and interactive Discovery Centre. \$15 or less. Bookings essential. Contact: 9291 3900 [education@kanyanawildlife.org.au](mailto:education@kanyanawildlife.org.au) [website](#)
-  **Thursdays and Fridays 9am–4pm**  
**Wetland, Bushcare** and **nursery** activities with The **Wetlands** Centre, **Cockburn**. Contact: Danielle 9417 8460 [community@thewetlandscentre.org.au](mailto:community@thewetlandscentre.org.au)
-  **Thursdays 3pm**  
**Bushcare** most Thursdays with **Friends of Point Peron**. Look for the signs Point Peron Rd or Safety Bay Rd **Rockingham**. Bring your own gloves, water and dress for the bush. Contact: James 0427 229 166 [jgmumme@live.com.au](mailto:jgmumme@live.com.au)
-  **Thursdays 7:30pm**  
**Talks** with **Murdoch** Branch of the **Wildflower Society** to share passion and knowledge of nature. First Thursday each month. Cockburn Wetlands Education Centre. Contact: 0419 928 618 [Facebook](#) [murdoch.secretary@wildflowersocietywa.org.au](mailto:murdoch.secretary@wildflowersocietywa.org.au)
-  **Fridays 8am**  
**Bushcare activities** at **Piney Lakes**. Volunteers need a site induction. Contact: [jacklyn.kelly@melville.wa.gov.au](mailto:jacklyn.kelly@melville.wa.gov.au)
-  **Fridays and Sundays**  
**Bushcare** with Friends of **Mosman Park** Bushland every Friday and the second Sunday of each month. Site determined the week before. Contact: [mail@mosmanparkbushland.org](mailto:mail@mosmanparkbushland.org)
-  **Fridays 7pm**  
**Talks** with **Eastern Hills** Branch of the **Wildflower Society**. Fourth Friday each month, Octagonal Hall, 52 McGlew Rd, Glen Forrest. \$2 entry, visitors welcome. Contact: [website](#) [eastern.hills.branch@wildflowersocietywa.org.au](mailto:eastern.hills.branch@wildflowersocietywa.org.au), [Facebook](#)
-  **Fridays and Saturdays 7pm–9pm**  
First Friday and second Saturday every month, **Nocturnal Tours**, **Kanyana Wildlife** Centre. Meet nocturnal native wildlife and hear about endangered species breeding programs. \$20 or less. Bookings essential. Contact: 9291 3900 [education@kanyanawildlife.org.au](mailto:education@kanyanawildlife.org.au) [website](#)
-  **Check calendar**  
**BirdLife** holds regular **talks** and **excursions** each month. [View](#) their calendar.
-  **Check calendar**  
**WA Naturalists** hold regular **excursions**, **photo groups** and **campouts** each month. [View](#) their calendar for the activities of the four branches.
-  **Check calendar**  
**Wildflower Society of WA** holds regular talks. [View](#) their calendar.

### Activities Key



**Hands on** – bushland and wetland management activities.



**Walks and tours** – look, listen and enjoy guided walks and excursions



**Skills development activities** – talks, presentations, training courses and workshops.



**Meetings and events** – group meetings, expos, festivals and conferences.



## January

- 6 Thursday 11am–12 noon**  
**Birak Art Classes.** Learn a traditional Aboriginal dot painting style with Whadjuk artist Julianne Wade as she talks about seasons, symbols, language and Indigenous local knowledge. Walyalup Aboriginal Cultural Centre, Fremantle. [Tickets](#) \$20.
- 7 Friday 7pm–8:30pm**  
**Nocturnal Woylie Walk,** Woodland Reserve, **Whiteman Park.** [Bookings](#) \$20 adults, \$15 children/concession/students, family (2 adults + 2 children) \$60.
- 8 Saturday 9:30am–11:30am**  
**Curtis & Martha's Litter Less Ocean Adventure Show** teaches children aged 3–9 about the impact littering has on our environment, with an emphasis on ocean and beach littering. Coogee Community Hall. [Reserve tickets](#) for this free event.
- 9 Sunday 10am**  
**Animal Encounters:** get up close and personal with some of the living residents at the Wild Life Gallery at WA Museum Boola Bardip. This is a member only event, but free [membership](#) is available. [Tickets](#) \$10 or \$8 for concession/junior.
- 11 Tuesday 1pm–1:30pm or 1:45pm–2:15pm**  
**Kaarakin Black Cockatoo Conservation.** Meet Rex, a Baudin's cockatoo and learn about the work of the Kaarakin Black Cockatoo Conservation Centre. Kelmescott Library. Suitable for children 6–12 years. Free event, registrations essential. Book for session [one](#) or [two](#).
- 11 Tuesday 5:30pm–7:30pm**  
**Frog Night Stalk** through **Bibra Lake Reserve.** Go on a night-time adventure to learn about the frogs that live near the wetlands of the Swan Coastal Plain. The Wetlands Centre Cockburn, Bibra Lake. [Tickets](#) \$5 for children, free for parents and children under 5.
- 11 Tuesday 6:30pm–8:30pm**  
**Kids Nocturnal Woylie Walk** for the school holidays. Woodland Reserve, **Whiteman Park.** [Bookings](#) \$22 adults, \$18 children/concession, family (2 adults + 2 children) \$70.
- 12 Wednesday 10am–12 noon**  
**Climate Change and Wildlife!** Learn about how climate change is impacting our native animals, what you can do to help our local wildlife, and meet some friendly animals in this school holiday event. WA Wildlife Education, Bibra Lake. Suitable for ages 12–14. [Tickets](#) \$10.
- 12 Wednesday 6:30pm–8:30pm**  
**Kids Nocturnal Woylie Walk** for the school holidays. Woodland Reserve, **Whiteman Park.** [Bookings](#) \$22 adults, \$18 children/concession, family (2 adults + 2 children) \$70.
- 13 Thursday 10am–1pm**  
**Nyoongar knowledge:** a drop and leave workshop recommended for children ages 8 and above. WA Museum Boola Bardip. [Tickets](#) \$45.
- 13 Thursday 9am–3pm**  
**Kids Nature Club: Nature Detectives Holiday Program** for kids aged 5–10 years. **Perry Lakes Reserve,** Floreat. [Bookings](#) \$90 per child.
- 13 Thursday 10am–12 noon**  
**Minibeast Sculpture,** a holiday family art class. Take inspiration from insects to create your own realistic or fantastical minibeast sculpture from mixed media. Suitable for ages 6+. Midland Junction Arts Centre. [Tickets](#) \$38.01.
- 13 Thursday 11am–12 noon**  
**Birak Art Classes.** Learn a traditional Aboriginal dot painting style with Whadjuk artist Julianne Wade as she talks about seasons, symbols, language and Indigenous local knowledge. Walyalup Aboriginal Cultural Centre, Fremantle. [Tickets](#) \$20.
- 14 Friday 9am–3pm**  
**Kids Nature Club: Nature Detectives Holiday Program** for kids aged 5–10 years. **Perry Lakes Reserve,** Floreat. [Bookings](#) \$90 per child.
- 14 Friday 5pm–7pm**  
**Sunset Bird Watching** over the wetlands of **Bibra Lake** with nibbles served on the boardwalk. The Wetlands Centre Cockburn, Bibra Lake. Suitable for ages 5–12. [Tickets](#) \$5 for children, free for parents and children under 5.
- 14 Friday 7pm–8:30pm**  
**Nocturnal Woylie Walk,** Woodland Reserve, **Whiteman Park.** [Bookings](#) \$20 adults, \$15 children/concession/students, family (2 adults + 2 children) \$60.
- 15 Saturday 9:30am–11:30am**  
**Curtis & Martha's Litter Less Ocean Adventure Show** teaches children aged 3–9 about the impact littering has on our environment, with an emphasis on ocean and beach littering. Coogee Community Hall. [Reserve tickets](#) for this free event.

- 16 Sunday 10am**  
**Animal Encounters:** get up close and personal with some of the living residents at the Wild Life Gallery at WA Museum Boola Bardip. This is a member only event, but free [membership](#) is available. [Tickets](#) \$10 or \$8 for concession/junior.

- 18 Tuesday 6pm–8pm**  
**Retrosuburbia – Retrofitting the suburbs for a post oil future** is a presentation by Shani Graham on the key concepts from David Holgren's book. Learn how we can transform our suburbs to prepare for a future with less cheap energy, to be more resilient, sustainable, and less impactful on the environment. Girrawheen Public Library. Free event, [register](#).

- 18 Tuesday 6:30pm–8:30pm**  
**Kids Nocturnal Woylie Walk** for the school holidays. Woodland Reserve, **Whiteman Park.** [Bookings](#) \$22 adults, \$18 children/concession, family (2 adults + 2 children) \$70.

- 19 Wednesday 1pm–3pm**  
**Booyi Nyungar Art** is an interactive educational program that explores Nyungar culture through craft. The Wetlands Centre Cockburn, Bibra Lake. Suitable for ages 5–12. [Tickets](#) \$5 for children, free for parents and children under 5.


- 19 Wednesday 10am–12 noon**  
**Reptile Awareness** – learn about your local reptiles, what to do when you encounter them, and meet some friendly reptiles in this school holiday event. WA Wildlife Education, Bibra Lake. Suitable for ages 5–11. [Tickets](#) \$10.


- 19 Wednesday 6:30pm–8:30pm**  
**Kids Nocturnal Woylie Walk** for the school holidays. Woodland Reserve, **Whiteman Park.** [Bookings](#) \$22 adults, \$18 children/concession, family (2 adults + 2 children) \$70.





*See rare and extraordinary Australian animals up close, learn what they like to eat and how you can help them thrive and survive in the [Animal Encounters](#) program at WA Museum Boola Bardip. Photo – © WA Museum.*





 **20 Thursday 11am–12 noon**  
**Birak Art Classes.** Learn a traditional Aboriginal dot painting style with Whadjuk artist Julianne Wade as she talks about seasons, symbols, language and Indigenous local knowledge. Walyalup Aboriginal Cultural Centre, Fremantle. [Tickets](#) \$20.


 **21 Friday 7pm–8:30pm**  
**Nocturnal Woylie Walk,** Woodland Reserve, **Whiteman Park.** [Bookings](#) \$20 adults, \$15 children/concession/students, family (2 adults + 2 children) \$60.


 **22 Saturday 9:30am–11:30am**  
**Curtis & Martha's Litter Less Ocean Adventure Show** teaches children aged 3–9 about the impact littering has on our environment, with an emphasis on ocean and beach littering. Coogee Community Hall. [Reserve tickets](#) for this free event.


 **22 Saturday 11am–2pm**  
**Carnaby's cockatoo talk** (11am–12 noon) and **kite making workshop** (12 noon–2pm). Join Christine Groom as she talks about the endangered Carnaby's cockatoo and the work of the Carnaby's Cockatoo Action Group, and then learn to make a Carnaby's cockatoo inspired kite with local paper artist Ingrid Mulder. Midland Junction Arts Centre. The talk is free to attend but [bookings essential](#). Kite making workshop [tickets](#) \$25.


 **23 Sunday 10am**  
**Animal Encounters:** get up close and personal with some of the living residents at the Wild Life Gallery at WA Museum Boola Bardip. This is a member only event, but free [membership](#) is available. [Tickets](#) \$10 or \$8 for concession/junior.


 **24 Monday 10am–12 noon**  
**Underwater Seascapes,** a holiday family art class. Drawing inspiration from the depths of the ocean, create abstract or figurative underwater seascapes from clay. Suitable for ages 6+. Midland Junction Arts Centre. [Tickets](#) \$38.01.


 **24 Monday 2pm–3pm**  
**West Oz Wildlife.** Meet some incredible Australian animals, learn about their habitats and how you can protect their environment. Suitable for ages 5–12. No booking required but arrive early to secure your place. [Maylands Public Library.](#)

 **27 Thursday 9:30am–10:30am**  
**Nature Storytime Trek** with Cockburn Libraries. Listen to stories featuring Western Australian animals and trek through the bushlands of **Bibra Lake** to spot fauna and flora. Suitable for ages 2–5. The Wetlands Centre Cockburn, Bibra Lake. [Tickets](#) \$5 for children, parents free.


 **27 Thursday 11am–12 noon**  
**Birak Art Classes.** Learn a traditional Aboriginal dot painting style with Whadjuk artist Julianne Wade as she talks about seasons, symbols, language and Indigenous local knowledge. Walyalup Aboriginal Cultural Centre, Fremantle. [Tickets](#) \$20.


 **28 Friday 7pm–8:30pm**  
**Nocturnal Woylie Walk,** Woodland Reserve, **Whiteman Park.** [Bookings](#) \$20 adults, \$15 children/concession/students, family (2 adults + 2 children) \$60.


 **29 Saturday 9:30am–11:30am**  
**Curtis & Martha's Litter Less Ocean Adventure Show** teaches children aged 3–9 about the impact littering has on our environment, with an emphasis on ocean and beach littering. Coogee Community Hall. [Reserve tickets](#) for this free event.


 **30 Sunday 10am**  
**Animal Encounters:** get up close and personal with some of the living residents at the Wild Life Gallery at WA Museum Boola Bardip. This is a member only event, but free [membership](#) is available. [Tickets](#) \$10 or \$8 for concession/junior.

## February


 **1 Tuesday 2pm–3pm**  
**Bunura – The beauty of local wildflowers,** a seasonal talk presented by the Wildflower Society on the wildflowers that bloom in the Noongar season of Bunura (second summer). This session is for adults. Seville Grove Library. [Bookings essential.](#)


 **4 Friday 7pm–8:30pm**  
**Nocturnal Woylie Walk,** Woodland Reserve, Whiteman Park. [Bookings](#) \$20 adults, \$15 children/concession/students, family (2 adults + 2 children) \$60.


 **9 Wednesday 12 noon–1pm**  
**Nyoongar Six Seasons** with Marissa Verma of Bindi Bindi Dreaming. Learn about the six seasons, what they represent and the seasonal changes we see annually. Walyalup Aboriginal Cultural Centre, Fremantle. [Tickets](#) \$30.


 **10 Thursday 9:30am–4pm**  
**Aboriginal Cultural Awareness Workshop** facilitated by Mr Danny Ford, a Noongar man and senior traditional custodian of Wadjuk Country, with connections to wider Noongar Country and Aboriginal community across Western Australia. Parmelia Hilton Perth. [Tickets](#) \$220–260.

 **11 Friday 7pm–9:30pm**  
**Simon Cherriman** will present a [talk](#) (topic TBC) with the Darling Range branch of the WA Naturalists' Club. Kalamunda Community Hall. Entry \$5 for adults and \$1 for children.


 **17 Thursday 5pm–6pm**  
**Not Just a Fish:** a Meet the Museum event with Dr Glenn Moore provides a hands-on opportunity to investigate several types of fish up close using digital microscopes to understand and compare their anatomy and adaptations for survival. This is a member only event, but free [membership](#) is available. WA Museum Boola Bardip. [Tickets](#) \$10 or \$8 for concession/junior.


 **18 Friday 7pm–8:30pm**  
**Nocturnal Woylie Walk,** Woodland Reserve, **Whiteman Park.** [Bookings](#) \$20 adults, \$15 children/concession/students, family (2 adults + 2 children) \$60.


 **23 Wednesday 12 noon–1pm**  
**Nyoongar Six Seasons** with Marissa Verma of Bindi Bindi Dreaming. Learn about the six seasons, what they represent and the seasonal changes we see annually. Walyalup Aboriginal Cultural Centre, Fremantle. [Tickets](#) \$30.

 **25 Friday 7pm–8:30pm**  
**Nocturnal Woylie Walk,** Woodland Reserve, Whiteman Park. [Bookings](#) \$20 adults, \$15 children/concession/students, family (2 adults + 2 children) \$60.

## March

 **11 Friday 7pm–9:30pm**  
**Dragon's Teeth and Thunderstones – the Quest for the Meaning of Fossils** a [talk](#) by Ken McNamara presented by the Darling Range Branch of the WA Naturalists' Club. Kalamunda Community Hall. Entry \$5 for adults and \$1 for children.

 **12 Saturday 10am–11am**  
**Noongar Language and Cultural Class** for adult beginners. Hosted by Marie Taylor, a Traditional Owner and Elder of Noongar Country. Hillview Intercultural Community Centre, Bentley. Free event, [registrations essential.](#)

 **19 Saturday 4:30pm–10pm**  
**Moon Walk** Casual 9km return guided walk with the Bibbulmun Track Foundation through mixed jarrah forest to a large granite outcrop for a BYO picnic by the setting sun and rising moon. East of Armadale. [Tickets](#) \$35.



## Highlights

### On now – 25 January, Monday to Friday 9:30am–4:30pm

**Wild West: Animals in the Archives** is an [exhibition](#) featuring stories from government records showing how Western Australians have interacted with wildlife and highlights our changing attitudes to animals and the environment. National Archives of WA Office, Northbridge. Free entry.

### On now – 31 August 9am–5pm

**Flowers in Focus** [amateur photography exhibition](#) is showcasing the best images from the 2021 Flowers in Focus photography competition, on display in Kings Park's outdoor gallery Long Vista.

### 6–21 January

Parks and Wildlife Service's Know Your Patch, Nearer to Nature and River Guardians have come together to provide an engaging, hands-on **nature-based school holiday program** for kids and families. With locations across the Perth metro area and a variety of different themes, there is something for everyone to enjoy. Head to the [website](#) for more information or to book.

### 13–14 January 9am–3pm

**Introduction to Shorebird Identification Workshop.** Learn shorebird identification skills in this free [workshop](#) with a mix of field visits and classroom learning. Places limited, with preference given to those who can volunteer for the Annual Shorebird Count on Sunday 30 January. Contact Charlie Jones by [email](#) or phone (6369 8800) to enquire about availability.

### 30 January

**The Annual Shorebird Count** in the Peel-Yalgorup System is part of the National Shorebird Monitoring Program, a national citizen science initiative. This is a closed [event](#) for volunteers who have attended the training [workshop](#) on 13–14 January. Contact Charlie Jones by [email](#) or phone (6369 8800) if you are interested in getting involved.



*Search the beach for washed-up organisms left behind by the waves and explore the intertidal zone on an ecosystem survey, just one of many fun activities available with Parks and Wildlife Service's [school holiday program](#). Photo – Dom Lim Photography.*

### 2–3 February

**WA Wetlands Conference 2022** will focus on themes of cultural wisdom and scientific innovation for our wetlands. Planned as an in-person event at The Wetlands Centre Cockburn, or virtually if COVID-19 health restrictions require. For details on registration and fees, visit the [website](#), or contact the conference organisers by [email](#) or phone (9417 8460).

### Every Tuesday from 8 February – 29 March, 10am–11am

**Kaya Koolangka! Hello children!** program for ages 2–5 teaches the Noongar names of native animals and our environment through stories, movement, and nature-based activities, with a different theme each week. [Tickets](#) \$15 per child (single session), adults free with an enrolled participant. WA Museum Boola Bardip.

### March

**Clean up the Peel Month** throughout the Peel-Harvey Catchment. To see how your group can become involved, contact [Charlie Jones](#).

### 3, 10, 17 & 24 March, 1pm–2pm

**Noongar Language classes.** Learn basic Noongar with Sharon Gregory, with four 1-hour sessions held weekly at the Walyalup Aboriginal Cultural Centre, Fremantle. [Tickets](#) \$60.

### 3–5 March 7:30pm

**Noongar Wonderland** is a multisensory experience created by a team of Noongar artists and guided by stories of Country. Weave your way through an immersive light and sound installation at Perry Lakes, Floreat. Free event, [registration](#) required.

### 6 March

**Clean Up Australia Day** [Register a site](#) and get a group together to help clean up your local park, waterway, beach or bushland. Or [check](#) to see if there is a clean-up event already happening in your area – note that these may be happening on other dates and be sure to check details with the site supervisor beforehand.

### 8–10 March

**2022 Private Land Conservation Conference** [Recover, Restore, Redouble](#). Doltone House, Darling Island, Sydney, NSW. [Registration](#) available for in-person or virtual attendance, with pricing from \$120–650 (early bird discounts available until 18 January).

### 21–23 March

The inaugural **Australian & New Zealand Environmental DNA (eDNA) conference** will discuss the latest innovations in eDNA analysis for measuring condition and change of biodiversity assets, and biosecurity threats. Hotel Grand Chancellor, Hobart, Tasmania and online. [Registration](#) from \$195–845 (early bird discounts available until 28 January).

### 3 April

**The Great Cocky Count** is an annual citizen science census monitoring Carnaby's cockatoos, Baudin's cockatoos and forest red-tailed black cockatoos. [Register](#) from late January until 13 March. [Email](#) now to go on BirdLife's Cockey Notes list to be notified when registrations open. Help BirdLife identify more roost sites by reporting any night-time roost sites you know about by contacting Meryn Pryor by [email](#) or phone (0424 735 770).

### 3–7 April

**Australasian Plant Conservation Conference** [Seeds to recovery](#). Two full-day field trips will be run on Thursday 7 April. Albury, NSW. [Registration](#) available for one, two, or three-day passes, with early bird pricing until 18 February ranging from \$120–500.

### 19–23 May

**2022 BirdLife Photography Biennial Conference** [Inspiring Bird Photographers](#). The conference will be held on 21–22 May with pre- and post-conference [tours](#) available to a variety of birdwatching locations. The Gold Coast, Queensland. [Tickets](#) \$310.

### 4 June, 13 August, 18 September

**Koolbardi wer Wardong** is a musical production which tells a creation narrative of two vain, jealous brothers, Koolbardi the magpie and Wardong the crow. Sung in Noongar with English surtitles. On at the Albany Entertainment Centre (Saturday 4 June), Goldfields Art Centre (Saturday 13 August), and Esperance Civic Centre (Saturday 18 September). Visit the [website](#) to register for ticket announcements.

### 23–25 August

**2022 National Landcare Conference** International Convention Centre, Darling Harbour, Sydney NSW and online. Early bird tickets on sale in April. Registrations to be a virtual conference delegate are free. Visit the [website](#) for more details.

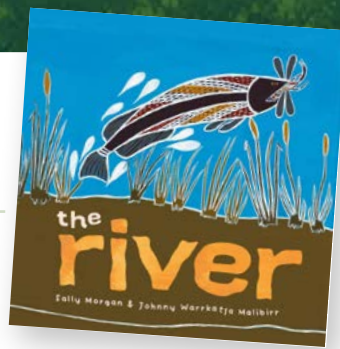
### 10–16 September

**Australian Native Plants Society Biennial Conference** [Australian Flora – Past Present Future](#). Kiama, NSW. Registrations open in early February.



## New publications

**The River** Morgan, Sally, Johnny Warrkatja Malibirr. *Magabala Books*, 2021. \$24.99. This children's picture book with words by Sally Morgan and artwork by Johnny Warrkatja Malibirr tells a simple, universal story celebrating the life of the river. *The River* takes the reader on a journey of what their eyes can see and their ears can hear – see green ants crawling, hear frogs croaking, a goanna running, a fish splashing.



**Birds of the Perth Hills** Huston, Talitha. *Environmental Printing Company*, 2021. \$29.99. *Birds of the Perth Hills* is a book by local teen photographer Talitha Huston, who started secretly writing it at the age of 14. Three years later, she paid for copies to be printed using her own money so she could surprise her parents with it for Christmas. An introduction to nearly 50 species found in the Perth Hills, this is a practical resource for naturalists enthusiastic to learn about the birds in this unique region. Available for purchase through the [Birds of the Perth Hills](#) Facebook page, [SERCUL](#), independent book shops, and select stores and cafés throughout the Perth Hills.



**Songs of Disappearance** *The Bowerbird Collective*, 2021. \$9.99 (digital album) or \$12 (CD album). Hear 53 of our most threatened species on this album of pure birdsong. The title track celebrates the diversity of the Australian soundscape, highlighting what we stand to lose without taking action. Be immersed in a chorus of iconic cockatoos, the buzzing of bowerbirds, a bizarre symphony of seabirds, and the haunting call of one of the last remaining night parrots. A collaboration between nature recordist David Stewart, Nature Sound, the Bowerbird Collective, BirdLife Australia, Charles Darwin University and Mervyn Street of Mangkaja Arts, this project is being released alongside [The Action Plan for Australian Birds 2020](#). Proceeds from all [sales](#) will go towards supporting BirdLife Australia's conservation work.



## Recent Research

Bracknell C, Horwitz P, Ryan T, Marshall JW (2021) Performing *kayepa dordok* living waters in Noongar *boodjar*, South-Western Australia. [River Research and Applications](#), 1–8.

Honey R, McLean C, Murray BR, Webb JK (2021) Insulated nest boxes provide thermal refuges for wildlife in urban bushland during summer heatwaves [Journal of Urban Ecology](#) 7(1), juab032.

Hopkins AJM, Tay NE, Bryant GL, et al. (2021) Urban remnant size alters fungal functional groups dispersed by a digging mammal [Biodiversity and Conservation](#) 30, 3983–4003.

Pauli N, Mouat C, Prendergast K, Chalmer L, Ramalho CE, Ligtermoet E (2021) The social and ecological values of native gardens along streets: A socio-ecological study in the suburbs of Perth. Report for the [Clean Air and Urban Landscapes Hub \(CAUL\)](#), Melbourne, Australia.

Pedrini S, Stevens JC, Dixon KW (2021) Seed encrusting with salicylic acid: A novel approach to improve establishment of grass species in ecological restoration [PLOS ONE](#) 16(6): e0242035.

Peterson NR, Rose K, Shaw S, et al. (2020) Cross-continental emergence of *Nannizziopsis barbatae* disease may threaten wild Australian lizards [Scientific Reports](#) 10, 20976.

Van Helden BE, Close PG, Stewart BA, Speldewinde PC (2021) Managing gardens for wildlife: Features that predict mammal presence and abundance in gardens vary seasonally [Ecosphere](#) 12(3): e03453.

White MP, Elliott LR, Grellier J, et al. (2021) Associations between green/blue spaces and mental health across 18 countries [Scientific Reports](#) 11, 8903.

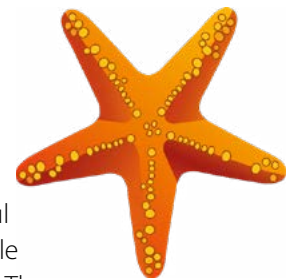
Wooltorton S, White P, Palmer M, Collard L (2021) Learning Cycles: Enriching Ways of Knowing Place [Australian Journal of Environmental Education](#) 37(1), 1–18.

## Apps

**Australian Snake ID** helps you to identify snakes observed in the wild where close-up examination is not feasible. The guide asks for some basic information such as approximate size, dominant colour, and location, and presents photographs of likely species. The user can then figure out which one or more species most closely resembles the snake observed, and use information about the snake's habits and habitats to eliminate species from the list of 'possibles'. Available for \$9.99 from the [App Store](#) or [Google Play](#).



**Beachcomber** helps you learn about the fascinating things that wash up on the beaches of Western Australia's temperate waters. With four simple categories (chordates, invertebrates, seagrasses and algae, and unusual finds), the app features photographs to assist with identification, interesting facts, and helpful hints for a safe and enjoyable beachcombing experience. The app was developed by the Northern Agricultural Catchments Council with the Department of Fisheries from the popular printed version, [Beachcombers Field Guide](#). Available for free from the [App Store](#) or [Google Play](#).





## Website watch

**100 Priority Species** have been [selected](#) as part of the [Threatened Species Strategy](#) to focus the efforts of the Australian Government and partners on recovery actions.

Perth NRM's Stakeholder Engagement team has started the **PNRM Enviro Network Facebook group** to enhance networking and communication related to environmental concerns in the Perth area. Join as an individual or a group to start collaborating and sharing knowledge.

**Conservation works better when local communities lead it** is [an article](#) describing how improvements for the environment and human wellbeing are much more likely when Indigenous peoples and local communities have a central role in conservation projects.

**Aussie Wildlife Show** is a [podcast](#) about some of the most unique and fascinating wildlife on Earth with a wide range of guests including experts, researchers and enthusiasts. Listen to the [latest episode](#) with Dr Tahlia Perry as she talks about her research on echidnas and the [EchidnaCSI](#) citizen science project.

**Weeds Australia** is a nationally focused [weeds website](#) housing information on 398 weeds, offering best practice information on weed management, an identification tool, a resource library, and much more. The website is in beta and the project team is seeking feedback from the community.

Want to learn about **Urban Heat**? [New WATER Ways](#) has a five-part video series on urban heat, each video covering a different aspect. Learn how [urban heat affects the community](#), [how we can reduce heat in a city](#), [what communities can do to reduce urban heat](#), [why cities get hot](#), and [what the many benefits of green infrastructure are](#).

**Chuditch** have been caught on camera by [Bush Heritage Australia](#) at two of their midwest reserves, including at Hamelin Station Reserve in Shark Bay, believed to be the first sighting in the district for many years.

**Will science save us?** is a [webinar](#) by Bush Heritage Australia, which was a live discussion held for the launch of National Science Week 2021 in August. Experts Dr Rebecca Spindler, Dr Kate Fitzherbert, Clair Dougherty, and Chontarle Bellottie discuss what knowledge we need to lean on if we want to work towards a sustainable future for all.



*The Carnaby's cockatoo (Zanda latirostris) has been selected as one of the [100 Priority Species](#) by the Australian Government.  
Photo – Mark Brundrett.*

**The Indigenous Land and Sea Corporation's Our Country Our Future [program](#)** funds land acquisition or management projects that deliver benefits to Indigenous Australians. This includes on-ground activities to maintain or improve the condition of Country (land, water, biodiversity, and cultural heritage). **Open on an ongoing basis.**

**Lotterywest Grassroots Community-Led Grants** are available for proposals big or small that work towards sustainable ecosystems including restoration, care for natural heritage, protection of endangered species, and reduction of the community's impact on the environment. [Applications open year round.](#)

**Lotterywest National Volunteer Week Grants** are available for organisations to hold an event or activity during National Volunteer Week 2022 (Monday 16 – Sunday 22 May) to recognise and thank their volunteers. [Applications open early 2022.](#)

**Preparing Australian Communities – Local Stream Program** provides projects with up to \$10 million in funding to improve the resilience of communities against natural hazards, including resilience of the natural environment. [Applications close 6 January.](#)

**Riverbank Grants [offer funding](#)** for local government agencies managing land in the Swan Canning Riverpark for foreshore rehabilitation and protection projects. Project funding is based on partnership arrangements and should seek to plan and implement best practice management for foreshore restoration. Applications for the 2022–23 round are likely to **open in February.**

**Coastwest 2022/23** provides grants of \$5,000–\$60,000 to support coastal land managers and community organisations to rehabilitate, restore and enhance the Western Australian coast. [Applications](#) are likely to **open in February.**

**Living Green Schools Fund [offers](#)** up to \$5,000 for the planning and development of sustainability projects and activities for primary and secondary schools across the City of Stirling. [Applications close 28 February.](#)

**Belmont Forum's Giving Back Program [offers small grants](#)** of \$500 to local not-for-profit organisations. Grant winners are selected at the end of each quarter – **March, June, September and December.**

**The Ian Potter Foundation** supports ambitious and transformative environmental initiatives with grants of over \$100,000. [Expressions of interest](#) open 14 March and **close 31 March.**

**Australian Bird Environment Foundation community grants** of up to \$5,000 are available to support practical, community-based projects which deliver bird and habitat conservation impacts. [Applications close 30 April.](#)

**Local government community grants**  
These local governments provide small grants to their communities which fund environmental groups' management and restoration projects. Eligibility varies. [Armadale opens March](#), [Belmont opens 15 January](#), [Busselton closes 31 January](#), [Cambridge opens January](#), [Canning closes 8 March](#), [Cockburn opens early February](#), [Fremantle opens 1 March](#), [Kwinana opens February](#), [Melville open year round](#), [South Perth open year round](#), [Swan opens 1 February](#), [Wanneroo open year round.](#)



# spotted jezebels

By Andrew A.E. Williams

The spotted jezebel (*Delias aganippe*) is a spectacular endemic Australian butterfly. In Western Australia it is found in near-coastal areas from North West Cape to the south coast between Albany and Esperance, and inland through the Wheatbelt into the semi-arid and arid zone. The species has been recorded in all months of the year, though it flies predominantly in spring and summer.

It is a relatively large butterfly with a wingspan over 60mm. From a distance it appears white, but closer examination shows that the upper surface of the wings are extensively washed with silvery-grey scales, with the outer border edged with black and white markings. The underside of the hind wing is more heavily marked and especially beautiful, having brilliant large red spots and yellow markings incorporated into the black and white base pattern.

Spotted jezebels are master gliders, using rising warm air currents to carry them to the summits of high hills. Here males congregate, sometimes in large numbers, gliding effortlessly on the rising air currents. They float round the prominent

hilltops, waiting for unmated females to arrive. This mate-finding strategy is referred to as 'hill-topping' behaviour.

It stands to reason that isolated hilltops are amongst the best places to find spotted jezebels. At times the butterflies may hang almost motionless in the air 2–3m above an observer, their brilliant underside wing patterns clearly visible, making it possible to obtain remarkable photographs of them in flight. The Stirling Range, with its multiple high points, is a particularly good place to observe the butterflies.

Spotted jezebels generally occur in woodland habitats where their larval food-plants grow. Females lay their eggs in clusters on the leaves of parasitic plants on which the larvae feed – often quandong trees or sandalwood trees (Santalaceae), or parasitic mistletoes (Loranthaceae). When the eggs hatch, the larvae feed gregariously, unusual for butterflies. Pupation usually takes place en masse, and it is not uncommon to see dozens of pupae (chrysalises) clustered on the trunks of sandalwood or quandong host trees in spring or early summer.



Photo – Jeremy Storey.